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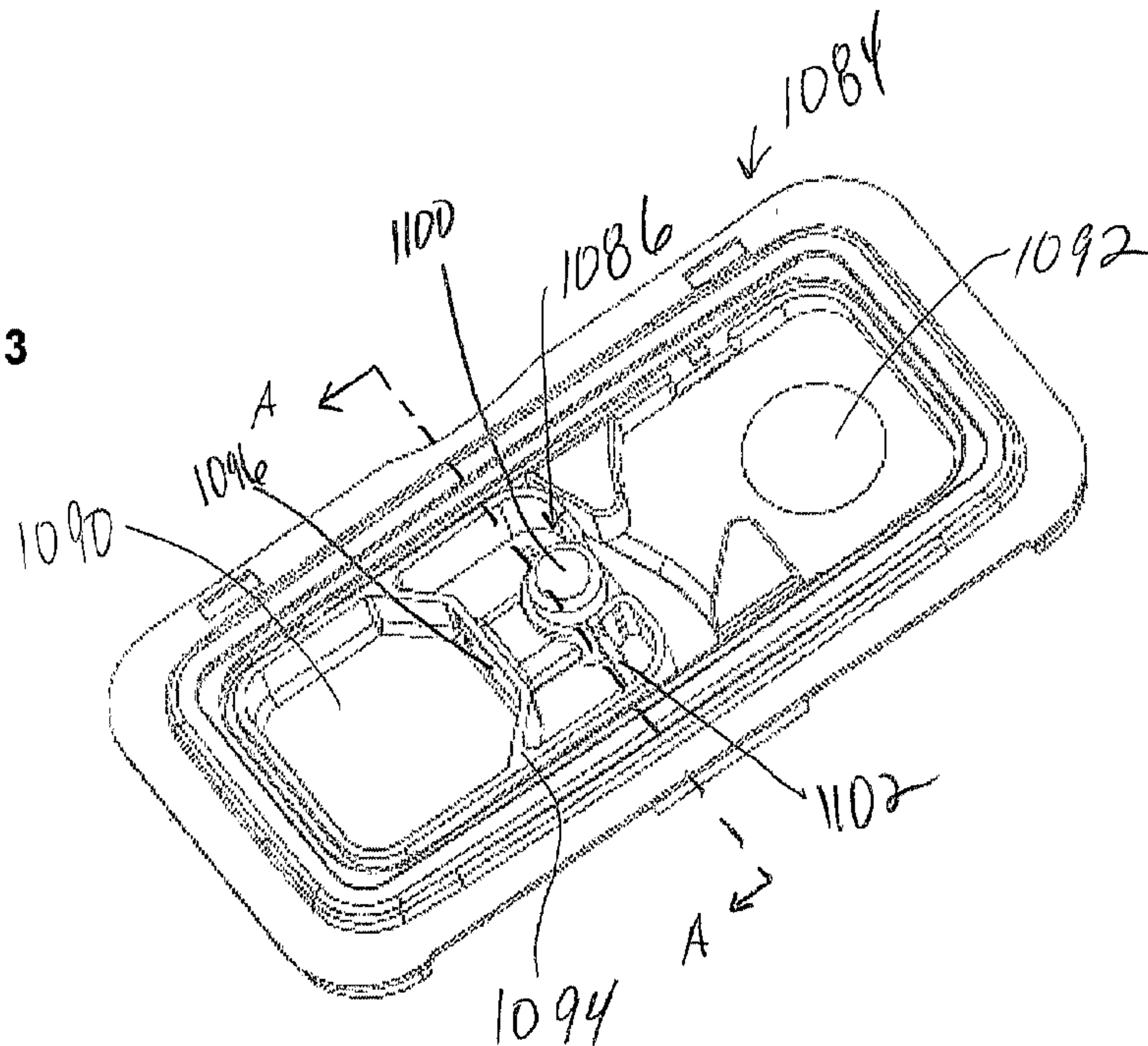
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(54) Title: FLAT PACK CONTAINERS

FIG. 113



(57) **Abrégé/Abstract:**

A child-resistant package includes a seal for sealing a package and a latch for securing the package in a closed position. According to embodiments, the package includes a first shell portion having a first closed lip and a second shell portion having a second closed lip. According to embodiments, the seal may be formed by the engagement of an angled outer wall of the first closed lip with a bent or deformed thin wall of the second closed lip. The package may also incorporate one or more elastomeric ancillary face and/or side seals. The first and second shell portions may be joined by a hinge, such as a double hinge. Additionally, the insert may include a dispenser assembly that controls the dispensing of product from a product containing space to a dispenser receptacle. A spring may bias the latch in a locked or rest position.



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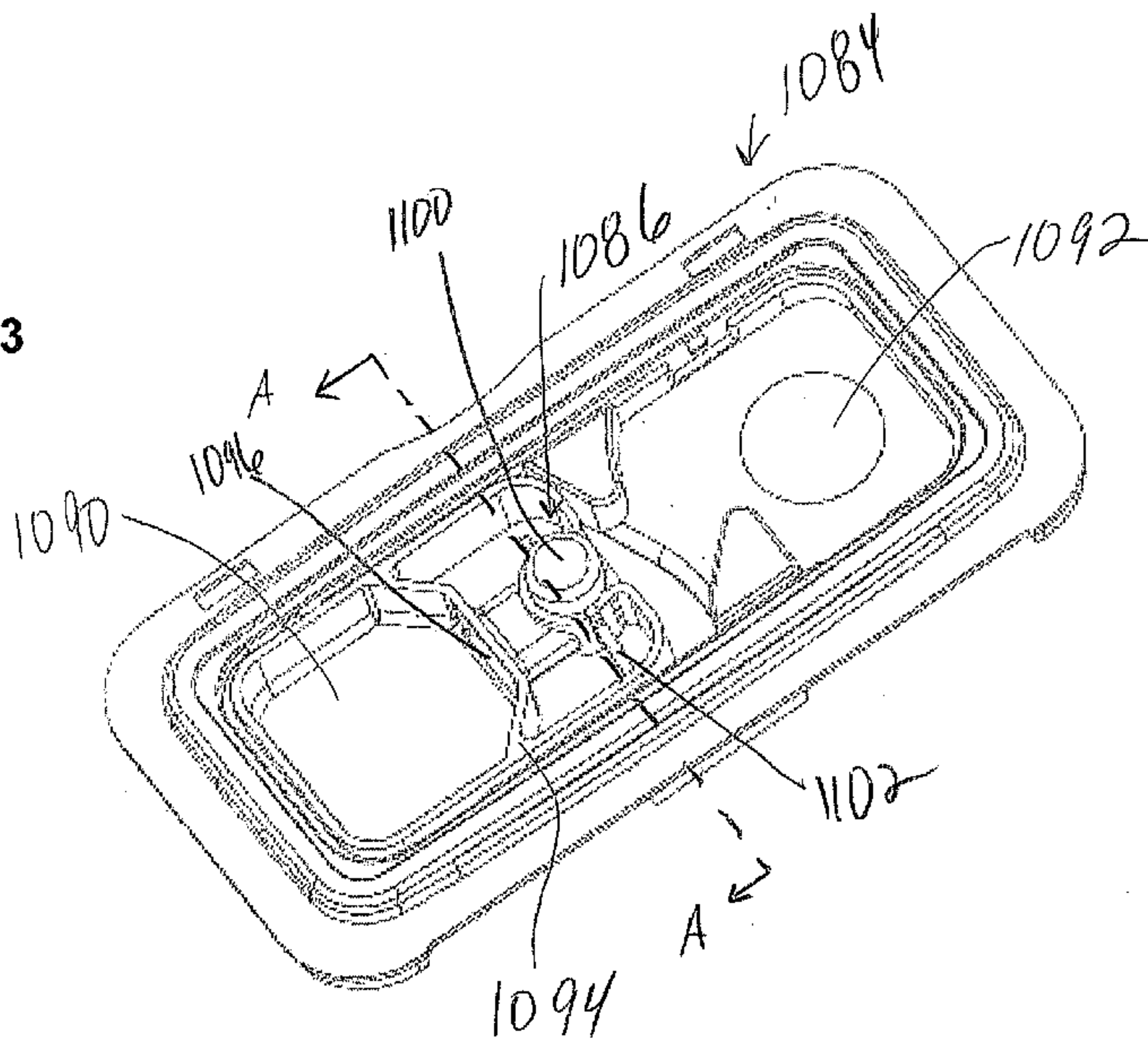
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FIG. 113



(57) Abstract: A child-resistant package includes a seal for sealing a package and a latch for securing the package in a closed position. According to embodiments, the package includes a first shell portion having a first closed lip and a second shell portion having a second closed lip. According to embodiments, the seal may be formed by the engagement of an angled outer wall of the first closed lip with a bent or deformed thin wall of the second closed lip. The package may also incorporate one or more elastomeric ancillary face and/or side seals. The first and second shell portions may be joined by a hinge, such as a double hinge. Additionally, the insert may include a dispenser assembly that controls the dispensing of product from a product containing space to a dispenser receptacle. A spring may bias the latch in a locked or rest position.

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FLAT PACK CONTAINERS

BACKGROUND OF THE INVENTION

[0001] The present invention relates to a package, for example a child-resistant, elder friendly package to contain articles such as pharmaceutical dosage forms or tobacco products.

[0002] Containers provided with child safety features are well known in the art, particularly in North America, for packaging pharmaceutical products. The child safety feature is also referred to as a Child-Resistant Closure (CRC). In general, a child-resistant closure must be difficult for children under 5 years old to open, yet be generally user friendly for users over 50 years old, particularly for users over 60 years old. The US government has established a CR protocol to evaluate effectiveness of closures. Child-Resistant Protocol testing is defined under CFR Title 16, Part 1700 by the Food and Drug Administration. Ideally these are provided in a way that is easy and convenient for the intended consumer to use the product.

[0003] Product packaging enhances a product with many additional features such as environmental protection and protection from being damaged. Many products are packaged in multiple unit packages or bulk for consumer convenience and packaging efficiency. Typically the entire product is exposed when the package is opened. If the product needs to be protected from the environment, for example humidity, then a seal is required.

[0004] One way to ensure the product is protected is to provide a seal for the entire contents of the package. This type of approach may impose certain dimensional, shape or other design constraints on the package design. In this approach, all of the product may be exposed to the consumer or child who opens the package. Some means would be needed to restrain the product so that it is held in place so that it is easy to access but does not fall out of the package.

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[0005] Another way is to protect the product in a protective envelope or wrapper. When this wrapper is opened, the entire product is exposed. Again, the entire product is exposed to the environment and it is no longer protected. In addition, the entire remaining product is exposed to children.

[0006] Depending on the requirements of the package, the design may become complicated with several contradictory constraints that would need to be managed in order to meet the requirements. This could lead to added expense and an undesirable package for the consumer.

BRIEF SUMMARY OF THE INVENTION

[0007] An aspect of the invention is a package comprising a first shell portion having a base sidewall and an inner region and second shell portion having a lid sidewall and at least one catch. According to an embodiment, a hinge joins the first shell portion and the second shell portion. The package also includes at least one latch for releasably latching the first shell portion and the second shell portion together.

[0008] The at least one latch includes a first lever leg and a second lever leg, the second lever leg pivotably secured to a pivot point that extends from the first shell portion. The latch also includes an actuator portion of the first lever leg that is adapted to be displaced by a user to pivotably displace the second leg about the pivot point from a locked position to an unlocked position. The latch also includes a latch engagement portion secured to the second lever leg, the latch engagement portion configured to lockingly engage the at least one catch when the second lever leg is in a locked position, and to disengage the catch when the second lever leg is moved to an unlocked position

[0009] Another aspect of the invention is a package comprising a first shell portion having a base sidewall and an inner region, a second shell portion having a lid sidewall and at least one catch, the at least one catch having a catch aperture, and, optionally, a

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hinge that joins the first shell portion and the second shell portion. An insert is positioned within the inner region of the first shell portion, the insert having at least one latch for releasably latching the first shell portion and the second shell portion together. The at least one latch is integrally molded to the insert, at least a portion of the at least one latch separated from a body of the insert by a space. The space is configured to receive the displacement of at least a portion of the latch as the latch is moved from a locked position to an open position.

[0010] The latch includes a latch leg having a first end and a second end, the second end attached to the body of the insert. The latch also includes a latch opening that is configured to receive the at least one catch when the first shell portion and the second shell portion are together in a closed position. Additionally, the latch includes a latch engagement portion positioned in the latch opening and which is configured to extend into the catch aperture to lock the package closed when the second shell portion are together in a closed position. Further, the latch includes an actuator portion adapted to be displaced by a user from a locked position to disengage the latch engagement portion from the catch aperture.

[0011] Another aspect of the invention is a package that includes a first shell portion having a base sidewall and at least one protrusion, a second shell portion having a lid sidewall and a hook, and, optionally, a hinge joining the first shell portion and the second shell portion. The package also includes at least one latch at least one latch for releasably latching the first shell portion and the second shell portion together.

[0012] The at least one latch includes a first leg and a second leg that are joined at an angle. The first leg includes an actuator portion, at least a portion of the actuator portion extending into an opening in the side base wall, the opening configured to allow the slideable movement of the actuator portion along the base sidewall. The second leg has a slot and a spring, the slot being configured to mate with a protrusion of the first shell portion to guide the displacement of the second leg. The spring is configured to abut the protrusion and bias the latch in a locked position. The at least one latch also

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includes a latch engagement portion configured to lockingly engage the hook when the latch engagement portion is in a locked position, and be disengaged from the hook when the latch engagement portion is in an unlocked position.

[0013] Another aspect of the invention is a package that includes a first shell portion having a base sidewall and at least one protrusion, a second shell portion having a lid sidewall and a hook, and, optionally, a hinge joining the first shell portion and the second shell portion. The package also includes at least one latch for releasably latching the first shell portion and the second shell portion together.

[0014] The at least one latch includes a first leg and a second leg that are joined at an angle. The first leg includes an actuator portion, at least a portion of the actuator portion extending into an opening in the side base wall, the opening configured to allow the slideable movement of the actuator portion along the base sidewall. The second leg has a slot and a spring, the slot being configured to mate with a protrusion of the first shell portion to guide the displacement of the second leg. The spring is configured to abut the protrusion and bias the latch in a locked position. The at least one latch also includes a latch engagement portion configured to lockingly engage the hook when the latch engagement portion is in a locked position, and be disengaged from the hook when the latch engagement portion is in an unlocked position.

[0015] According to another aspect of the invention, a package includes a first shell portion having a base sidewall and at least one protrusion, a second shell portion having a lid sidewall and a hook, and, optionally, a hinge joining the first shell portion and the second shell portion. The package also includes at least one latch for releasably latching the first shell portion and the second shell portion together.

[0016] The at least one latch includes a latch engagement portion about a second end of the latch and configured to engage the hook when the latch is in a locked position, and to disengage from the hook when the latch is in an open position. The at least one latch also includes an actuator portion positioned about a first end of the at least one latch. The actuator portion is adapted to be displaced by a user to displace

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the latch engagement portion from a locked position to an open position. The at least one latch also includes an arm having a slot, the slot being configured to mate with a protrusion of the first shell portion to guide the displacement of the arm. Additionally, a spring biases the at least one latch in a locked position. The spring is configured to extend from the arm and abut the protrusion

[0017] Further, another aspect of the invention is a package that includes a first shell portion having a base sidewall and an inner region, a second shell portion having a lid sidewall and at least one lid latching abutment, and, optionally, a hinge joining the first shell portion and the second shell portion. The package also includes an insert positioned within the inner region of the first shell portion, the insert having an upper region and at least one latch for releasably latching the first shell portion and the second shell portion together.

[0018] The at least one latch integrally is molded to the insert and includes a first leg and a second leg, the second leg being connected to the body of the insert, at least a portion of the second leg being separated by a space between the second leg and the body of the insert. At least a portion of the first leg is positioned beneath the upper surface of the insert. The at least one latch also includes a base latching abutment attached to the first leg, the base latching abutment positioned about an aperture in the insert to allow the base latching abutment to lockingly engage the lid latching abutment when the package is in a closed position. The at least one latch also includes an actuator portion adapted to be displaced by a user to displace the base latching abutment from a locking engagement with the lid latching abutment to an unlocked engagement. The second leg is configured to bias the actuator portion in a locked position.

[0019] Additionally, another aspect of the invention is a package comprising a first shell portion having a base sidewall, a second shell portion having a first lid latching abutment and a second lid latching abutment, and, optionally, a hinge joining the first

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shell portion and second shell portion. The package also includes an upper latch and a lower latch for a latching engagement with the first and second lid latching abutments.

[0020] The upper latch includes an actuator portion, a spring, a leg, an opening, and a first base latching abutment. The lower latch includes an actuator portion, a spring, a leg, and a second base latching abutment. At least a portion of the leg of the upper latch is positioned above at least a portion of the leg of the lower latch and in a sliding engagement with the leg of the lower latch. Further, at least a portion of the second base latching abutment of the lower leg protrudes through the opening in the upper leg. The actuator portions of the upper and lower latches are adapted to be displaced by a user to displace the latching abutments of the upper and lower latches from a locking engagement to an unlocked disengagement with the first and second first lid latching abutments.

[0021] Another aspect of the invention is a package comprising a first shell portion having an inner region, a second shell portion having at least one lid latching abutment, and, optionally, a hinge joining the first shell portion and second shell portion. The package also includes an insert that is secured in the inner region. The insert has at least one product containing space, an opening, an angled tab, and a guide. The package also includes at least one latch for releasably latching the first shell portion and the second shell portion together.

[0022] The at least one latch includes a first leg and a second leg. A latching abutment is attached to a second leg, the latching abutment configured to lockingly engage the at least one lid latching abutment when the at least one latch is in a locked position. The second leg includes an opening configured to receive a guide from the first shell portion that assists in guiding the displacement of the second leg as the latch moves from a locked to an unlocked position. The second leg also includes a slot configured to mate with the angled tab, the slot configured to move the latching abutment in the angled direction of the tab when the latch is moved from a locked position to an unlocked position. The at least one latch also includes an actuator

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portion attached to the first leg, the actuator portion adapted to be displaced by a user to displace the latching abutment from a locking engagement to an unlocked disengagement with the at least one lid latching abutment. A spring is configured to bias the actuator portion in a locked position.

[0023] Another aspect of the invention is a package including a first shell portion having an inner region and a base sidewall, the base sidewall having at least one opening, a second shell portion having a closed lip, and, optionally, a hinge joining the first shell portion and the second shell portion. The package also includes an insert having at least one actuator portion and an upper surface. The at least one actuator portion is configured to protrude into the at least one opening in the base sidewall. The package also includes a gasket having an upper portion, an inner area, and at least one spring. The inner area of the gasket is configured to receive at least a portion of the insert. The upper portion of the gasket has a groove on which the closed lip seats to form a seal when the first shell portion and second shell portion are together in a closed position. The at least one actuator is adapted to be displaced by a user to displace the spring to at least partially deform the gasket to unseat the closed lip from the groove.

[0024] Another aspect of the invention is a package that includes a first shell portion having an inner region and a base sidewall, the base sidewall having at least one opening, a second shell portion having at least a closed lip and at least one catch, the catch having a catch aperture, and, optionally, a hinge joining the first shell portion and the second shell portion. The package also includes an insert having an insert base and an insert wall.

[0025] Additionally, the package includes a gasket having an inner surface, an outer surface, and a gasket lip. At least a portion of the gasket base is positioned beneath the insert base. The inner surface is adjacent to the insert wall. The gasket lip is configured to be engaged by the closed lip with the first shell portion and second shell portion are together in a closed position to form a seal to prevent the passage of ambient air outside of the seal into the area enclosed by the seal.

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[0026] The package also includes an inner wall member having at least one latch, the at least one latch having an actuator portion and a latching abutment. The latching abutment is configured to be removably placed in the catch aperture to lock the package closed when the first and second shell portions are together in a closed position.

[0027] According to another aspect of the invention, the package includes a lid having a top portion, a front wall, and a closed lip. The package also includes a sleeve having a base, a sidewall, an opening, and an inner area. The lid is pivotably attached to the sleeve. The package also includes a container having a container sidewall and a container base. The container is configured for placement within the inner area of the sleeve. The container sidewall and the container base define a product containing space. An upper region of the container sidewall defines a container opening. A slide button is attached to the container for a user to slidingly displace the container within the sleeve from an open position to a closed position. The container sidewall is configured to be received in a groove between the closed lip and at least a portion of the sleeve sidewall when the package and the container are in a closed position. The placement of the container sidewall within the groove forms a seal about the container opening.

[0028] Additionally, another aspect of the invention is a package including a base having a sidewall, a shoulder, and a product containing space. The package also includes a lid that is pivotably attached to the base. The lid includes a lid sidewall, a top portion, and a lid closed lip. The lid closed lip is configured to form a seal about the product containing space when package is in a closed position. The base shoulder and lid shoulder are configured to prevent the lid from being pivotably displaced from the base when the package is in a closed position.

[0029] The package also includes a push button that is positioned at least in a first orifice in the lid. The push button is configured to be displaced to separate the lid from

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the base by a distance sufficient to separate the lid shoulder from the base shoulder to allow the lid to be pivoted about the base to open the package.

[0030] Another aspect of the invention is a package including a first shell portion having an inner region, a second shell portion, and, optionally, a hinge joining the first shell portion and the second shell portion. An insert is secured in the inner region, the insert including a product containing space and a dispenser receptacle. The product containing space has a mouth through which product may be removed from the product containing space. The dispenser receptacle has an opening through which product may enter the dispenser receptacle. The position of the mouth is at least partially offset from the position of the opening.

[0031] A slide assembly is operably attached to the insert, the slide assembly including a lever adapted to be displaced by a user to move the slide assembly from a closed position to an open position. The slide assembly also includes a slide opening, the slide opening being in communication with the mouth of the product containing space when the slide assembly is in a closed position so the slide opening receives product from product containing space. The slide opening is in communication with the opening of the dispenser receptacle when the slide assembly is displaced to an open position to deliver product from the product containing space that is in the slide opening to the dispenser receptacle. Additionally, a spring is configured to bias the positioning of the slide assembly.

[0032] Additionally, according to another aspect of the invention, a package includes a first shell portion having an inner region, a second shell portion, and, optionally, a hinge joining the first shell portion and the second shell portion. The package also includes an insert secured in the inner region. The insert includes a product containing space and a dispenser receptacle. The product containing space has a mouth through which product may be removed from the product containing space. The dispenser receptacle has an opening through which product may enter the dispenser receptacle. The mouth and the opening are at least partially offset.

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[0033] The insert also includes a push button assembly that is attached to the insert. The push button assembly includes a button having an aperture and at least one spring. The aperture is positioned within at least a portion of the body of the button. The aperture is in communication with the mouth when the push button assembly is in a closed position so that the aperture may receive product from the product containing space. The aperture is in communication with the opening of the dispenser when the push button assembly is displaced to an open position so that product in the aperture is delivered through the opening to the dispenser receptacle. The at least one spring is configured to bias the position of the slide assembly.

[0034] Another aspect of the invention is a package that includes a first shell portion having an inner region, a second shell portion, and, optionally, a hinge joining the first shell portion and the second shell portion. The package also includes an insert secured in the inner region. The insert includes a product containing space and a dispenser receptacle. The product containing space has a mouth through which product may be removed from the product containing space. The dispenser receptacle has an opening through which product may enter the dispenser receptacle. The position of the mouth is at least partially offset from the position of the opening.

[0035] The insert also includes a push button assembly that is attached to the insert. The push button assembly includes a button, at least one spring, a tab, and a ramp. The bottom of the button is separated from the ramp by a distance that permits the placement of product from the mouth of the product containing space to between the bottom of the button and the ramp when the push button assembly is in a closed position. The tab extending from the button is configured to displace the ramp as the button assembly is moved from a closed position to an open position. The displaced ramp is moved into communication with the opening of the dispenser receptacle to allow the product beneath the button to be transported to the dispenser receptacle. The at least one spring is configured to bias the positioning of the slide assembly.

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[0036] According to another exemplary embodiment of the invention, the first and second shell portions of the package are joined together by a double hinge, among other hinges.

[0037] According to another exemplary embodiment of the invention, the package may also include a seal, such as a seal formed by the engagement between a first closed lip of the first shell portion and the second closed lip of the second shell portion, among others. According to an embodiment, the first closed lip may have an angled outer wall that engages with, and distorts, deforms, or bends a generally straight and thin wall of the second closed lip to form the seal. Additionally, the packages may include ancillary elastomeric face and side seals.

[0038] Further, the package may include an insert that is covered by a cover. The insert may include a product containing space. The cover may cover at least a portion of the product containing space while also providing a dispenser opening that is configured for the removal of product from the insert. The configuration of the dispenser opening may at least partially depend on the shape of the product that is being dispensed.

[0039] According to another exemplary embodiment of the invention, the insert may also include downwardly extending tabs that, when the insert is being inserted into the first base portion, may engage springs in the first shell portion or latch springs that assist in guiding the insert into proper position in the first shell portion.

[0040] According to another exemplary embodiment of the invention, the at least the second shell portion and insert may be integrally molded to form a first member. The first member may be attached to a second member, such as a first shell portion or the base of the first shell by a snap fit.

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BRIEF DESCRIPTION OF SEVERAL VIEWS OF THE DRAWINGS

[0041] FIG. 1 is a perspective view of an embodiment of the package assembly, showing the lid open to show the interior.

[0042] FIG. 2 is a view similar to FIG. 1, but having portions of the insert tray cut away to show underlying details.

[0043] FIG. 2A is a view similar to FIG. 2, showing an alternative embodiment having modified first and third legs 60 and 90 and no pivots 84 and 102.

[0044] FIG. 3 is a view similar to FIG. 2, showing the latches advanced to their releasing positions.

[0045] FIG. 3A is a view similar to FIG. 3, showing the alternative embodiment of FIG. 2A.

[0046] FIG. 4 is a detail side elevation view showing one of the latches engaged.

[0047] FIG. 5 is a view similar to FIG. 4, showing the latch disengaged.

[0048] FIG. 6 is a perspective view of the package according to an embodiment of the invention, showing the package when open.

[0049] FIG. 7 is a perspective view of the embodiment of FIG. 6, showing the package when closed.

[0050] FIG. 8 is a cutaway view of the embodiment of FIG. 6, showing details of the base wells.

[0051] FIG. 9 is a plan view of the embodiment of FIG. 6, showing the interior of the base shell.

[0052] FIG. 10 is a plan view of the embodiment of FIG. 6, showing the exterior of the base shell.

[0053] FIG. 11 is a side elevation view of the exterior of the base shell in the embodiment of FIG. 6.

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[0054] FIG. 12 is a perspective view of the embodiment of FIG. 6, showing the package when closed, cut away to show the relation of the base wells and lid wells.

[0055] FIG. 13 is a perspective view of the lid shell of the embodiment of FIG. 6.

[0056] FIG. 14 is a perspective view of the embodiment of FIG. 6 when open, cut away to show the wells and shown with product sticks in the wells and seal sheets covering the wells.

[0057] FIG. 15 is a perspective view of another embodiment of the package, showing a different well arrangement and shape.

[0058] FIG. 16 is a detail view of another embodiment of the package, showing a corrugated shell wall for the base shell and/or lid shell.

[0059] FIGS. 17 (showing a base shell) and 18 (showing a lid shell) are views similar to FIGS. 9 and 13 of another embodiment having a perimeter seal around the wells.

[0060] FIG. 19 is a sectional view of another embodiment of the package, when closed, having blister sheets joined to the package and a perimeter seal around the wells.

[0061] FIG. 20 is a cutaway perspective view of the embodiment of FIG. 19, when open.

[0062] FIG. 21 is a perspective view of an embodiment of the invention.

[0063] FIG. 22 is a similar view of the embodiment of FIG. 21, showing the shell in isolation.

[0064] FIG. 23 is a sectional view of the embodiment of FIG. 21, showing details of the drawers.

[0065] FIG. 24 is a plan view of the embodiment of FIG. 21 with the shell removed, showing details of the latches and drawers. The ramps 70, 72, 84, and 86 are shown in phantom.

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[0066] FIG. 25 is an isolated perspective view of a drawer of the embodiment of FIG. 21, primarily showing the bottom of the drawer.

[0067] FIG. 26 is an isolated perspective view of a drawer of the embodiment of FIG. 21, primarily showing the top of the drawer.

[0068] FIG. 27 is an isolated perspective view of one side of a latch according to the embodiment of FIG. 21.

[0069] FIG. 28 is an isolated perspective view of the other side of a latch according to the embodiment of FIG. 21.

[0070] FIG. 29 is a transverse section of the embodiment of FIG. 21.

[0071] FIG. 30 is a perspective cutaway view of the embodiment of FIG. 21, showing the interior wall.

[0072] FIG. 31 is another section of the embodiment of FIG. 21, showing more interior details.

[0073] FIG. 32 is perspective view of an embodiment of the package assembly shown in an open position, without an insert, and with a pivotable latch in a rest or locked position.

[0074] FIG. 33 is a view similar to the embodiment of FIG. 32, but shows the pivotable latch in an open position.

[0075] FIG. 34 is a perspective view of an embodiment of the package assembly (shown without the second shell portion) with the pivotable latch in a rest position.

[0076] FIG. 35 is a perspective view of the pivotable latch shown in the embodiments in FIGS. 32 to 34.

[0077] FIG. 36 is a side cross sectional view of portion of an embodiment of a package assembly having a double hinge.

[0078] FIG. 37 is a cross sectional view of a portion of a package assembly having a double hinge.

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[0079] FIG. 38 is a cross sectional view of a portion of an embodiment of a package assembly in an open position, the package assembly having a flexible second closed lip and a first closed lip with an angled outer wall.

[0080] FIG. 39 is a cross sectional view of a section of the package shown in FIG. 38 with the package assembly in a closed position.

[0081] FIG. 40 is a cross sectional view of an embodiment of a package assembly in a closed position having an ancillary seal that is configured to assist in creating either a face seal or a side seal within the package.

[0082] FIG. 41 is a cross sectional view of an embodiment of a package assembly in a closed position having an ancillary seal that is configured to assist in creating a face seal within the package.

[0083] FIG. 42 is a cross sectional view of an embodiment of a package assembly in a closed position having an ancillary seal that is configured to assist in creating a side seal within the package.

[0084] FIG. 43 is a cross sectional view of an embodiment of a package assembly having an ancillary seal that is configured to assist in creating either a face seal or a side seal within the package.

[0085] FIG. 44 is a cross sectional view of an embodiment of a package assembly having a second closed lip that is configured to assist in creating a seal within the package.

[0086] FIG. 45 is a cross sectional view of an embodiment of a package assembly having an ancillary seal that is configured to assist in creating either a face seal or a side seal within the package.

[0087] FIG. 46 is a cross sectional view of an embodiment of a package assembly having a second closed lip that is configured to assist in creating a seal within the package.

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[0088] FIG. 47 is a cross sectional view of an embodiment of a package assembly having an ancillary seal that is configured to assist in creating either a face seal or a side seal within the package.

[0089] FIG. 48 is a cross sectional view of an embodiment of a package assembly having a second closed lip that is configured to assist in creating a seal within the package.

[0090] FIG. 49 is a cross sectional view of an embodiment of a package assembly having a second closed lip that is configured to assist in creating a seal within the package.

[0091] FIG. 50 is a cross sectional view of an embodiment of a package assembly having an ancillary seal that is configured to assist in creating a face seal within the package.

[0092] FIG. 51 is a cross sectional view of an embodiment of a package assembly having an ancillary seal that is configured to assist in creating a face seal within the package.

[0093] FIG. 52 is a cross sectional view of an embodiment of a package assembly having an ancillary seal that is configured to assist in creating a face seal and a side seal within the package.

[0094] FIG. 53 is a cross sectional view of an embodiment of a package assembly having an ancillary seal that is configured to assist in creating a face seal within the package.

[0095] FIG. 54 is a cross sectional view of a portion of an embodiment of a package assembly in a closed position and having a second closed lip and angled outer wall configured to provide a side seal, and an ancillary seal that is configured to assist in creating a face seal within the package.

[0096] FIG. 55 is a perspective view of an embodiment of the package assembly with the lid open and showing the interior.

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[0097] FIG. 56 is a side view of the package assembly shown in FIG. 55.

[0098] FIG. 57 is a perspective view of the first shell portion and insert of the package shown in FIG. 55.

[0099] FIG. 58 is a perspective view of a first shell portion of the package shown in FIG. 55.

[00100] FIG. 59 is a perspective view of the insert of the package shown in FIG. 55, with the insert having an integrally molded latch.

[00101] FIG. 60 is a perspective view of a portion of the integrally molded latch shown in FIG. 59 in a rest or locked position.

[00102] FIG. 61 is a top view of an embodiment of a package assembly without the insert and showing the package opened and the latch in a rest or locked position.

[00103] FIG. 62 is a top view of an embodiment of a package assembly without the insert and showing the package opened and the latch in an open position.

[00104] FIG. 63 is a perspective view of the package shown in FIG. 61.

[00105] FIG. 64 is a perspective view of the package shown in FIG. 62.

[00106] FIG. 65 is a perspective view of the first shell portion of the package shown in FIG. 61.

[00107] FIG. 66 is a perspective view of an embodiment of a package assembly showing the package opened and the latch in a closed or rest position.

[00108] FIG. 67 is a perspective view of an embodiment of the package assembly, having the lid open and showing the interior.

[00109] FIG. 68 is a top view of the first shell portion and insert of the package shown in FIG. 68.

[00110] FIG. 69 is a top view of the first shell portion and latches of the package shown in FIG. 68.

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[00111] FIG. 70 is a top view of the first shell portion of the package shown in FIG. 68.

[00112] FIG. 71 is a perspective view of the latches of the package shown in FIG. 68, the latches being shown in a rest or locked position.

[00113] FIG. 72 is a perspective view of the latches of the package shown in FIG. 68, the latches being shown in an open position.

[00114] FIGS. 73a and 73b are perspective views of an embodiment of the package assembly, showing the lid open to show the interior and with the latches in a rest or locked position.

[00115] FIG. 74 is a bottom view of an embodiment of an insert for the package assembly shown in FIGS. 73a and 73b.

[00116] FIG. 75 is a perspective view of the insert shown in FIG. 74.

[00117] FIG. 76 is a perspective view of the insert shown in FIG. 74 after molding and before the first and second legs of the latches are folded into position for assembly of the insert with the package assembly.

[00118] FIG. 77 is a perspective view of an embodiment of the package assembly, having the lid open and showing the interior with the latches in a locked or rest position.

[00119] FIG. 78 is a perspective view of the package shown in FIG. 77 but without the insert.

[00120] FIG. 79 is a perspective view of the package shown in FIG. 77 but without the insert and the first and second latch.

[00121] FIG. 80 is a perspective view of overlapping first and second latches.

[00122] FIG. 81 is a bottom view of an embodiment of an insert having two latches shown in the rest or locked position.

[00123] Fig. 82 is a perspective view of the insert shown in FIG. 81 with the latches in the rest or locked position.

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[00124] FIG. 83 is a perspective view of a portion of the insert shown in FIG. 81 having a first latch in a rest or locked position and a second latch removed from the insert.

[00125] FIG. 84 is a bottom view of the insert shown in FIG. 81 but with the latches in an open position.

[00126] Fig. 85 is a perspective view of the insert shown in FIG. 84 with the latches in an open position.

[00127] FIG. 86 illustrates a package is a perspective view of a package assembly having a gasket according to an embodiment of the present invention shown in an open position.

[00128] FIG. 87 is a side view of the package assembly shown in Fig. 86.

[00129] FIG. 88 is a top view of the first shell portion, insert, and gasket of the package assembly shown in FIG. 86.

[00130] FIG. 89 is a sectional view taken along section line A-A of FIG. 86 of the package assembly.

[00131] FIG. 90 is a perspective view of the gasket shown in FIG. 88.

[00132] FIG. 91 is a perspective view of an embodiment of a package assembly having an integrated seal and spring release shown in an open position.

[00133] FIG. 92 is a view of the front of the package assembly illustrated in FIG. 91 without the second shell portion.

[00134] FIG. 93 is a sectional view taken along section line A-A of FIG. 91 if the package assembly were in a closed position with the second shell portion.

[00135] FIG. 94 is a portion of a sectional view of the package assembly identified by circle B-B in FIG. 93.

[00136] FIG. 95 is a perspective view of an inner wall member of the package assembly shown in FIG. 91.

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[00137] FIG. 96 is a cross sectional view of an insert being inserted into a first shell portion of a package according to an embodiment of the present invention.

[00138] FIG. 97 is a front perspective view of a first and second member according to an embodiment of a package assembly.

[00139] FIG. 98 is a rear perspective view of the package assembly shown in FIG. 97.

[00140] FIG. 99 is a front perspective view of an embodiment of a package assembly having a slide button and shown with the lid and slide button latch in an open position.

[00141] FIG. 100 is a rear perspective view of the package assembly illustrated in FIG. 99.

[00142] FIG. 101 is a side perspective and partial cutaway of the package assembly illustrated in FIG. 99 with the package assembly closed.

[00143] FIG. 102 is a perspective view of a portion of the package assembly shown in FIG. 101.

[00144] FIG. 103 is a perspective view of a portion of the package assembly shown in FIG. 101 with the slide button latch moved to an open position.

[00145] FIG. 104 is a perspective view of an embodiment of a rotatable package assembly having a push button assembly and shown in a closed position.

[00146] FIG. 105 is a perspective view of the rotatable package assembly illustrated in FIG. 104 and shown in an open position.

[00147] FIG. 106 a rear perspective view of the rotatable package assembly shown in FIG. 105.

[00148] FIG. 107 is a first side perspective view of an embodiment of an insert having a slide assembly.

[00149] FIG 108 is a first side perspective view of the insert shown in FIG. 107 but without a cover.

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[00150] FIG. 109 is a second side perspective view of the insert shown in FIG. 107 but without a cover.

[00151] FIG. 110 is a front perspective view of the insert shown in FIG. 107 but without a cover.

[00152] FIG. 111 is a perspective view of an embodiment of a secondary insert having a slide assembly.

[00153] FIG. 112 is a side perspective view of an embodiment of an insert having a push button assembly.

[00154] FIG. 113 is a side perspective view of the insert shown in FIG. 112 but without a cover.

[00155] FIG. 114 is a rear perspective view of the insert shown in FIG. 113.

[00156] FIG. 115 is a front perspective view of the insert shown in FIG. 113.

[00157] FIG. 116 is a sectional view taken along line A-A in FIG. 113 of an embodiment of an insert having a push button assembly.

[00158] FIG. 117 is a side perspective view of an embodiment of an insert having a push button assembly and ramp.

[00159] FIG. 118 is a side perspective view of the insert shown FIG. 117 but without a cover.

[00160] FIG. 119 is a front perspective view of the insert shown in FIG. 118.

[00161] FIG. 120 is a rear perspective view of the insert shown in FIG. 118.

[00162] FIG. 121 is a bottom plan view of an embodiment of a secondary insert, ramp, and a portion of the push button assembly.

[00163] FIG. 122 is a sectional view taken along line A-A in FIG. 121 of a secondary insert and a portion of the push button assembly.

[00164] FIG. 123 is a perspective view of an embodiment of a push button assembly.

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[00165] The following reference characters are used in the specification and figures:

40	package
42	First shell portion
44	Second shell portion
46	First peripheral portion (of 42)
48	Second peripheral portion (of 42)
50	First peripheral portion (of 44)
52	Second peripheral portion (of 44)
54	First latching abutment
56	Hinge
58	Latch
60	First leg (of 58)
62	Second leg (of 58)
64	Actuator portion (of 60)
66	Second latching abutment
68	Peripheral edge (of 42)
70	Peripheral edge (of 44)
72	First closed lip
74	Enclosure (defined by 72)
76	Second closed lip
78	Insert
80	First bending ramp (for 62)
82	First biasing abutment (for 62)
84	First pivot (of 60)
86	Third latching abutment
88	Second latch
90	Third leg

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92	Fourth leg
94	Actuator portion (of 90)
96	Second bending ramp (engaged by 92)
98	Fourth latching abutment
100	Second biasing abutment (for 92)
102	Second pivot (of 90)
104	Remainder of 42 (other than insert 78)
106	Leaf spring (of 60)
108	Leaf spring (of 90)
110	Recess
112	Sidewall (of 110)
114	Flange
116	Aperture (in 114)
118	Aperture (in 114)
120	package
122	Base shell
124	Lid shell
126	Integral hinge
128	First closure detent
129	First closure aperture
130	Second closure detent
131	Second closure aperture
132	Inside surface (of 22)
134	Outside surface (of 22)
136	Base well (of 22)
138	Base well (of 22)
140	Base well (of 22)
142	Base well (of 22)

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144	Base well (of 22)
146	Long upstanding wall (of 36)
148	Long upstanding wall (of 38)
150	Gap (between 46 and 48)
152	Short upstanding wall (of 36)
154	Short upstanding wall (of 38)
156	Marginal sealing surface (of 36)
158	Marginal sealing surface (of 38)
160	Marginal sealing surface (of 40)
162	Marginal sealing surface (of 42)
164	Marginal sealing surface (of 44)
166	Long upstanding wall (of 38)
168	Long Corrugation
172	Inside surface (of 24)
174	Outside surface (of 24)
176	Base wall (of 24)
178	Base wall (of 24)
180	Base wall (of 24)
182	Base wall (of 24)
184	Base wall (of 24)
186	Long upstanding wall (of 76)
188	Long upstanding wall (of 78)
190	Gap (between 86 and 88)
192	Short upstanding wall (of 76)
194	Short upstanding wall (of 76)
196	Marginal sealing surface (of 76)
198	Marginal sealing surface (of 78)
200	Marginal sealing surface (of 80)

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202	Marginal sealing surface (of 82)
204	Marginal sealing surface (of 84)
206	Long upstanding wall (of 78)
210	Upward lid abutment
212	Downward base abutment
214	Resilient tab (for 28)
216	Provisional portion (of 44)
218	Distal portion (of 44)
220	Upward lid abutment
222	Resilient tab
224	Proximal part (of 122)
226	Distal part (of 122)
228	Thumb tab
230	Sealing sheet
232	Sealing sheet
234	Cut (of 130)
236	Cut (of 130)
238	Cut (of 130)
240	Cut (of 130)
242	Cut (of 132)
244	Cut (of 132)
246	Cut (of 132)
248	Cut (of 132)
250	Product piece
252	Product piece
254	Product piece
256	Product piece
258	Product piece

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260	Product piece
262	Product piece
264	Product piece
266	Product piece
268	Product piece
270	Strip
272	Well
274	Lid shell
276	Base shell
280	Base shell (FIG. 12)
282	Lid shell (FIG. 13)
283	Perimeter seal
284	Lip (of 180)
286	Lip (of 182)
290	Base shell
292	Lid shell
294	Blister sheet (of 190)
296	Blister sheet (of 192)
298	Cover sheet (of 190)
300	Cover sheet (of 192)
330	Container
332	Shell
334	First drawer
336	Second drawer
338	First abutment (of stop)
340	Second abutment (of stop)
342	First latch
344	Second latch

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346	First drawer opening
348	Second drawer opening
350	Passage (of 30)
352	First side opening (of 30)
354	Second side opening (of 30)
356	Gasket (of 34)
358	Storage area (of 34)
360	First link (of 34)
362	Second link
364	First push button gasket
366	Second push button gasket
368	First latch abutment (of 42)
370	Ramp (of drawer 42)
372	Ramp (of drawer 42)
374	Second latch abutment (of 44)
376	Push button (of 42)
378	Push button (of 44)
380	First unlatching mechanism
382	Second unlatching mechanism
384	Ramp (of drawer 34)
386	Ramp (of drawer 34)
388	Link (of drawer 34)
390	First drawer abutment (of 34)
392	Second drawer abutment (of 36)
394	First stop (in drawer 34)
396	Second stop (in drawer 36)
398	Second link (of drawer 34)
400	Guide (of 32)

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402	Guide (of 32)
404	Guide (of 32)
406	Guide (of 32)
408	Guide (of 32)
410	Guide (of 32)
412	Cover (of 34)
420	Package
422	First shell portion
424	Second shell portion
426	Hinge
428	Latch
430	Base peripheral edge
432	Base sidewall
434	Inner region
436	Lid peripheral edge
438	Lid sidewall
440	Interior region
442	Catch
444	Actuator portion
446	Lever
447	Wall segment
448	Latch engagement portion
450	First lever leg
452	Second lever leg
454	First pivot point
456	Base plate
458	Contoured wall segment
460	First aperture

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462	First opening
464	Second aperture
466	Second opening
468	Catch aperture
470	Actuator guide
472	Slot
472	Latch protrusion
474	Groove
476	Double hinge
478	Body
480	Space
482	First pivot
484	Second pivot
486	First end
488	Second end
490	Insert
494	Post
496	Seal
498	Package
500	Product containing space
502	First shell portion
504	Second shell portion
506	Insert
508	First closed lip
510	Angled outer wall
512	Second closed lip
514	Package
516	First shell portion

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518	Second shell portion
520	Insert
522	Ancillary seal
524	Inner area
526	Second closed lip
528	Upper surface (of insert 520)
530	Inner wall surface (of insert 520)
532	Inner surface (of second closed lip 530)
534	Outer wall surface (of insert 520)
536	Lid guides
538	Angled outer wall
540	Package
542	First shell portion
544	Second shell portion
546	Insert
548	Hinge
550	Base
552	Base sidewall
554	Inner region
556	Lid sidewall
558	Top portion
560	Interior region
562	Catch
564	Catch aperture
566	Latch
568	Product containing space
570	Cover
572	Dispenser opening

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574	Access opening
576	Latch leg
578	Actuator portion
580	Latch opening
582	Latch engagement portion
584	First opening
586	Second opening
588	First aperture
590	Second aperture
600	Package
602	First shell portion
604	Second shell portion
606	Hinge
608	Latch
610	Base sidewall
612	Inner region
614	Protrusion
616	Lid sidewall
618	Interior region
620	Hook
622	Insert
624	Actuator portion
626	First leg
628	Second leg
630	Slot
632	Spring
634	Latch engagement portion
636	First end

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638	Second end
640	Prong
642	Insert aperture
644	Opening
646	First guide
648	Second guide
650	Corner guide
652	Corner
654	Back end
656	Package
658	First shell portion
660	Second shell portion
662	Hinge
664	Latch
666	Base sidewall
668	Inner region
670	Protrusion
672	Lid sidewall
674	Interior region
676	Hook
678	Insert
680	Actuator portion
682	Arm
684	Spring
686	Latch engagement portion
688	Slot
690	Opening
692	Side

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694	Front portion
696	Aperture
698	First end portion
700	Second end portion
702	Guides
704	Prong
706	Package
708	First shell portion
710	Second shell portion
712	Insert
714	Opening
716	Base Sidewall
718	Lid latching abutment
720	Lid sidewall
722	Interior region
724	Upper surface
726	Latch
728	Aperture
730	Product containing space
732	Actuator portion
734	First leg
736	Second leg
738	Base latching abutment
740	Body
742	Space
744	Package
746	First shell portion
748	Second shell portion

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750	Insert
752	Hinge
754	Latch
756	Base sidewall
758	Inner region
760	Lid latching abutment
762	Product containing space
764	Aperture
766	Second attachment member
768	Actuator portion
770	Spring
772	Leg
774	Opening
776	Base latching abutment
778	Protrusion
780	Insert
782	Latch
784	Bottom
786	Product containing spaces
788	Opening
790	Tab
792	Guide
794	Latching abutment
796	Actuator portion
798	Spring
800	Leg opening
802	Slot
804	End region

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806	Front portion
808	First leg
810	Second leg
812	Intermediate portion
814	Package
816	First shell portion
818	Second shell portion
820	Insert
822	Gasket
824	Base
826	Base sidewall
828	Opening
830	Lid sidewall
832	Guide post
834	Lid closed lip
836	Actuator portion
838	Central region
840	Upper surface
842	Inner wall
844	Product containing space
846	Access opening
848	Cover
850	Hinge
852	Upper portion
854	Lower portion
856	Space
858	Groove
860	Spring

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862	Aperture
864	Dispenser opening
866	Package
868	First shell portion
870	Second shell portion
872	Hinge
874	Insert
876	Inner wall member
878	Gasket
880	Base
882	Base sidewall
884	Opening
886	Lid sidewall
888	Second closed lip
890	Catch
892	Catch aperture
894	Insert base
896	Insert wall
898	Product containing space
900	Cover
902	Gasket base
904	Gasket wall
906	Inner surface
908	Outer surface
910	Gasket lip
912	First protrusion
914	Recess (of gasket 878)
916	Recess (of second closed lip 888)

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918	First surface
920	Second surface
922	Latch
924	Second protrusion
926	Recess (of inner wall member 876)
928	Actuator portion
930	Latching abutment
932	Leg
934	First end
936	Second end
938	Body
940	Aperture
942	Protrusion (of latching abutment 930)
944	Upper surface
946	Space
948	Package
950	Latch
952	Insert
954	First shell portion
956	Tab
958	Spring
960	Rib
962	Package
964	First member
966	Second member
968	Second shell portion
970	Insert
972	First shell portion

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974	Base sidewall
976	Base
978	Openings
980	Package
982	Lid
984	Sleeve
986	Container
988	Top portion
990	Lid wall
992	Closed lip
994	Base
996	Sidewall (of sleeve 984)
998	Opening (of sleeve 984)
1000	Interior region
1002	Sidewall (of container 986)
1004	Base (of container 986)
1006	Product containing space
1008	Upper region
1010	Container opening
1012	Slot
1014	Slide button
1016	Groove
1018	Spring
1020	Package
1022	Base
1024	Lid
1026	Button
1028	Base sidewall

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1030	Base shoulder
1032	Product containing space
1034	First orifice
1036	Outer peripheral surface
1038	Lid sidewall
1040	Top portion
1042	Lid closed lip
1044	Lid shoulder
1046	Second orifice
1048	First side
1050	Second side
1052	Sleeve
1054	Insert
1056	Product containing space
1058	Slide assembly
1060	Dispenser receptacle
1062	Secondary insert
1064	First sidewall
1066	Inner opening
1068	Mouth
1070	Lever
1072	Slide opening
1074	Spring
1076	Track
1078	Outer slide wall
1080	Cover
1082	Slot
1084	Insert

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1086	Push button assembly
1088	Cover
1090	Product containing space
1092	Dispenser receptacle
1094	Secondary insert
1096	Mouth
1098	Opening (of dispenser receptacle 1092)
1100	Button
1102	Spring
1104	Orifice
1106	Dispenser opening
1108	Sleeve
1110	Insert
1112	Push button assembly
1114	Ramp
1116	Product containing space
1118	Dispenser receptacle
1120	Secondary insert
1122	Sidewall
1124	Mouth
1126	Base
1128	Spaces
1130	Opening
1132	Receptacle sidewall
1134	Inner wall
1136	Spring
1138	Tab
1140	Cover

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1142	Aperture
1144	Protrusion
1146	Extension member
1148	Button
1150	Bottom (of button 1148)
1152	Dispenser opening

DETAILED DESCRIPTION OF EXEMPLARY EMBODIMENTS

[00166] The present invention will now be described more fully with reference to the accompanying drawings, in which several embodiments are shown. This invention may, however, be embodied in many different forms and should not be construed as limited to the embodiments set forth here. Rather, these embodiments are examples of the invention, which has the full scope indicated by the language of the claims. Like numbers refer to like elements throughout.

[00167] Referring to Figures 1-5, a package 40 is shown having the following common features in the illustrated embodiments: a first shell portion 42, a second shell portion 44, a hinge 56, and a latch 58. A package is broadly defined here to be a package having two portions or leaves that are releasably joined so they can be closed or opened. The two portions or leaves do not need to be congruent, or the same size, or have matching edges to be a package as defined here.

[00168] In the illustrated embodiments, the first shell portion 42 has a first peripheral portion 46 and a second peripheral portion 48, and the second shell portion 44 has a first peripheral portion 50 and a second peripheral portion 52. The second peripheral portions 48 and 52 are the entire perimeters of the shell portions 42 and 44, except for the first peripheral portions 46 and 50.

[00169] In the illustrated embodiments, the second peripheral portion 52 of the shell portion 44 includes a first latching abutment 54 that is engaged or disengaged by the

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latch 58 as described below. In the illustrated embodiments, a hinge 56 joins the first shell portion 42 and second shell portion 44 at their first portions 46 and 50, defining a clamshell package. Hinges and hinged portions, however, are not essential and not necessary to carry out any embodiment of any invention disclosed in this specification. For example, in place of the hinge 56, the first and second shell portions 42 and 44 may have two or more hooks or another latch between their respective first peripheral portions 46 or 50 to releasably engage the first and second shell portions 42 and 44.

[00170] In the illustrated embodiments, a latch 58 can be provided for latching the second portions 48 and 52 of the first shell portion 42 and second shell portion 44 together. The illustrated latch 58 includes a first leg 60 and a second leg 62, an actuator portion 64, and a second latching abutment 66. The first and second legs 60 and 62 are joined at an angle (which is for example 90 degrees and/or corresponds to the respective angle between a side edge of the second shell portion 44 and the front edge of the second shell portion), and the first leg 60 is secured to the first shell portion 42.

[00171] In the illustrated embodiments, an actuator portion 64 of the first leg 60 is positioned to be displaced generally laterally (in the direction indicated as “L” in FIGS. 1 through 3A) by a user’s finger to displace the second leg 62 generally longitudinally from a latched position, illustrated in FIGS. 2 and 4, to a released position, illustrated in FIGS. 3 and 5. In the illustrated embodiments, the actuator portion 64 can be displaced laterally by pushing it inward with one’s finger. In this embodiment the lateral displacement of the actuator portion is perpendicular to the first leg 60 (the first leg 60 extends in the direction indicated as “V” in FIGS. 1 through 3A), and thus also perpendicular to the side edge of the second shell portion 44, and parallel to the front edge of the second shell portion 44, since the second leg is arranged parallel to the front edge of the second shell portion 44 and since the angle between the two legs is 90 degrees. Optionally, as shown in FIGS. 2, 2A, 3, and 3A, a resilient element, such as the leaf spring 106, can be provided that resists this displacement and biases the actuator portion 64 toward its latched position. In the illustrated embodiments, the leaf

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spring 106 optionally bears against a portion of the insert 78 (a side wall defining recess 110, described below, in the illustrated embodiments), resiliently resisting the advance of the actuator portion 64.

[00172] In the illustrated embodiments, a second latching abutment 66 is secured to the second leg 62. The second latching abutment 66 in the illustrated embodiments is configured to engage the first latching abutment 54 when the second leg 62 is in its latched position, illustrated in FIGS. 1, 2, and 4, and to release the first latching abutment 54 when the second leg 62 is in its released position, illustrated in FIGS. 3 and 5. Optionally, as shown in FIGS. 2 and 3, a leaf spring 108, can be provided that functions like the leaf spring 106.

[00173] In addition to the common and optional features in the illustrated embodiments, the package 40 illustrated in the Figures can have any one or more of numerous additional optional features. Zero, one, or more than one of these optional features can be employed, whether individually or in any combination.

[00174] A first optional feature of the embodiments of FIGS. 1-5 is that the first and second shell portions 42 and 44 can have mating peripheral edges 68 and 70. Mating peripheral edges are defined as peripheral edges that are generally congruent and registered when the package 40 is closed.

[00175] A second optional feature of the embodiments of FIGS. 1-5 is that a lip seal arrangement can be provided to isolate the interior of the package 40 from the exterior environment when the package 40 is closed. For example, the package 40 can include a first closed lip 72 on the first shell portion 42 defining an enclosure 74, and a mating second closed lip 76 on the second shell portion 44. The second closed lip 76 can be positioned to engage the first closed lip 72 and seal the enclosure 74 from the ambient air outside the enclosure 74 when the first shell portion 42 and second shell portion 44 are latched. "Closed loop" means that a lip is endless or continuous, like a ring. The loop can be round, oval, rectangular with rounded corners, irregular, or have some other shape.

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[00176] A third optional feature of the embodiments of FIGS. 1-5 is that an insert 78 can be provided as part of the first shell portion, defining the first closed lip 72 and joined to the remainder 104 of the first shell portion 42. The insert 78 illustrated in FIG. 1 can take the form of a tray 78 having a recess 110 located within the closed lip 72 and defined by a sidewall 112. The recess can define a sealed portion of the container. The tray 78 also can include a peripheral flange 114 located outside the closed lip 72. In the illustrated embodiments, the peripheral flange 114 conceals most of the latches 58 and 88 but includes apertures 116 and 118 to allow engagement between the first and second latching abutments 54 and 66, and between the third and fourth latching abutments 86 and 98.

[00177] A fourth optional feature of the embodiments of FIGS. 1-5 is that at least a portion of the latch 58 and at least a portion of the latch 88 can be positioned between the flange 114 of the insert 78 and the first shell portion 42. This conceals the latches 58 and 88, while providing the sidewall 112 that acts as a bearing surface against which the second and fourth legs 62 and 92 or the leaf springs 106 and 108 can bear to bias the latches 58 and 88 toward their latched positions. It should be understood that the second latch 88 and the structure it engages are not essential or necessary, as a single latch can alternatively be provided to adequately latch the container closed. For example, the single latch 88 can be modified to carry both the second and fourth abutments 66 and 98, which can be modified so both latch in the same direction.

[00178] A fifth optional feature of the embodiments of FIGS. 1-5 is that a bending ramp 80 can be positioned to be engaged by the second leg 62 for bending the second leg 62 into contact with a biasing abutment 82 when the second leg 62 is displaced generally longitudinally from the latched position (shown for example in FIGS. 1, 2, and 4) toward the released position (shown for example in FIGS. 3 and 5). In the illustrated embodiments, the bending ramp 80 is a bent portion of the fourth leg 92, which has the advantage that the bending ramp 80 moves to the right while the second leg 62 moves to the left as the latches 58 and 88 move in opposite directions toward their respective unlatched positions. The relative movement of the two latches doubles their passing

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rate, compared to the rate of travel of either latch relative to fixed structure, doubling the bending rate of the second leg 62.

[00179] A sixth optional feature of the embodiments of FIGS. 1-5 is that the first leg 60 can be secured to the first shell portion 42 by a pivot 84. The provision of a pivot 84 allows a user to displace the actuator portion 64 to pivot the first leg 60 relative to the first shell portion 42. Alternatively, the pivot 84 can be replaced by a fixed attachment point or a bearing point, either of which would provide another, or an alternative, biasing force to bias the latch 58 toward its latched position, assuming the first leg 60 is resilient.

[00180] An seventh optional feature of the embodiments of FIGS. 1-5 is that the container latching arrangement can further include a third latching abutment 86 and a second latch 88. The third latching abutment 86 can be provided on either one of the first and second shell portions 42 and 44. The second latch 88 can be provided for releasably latching the second portions 48 and 52 of the first shell portion 42 and second shell portion 44 together.

[00181] An eighth optional feature of the embodiments of FIGS. 1-5 is that the second latch 88 can include third and fourth legs 90 and 92, an actuator portion 94, and a fourth latching abutment 88. The third and fourth legs 90 and 92 can be joined at an angle, as illustrated here. The third leg 90 can be secured to the other of the first and second shell portions 42 and 44 relative to the third latching abutment 86. The actuator portion 94 of the third leg 90 can be positioned to be displaced generally laterally by a user's finger. Displacing the actuator portion 94 of the third leg 90 in the illustrated embodiments displaces the fourth leg 92 generally longitudinally from a latched position to a released position.

[00182] The fourth latching abutment 88 can be secured to the fourth leg 92. The fourth latching abutment 88 can be configured, as shown in the illustrated embodiments, to engage the third latching abutment 86 when the fourth leg 92 is in its latched position. The fourth latching abutment 88 can be configured, as shown in the illustrated

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embodiments, to release the third latching abutment 86 when the fourth leg 92 is in its released position.

[00183] A ninth optional feature of the embodiments of FIGS. 1-5 is that the actuator portions 64 and 94 of the first and third legs 60 and 90 can be spaced at least five cm apart, optionally at least six cm apart, optionally at least seven cm apart, optionally at least 8 cm apart, optionally at least 9 cm apart, optionally at least 10 cm apart.

[00184] A tenth optional feature of the embodiments of FIGS. 1-5 is that the actuator portions 64 and 94 of the first and third legs 60 and 90 optionally can be arranged so they must be actuated simultaneously to unlatch the second portions 48 and 52 of the first shell portion 42 and second shell portion 44.

[00185] The ninth and tenth optional features, or either one of them, can be employed to provide a child resistant but elder friendly package 40. Desirably for this purpose, the actuator portions 64 and 94 are far enough apart that a small child who should not have access to the contents of the package 40 will find it difficult or impossible to operate both simultaneously with one hand. Desirably, the actuator portions 64 and 94 are close enough together that an adult who should have access to the contents of the package 40, including an elderly person, will find it possible, preferably easy to operate both actuator portions 64 and 94 simultaneously with one hand to open the package.

[00186] As an eleventh optional child-resistant feature, the embodiments of FIGS. 1-5 does not have an opening spring, strut, or the like to open the package automatically when it is unlatched. When the latches 58 and 88 are disengaged, the second shell portion 44, which in this case is the lid, does not spring open automatically; the second shell portion 44 must be lifted manually to open the package. For this purpose, the first shell portion 42 has an indentation coinciding with the bending ramp 96, and the second peripheral portion 52 of the second shell portion 44 bridges the indentation.

[00187] The user can lift the section of the second peripheral portion 52 bridging the indentation of the closed package 40, when the latches 58 and 88 are released, to open the package 40 and have access to its contents. This is a child-resistant feature

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because, in normal operation, both actuator portions 64 and 94 are engaged with one hand and the second shell portion 44 is lifted with the other. The user's hand must be large enough to engage the two actuator portions 64 and 94 at the same time to open the package. Yet, opening the package 40 does not require complex movement, such as grasping and twisting one part relative to another, and can easily be designed by controlling the necessary biasing force so it does not require great strength to open.

[00188] A twelfth optional feature of the embodiments of FIGS. 1-5 is that the second and fourth legs 62 and 92 optionally can be positioned generally parallel while in their latched positions. "Generally parallel" means that a majority of the length of the respective legs runs side by side at approximately the same distance apart along their mutual lengths when the package is latched. As will be understood from this specification, the legs need not remain parallel when the package 40 is unlatched, as part of their respective motion is lateral.

[00189] A thirteenth optional feature of the embodiments of FIGS. 1-5 is that the second and fourth legs 62 and 92 optionally can be positioned to be displaced generally longitudinally in opposite directions from their latched positions to their released positions.

[00190] A fourteenth optional feature of the embodiments of FIGS. 1-5 is that bending ramps 80 and optionally 96 can be positioned to be engaged by one or optionally both of the second and fourth legs 62 and 92 for bending the engaged leg 62 or 92 into contact with a biasing abutment 98 or 100 when the engaged leg 62 or 92 is displaced generally longitudinally from the latched position toward the released position.

[00191] In the illustrated embodiments, both of the second and fourth legs 62 and 92 engage a bending ramp, respectively the bending ramp 80 defined by the fourth leg 92 and the bending ramp 96 defined by an indentation of the wall defining the second portion 48 of the first shell portion 42. This juxtaposition of two bending ramps increases the lateral displacement of the second leg 62 when the package 40 is unlatched, which can be explained as follows. Engaging the bending ramp 96 with the

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fourth leg 92 displaces the fourth leg 92, and thus the bending ramp 80, laterally inward with respect to the package, also displacing the second leg 62 laterally inward. Engaging the bending ramp 80 with the second leg 62 further displaces the second leg 62 further laterally inward. This provides a movement comparable to a compound lever. Optionally, just the second leg 62 will bear against the sidewall 112, or optionally or additionally against the wall of the aperture 116, to produce a biasing force tending to resist unlatching.

[00192] A fifteenth optional feature of the embodiments of FIGS. 1-5 is one way for biasing the actuator portion toward its latched position. A first bending ramp 80 can be provided that is positioned to be engaged by the second leg 62 for bending the second leg 62 into contact with a first biasing abutment 82 when the second leg 62 is displaced generally longitudinally from its latched position toward its released position.

[00193] In a sixteenth, optional elaboration of this mechanism, a second bending ramp 96 can be provided and positioned to be engaged by the fourth leg 92 for bending the fourth leg 92 into contact with a second biasing abutment 100 when the fourth leg 92 is displaced generally longitudinally from its latched position toward its released position.

[00194] A seventeenth optional feature of the embodiments of FIGS. 1-5 is that the first leg 60 can be secured to the first shell portion 42 by a first pivot 84, and the third leg 90 also can be secured to the first shell portion 42 by a second pivot 102.

[00195] Referring to Figures 6-20, a package 120 includes a base shell 122, a lid shell 124, an integral hinge 126, a first closure 128, and a second closure 130. The can be manufactured by different processes depending on the specifics of the design. In the illustrated embodiments, the base shell 122, lid shell 124, integral hinge 126, and closures 128 and 130 are formed as a single injection molded part 120, molded in one shot in one mold. In alternative embodiments, one or more components or portions can be formed separately and joined to form a one-piece package, or the respective

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components can be formed in more than one mold or more than one shot. The package also can be blow molded or thermoformed.

[00196] The base shell 122 has inside and outside surfaces 132 and 134. It has at least a first base well, and here five base wells 136, 138, 140, 142, and 144, on the inside surface 132. The wells are formed by depressions in the base shell 122. In the illustrated embodiment, each base well such as 136 is defined by an upstanding wall 146 extending from the base shell 122 to the generally flat marginal sealing surface and encircling the well such as 136. In the illustrated embodiment, the upstanding walls 146 and 148 of at least two adjacent base wells, and here of all five illustrated base wells, are spaced apart, defining a gap such as 150 between them.

[00197] In the illustrated embodiment, the base wells 136-144, and more particularly the upstanding walls such as 146 and 148, reinforce the base shell 122 against deformation. This reinforcement is useful to stiffen the base shell 122 against bending, thus keeping its contents more secure against access to the contents of the base wells 136-144 by prying or otherwise bending the base shell 122 while the package 120 is closed and the closures 128-131 are engaged.

[00198] In the illustrated embodiment, the base wells such as 136 have a length (measured along the longer upstanding walls such as 146 and 148) and width (measured along the shorter upstanding walls such as 152 and 154) generally parallel to the generally flat marginal sealing surface 156-164 of the base shell 122 and a depth generally perpendicular to the generally flat marginal sealing surface 156-164 of the base shell 122.

[00199] In the illustrated embodiment the marginal sealing surface 156-164 is a discontinuous surface defined by the generally coplanar marginal sealing surfaces 156, 158, 160, 162, and 164 of the respective base wells 136, 138, 140, 142, and 144) of the base shell 122. In an alternative embodiment, the facing upstanding walls such as 148 and 166 between two wells can be merged, thus reducing or eliminating the gaps such

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as 150 and potentially joining the portions of the marginal sealing surface 156-164 to form a single, continuous sealing surface 156-164.

[00200] In an alternative embodiment, shown in FIG. 16, a base well is formed by a corrugation 168 in the base shell 122. In the corrugated structure, the inside surface 132 and the outside surface 134 both undulate.

[00201] In the illustrated embodiment, the base wells 136-144 have lengths at least three times as great as their widths, and as illustrated roughly twenty times as great as their widths.

[00202] The lid shell 124 also has inside and outside surfaces 172 and 174. It has at least first and second lid wells, and here five lid wells 176, 178, 180, 182, and 184, on the inside surface 172. The wells can be formed by depressions in the lid shell 124. In the illustrated embodiment, each lid well such as 176 is defined by an upstanding wall 186 extending from the lid shell 124 to the generally flat marginal sealing surface and encircling the well such as 176. In the illustrated embodiment, the upstanding walls 186 and 188 of at least two adjacent lid wells, and here of all five illustrated lid wells, are spaced apart, defining a gap such as 190 between them.

[00203] In the illustrated embodiment, the lid wells 176-184, and more particularly the upstanding walls such as 186 and 188, reinforce the lid shell 124 against deformation. This reinforcement is useful to stiffen the lid shell 124 against bending, thus keeping its contents more secure against access to the contents of the lid wells 176-184 by prying or otherwise bending the lid shell 124 while the package 20 is closed and the closures 128-131 are engaged.

[00204] In the illustrated embodiment, the lid wells such as 176 have a length (measured along the longer upstanding walls such as 186 and 188) and width (measured along the shorter upstanding walls such as 192 and 194) generally parallel to the generally flat marginal sealing surface 196-204 of the lid shell 124 and a depth generally perpendicular to the generally flat marginal sealing surface 196-204 of the lid shell 124.

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[00205] In the illustrated embodiment the marginal sealing surface 196-204 is a discontinuous surface defined by the generally coplanar marginal sealing surfaces 196, 198, 200, 202, and 204 of the respective lid wells 176, 178, 180, 182, and 184) of the lid shell 124. In an alternative embodiment, the facing upstanding walls such as 198 and 206 between two wells can be merged, thus reducing or eliminating the gaps such as 190 and potentially joining the portions of the marginal sealing surface 196-204 to form a single, continuous sealing surface 196-204.

[00206] In the illustrated embodiment, the lid wells 176-184 have lengths at least three times as great as their widths, and as illustrated roughly twenty times as great as their widths.

[00207] In the illustrated embodiment, the portions of the base shell 122 and the lid shell 124 separating the base wells 136-144 from the outside of the container are each at least 0.5 mm thick, alternatively at least 0.8 mm thick, alternatively at least 1 mm thick, alternatively at least 2 mm thick, and can be thick enough to provide a sufficient barrier layer and seal against the passage of moisture, oxygen, or both to meet the needs of particular articles carried in the wells. The shells can be made, for example, from polyethylene or polypropylene.

[00208] The integral hinge 126 joins the base shell 122 and lid shell 124. The hinge 126 allows the base shell 122 and lid shell 124 to close together in fashion. A non-integral hinge can also optionally be used, though it might add to the cost of manufacture.

[00209] The package 120 has at least one closure, and in this embodiment has two. When the package 120 is closed, the marginal sealing surfaces of the lid shell 124 and base shell 122 are facing and adjacent to each other, as shown in FIG. 12, preventing access to the wells. The closure, and in this instance the first closure 128-129 and the second closure 130-131, releasably secure the base shell 122 to the lid shell 124 when closed.

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[00210] The first closure 128-129 comprises at least a first upward-facing lid abutment 210 (see FIGS. 7 and 13) secured to the lid shell 124 and at least a first downward-facing base abutment 212 of the first closure detent 128 secured to the base shell 122 and normally bearing against the lid abutment 210 when the package 120 is closed (as shown in FIG. 2). In an alternative embodiment, the first closure can be centrally located and a single closure can be used to secure the package 120.

[00211] The first downward-facing base abutment 212 is resiliently mounted to the corresponding (base) shell 122, as is best seen by reference to FIG. 9. The detent 128 is mounted to a resilient tab 214 on its proximal portion 216. The distal portion 218 of the resilient tab is offset in this embodiment to increase the amount the tab 214 can be deflected downward (with reference to the orientation of FIG. 9) without touching the remainder of the package 120.

[00212] The first downward-facing base abutment 212 carried on the tab 214 is normally biased to the as-molded position shown in the Figures, at which it engages the first upward-facing lid abutment 210 (see FIGS. 7 and 13) secured to the lid shell 124, so the detent 128 is inserted into the aperture 129. The first downward-facing base abutment 212 is resiliently deflectable against its bias, in this case toward the remainder of the package 120, to disengage the first upward-facing lid abutment 210, releasing the first closure 128 by removing the detent 128 from the aperture 129.

[00213] The second closure 130-131 comprises at least a second upward-facing lid abutment 220 (see FIGS. 7 and 13) secured to the lid shell 124 and a second downward-facing base abutment 212 of the second closure detent 130 secured to the base shell 122 and normally bearing against the lid abutment 220 when the package 120 is closed.

[00214] The second downward-facing base abutment on the detent 130 is resiliently mounted to the corresponding (base) shell 122, as is best seen by reference to FIG. 9. The detent 130 is mounted to a resilient tab 222 on its proximal portion 224. The distal portion 226 of the resilient tab 222 is offset in this embodiment to increase the amount

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the tab 222 can be deflected upward (with reference to the orientation of FIG. 9) without touching the remainder of the package 120. The second closure 130-131 functions in the same manner as the first closure 128-129 as described above.

[00215] The first closure 128 is spaced from the second closure 130. In the illustrated embodiment, the first and second closures 128-129 and 130-131 normally must be operated at least substantially simultaneously to open the package 120. The resiliently mounted abutments of the first and second closures are operable, as by pinching the distal portions 218 and 226 with a finger and the thumb of one hand, to release the closures by urging the resiliently mounted abutment of one closure toward the resiliently mounted abutment of another closure. While the distal portions 218 and 226 are pinched inward using one hand, the thumb tab 228 can be engaged to open the package. The need to manipulate two resilient tabs and a thumb tab on different parts of the package 120 renders the closure child-resistant, but still relatively easy to open for an adult having a larger hand span than a young child.

[00216] The package 120 as illustrated in FIG. 14 includes a sealing sheet 230 adhered to the generally flat marginal sealing surfaces 156-164 encircling the base wells 136-144 to hermetically seal the individual base wells. The sealing sheet can be attached, for example, by ultrasonic welding, solvent welding, heat sealing, an adhesive, or other expedients, including those known in the art. The package 120 as illustrated in FIG. 14 also includes a sealing sheet 232 adhered to the generally flat marginal sealing surfaces 196-204 encircling the lid wells 176-184 to hermetically seal the individual lid wells. Optionally, the sealed wells can be "moisture-tight," which is defined below.

[00217] If no seal is required in a given instance, then the flexible film does not need to have the barrier and sealing properties to provide a seal. For example, a paper seal can be used. In another embodiment, the design of the pockets can be such as to restrain the product in the package so no flexible film is required

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[00218] The flexible film material can be formed in a way that allows one compartment at a time to be opened. The sealing sheets 230 and 232 optionally can be weakened, cut, or perforated, for example between adjacent wells, as at the cuts 234-240 of the sheet 230 and the cuts 242-248 of the sheet 232, to define separately removable strips such as 270 (between two adjacent cuts such as 234 and 236) that can be individually removed to unseal or open one well without unsealing or opening an adjacent well. To access the product, the consumer would peel away the flexible film material exposing one of the compartments. Additionally or instead, a tool could be used to open the compartments. Another option is to provide a pull tab that has a string or other material that is pulled through the flexible film covering a well, opening the compartment.

[00219] In various embodiments, the sheets 230 and 232 can originally be two separate sheets or portions of one sheet that bridges the integral hinge. The bridging web of the sheet can either be removed or left in place.

[00220] An embodiment of another aspect of the invention is a method of filling the package 120 with a product. Pieces of the product, for example the stick-shaped product pieces 252-268 shown in FIG. 14 in cross-section, are placed in the base and lid wells 136-144 and 176-184. The wells 136-144 and 176-184 of the base shell 122 and lid shell 124 are covered with cover sheets 230 and 232 to close them. The cover sheets 230 and 232 are sealed to the generally flat marginal sealing surfaces 156-164 and 196-204 to seal the wells 136-144 and 176-184. Portions of the cover sheets 230 and 232 between two wells are weakened or cut at the cuts 234-240 of the sheet 230 and the cuts 242-248 of the sheet 232 to form strips such as 270 of the cover sheet between two cuts. In an embodiment, each strip such as 270 of the cover sheet covers one well, although alternatively they could cover more than one well per strip 270, as when the objects to be dispensed are pharmaceutical tablets and the recommended dose is two tablets at a time. In an embodiment, each strip is removable separately from one or more adjacent strips of the cover sheet covering different wells.

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[00221] Another embodiment of the invention is shown in FIG. 15, in which the wells such as 272 are generally circular and provided in two offset lines in the lid 274, and also in the base 276. This embodiment can be used for tablets or disk-shaped or coiled dosage forms or other objects. The illustrated wells of the lid and base do not intersect when the package is closed. One utility for offset base and lid wells is to allow a pull tab or other structure for opening each base well to project into the space between the offset lid wells, and vice versa. Alternatively, the offset wells of the lid and base could interleave, so the base wells faced and projected into a portion of the lid between two lid wells, and vice versa.

[00222] FIG. 16 is a detail view of another embodiment of the package, showing a corrugated shell wall for the base shell 122, which could also be used for the lid shell 124. In this embodiment, both the inside and outside surfaces 132, 134, are corrugated.

[00223] FIGS. 17 and 18 show an additional embodiment of the invention, again including a base shell 280 and a lid shell 282. In this embodiment, a perimeter seal 283 has been incorporated into the clamshell, comprising a lip 284 of the base shell 280 and a lip 286 of the lid shell 282. The lips can form a lip-to-lip butt seal, or the lips can be concentric surfaces having matching tapers, so the sides of the respective lips engage. Optionally, the perimeter seal 283 can be "moisture-tight," which is defined below. In a further embodiment, the perimeter seal may be re-sealable; upon opening and closing of the clam shell package, the moisture-tight seal is re-established. For example, the package can be designed to be moisture tight at least until it has been opened the number of times necessary to access all the wells in the package, one at a time.

[00224] FIGS 19 and 20 show still another embodiment, which can be used as a blister package holder or outer package. The lips 284 and 286 can be concentric surfaces having matching tapers forming a perimeter seal 283, also shown in FIGS. 17 and 18, though this is an optional feature for FIGS. 19-20. FIGS. 19 and 20 also show a base shell 290 and a lid shell 292, respectively supporting and attached to blister sheets

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294 and 296 sealed to cover sheets 298 and 300. It is useful to permanently secure the blister sheets 294 and 296 within the package, so the child-resistant closure cannot be circumvented by removing the blister pack from the outer package before dispensing its contents.

[00225] The outer package of FIGS. 17-18 or 19-20 can be molded as a single piece with an integral hinge and child-resistant closure. In these embodiments, the flexible film optionally does not need to provide any sealing, which would allow for more flexibility in its design and materials. For example a simple, inexpensive paper based material could be used to close off the compartments while the perimeter seal provides the sealing function.

[00226] In various embodiments of the invention when a seal is required the wells or other package elements optionally can include a material to remove gases that the product needs to be protected from. This agent could be added separately to the wells or made as an integral part of the base shell and/or lid shell. For example, a multi material molding process could be used to mold one material for the body and a second, joined material in the form of a polymer or plastic material with an active agent entrained within it.

[00227] One example of the active agent entrained plastic is a three component composition and method that is disclosed in one or more of the following U.S. Patent Nos.: 5911937, 6214255, 6130263, 6174952, 6,613,405 and 6,124,006 incorporated by reference herein. Another example is a two component mixture of active agent and polymer.

[00228] In one example a desiccant may be used as the active agent in the entrained polymer. The desiccant can be used to remove moisture from the product and/or the packaged environment. A desiccant can be selected to maintain a specific range of relative humidity. In one example, a molecular sieve desiccant can be used to maintain a relative humidity of less than 10%. In another example, a silica gel desiccant can be used to maintain the relative humidity in the ranges of 10-30 % RH (relative humidity) or

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30-50% RH or 40-60% RH. The relative humidity can be controlled, for example, by the amount of silica gel incorporated into the polymer.

[00229] Other active agents are optionally contemplated, such as oxygen absorbers or materials that release a preservative agent. These can also be incorporated into a three component composition described above as well as a two component composition.

[00230] In certain embodiments, a dosage form of a product is provided in at least one of the base or lid wells. The product can be an extruded stick of a composition, a rolled sheet of a composition, a portion of a leaf, ground material and a binding agent, a lozenge, a tablet, a plug, combinations of these types (such as a rolled portion of a leaf), or other forms, without limitation.

[00231] As used herein, the term "moisture-tight" in reference to a package, individual well, or other container is defined as follows.

[00232] For a complete package having perimeter sealing, "moisture tight" means the moisture ingress into the package is less than about 2500 micrograms of water per day, in another embodiment about 2000 micrograms of water per day, in another embodiment about 1500 micrograms of water per day, in another embodiment about 1000 micrograms of water per day, in another embodiment about 500 micrograms of water per day, in a further embodiment about 300 micrograms of water per day, in yet another embodiment about 150 micrograms of water per day, determined by the following test method: (a) place approximately one gram of molecular sieve in the container and record the weight; (b) close and seal the container; (c) place the sealed container in an environmental chamber at conditions of 80% relative humidity and 22 deg. C (72 deg. F); (c) after one day, weigh the container containing the molecular sieve; (d) after approximately two weeks, weigh the container; (e) subtract the first day sample from the value obtained and divide by the number of days to calculate the moisture ingress of the container in units of micrograms of water per day.

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[00233] For an individual well of a package, “moisture tight” means the moisture ingress into an individual sealed well is less than about 750 micrograms of water per day, in another embodiment about 500 micrograms of water per day, in another embodiment about 250 micrograms of water per day, in another embodiment about 150 micrograms of water per day, in another embodiment about 100 micrograms of water per day, determined by the following test method: (a) place approximately 0.2 gram of molecular sieve (more or less, depending on the well size) in the container and record the weight; (b) close and seal the well and close the container; (c) place the sealed container in an environmental chamber at conditions of 80% relative humidity and 22 deg. C (72 deg. F); (c) after one day, weigh the package containing the molecular sieve; (d) after approximately two weeks, weigh the package; (e) subtract the first day sample from the value obtained and divide by the number of days to calculate the moisture ingress of the package in units of micrograms of water per day. The test for a multi-well package can be conducted on an individual well, on all of them, or on any number of wells in between one and all.

[00234] Referring now to Figs. 21-23, a child-resistant container generally indicated as 330 is disclosed comprising a shell or housing cover 332, two drawers or product trays 334 and 336, a stop defined by abutments 338 and 340, and a latch, here defined by the first latch 342 and second latch 344.

[00235] The shell 332 optionally can have opposed first and second drawer openings 346 and 348. The shell 332 can define a longitudinal passage 350 from the first drawer opening 346 to the second drawer opening 348. In the illustrated embodiment, the shell 332 further can define a first side opening 352, and in this embodiment also a second side opening 354, providing access to the longitudinal passage from outside the shell 332.

[00236] The first drawer 334 is slidably received in the longitudinal passage 350 and projects through the first drawer opening 346 when the first drawer 334 is opened, and also, in another embodiment, a little bit when the drawer is closed. In the illustrated

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embodiment, the first drawer 334 optionally can have its first drawer abutment 340 facing the first opening 350. The first drawer 334 has a gasket 356 and a storage area 358 for containing objects kept in the container 330.

[00237] The second drawer 336 is slidably received in the longitudinal passage 350, relatively movable with respect to the first drawer 334, and projects through the second drawer opening 348 when the second drawer is opened and also, in another embodiment, a little bit when the drawer is closed. In the illustrated embodiment, each drawer 334, 336 is identical in shape and function.

[00238] The stop defined by the abutments 338 and 340 is located within the passage 350. It is configured to engage the first and second drawers 334, 336 to prevent the first and second drawers from sliding apart past a limit of travel, with respect to the shell. The limit of travel is reached when either of the first and second drawers is open sufficiently to provide access to its contents and the other drawer is closed sufficiently to prevent access to its contents.

[00239] In the illustrated embodiment, the stop comprises an abutment 336 of the first drawer 334 facing the first opening 346 and an abutment 340 of the second drawer 336 facing the second opening 348, the first and second abutments 338 and 340 engaging to define the stop when the drawers 334, 336 are moved apart. In the illustrated embodiment, at least one of the abutments 338 and 340, and in this instance each of them, is connected to the corresponding drawer 334 or 336 by a link 360 of one drawer 334 extending toward the other drawer 336 and vice versa the link 362 of the other drawer 336. In the illustrated embodiment, the stop optionally can have a first portion 360 associated with the first drawer 334 and a second portion 362 associated with the second drawer 336. The stop could alternatively be the first and second portions engaged with each other, as illustrated, or the first and second portions engaged with a portion of the shell, or the first and second portions engaged with a portion of the latch, in alternative embodiments.

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[00240] The latch, here defined by the first latch 342 and the second latch 344, is normally biased, here by the resilience of the first and second push button gaskets 364 and 366 deformed against the shell 332, to latch and seal the first and second drawers 334, 336 closed as illustrated in Figs. 21-24. The latch such as 342 is operable against its normal bias to unlatch at least one drawer 334 or 336. In the illustrated embodiment, the latch comprises a first latch 342 engaging the first drawer 334 and a second latch 44 engaging the second drawer 336. Alternatively, a one-part latch can be devised for engaging both drawers 334, 336, either simultaneously or alternatively. The first latch 342 optionally can have a first latch abutment 368 facing the first drawer opening 346, and the first latch 342 includes part of an unlatching mechanism described below, which in this embodiment is a ramp 370, and in this embodiment more precisely a pair of ramps 370 and 372, on the latch 342.

[00241] In this embodiment, the first and second latches 342 and 344 are at least partially within the longitudinal passage 350 and respectively accessible through the first and second side openings 352 and 354, respectively for unlatching the first and second drawers 334, 336. The second latch 344 optionally can have a second latch abutment 374 facing the first drawer opening 346.

[00242] In the illustrated embodiment the latch 344 is operated using a push button, here opposed push buttons 376 and 378.

[00243] In the illustrated embodiment, the first and second latches 342 and 344 are identical in shape.

[00244] Each drawer 334, 336 and the corresponding latch 342, 344 define an unlatching mechanism 380, 382. In the illustrated embodiment, the unlatching mechanism 380, 382 includes a ramp 370 or 372 on the latch 342 or 344 and a ramp (here, the ramps 384 and 386) on a link 388 projecting from the drawer 334 that engage to deflect the drawer abutment 390 transversely away (behind the plane of Fig. 24) from the latch abutment 368.

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[00245] In the illustrated embodiment, the first drawer abutment 390 and first latch abutment 368 are positioned to engage each other when the first drawer 334 is closed and the latch 342 is normally biased to latch the first drawer 334 closed. Similarly in this embodiment, the second drawer abutment 392 and second latch abutment 374 are positioned to engage each other when the second drawer 336 is closed and the latch 344 is normally biased to latch the second drawer 336 closed.

[00246] In the illustrated embodiment, the first and second latches 342 and 344 are configured to unlatch by traveling transversely toward each other within the passage 350, disengaging one of the first and second drawer abutments 390, 392 from the corresponding latch abutment 368 or 374 when both latches 342 and 344 are operated.

[00247] In the illustrated embodiment, the first drawer 334 and the latch 342 are configured to unlatch the first drawer 334 only when both pushing the first drawer 334 further closed to engage an unlatching mechanism 380 and operating the latch 334 to unlatch the first drawer 334. In the illustrated embodiment, the second drawer 342 and the latch 344 similarly are configured to unlatch the second drawer 336 only when both pushing the second drawer 336 further closed to engage a second unlatching mechanism 382 and operating the latch 344 to unlatch the second drawer.

[00248] The unlatching mechanism such as 380 of the present embodiment works as follows.

[00249] In the illustrated embodiment, the ramps 370 and 372 on the latch 342 and the corresponding ramps 384 and 386 on the drawer 334 are normally longitudinally displaced when the drawer 334 is closed, as shown in Fig. 24 (where the ramps are all underlying structure) and are longitudinally aligned in engaging relation by moving the ramps 384 and 386 to the right in Fig. 24 when the drawer 334 is pushed further closed.

[00250] In the illustrated embodiment, a first stop 394 (in drawer 334) and a second stop 396 (in drawer 336) respectfully limit the travel of the links 360 and 398 to prevent the drawers 334, 336 from being simultaneously pushed further closed sufficiently to engage both the unlatching mechanism 380 of the first drawer 334 and the unlatching

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mechanism 382 of the second drawer 336, thereby only allowing one of the first and second drawers to be opened at a time.

[00251] The shell 332 of the illustrated embodiment has guides 400 and 402 that receive the link 388 of the drawer 334 when the unlatching mechanism 380 is engaged and the link 388 is deflected, and similar guides 404 and 406 that receive the link of the drawer 336 when the unlatching mechanism 382 is engaged and the link of the drawer 336 is deflected, in each case to guide the drawer as it is opened. The shell 332 also has a guide 408 to guide the drawer link 360 and a guide 410 to guide the other drawer link 398.

[00252] The drawers such as 334 can further include partial covers such as 412. In an embodiment, the partial cover 412 can be molded as an integral part of the drawer 332, with an integral hinge 414, while in the orientation 412' shown in phantom in FIG. 24. The partial cover 412' can then be folded over and optionally secured to the body of the drawer 334 by a catch or similar arrangement. Also or instead, the insertion of the drawer 334 into the shell 332 during assembly of the container 330 with the partial cover 412 in the closed position shown in full lines in FIG. 24 can capture the partial cover 412 in its closed position. The partial covers such as 412 limit access to the stack 416, encouraging the user to remove one sheet 416 at a time from the top of a stack of the sheets 416.

[00253] A further description of the illustrated embodiment follows.

[00254] The illustrated embodiment includes a package 330, useful for example for solid oral dosages in a bulk arrangement so as to limit the number of solid oral dosages that are presented to a user. The bulk package 330 optionally can be portable, lightweight and easy to use. The package 330 as illustrated has an effective child-resistant closure, as a small child will find it difficult to press the push buttons 376, 378 and push a drawer into the package at the same time. Also, the double drawer feature with only one operable at a time, limits the amount of contents to which the user has access at a given time. The package 330 optionally can also help to create an

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emotional bond between the user and the product. A package that is fun to operate and has an appealing tactile element is regarded here as creating such an emotional bond.

[00255] The illustrated embodiment includes a bulk package for delivering solid oral dosages to a user. The solid oral dosages may include, but are not limited to: edible films, tablets, lozenges and capsules. In one embodiment, the product is an edible film. In an embodiment, the edible films are rectangular in shape; the approximate dimensions can be 25 mm x 35 mm in size for example. The bulk package of the present illustrated embodiment can be substantially a rectangular parallelepiped, as an example: the illustrated embodiment is essentially a rectangular parallelepiped with rounded edges and corners, and is relatively thin so that the package may be readily carried in a pocket or handbag. The edible films are stacked in trays located within the bulk package. The bulk package incorporates two trays, one located in each end of the package.

[00256] The trays slide out from each end of the package. In an embodiment, each tray holds up to 25 edible films and more preferably, approximately 10 edible films per tray. The bulk package shown in Figure 21 optionally can have 20 edible film pieces: 10 pieces per tray.

[00257] To open the package, two buttons 376 and 378, located in the center of the package, are used to slide out one of the trays. The buttons are attached to latches 342, 344 that control the child-resistant mechanism. To open the package, the buttons are pressed and held in while simultaneously one of the trays (or drawers) is pushed inward about 1 to 2 mm. Once pushed inward, the tray is released, causing the tray to move outward from the bulk package housing. Once the tray is released, the user may manually slide the tray further open to access the product.

[00258] The package is designed such that only one tray may be accessed at a time. When one tray is opened to the user, the other tray is locked within the package.

[00259] After the tray is opened, the user may release the two push buttons 376 and 378. When released, the push buttons move the latches outward due to spring back of

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the compliant gasket, returning to their home positions. To close the package, the user can slide the opened tray back into the housing cover. In the illustrated embodiment, the tray can be flush with the housing cover when fully seated in the package. It is possible to push the tray beyond flush, about 1 to 2 mm. When in the closed position, the tray is again locked into the package and cannot be opened again until the above sequence is repeated.

[00260] In the illustrated embodiment, the bulk package is composed of five parts: a housing cover, two identical side buttons with latches and two identical product trays.

[00261] The bulk package is designed to protect the product from exposure to moisture. The bulk package as illustrated optionally can have seals that are formed between the product trays and the housing cover, and also optionally can have seals that are formed between the push buttons and the housing cover. The bulk package re-establishes these seals during use life (after the trays have been opened and closed). The re-sealable seals are designed for up to 50 open/close cycles per tray. In one embodiment the seals have a moisture ingress rate of less than 2,000 micrograms per day, preferably less than 1,500 micrograms per day, under the conditions of 22°C / 80% RH (relative humidity), determined by the following test method: (a) place approximately one gram of molecular sieve in the container and record the weight; (b) close the resealable mechanism; (c) place the sealed container in an environmental chamber at conditions of 80% relative humidity and 22°C; (c) after one day, weigh the container containing the molecular sieve; (d) after approximately two weeks, weigh the container; and (e) subtract the first day sample from the value obtained and divide by the number of days to calculate the moisture ingress of the container in units of micrograms of water.

[00262] The tray assembly is composed of three parts: (1) the product tray, (2) a compliant gasket material at one end (also used as a button) and (3) a product lid to partially restrict access to the product.

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[00263] The product tray serves as a reservoir to hold the edible film in a stacked arrangement. The product tray optionally can have a sloped region to facilitate the removal of one piece of edible film from the stack. The sloped region helps to separate the top piece of film from the stack. Typically, the user places a finger on the top of the edible film stack and slides the top piece toward the sloped region. The product tray may be composed of a single material (i.e., polypropylene or polyethylene) or may incorporate an active-polymer (i.e., a desiccant plastic) to control the moisture level in the product. In one embodiment, the product tray is manufactured in a 2-shot injection molding process: the outer portion is molded of a thermoplastic resin (i.e., polypropylene or polyethylene) and the interior portion (the sloped region) is molded out of desiccant plastic. Desiccant plastic material is described, for example, in U.S. Patent No. 5,911,937; 6,080,350; 6,130,263; 6,174,952; 6,214,255; 6,486,261; and 7,005,459, incorporated by reference here.

[00264] A compliant gasket material is positioned on one end of the product tray. There are two projections that are located on the side opposite of the gasket material. Referring to Figure 24, the shorter projection optionally can have a slot in the middle of the projection. The longer projection optionally can have a harpoon-like feature along one side of the projection. The shorter projection interacts with the latching mechanism. The longer projection extends into the opposing tray and prevents both trays from being opened at the same time.

[00265] The product tray optionally can have a lid that partially extends over the top of the tray. The lid may be manufactured as a separate component or manufactured integral to the product tray. As an integral component, the lid may be hinged to the product tray. In one embodiment, the product tray and lid are molded in a single injection molding process. Prior to product filling, the lid is not assembled over the top of the tray. The lid may be hinged in an 'open' position. After product is filled into the tray, the lid may be rotated closed and locked into position. Once closed, the lid may not be removed.

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[00266] The gasket serves two functions: (1) provides a seal between the housing cover and the product tray and (2) provides a spring-back force when the user pushes product tray inward. During package operation, the user applies an inward force to the tray on the gasket material.

[00267] The gasket may be a separate component or manufactured with the product tray in an integral manner. In one embodiment, the gasket is molded in a 2-shot injection molding process with the product tray. The gasket may be composed of a thermoplastic elastomer (TPE). Suitable TPEs are materials with a good moisture vapor transmissions rates and materials that readily bond (are compatible with) the thermoplastic resin used for the product tray.

[00268] The push button latches and product trays are assembled into the housing cover. The push button latches each have a hook-feature on their distal end. When the push buttons are assembled into the housing cover, the hooks interlock together and prevent the push button latches from being removed from the package. The push buttons are an integral part of the child-resistant mechanism in the package. In the closed position, when the push buttons are NOT pressed, the latches prevent the product trays from begin opened. The shorter slotted tab in the product tray optionally can have a projection along the distal end and is assembled over the latch. The interference between the projection and the latch prevent the product tray from opening.

[00269] The housing cover can be composed of one material. In a preferred embodiment, the housing cover may be manufactured in one part using an injection molding process. The material used for the housing cover optionally can provide a good barrier to moisture and to UV light to protect the product within the package. The material optionally can also be dimensionally stable since the there are features in the housing cover that interact with other aspects of the bulk package to assist operation of the package. Suitable materials include polypropylene (PP), high-density polyethylene (HDPE), cyclic olefin copolymer (COC) etc.

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[00270] The interior, bottom surface of the housing cover optionally can have two channels that project out from the surface. These channels are used to capture the shorter, slotted tab of the product tray.

[00271] The product tray's slotted tab optionally can have a set of cleats midway along the top surface. When the push button latches are pressed inward, the cleats ride along the latch. At the same time, one of the product trays is pressed inward. The latch bottom surface optionally can have corresponding cleats so that the slotted tab is deflected downward approximately about 2 to 3 mm. When the push button tabs are fully depressed, the slotted tab is deflected downward so that the tab is aligned with one of the channels in the housing cover. When the product tray is released, the product tray slides outward from the package; during this outward motion, the slotted tab is captured by one of the channels in the housing cover.

[00272] The product tray can then be pulled out of the package, until the longer tab on the product tray reaches the end of travel. The end of travel occurs when the harpoon feature of one product tray contacts the harpoon of the opposing product tray. The maximum distance that a product tray can be opened is defined by the harpoon position.

[00273] The push button latches can be composed of two components: (1) a push button that forms a seal with the housing cover and (2) a movable latch that is used to release the product trays. The push button latches may be made of two parts and assembled. In a preferred embodiment, the push button latches are made in a 2-shot injection molding process. The push buttons are made of a thermoplastic elastomer with similar material requirements as the Gasket on the product tray.

[00274] The push button latches are pushed together inward. In the present embodiment, the latches move approximately 4 mm inward. A set of cleats on the bottom surface of the latches engage a corresponding set of cleats on the slotted tab on the product tray, causing the slotted tab to deflect downward. This allows the slotted

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tab to fit into a channel in the housing cover and enables one of the product trays to open outward.

[00275] Referring to Figures 32 to 35, a package 420 in an open position is shown having a first shell portion 422, a second shell portion 424, a hinge 426, and at least one latch 428. The first shell portion 422 includes a base peripheral edge 430, a base sidewall 432, and an inner region 434. The second shell portion 424 includes a lid peripheral edge 436, a lid sidewall 438, an interior region 440, and at least one catch 442. According to an embodiment, the first shell portion 422, second shell portion 424, and hinge 426 may be integrally molded or non-integral. The latch 428 includes an actuator portion 444, a lever 446, and a latch engagement portion 448. According to certain embodiments, the actuator portion 444 may be a button. The lever 446 includes a first lever leg 450 and a second lever leg 452. According to an embodiment, the first lever leg 450 and the second lever leg 452 are joined at an angle. The second lever leg 452 may be pivotably secured to a first pivot point 454, such as, for example a pin that extends from the first shell portion 422. According to another embodiment, the first shell portion 422 may include a base plate 456 that is secured or integrally molded to the first shell portion 422, with the first pivot point 454 extending from the base plate 456. According to another embodiment, the pivot point 454 may extend from an insert or tray similar to the insert 78 previously discussed that is secured to the first shell portion 422.

[00276] The inner region 434 of the first shell portion 422 may be configured to provide at least a portion of one or more product containing spaces for the placement of product, as discussed above. As discussed, the first shell portion 422 may include an insert, having a similar configuration to insert 490 discussed above with respect to FIG. 1, which may be configured to provide at least a portion of a product containing space. According to such an embodiment, the insert 490 may be operably attached to the first shell portion 422, such as, for example, the insert being adhered to the first shell portion 422, wet welded, through the use of a snap or friction fit, and/or attached by a mechanical fastener, including, for example, a clip or pin, among others. In the embodiment of FIGS. 32-34, the insert 490 sits below the lever 446, a pin protrudes

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upward from the insert creating pivot point 454. In another embodiment, the insert 490 sits above and covers the lever 446. For example, the first shell portion 422 may include at least one upward projection, rib, or slot that is configured to receive at least one downwardly extending projection or tab from the insert for attaching the insert to, or aligning the insert for attachment to, the first shell portion 422.

[00277] The base sidewall 432 may upwardly extend from, or alternatively, be offset from, the base peripheral edge 430. For example, as illustrated in Figures 32 to 34, the base sidewall 432 is inwardly offset from the base peripheral edge 430. According to an embodiment, the base sidewall 432 may be offset from the base peripheral edge 430 by a distance that is approximately equal to the thickness of the lid sidewall 438. When the package 420 is closed and the first and second shell portions 422, 424 are properly aligned, such an offset may allow for at least a portion of an outer surface of the lid sidewall 438 to be generally aligned with the adjacent portion of the base peripheral edge 430, while at least a portion of an outer surface of the base sidewall 432 may be adjacent to, or abut, a portion of an inner surface of the lid sidewall 438. Such an offset may also allow for at least one latch 428 to engage at least one catch 442 of the second shell portion 424 so as to lock the package 420 in a closed position, as discussed below in more detail.

[00278] According to an embodiment, the base and lid sidewalls 432, 438 may be comprised of wall segments having similar or different configurations or contours. For example, the base sidewall 432 may include a contoured or recessed wall segment 458 that, when the package 420 is in a closed position, provides a space that may allow a user to generally upwardly press on a portion of a bottom surface of the second shell portion 424 so as to move the package 420 from a closed position to an open position when the latch 428 is in an unlocked position.

[00279] The wall segments of the base sidewall 432, lid sidewall 438, and/or the peripheral edges 430, 436 may be contoured to provide a space for the placement of at least a portion of the hinge 426 within, or generally aligned with, the peripheral edges

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430, 436 of the first and second shell portions 422, 424 when the package 420 is in a closed position, as further shown for example in FIGS. 36 and 37 (with the hinge 426 being shown as a double hinge 476). Additionally, the base sidewall 432 may include at least one wall segment having a first aperture 460 configured for the placement of a latch engagement portion 448. Further, the base sidewall 432 may be configured to provide a first opening 462 for the slideable placement of at least a portion of the actuator portion 444 of the latch 428. According to certain embodiments, the base peripheral edge 430 may also provide an opening for the moveable placement of at least a portion of the actuator portion 444.

[00280] Additionally, although the actuator portion 444 and the first and second openings 462, 466 are illustrated in FIGS. 32 to 34 as being on the sides of the package 420, the openings 462, 466, latch 428, and catches 442 can be moved to other areas of the package 420, such as for example, having the actuator portion 444 about a front portion of the first shell portion 422 with the corresponding catch 442 extending from a side portion of the second shell portion 424. Additionally, according to certain embodiments, the latches 428 may be placed within the second shell portion 424, and configured to engage a catch that is attached to, extends from, or located on the first shell portion 422.

[00281] According to an embodiment, the catch 442 may be part of, extend from, or be adjacent to the lid sidewall 440. Additionally, the catch 442 includes a catch aperture 468 that is configured to engage with a portion of the latch engagement portion 448 when the package 420 is closed and the latch 428 is in a locked or rest position.

[00282] When the package 420 is closed and the latch 428 is in a locked or rest position, the latch engagement portion 448 may protrude through the first aperture 460 in a wall segment 447 of the base sidewall 432 and into a catch aperture 468, thereby locking the package 420 in the closed position. The latch 428 may be moved from a rest or locked position (as shown in FIG. 32) to an unlocked position (as shown in FIGS. 33 and 34) by the displacement of the actuator portion 444 in a generally inwardly

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lateral direction, as indicated by “L” in FIG. 33. Moreover, a user may inwardly displace the actuator portion 444 by pressing on the actuator portion 444 with the user’s thumb or finger.

[00283] As shown in FIGS. 33 to 35, an actuator guide 470 in the first shell portion 422 or base plate 456 engages a slot 472 in the lever 446 to assist in guiding the generally lateral displacement of the actuator portion 444.

[00284] While Figures 32 to 34 illustrate only one latch 428, multiple latches 428 may be utilized. For example, for purposes of illustration, the first shell portion 422 illustrated in FIGS. 32 to 34 is configured to accommodate two latches 428, as evidenced at least in part by the inclusion in the base plate 456 and/or first shell portion 422 of a second pivot point 454b, second actuator guide 470b, second aperture 464, and second opening 466. However, in use, the first shell portion 422 may be configured to match the number of latches 428 that are being used by the package 420.

[00285] As the actuator portion 444 is inwardly laterally displaced, the second lever leg 452 rotates about the first pivot point 454. As the second lever leg 452 rotates about the first pivot point 454, the latch engagement portion 448 is rotated away from, and out of, the catch aperture 468, thereby unlocking the package 420. According to an embodiment, the latch engagement portion 448 may also include a latch protrusion 472 that fits inside a groove 474 in the first shell portion 422 or base plate 456. The engagement of the latch protrusion 472 and groove 477 may assist in maintaining the lever 446 in a proper position and/or limit the distance that the latch engagement portion 448 and second lever leg 452 may be rotated.

[00286] The first lever leg 450 may be configured and/or oriented to act as a spring that biases the latch 428 in a rest or locked position. Accordingly, the first lever leg 450 may at least assist in returning the latch 428 to a rest position after the inwardly directed lateral force has been removed from the actuator portion 444. For example, as shown in FIG. 32, when in a rest or locked position, the first lever leg 450 may have a generally straight configuration that is angled away from lateral direction “L”. However, as the

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actuator portion 444 is inwardly displaced in the lateral direction and the second lever leg 452 is pivoted, the first lever leg 450 may be deflected, bent, and/or deformed, as shown in FIGS. 33 and 34. Additionally, according to an embodiment, while the degree to which the second lever leg 452 may be rotated may be limited, such as, for example, through the engagement between the latch protrusion 472 and groove 474, or a post or other obstruction that limits the rotational movement of the second lever leg 452 or latch engagement portion 448, the first lever leg 450 may continue to be deflected, bent, and/or deformed as the actuator portion 444 continues to be laterally displaced. However, according to an embodiment, the configuration of the first lever leg 450 and placement of the first pivot point 454 in the second lever leg 452 may result in the first lever leg 450 being deformed, deflected, and/or bent without the need for protrusions or other obstructions that limit the rotational movement of the second lever leg 452.

[00287] When the inwardly lateral force is removed from the actuator portion 444, the first lever leg 450 may begin to generally return to its original, at rest or locked shape and/or position. As the first lever leg 450 begins to return to shape, the latch 428 may be biased back to its rest or locked position, during which time the engagement of the slot 472 of the lever 428 with the actuator guide 470 may assist in guiding the outwardly lateral movement of the actuator portion 444 back to the general position the actuator portion 444 held before the assertion of the inwardly lateral force. As the first lever leg 450 returns to its rest shape or position, the second lever leg 452 may also pivot the latch engagement portion 448 back into the first aperture 460.

[00288] As the latch 428 may be in a rest or locked position in the absence of lateral force inwardly displacing the actuator portion 444, in some circumstances a user may attempt to close the package with the latch engagement portion 448 extending through the first aperture 460. Therefore, so that the latch engagement portion 448 does not create an interference that prevents the closing of the package 420, the catch 442 may have a wall thickness that allows the catch 442 to deform or be deflected around the latch engagement portion 448 until the catch aperture 468 and latch engagement portion 448 are generally aligned, whereupon the latch engagement portion 448 may

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lockingly engage the catch aperture 468. The catch 442 and/or latch engagement portion 448 may also include chamfers or other geometrical surface characteristics that assist with the catch 442 sliding over the latch engagement portion 448 until the latch engagement portion 448 is able to enter the catch aperture 468 and lock the package 420 in a closed position. Additionally, the latch 428 and/or catch 442 may be configured so that the closing of the second shell portion 424 relative to the first shell portion 422 forces the latch engagement portion 448 to be displaced until the catch aperture 468 is in position to engage the latch engagement portion 448 so as to lock the package 420 in a closed position.

[00289] The hinge 426 may assist in controlling the movement of the unlocked second shell portion 424 relative to the first shell portion 422. For example, referencing FIG. 33, the hinge 426 may assist in limiting movement of the second shell portion 424 relative to the first shell portion 422 in at least the lateral ("L"), direction, particularly when the second shell portion 424 is being moved to open the package 420 so that the inner region 434 is accessible to a user and/or to close the package 420. The hinge 426 may be oriented so that, when the second shell portion 424 is being moved to an open position, the second shell portion 424 may be pivoted away from the first shell portion 422 so as to provide access to one or more product containing spaces of the first shell portion 422 or of an insert 78. For example, according to an embodiment of the invention, relative to the first shell portion 422, the second shell portion 424 may be moved from a closed position to an open position where the second shell portion 424 is generally in the same plane as the first shell portion 422. However, the hinge 426 may be configured to allow the second shell portion 424 to be pivoted from the first shell portion 422 by any number of degrees. Further, a variety of hinges 426 may be used, including integral and non-integral hinges, such as, for example, a double-fold, flat-top, butterfly, or pinned hinge, among others.

[00290] FIGS. 36 and 37 illustrate side cross sectional views of a double hinge 476 that is suitable for a number of embodiments of the packages described herein. According to such an embodiment, the hinge 476 may be configured to allow for

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displacement of the second shell portion 424 relative to the first shell portion 422 in the "V" direction (as indicated in FIG. 36). For example, the hinge 426 referenced in FIGS. 32 to 34 may be a double hinge 476 that has a first pivot 482 connecting the first shell portion 422 and the double hinge 476, and a second pivot 484 joining the hinge 476 and the second shell portion 424. As shown in FIG. 36, a double hinge 476 may allow for a degree of misalignment between the first and second shell portions 422, 424 while still allowing for the formation of the seal within the package 420. More specifically, as shown in FIG. 36, the double hinge 476 may allow the base sidewall 432 and lid sidewall 438 to be at least partially misaligned while permitting a seal 496 to form about at least a product containing space in the package 420.

[00291] Referring again to FIGS. 32 to 35, a lip seal arrangement can also be provided to isolate at least the product containing space of the package 420 from the exterior environment when the package 420 is closed, as discussed with respect to FIGS. 1 to 5. For example, the package 420 can include a first closed lip extending from the first shell portion 422 or the insert and a mating second closed lip extending from the second shell portion 424. The first closed lip may define a closed loop enclosure about the product containing space. The second closed lip can be positioned to engage the first closed lip and seal the area enclosed therein from ambient air outside of the seal. Additionally, an elastomeric or non-elastomeric material may be employed to assist in creating one or more seals that seal at least the product containing space from ambient air that is outside of the seal, as discussed in more detail below.

[00292] FIGS. 38 and 39 are cross sectional views of a portion package 498 having a seal that is suitable for use with embodiments of the packages described herein. The package 498 illustrated in FIGS. 38 and 39 includes a first shell portion 502 and a second shell portion 504. According to an embodiment, the first shell portion 502 includes an insert 506, the insert 506 having a product containing space 550 and a first closed lip 508, the first closed lip 508 including an angled outer wall 510. Alternatively, rather than extending from the insert 506, the first closed lip 510 may extend from the

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first shell portion 502. The second shell portion 504 has a second closed lip 512, at least a portion of the second closed lip 512 being configured to engage at least a portion of the angled outer wall 510 of the first closed lip 508 when the package 498 is in a closed position.

[00293] As shown in FIG. 38, the second closed lip 512 may have a generally straight configuration when the package 498 is in an open position and the second closed lip 498 is not in contact with the first closed lip 508. The second closed lip 512 has a generally thin wall thickness, which, when second closed lip 512 engages the angled outer wall 510 as the package 498, allows the second closed lip 512 to be deformed, bent, or distorted so that at least a portion of the second closed lip 512 generally mates with or conforms to the angled orientation of the angled outer wall 510. The engagement between the second closed lip 512 and angled outer wall 510 forms a seal that seals the area enclosed therein from ambient air that is outside of the seal.

[00294] For example, according to an embodiment, the second closed lip 512 may have a thickness of approximately 0.4-0.8 cm, preferably approximately 0.4 to 0.6 cm, and more preferably approximately 0.6 cm. Additionally, the angled outer wall 510 of the first closed lip 508 may be angled at a variety of different angles suitable for distorting the second closed lip 512 so as to create the seal between the first and second closed lips 508, 512. However, if the angle of the angled outer wall 510 is too low, too much of the second closed lip 512 may be in contact with the first closed lip 508, which may increase the friction between the first and second closed lips 508, 512, and thereby result in difficulty in opening and/or closing the package 498. Yet, if the angle of the angled outer wall 510 is too steep, then too little of the second closed lip 512 may be in contact with the first closed lip 508, which may cause the seal to be more sensitive to improper alignment. According to certain embodiments, the angle of the angled outer wall 510 of the first closed lip 508 may be between approximately 3 to 10 degrees, and preferably between approximately 5 to 8 degrees. For example, according to one embodiment, the angled outer wall 510 may have an angle of approximately 6.5 degrees.

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[00295] Referencing FIGS. 40 to 54, at least one ancillary seal 522 and/or at least one second closed lip 526 may be used in forming a seal inside the package 514 when the package is closed. The ancillary seal 522 or second closed lip 526 may be used to create side and/or face seals, among others, and may be constructed from resilient materials, such as, for example, an elastomeric or non-elastomeric material. For example, a sealing engagement may be formed by pressing a first closed lip from a first shell portion 516 or insert 520, or a second shell portion 518 into or against the ancillary seal 522, causing the ancillary seal 522 to deform about at least a portion of the adjacent first closed lip or second closed lip 526 so as to form a seal. Similarly, a seal may also be formed by the second closed lip 526 being distorted, bent, or deformed by a pressing engagement with a surface of the first shell portion 516 or insert 520, such as a first closed lip, among others. The ancillary seal 522 may be affixed to, or integrally or non-integrally molded to, the first shell portion 516, insert 520, or to the second shell portion 518. For purposes of illustration, the embodiments below are shown using a second closed lip 526 in connection with forming the seal. However, according to certain embodiments, a first closed lip extending from the first shell portion 516 or insert 520 may also be used to create the seal in a similar manner as discussed below with respect to the second closed lip 526.

[00296] Although referred to as a “second” seal 522, according to certain embodiments, the ancillary seal 522 may be used to create the primary, and possibly the only, seal within the closed package 514, or in combination with other seals, including the lip seal discussed with respect to FIGS. 1 to 5, among others. Exemplary configurations of sealing arrangements showing ancillary seals 522 and the use of the second closed lip 526, are shown in cross sectional FIGS. 40-54, which are discussed in the below.

[00297] FIG. 40 illustrates a package 514 having a first shell portion 516, a second shell portion 518, an insert 520, and an ancillary seal 522. The ancillary seal 522 in Figure 40 is used to create a face seal and may be made from a variety of materials, including a thermoplastic elastomeric material, among others. According to an

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embodiment, the ancillary seal 522 is affixed or molded to an inner region 524 of an insert 520. The insert 520 may be affixed to, or, alternatively, part of, a first shell portion 516. The second shell portion 518 includes a second closed lip 526 that abuts the ancillary seal 522 when the package 514 is in a closed position to form a seal between the second closed lip 526 and the ancillary seal 522. Moreover, the second closed lip 526 may have a length that causes the second closed lip 526 to depress the abutting resilient surface of the ancillary seal 522 to form the seal. According to another embodiment, the ancillary seal 522 may be affixed or molded to the second shell portion 518, and the first shell portion 516 may include a first closed lip that engages and depresses the ancillary seal 522 when the package 514 is in a closed position.

[00298] According to another embodiment, the ancillary seal 522 shown in FIG. 40 is affixed or molded to the second closed lip 526. According to such an embodiment, the seal is created when the package 514 is closed by the ancillary seal 522 being pressed against the insert 520 or first shell portion 516.

[00299] FIG. 41 illustrates a face seal where the ancillary seal 522 is outside of an inner area 524 of the insert 520. According to such an embodiment, the ancillary seal 522 may be attached or molded to the insert 520 or the first shell portion 516 and may be made from a variety of different materials, including polypropylene, among others. Additionally, as shown, the second closed lip 526 of the second shell portion 518 terminates in a “V” shape that is depressed into the ancillary seal 522 when the package 514 is in a closed position. According to an embodiment, the ancillary seal 522 may also have a mating “V” shape indentation that is configured to mate with the “V” shaped protrusion of the second closed lip 526. Additionally, as with FIG. 40, according to another embodiment, the ancillary seal 522 may be attached or molded to the second shell portion 518, with the first shell portion 516 or insert 522 having a first closed lip with an inverted “V” shape that is pressed into the ancillary seal 522 when the package 614 is in a closed position.

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[00300] According to another embodiment, the ancillary seal 522 shown in FIG. 41 is affixed or molded to the bottom of the second closed lip 526. According to such an embodiment, the seal is created when the package 514 is closed by the ancillary seal 522 being pressed against the insert 520 or first shell portion 516.

[00301] FIG. 42 illustrates the use of the ancillary seal 522 to create a side seal. As shown, when the package 514 is in a closed position, the ancillary seal 522 is pressed between an inner surface 532 of the second closed lip 526 and an outer wall surface 534 of the insert 520, such as a first closed lip. According to an embodiment, the ancillary seal 522 may be attached or molded to either the second closed lip 526 or the insert 520, and may be made from a variety of materials, including thermoplastic elastomeric materials, among others. As shown, according to such an embodiment, the second closed lip 522 does not necessarily touch the insert or the first shell portion 516. However, according to another embodiment, a face seal may also be formed at the bottom of the second closed lip 526, such as, for example, by extending the ancillary seal 522 shown in FIG. 42, the inclusion at least one other ancillary seal 522, or by the interaction between the bottom of the second closed lip 526 and the insert 520 and/or first shell portion 516. According to another embodiment, the ancillary seal 522 may be between a wall of the first shell portion 516, such as the first closed lip (not shown), and the second closed lip 526 of the second shell portion 518.

[00302] FIG. 43 illustrates an ancillary seal 522 that is attached or molded to the second shell portion 518 to form a side seal. The ancillary seal 522 shown in FIG. 43 may be made for a variety of different materials, including thermoplastic elastomeric materials, among others. More specifically, as shown when the package 514 is in a closed position, the ancillary seal 522 is pressed by an inner wall surface 530 of the insert 520, such as a first closed lip, to form a seal. According to another embodiment, the first shell portion 516 may include a wall, such as the first closed lip (not shown) that may interact with a ancillary seal 522 that is attached or molded to the second shell portion 518 to form a face seal. Alternatively, the ancillary seal 522 in FIG. 43 may be

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extended or positioned to interact with an upper surface of the insert 520 or of a wall of the first shell portion 516 to form a face seal in addition to, or in lieu of, the face seal.

[00303] According to another embodiment, the ancillary seal 522 shown in FIG. 43 is affixed or molded to the insert 520 or first shell portion 516. According to such an embodiment, a seal is created when the package is closed by the ancillary seal 522 being pressed against the insert 520 or first shell portion 516. According to such an embodiment, when the package is closed, the ancillary seal 522 engages the first shell portion 518 to form a face seal inside the package.

[00304] FIG. 44 is similar to FIG. 43, except the ancillary seal 522 is replaced with a second closed lip 526 that is molded in the second shell portion 518. According to such an embodiment, at least the second shell portion 518 may be molded from a polypropylene that allows the second closed lip 526 to be deformed. Moreover, similar to the second closed lip 512 in FIGS. 38 and 39, the second closed lip 526 in FIG. 44 is relatively thin so as to allow the second closed lip 526 to be deflected, bent, or deformed by engagement with an inner wall surface 530 of the insert 520 or first shell portion 516, such as a first closed lip, to form a seal. In the embodiment, illustrated in FIG. 44, when the package 514 is in a closed position, the second closed lip 526 is deformed, bent, or distorted inwardly. According to other embodiments, the insert 520 and/or first shell portion 516 may include walls, such as the first closed lip of the first shell portion 516 that may be deflected, bent, or deformed by engagement with the second shell portion 518 to form a seal.

[00305] FIG. 45 illustrates a package 514 having an ancillary seal 522 that is used to form a side seal. According to such an embodiment, the ancillary seal 522 is attached or molded to the second shell portion 518, and engages a portion of an outer wall surface 534 of the insert 520 or first shell portion 516, such as a first closed lip. Such an engagement outwardly presses on the ancillary seal 522, thereby forcing the ancillary seal 522 to deform, distort, or bend to conform to the pressing outer wall surface 534, and thereby form a seal. According to such an embodiment, the ancillary

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seal 522 is affixed or molded to the second shell portion 518 and may be made from a variety of materials, including thermoplastic elastomers, among others.

[00306] However, according to another embodiment, the ancillary seal 522 shown in FIG. 45 may be affixed or molded to the outer wall surface 534 of the insert 520 or the first shell portion 516, such as for example along the outer surface of the previously discussed first closed lip (not shown). According to such an embodiment, when the package 514 is closed, the ancillary seal 522 engages the second shell portion 518 to form a face seal.

[00307] FIG. 46 is similar to FIG. 45 except the ancillary seal 522 is replaced with a second closed lip 526 that is molded in the second shell portion 518. According to such an embodiment, at least the second shell portion 518 may be molded from a material such as polypropylene that allows the second closed lip 526 to be deformed. Moreover, similar to the second closed lip 512 in FIGS. 38 and 39, the second lip 526 in FIG. 44 is relatively thin so as to allow the second closed lip 526 to be deflected, bent, or deformed by engagement with a outer wall surface 534 of the insert 520 or first shell portion 516, such as a first closed lip, to form a seal. In the embodiment, illustrated in FIG. 46, when the package 514 is in a closed position, the second closed lip 526 is deformed, bent, or distorted outwardly. According to other embodiments, the insert 520 and/or first shell portion 516 may include walls, such as the first closed lip of the first shell portion 516 that may be deflected, bent, or deformed by engagement with the second shell portion 518 to form a seal.

[00308] FIG. 47 illustrates an ancillary seal 522 creating a side seal if the ancillary seal 522 is affixed or molded to the second shell portion 518, or a face seal if the ancillary seal 522 is molded or affixed to the insert 520 or first shell portion 516. The ancillary seal 522 shown in FIG. 47 is similar to that shown in FIG. 43, except the ancillary seal 522 in FIG. 47 is a longer seal that extends further into the insert 520. The ancillary seal 522 shown in FIG. 47 may be made from a variety of different materials, including thermoplastic elastomers, among others.

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[00309] FIG. 48 is similar to FIG. 47 except the ancillary seal 522 in the package 514 is replaced with a second closed lip 526 that is molded in the second shell portion 518. According to such an embodiment, at least the second shell portion 518 may be molded from a polypropylene, among other materials. Similar to the second closed lip 512 in FIGS. 38 and 39, the second closed lip 526 in FIG. 44 is relatively thin so as to allow the second closed lip 526 to be deflected, bent, or deformed by engagement with an inner wall surface 530 of the insert 520 or first shell portion 516, such as a first closed lip, to form a seal. In the embodiment, illustrated in FIG. 48, when the package 514 is in a closed position, the second closed lip 526 is deformed, bent, or distorted inwardly. According to other embodiments, the insert 520 and/or first shell portion 516 may include walls, such as the first closed lip of the first shell portion 516, that may be deflected, bent, or deformed by engagement with the second shell portion 518 to form a seal.

[00310] FIG. 49 illustrates a package 514 in which an inner surface 532 of a second closed lip 526 engages with an outer wall surface 534 of an insert 520 or first shell portion, such as a first closed lip, to form a side seal. According to such an embodiment, the second closed lip 526 may be bent, deformed, or distorted when engaged with the outer wall surface 534 of the insert 520 to form a seal. According to certain embodiments, at least the second closed lip 526 is molded from a polypropylene, among other materials.

[00311] FIG. 50 illustrates an ancillary seal 522 that is affixed or molded to a second shell portion 518. The ancillary seal 522 is configured and positioned to assist in providing a face seal when the package 514 is in a closed position. Moreover, when the package 514 is in a closed position, the ancillary seal 522 engages an upper surface 528 of the insert 520 or of the first shell portion 516. The engagement between the ancillary seal 522 and the upper surface 528 creates a face seal. According to such an embodiment, the ancillary seal 522 may be made from a variety of materials, including thermoplastic elastomers, among others.

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[00312] FIG. 51 is similar to FIG. 50 with the exception that the ancillary seal 522 is molded or affixed to the upper surface 528 of the insert 520 rather than the second shell portion 518. Therefore, when the package 514 is closed, a portion of the second shell portion 518 engages the ancillary seal 522 in FIG. 51 to form a face seal that seals the area enclosed therein from ambient air that is outside of the ancillary seal 522.

[00313] FIG. 52 is similar to FIG. 50 with the exception that in addition to a face seal, the same or an additional ancillary seal 522 is used to provide a side seal inside the package 514. According to an embodiment, at least a portion of the ancillary seal 522 is affixed or molded along a portion of the second shell portion 518. When the package 514 is in a closed position, an upper surface 528 of the insert 520 engages the ancillary seal 522, thereby deforming, bending, or distorting the ancillary seal 522 to mate with at least a portion of the upper surface 528, and thereby assist in creating a seal. Additionally, the same or an additional ancillary seal 522 may extend downwardly so that, when the package 514 is in a closed position, a side seal is formed along an outer wall surface 534 of the insert 520 or of the first shell portion 516, such as a first closed lip.

[00314] FIG. 53 illustrates an ancillary seal 522 that is affixed or molded to the second shell portion 518 and positioned between lid guides 536. According to such an embodiment, the engagement of the ancillary seal 522 and an upper surface 528 of the insert 520, such as a first closed lip, that forms a face seal that seals the area enclosed therein from ambient air outside of the seal.

[00315] FIG. 54 illustrates a seal similar to that previously described with FIG. 38 and 39, in which a generally straight second closed lip 512, 526 is bent, deformed, or distorted when engaged with an angled outer wall 510, 538 of the insert 506, 520 or first shell portion. However, the embodiment illustrated in FIG. 54 also includes an ancillary seal 522 similar to that previously discussed with respect to FIG. 41. Similar to the discussion regarding FIG. 41, the ancillary seal 522 shown in FIG. 54 may be attached

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or molded to either the second closed lip 526, the insert 520, or the first shell portion 516, and is used to form a face seal when the package 514 is closed.

[00316] Examples of non-elastomeric materials that may be used for the ancillary seal 522 include, but are not limited to, Polypropylene (PP), Polyethylene (PE) (high or low density), Polyvinyl Chloride (PVC), Cyclic Olefin Co-polymer (CoC), Polyethylene Vinyl Acetate (EVA), Polystyrene (PS), Polycarbonate (PC), Polyester terephthalate (PET), Polyamide (nylon), Acetal Copolymer or Homopolymer Resin, and Liquid Crystal Polymer, among others. Examples of elastomeric materials that may be used for the ancillary seal 522 include, but are not limited to, Santoprene[®] Thermoplastic Vulcanizate (TPV), Polyoxymethylene Copolymer (POM), Ethylene Propylene Diene Monomer (EPDM), Silicones (CG, PG, TR, FDA), Styrenet Butadiene Rubber (SBR), Polychloroprene (CR), Nitrile Rubber (NBR), and Neoprene[®], among others.

[00317] Referring to FIGS. 55 to 60, a package 540 is shown in an open position that includes a first shell portion 542, a second shell portion 544, an insert 546, a hinge 548, and at least one latch 566. The first shell portion 544 includes a base 550, a base sidewall 552, and an inner region 554. The base sidewall 552 generally extends upwardly from the base 550 and generally defines the inner region 554. The second shell portion 544 includes a lid sidewall 556, a top portion 558, an interior region 560, and at least one catch 562. The lid sidewall 556 generally extends from the top portion 558 and generally defines the interior region 560.

[00318] According to an embodiment, the base sidewall 552 and the lid sidewall 556 may be configured to abut each other along at least one surface when the package 540 is in a closed position. Additionally, the package 540 illustrated in FIGS. 55 to 60 may include a sealing arrangement as previously discussed, including, but not limited to, the sealing arrangements discussed with respect to FIGS. 1 to 5 and FIGS. 32 to 54.

[00319] Further, as previously discussed, a variety of hinges 548 may be used with the package 540, including integral and non-integral hinges, such as, for example, the

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double hinge 476 discussed above with respect to FIGS. 36 to 37, a double-fold hinge, flat-top hinge, butterfly hinge, or pinned hinge, among others.

[00320] The catch 562a, 562b may be part of, extend from, or be adjacent to the lid sidewall 556. For example, as shown on FIG. 56, the package 540 includes a first and second catch 562a, 562b that extend downwardly from the second shell portion 544 and are adjacent to an inner surface of the lid sidewall 556. Additionally, the first and second catch 562a, 562b include a catch aperture 564 that is configured to engage with a portion of a latch engagement portion 582, discussed below, when the package 540 is in a closed position and the latch 566 is in a locked or rest position, as discussed below.

[00321] The insert 546 is configured to be placed and/or secured in the inner region 554 of the first shell portion 542, as previously discussed with respect to at least the package shown in FIGS. 32 to 35. For example, the insert 546 may include a slot or orifice that is placed over a pin or post 494 in the first shell portion 542 to assist in securing the insert 546 to the first shell portion 542. Additionally, as also previously discussed, the insert 546 may include a product containing space 568 that is at least partially accessible to a user when the package 540 is in an open position. At least a portion of the product containing space 568 of the insert 546 may be covered by a cover 570. The cover 570 may include at least one dispenser opening 572 that may be configured for the dispensing of product contained in the product containing space 568. The shape and size of the dispenser opening 572 may be configured based on the size and shape of the product that is to be dispensed from the dispenser opening 572. For example, at least a portion of the dispenser opening 572 may be configured for dispensing relatively long and narrow stick-shaped products, circular products, or thin sheet products from a stack of similar products. Further, the dispenser opening 572 may also include an access opening 574 for the user to place a finger or thumb to assist with the dispensing of product from the dispenser opening 572. Such covers 570 can be used with the inserts for each of the package embodiments discussed herein.

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[00322] The insert 546 includes at least one latch 566. For example, according to an embodiment, the package 540 has a first latch 566a and a second latch 566b that are integrally molded with the insert 546. Each latch 566a, 566b includes a latch leg 576, an actuator portion 578, a latch opening 580, and a latch engagement portion 582. According to an embodiment, the latch leg 576 may extend along the side of the insert 546 and be separated from the body 478 of the insert 546 by a space 480. The space 480 may be configured to provide a space for the displacement of the actuator portion 578 and/or the bending, deformation, distortion, or pivotable movement of the latch leg 576. Additionally, the latch leg 576 may have a first end 486 and a second end 488, the first end 486 including or being attached to the actuator portion 578, and the second end 488 being attached to the body 478 of the insert 546.

[00323] The latch opening 580 is configured to receive at least a portion of the corresponding catch 562 when the package 540 is in a closed position. Additionally, the latch engagement portion 582 is configured so that at least a portion of the latch engagement portion 582 extends into the catch aperture 564 when the package 540 is in a closed position so as to lock the package 540 closed. Although FIGS. 55 to 60 illustrate the first and second catches 562a, 562b and the first and second latches 566a, 566b on the sides of the package 540, according to other embodiments, the latches 566a, 566b and catches 562a, 562b may be located at a variety of locations, including at the front of the package 540, among other locations.

[00324] As shown, the actuator portions 578a, 578b extend through first and second openings 584, 586, respectively, in the base sidewall 552 so that the actuator portions 578a, 578b are accessible to the user. Additionally, the base sidewall 552 includes a first and second aperture 588, 590 so as to provide the first and second catch 562a, 562b, respectively, access to the latch openings 580 and latch engagement portions 582.

[00325] To open a package 540 that is closed and locked, the user presses on the actuator portions 578a, 578b of the latch 566 so that the actuator portions 578a, 579b

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are generally inwardly displaced in a lateral direction (as indicated by "L" in FIG. 55). The inward displacement of the actuator portions 578a, 578b causes the associated latch leg 576a, 576b to bend, deflect, and/or deform. Such inward displacement of the actuator portions 578a, 578b causes the inward displacement of the latch engagement portion 582 corresponding to each actuator portion 576a, 576b so that the latch engagement portion 582 is removed from the corresponding catch aperture 564. The catches 562a, 562b may then be able to be removed from the latch openings 580a, 580b and the first and second apertures 588a, 588b, respectively, as the second shell portion 544 is at least partially separated from the first shell portion 542 as the package 540 is moved from a closed to an open position. When the inward force is removed from an actuator portion(s) 578a, 578b, the corresponding latch leg 576a, 576b may generally return to the original shape, orientation, or position the latch leg 576a, 576b had before the corresponding actuation portion(s) 578a, 578b was pressed so that the actuator portion(s) 578a, 578b is generally returned to its rest or locked position.

[00326] As with the catch 442 discussed above with respect to the package 420 shown in FIGS. 32-35, the catch 562 shown in FIGS. 55 and 56 may be configured to bend, deflect, or deform when the package 540 is being closed so that the latch engagement portion 582 lockingly engage the catch 562 without actuation of the latch 566. Additionally, the latch 566 and/or catch 562 may be configured to so that the closing of the second shell portion 544 relative to the first shell portion 542 forces the latch engagement portion 582 to be displaced until the catch aperture 564 is in position to lockingly engage the latch engagement portion 582 so as to the lock the package 540 in a closed position.

[00327] Referring to FIGS. 61 to 66, a package 600 is shown in an open position, the package 600 having a first shell portion 602, a second shell portion 604, a hinge 606, and at least one latch 608. The first shell portion 602 includes a base sidewall 610, an inner region 612, and at least one protrusion 614. The second shell portion 604 includes a lid sidewall 616, an interior region 618, and a hook 620. According to an embodiment, the first shell portion 602, second shell portion 604, and hinge 606 may be

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integrally molded. As previously discussed, an insert 622 may be operably attached to the first shell portion 602 and includes a product containing space 568. Additionally, as discussed with respect to FIG. 55, a cover 570 may be attached to the insert 622.

[00328] According to an embodiment, the base sidewall 610 and the lid sidewall 616 may be configured to abut each other along at least one surface when the package 600 is in a closed position, which may form a seal inside the package 600. According to certain embodiments, the package 600 may include a sealing arrangement as previously discussed, including, but not limited to, the sealing arrangements discussed with respect to FIGS. 1 to 5 and FIGS. 32 to 54.

[00329] Further, as previously discussed, a variety of hinges may be used with the package 600, including integral and non-integral hinges, such as, for example, the double hinge 476 discussed above with respect to FIGS. 36 to 37, a double-fold hinge, flat-top hinge, butterfly hinge, or pinned hinge, among others.

[00330] The latch 608 shown in FIGS. 61 to 64 may be relatively flexible and have a generally "L" shape configuration. The latch 608 may include an actuator portion 624, a first leg 626, a second leg 628, a slot 630, a spring 632, and a latch engagement portion 634. According to an embodiment, the slot 630 and spring 632 may be located in the second leg 628. While the spring 632 illustrated in FIGS. 61 to 64 is integrally molded into the latch 608, according to other embodiments the spring 632 may be a separate component that is biased against the latch 608. For example, according to an embodiment, a separate helical compression spring may be used to bias the latch in the locked or rest position. Additionally, according to an embodiment, at least a portion of the spring 632 may be located in the slot 630. Further, at least a portion of the actuator portion 624 may be located in proximity to the first end 636 of the latch 608, while the latch engagement portion 634 may be located in proximity to a second end 638 of the latch 608. The latch engagement portion 634 is configured to engage at least a portion of the hook 620 when package 600 is closed so that the package 600 may be locked closed. Moreover, the hook 620 may include at least one prong 640 that

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extends from the hook 620 and is positioned beneath at least a portion of the latch engagement portion 634 when the package 600 is locked in a closed position. Further, as shown in FIG. 66, the insert 622 covers the latches 608 when inserted into the first shell portion 602 and includes an insert aperture 642 through which the hook 620 may extend so as to engage the latch engagement portion 634 when the package 600 is closed.

[00331] FIG. 65 illustrates a perspective view of the first shell portion 602 for an embodiment of the package 600. The base sidewall 610 may include an opening 644 configured to allow for the protrusion and slideable movement of the actuator portion 624, as discussed below. Additionally, the first shell portion 602 may include at least one guide 646, 648, 650 that guides the movement of the first and/or second leg 626, 628 as the latch 608 is being activated. More specifically, the first shell portion 602 may include a first guide 646 that assists in guiding the movement of at least a portion of the first leg 626 in a generally “V” direction (as indicated in FIG. 61), a second guide 648 that assists in guiding the movement of at least second leg 628 in a generally lateral direction (indicated by “L” in FIG. 61), and/or a corner guide 650 that assists in guiding a portion of the latch 608 where the first and second legs 626, 628 join around the corner 652 of the first shell portion 602. The first shell portion 602 also includes a protrusion 614 that mates with the slot 630 in the latch 600, and which provide at least one relatively stationary surface against which a portion of the spring 632 may engage in connection with biasing the latch 608 in a closed position.

[00332] To open the package 600 shown in FIGS. 61-66 when the package 600 is closed and locked, the user may slidably displace the actuator portions 624 along a side wall of the base sidewall 610 toward the back end 654 of the first shell portion 602. According to certain embodiments, the base sidewall 610 may have an opening 644 that is configured to allow the actuator portion to be slid along in the “V” direction as the latch is moved from a locked or rest position to an open position, and vice versa.

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[00333] The sliding displacement of the actuator portions 624 causes at least a portion of the adjoined first leg 626 to move generally in the “V” direction, at least a portion of the second leg 628 to move in an “L” direction, and at least a portion of the latch where the first and second legs 626, 628 meet to move around the corner 652 of the first shell portion 602. As the latch 608 moves, the slot 630 of the latch 608 also moves along the protrusion 614 of the first shell portion 602, pulling the inwardly biased spring 632 in an outwardly direction toward the protrusion 614. This movement of the second leg 628 also results in the latch engagement portion 634 moving in an outwardly lateral direction. According to certain embodiments, the actuator portion 624 may be formed as a portion of the first leg 626.

[00334] As illustrated in FIGS. 61 and 63, according to an embodiment in which the package 600 has two latches 608, the latch engagement portions 634 of both latches 608 are in relative close proximity to each other about a central lateral location of the first shell portion 658 when the latches 608 are in a locked or rest position. Such relative close proximity of the latch engagement portions 608 may assist in maintaining the locking engagement between the hook 620 and the latch engagement portions 634. However, as shown in FIGS. 62 and 64, when a user slides the actuator portion 624 so as to displace the actuator portions 624 from the rest or locked position shown in FIG. 63 to the open position shown in FIG. 64, the latch engagement portions 634 of the two latches 608 move outwardly in opposite directions, thereby increasing the distance between the latch engagement portions 634 and disengaging from the hook 620 and unlocking the package 600. The previously locked package 600 may then be opened. When the user removes the force used to slide the actuator portions 624, the biased springs 632 force the latches 608 back to their at rest or locked position, thereby returning the latch engagement portions 634 of the latches 608 to being in relative close proximity, as shown in FIGS. 61 and 63.

[00335] When the package 600 is to be closed, the hook 620 and latching engagement portions 634 may have chamfers or other surface modifications that allows the hook 620 to push the latching engagement portions 634 in an outwardly lateral

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direction until the prongs 640 of the hook 620 are beneath the latching engagements portions 634, at which point the inwardly biasing force of the spring 632 may force the latching engagements portions 634 back to their rest or locked position and lock the package 600 closed.

[00336] While FIGS. 61 to 64 illustrate two latches 608, the package 600 could also be configured for use with one latch 608, where the displacement of the latch 608 disengages the locking engagement between latch 608 and hook 620, and thereby allows the package 600 to be opened.

[00337] Referring to FIGS. 67 to 72, a package 656 is shown in an open position, the package 656 having a first shell portion 658, a second shell portion 660, a hinge 662, and at least one latch 664. The first shell portion 658 includes a base sidewall 666, an inner region 668, and at least one protrusion 670. The second shell portion 660 includes a lid sidewall 672, an interior region 674, and a hook 676. According to an embodiment, the hook 676 may include at least one prong 704 that outwardly extends from the hook 676 and lockingly engages the latch engagement portions 686a, 686b when the package 656 is closed and locked. According to an embodiment, the first shell portion 658, second shell portion 660, and hinge 662 may be integrally molded or non-integral. As previously discussed, an insert 678 may be operably attached to the first shell portion 658 and includes a product containing space 568. Additionally, as discussed with respect to FIG. 55, a cover 570 may be attached to the insert 678.

[00338] According to an embodiment, the base sidewall 666 and the lid sidewall 672 may be configured to abut each other along at least one surface when the package 656 is in a closed position, which may form a seal inside the package 656. Additionally, the package 656 may include a sealing arrangement as previously discussed, including, but not limited to, the sealing arrangements discussed with respect to FIGS. 1 to 5 and FIGS. 32 to 54.

[00339] As previously discussed, a variety of hinges may be used with the package 656, including integral and non-integral hinges, such as, for example, the double hinge

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476 discussed above with respect to FIGS. 36 to 37, a double-fold hinge, flat-top hinge, butterfly hinge, or pinned hinge, among others.

[00340] FIGS. 69 to 72 illustrate a package 656 having a first latch 664a and a second latch 664b. Each of the latches 664a, 664b may include an actuator portion 680a, 680b, an arm 682a, 682b, a spring 684a, 684b, a latch engagement portion 686a, 686b, a first end portion 698a, 698b, and a second end portion 700a, 700b. The actuator portion 680a, 680b may be positioned about the first end portion 698a, 698b, while the latch engagement portion 686a, 686b may be positioned in proximity to the second end portion. The arms 682a, 682b may include a slot 688a, 688b that mates with the protrusion 670 in the first shell portion 658. The size of the slot 688a, 688b and the protrusion 670 may limit the distance that the latch 664 may be displaced either an outwardly or inwardly lateral direction (as indicated by "L" in FIG. 67). The first shell portion 658 also includes openings 690a, 690b through which the user may have access to the actuator portions 680a, 680b so as to push actuator portions 680a, 680b in a generally inward lateral direction when unlocking the package 656.

[00341] The spring 684a, 684b is configured to engage the protrusion 670 and bias the latches 664a, 664b in a locked or rest position, as shown in FIGS. 69 and 71. While the spring 684a, 684b illustrated in FIGS. 69 to 72 is integrally molded into the latch 664a, 664b, according to other embodiments, the spring 684a, 684b may be a separate component that is biased against the latch 664a, 664b. Additionally, according to an embodiment, at least a portion of the spring 684a, 684b may be located in the slot 688a, 688b.

[00342] According to an embodiment, the arms 682a, 682b may extend between the sides 692, and along and front portion 694, of the first shell portion 658. The latch engagement portions 686a, 686b of the latches 664a, 664b have apertures 696a, 696b that when assembled within the first shell portion 658, are in an overlapping configuration about a generally central location in the lateral direction "L" of the first shell portion 658. For example, as shown in FIGS. 71 and 72, at least a portion of the latch

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engagement portion 686b of a second latch 664b overlaps at least a portion of the aperture 696a of the latch engagement portion 686a of a first latch 664a. The two overlapping apertures 696a, 696b form a single opening that receives the hook 676 when the package 656 is closed.

[00343] To unlock a closed package 656, the actuator portions 680a, 680b are displaced in a generally inward lateral direction. As the actuator portions 680a, 680b are inwardly displaced, the latch engagement portion 686a of the first latch 664a is moved into closer proximity to the actuator portion 680b of the second latch 664b then when the latches 664a, 664b are in a locked or rest portion, while the latch engagement portion 686b on the second latch 664b is moved into closer proximity to the actuator portion 680a of the first latch 664a. Such movement displaces the latch engagement portions 686a, 686b away from the hook 676, thereby releasing the locking engagement between the hook 676 and the latch engagement portions 686a, 686b and unlocking the package 656. When the inwardly directed force is removed from the actuator portions 680a, 680b, the springs 684a, 684b generally return the actuator portions 680a, 680b to their rest or locked position.

[00344] According to an embodiment, when the package 656 is to be closed, the hook 676, and more specifically the prong 704, and the latching engagement portions 686a, 686b may have chamfers, contours, or other surface modifications that allows the prong 704 to push the latching engagement portions 686a, 686b in a generally outwardly lateral direction until the prongs 704 of the hook 676 are beneath the latching engagements portions 686a, 686b, at which point the biasing force of the springs 684a, 684b may force the latching engagements portions 686a, 686b back to their rest or locked position and therefore lock the package 656 closed.

[00345] While FIGS. 67 to 72 illustrate two latches 664a, 664b, the package 656 could also be configured for use with one latch 664a, where the displacement of the latch 664a disengages the locking engagement between latch 664a and hook 676, and thereby allows the package 656 to be opened.

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[00346] Referencing FIGS. 73 to 75, a package 706 is shown in an open position, the package 706 having a first shell portion 708, a second shell portion 710, and an insert 712. The first shell portion 708 includes a base sidewall 716, the base sidewall 716 having at least one opening 714. The second shell portion 710 may include a lid sidewall 720 that generally defines an interior area 722. According to an embodiment, the second shell portion 710 may have a configuration similar to the second shell portion 44 discussed above with respect to FIGS. 1 to 5. At least one lid latching abutment 718 extends from the second shell portion 710. Moreover, in the embodiment illustrated in FIGS. 73a and 73b, a first and a second lid latching abutment 718a, 718b extend from the second shell portion 710. The first and second shell portions 708, 710 may be integrally or non-integrally molded, and may be joined by a integral or non-integral hinge, including, for example, the double hinge 476 discussed above with respect to FIGS. 36 to 37, a double-fold hinge, flat-top hinge, butterfly hinge, or pinned hinge, among others. Additionally, the package 706 may include a sealing arrangement as previously discussed, including, but not limited to, the sealing arrangements discussed with respect to FIGS. 1 to 5 and FIGS. 32 to 54.

[00347] The insert 712 includes an upper surface 724 and least one latch 726. The upper surface 724 includes at least one aperture 728. Additionally, the upper surface 724 may be configured to provide a product containing space 730 that may be covered by a cover 570, as previously discussed. As shown in FIGS. 74 and 75, the latch 726 is integrally molded to the insert 712. The illustrated embodiment shows a first latch 726a and second latch 726b. However, according to other embodiments, the insert 712 may include only one latch 726, or more include more than two latches 726.

[00348] The first and second latches 726a, 726b each include an actuator portion 732, a first leg 734, a second leg 736, and a base latching abutment 738. The base latching abutment 738 may be positioned on the first leg 734, while the second leg 736 may be connected to the body 740 of the insert 712. At least a portion of the first leg 734 may be positioned beneath the upper surface 724 of the insert 712. When assembled with the first shell portion 708, at least a portion of the actuator portion 732

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protrudes into the opening 714 in the first shell portion 708 so that a user may inwardly depress and displace the latch 726 when unlocking the package 706. The first and second base latching abutments 738a, 738b are configured to be positioned in, or protrude out of, a first and second aperture 728a, 728b, respectively, in the insert 712. Additionally, the first and second base latching abutments 738a, 738b are configured to engage with the first and second lid latching abutments 718a, 718b, respectively, so as to lock the package 706 in the closed position.

[00349] According to an embodiment, at least a portion of the first leg 734 of the second latch 726b may be positioned over at least a portion of the first leg 734 of the first latch 726a, or vice versa. According to such an embodiment, the first leg 734b or base latching abutment 738b of the second latch 726b is configured or positioned so that the second latch 726b does not interfere with the ability of the base latching abutment 738a of the first latch 726a to slidingly engage and disengage with/from the first lid latching abutment 718a. According to an embodiment, at least a portion of the first legs 734a, 734b of the first and second latches 726a, 726b may be positioned next to each other, as shown in FIGS. 74 and 75.

[00350] In use, the lid latching abutments 718a, 718b may engage the base latching abutments 738a, 738b in a manner similar to that described above with respect to FIGS. 4 and 5 to lock the package 706 in a closed position. To unlock the package 706, the user may inwardly press on the actuator portions 732a, 732b, causing the lateral displacement of the first and second base latching abutments 738a, 738b away from, and thereby disengage, their adjacent lid latching abutments 718a, 718b, and thus unlock the package 706.

[00351] According to an embodiment, at least a portion of each of the second legs 736a, 736b of the latches 726a, 726b are separated from the adjacent body 740 of the insert 712 by a space 742, with an end portion of the second leg 736 being connected to the body 740. When the first and second actuator portions 732a, 732b are inwardly displaced from their rest or locked position, the thickness and material selection for the

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second legs 736a, 736b and/or the configuration of the attachment of the second legs 736a, 736b to the body 740 of the insert 712 allows the second leg 736 to be bent, deformed, distorted, and/or pivoted. When the force that inwardly displaced the actuator portions 732a, 732b is removed, the second leg 736a, 736b may act as a spring that returns the latch 736a, 736b to its rest or locked position, as shown in FIGS. 73 to 75, as the second leg 736a, 736b returns to its rest or locked position, shape, and/or orientation.

[00352] The second leg 736 of the latches 726a, 726b may also be deformed, bent, or displaced while the package 706 is being moved for an open to a closed position. More specifically, when the package 706 is being closed, and the user is not inwardly displacing the actuator portions 732a, 732b, a lower area of the first and second base latching abutments 738a, 738b may be generally aligned, and come into contact, with an upper area of the corresponding first and second lid latching abutments 718a, 718b. The force exerted by the first and second lid latching abutments 718a, 718b on the base latching abutment 738a, 738b may cause the second leg 736a, 736b of the latches 726a, 726b to be deformed, bent, distorted, and/or pivoted so that the first and second base latching abutments 738a, 738b are displaced in a generally outwardly direction until the base and lid latching abutments 718a, 718b, 738a, 738b are properly aligned for locking the package 706. Once the base and lid latching abutments 718a, 718b, 738a, 738b are properly aligned, the second leg 736a, 736b may return to its rest or locked position or orientation, which moves the first and second base latching abutments 738a, 738b in a generally inwardly direction until the latches 726a, 726b are at their rest or locked position. According to an embodiment, the outer surfaces of the base and/or lid latching abutments 718a, 718b, 738a, 738b may have surface characteristics, such as chamfers or contours, that may assist in the outwardly moving the base latching abutments 738a, 738b when the package 706 is being closed.

[00353] FIG. 76 illustrates the insert 712 after molding. As shown, according to an embodiment, the latches 726a, 726b may be integrally molded with the insert 712 by having the first legs 734a, 734b extend away from the body 740 of the insert 712.

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According to such an embodiment, prior to assembly in the first shell portion 708, the first legs 734a, 734b may be rotated into position beneath the body 740 of the insert 712.

[00354] Referring to FIGS. 77 to 80, a package 744 is shown having a first shell portion 746, second shell portion 748, an insert 750, a hinge 752, and at least one latch 754. According to an embodiment, the first and second shell portions 746, 748 and the insert 750 may generally have the same or similar construction as the previously discussed first and second shell portions 42, 44 and insert 78, respectively, that are illustrated in FIGS. 1 to 5. As also previously discussed, the first and second shell portions 746, 748 may be joined by a variety of integral or non-integral hinges, such as, for example, the double hinge 476 discussed above with respect to FIGS. 36 to 37, a double-fold hinge, flat-top hinge, butterfly hinge, or pinned hinge, among others. Additionally, the package 744 illustrated in FIGS. 77 to 80 may include a sealing arrangement as previously discussed, including, but not limited to, the sealing arrangements discussed with respect to FIGS. 1 to 5 and FIGS. 32 to 54. For example, the first and second shell portions shown in FIG. 77 are both illustrated as having a first and second closed lip 72, 76, respectively, as previously discussed.

[00355] As shown in FIGS. 77 to 79, the first shell portion 746 may include a base sidewall 756 and an inner region 758, while the second shell portion 748 may include at least one lid latching abutment 760. The insert 750 may include a product containing space 762, and at least one aperture 764. According to an embodiment, the insert 750 may include a first attachment member, such as a tab, that is to be mated or fitted with a second attachment member 766, such as rib protrusions, in the first shell portion 746 to attach or secure the insert 750 to the first shell portion 746. Additionally, at least a portion of the insert 750, such as a portion of the product containing space 762, may be covered by a cover 570, as previously discussed.

[00356] As previously mentioned, the package 744 includes at least one latch 754. According to the embodiment illustrated in FIGS. 77 to 80, the package 744 has an

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upper latch 754a and a lower latch 754b. The upper latch 754a includes an actuator portion 764a, a spring 770a, a leg 772a, an opening 774, and a first base latching abutment 776a. The lower latch includes an actuator portion 764b, a spring 770b, a leg 772b, and a second base latching abutment 776b. The springs 770a, 770b may be integrally molded or non-integral to the upper and lower latches 754a, 754b. The first and second base latching abutments 776a, 776b are configured to lockingly engage a first and second lid latching abutment 760a, 760b, respectively, when the package 744 is in closed position. According to an embodiment, the base and lid latching abutments 776a, 776b, 760a, 760b have a configuration similar to the latching abutments 98, 66, 86, 54 previously discussed with respect to FIGS. 1 to 5. The springs 770a, 770b may be configured to engage a wall in the first shell portion 746 or insert 750, such as a first closed lip, so as to bias the latches 754a, 754b in a locked or rest protrusion, wherein the actuator portions 764a, 764b may protrude from openings in the base sidewall 756.

[00357] When assembled, at least a portion of the leg 772a of the upper latch 754a overlaps at least a portion of the leg 772b of the lower latch 754b, as shown in FIG. 80. Additionally, the opening 774 of the upper latch 754a is configured to receive the insertion of the second base latching abutment 776b, and is sized to not interfere with the ability of the second latching abutment 776b to be laterally displaced (as indicated by "L" in FIG. 77) when the second latching abutment 776 is engaging and disengaging the second lid latching abutment 760b. When the package 744 is assembled with the insert 750, at least a portion of the first and second base latching abutments 776a, 776b may extend through an aperture 764a, 764b in the insert 750 and/or at least a portion of a lid latching abutment 760a, 760b may extend into the aperture 764a, 764b when the package 744 is in a closed position.

[00358] A latch 754 may move from a rest or locked position to an unlocked position when an actuator portion 764 is inwardly depressed with sufficient force to at least partially deform, deflect, or bend the spring 770a, 770b. As an actuator portion 764a, 764b is inwardly displaced, the associated spring 770a, 770b, which, according to an embodiment may be a leaf spring that is located on the backside of the actuator portion

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764a, 764b, is pressed against a wall or surface of the first shell portion 746 or insert 750, such as a first closed lip. The displacement of the actuator portion 764a, 764b causes the associated leg 772a, 772b and base latching abutment 776a, 776b to move in the same general direction as the actuator portion 764a, 764b. When both the upper and lower actuator portions 764a, 764b are being inwardly displaced, the legs 772a, 772b of the upper and lower latches 754a, 754b may generally slide opposite directions, thereby increasing the distance between the first and second base latching abutments 776a, 776b. Moreover, the sliding displacement of a base latching abutment(s) 776a, 776b may disengage the base latching abutment(s) 754a, 754b from a locking engagement with the corresponding lid latching abutment 760a, 760b.

[00359] When the user releases an actuator portion 764a, 764b, the associated spring 770a, 770b forces the actuator portion 764a, 764b to generally return to its locked or rest position, bringing the base latching abutments 776a, 776b back into closer proximity with each other. Additionally, when an opened package 744 is being closed, the lid latching abutment 760a, 760b may exert a force on the corresponding base latching abutment 776a, 776b that is sufficient to at least partially deflect, deform, or bend the spring 770a, 770b so that the base latching abutments 776a, 776b may be outwardly displaced until the base and lid latching abutments 776a, 776b, 760a, 760b are aligned, after which the springs 770a, 770b return the base latching abutments 776a, 776b to a locked or rest position, thereby locking the package 744 closed.

[00360] Additionally, the leg 772a of the upper latch 754a may include a protrusion that mates with an aperture in the leg 772b of the lower latch 754b, and/or vice versa, that may assist in guiding the sliding movement of the legs 772a, 772b as the latches 754a, 754b are moved between open and locked or rest positions. Additionally, according to an embodiment, the insert 750 or first shell portion 746 may include at least one protrusion 778 that may assist in guiding the displacement of the actuator portion 764a, 764b or sliding movement of the upper and/or lower legs 772a, 772b.

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[00361] FIGS. 81 to 85 illustrate an embodiment of an insert 780 having first and second latches 782a, 782b that are attached to the bottom 764 of the insert 780. Although FIGS. 81 to 85 illustrate the use of two latches 782a, 782b, the insert 780 may be configured for use with one or more than two latches. Additionally, the insert 780 shown in FIGS. 81 to 85 may be used with a variety of the packages and sealing arrangements previously described. Further, although the insert 780 shown in FIG. 83 illustrates the backside of two product containing spaces 786, as with the inserts previously illustrated, the insert 780 may be configured to include one or more product containing spaces 786.

[00362] According to an embodiment, the insert 780 includes an opening 788, a tab 790, and a guide 792 for each latch 782a, 782b. The latches 782a, 782b may include an actuator portion 796a, 796b, a spring 798a, 798b, a leg opening 800a, 800b, a slot 802a, 802b, and latching abutments 794a, 794b. The latch 782a, 782b may have a first leg 808a, 808b and a second leg 810a, 810b that generally form an "L" shaped configuration. The first leg 808a, 808b may include, or be attached to, the actuator portion 796a, 796b and the spring 798a, 798b. The spring 798a, 798b may be integrally molded to the latch 782a, 782b or non-integral. Additionally, a variety of springs may be incorporated, either separately or in combination, including leaf and helical compression springs. According to the embodiment illustrated in FIGS. 81 to 85, the latch 782a, 782b includes an integrally molded leaf spring 798a, 798b that extends from a side of the actuator portion 796a, 796b and engages a wall surface on the insert 780. Alternatively, the spring 798a, 798b may engage a wall of a first shell portion. When the latches 782a, 782b are in a rest or locked position, the latches 782a, 782b are biased by the spring 798 in a locked or rest position, as shown in FIGS. 81 and 82.

[00363] As shown in FIGS. 81 to 85, the actuator portion 796a, 796b extends through the opening 788 in the insert 780. As also previously discussed, the first shell portion also includes an opening through which the actuator portion 796a, 796b protrudes when the latch 782a, 782b is in a rest or locked position.

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[00364] The second leg 810a, 810b may include a leg opening 800a, 800b, a slot 802a, 802b and a latching abutment 794a, 794b. The leg opening 800a, 800b is configured to receive the insertion of the guide 792, which may at least assist in guiding the generally inwardly lateral movement (as in indicated by "L" in FIG. 84) of the second leg 810a, 810b when the latch 782a, 782b is moved from a rest or locked position to an open position, and assist in the generally outwardly lateral movement of the second leg 810a, 810b when the latch 782a, 782b is moved from an open position to a locked or rest position. At least a portion of the end region 804 of the second leg 810a, 810b wraps around at least a portion of the tab 790 in the insert 780, with the tab 790 being received in a slot 802a, 802b in the latch 782a, 782b. Both the slot 802a, 802b and the tab 790 have a generally angled orientation, as shown in FIGS. 81 to 85. According to an embodiment, the slot 802a, 802b and tab 790 may be angled at about 45 degrees from a front portion 806 of the insert 780.

[00365] The latching abutments 794a, 794b are configured to engage with the latching abutments that extend from the second shell portion or lid, as previously discussed. As shown in FIG. 84, when at a rest or locked position, the latching abutments 794a, 794b at least partially protrude from the front portion 806 of the insert 780 so as to lockingly engage the latching abutments of the second shell portion or lid when the package is in a closed position.

[00366] The latching abutments 794a, 794b shown in FIGS. 81 to 85 may have a chamfered or contoured surface, such as a ramp, that assists in moving the latching abutments 794a, 794b from a locked or closed position to an open position as the package is in the process of being closed. For example, when a package is moved from an opened, unlocked position, to a closed, locked position, the latching abutments 794a, 794b of the latches 782a, 782b may be in a position that contacts the lid latching abutments before the lid latching abutments reach the needed position or alignment for a locking engagement with the latching abutments 794a, 794b of the latches 782a, 782b. Therefore, the latching abutments 794a, 794b may include chamfers or contours that assist with the displacement the latching abutments 794a, 794b towards

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the package until the lid latching abutments are positioned for a locking engagement with the latching abutments 794a, 794b of the latches 782a, 782b.

[00367] When the actuator portion 796 is displaced in a generally inwardly lateral direction (as indicated by “L” in FIG. 81), at least a portion of the second leg 810a, 810b also moves in a generally inwardly lateral direction. As previously mentioned, the guide 792 may assist in directing the lateral movement of at least a portion of the second leg 810a, 810b. However, as the end region 804a, 804b of the second leg 810a, 810b, and particularly the slot 802a, 802b, is engaged with the angled tab 790 of the insert 780, the inwardly lateral displacement of the actuator portion 796a, 796b also causes at least the end region 804a, 804b of the second leg 810a, 810b to also be moved in an inwardly angled direction (as indicated by “S” in FIG. 84). The inwardly angled displacement of the end region 804 of the second leg 810a, 810b causes the latching abutments 794a, 794b of the latch 782a, 782b to be withdrawn from the front portion 806 of the insert 780, thereby allowing for the latching abutments 794a, 794b of the latches 782a, 782b to disengage from the latching abutments of the second shell portion or lid, thereby unlocking the package.

[00368] As also shown in FIGS. 84 and 85, as the actuator portions 796a, 796b are generally laterally displaced to unlock the package, the generally inwardly lateral movement of the second legs 810a, 810b about guide 792 and the angled movement of the end region 804a, 804b of the second leg 810a, 810b may cause the distortion, deflecting, or bending of an intermediate portion 812a, 812b of the second leg 810a, 810b. According to an embodiment, when the pressure that displaced the actuator portion 796a, 796b is removed, this intermediate portion 812a, 812b of the second leg 810a, 810b may act as a spring that at least assists in returning the latch 782a, 782b to its rest or locked position as the intermediate portion 812a, 812b returns from a distorted, deformed, or bent condition to its rest or locked shape or orientation.

[00369] Referring to FIGS. 86 to 90, an embodiment of a package 814 is shown having a first shell portion 816, a second shell portion 818, an insert 820, a gasket 822,

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and a hinge 850. The first shell portion 816 includes a base 824 and a base sidewall 826, the base sidewall 826 having at least one opening 828. The second shell portion 818 includes a lid sidewall 830, at least one guide post 832, and a lid closed lip 834. The insert 820 includes at least one actuator portion 832, a central region 838, and an upper surface 840. In the embodiment illustrated in FIGS. 86 to 90, the insert 820 has three actuator portions 836. Each actuator portion 836 extends through a mating opening 828 in the base sidewall 826. As previously discussed, a variety of hinges may be used for the hinge 850, such as integral and non-integral hinges, including a double hinge, double-fold, flat-top, butterfly, or pinned hinge, among others.

[00370] According to certain embodiments, the insert 820 may include an inner wall 842 that at least partially defines a portion of at least one product containing space 844. Additionally, the insert 820 may include a cover 848 over at least a portion of the product containing space 844, the cover 848 providing a dispenser opening 864 for the dispensing of product from the product containing space 844 and a product access opening 846. The cover 848 may be integrally molded to, or separate from, the insert 820 or first shell portion 816.

[00371] According to an embodiment, the gasket 822 may include an upper portion 852 that is joined to a lower portion 854. According to certain embodiments, the gasket 822 may include a space 856 between at least a portion of the upper portion 852 and the lower portion 854 that may include an inner area that is configured to receive at least a portion of the insert 820 and/or first shell portion 816 so as to secure the gasket 822 to the insert 820 and/or the first shell portion 816. The upper portion 852 may include a groove 858. A groove 858 is defined between the upper portion 852 of gasket 822 and a raised portion of insert 20 (FIG. 88), which may be the cover and is configured to receive the placement of the lid closed lip 834 when the package 814 is in a closed position. Alternatively, a groove for receiving the lip 834 could be defined in the upper portion 852 of gasket 822. The gasket 822 may also include at least one spring 860. The spring 860 may or may not be configured to be in contact with the actuator portion 832 when the package 814 is in an open position. According to an

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embodiment, the gasket 822 is constructed from an elastomeric material, such as those discussed above with respect to the ancillary seal 522. When the package 814 is brought from an open position to a closed position, the lid closed lip 834 extends into the groove 858 to form a seal. According to an embodiment, the engagement of the lid closed lip 834 and groove 858 may cause the gasket 822 to be deformed about at least a portion of the adjacent engaging surfaces of the lid closed lip 834, thereby creating the seal. Additionally, such an engagement may also create an interference fit between the lid closed lip 834 and the gasket 822 that retains, or locks, the package 814 in a closed position.

[00372] According to an embodiment, one or more guide posts 832 extending from the second shell package 814 at least assist in properly aligning the second shell portion 818 with the insert 820 and/or the first shell portion 816 when the package 814 is being closed. According to such an embodiment, each guide post 832 may be received in a corresponding aperture 862 in the insert 820 or in the first shell portion 816. According to certain embodiments, at least a portion of the guide post 832 may be received by the aperture 862 before the lid closed lip 834 begins to engage the groove 858 so that the second shell portion 818 and insert 820 and/or the first shell portion 816 are properly aligned before any portion of the seal begins to be formed.

[00373] When a closed package 814 is to be opened, a user may inwardly press on the actuator portion(s) 836 so as to push the spring(s) 860 against the gasket 822 to cause the gasket 822 to at least partially deform from its locked configuration or orientation. This at least partial deformation of the gasket 822 permits the unseating of the lid closed lip 834 in the groove 858, and thereby allows the package 814 to be opened. In one embodiment, the package 814 is configured such that all of actuator portions 836 provided must be depressed in order to cause sufficient deformation of the gasket 822 so as to permit unseating of the lip 834. In other embodiments, the lip 834 can be removed from the groove when only some of the actuator portions 836 are pushed.

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[00374] Referring to FIGS. 91 to 95, a package 866 is shown having a first shell portion 868, a second shell portion 870, a hinge 872, an insert 874, an inner wall member 876, and a gasket 878. The first shell portion 868 includes a base 880, a base sidewall 882, and at least one opening 884. The second shell portion 870 includes a lid sidewall 886, a second closed lip 888, and at least one catch 890, the catch 890 having a catch aperture 892. According to an embodiment, the catch 890 may be integrated into, or part of, the lid sidewall 886. As previously discussed, the hinge 872 may be an integral or non-integral hinge, and joins the first and second shell portions 868, 870. The insert 874 has an insert base 894 and an insert wall 896. The insert wall 896 may generally define a product containing space 898. Additionally, the product containing space 898 may be covered by a cover 900, as previously discussed, which may be integrally molded, or attached, to the first insert 874.

[00375] The gasket 878 has a gasket base 902 and a gasket wall 904, and may be constructed from an elastomeric or non-elastomeric material, including the elastomeric and non-elastomeric materials discussed above. At least a portion of the gasket base 902 extends beneath the insert base 904. The gasket wall 904 generally extends upward from the gasket base 902, as shown by at least FIGS. 93 and 94. According to certain embodiments, the gasket base 902 may be adhered to the base 880 of the first shell portion 868. Alternatively, the gasket 878 may include at least one protrusion that extends from the base of the gasket 878, such as a post, pin, or wall, that mates with a slot or aperture in the base, or vice versa, that secures the gasket 878 to the first shell portion 868.

[00376] The gasket wall 904 has an inner surface 906, an outer surface 908, and a gasket lip 910. According to an embodiment, the inner surface 906 of the gasket 878 may be adjacent to, and abut, at least a portion of the insert wall 896. The gasket 878 may be at least partially stretched or deformed about the insert wall 896 to securely engage the gasket 878 with the insert 874. Alternatively, the insert base 894 may be adhered to the gasket base 902. Additionally, as shown in FIG. 94, according to an embodiment, the inner surface 906 or an upper edge of the gasket 878 may include a

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first protrusion 912 that mates with a recess 914 or chamfered surface in the insert wall 896 to assist with securing the insert 874 to the gasket 878, and/or vice versa.

[00377] The gasket lip 910 is configured to mate with a recess 916 in the second closed lip 888 when the package 866 is in a closed position so as to form a seal inside the package 866. Moreover, when the package 866 is in a closed position, at least a portion of the gasket 878 may be deformed so that the gasket lip 910 is pressed into the recess 916 of the second closed lip 888 to form a seal. Additionally, at least a portion of the gasket 878 may be pressed, and at least partially deformed, between at least a portion of the second closed lip 888 and the insert 874, thereby forming a seal.

[00378] As shown by at least FIG. 95, the inner wall member 876 includes a first surface 918, a second surface 920, and at least one latch 922. The first surface 918 may be adjacent to and abut the gasket 878, while the second surface 920 may be adjacent to, and abut the base sidewall 882 of the first shell portion 868. The second surface 920 of the gasket 878 may include a second protrusion 924 that mates with a recess 926 or chamfered surface in the first surface 918 of the inner wall member 876. Additionally, according to an embodiment, the inner wall member 876 may be constructed from a relatively rigid material. For example, according to an embodiment, the inner wall member 876 may be constructed from a non-elastomeric material.

[00379] According to the embodiment illustrated in FIG. 95, the inner wall member 876 includes two latches 922a, 922b, while the second shell includes two mating catches 892a, 892b. The latches 922a, 922b include an actuator portion 928a, 928b, a latching abutment 930a, 930b, and a leg 932a, 932b, the leg 932a, 932b having a first end 934a, 934b and a second end 936a, 936b. The first end 934a, 934b of the leg may include, or terminate at, the actuator portion 928a, 928b, while the second end 936a, 936b may be connected to the body 938 of the inner wall member 876. At least a portion of the actuator portion 928a, 928b may extend through the opening 884 in the first shell portion 868. Additionally, at least a portion of the leg 932a, 932b may be separated from the body 938 of the inner wall member 876 by a space 946a, 946b,

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which provides an area in which the leg 932a, 932b may be displaced, bent, deflected, and/or distorted when the actuator portion 928a, 928b is displaced toward the interior of the package 866 in a generally lateral direction (as indicated by "L" in FIG. 91). The leg 932a, 932b may also be configured to bias the actuator portion 928a, 928b and latching abutment 930a, 930b in a locked or rest position, as shown in FIG. 95.

[00380] The latching abutment 930a, 930b may upwardly extend from the leg 932a, 932b or the actuator portion 928a, 928b and through an aperture 940a, 940b in the insert 874 or first shell portion 868. The latching abutment 930a, 930b is configured to lockingly engage the catch aperture 892a, 892b when the package 866 is closed. Moreover, the latching abutment 930a, 930b may have a protrusion 942a, 942b that protrudes into the catch aperture 892a, 892b to lock the package 866 in a closed position. Additionally, an upper surface 944 of the protrusion 942 may be chamfered so as to facilitate the ability of the latching abutment 930a, 930b to be deflected, bent, or distorted when the bottom of the catch 890a, 890b comes into contact with the latching abutment 930a, 930b as the package 866 is being moved from an open position to a closed position and until the catch aperture 892a, 892b is moved into position for locking engagement with the latching abutment 930a, 930b.

[00381] When a locked package 866 is to be opened, the actuator portions 928a, 928b are inwardly displaced in direction L of FIG. 91, causing the deflection, distortion, or bending of the legs 932a, 932b and the displacement of the latching abutment 930a, 930b. The latching abutment 930a, 930b is inwardly displaced at least until the latching abutment 930a, 930b disengages the catch 890a, 890b, thereby allowing the package 866 to be opened. When the inward pressure on the actuator portions 928a, 928b is released, the legs 932a, 932b may return to their rest or locked position, and thereby also return the actuator portions 928a, 928b and latching abutments 930a, 930b to a rest or locked position.

[00382] As previously discussed, the inserts for the packages described herein may be operably secured to the first shell portion, such as through the use of adhesives,

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mechanical fasteners, welding, or snap or friction fits between at least a portion of the insert and at least a portion of the first shell portion, among others. Such inserts may include downwardly extending tabs that fit or mate into slots, openings, or protrusions, such as ribs, that are formed in the first shell portion. For example, according to an embodiment, a first shell portion may include one or more protrusions or ribs, such as a rib along both sides of the interior region of the first shell portion and two parallel ribs along a front central portion of the interior region of the first shell portion. According to such an embodiment, when the insert is properly positioned within the first shell portion, the downwardly extending tabs from the insert may engage, such as abut and/or press upon, the ribs in the first shell portion.

[00383] As shown in FIG. 96, according to an embodiment of the present invention, at least one spring 958a, 958b may assist in properly positioning and/or securing an insert 952 to a first shell portion 954. According to an embodiment, the springs 958a, 958b are attached to, or extend from, the first shell portion. According to another embodiment, the latches 950a, 950b, such those previously discussed, include a spring 958a, 958b that press upon a downwardly extending tab 956 of the insert 952. Moreover, the spring 958a, 958b may be the same spring or leg of the latch 950a, 950b used to bias the latch 950a, 950b in a rest or locked position, or may be a secondary spring. According to such embodiments, the spring 958a, 958b may be integrally molded to, or non-integrally attached to, the latch 950a, 950b.

[00384] The springs 958a, 958b may be loaded in the lateral or vertical directions (as indicated by "L" or "V" in FIG. 1) so as to exert a force on the insert 952 as the insert 952 is being inserted into the first shell portion 954, and thereby assist in properly positioning or guiding the insert 952 into the first shell portion 954. For example, according to an embodiment, the latches 950a, 950b may press upon the tab 956 so that the tab 956 is guided to be placed against or within a corresponding protrusion or rib 960 in the first shell portion 954. According to an embodiment, once the insert 952 has been properly positioned in the first shell portion 954, the spring 958a, 958b may continue to exert sufficient force on the insert 952 to retain the insert 952 at a desired

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position within the first shell portion 954. According to another embodiment, after the insert 952 has been positioned within the first shell portion 954, the insert 954 may be further secured to the first shell portion 954 through the application of a mechanical fastener, adhesive, or welding, such as wet welding.

[00385] Referencing FIGS. 97 and 98, according to an embodiment, the package 962 may include an integrally formed first member 964 and a second member 966. According to an embodiment, the first member 964 may include the second shell portion 968 and the insert 970, while the second member 966 may include the first shell portion 972. According to another embodiment, the first member 964 may include the second shell portion 968, the insert 970 and/or other portion of the first shell portion 972 that is part of the first member, such as the base sidewall 974. According to such an embodiment, the second member 966 may include the base 976 of the first shell portion 972. Additionally, according to certain embodiments, the first member 964 may include an integral hinge similar to those previously discussed that allows at least a portion of the second shell portion 968 be removed or pivoted away from the insert 970 so as to open the first member 964 and provide a user access to product contained in the insert 970. The package 962 may also include a seal for sealing a product containing space within the insert 970 from ambient air that is outside of the seal, such as those seals previously discussed above.

[00386] The first member 964 may include openings 978 configured to receive the placement of the actuator portion of one or more latches, such as the latches previously discussed above. Additionally, the first member 964 or second member 966 may be configured to receive the placement of the latches during assembly. The second member 966 may be configured to be operably secured to the first member 964, such as by a friction fit, a snap fit, mechanical fasteners, welding, or adhesives, among others.

[00387] Referencing FIGS. 99 to 103, a package 980 is shown having a lid 982, a sleeve 984, and a container 986. According to the embodiment illustrated in FIGS. 99

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to 103, the package 980 has a generally rectangular configuration. However, the package 980 may have a variety of geometrical shapes, including square, triangular, cylindrical, trapezoidal, round, and non-round, among others.

[00388] According to an embodiment, the lid 982 includes a top portion 988, a front lid wall 990, and a closed lip 992. The sleeve 984 may include a base 994, a sidewall 996, and an opening 998. As shown in FIGS. 99 to 103, according to an embodiment, the sidewall 996 of the sleeve 984 has a generally rectangular configuration and includes a front wall 996a, a first sidewall 996b, a second sidewall 996c, and a back sidewall 996d. The base 994 and sidewalls 996 generally define an interior region 1000 that is configured to receive the slideable insertion of the container 986. Additionally, the lid 982 and sleeve 984 may be integrally molded or non-integral. According to certain embodiments, the lid 982 may be removably or pivotably attached to the sleeve 984. For example, according to an embodiment, the top portion 988 of the lid 982 may be joined to the back sidewall 996d of the sleeve 984 by a hinge, such as by the one or more of the hinges previously discussed.

[00389] The container 986 includes a sidewall 1002 and a base 1004. The sidewall 1002 and base 1004 of the container 986 generally define a product containing space 1006, with an upper region 1008 of the sidewall 1002 defining a container opening 1010 that is configured for the insertion and/or removal of product to/from the product containing space 1006. As the container 986 is configured for slideable movement within the sleeve 984, according to certain embodiments, the container 986 may have a geometrical configuration similar to that of the sleeve 984, such as a rectangular configuration, among others.

[00390] At least one sidewall of the sleeve 984 may include at least one slot 1012 that allows a user to move the container 986 from a locked or rest position to an open position. For example, as shown in FIGS. 99, 101, 102, and 103, according to an embodiment, the front sidewall 996a of the sleeve 984 has a slot 1012 that is configured to allow the slideable movement of a slide button 1014 that is attached to, or part of, a

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sidewall 1002 of the container 986. Although the slot 1012 is shown extending in a generally vertical direction (as indicated by "V" in FIG. 101), the slot 1012 may have a variety of configurations, including a partial spiral configuration for use with a cylindrically shaped sleeve 984 and container 986, among others. The slide button 1014 may be recessed from the sidewall 1002, or may extend from the sidewall 1002 of the container 986 so as to be flush with, or protrude from, the front sidewall 996a of the sleeve 984. Alternatively, the slide button 1014 may include surface characteristics, such as, for example, protrusions or grooves that assist in a user's ability to slide the container 986 from a rest or locked position to an open position. Additionally, the slot 1012 and slide button 1014 may be placed at a variety of locations along the sidewalls 1002, 996 of the container 986 and sleeve 984, respectively, such as on a sidewall first 996b, second 996c, or rear sidewall 996d, or a combination thereof, of the sleeve 984 and on a corresponding sidewall 1002 of the container 986.

[00391] As shown by at least FIG. 103, according to an embodiment, when the package 980 is closed, a groove 1016 extends around the closed lip 992. For example, the groove 1016 may extend between the closed lip 992 and the adjacent lid wall 990 and/or sidewall 996 of the sleeve 984. The groove 1016 is configured to receive the slideable insertion of the sidewalls 1002 of the container 986 to form a seal about the container opening 1010, as shown for example in FIGS. 101 and 102. Moreover, the closed lip 992 and sidewall 1002 of the container 986 may be configured to engage each other to form a seal about the container opening 1010 when the package 980 is closed. According to an embodiment, the closed lip 992 may have a relatively thin wall thickness that allows the closed lip 992 to be bent, deformed, or distorted when engaged by the sidewall 1002 of the container 986 so that a seal is formed between at least a portion of the closed lip 992 and the adjacent container 986 sidewall 1002 surface. Additionally, according to certain embodiments, the groove 1016 may have a similar thickness as the container 986 sidewalls 1002 but still have a sufficient thickness to receive the slideable movement of the container 986 sidewalls 1002 into at least a portion of the groove 1016. According to other embodiments, the groove 1016 may be

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sized to house or receive an ancillary seal 522, such as those discussed above with respect to FIGS. 40 to 54, in addition to receiving the slideable insertion and removal of at least one sidewall 1002 of the container 986. According to such an embodiment, one or more ancillary seals 522 may be used to create a face and/or side seal between the sidewall 1002 of the container 986 and/or the lid 982, including the closed lip 992.

[00392] According to the embodiment illustrated in FIGS. 99 to 103, when the package 980 is closed, a spring 1018 may bias the container 986 in a rest or locked position in which the sidewall 1002 of the container 986 engages the closed lip 992 of the lid 982. When the package 980 is to be opened, a user may slide the slide button 1014 along the slot 1012 in the sleeve 984 in a generally downward vertical direction, causing the container 986 to be downwardly displaced and thus withdraw the sidewalls 1002 of the container 986 from the groove 1016 in the lid 982. The lid 982 may then be removed or pivoted from the sleeve 984 so that a user may dispense or insert product from/into the product containing space 1006. When the user releases the slid button 1014, the spring 1018 may again bias the container 986 and slide button 1014 in a generally upwardly direction until the container 986 returns to the rest or locked position.

[00393] To close the package 980, the user may again slide the slide button 1014 in a generally downward vertical direction so that the sidewalls 1002 of the container 986 do not interfere with the lid 982 being moved from an open to a closed position. After the package has been closed, the slide button 1014 may be released, thereby allowing the spring 1018 to again bias the container 986 into a locked or rest position, whereupon the sidewall 1002 of the container 986 may again enter the groove 1016. .

[00394] Referring to FIGS. 104 to 106, a package 1020 is shown having a base 1022, a lid 1024, and a button 1026. The base 1022 includes a base sidewall 1028, a base shoulder 1030, a product containing space 1032, and a first orifice. The base sidewall 1028 may define an outer peripheral surface 1036 of the base 1022. Additionally according to an embodiment, at least a portion of the base sidewall 1028 and the base shoulder 1030 may define at least a portion of the product containing space 1032. The

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first orifice may be configured to receive the placement of at least a portion of the button 1026, which may be operably attached to the base 1022.

[00395] The lid 1024 may include a lid sidewall 1038, a top portion 1040, a lid closed lip 1042, a lid shoulder 1044, and a second orifice 1046. The second orifice 1046 is generally aligned with first orifice in the base 1022 and is configured to receive the slideable movement of the button 1026. The lid sidewall 1038 may extend around the perimeter of the lid 1024 and may have varying vertical heights. For example, as shown in FIGS. 104 to 106, the lid sidewall 1038 along a first side 1048 of the lid 1024 may be shorter in height, as indicated by the direction “V” in FIG. 104, than the height of the lid sidewall 1038 along a second side 1050 of the lid 1024. Additionally, as shown in FIG. 104, according to an embodiment, when the package 1020 is in a closed position, at least a portion of the lid sidewall 1038 may be generally aligned, or flush, with at least a portion of the base sidewall 1028. Further, at least a portion of the lid sidewall 1038, such as the second side 1050 of the lid sidewall 1038 may be configured to cover at least a portion of the base sidewall 1028 when the package 1020 is in a closed position.

[00396] The lid closed lip 1042 is configured to seal the package containing space 1032 when the package 1020 is in a closed position. For example, according to an embodiment, the lid closed lip 1042 may be constructed from an elastomeric or non-elastomeric material that is engages at least a portion of an inner surface of the base sidewall 1028 so as to form a seal about the product containing space 1032. According to such an embodiment, the lid closed lip 1042 may have a generally thin wall thickness that allows the lid closed lip 1042 to be bent, deformed, or distorted when engaging the base sidewall 1028 so as to form a seal, such as, for example, a side or face seal. According to another embodiment, a ancillary seal 522 similar to those discussed above with respect to FIGS. 40-54, may be use with, or in lieu of the lid closed lip 1042.

[00397] The lid shoulder 1044 is configured to be adjacent to the base shoulder 1030 when the package 1020 is in a closed position. Such positioning of the shoulders 1030, 1044 of the base 1022 and lid 1024 may be configured to create an interference that

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prevents the opening of the package 1020. Additionally, as shown in FIGS. 105 to 106, according to an embodiment, the lid 1024 may be pivoted or rotated about the button 1026 so as to allow a user access to the product containing space 1032. According to such an embodiment, the lid 1024 may also include at least one arm or sleeve 1052 that extends into the first orifice or adjacent to the first orifice in the base 1022, and which assists in pivotably attaching the lid 1024 and the base 1022.

[00398] According to an embodiment, to open the package 1020, a user may displace the button 1026 in a generally downward vertical direction, as again indicated by “V” in FIG. 104. According to certain embodiments, such vertical displacement of the button 1026 may cause or allow the lid 1024 to be vertically raised or separated from the base 1022 by a sufficient height so as to eliminate interference between the base shoulder 1030 and lid shoulder 1044 and remove the seal between the closed lip and the base 1022, thereby allowing the package 1020 to be pivotably opened to expose the product containing space 1032. According to an embodiment, the button 1026 may be spring loaded so that, when an opened package 1020 is to be closed, and the lid 1024 is generally aligned with the base 1022 for closing the package 1020, the spring may pull the base 1022 and lid 1024 back together so as to lock the package 1020 in a sealed, closed position.

[00399] FIGS. 107 to 111 illustrate an insert 1054, which may be used with the packages previously discussed, that controls the dispensing of product from a product containing space 1056. The insert 1054 includes a slide assembly 1058, the product containing space 1056, and a dispenser receptacle 1060. According to an embodiment, the product containing space 1056 and the dispenser receptacle 1060 may be integrally molded into the insert 1054, or may be separate components that are assembled in the insert 1054. For example, as shown in FIG. 111, the product containing space 1056 may be housed in a secondary insert 1094 that is assembled in the insert 1054. The insert 1054 or secondary insert 1094 include a first sidewall 1064 and at least one inner opening 1066. According to an embodiment, the first sidewall 1064 defines at least a portion of the perimeter of the product containing space 1056. The product containing

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space 1056 includes a mouth 1068 through which product may be dispensed out from the product containing space 1056.

[00400] According to an embodiment, the slide assembly 1058 includes a lever 1070, a slide opening 1072, and a spring 1074. The slide assembly 1058 has an integral or non-integral construction. The spring 1074 biases the slide assembly 1058 in a closed position so that, when the slide assembly 1058 is in an open position and a user releases the lever 1070, the slide assembly 1058 returns to a closed position. According to an embodiment, product in the product containing space 1056 is not dispensed to the dispenser receptacle 1060 when the slide assembly 1058 is in a closed position.

[00401] The slide opening 1072 may be sized to transport a certain amount of product, namely the amount of product that fits in the slide opening 1072, to the inner opening 1066 for dispensing into the dispenser receptacle 1060. For example, the slide opening 1072 may be sized to hold one or more pieces of product.

[00402] According to an embodiment, the insert 1054 or secondary insert 1094 includes a track 1076, groove, and/or protrusion that guides the displacement of the slide assembly 1058 in a horizontal direction (as indicated by “H” FIG. 110) as the slide assembly 1058 is moved to and from the open and closed position. The track may include a recessed region of the secondary insert 1062 and the first sidewall 1064 of the secondary insert 1062.

[00403] According to an embodiment, the mouth 1068 of the product containing space 1056 and the inner opening 1066 are offset. According to such an embodiment, when the slide assembly 1058 is in a closed position, the slide opening 1072 generally aligns with the mouth 1068 of the product containing space 1056 so that product may be dispensed from the product containing space 1056 to the slide opening 1072. When the slide assembly 1058 is moved to an open position, at least a portion of the slide opening 1072 is generally aligned with the inner opening 1066. The product contained in the slide opening 1072 may then pass through the inner opening 1066 and into the

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dispenser receptacle 1060. Additionally, as the slide opening 1072 is moved into general alignment with the inner opening 1066, an outer slide wall 1078 of the slide assembly 1058 may at least partially move in front of the mouth 1068 of the product containing space 1056, thereby preventing the dispensing of additional product from the product containing space 1056. When the user releases the lever 1070 of the opened slide assembly 1058, the spring 1074 biases the slide assembly 1058 back into a closed position.

[00404] According to other embodiments, the inner opening 1066 and mouth 1068 of the product containing space 1056 may be generally aligned. According to such embodiments, the slide may include a slide wall that blocks the passage of product from the mouth 1068 of the product containing space 1056 and the inner opening 1066 when the slide assembly 1058 is in a closed position. When the user moves the slide assembly 1058 to an open position, the slide wall also moves and the slide opening 1072 becomes generally aligned with the mouth 1068 and inner opening 1066 so that product may move from the product containing space 1056 and into the dispenser receptacle 1060.

[00405] The insert 1054 may also include, or be attached to, a cover 1080, as previously discussed. According to an embodiment, the cover 1080 may cover the product containing space 1056 and at least a portion of the dispenser receptacle 1060. According to an embodiment, the cover 1080 includes a slot 1082, at least a portion of the lever 1070 protruding through the slot 1082 so that a user may engage at least a portion of the lever 1070. The slot 1082 may also be configured to allow the displacement of the latch 1070 in the lever 1070 in the generally "H" direction (as indicated by "H" in FIG. 110) as the slide assembly 1068 is moved between open and closed positions. Additionally, the slot 1082 may include one or more notches in which the lever 1070 may be slid so as to lock the slide assembly 1058 in an open and/or closed position. The cover 1080 also includes a dispenser opening 1084 through which product in the dispenser receptacle 1060 may be removed from the insert 1054.

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[00406] FIGS. 112 to 116 illustrate an insert 1084, which may be used with the packages previously discussed, that includes a push button assembly 1086 that controls the dispensing of product. The insert 1084 may include a cover 1088, a product containing space 1090, a dispenser receptacle 1092, and the push button assembly 1086. The product containing space 1090 may be defined by walls of the insert 1084, or may be part of a secondary insert 1094, as previously discussed. According to an embodiment, the product containing space 1090 includes a mouth 1096 that is configured to allow the passage of product out from the product containing space 1090. The dispenser receptacle 1092 includes an opening 1098 through which product enters the dispenser receptacle 1092.

[00407] According to an embodiment, the opening 1098 of the dispenser receptacle 1092 is offset from the mouth 1096 of the product containing space 1090 in a vertical direction (as indicated by "V" in FIG. 116) so that the bottom of the opening 1098 is at a lower or higher height than the bottom of the mouth 1096. Moreover, the opening 1098 and the mouth 1096 may be offset at a height sufficient to prevent the passing of product from the product containing space 1090 to the dispenser receptacle 1092 without the displacement of the push button assembly 1086. Additionally, the push button assembly 1086 may be configured to interfere with the ability of product to pass from the mouth 1096 and into opening 1098 without manipulation of the push button assembly 1086. According to the embodiment illustrated in FIGS. 112 to 116, the bottom of the opening 1098 is positioned higher than the bottom of the mouth 1096.

[00408] The push button assembly 1086 includes a button 1100, at least one spring 1102, and an orifice 1104, the orifice 1104 being operably connected to the button 1100. According to the embodiment illustrated in FIGS. 113 and 116, the push button assembly 1086 includes two springs 1102. The orifice 1104 may be positioned within the body of the button 1100, the orifice 1104 being sized to receive the insertion of one or more pieces of product that is stored in the product containing space 1090. The button 1100 may be at least partially housed in a sleeve 1108 in the insert 1084 or secondary insert 1094 that assists in guiding the movement of the button 1100.

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[00409] According to an embodiment, the springs 1102 bias the button 1100 so that the orifice 1104 is generally aligned with either the mouth 1096 of the product containing space 1090 or the opening 1098 of the dispenser receptacle 1092, and so that the button 1100 protrudes through an orifice 1104 in the cover 1086. For example, according to certain embodiments, the springs 1102 bias the button 1100 so that the orifice 1104 is generally aligned with the opening 1098 of the dispenser receptacle 1092. According to such an embodiment, a user may depress the button 1100 in the “V” direction, thereby bringing the orifice 1104 of the button 1100 into general alignment with the mouth 1096 of the product containing space 1090. The user may then tilt the package so that at least one piece of product contained in the product containing space 1090 enters the orifice 1104. The user may then release the button 1100, thereby allowing the springs 1102 to force the button 1100 upward in the “V” direction so that the orifice 1104 is generally aligned with the opening 1098 of the dispenser receptacle 1092. The user may then tilt, or the product may then move, out of the orifice 1104 and into the dispenser receptacle 1092. The product may then be removed through a dispenser opening 1106 in the cover 1086.

[00410] According to another embodiment, rather than being a push button, the button 1100 may rotate in a generally circular direction. According to such an embodiment, the mouth 1096 and opening 1098 may or may not be offset in the vertical direction. The orifice 1104 in the button 1100 may be biased by, among others, a spring or coil, so as to be biased in communication with the mouth 1096 or the opening 1098. According to an embodiment in which the orifice 1104 is biased in communication with the opening 1098 of the dispenser receptacle 1092, the button 1100 is rotated until the orifice 1104 is in communication with the mouth 1096 so that product contained in the product containing space 1090 may be moved into the orifice 1104. Once product has been placed in the orifice 1104, the button 1100 may be released, after which the button 1100 rotates so that the orifice 1104 returns to being into communication with the dispenser receptacle 1092, and the product contained in the orifice 1104 may be moved into the dispenser receptacle 1092.

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[00411] FIGS. 117 to 123 illustrate an insert 1110, which may be used with the packages previously discussed, that includes a push button assembly 1112 having a ramp 1114 that controls the dispensing of product. The insert 1110 includes a product containing space 1116, a dispenser receptacle 1118, the push button assembly 1112, and the ramp 1114. According to an embodiment, the ramp 1114 and product containing space 1116 may be integrally molded in the insert 1110 or in a secondary insert 1120. The product containing space 1116 may include a sidewall 1122, a mouth 1124, and a base 1126. The ramp 1114 may be positioned about, or adjacent to, the mouth 1124. According to an embodiment, at least a portion of the ramp 1114 extends into the product containing space 1116. Additionally, according to an embodiment, the ramp 1114 extends from the base 1126 of the product containing space 1116, and may be detached or separated from adjacent material along a portion of at least two of its sides by spaces 1128. The spaces 1128 are configured to allow at least a portion of the ramp 1114 to be bent, deflected, distorted, or pivoted in a generally downward vertical direction (as indicated by "V" in FIG. 120).

[00412] The dispenser receptacle 1118 includes an opening 1130 and a receptacle sidewall 1132. According to an embodiment, at least a portion of the perimeter of the dispenser receptacle 1118 may be defined by an inner wall 1134 of the insert 1110 or secondary insert 1120. The inner wall 1134 may also include the opening 1130 of the dispenser receptacle 1118. The opening 1130 of the dispenser receptacle 1118 is offset from the mouth 1124 of the product containing space 1116 in a vertical direction so that at least a portion of the opening 1130 is at a lower or higher vertical height than the mouth 1124. The opening 1130 and the mouth 1124 may be offset at a height sufficient to prevent product from passing from the product containing space 1116 to the dispenser receptacle 1118 without the displacement of the push button assembly 1112. Additionally, the push button assembly 1112 may be configured to interfere with the ability of product to pass from the mouth 1124 and into opening 1130 without manipulation of the push button assembly 1112. According to certain embodiments, at least a portion of the bottom of the dispenser receptacle 1118 is at a different vertical

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position than the base 1126 of the product containing space 1116. For example, at least a portion of the bottom of the dispenser receptacle 1118 in proximity to the opening 1130 of the dispenser receptacle 1118 may be at a higher or lower vertical position than the base 1126 of the product containing space 1116 at the mouth 1124 of the product containing space 1116.

[00413] The push button assembly 1112 includes a button 1148, at least one spring 1136, and at least one tab 1138, the tab 1138 extending from the bottom 1150 or the side of the button 1148. In the embodiment illustrated in FIGS. 117 to 123, two tabs 1138 are shown extending downwardly from the button 1148. According to an embodiment, the spring 1136 is integrally molded with the button 1148 and biases the button 1148 upwardly so that, when the button 1148 is biased by the spring 1136 into a rest position, there is space for at least a portion of the product from the product containing space 1116 to be positioned between the bottom 1150 of the button 1148 and the ramp 1114.

[00414] The spring 1136 may also generally bias the button 1148 in an upward vertical direction so that the button 1148 protrudes through an aperture 1144 in a cover 1140. The cover 1140 covers at least a portion of the product containing space 1116, and includes a dispenser opening 1152 for the removal of product from the dispenser receptacle 1118.

[00415] Additionally, according to an embodiment, the insert 1110 or secondary insert 1120 includes at least one recess that mates with a protrusion 1144 that extends from the side of the button 1148 and assists in guiding the vertical movement of the button 1148 when the button 1148 is downwardly displaced and as the displaced button 1148 returns to a rest position.

[00416] According to an embodiment, product from the product containing space 1116 may be positioned beneath the button 1148 when the button 1148 is at a rest position by tilting the package, which may cause the movement of product from the product containing space to the ramp 1114. Before the displacement of the button 1148, the

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inner wall 1134 and ramp 1114 may prevent the product that is beneath the button 1148 from being dispensed into the dispenser receptacle 1118. When product is to be dispensed into the dispenser receptacle 1118, the button 1148 is displaced in a generally downwardly vertical direction. According to an embodiment, as the button 1148 is downwardly displaced, the tab 1138 from the button 1148 pushes downwardly on the ramp 1114 or on an extension member 1146 that extends from the ramp 1114. The downward force of the tab 1138 on the extension member 1146 and the spaces on the side of the ramp 1114 allow the ramp 1114 to be bent, deflected, deformed or pivoted so that the ramp 1114 downwardly extends from the base 1126 of the product containing space 1116 to a position about the opening 1130 of the inner wall 1134 that allows the product that is beneath the button 1148 to pass into the dispenser receptacle 1118. According to an embodiment, as the product that was beneath the button 1148 is delivered to the dispenser receptacle 1118, the body of the button 1148 provides a barrier that prevents additional product from passing out of the product containing space 1116 and into the dispenser receptacle 1118, thereby controlling the amount of dispensed product. After the product from beneath the button 1148 has been dispensed into the dispenser receptacle 1118, the downward force on the button 1148 is released. The spring 1136 then biases the button 1148 back to a rest position, where the alignment of the ramp 1114 and the inner wall 1134 again prevent the dispensing of product from the product containing space 1116 into the dispenser receptacle 1118.

[00417] It should be noted that the term “comprising” does not exclude other elements or steps and that “a” or “an” do not exclude a plurality.

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CLAIMS

1. A package for the dispensing of a product to a user comprising:

a shell portion having an inner region; and

an insert secured in the inner region, the insert including a product containing space, a dispenser receptacle, and a slide assembly, the insert having a mouth through which product may be removed from the product containing space, the dispenser receptacle having an opening through which product may enter the dispenser receptacle, the position of the mouth being at least partially offset from the position of the opening;

the slide assembly including a lever and a slide opening, the slide opening being configured to receive the placement of one or more pieces of product from the product containing space, the lever being adapted to be displaced by the user toward a sidewall of the insert to move the slide assembly from a closed position to an open position, the slide assembly being configured to slide the slide opening from being in communication either the mouth or the opening when the slide assembly is in a closed position to being in communication with the other of the mouth or the opening when the slide assembly is in an open position.

2. The package of claim 2, wherein the slide assembly is biased towards the closed position.

3. The package of claim 1, wherein at least a portion of the insert is covered by a cover, the cover having a dispenser opening and a slot, the dispenser opening configured for the removal of product from the dispenser receptacle, the slot being configured for the protrusion therethrough of at least a portion of the lever from the cover.

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4. The package of claim 3, wherein the insert includes a secondary insert, the product containing space being located in the secondary insert.
5. The package of claim 4, wherein the slide assembly is positioned in the secondary insert.
6. The package of claim 5, wherein the secondary insert includes a guide that guides the displacement of the slide assembly.
7. The package of claim 3, wherein the slot includes at least one notch to lock the position of the slide assembly.
8. A package for the dispensing of a product to a user comprising:
 - a shell portion having an inner region; and
 - an insert secured in the inner region, the insert including a product containing space, a dispenser receptacle, and a push button assembly, the insert having a mouth through which product may exit the product containing space, the dispenser receptacle having an opening through which product may enter the dispenser receptacle, the position of the mouth being at least partially offset from the position of the opening;
 - the push button assembly having a button that is depressed by the user from a closed position to an open position, the button having a body and an aperture, the aperture positioned within at least a portion of the body of the button, the aperture configured to receive the placement of one or more pieces of product from the product containing space, the aperture being in communication with either of the mouth or the opening when the button is in the closed position and being in communication with the other of the mouth or the opening when the button is in the open position.
9. The package of claim 8, wherein the push button assembly is biased toward the closed position.

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10. The package of claim 9, wherein at least a portion of the insert is covered by a cover, the cover having a dispenser opening and an aperture slot, the dispenser opening configured for the removal of product from the dispenser receptacle, the aperture slot being configured for at least a portion of the button to protrude from the cover.

11. The package of claim 10, wherein the insert further includes a secondary insert, the product containing space being located in the secondary insert.

12. The package of claim 11, wherein the push button assembly is positioned in the secondary insert.

13. The package of claim 8, wherein the push button assembly further includes at least one slot that mates with a sleeve in the insert, the slot being configured to assist in guiding the displacement of the button.

14. A package for the dispensing of a product to a user comprising:

a shell portion having an inner region;

an insert secured in the inner region, the insert including a product containing space, a dispenser receptacle, and a ramp, the insert having a mouth through which product may exit from the product containing space, the dispenser receptacle having an opening through which product may enter the dispenser receptacle, the position of the mouth being at least partially offset from the position of the opening; and

a push button assembly positioned in the insert, the push button assembly having a button that is configured to be depressed by the user from a closed position to an open position, the button including a tab that extends from a bottom surface of the button, the bottom surface being separated from the ramp by a distance that permits the placement of at least one product from the product containing space when the button is

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in a closed position, the tab configured to displace at least a portion of the ramp when the button is depressed to an open position to allow for product placed between the button and ramp to be transmitted to the dispenser receptacle.

15. The package of claim 14, wherein the push button assembly is biased towards the closed position.

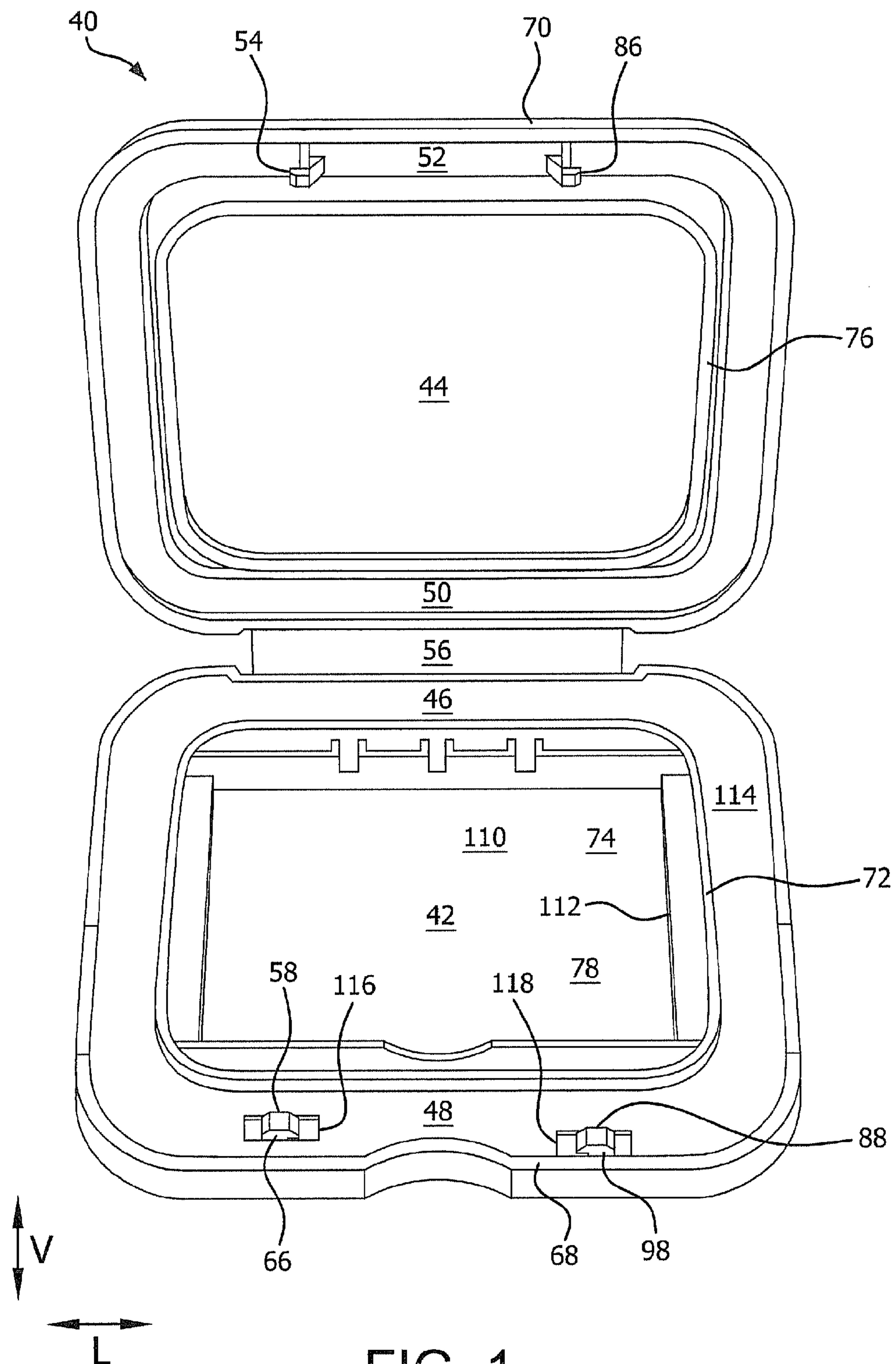
16. The package of claim 15, wherein at least a portion of the insert is covered by a cover, the cover having a dispenser opening and an aperture slot, the dispenser opening configured for the removal of product from the dispenser receptacle, the aperture slot configured for the protrusion of at least a portion of the button from the cover.

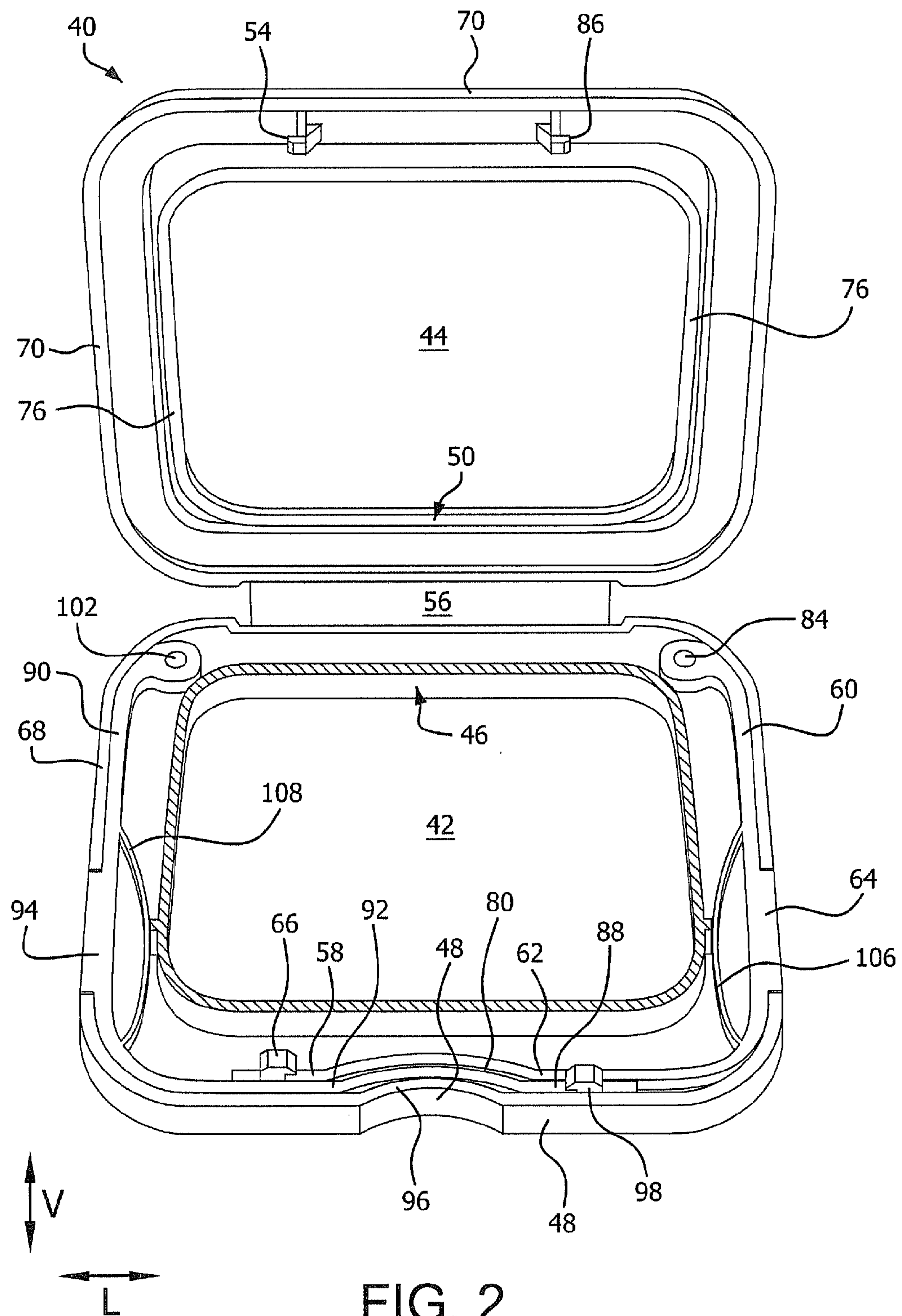
17. The package of claim 16 wherein the ramp includes at least one extension that is engaged by the tab when the button is depressed by the user.

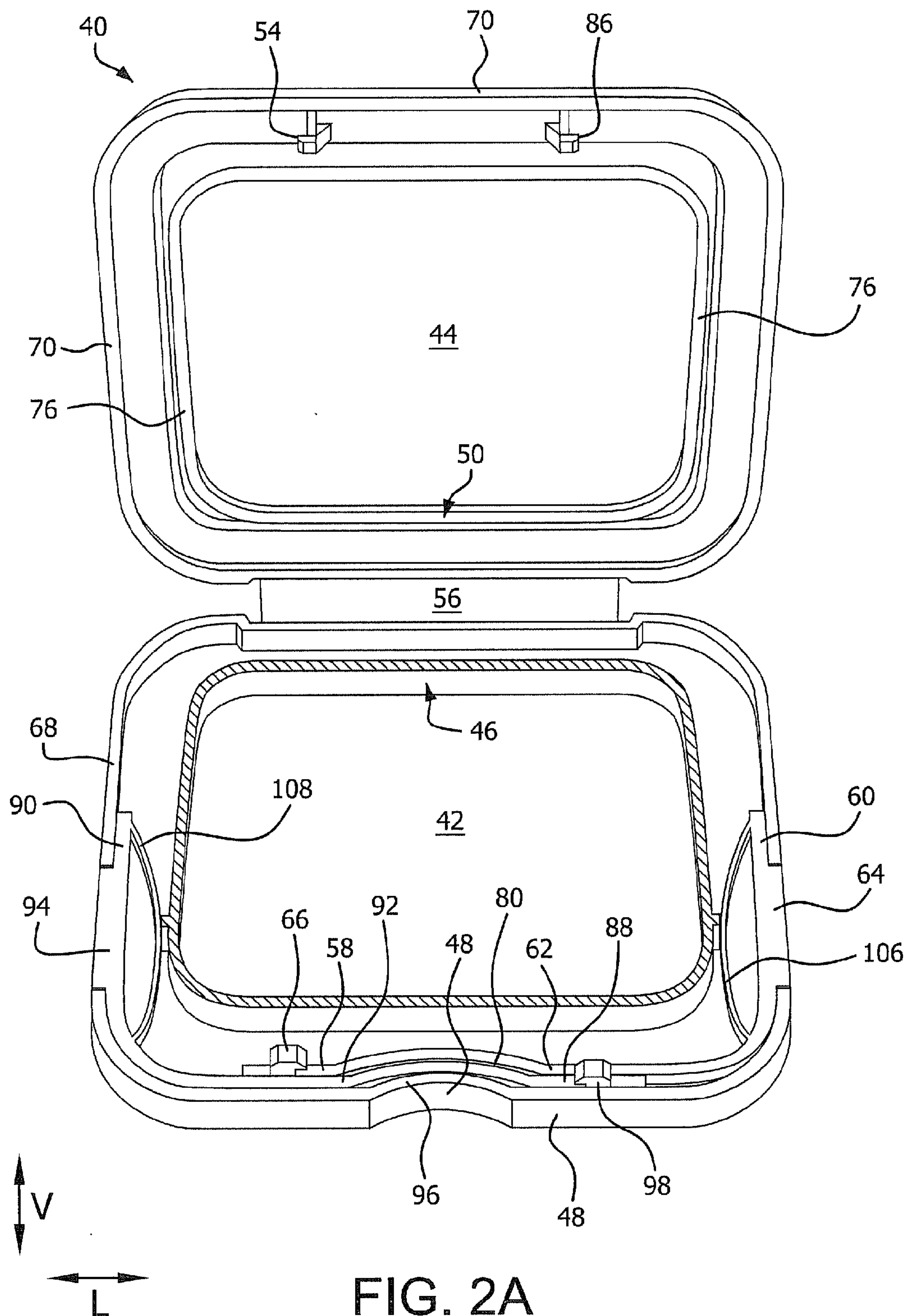
18. The package of claim 16, wherein the push button assembly further includes slots that mate with a sleeve in the insert, the slots being configured to assist in guiding the displacement of the button.

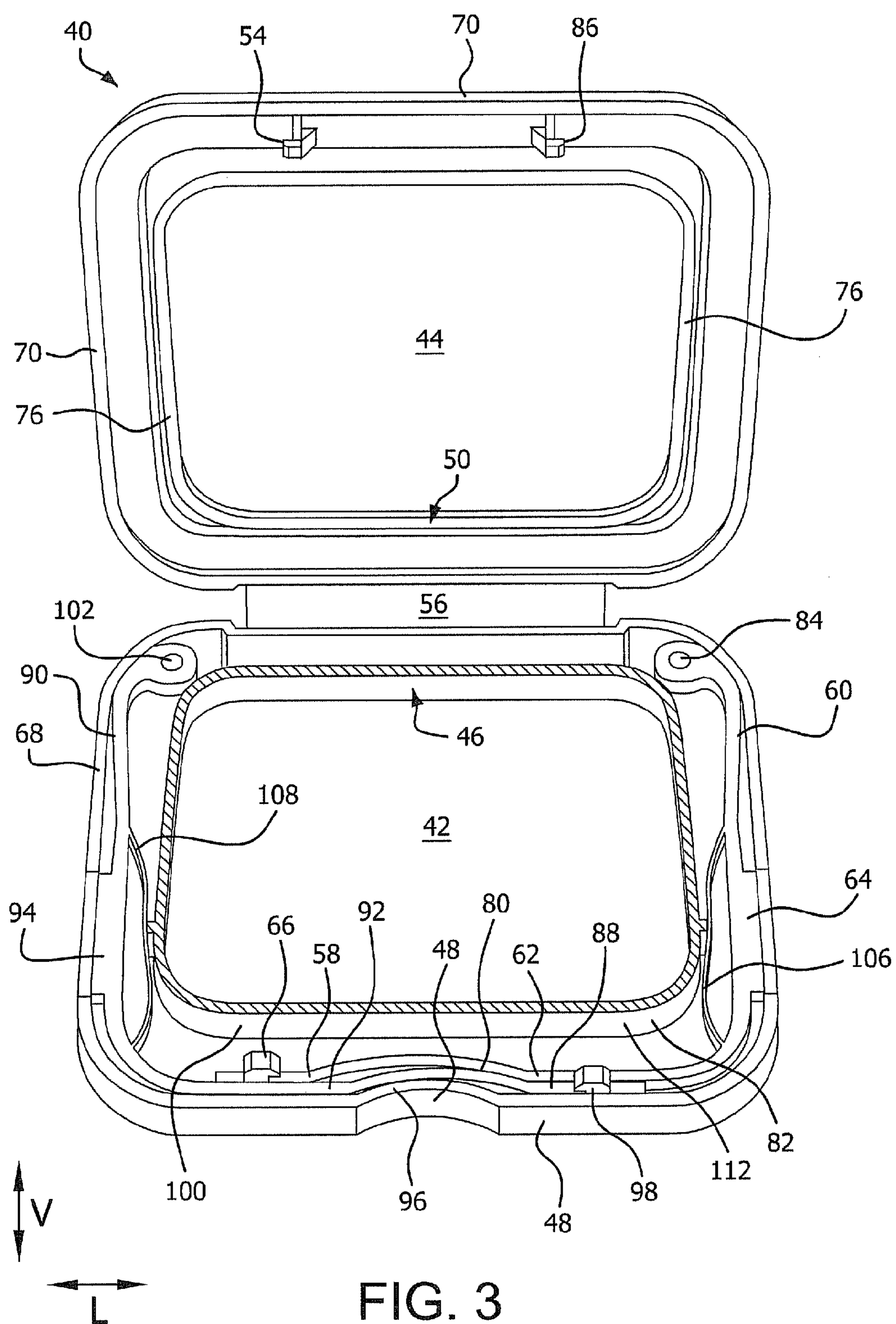
19. The package of claim 14, wherein the insert further includes a secondary insert, the product containing space being located in the secondary insert.

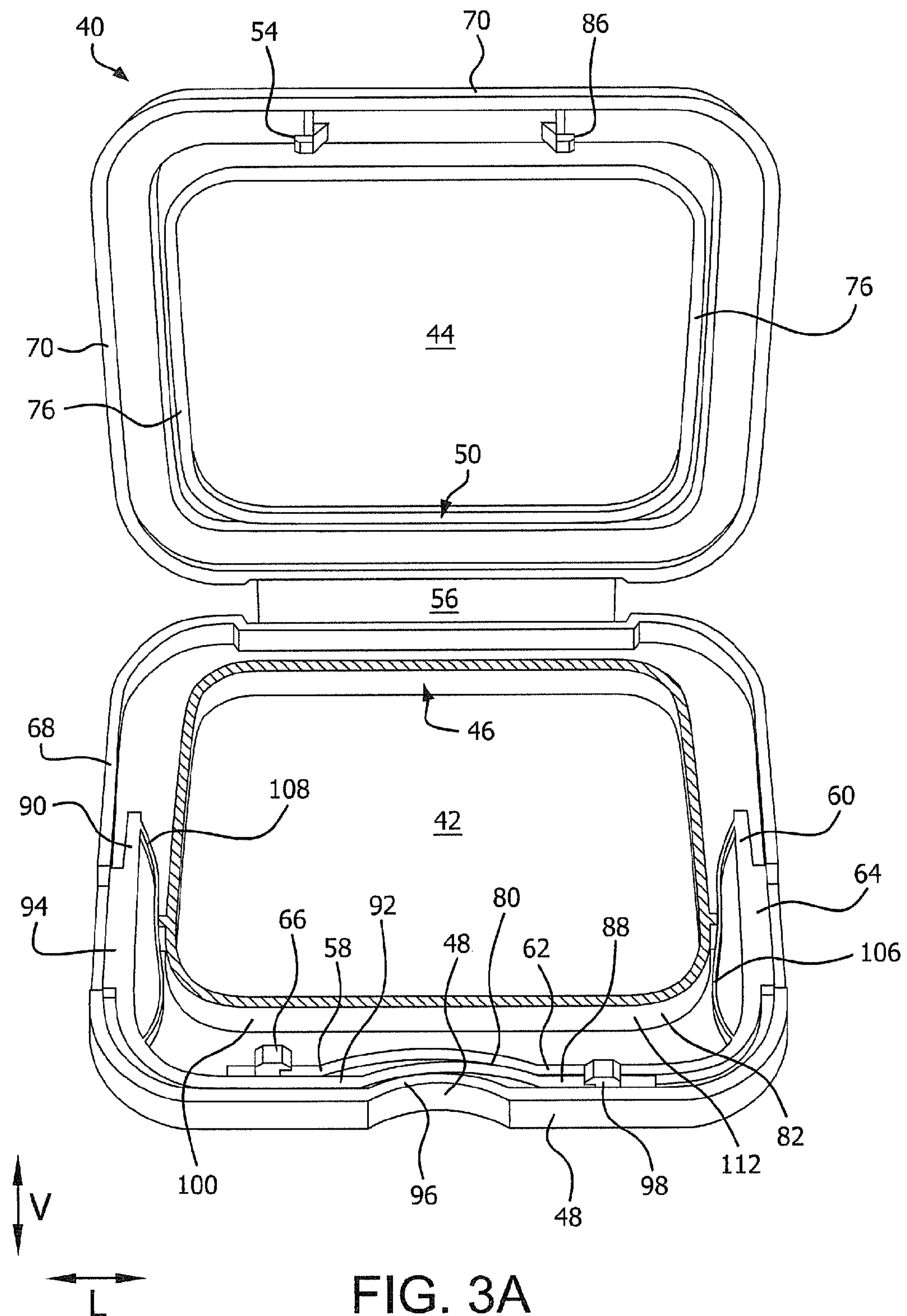
20. The package of claim 19, wherein the push button assembly is positioned in a secondary insert.











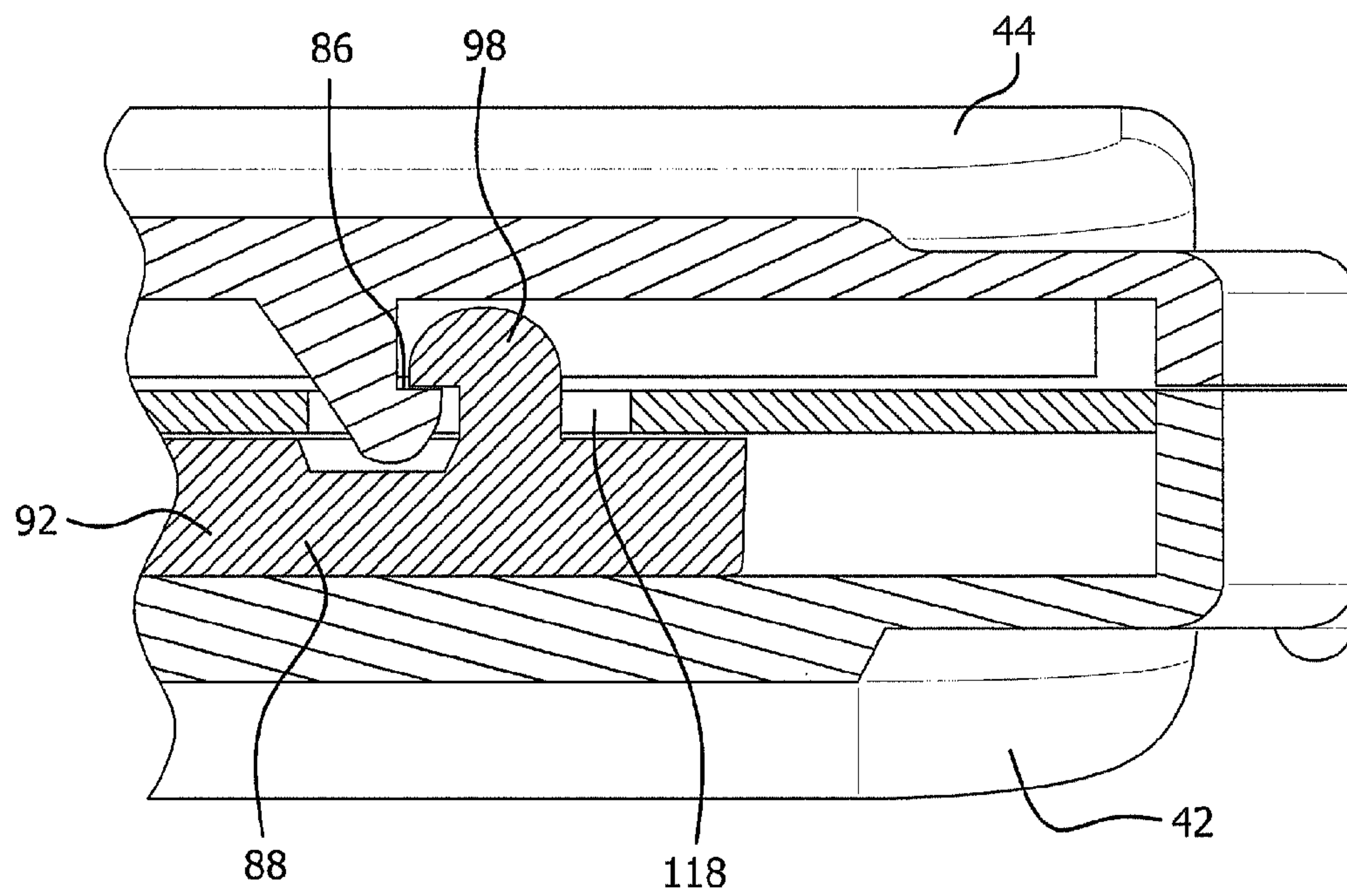


FIG. 4

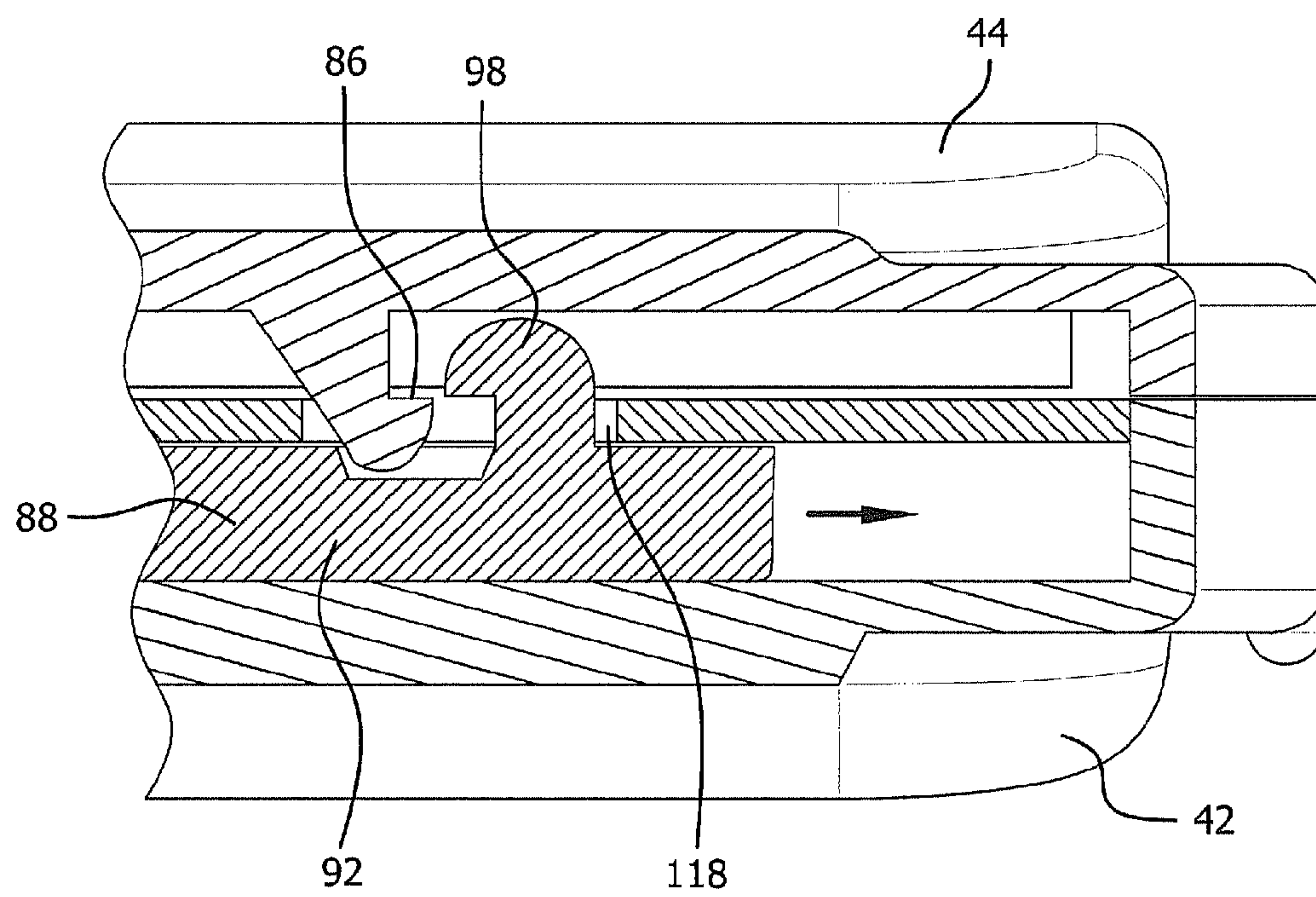
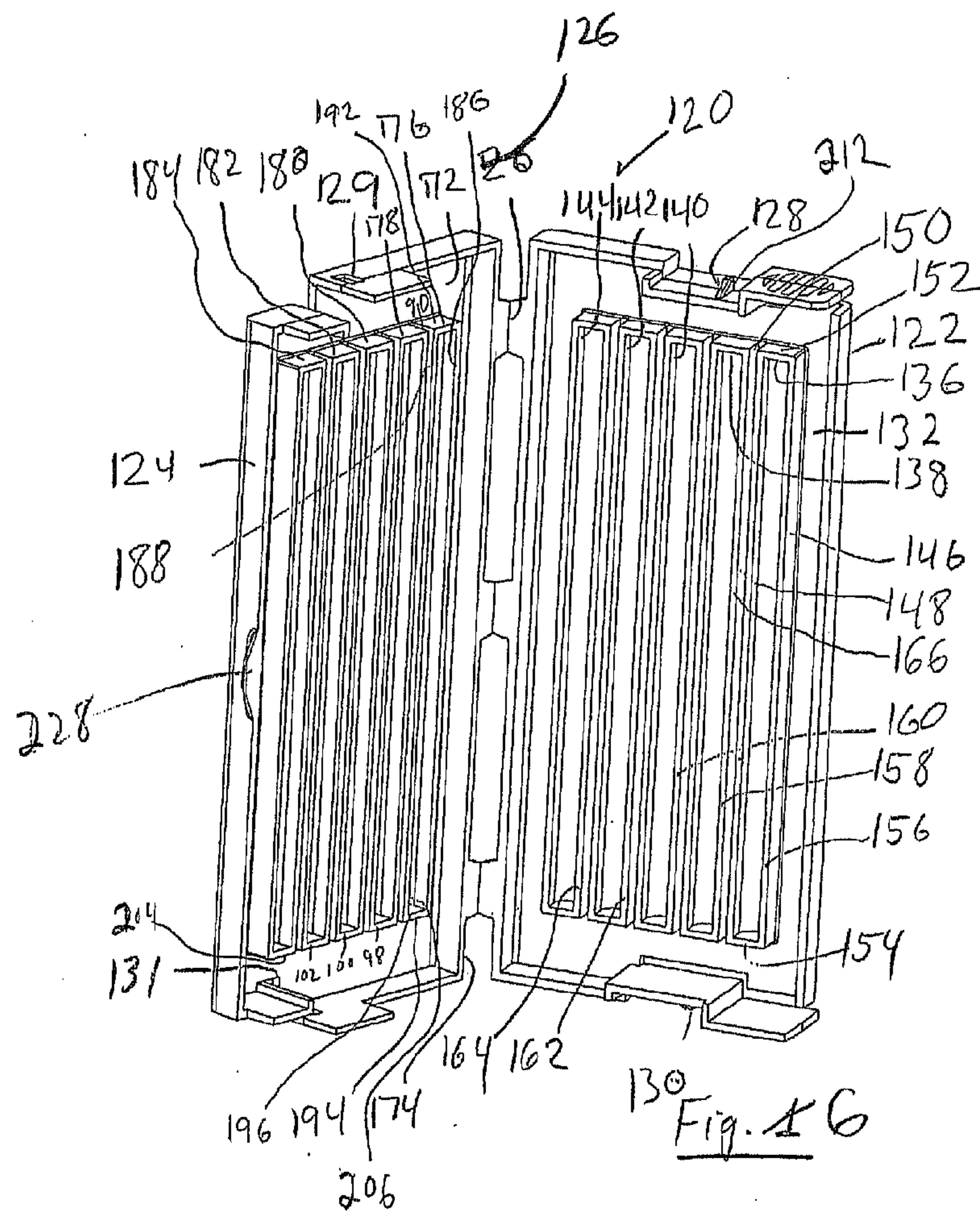
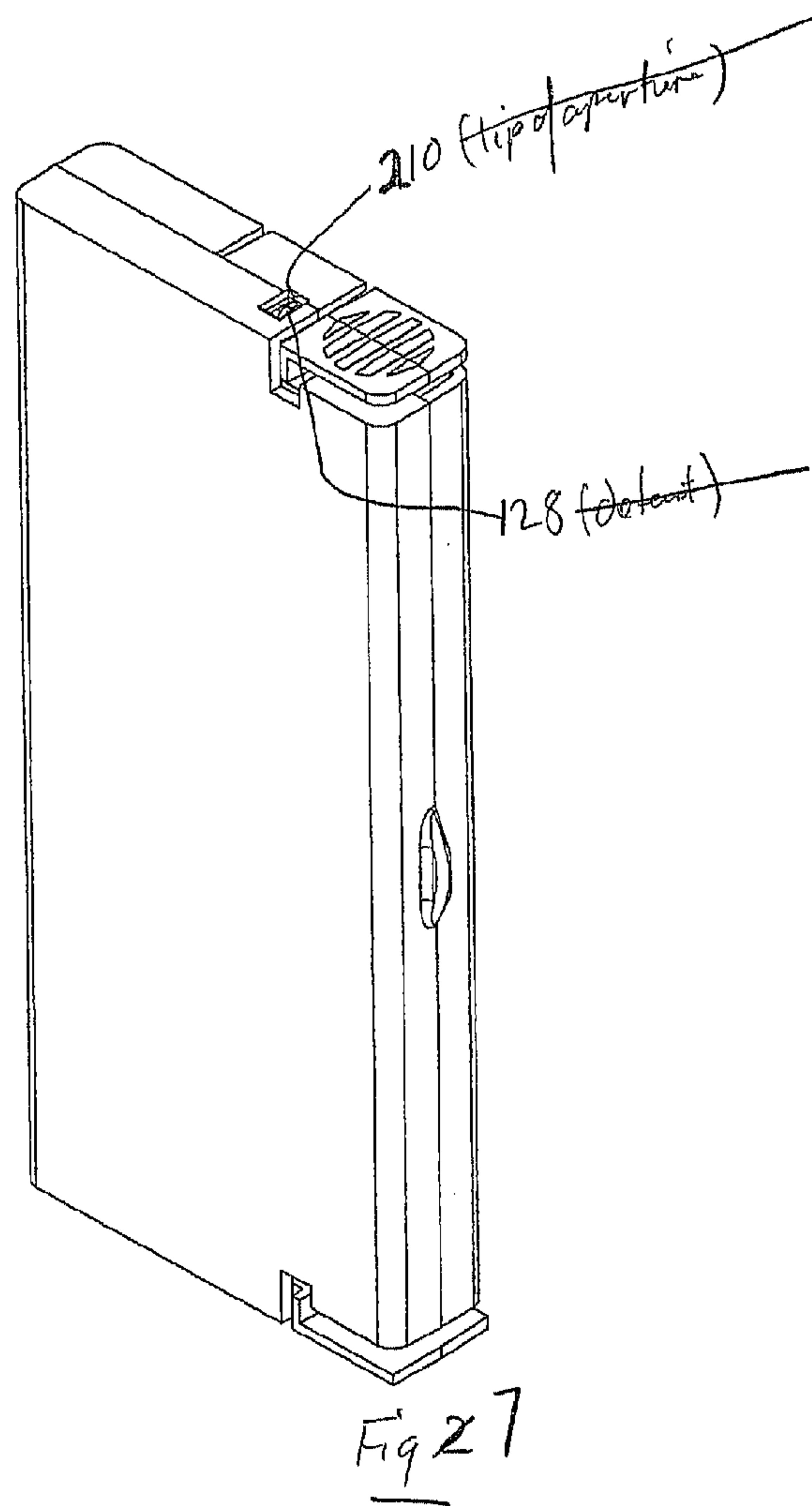
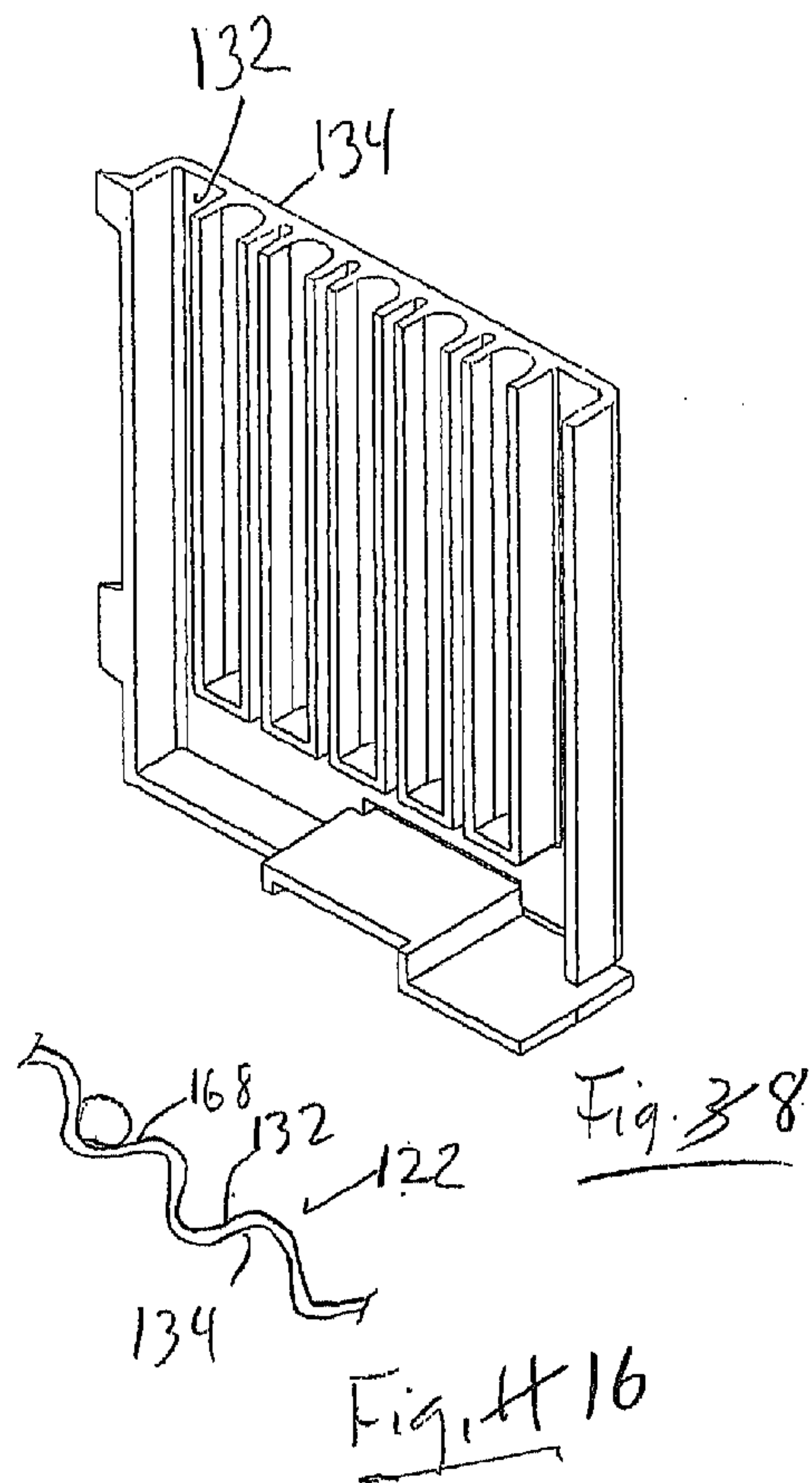
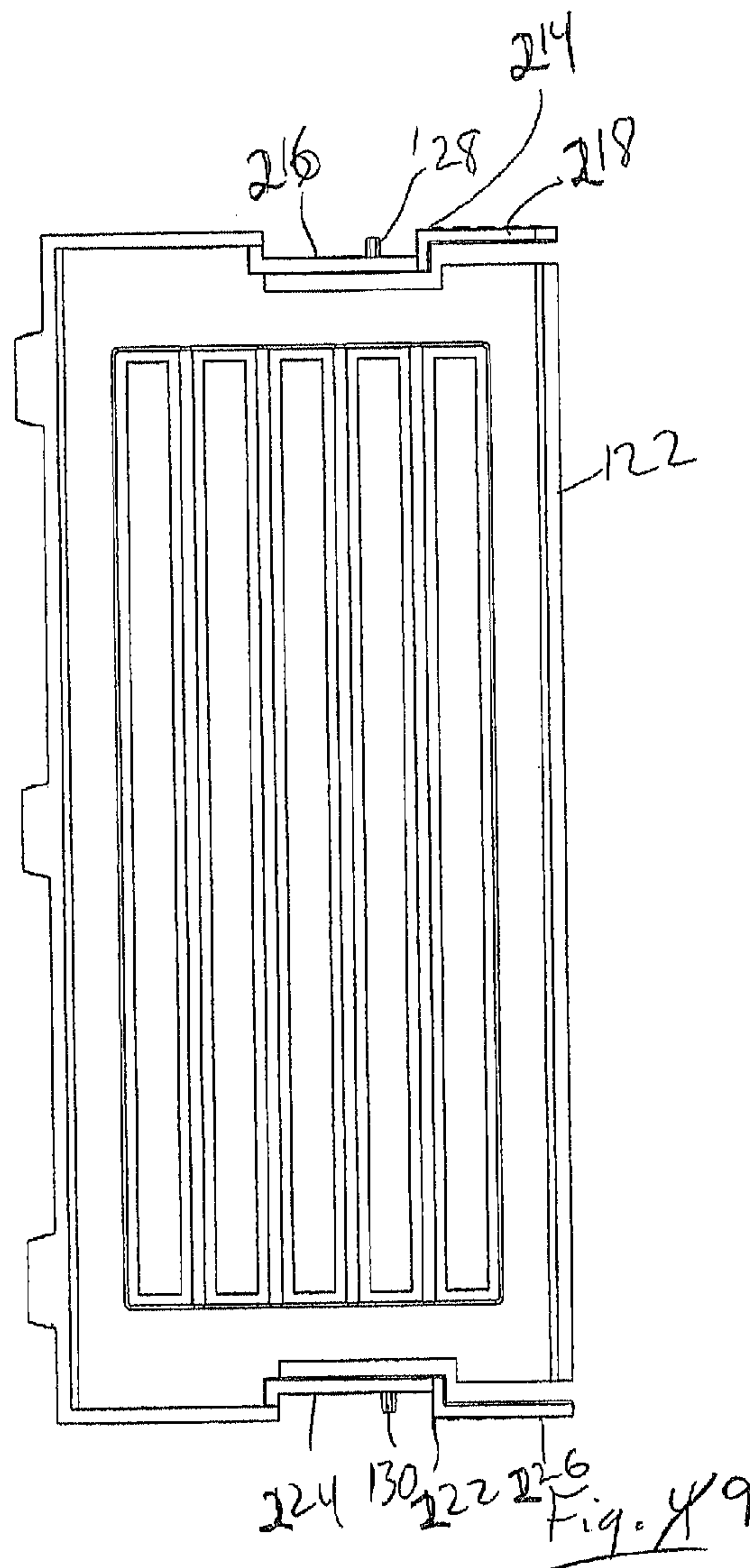


FIG. 5









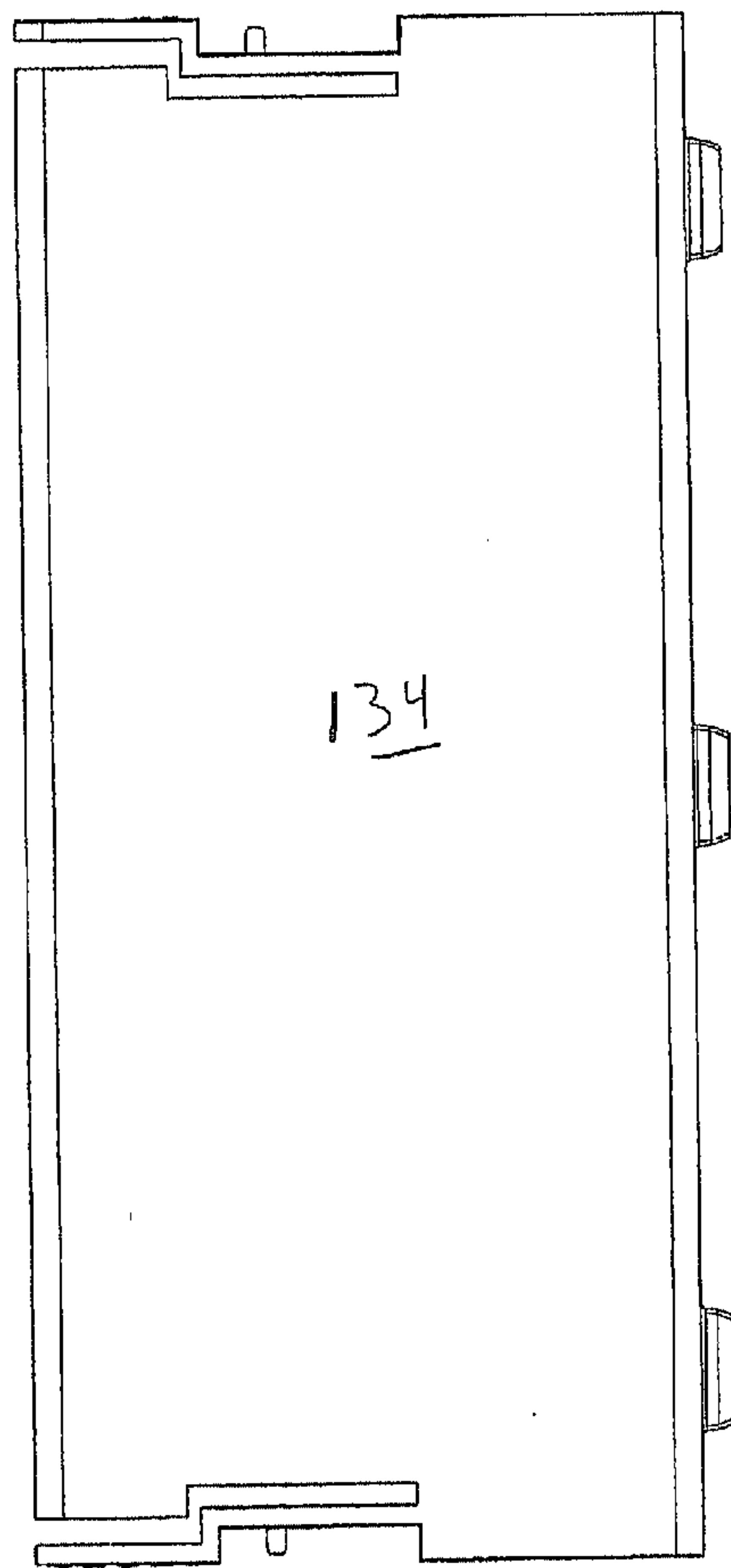


Fig 10

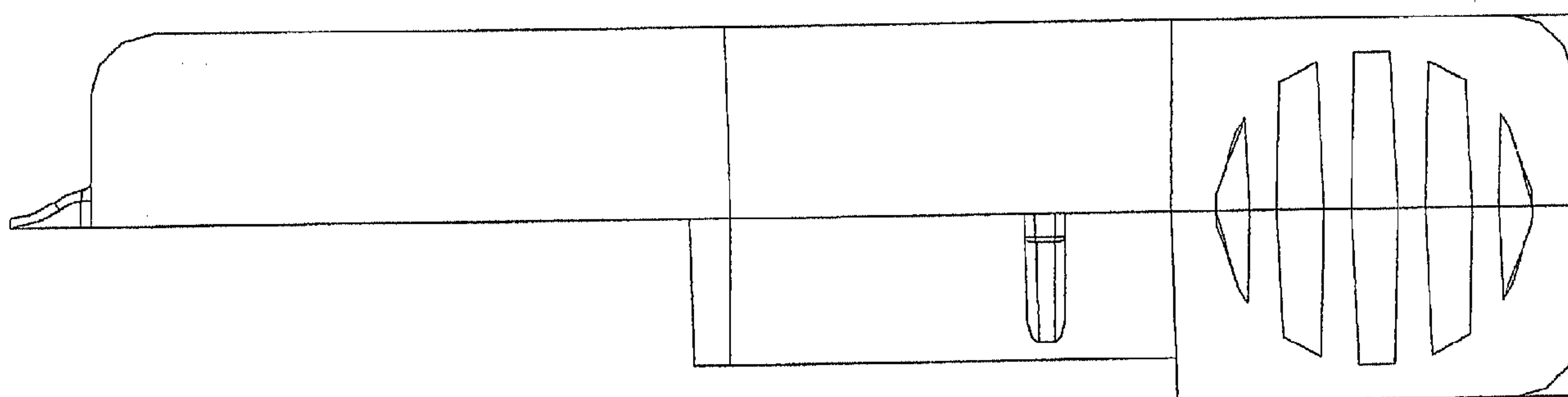


Fig. 11

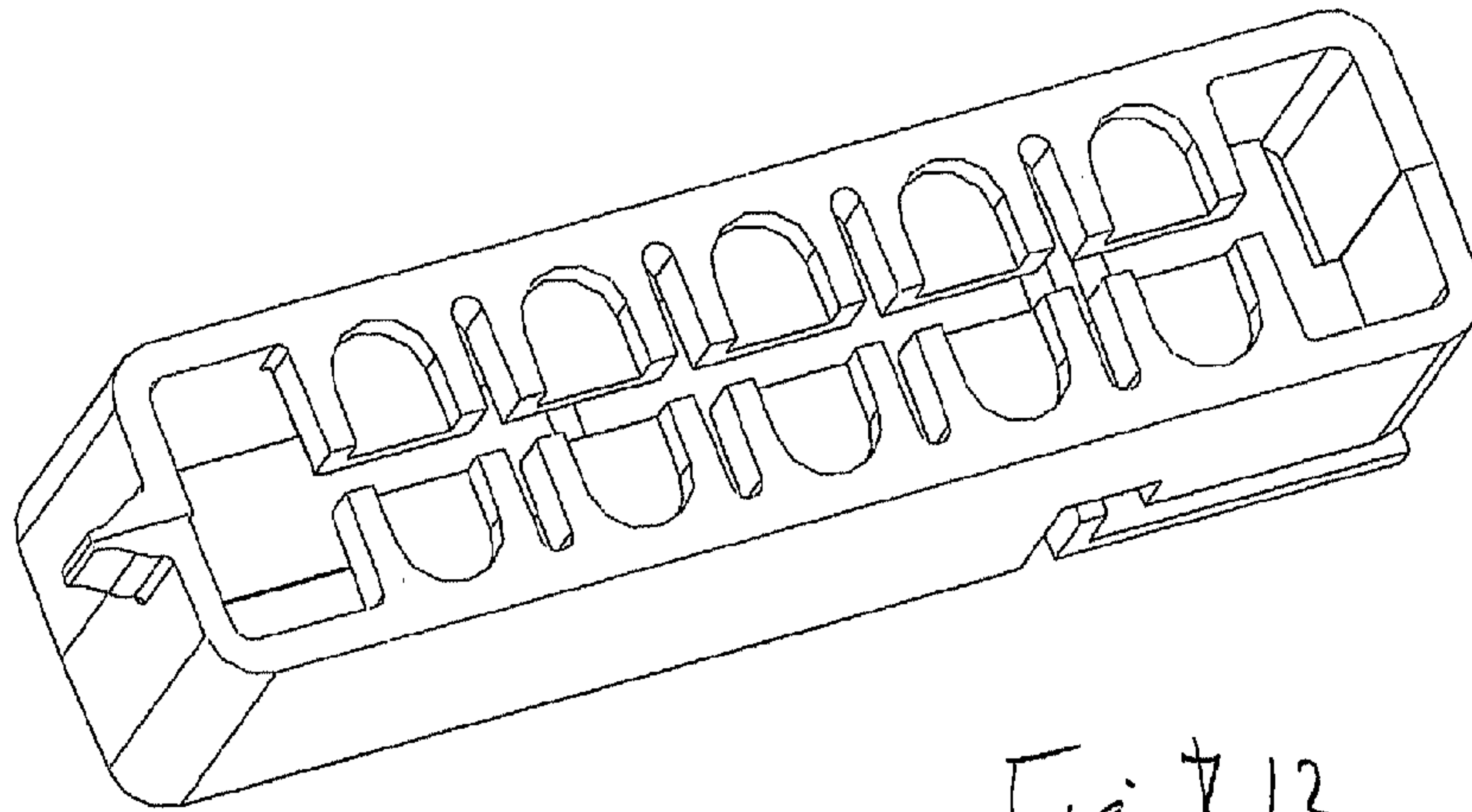
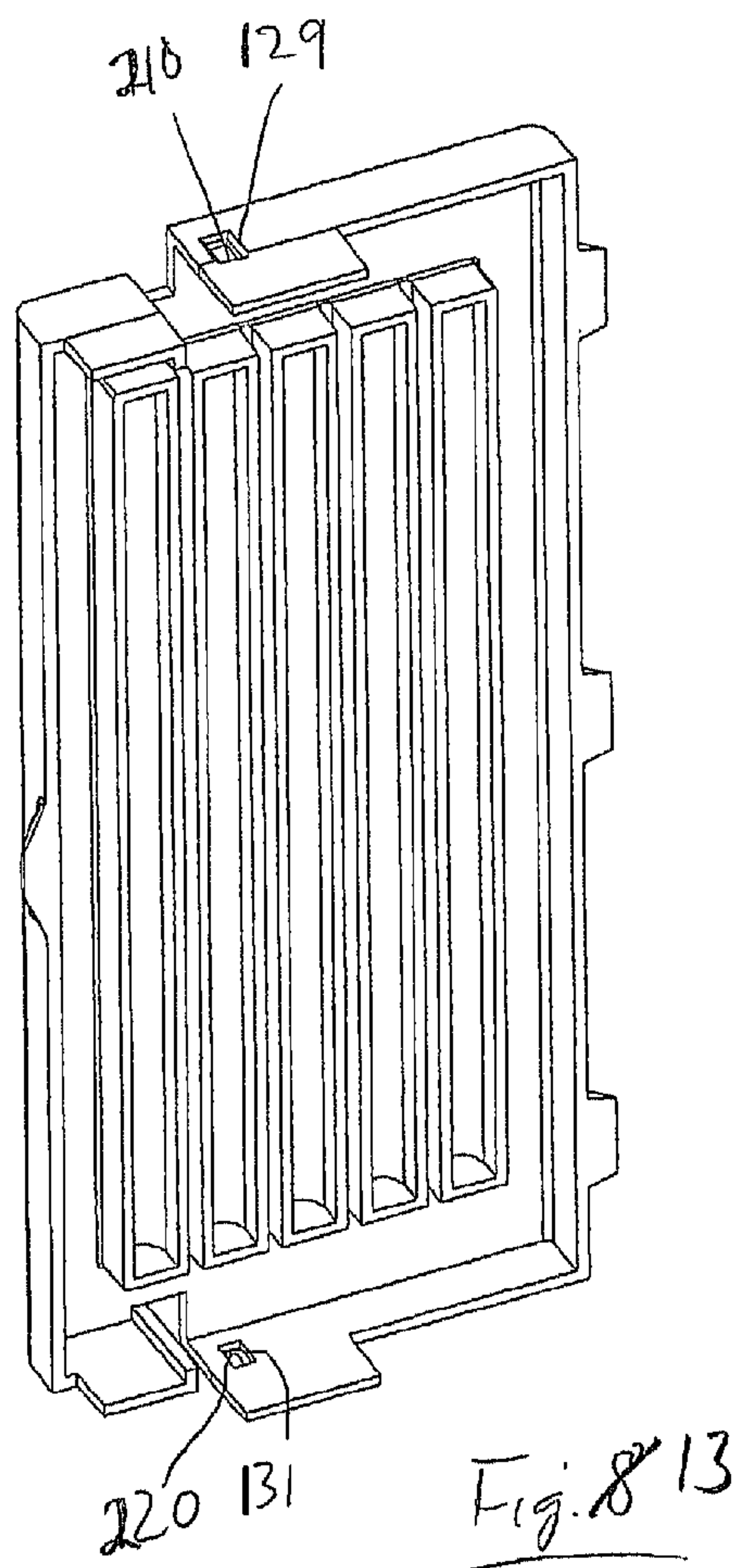


Fig. 12



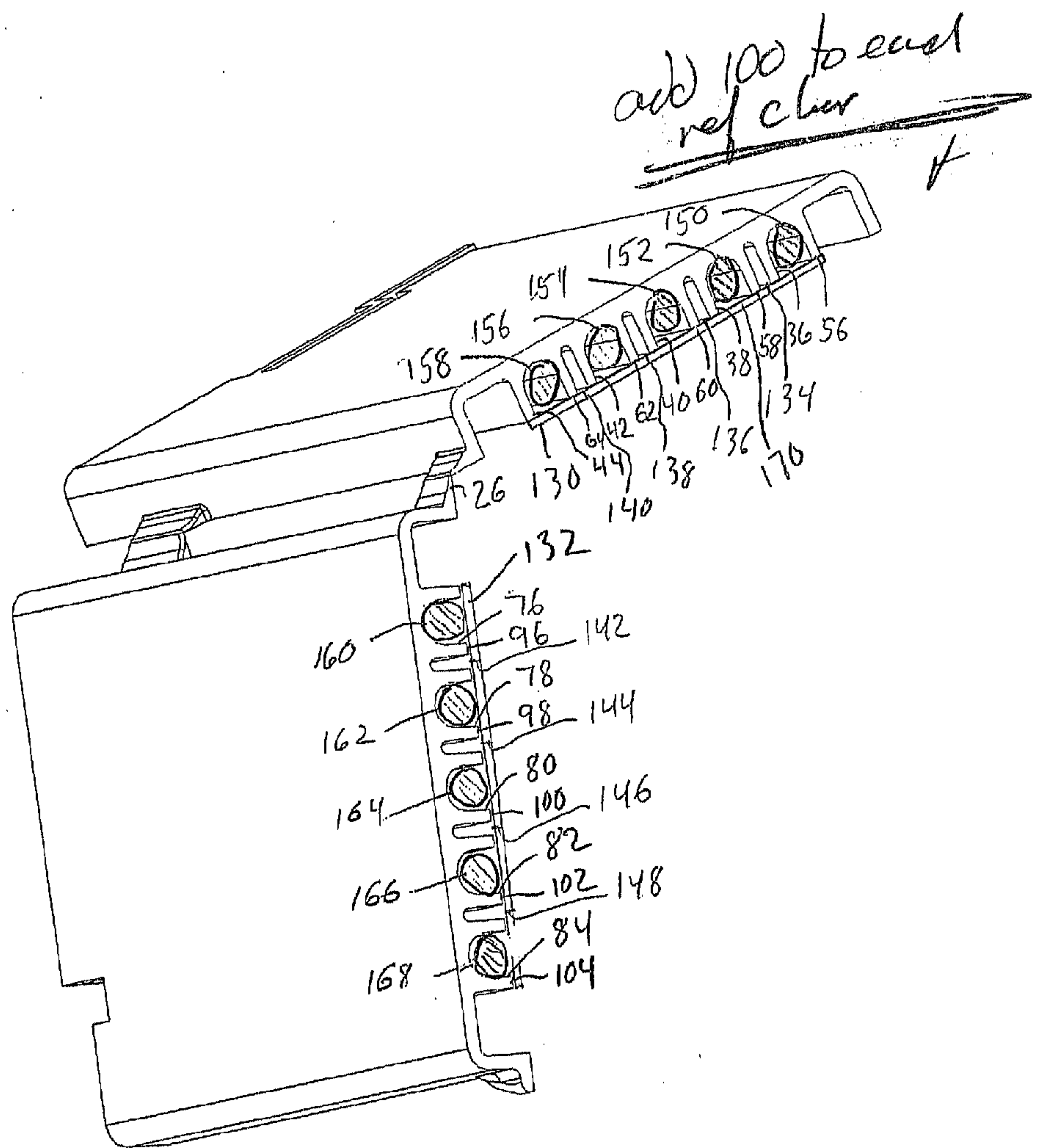
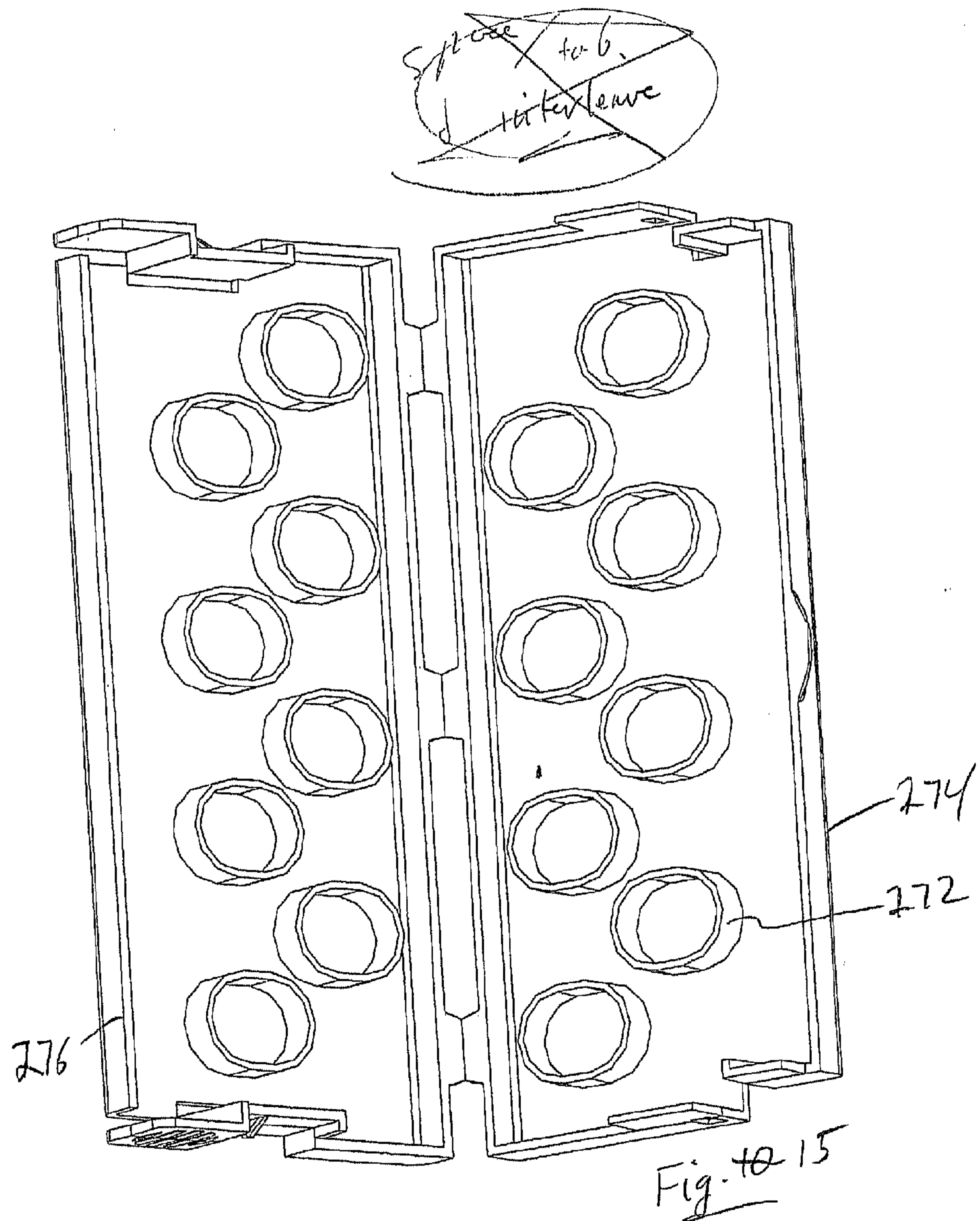


Fig. 14



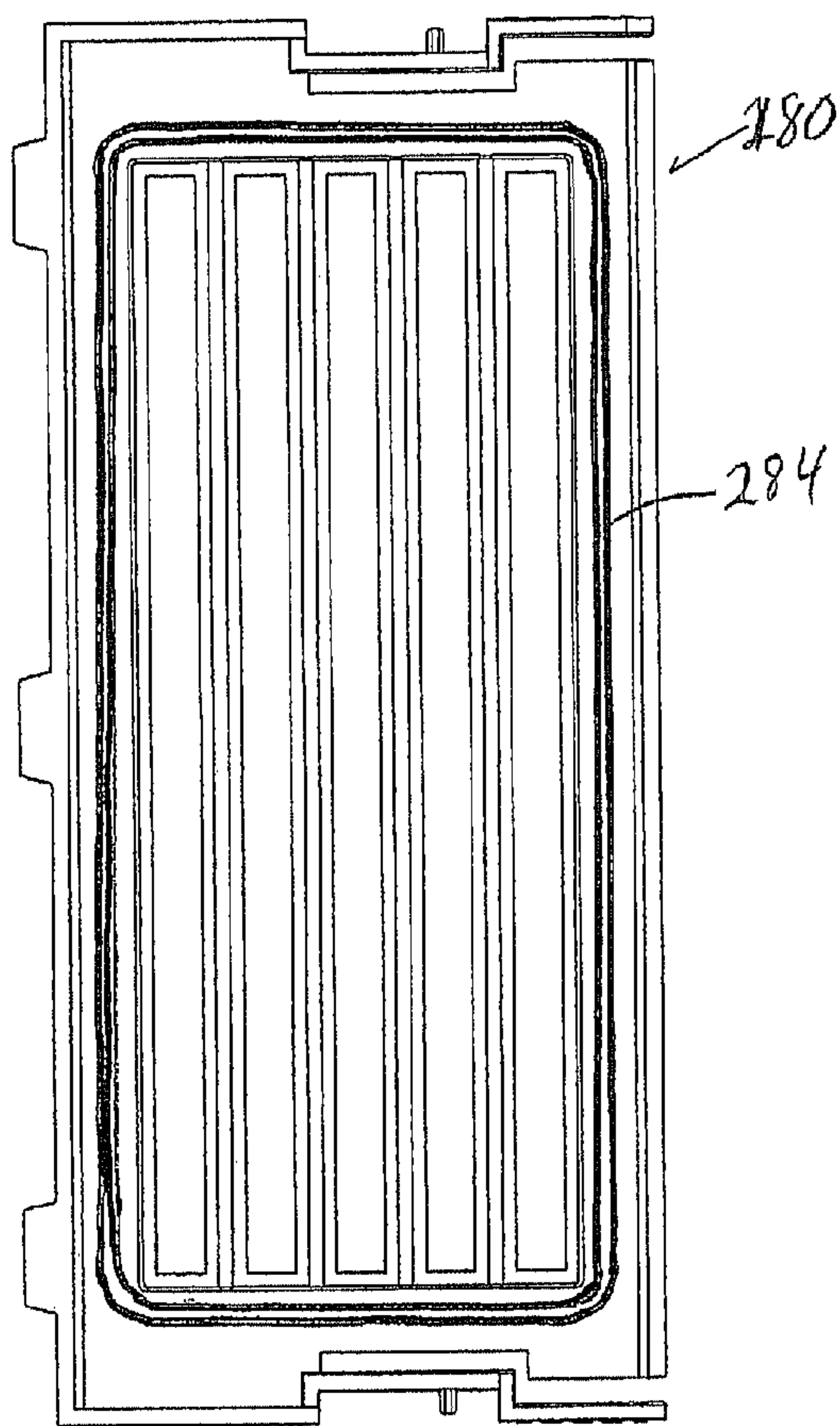


Fig 12-17

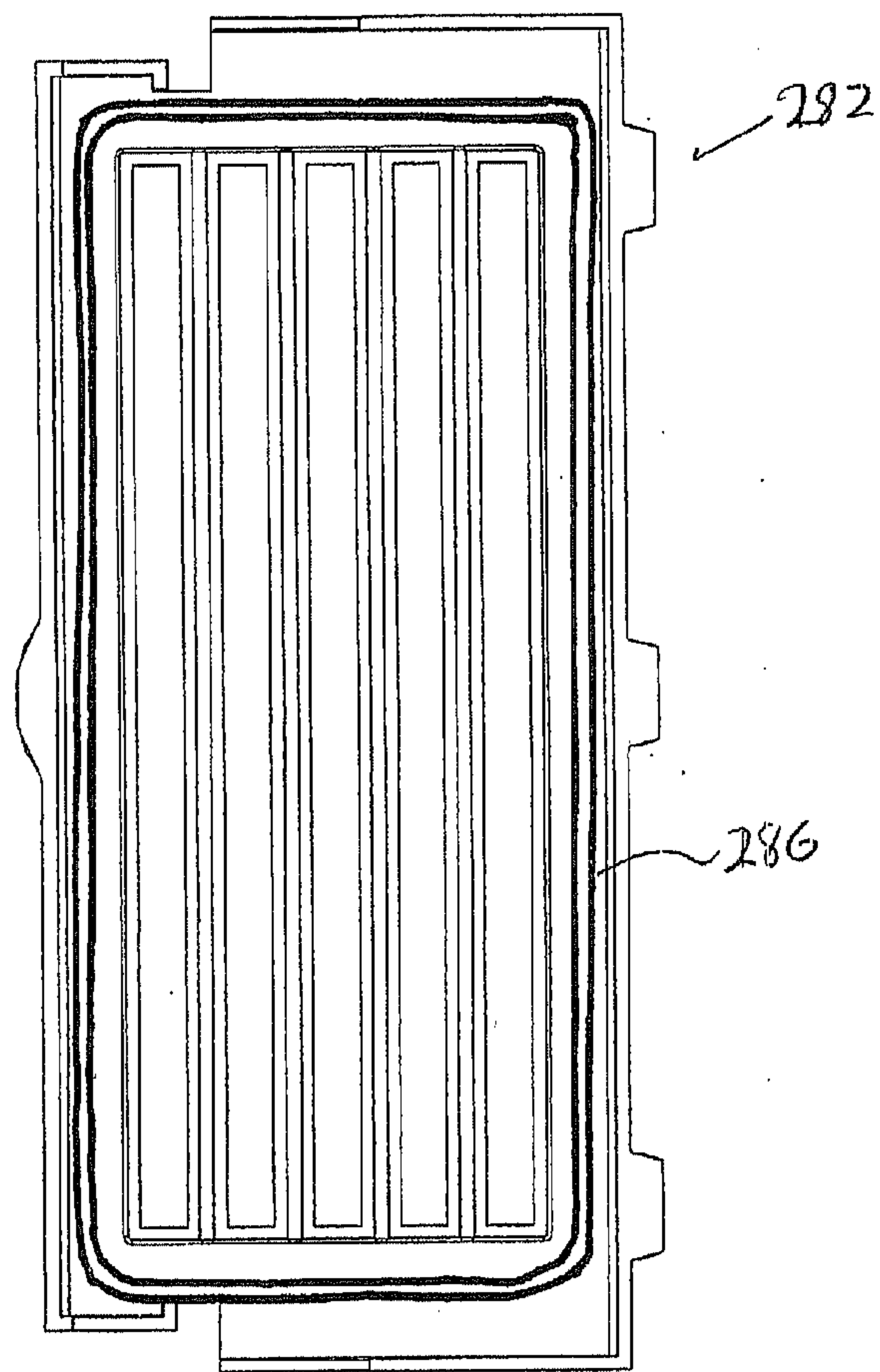
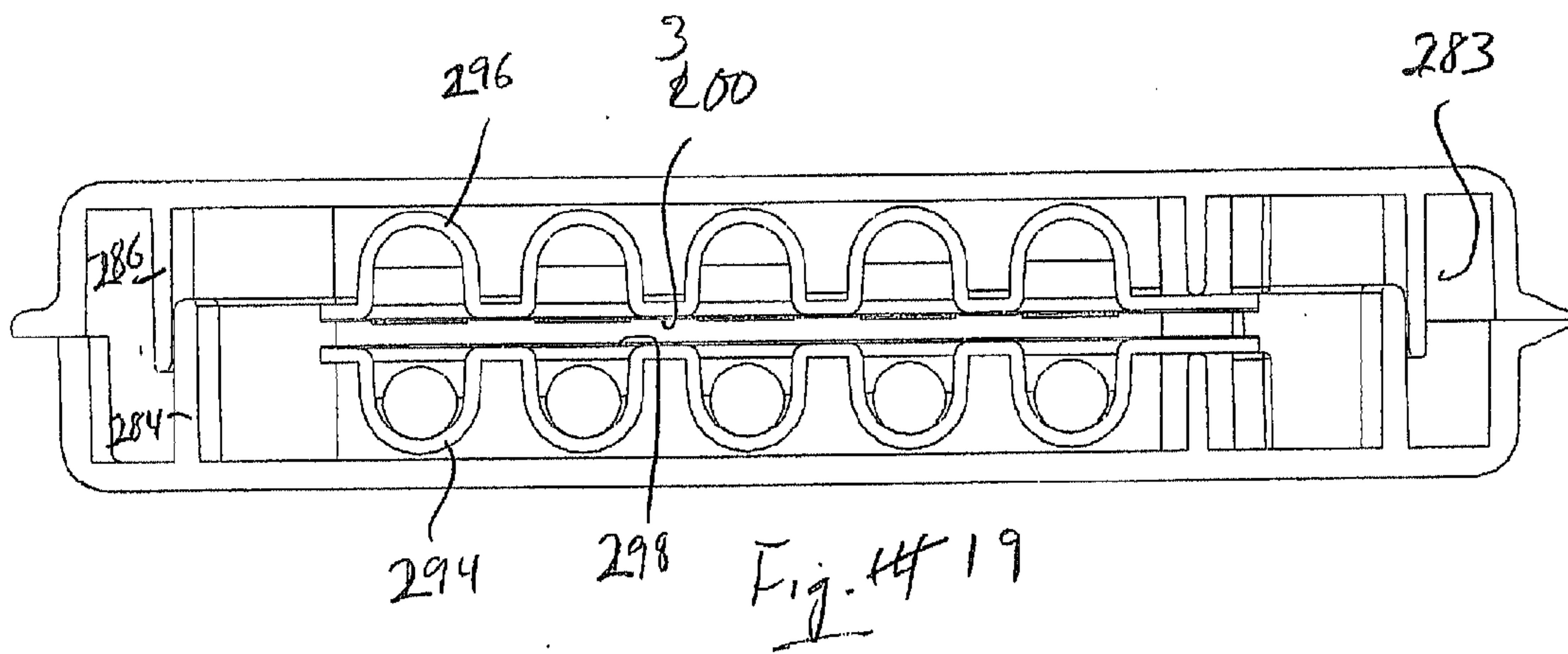
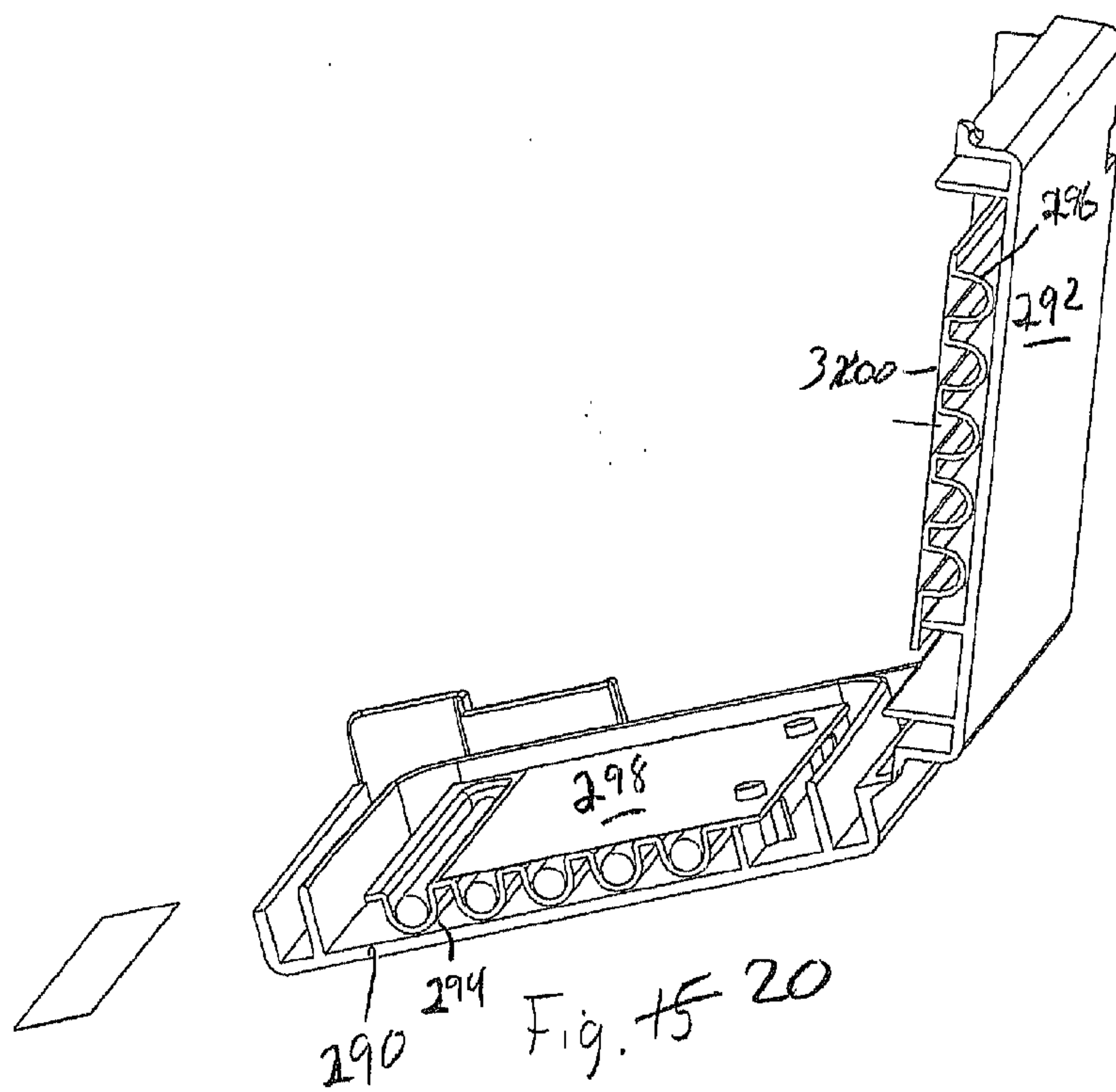
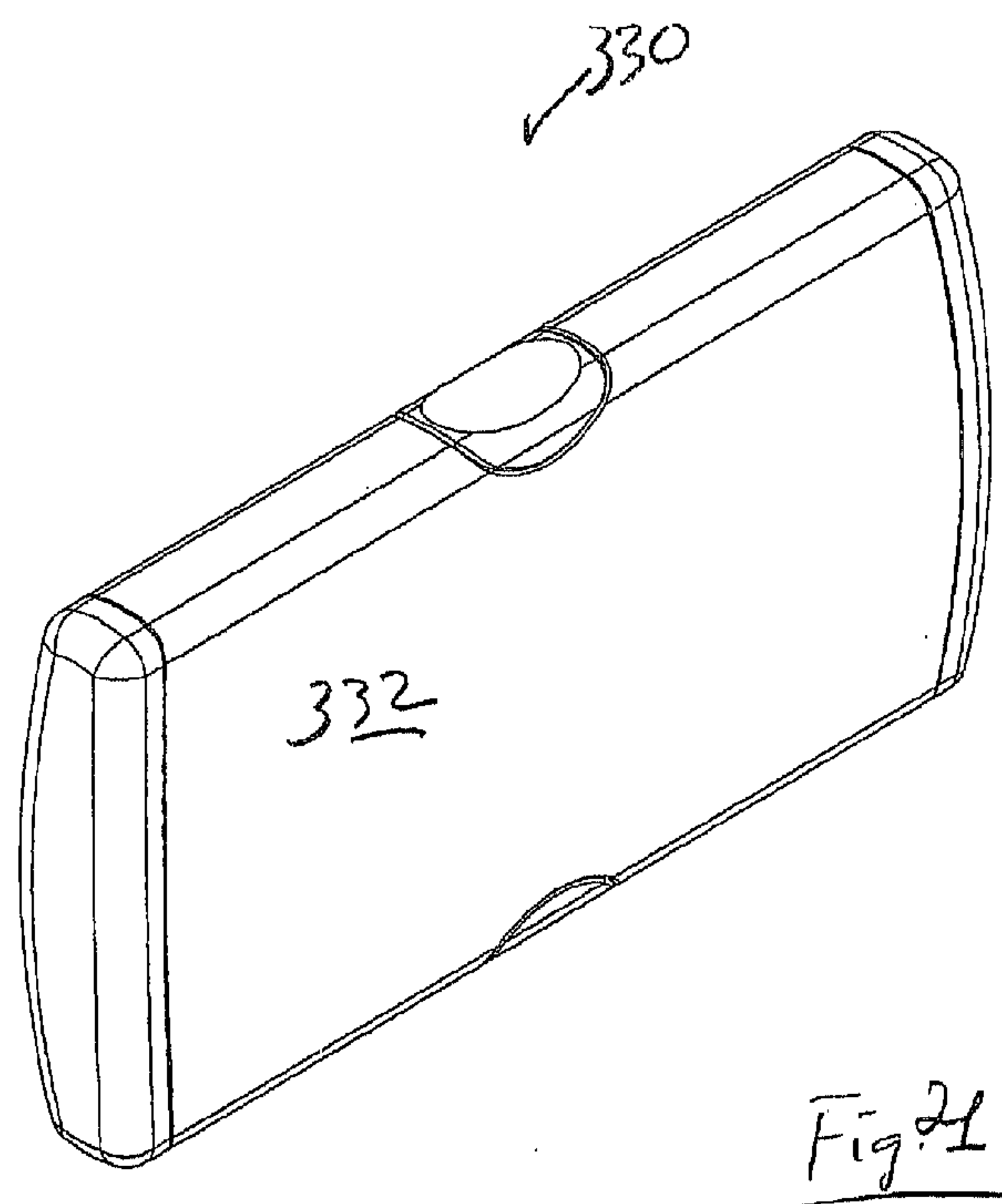
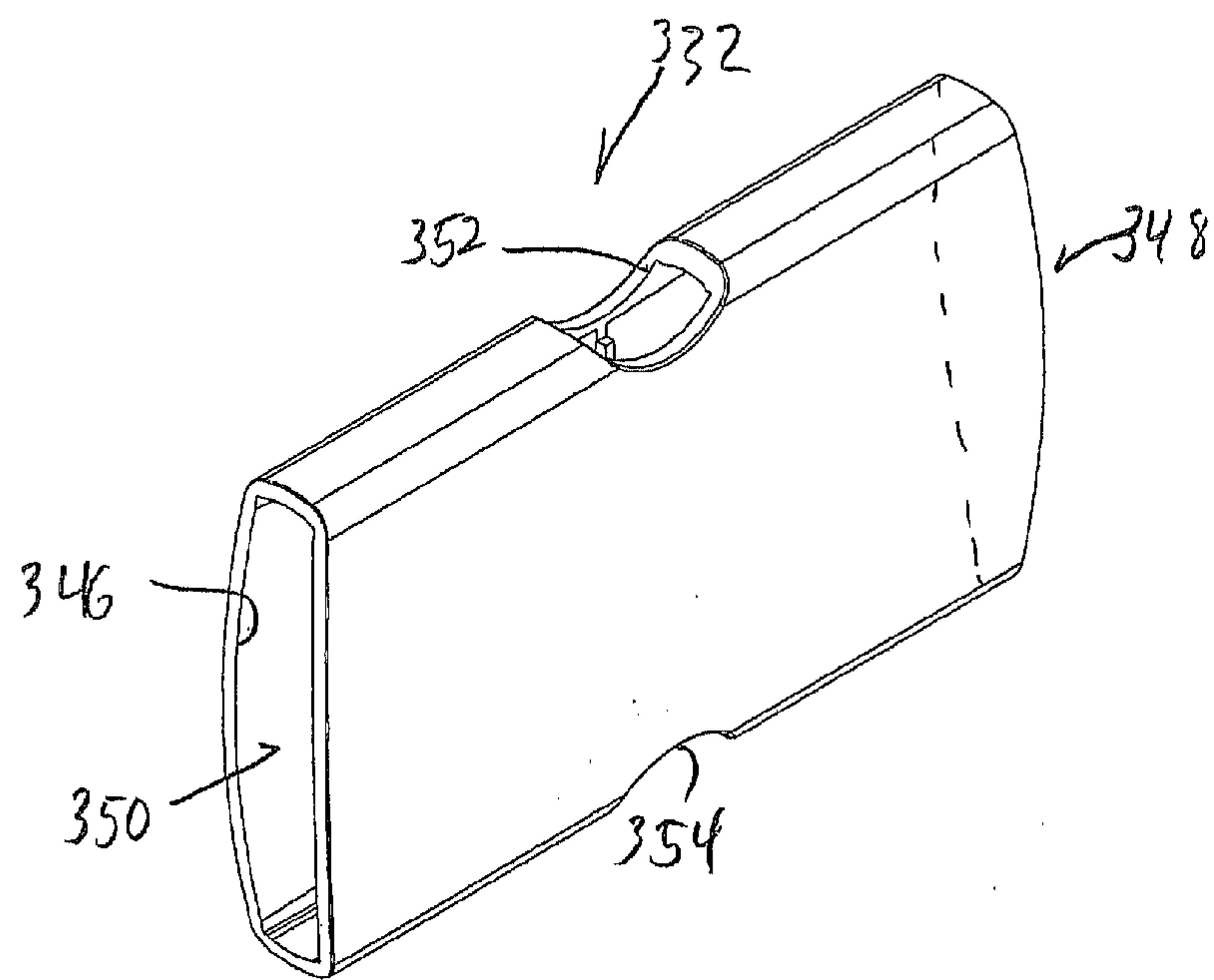


Fig. 18







Fig 22

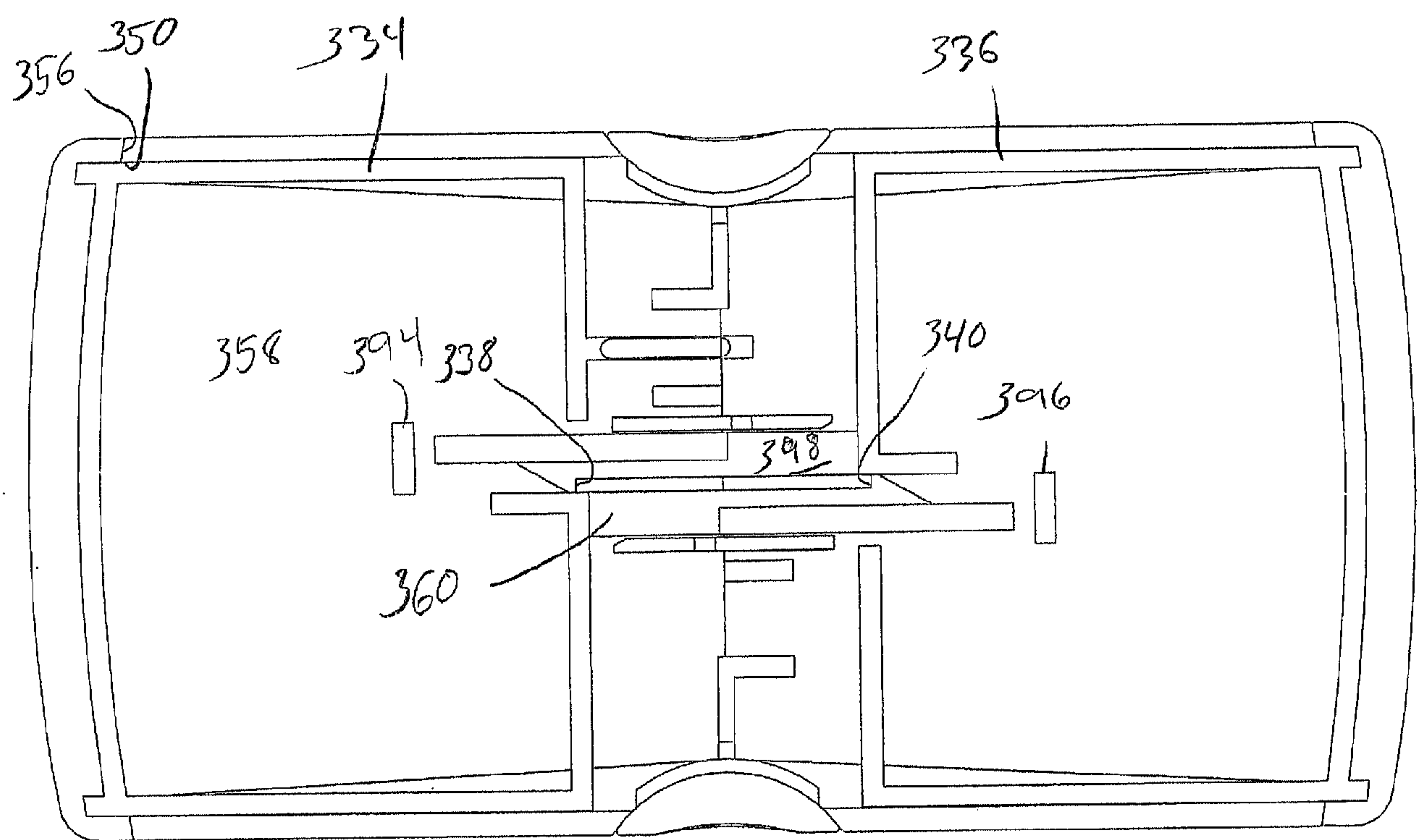
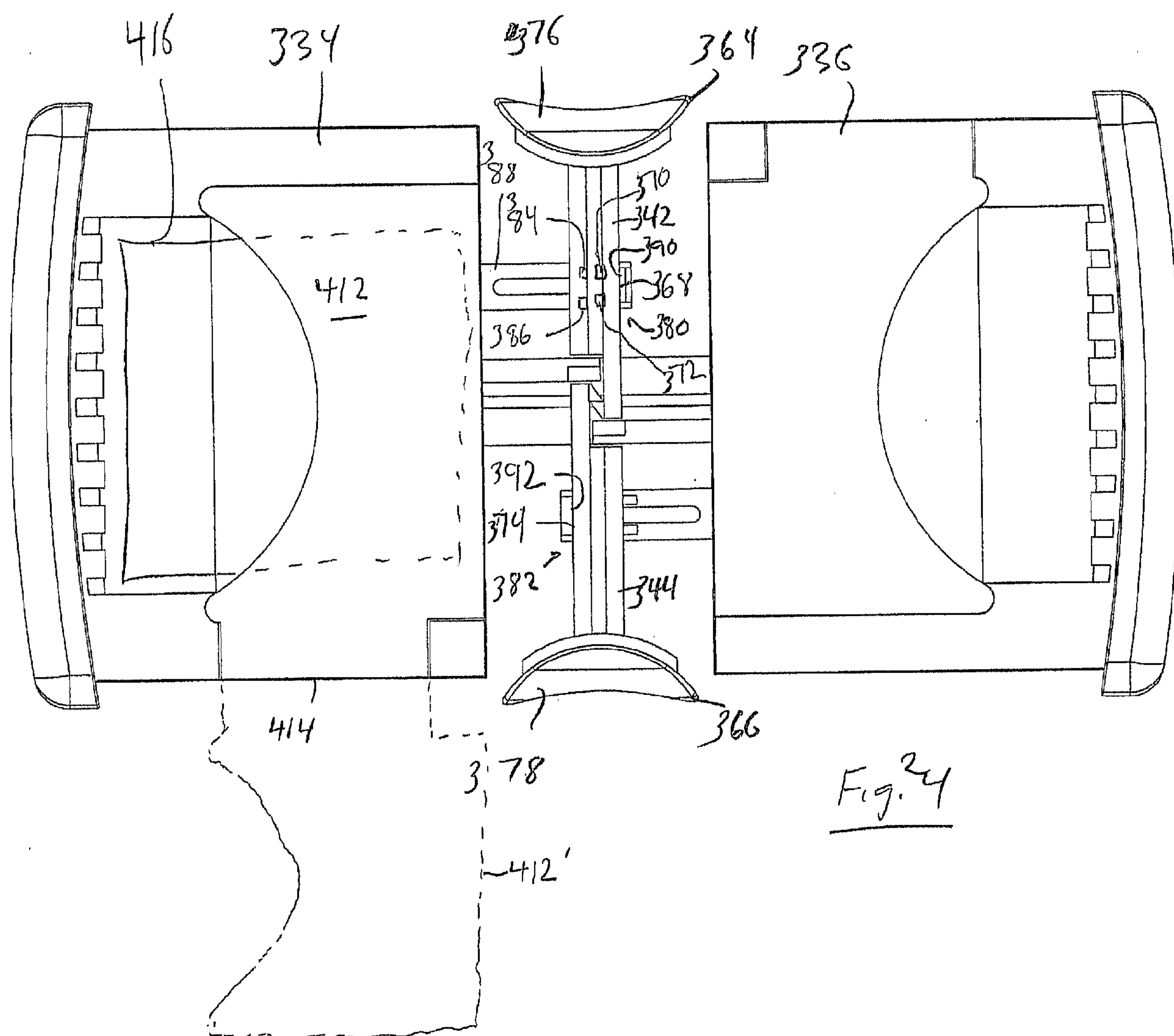
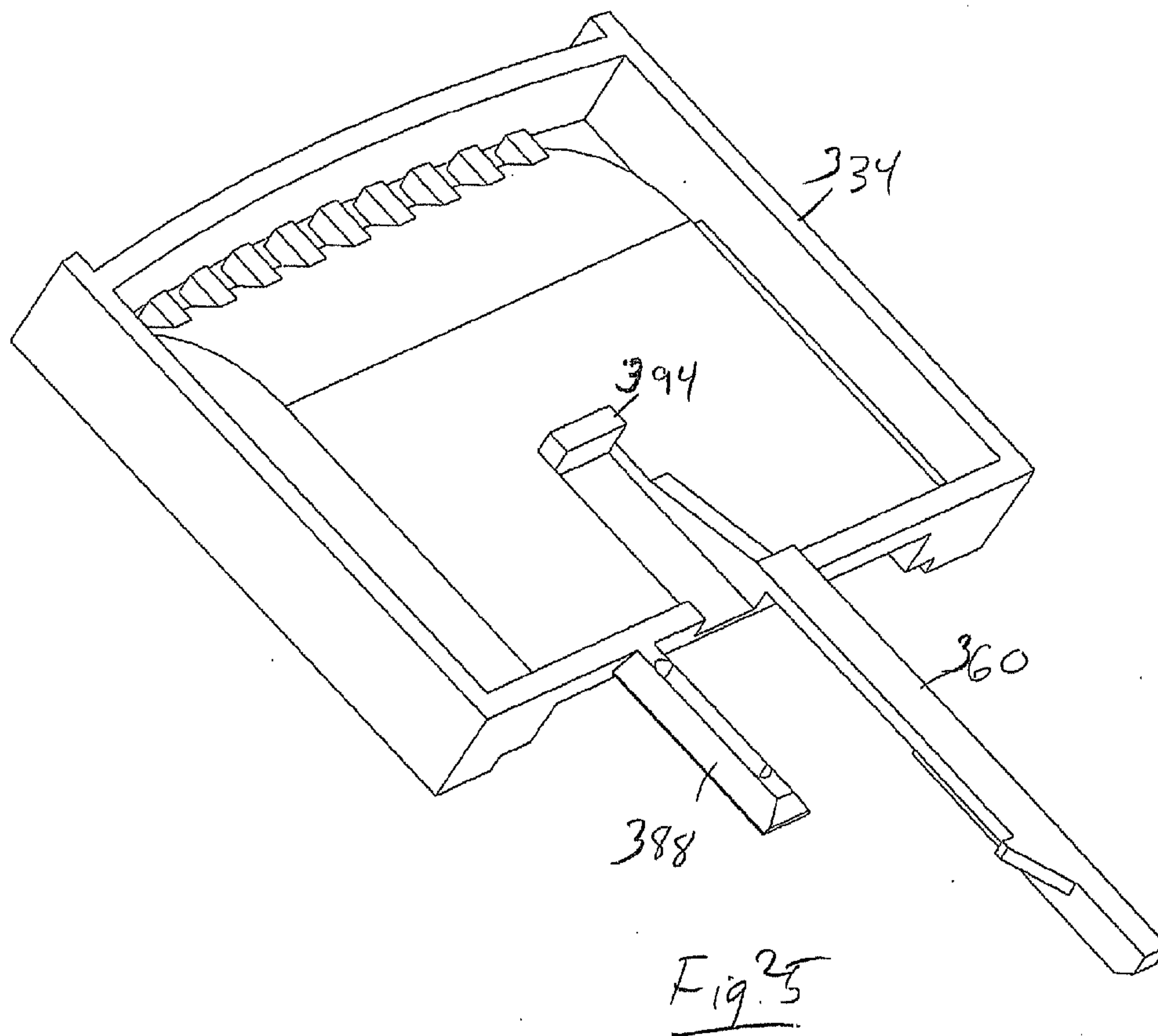
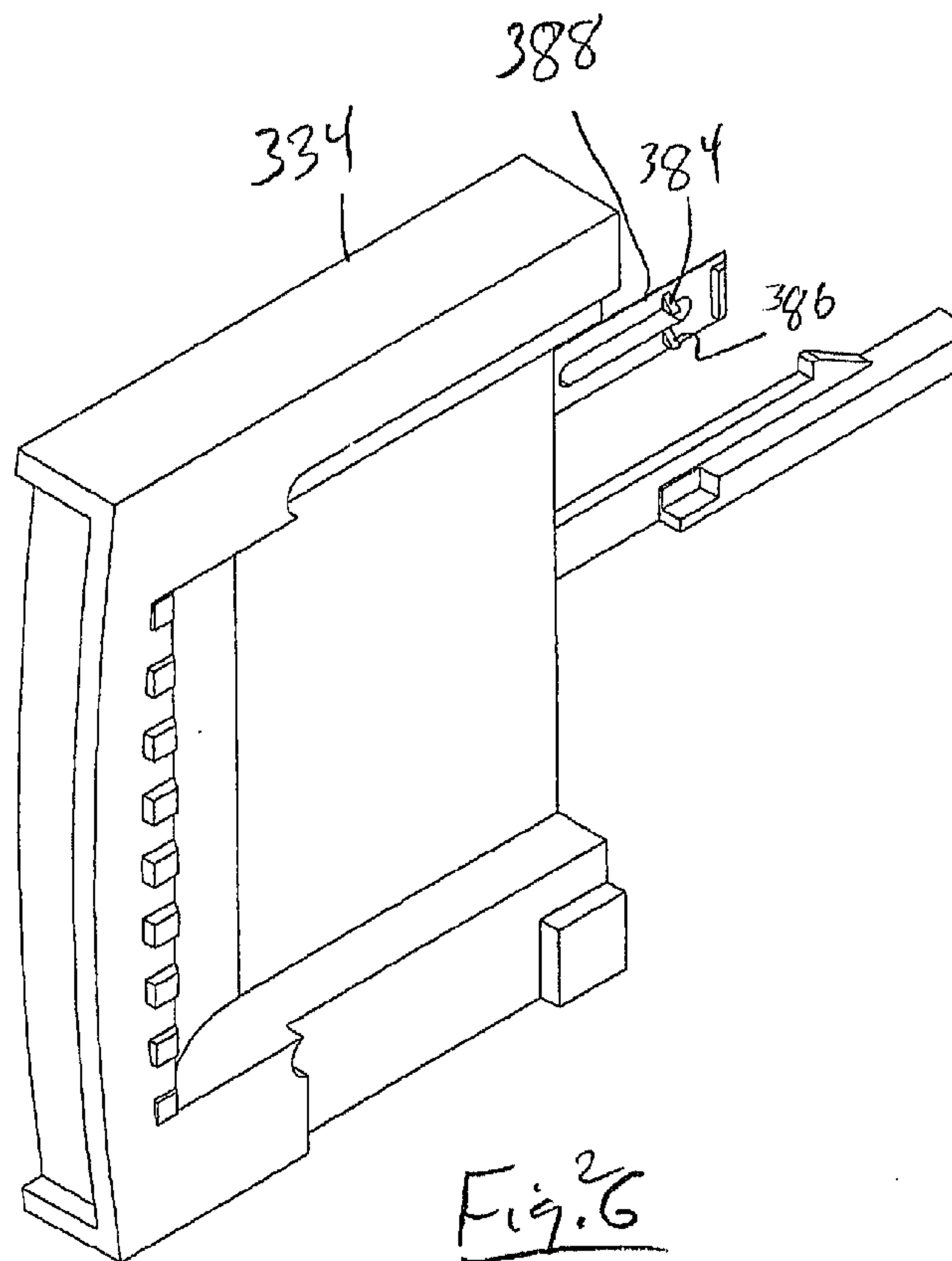
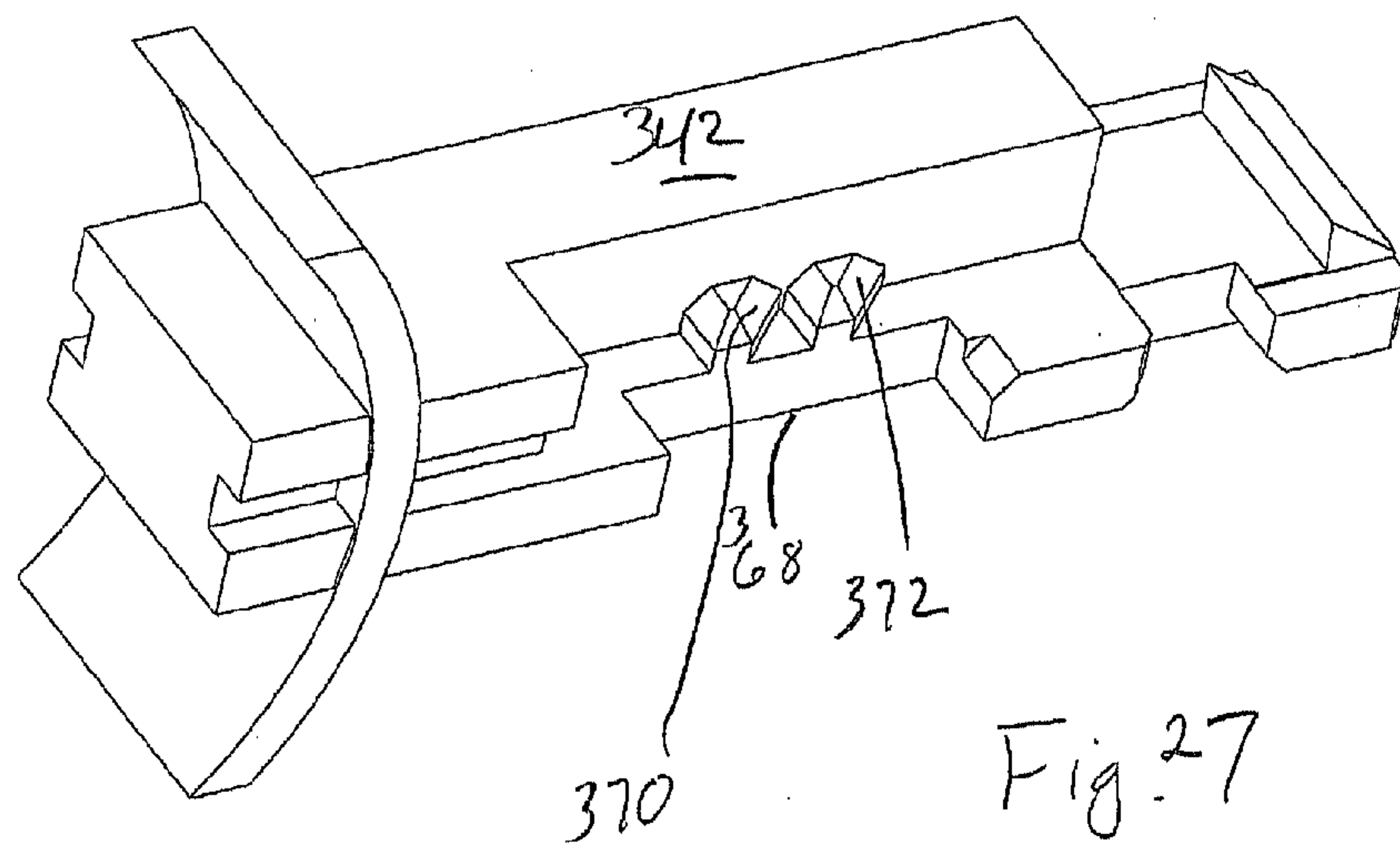


Fig. 23









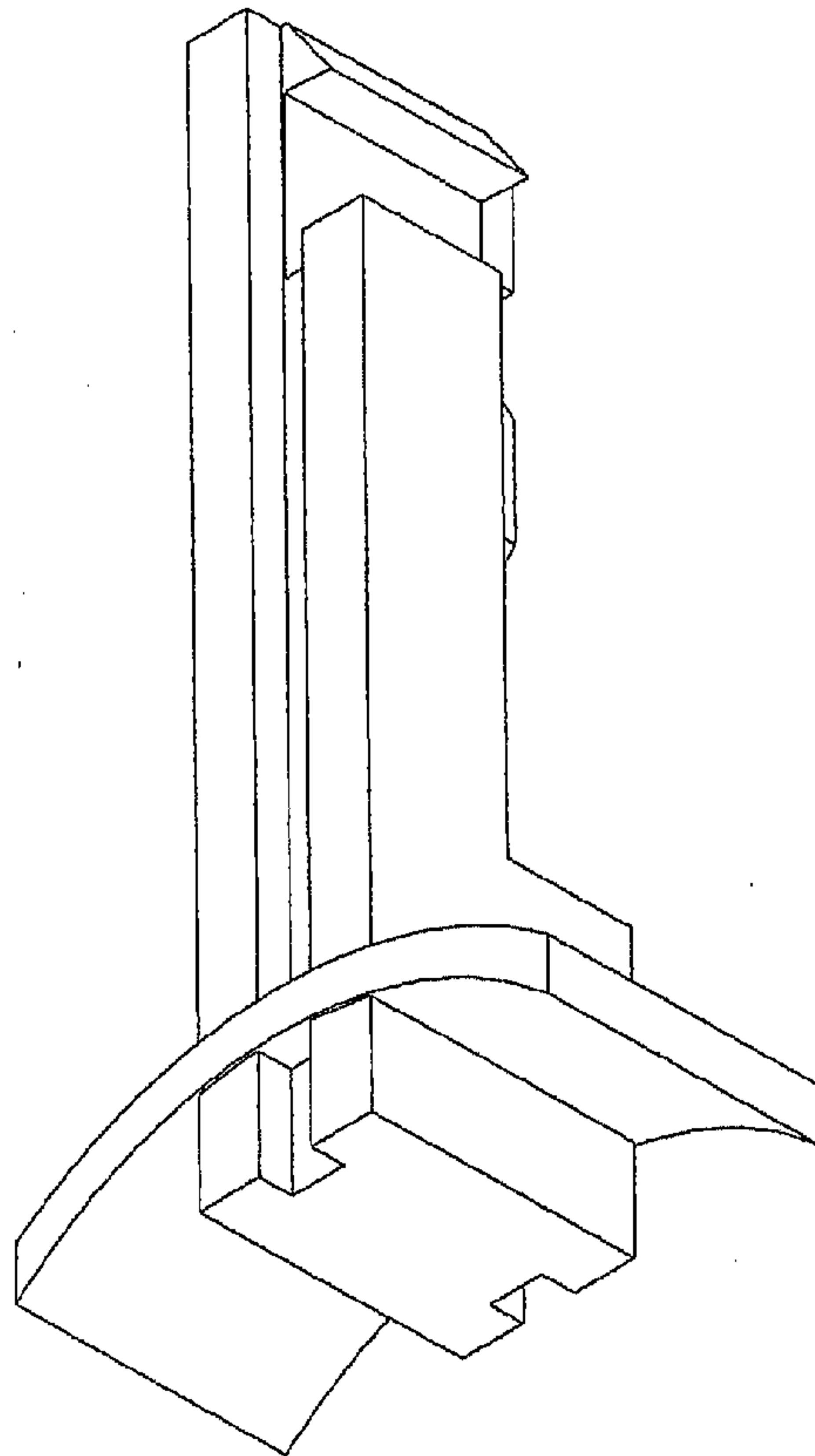
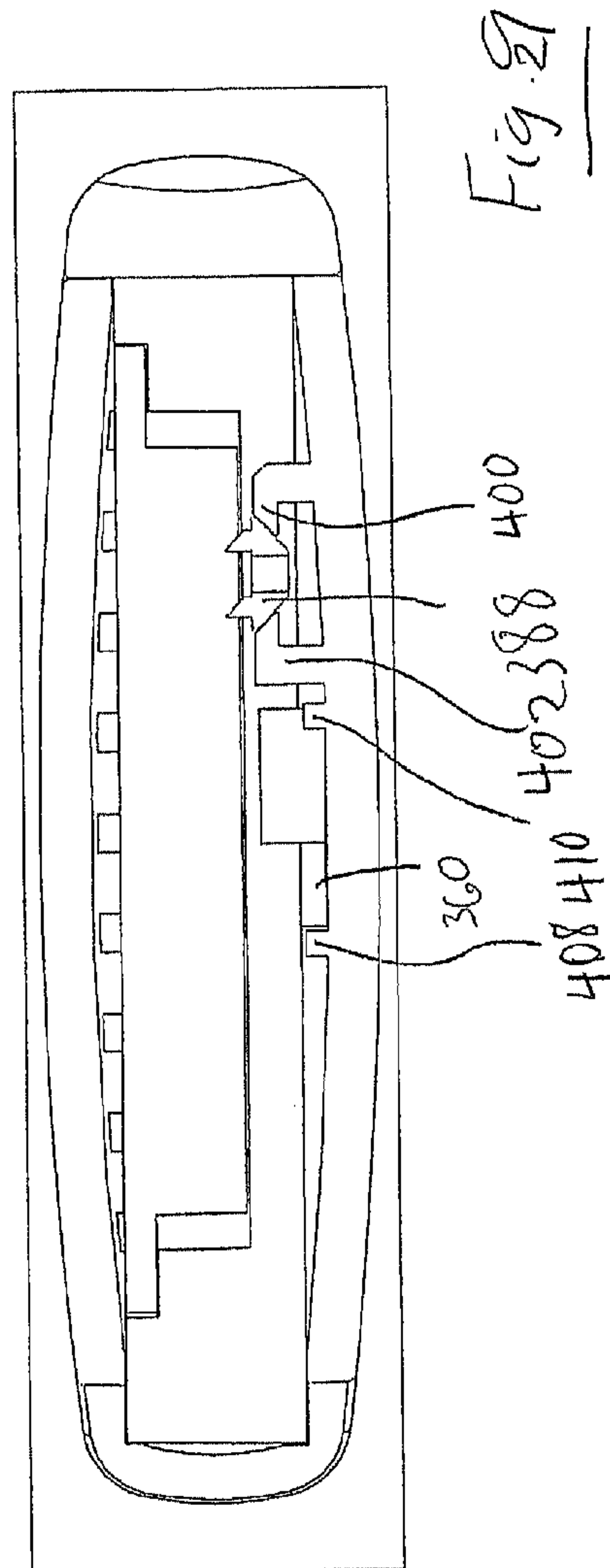
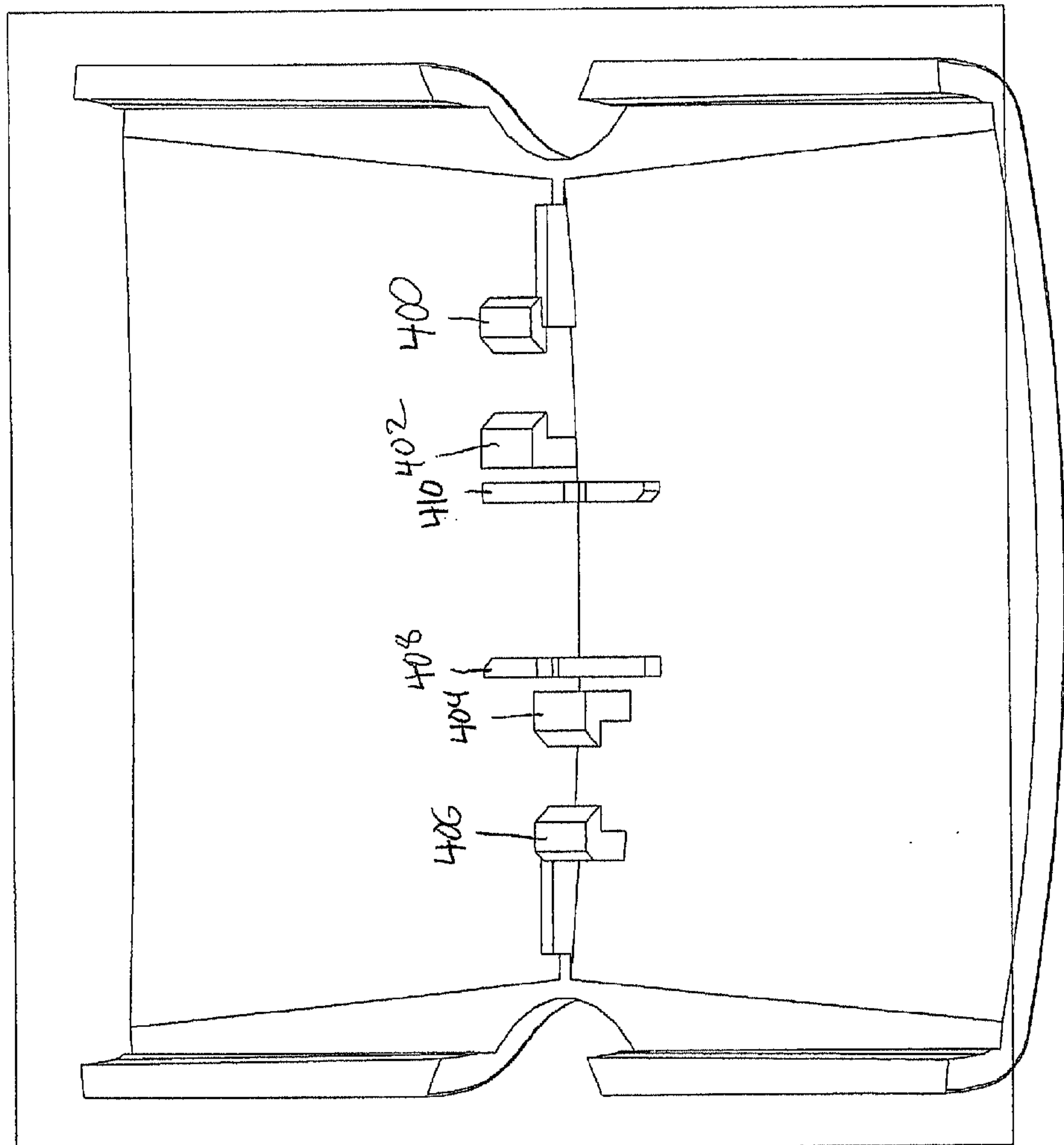


Fig. 28



Fig. 10-30

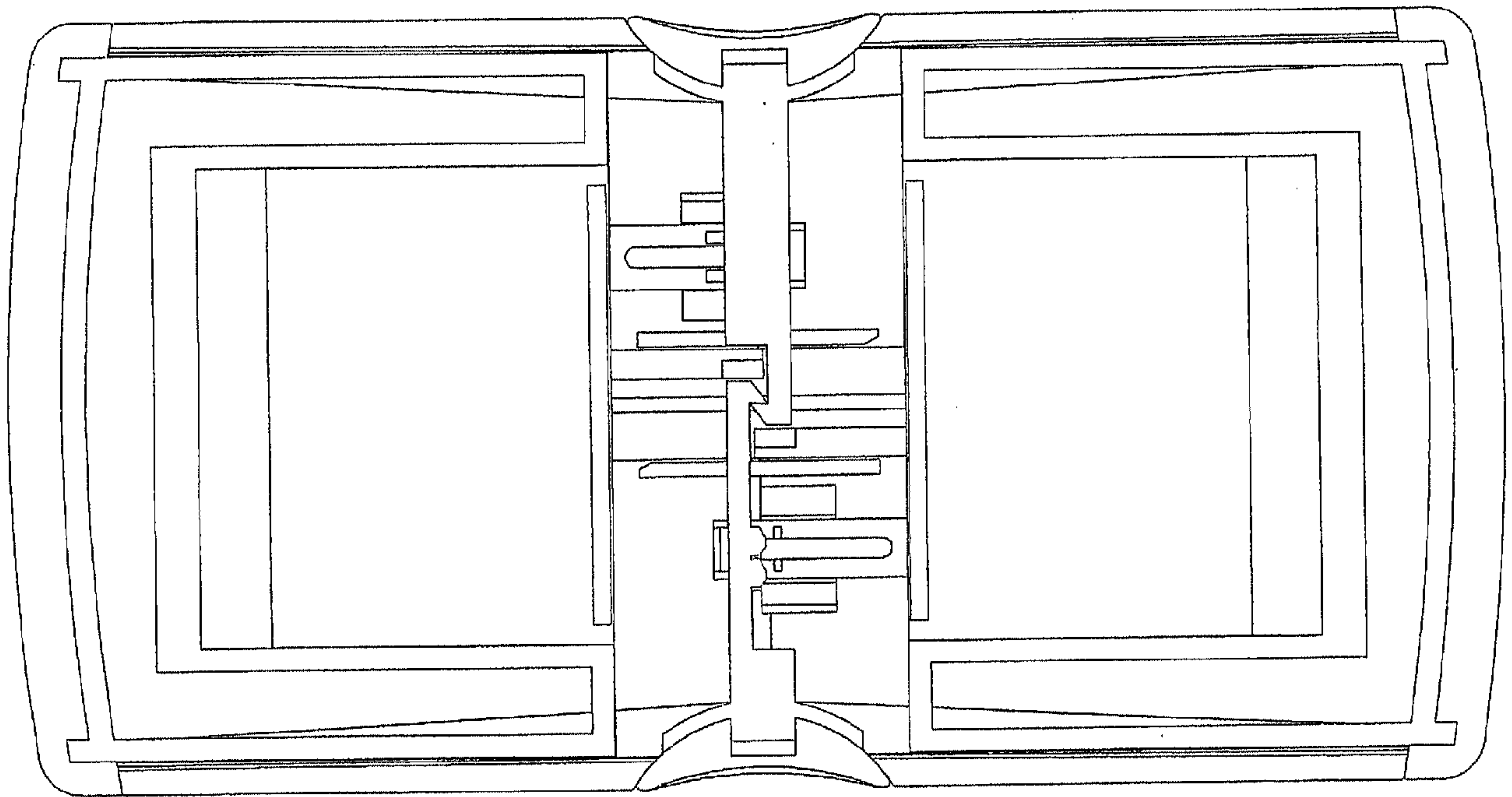
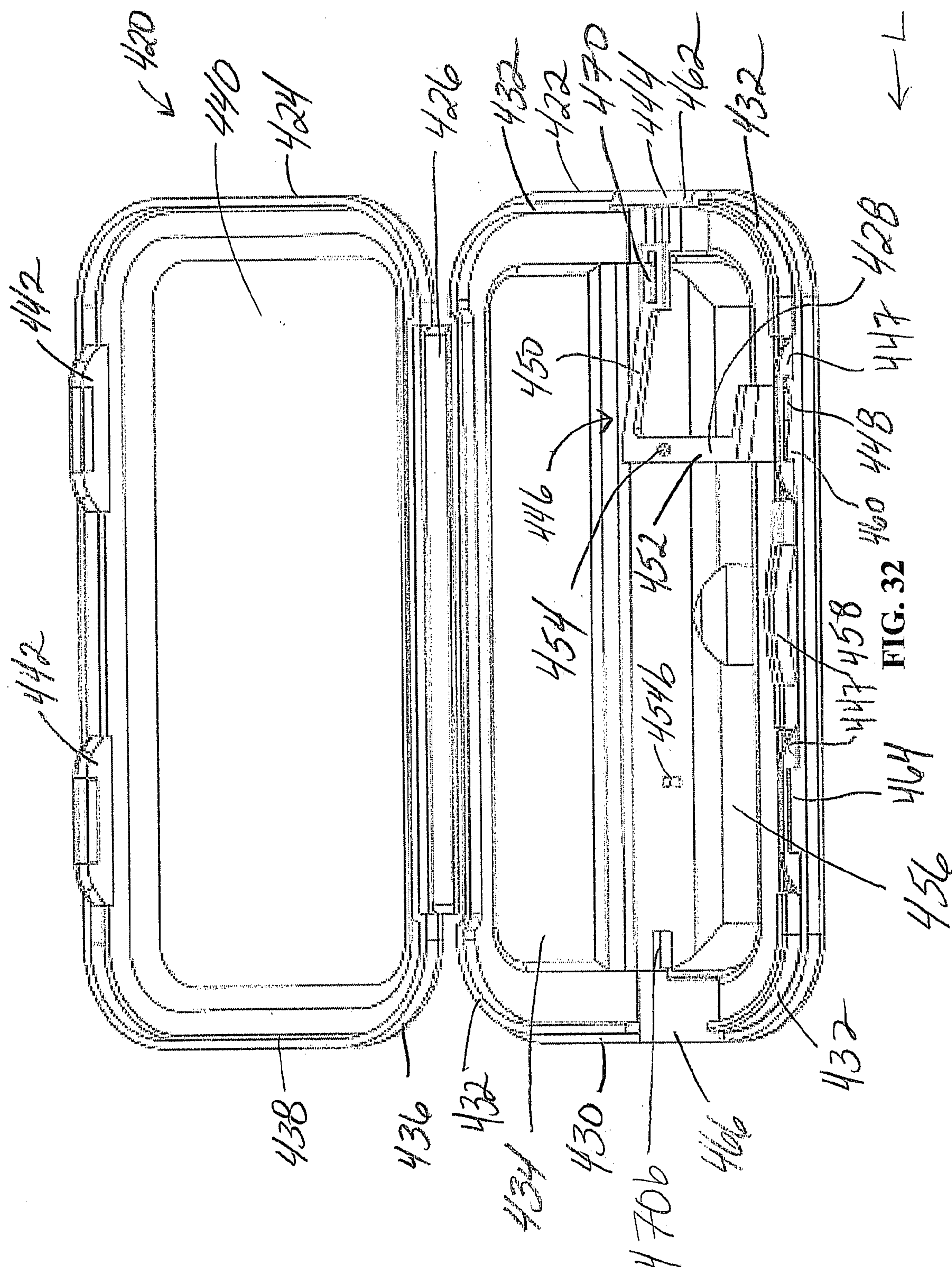


Fig. # 31



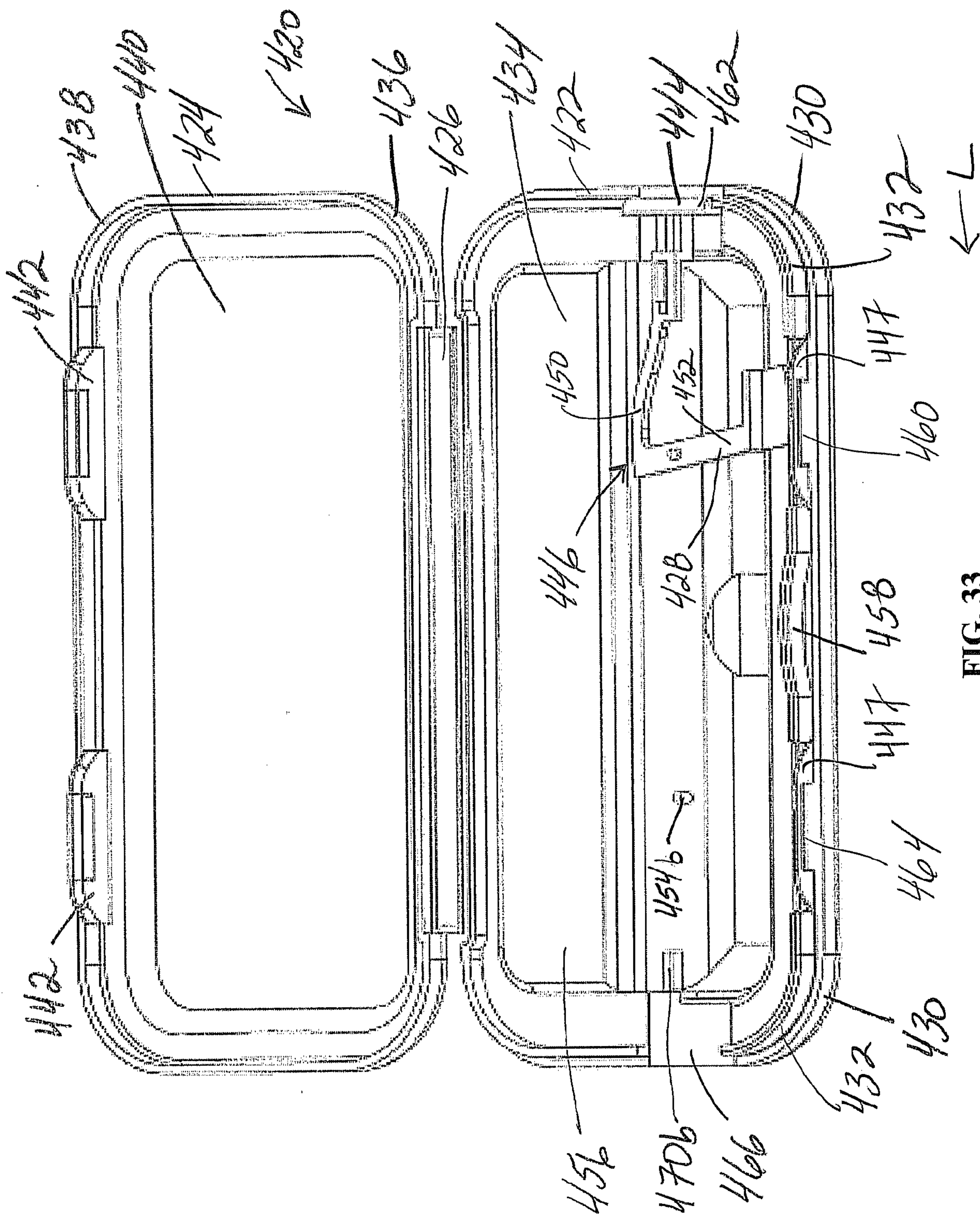


FIG. 33

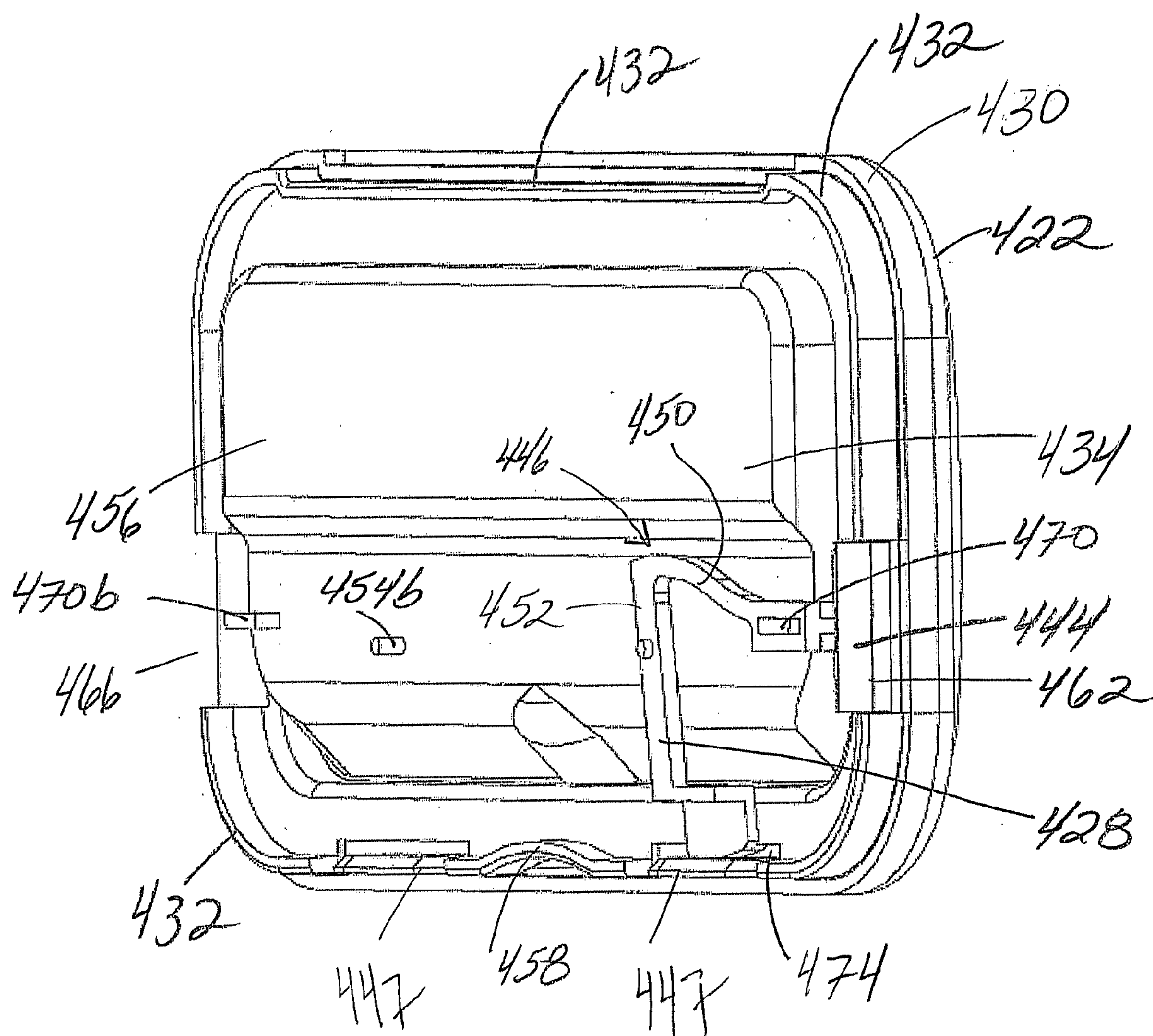
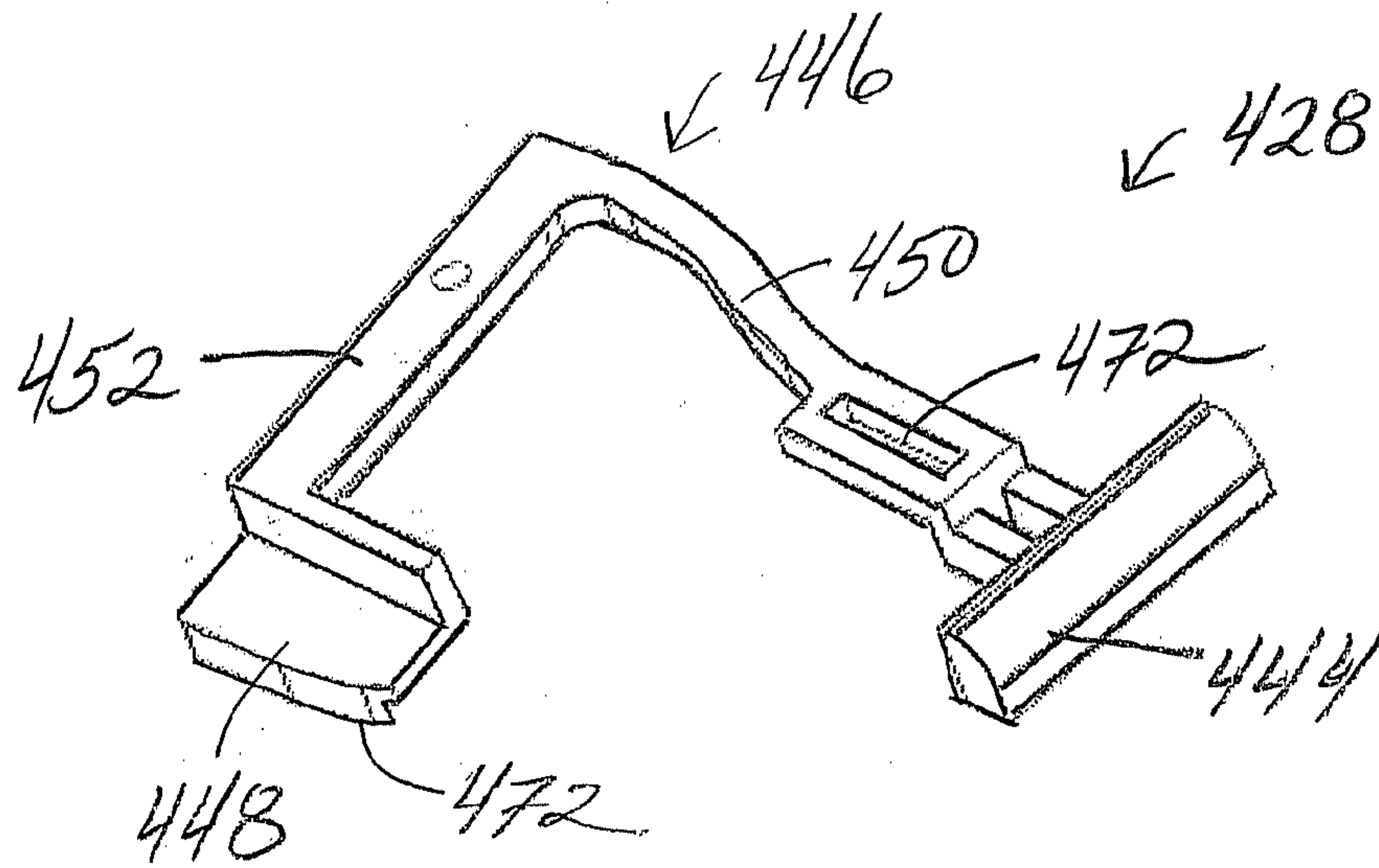


FIG. 34

**FIG. 35**

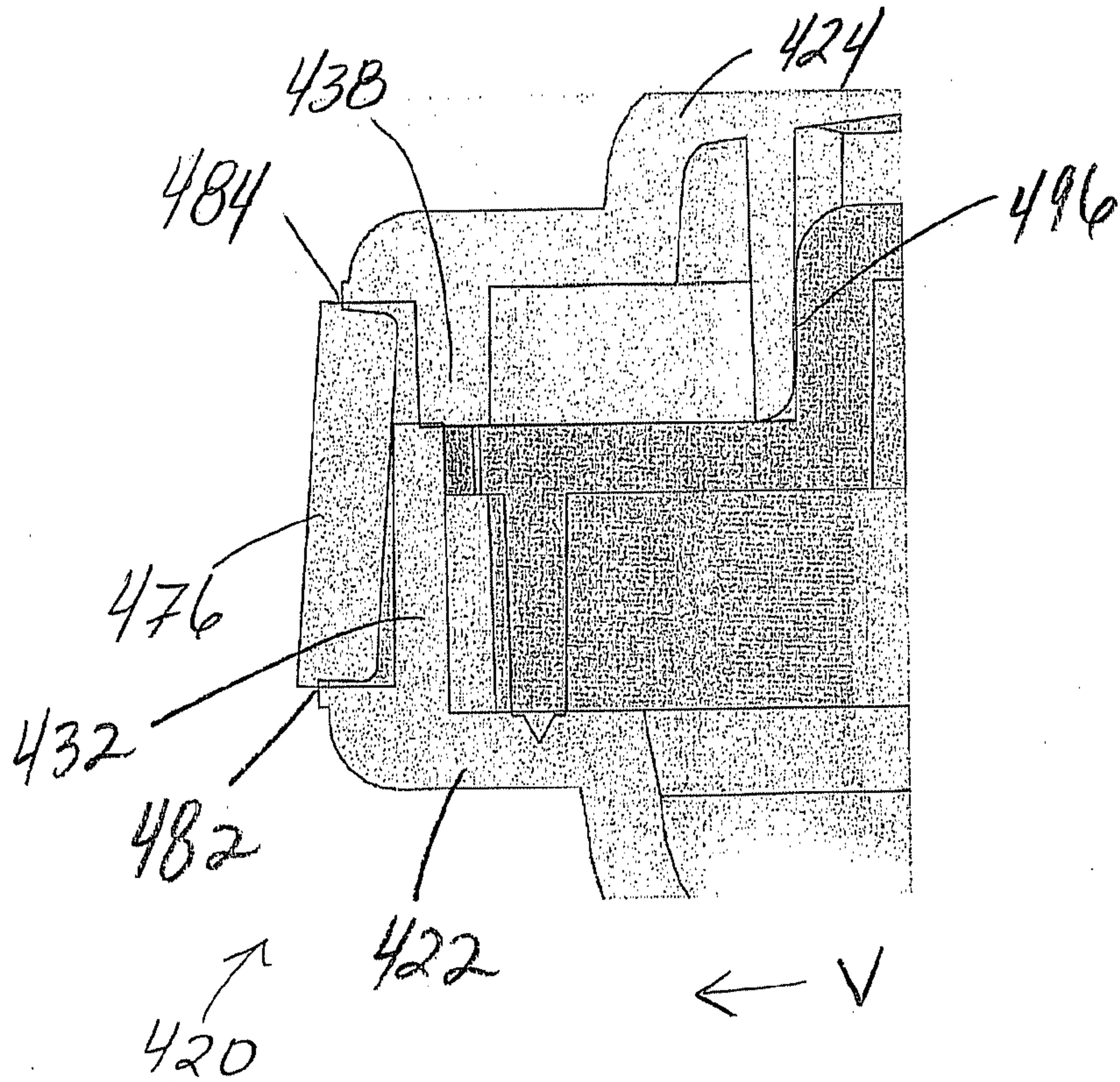


FIG. 36

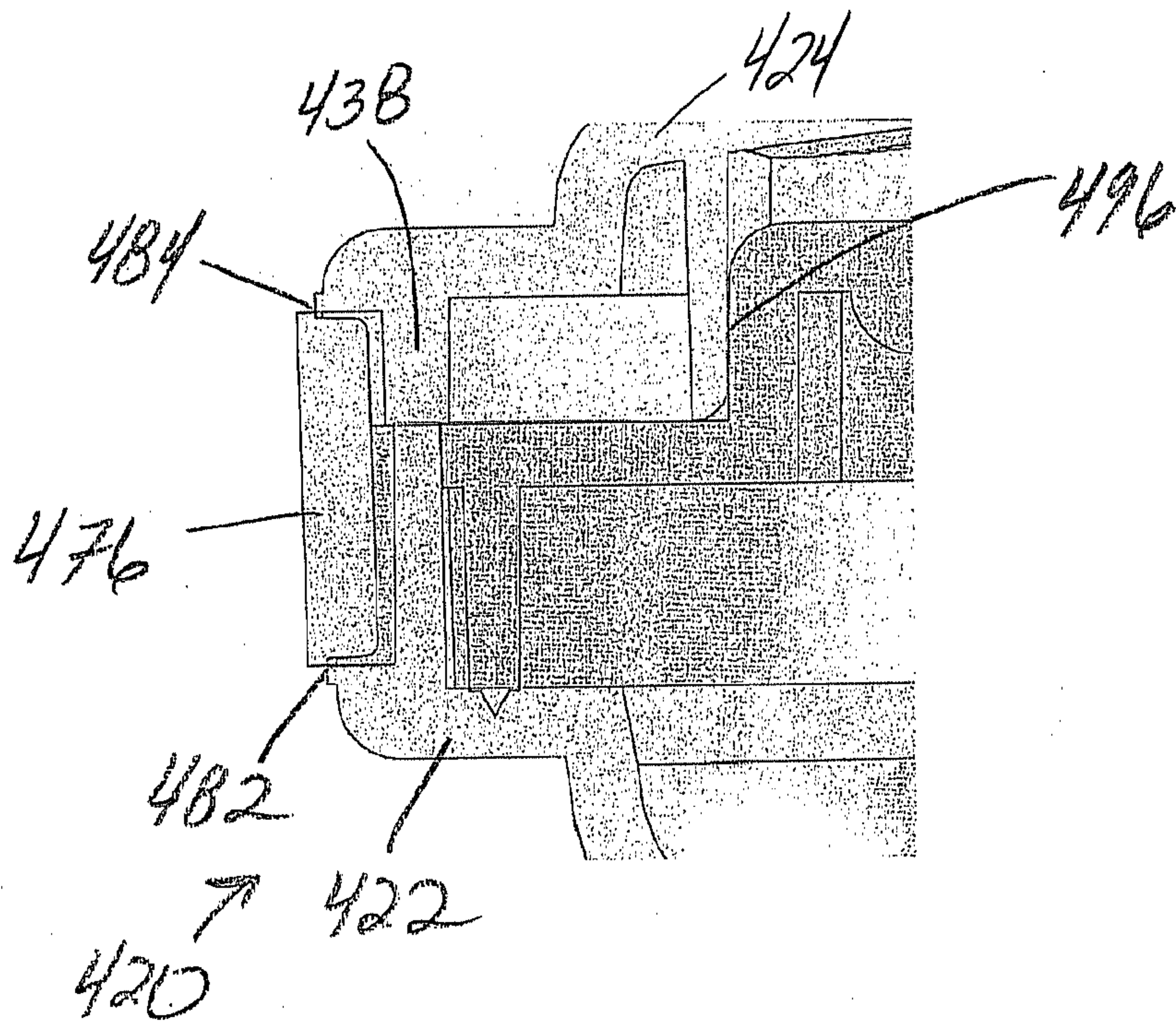


FIG. 37

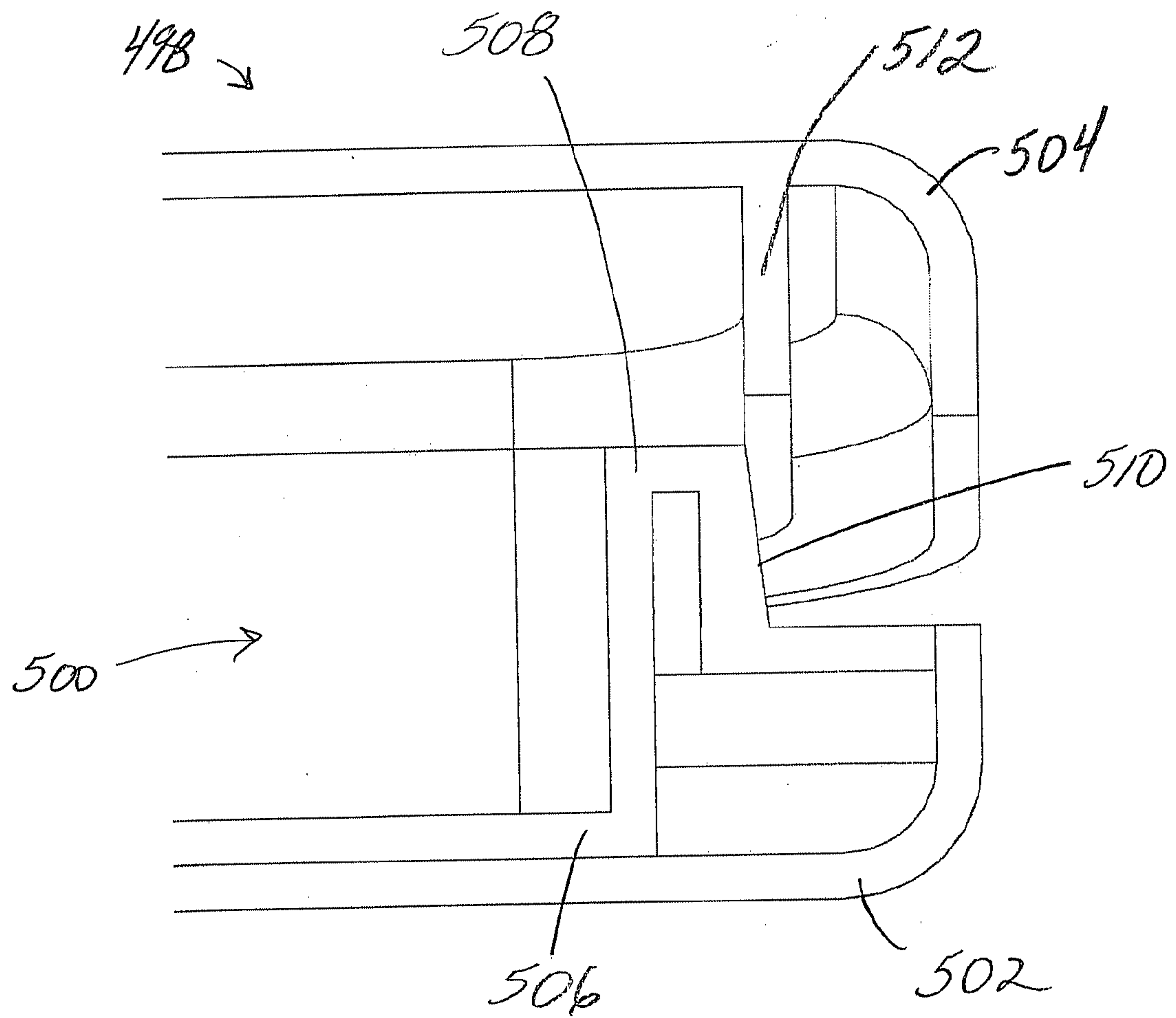


FIG. 38

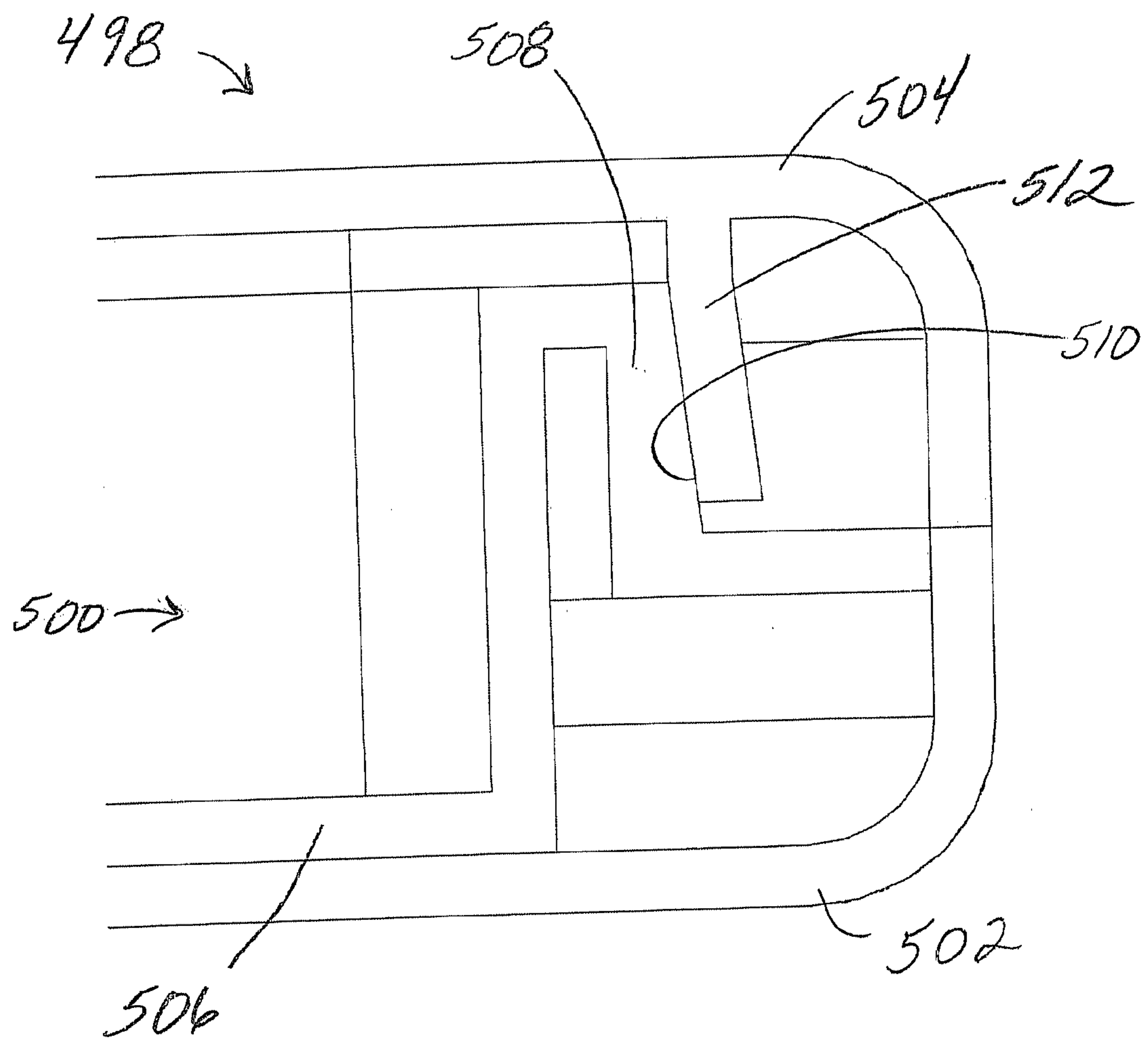
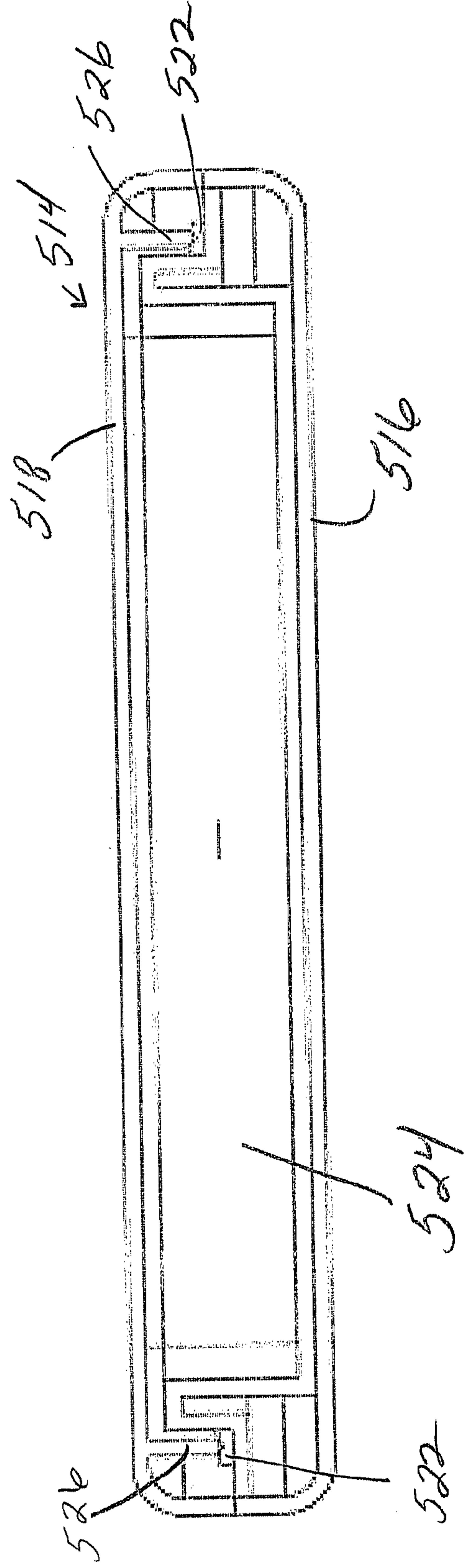
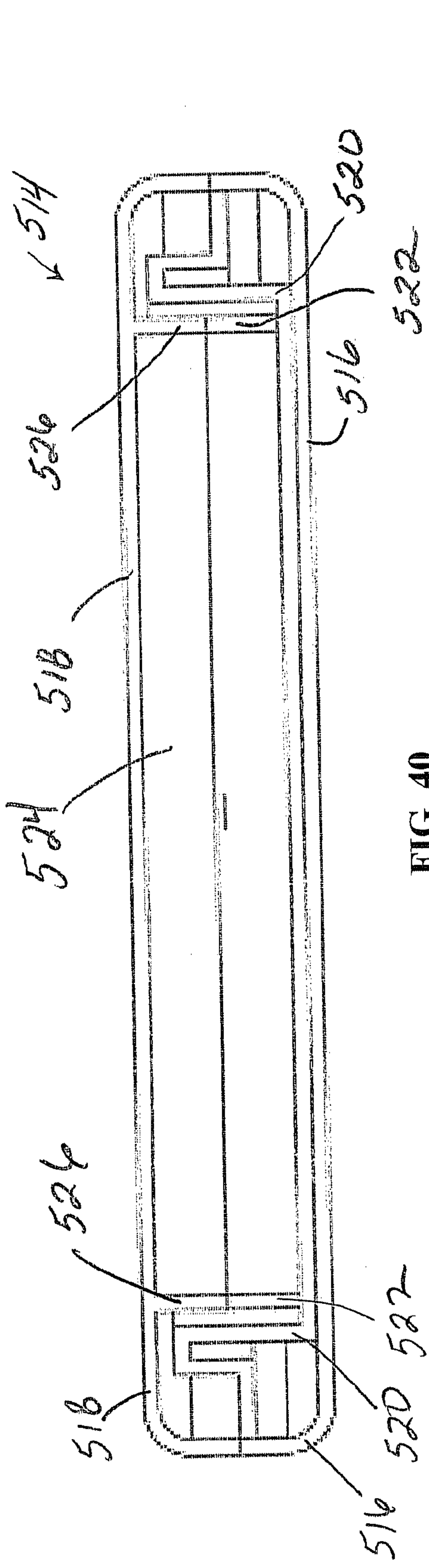


FIG. 39



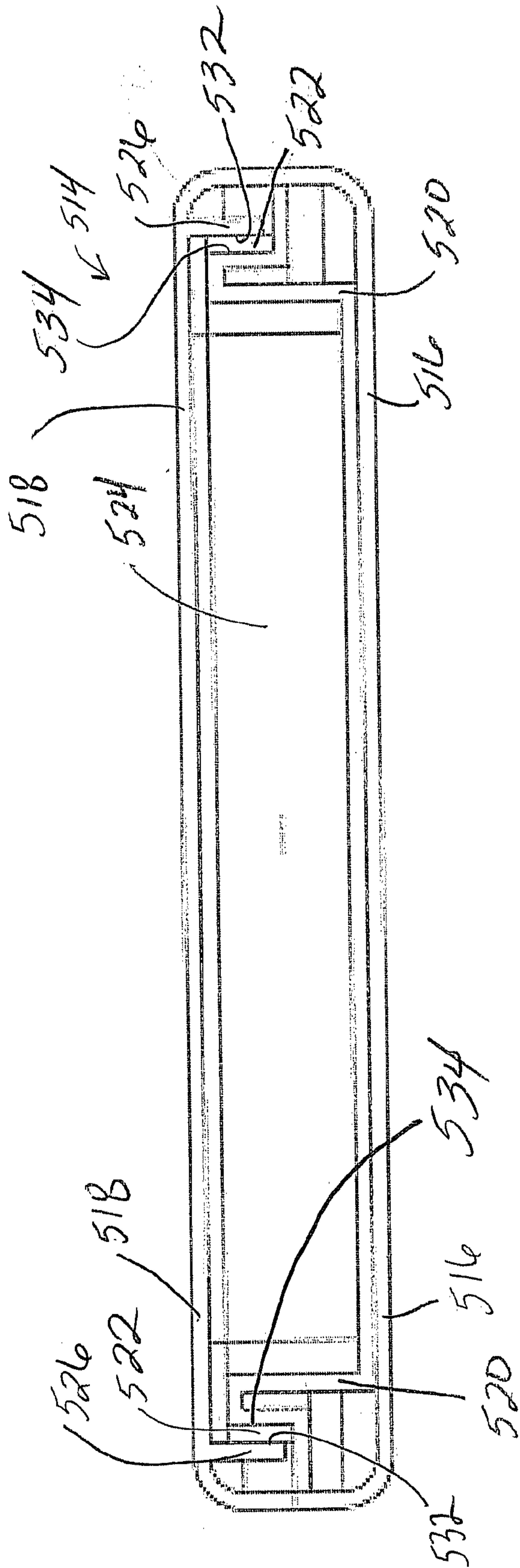


FIG. 42

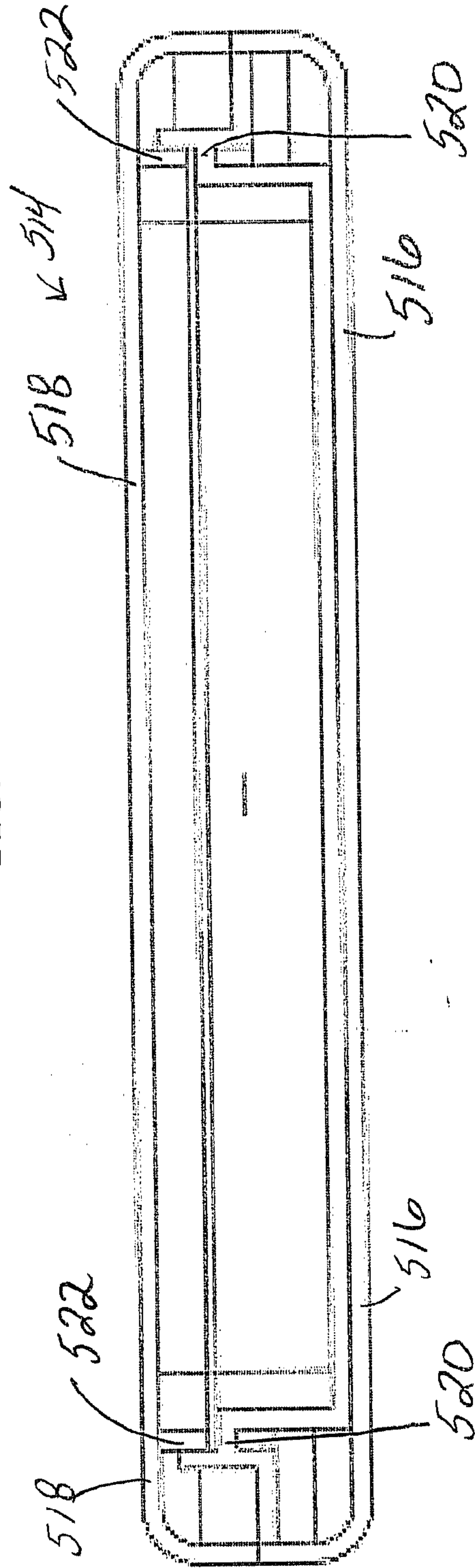


FIG. 43

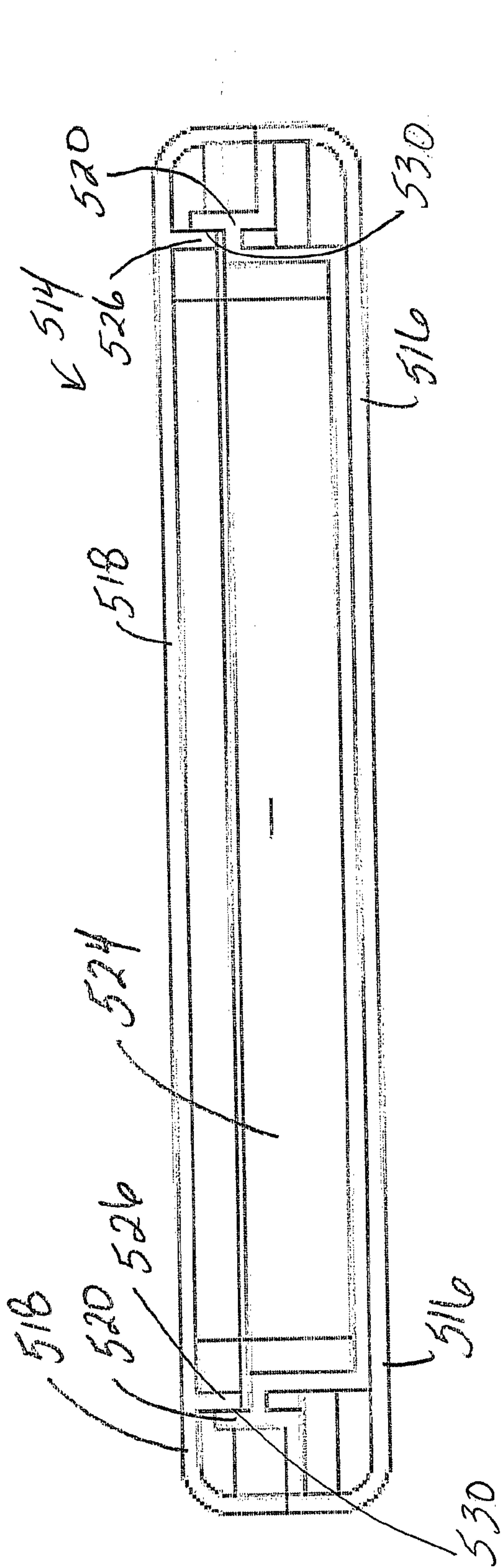


FIG. 44

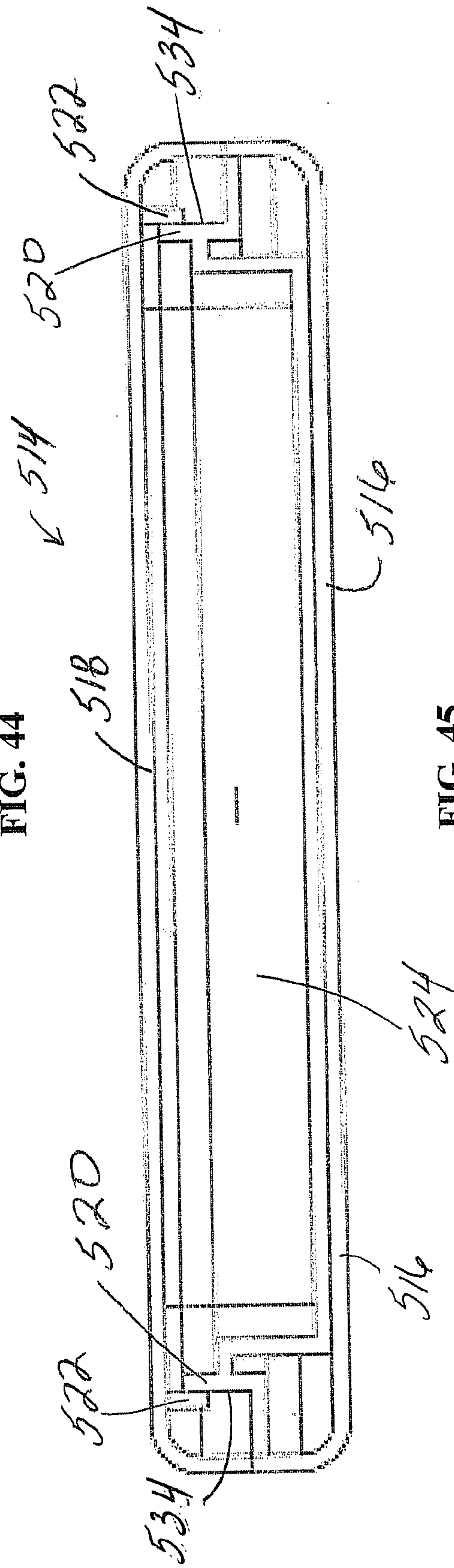


FIG. 45

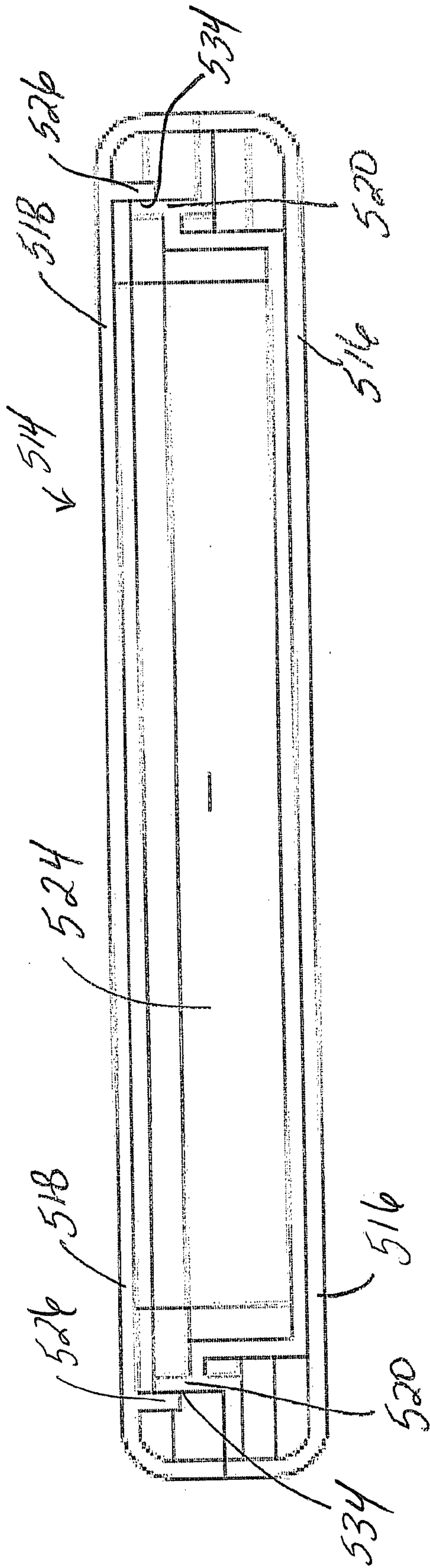


FIG. 46

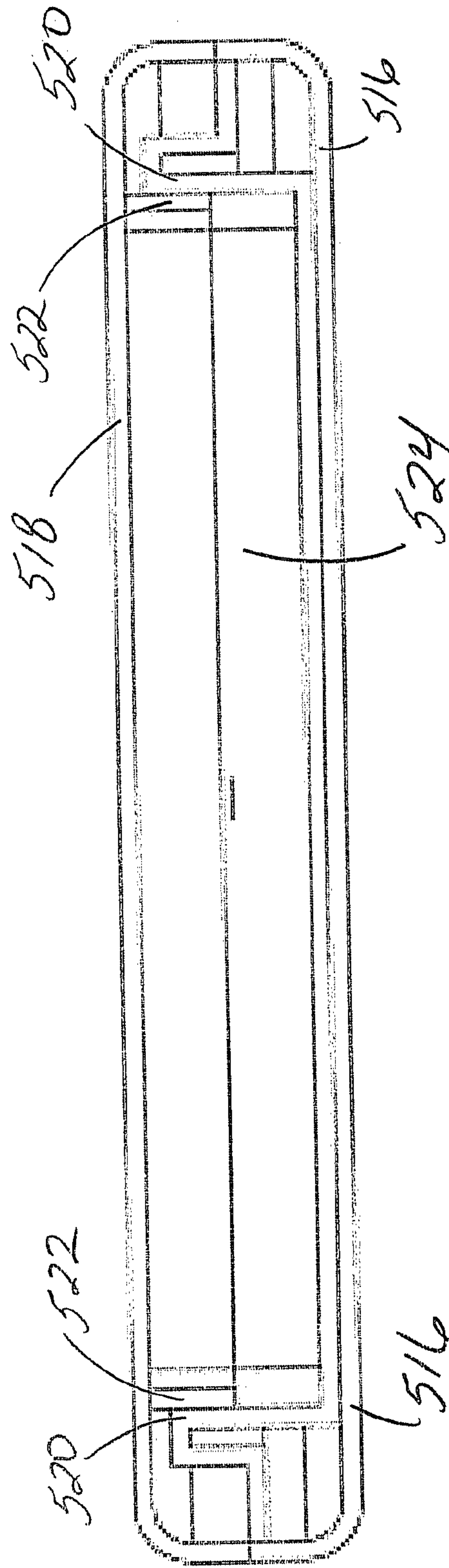


FIG. 47

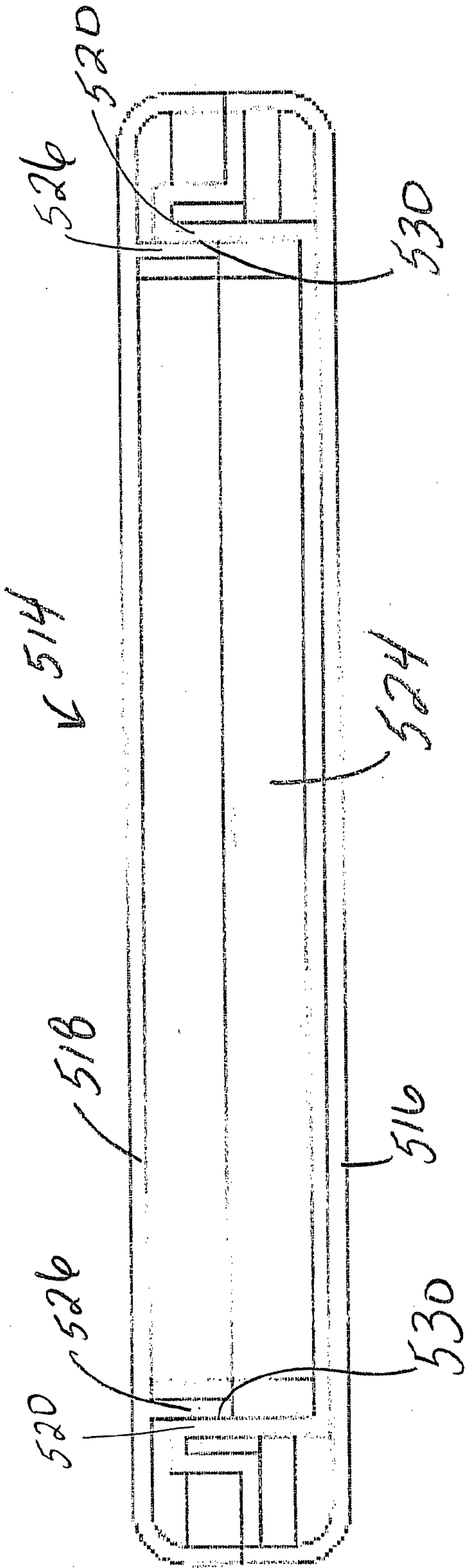


FIG. 48

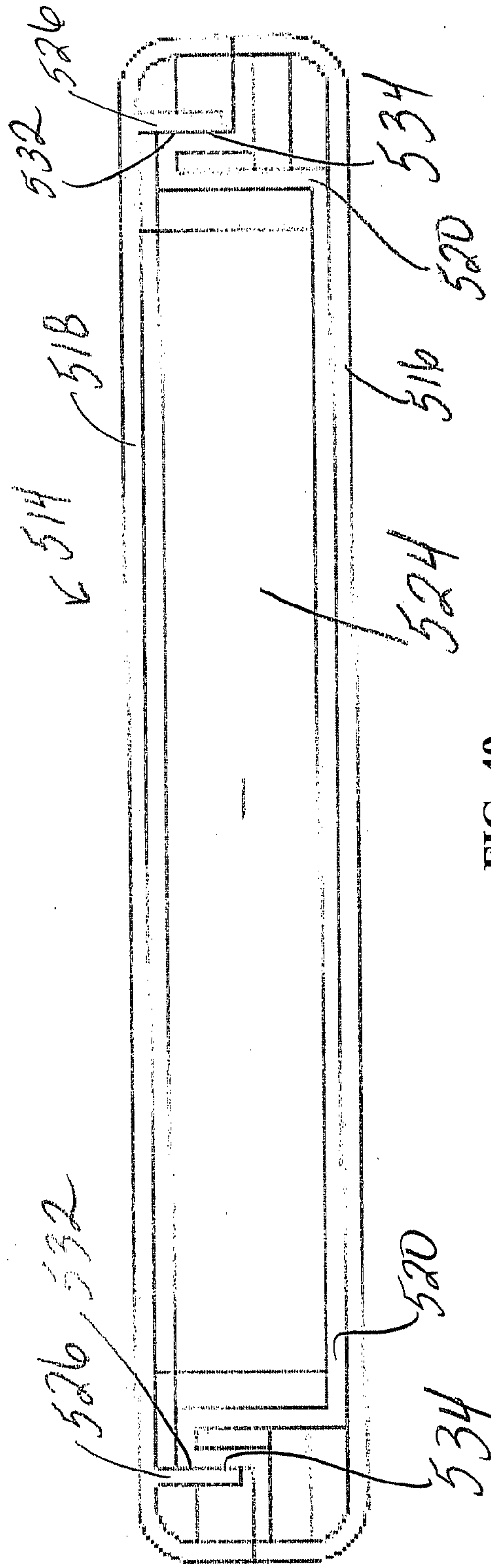
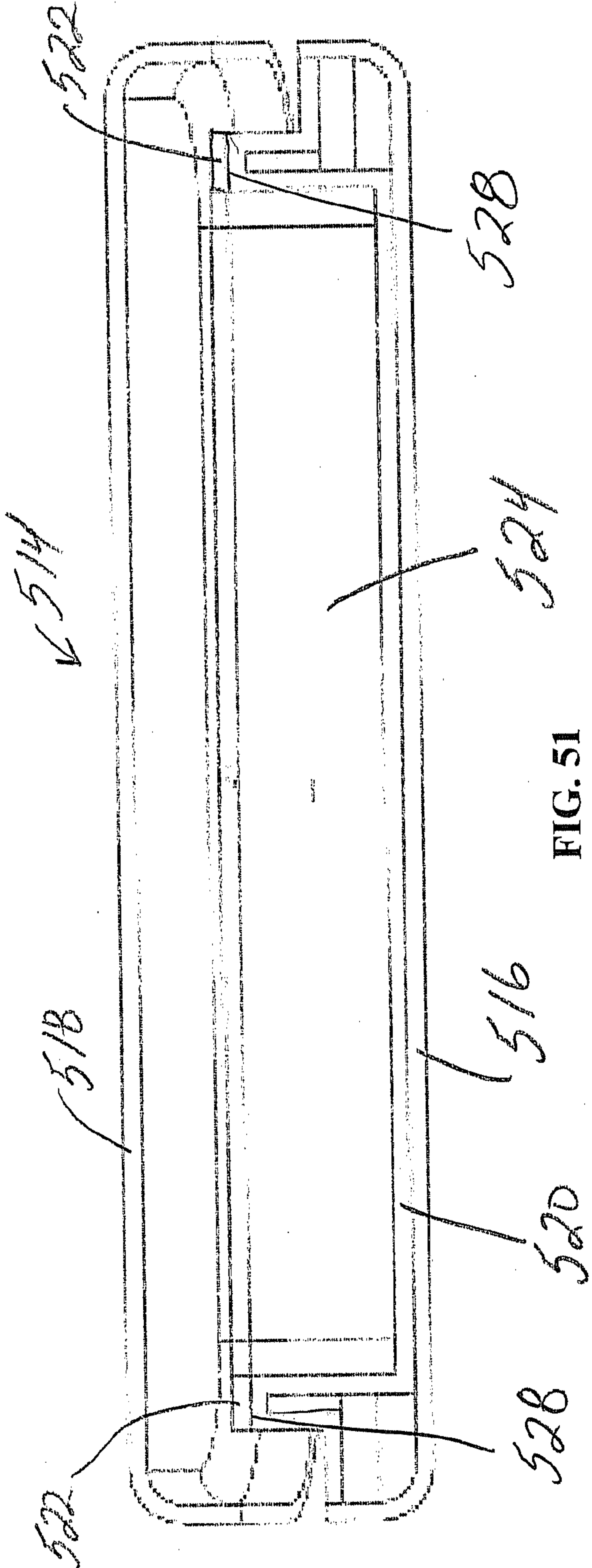
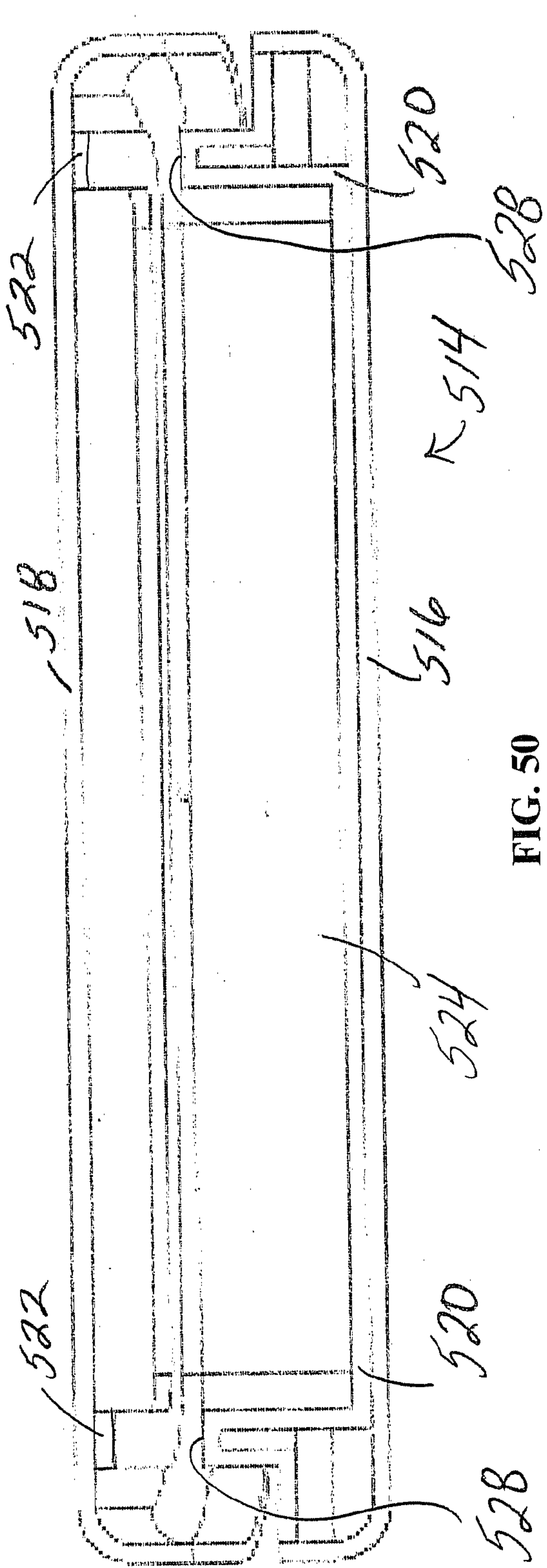
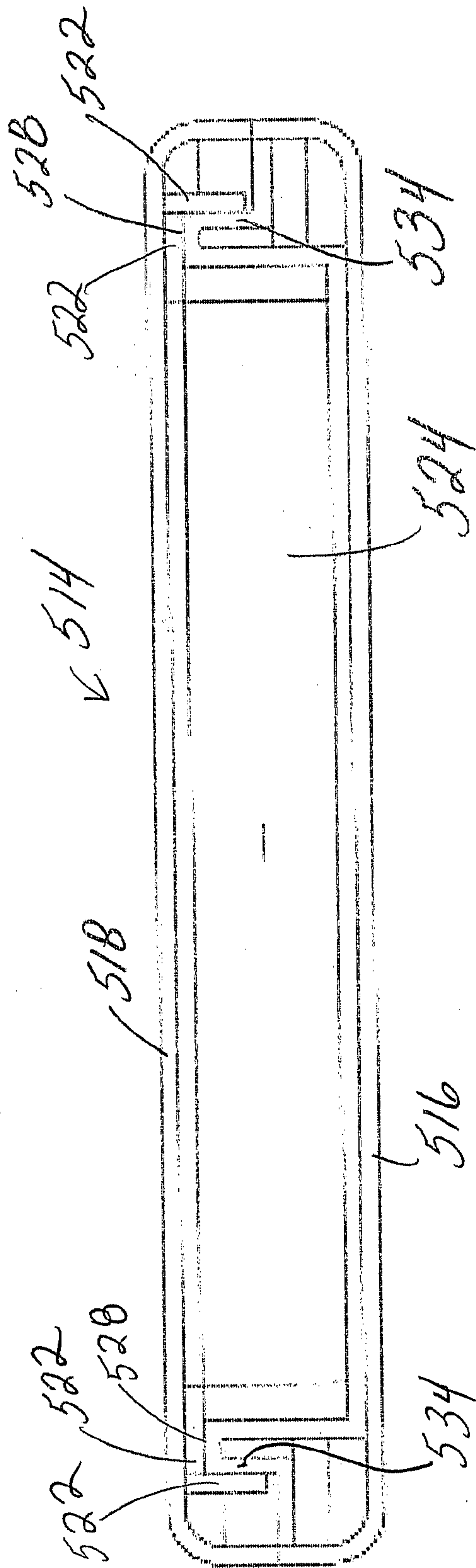


FIG. 49



**FIG. 52**

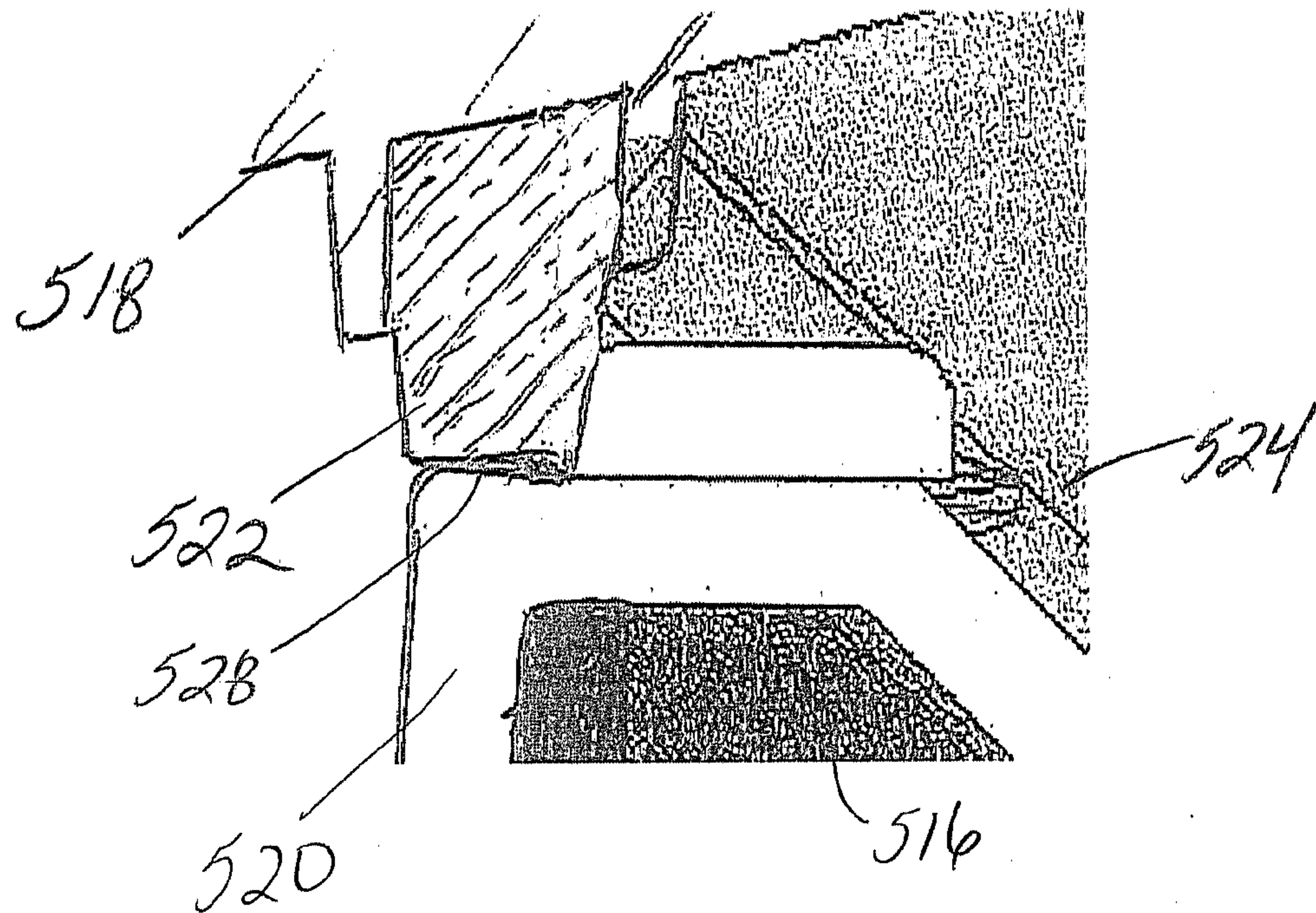


FIG. 53

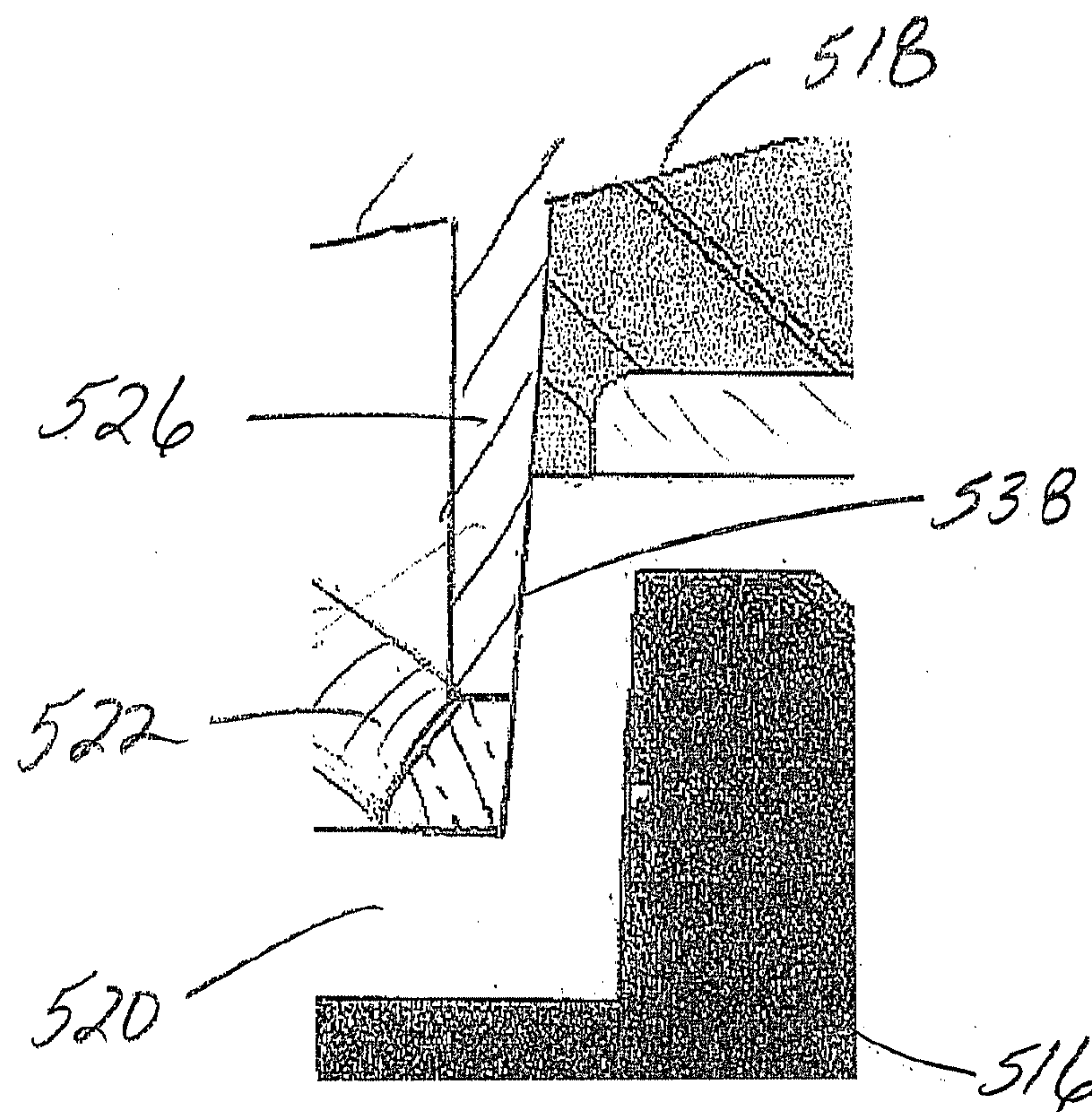


FIG. 54

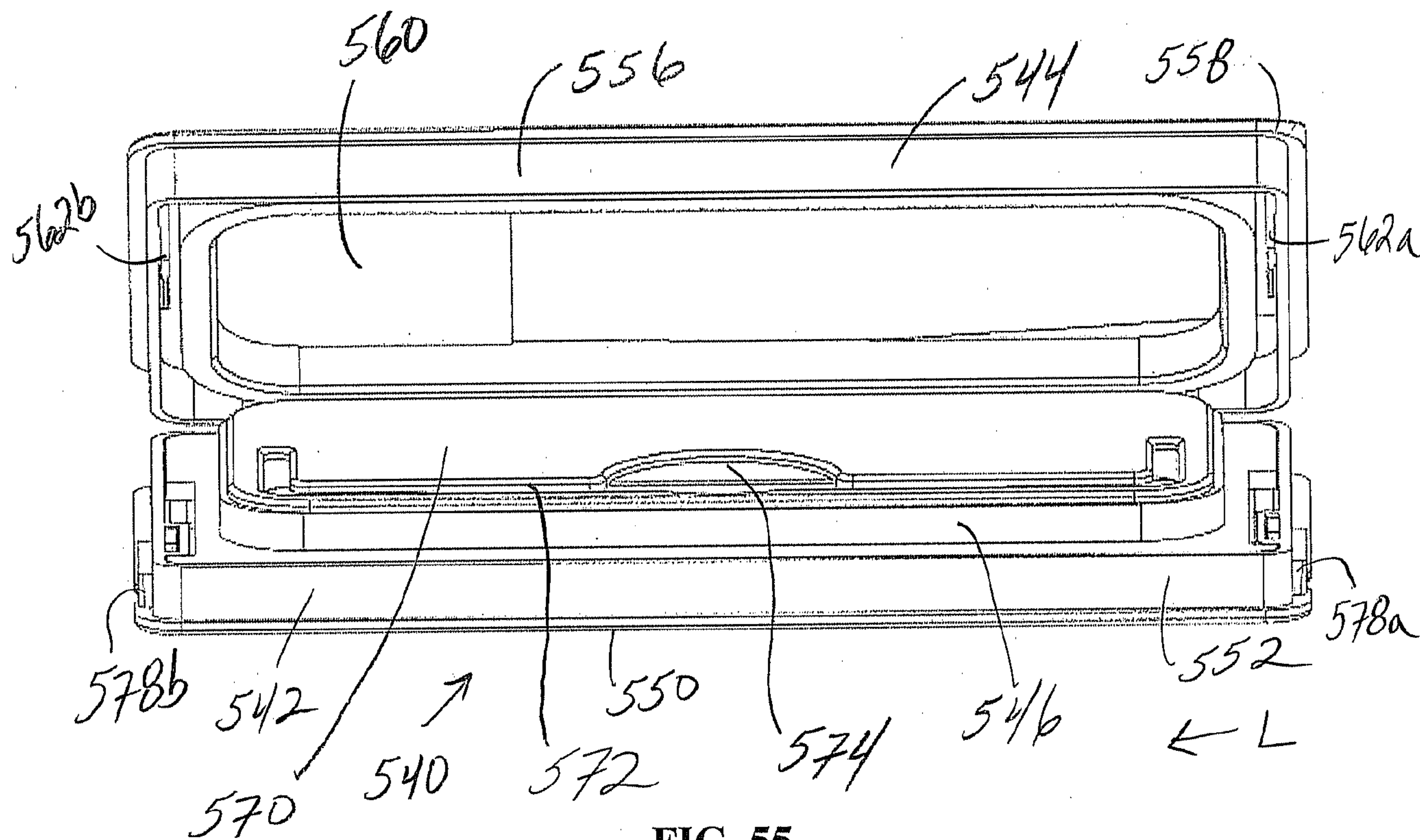


FIG. 55

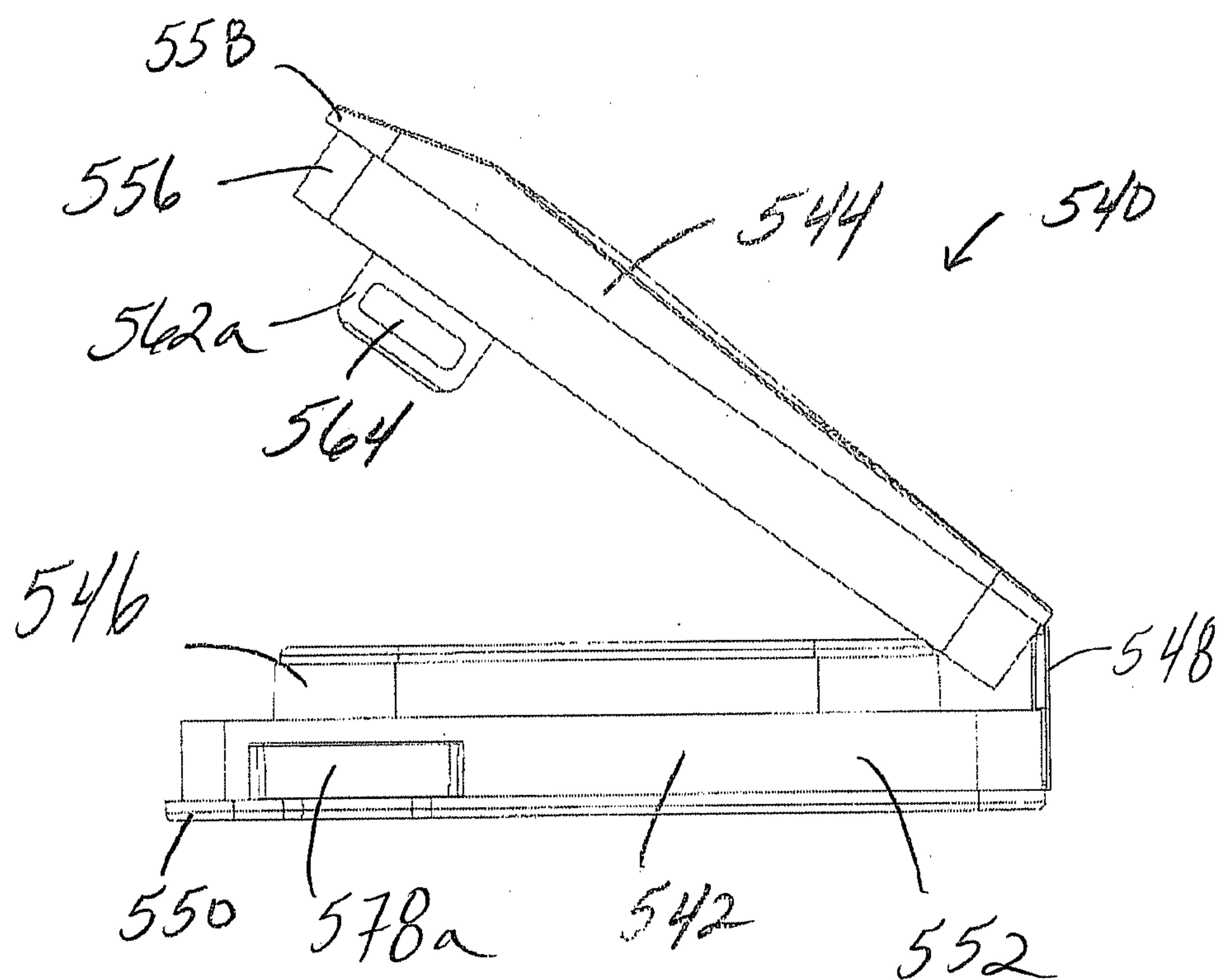


FIG. 56

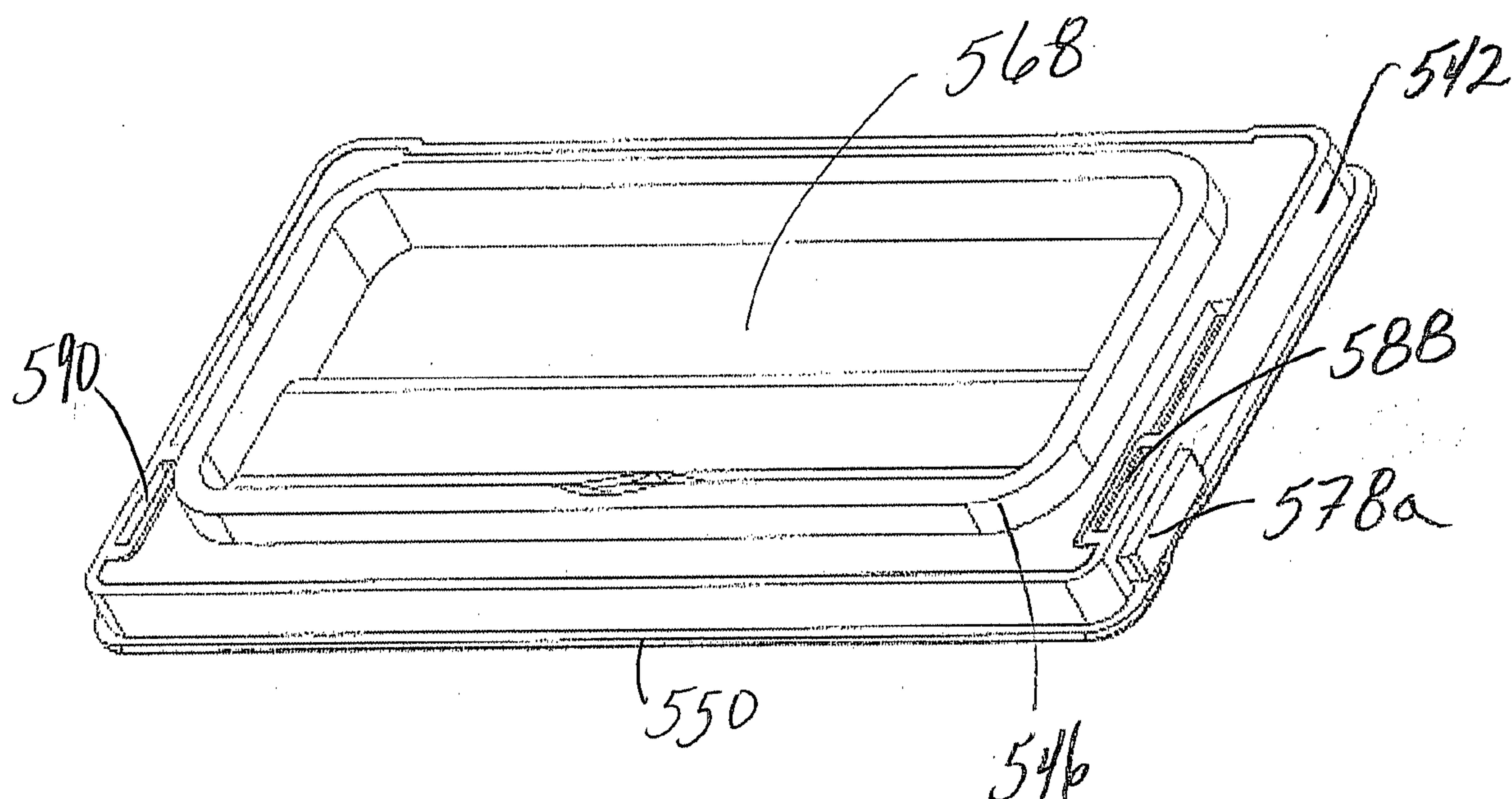


FIG. 57

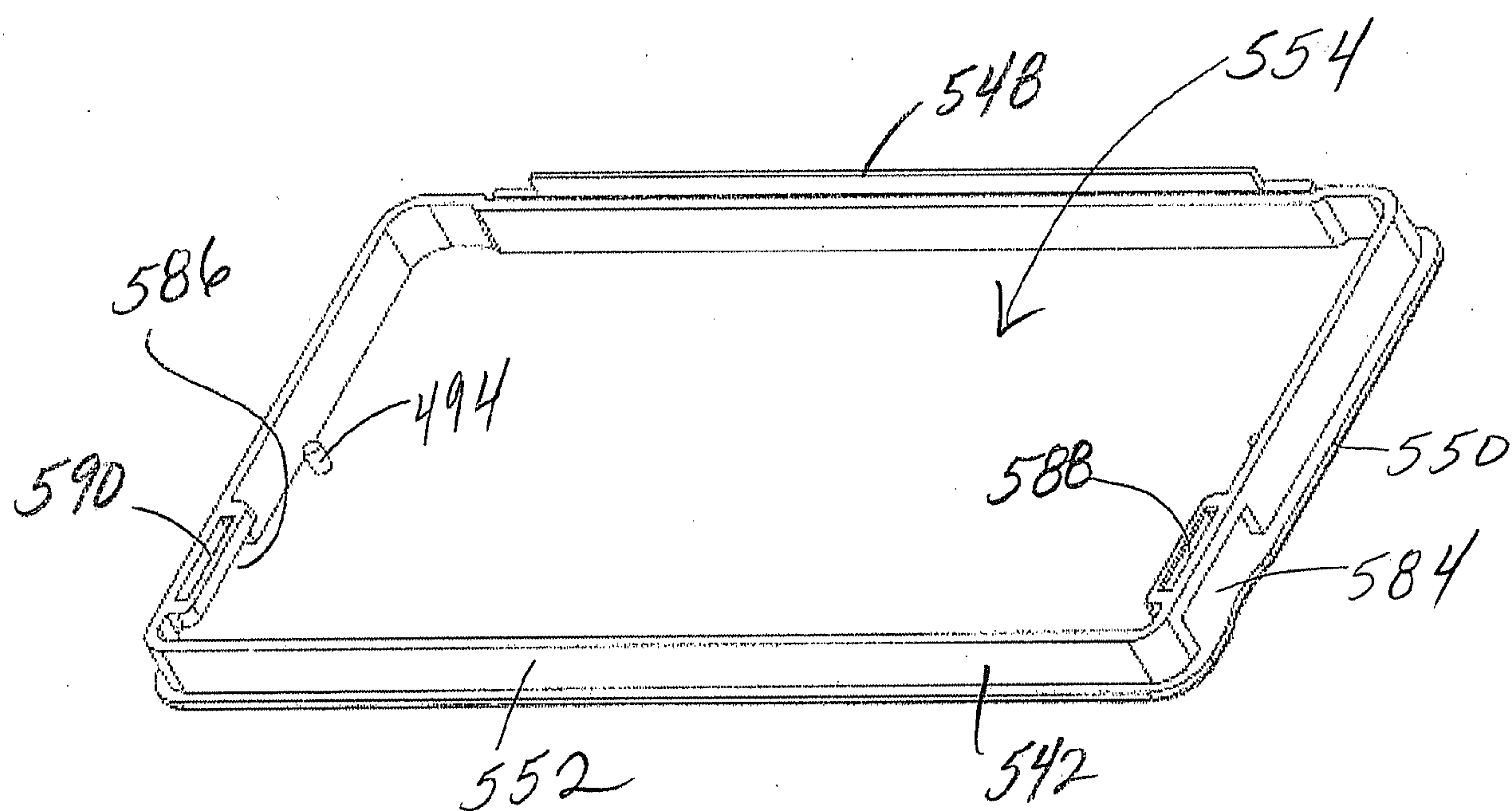


FIG. 58

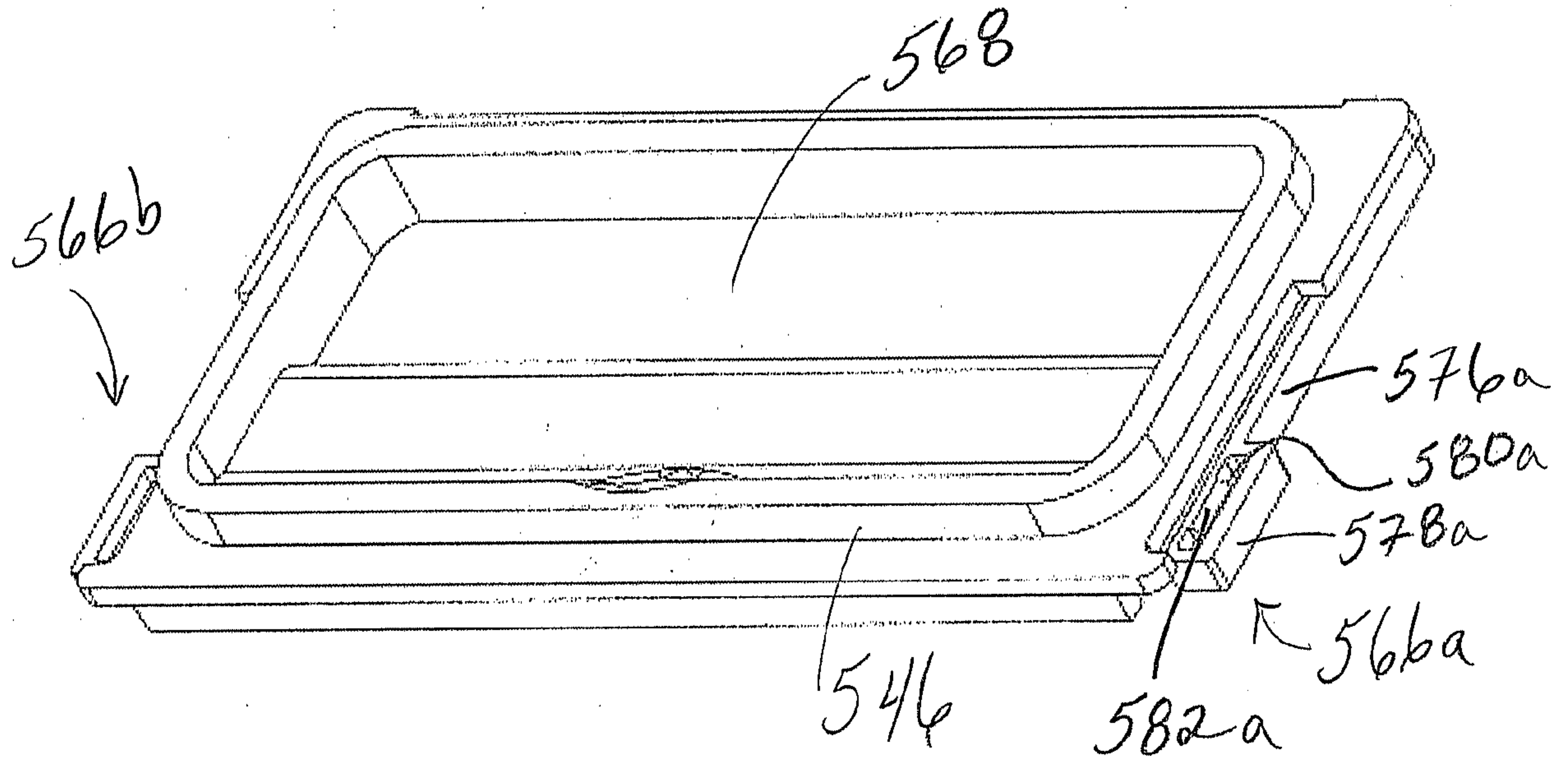


FIG. 59

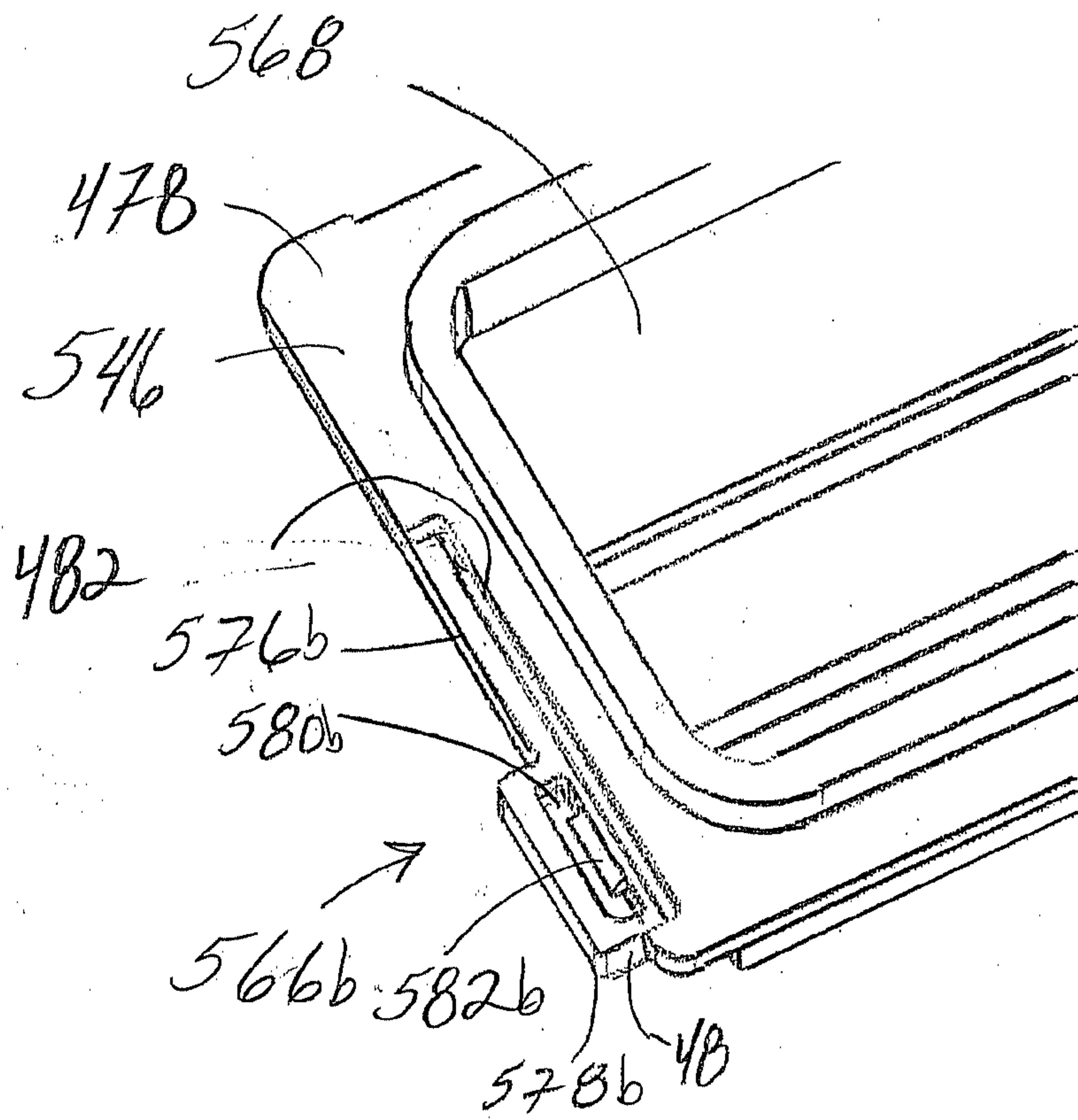
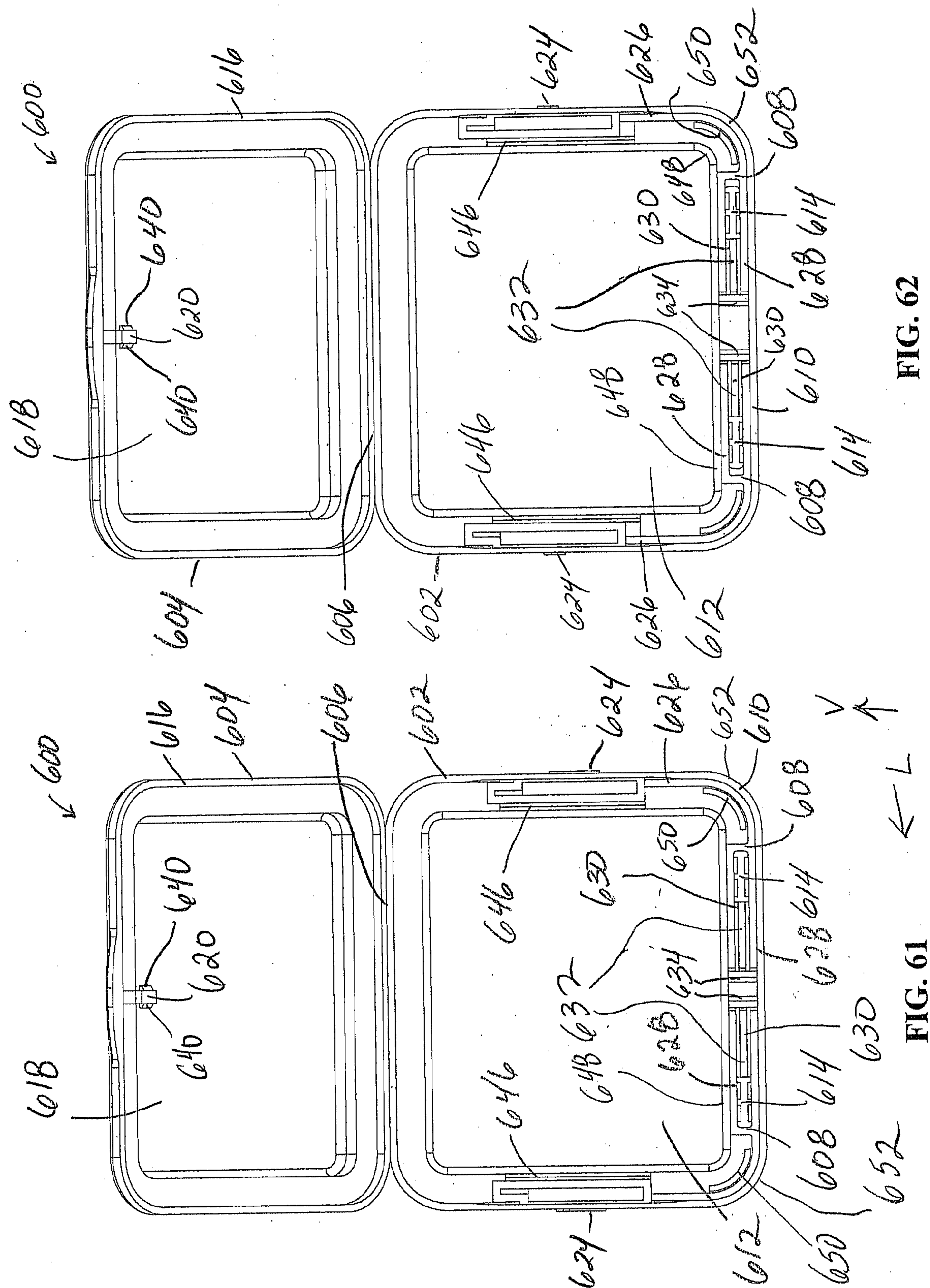
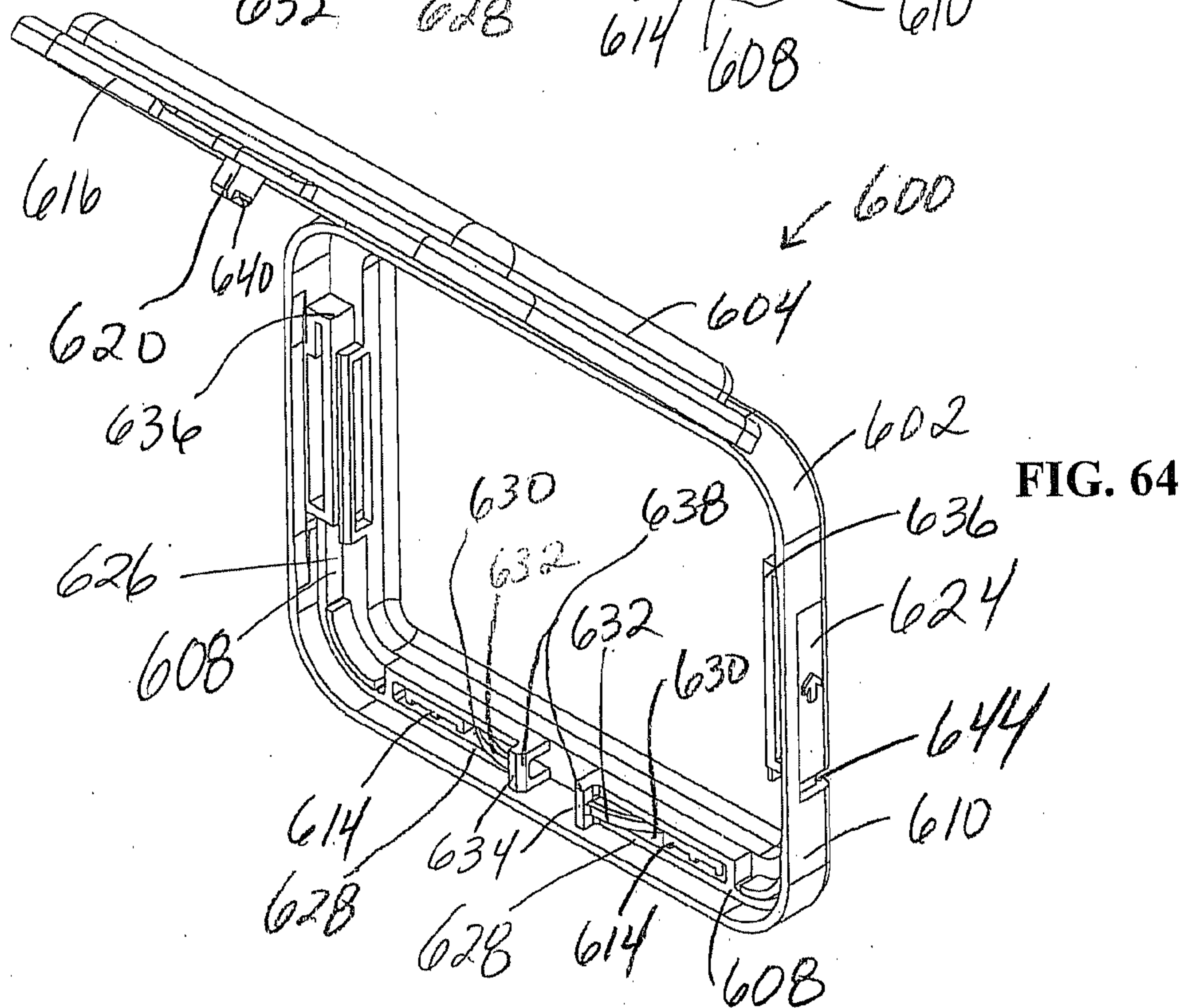
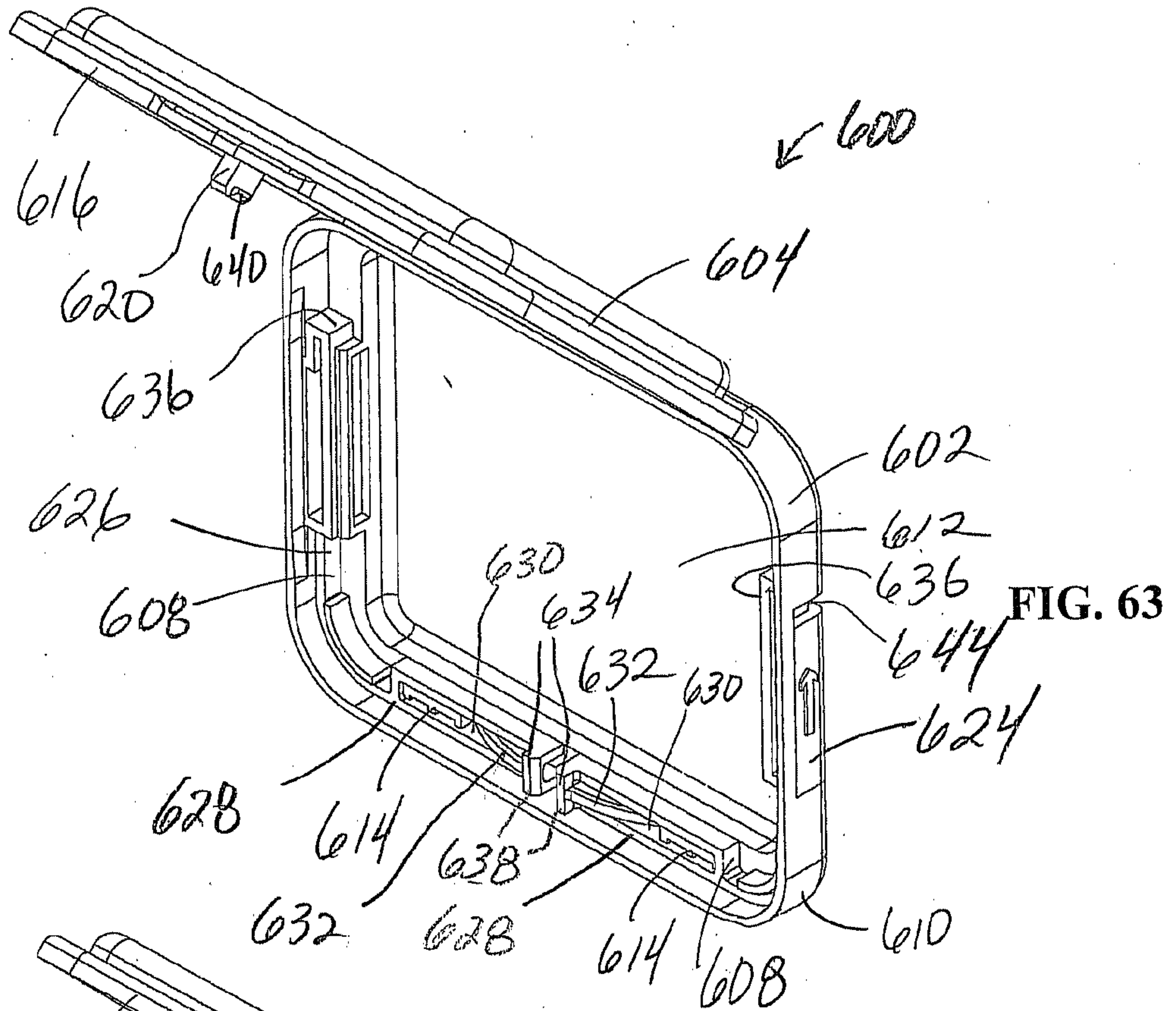
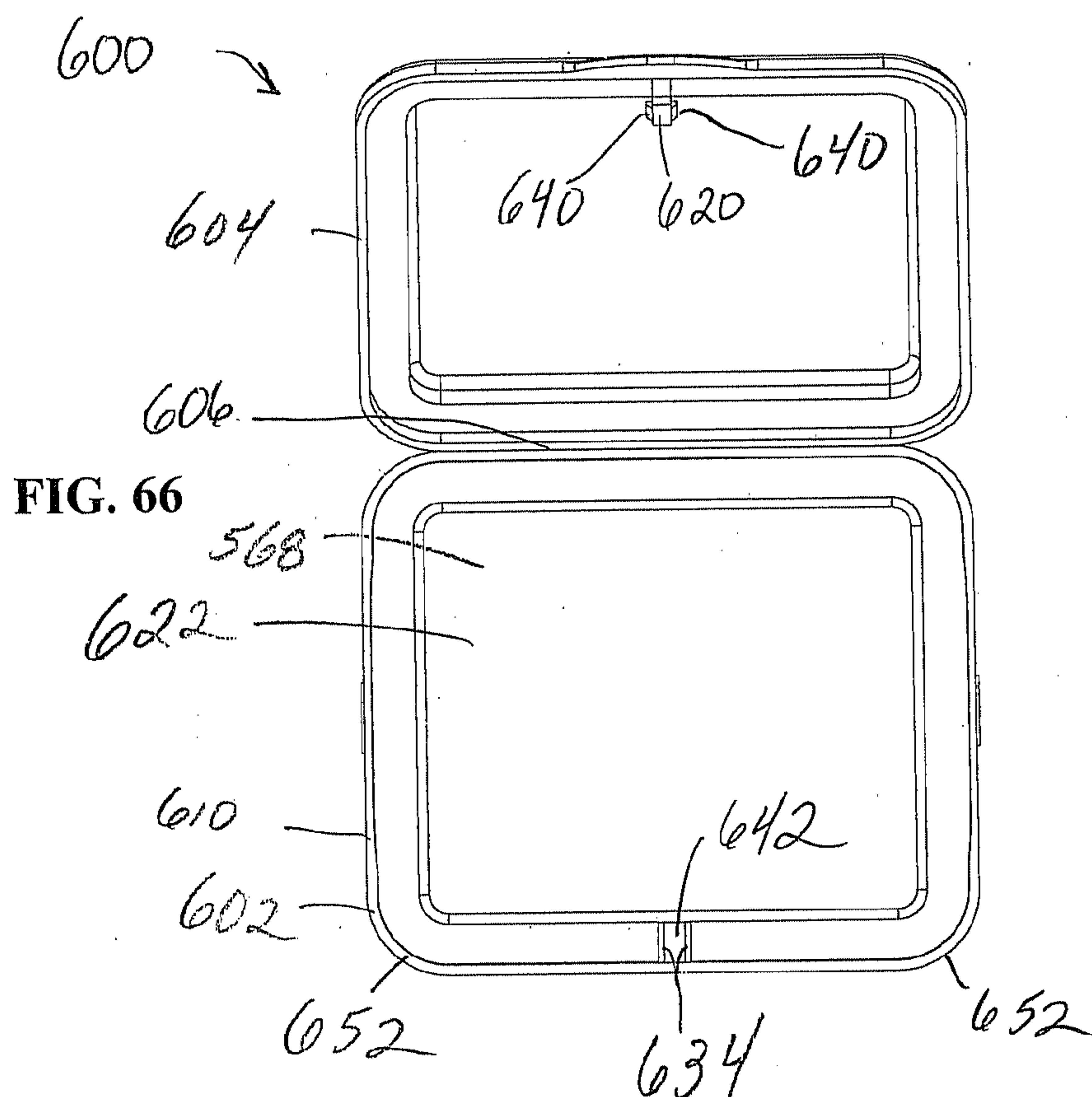
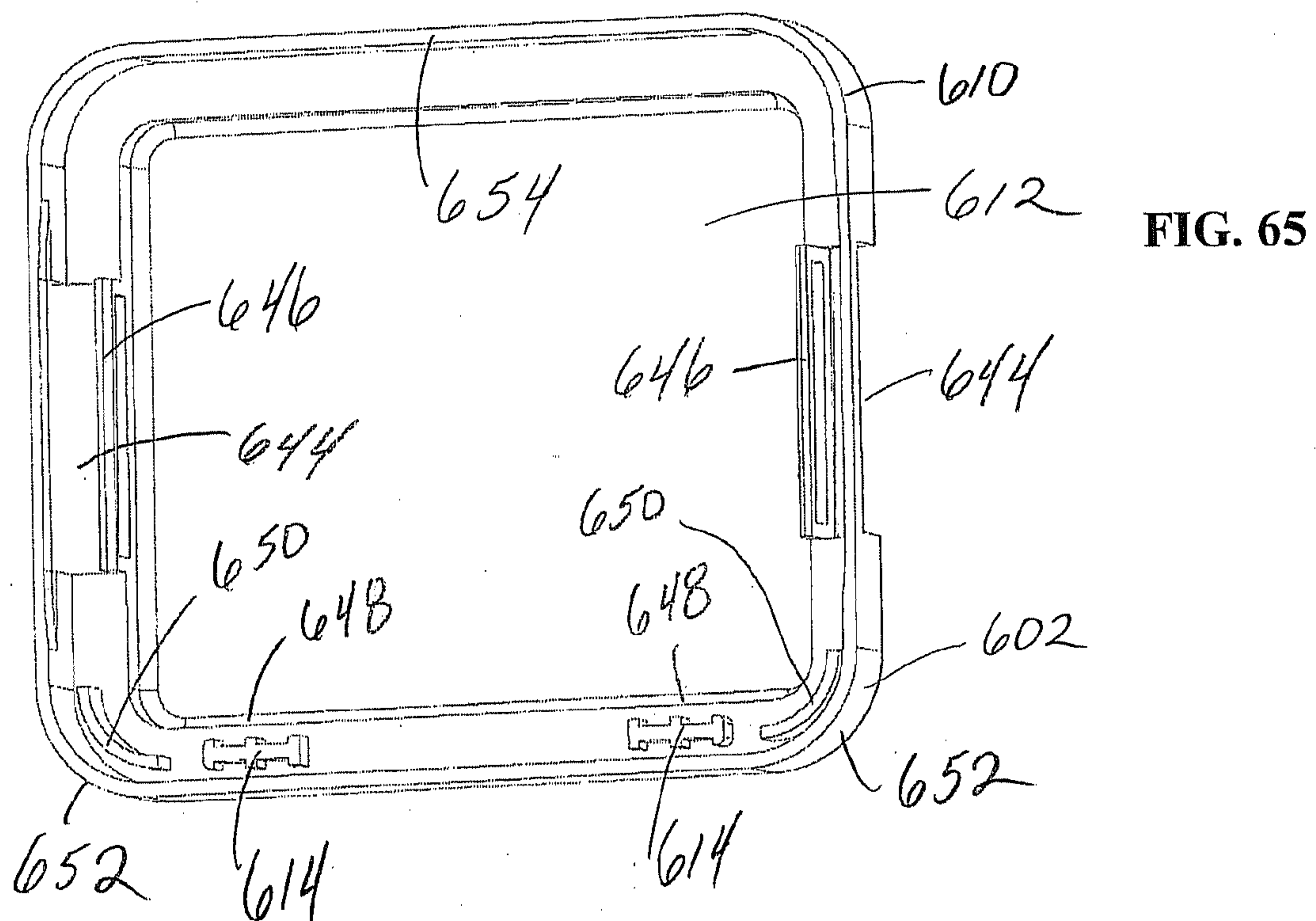


FIG. 60







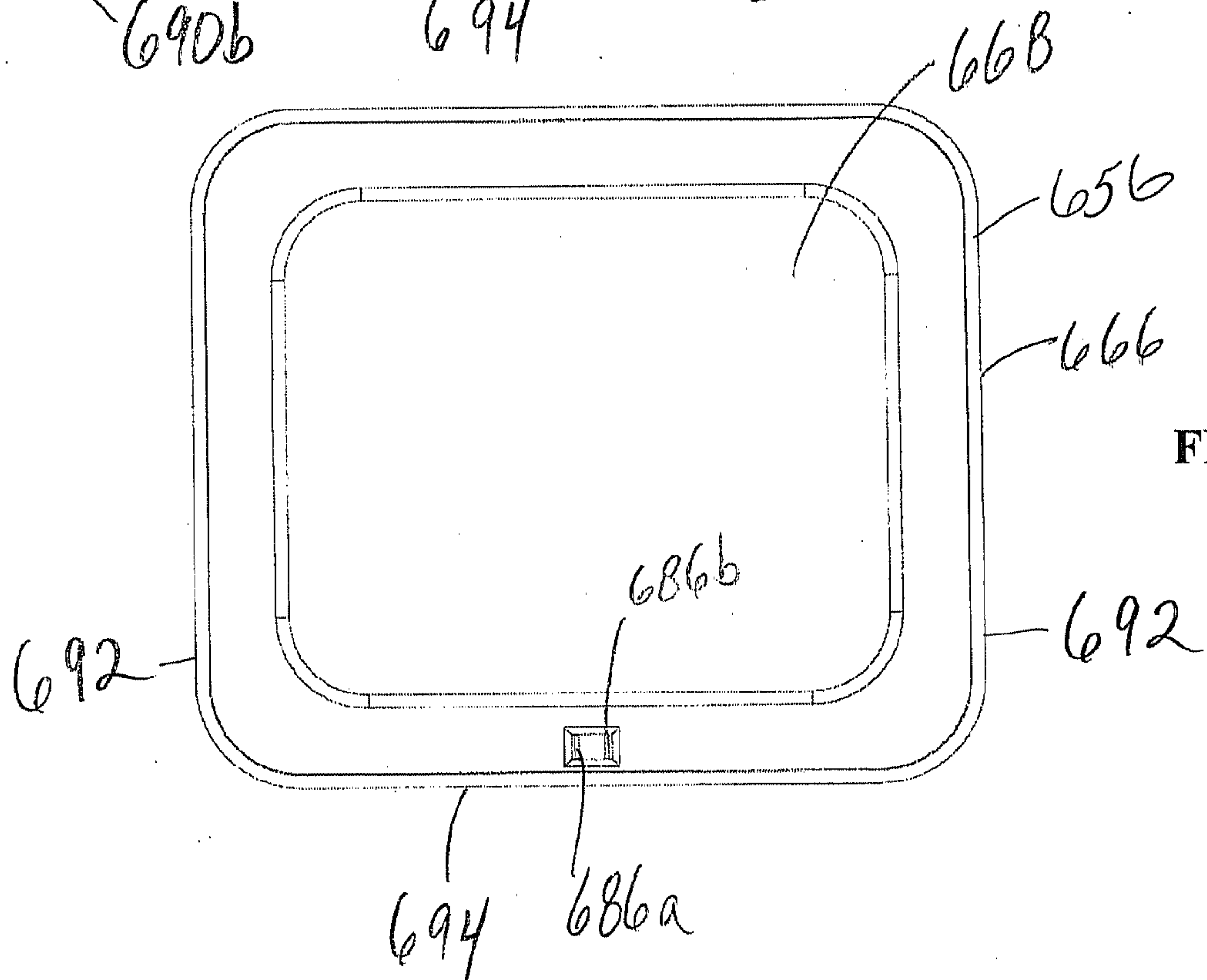
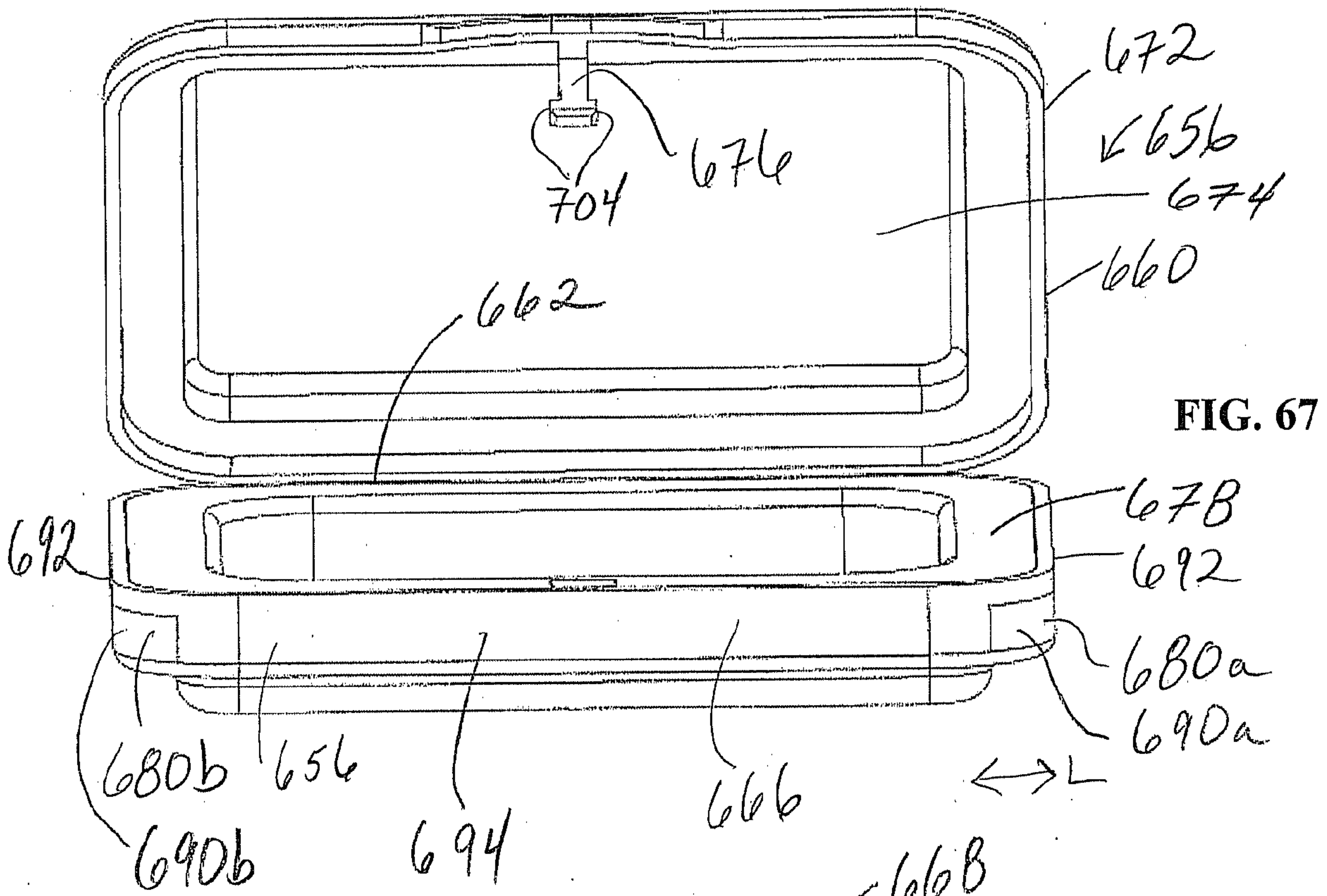


FIG. 69

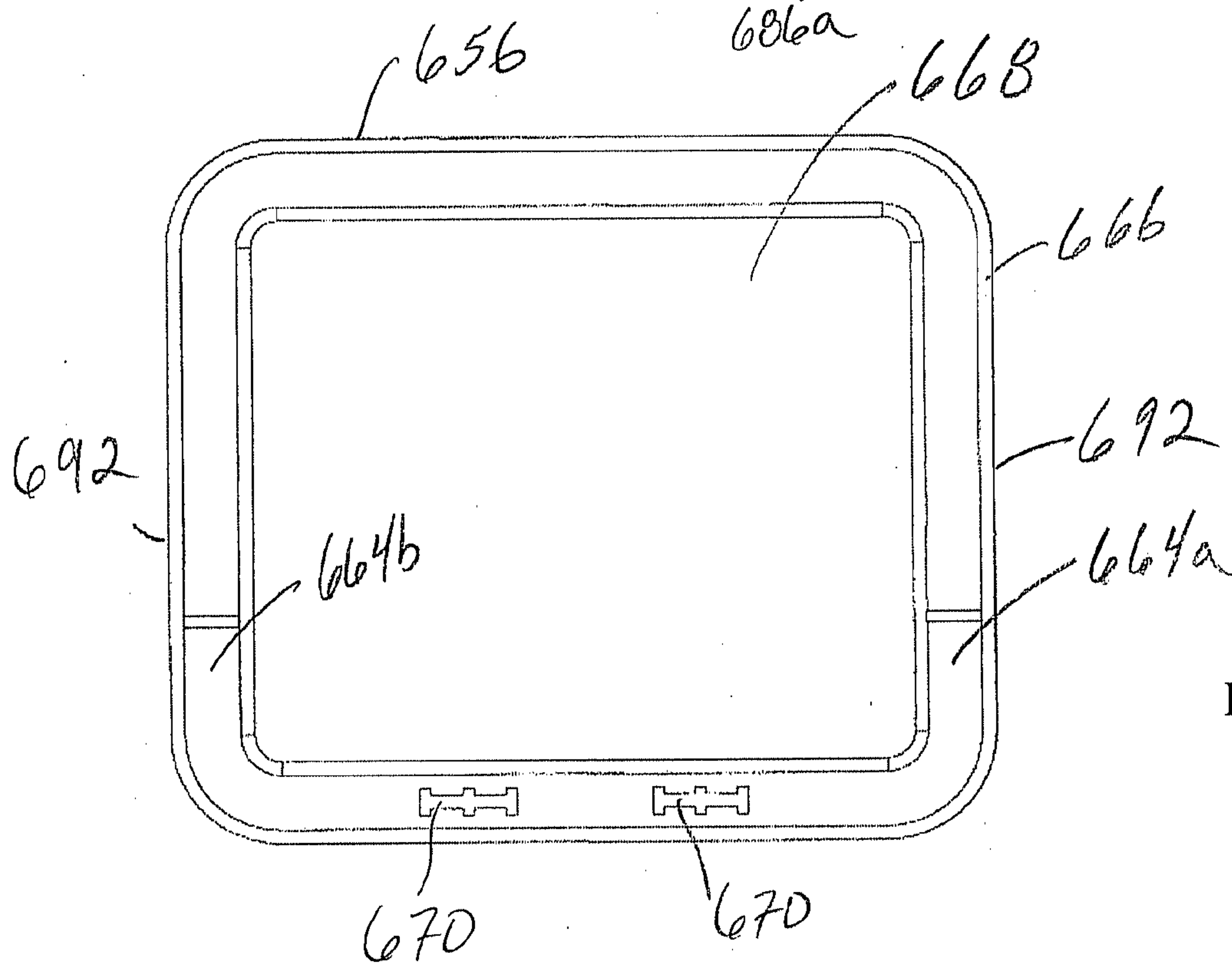
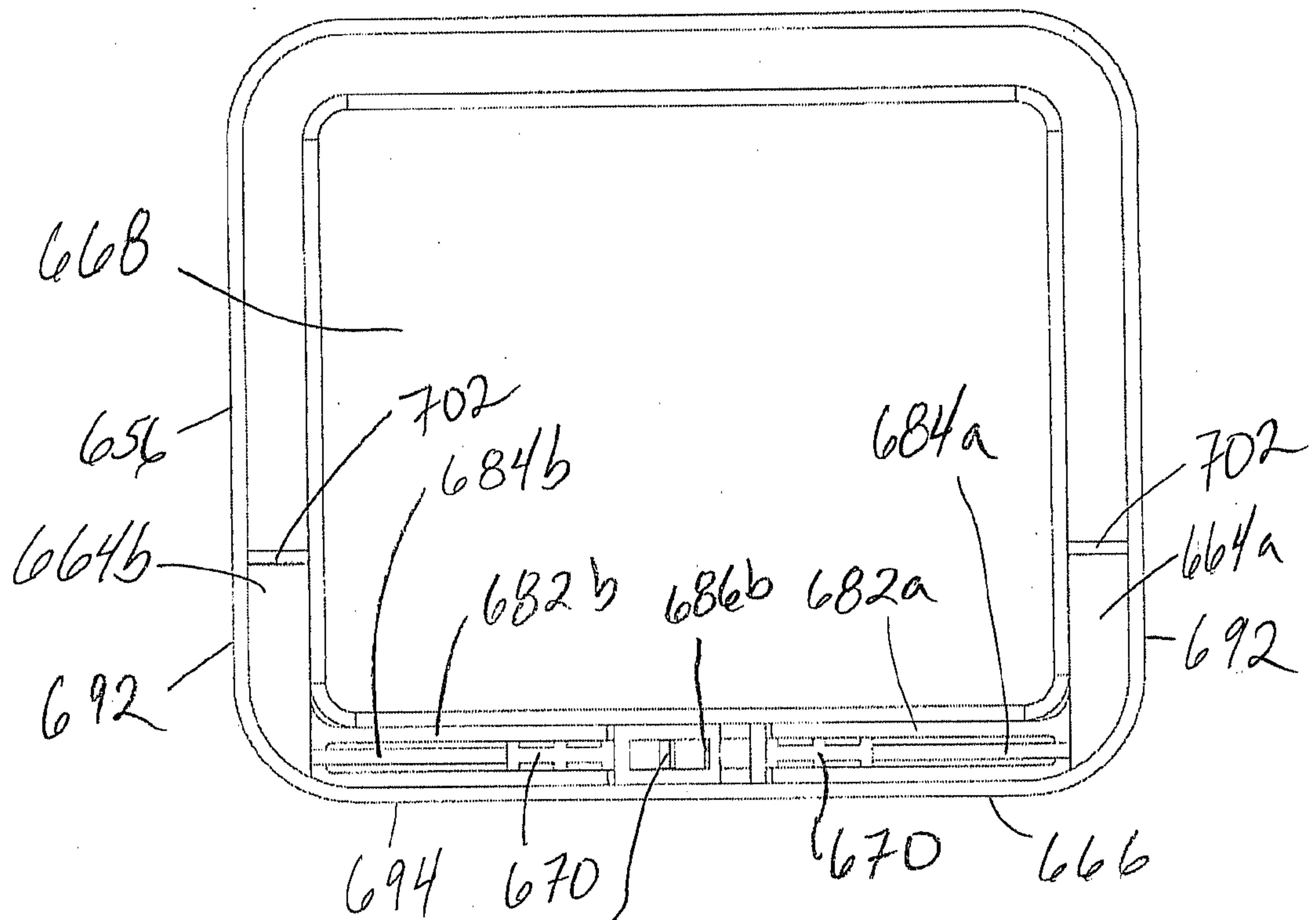


FIG. 70

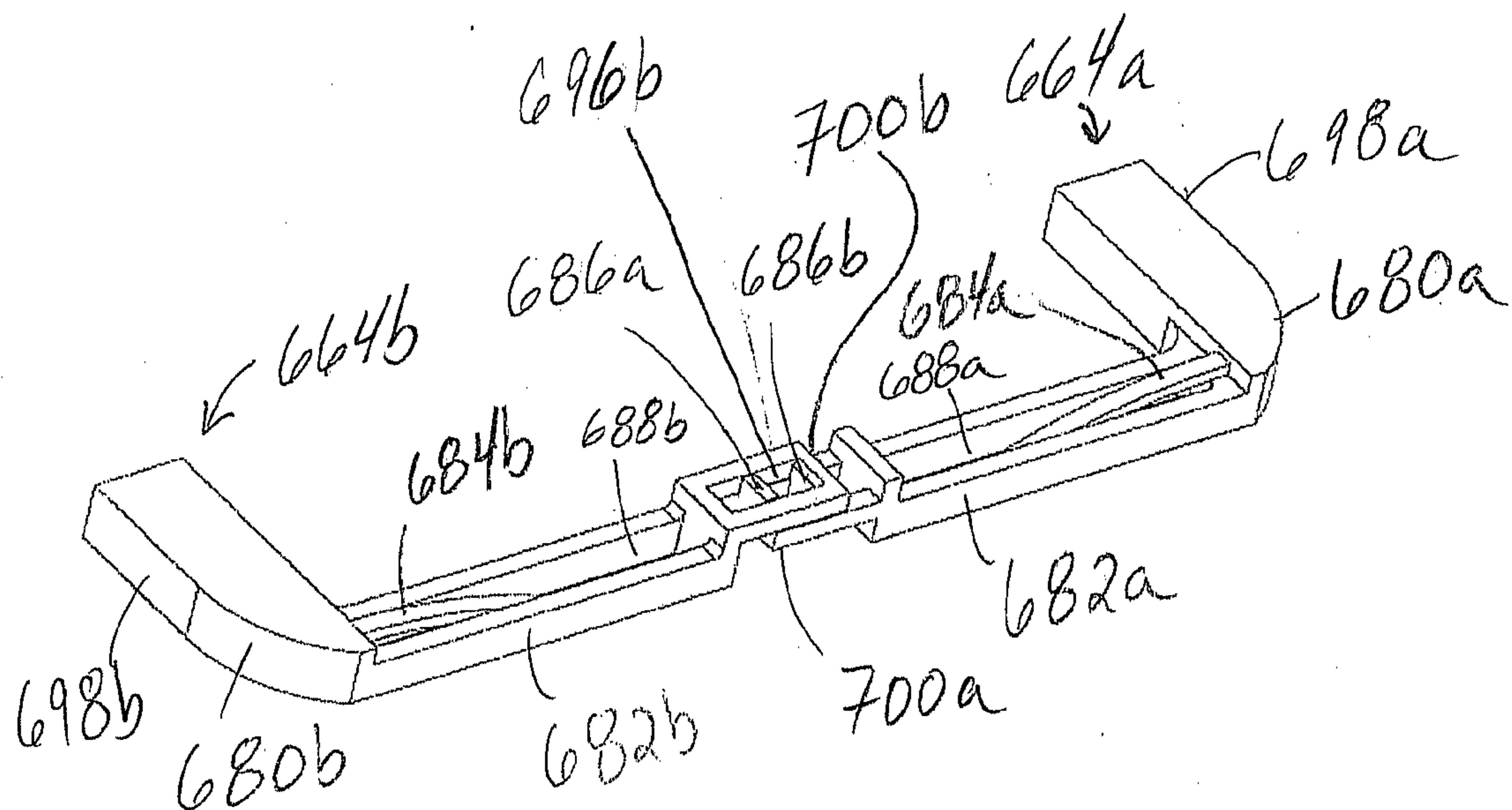


FIG. 71

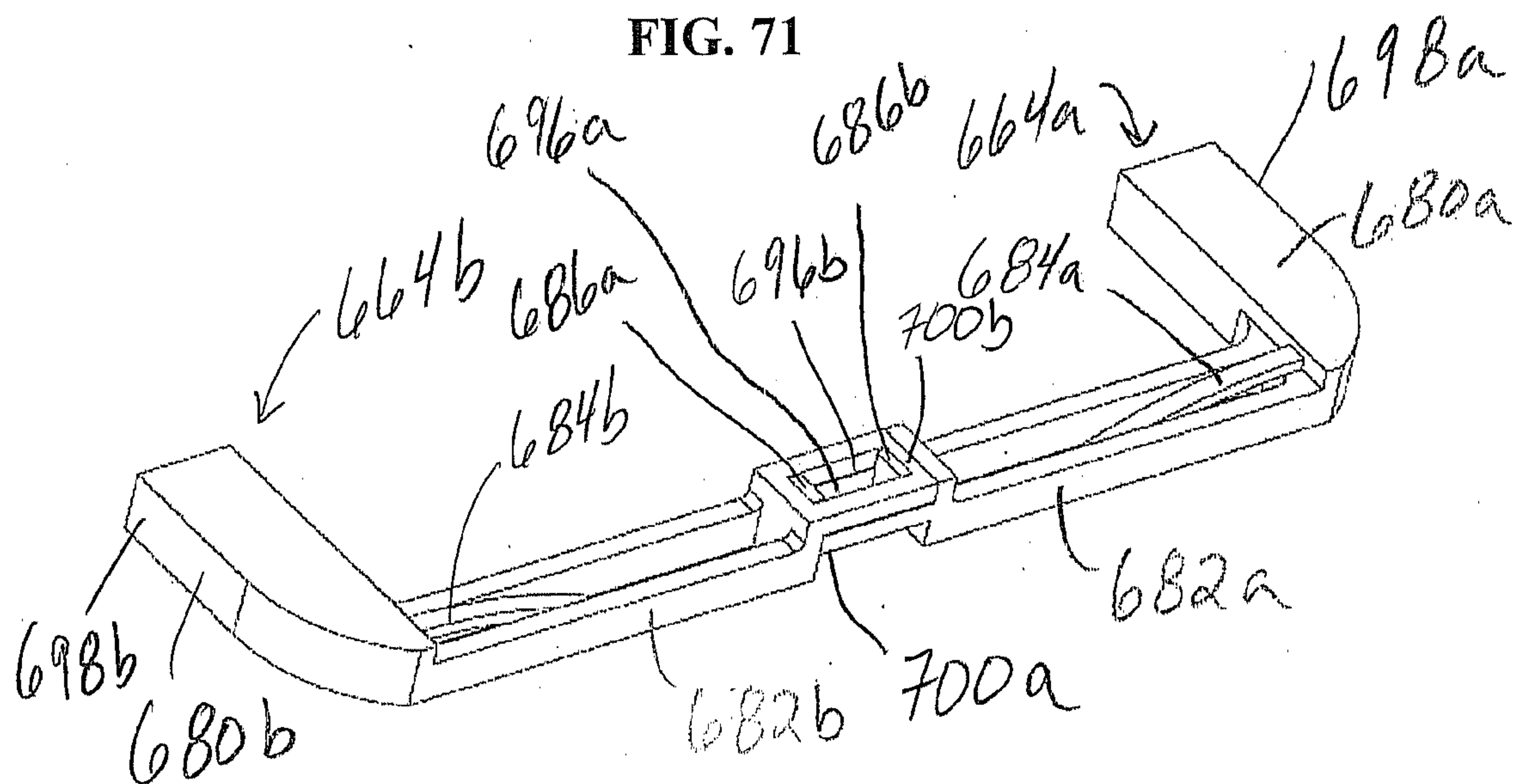


FIG. 72

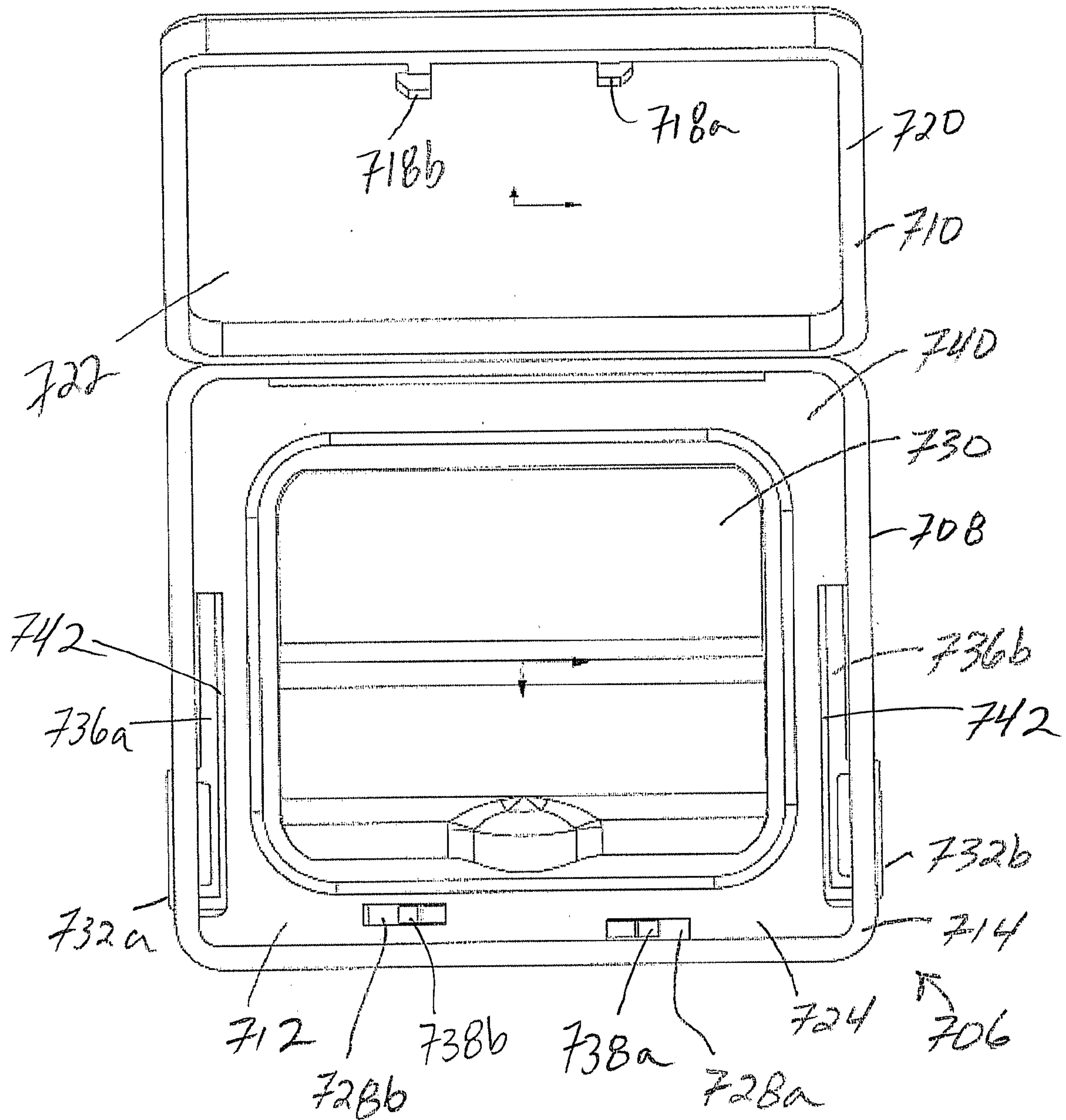
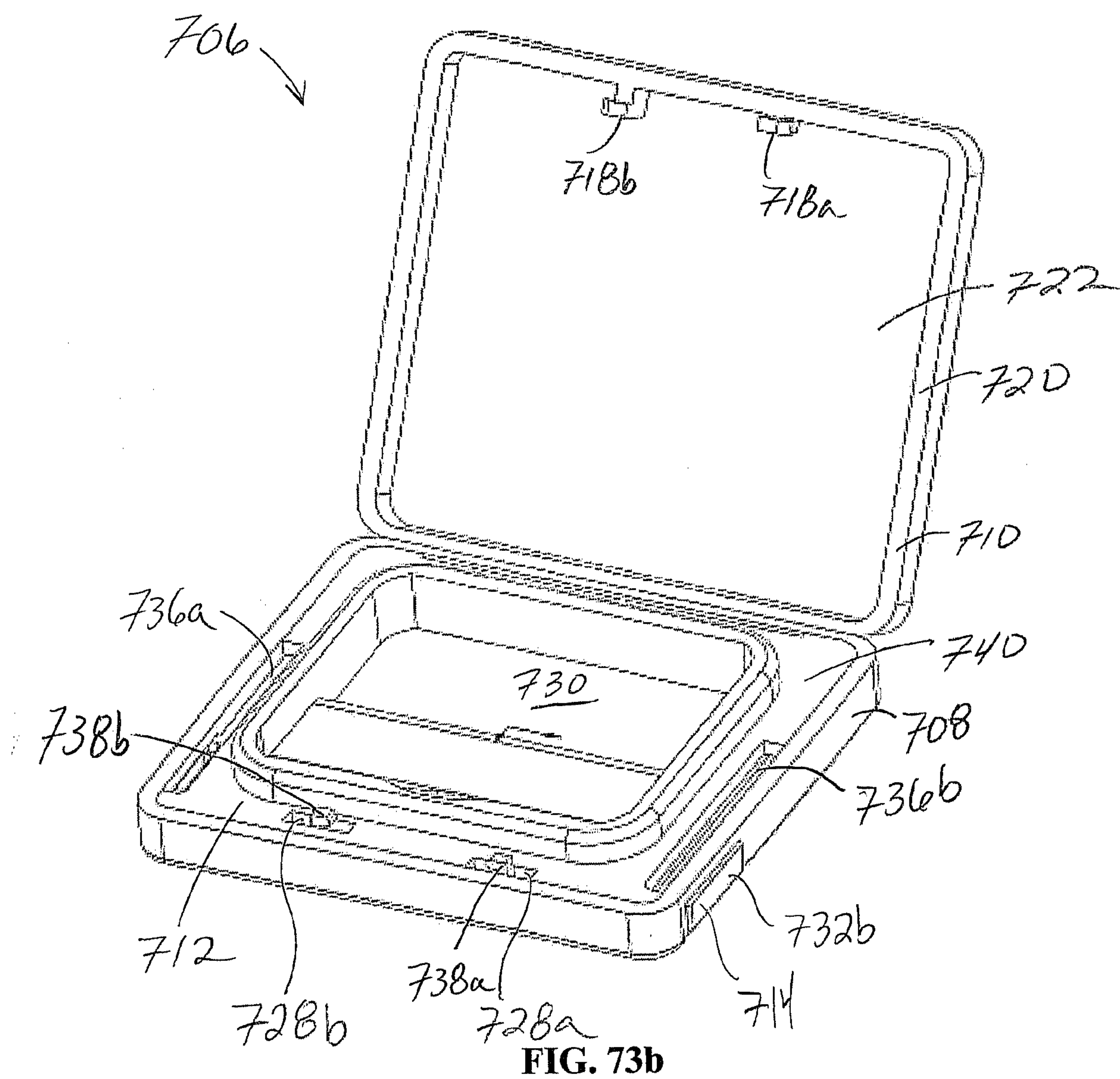
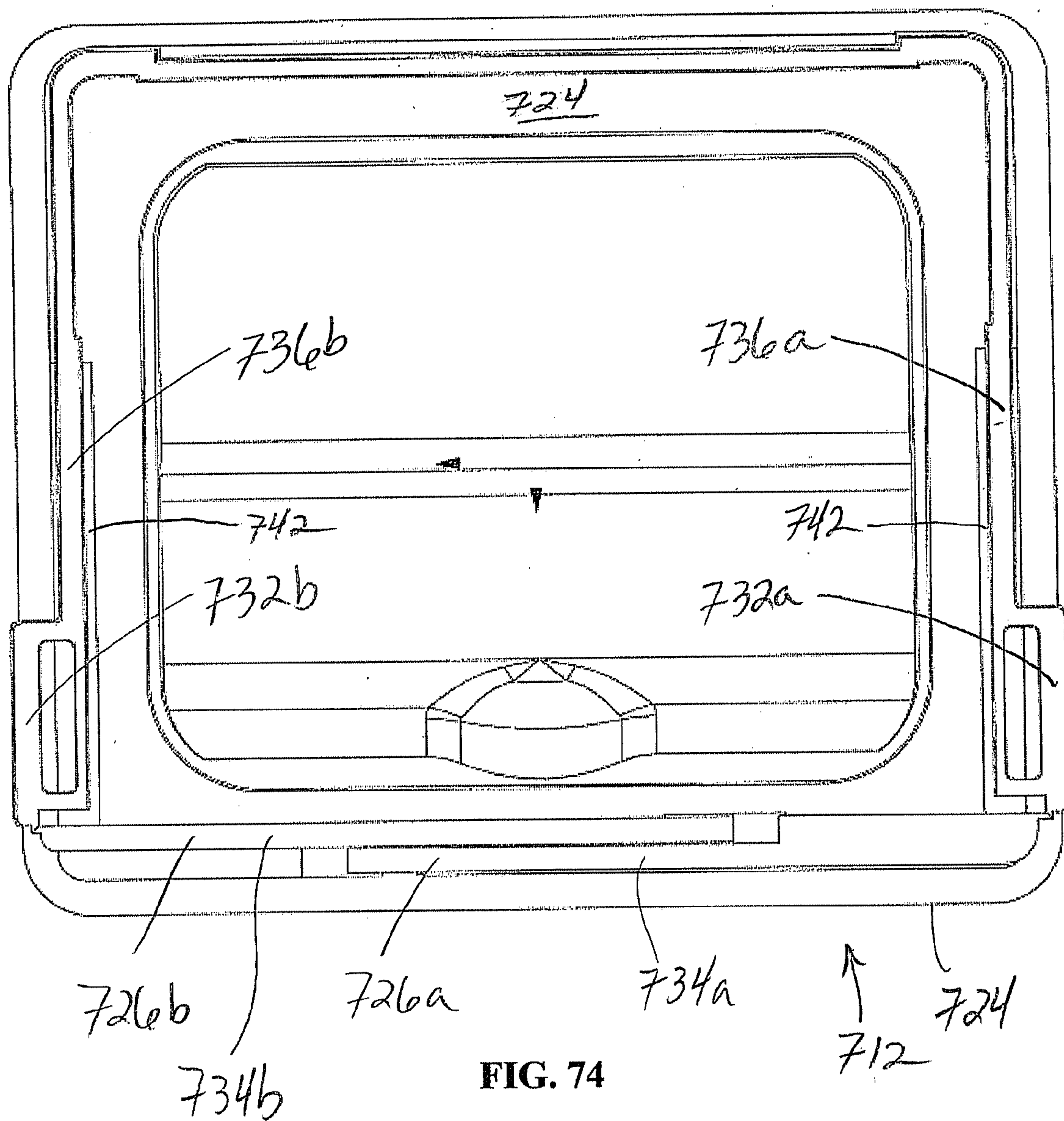
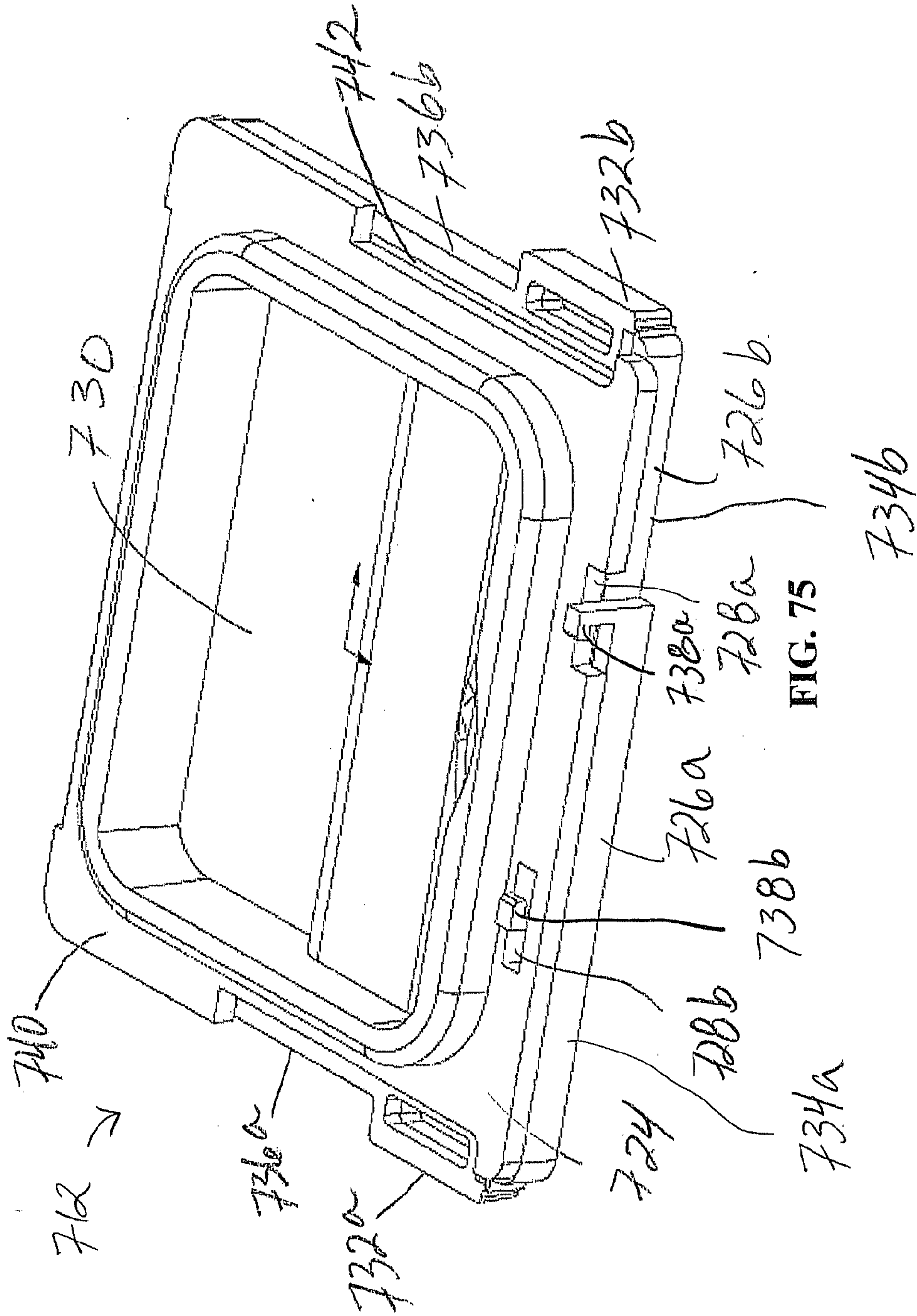


FIG. 73a







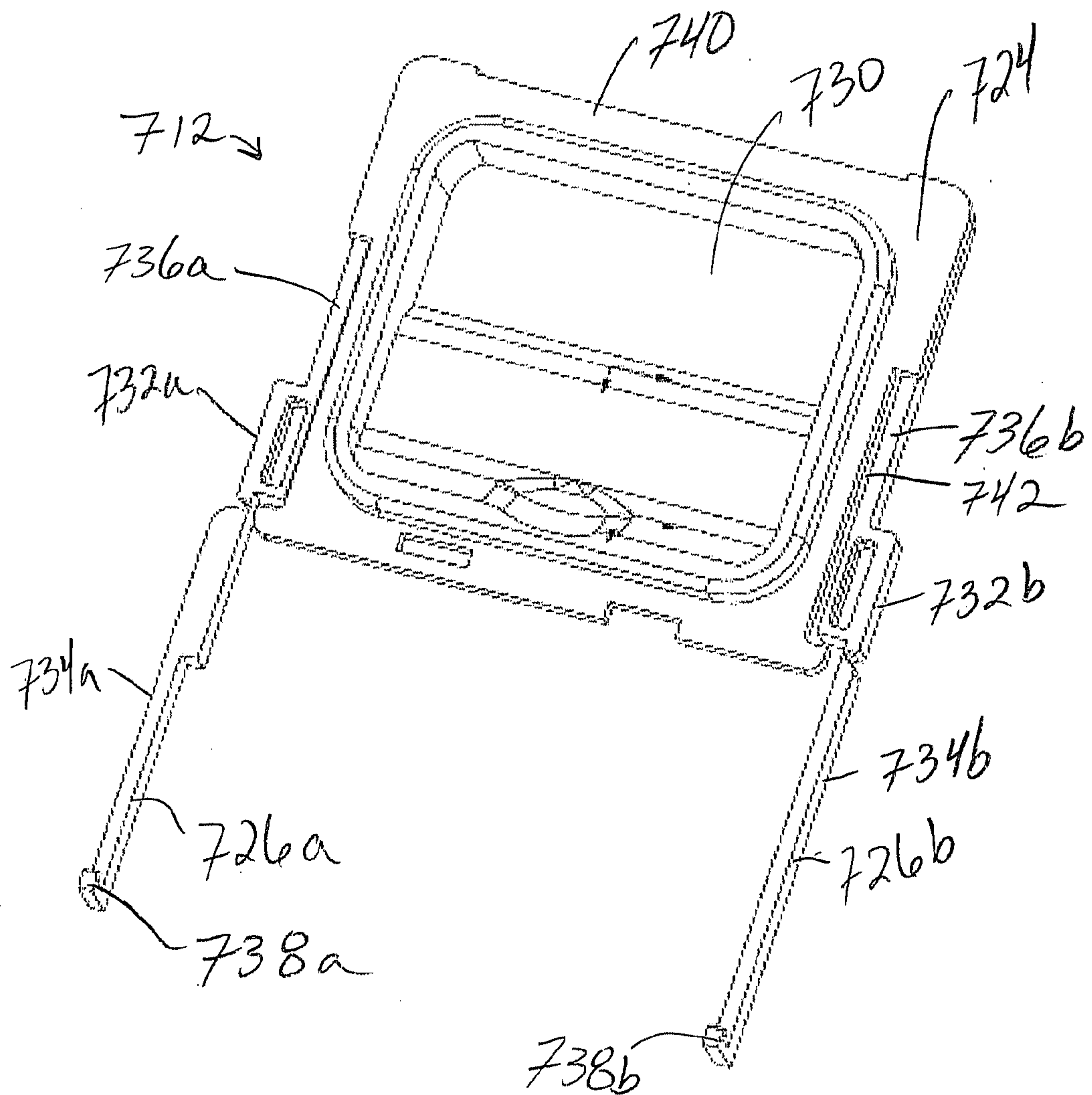
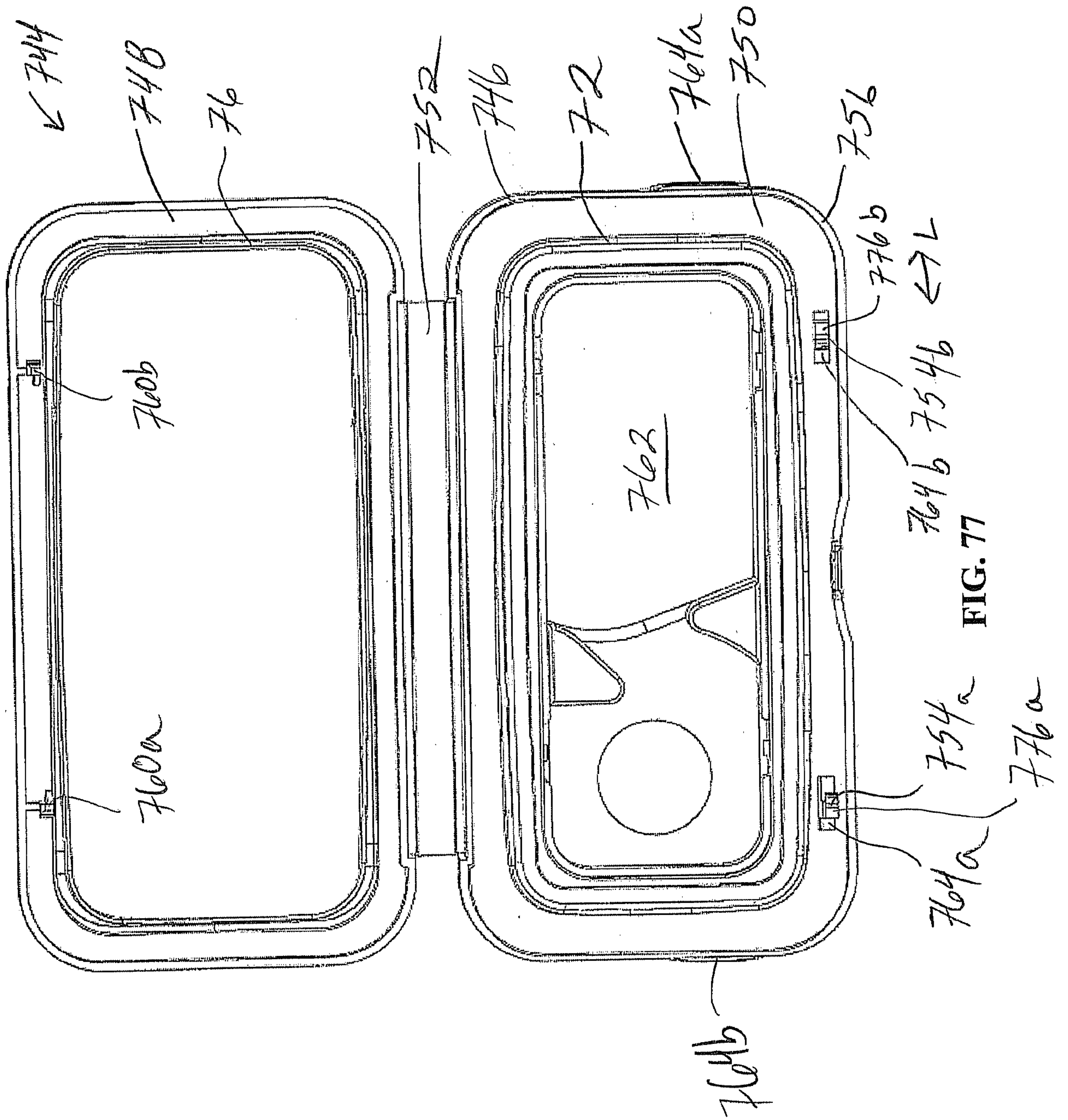


FIG. 76



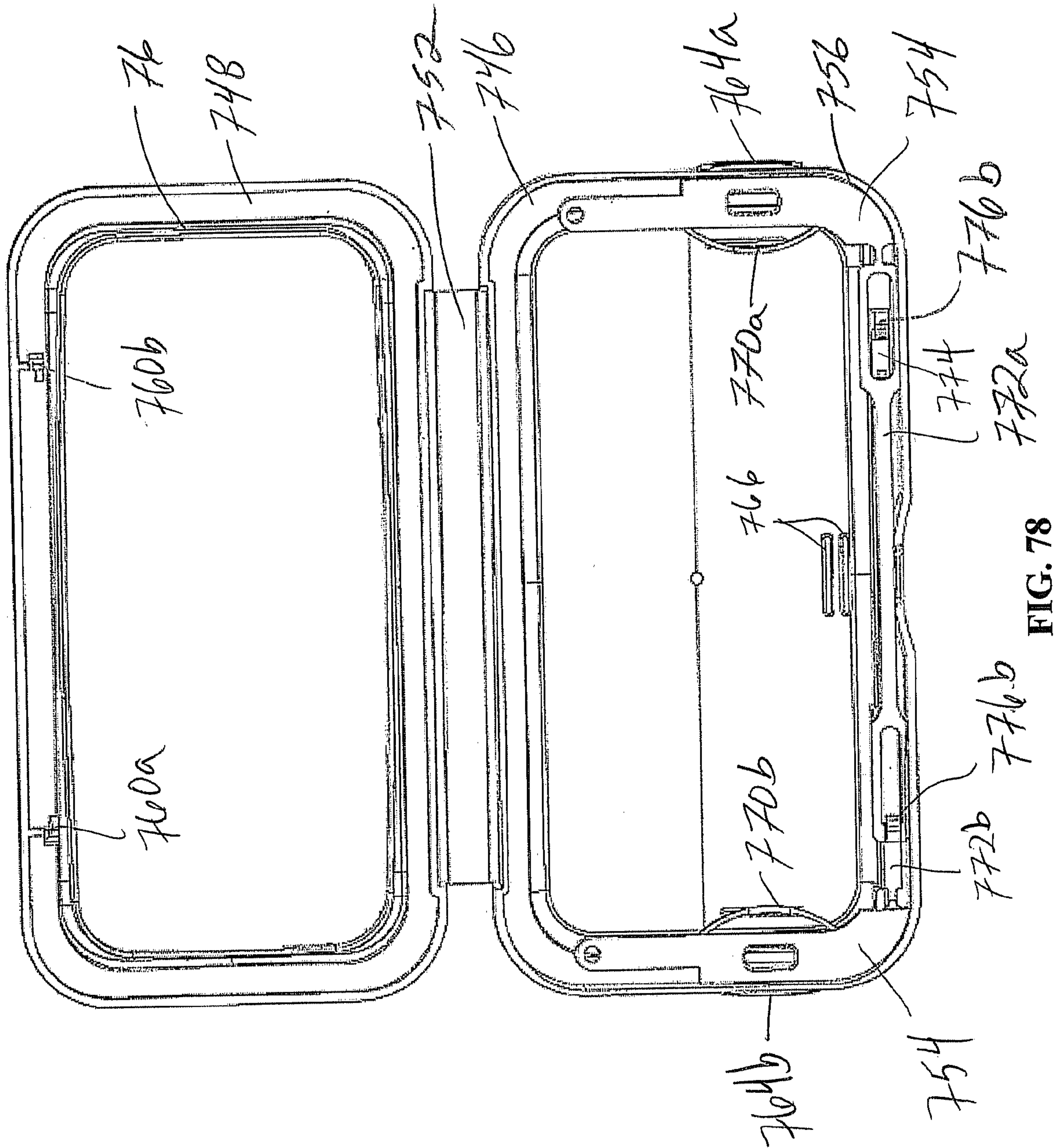


FIG. 78

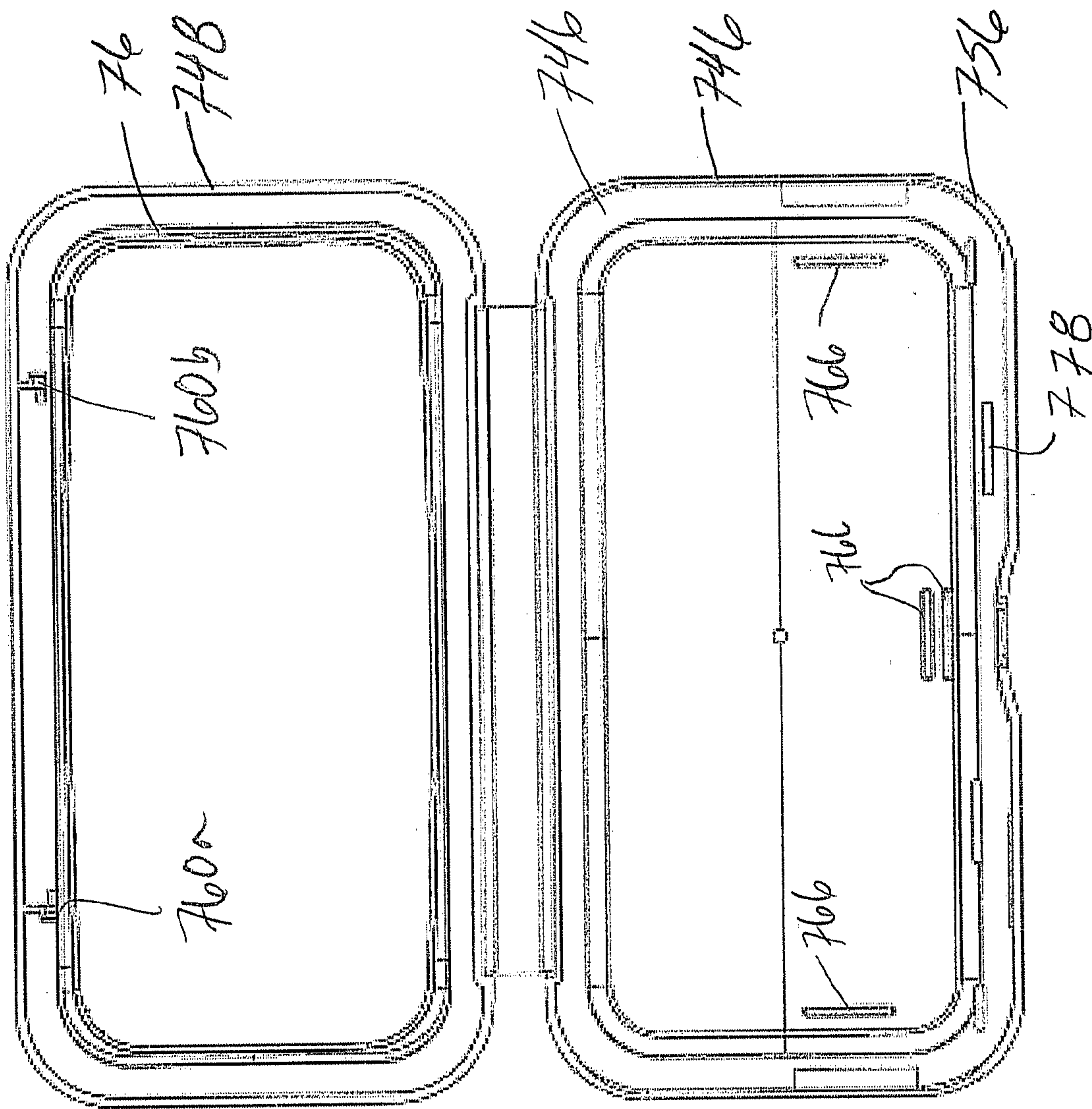


FIG. 79

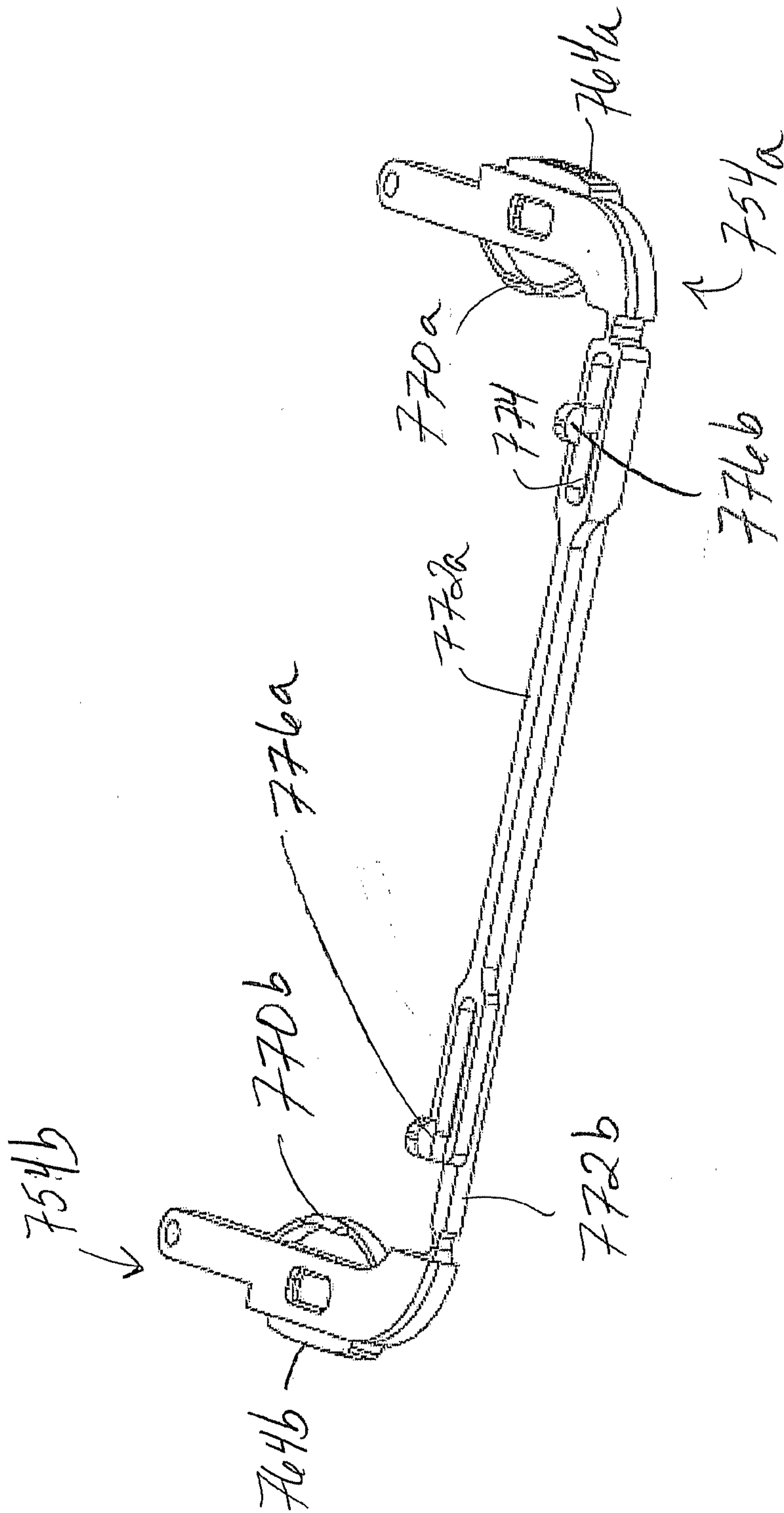


FIG. 80

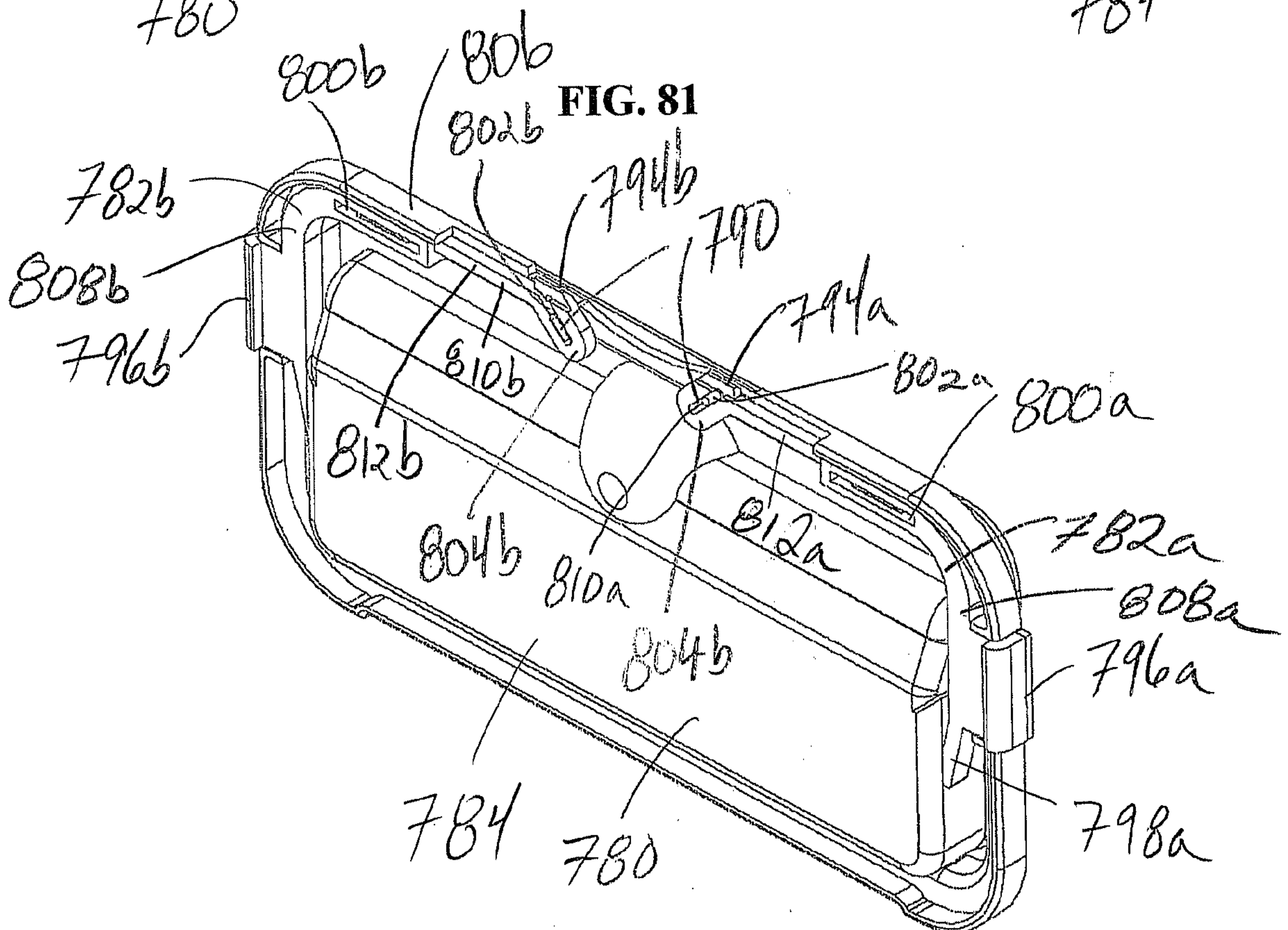
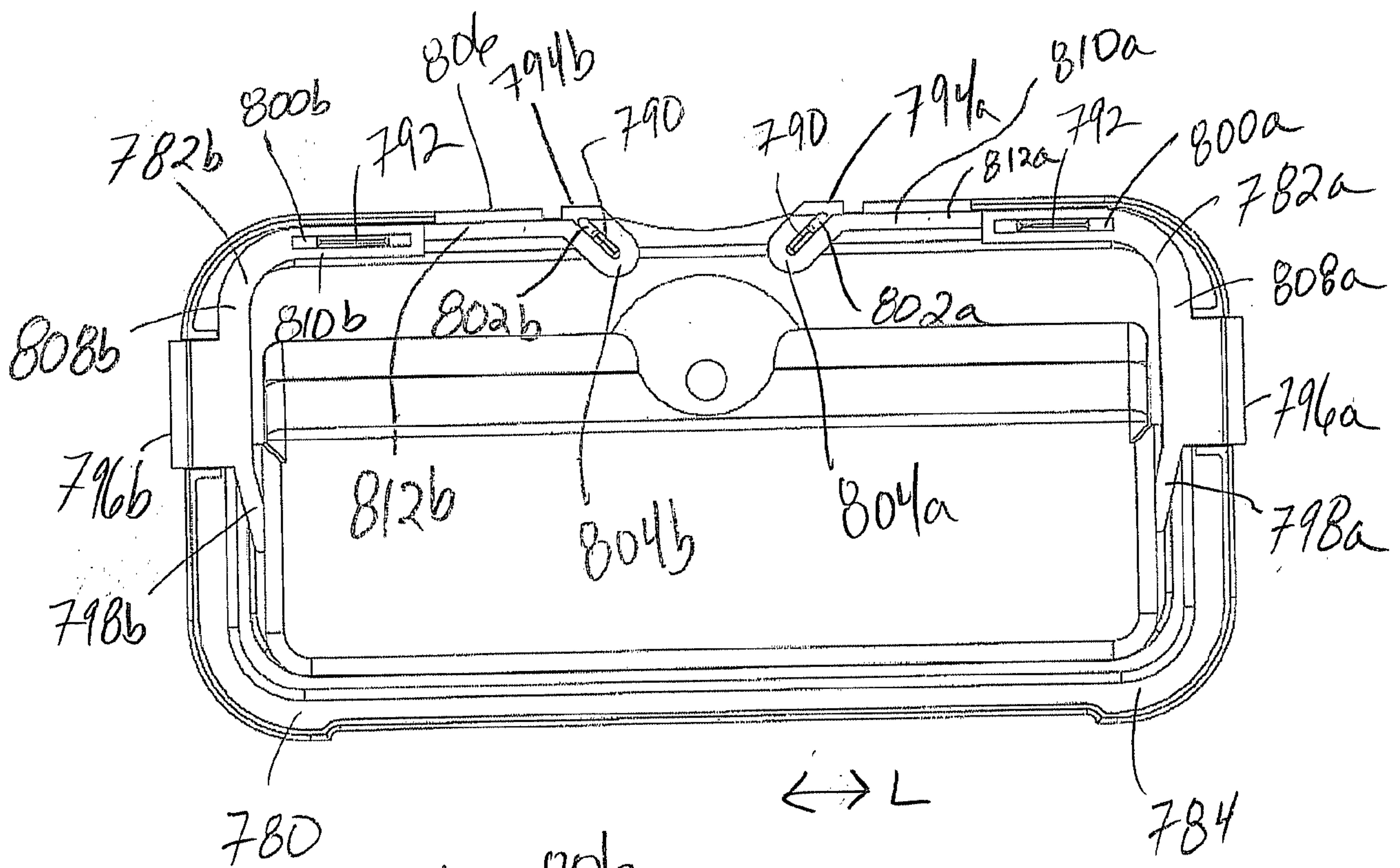


FIG. 82

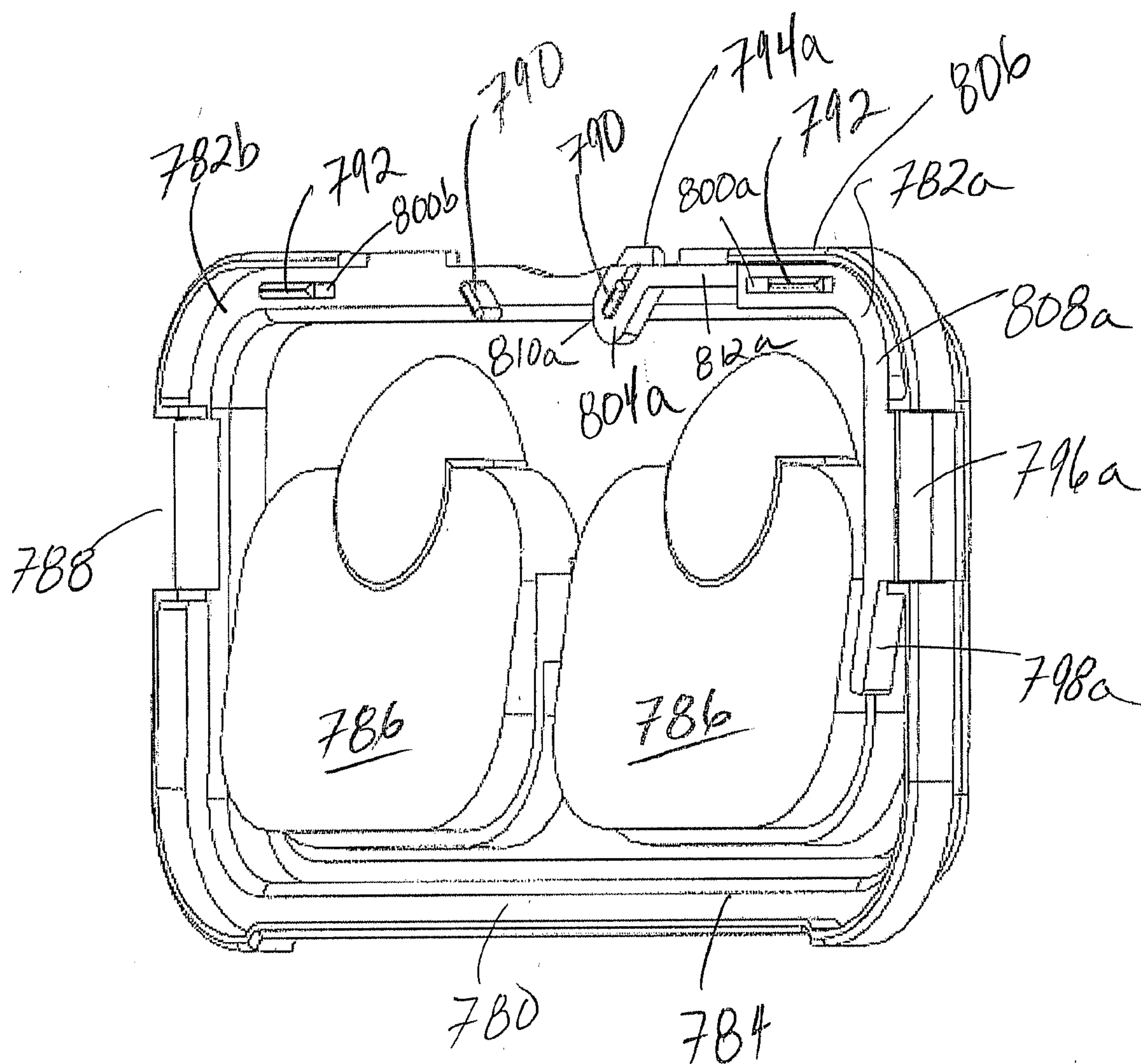


FIG. 83

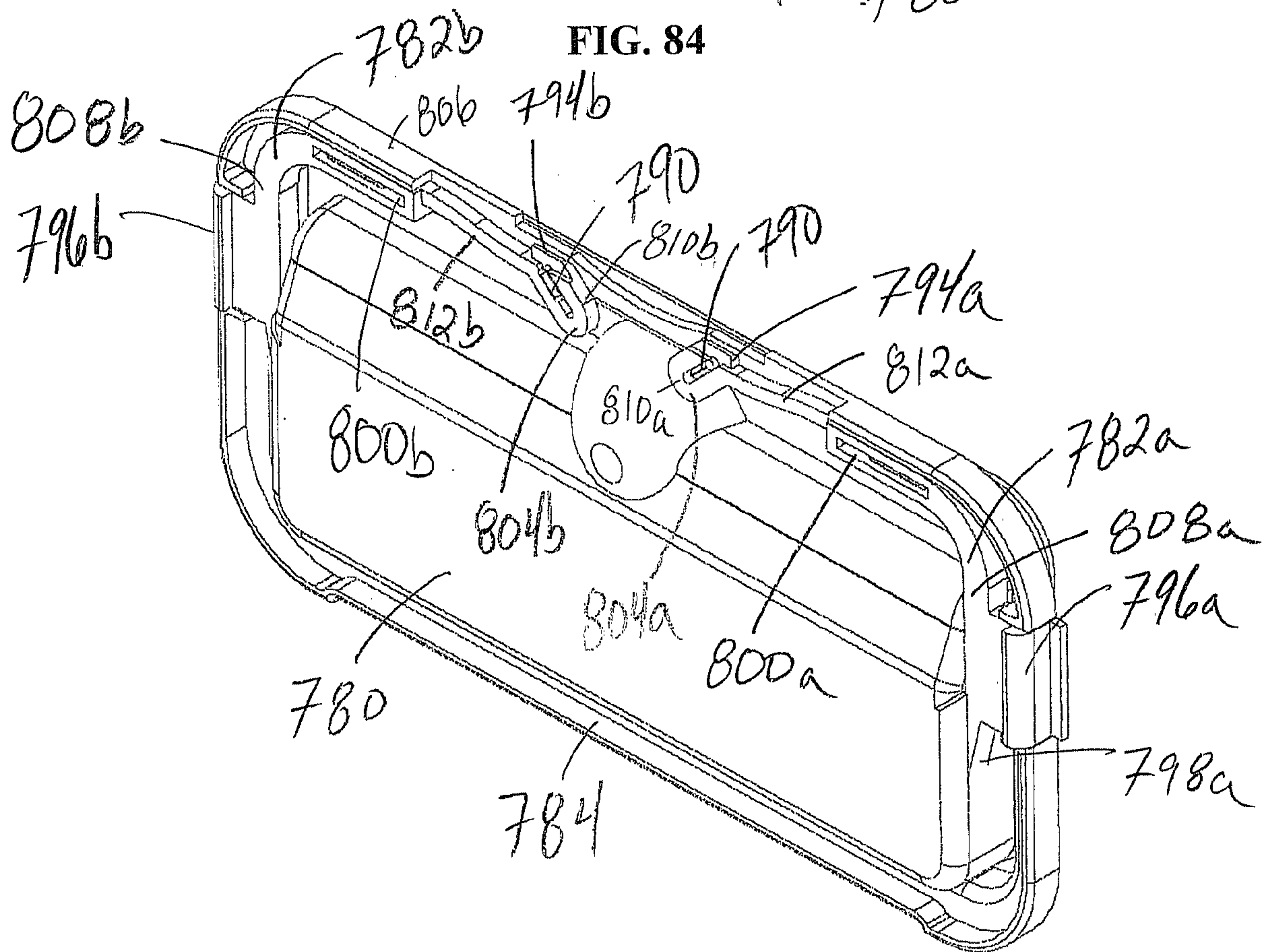
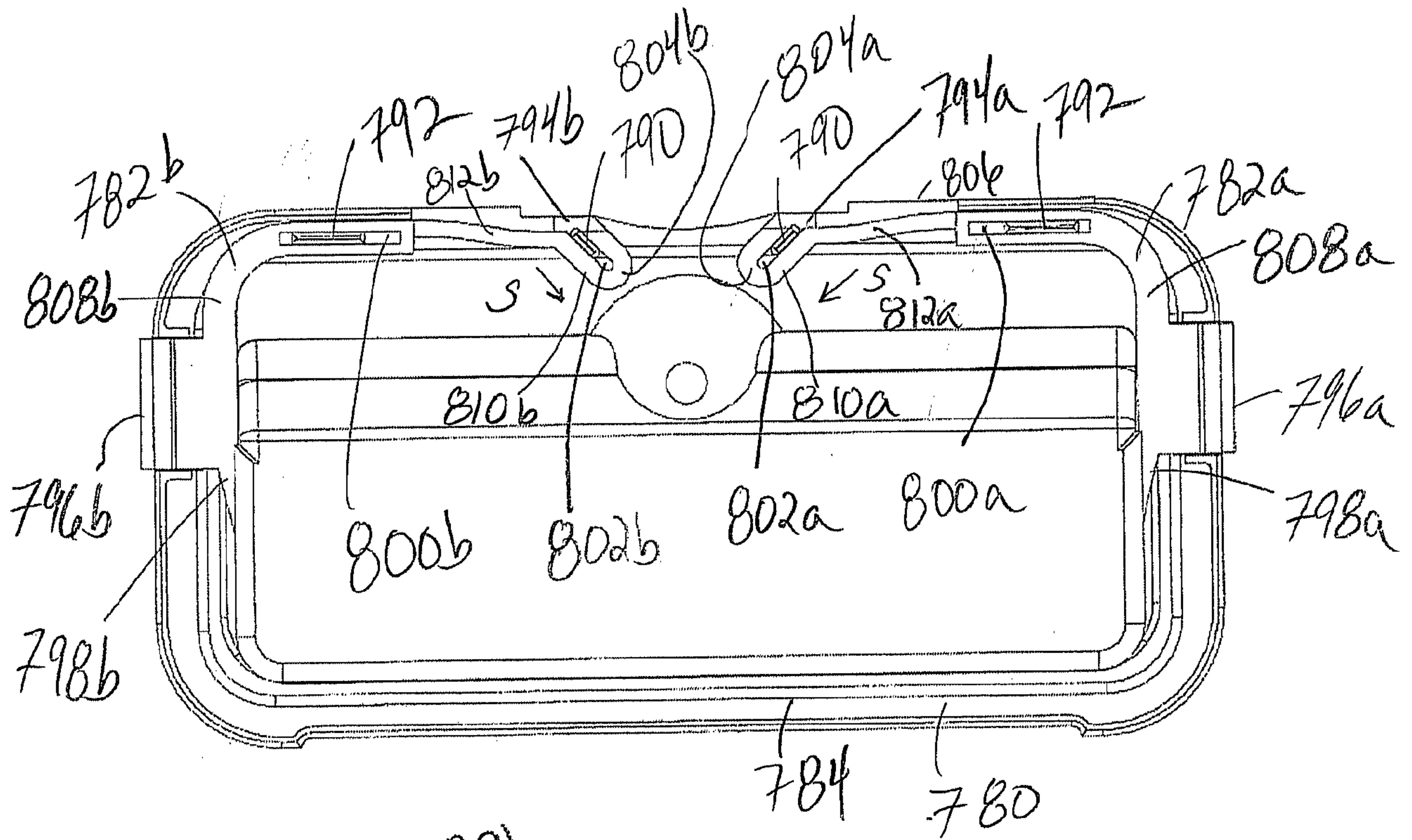
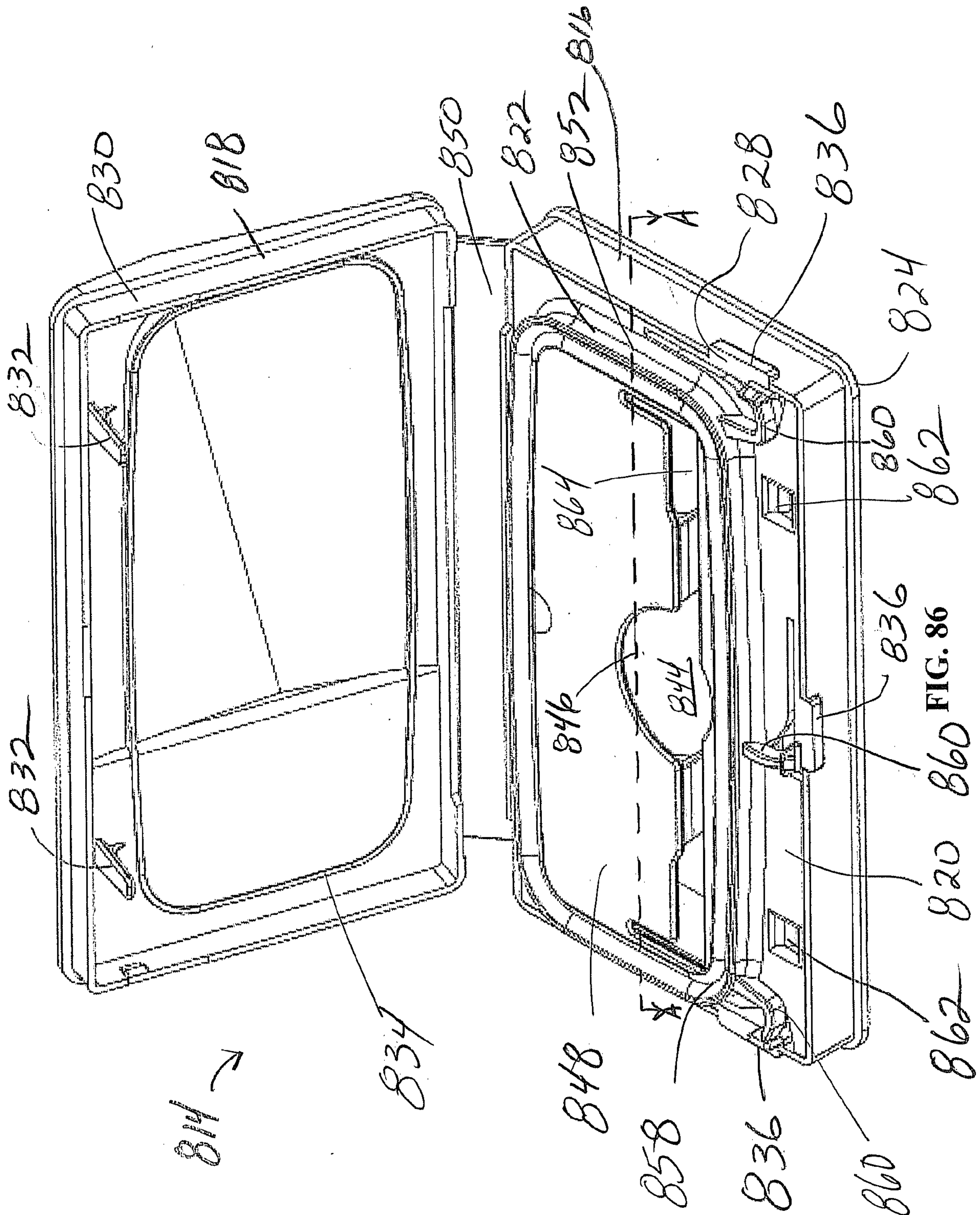
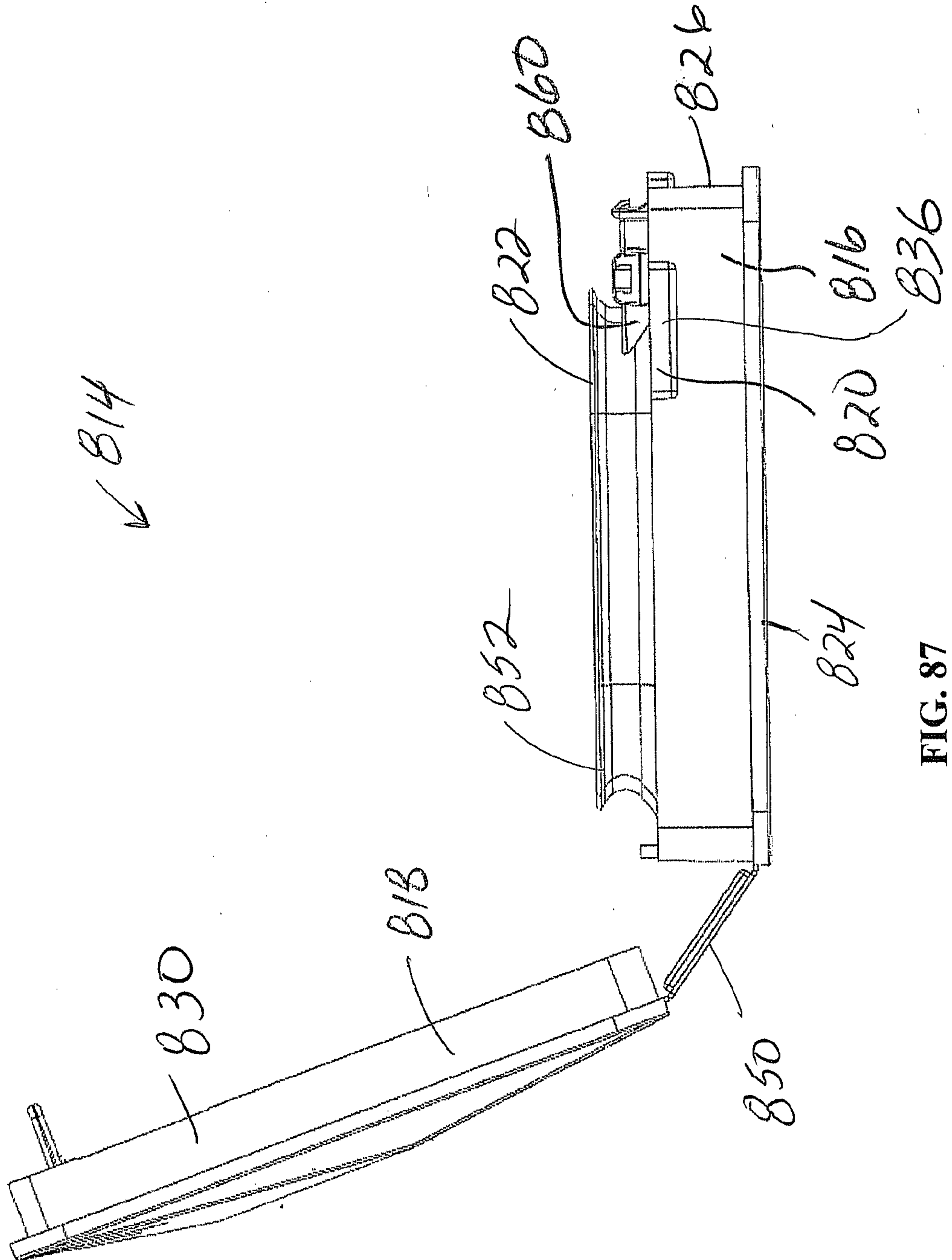


FIG. 85





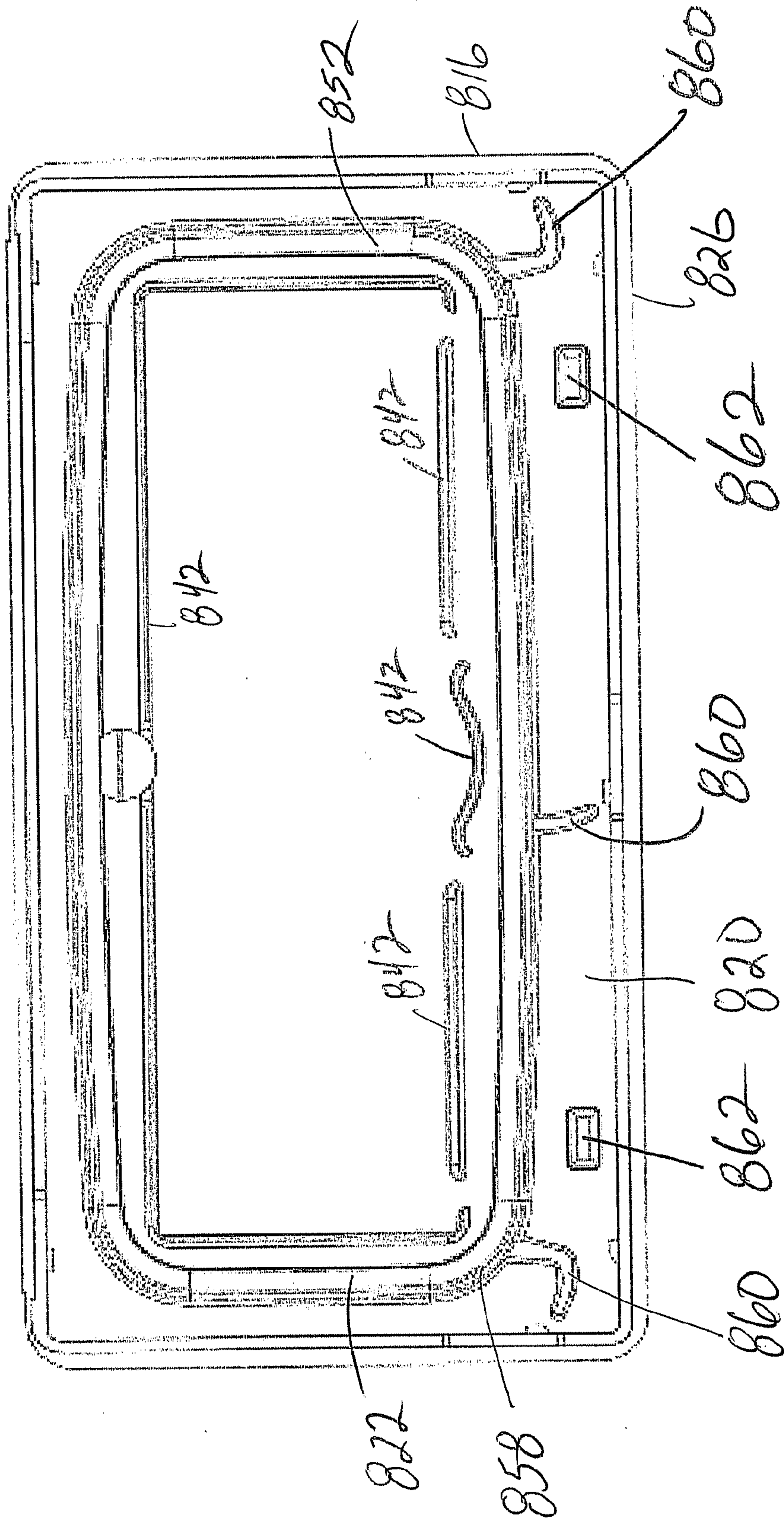


FIG. 88

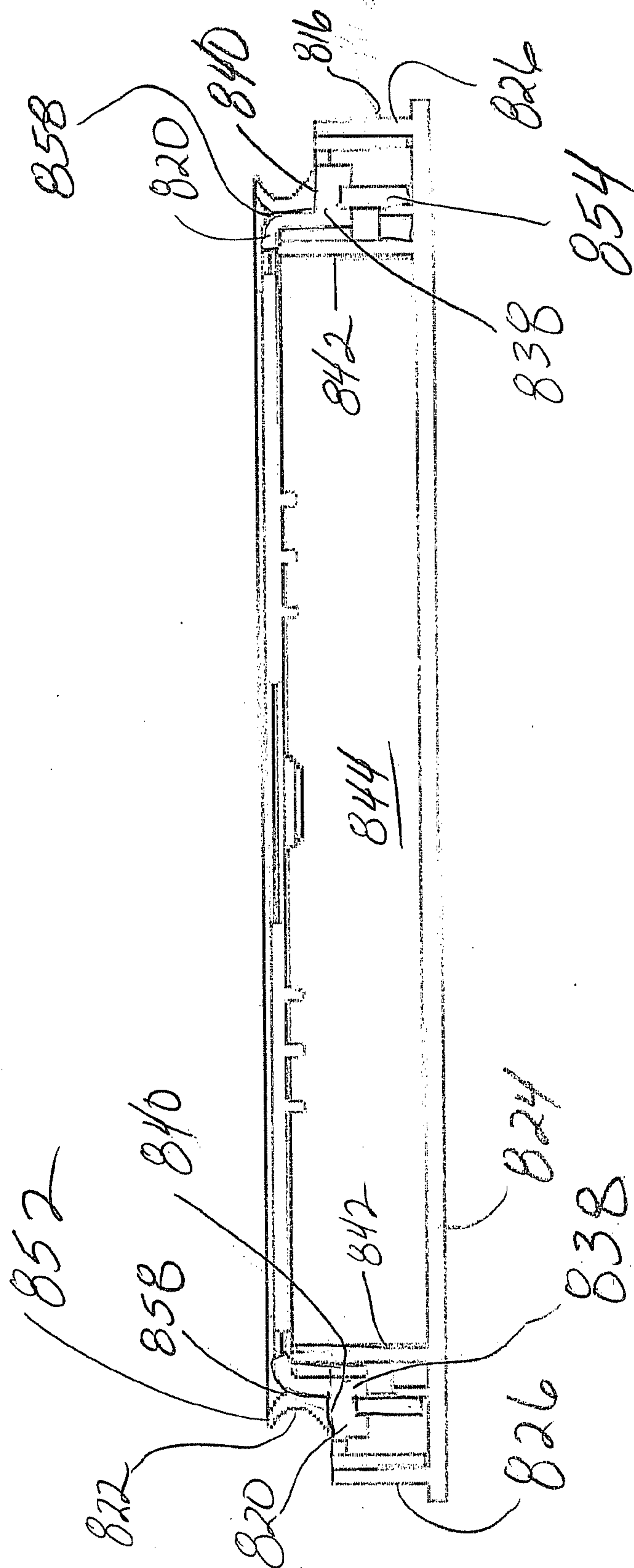


FIG. 89

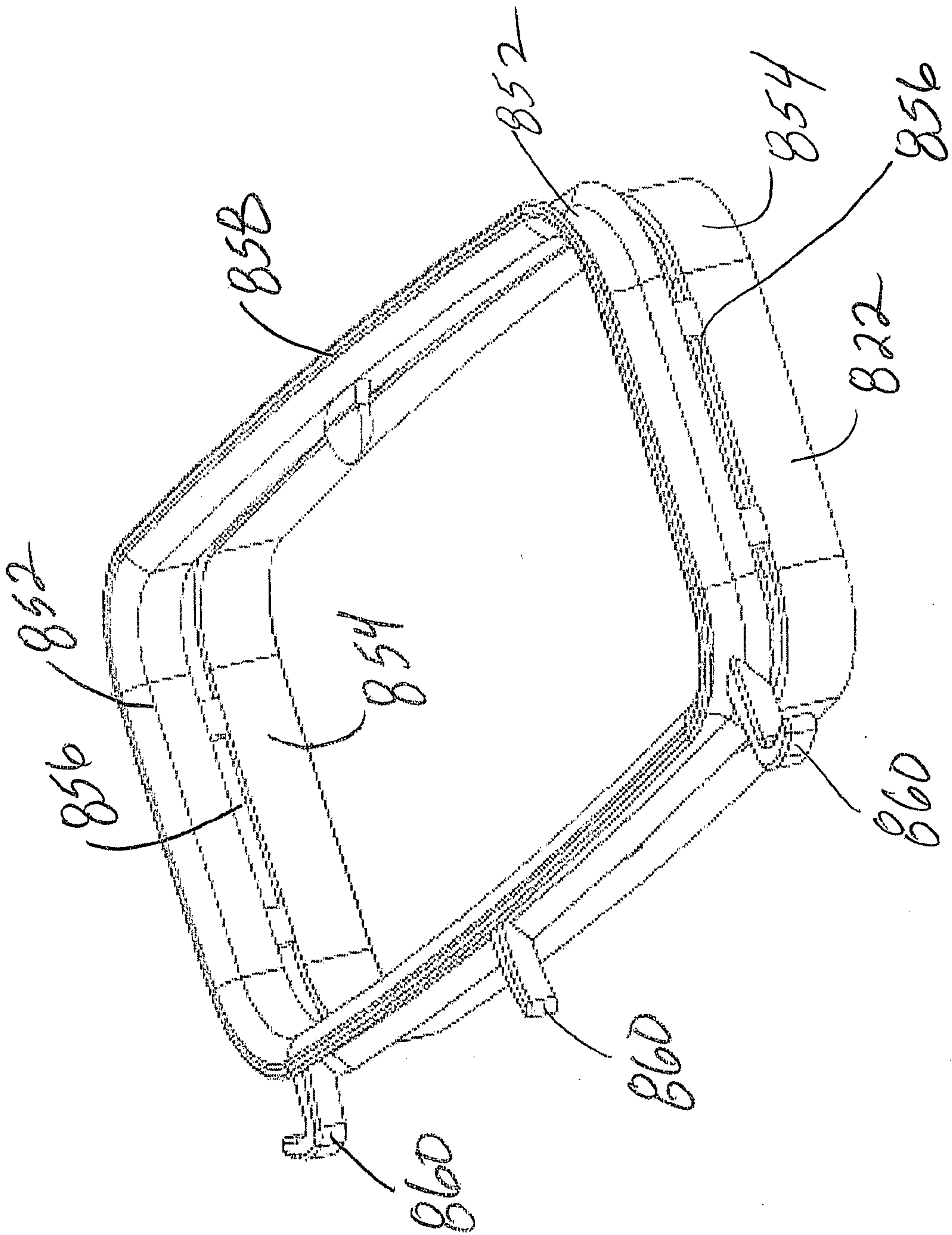


FIG. 90

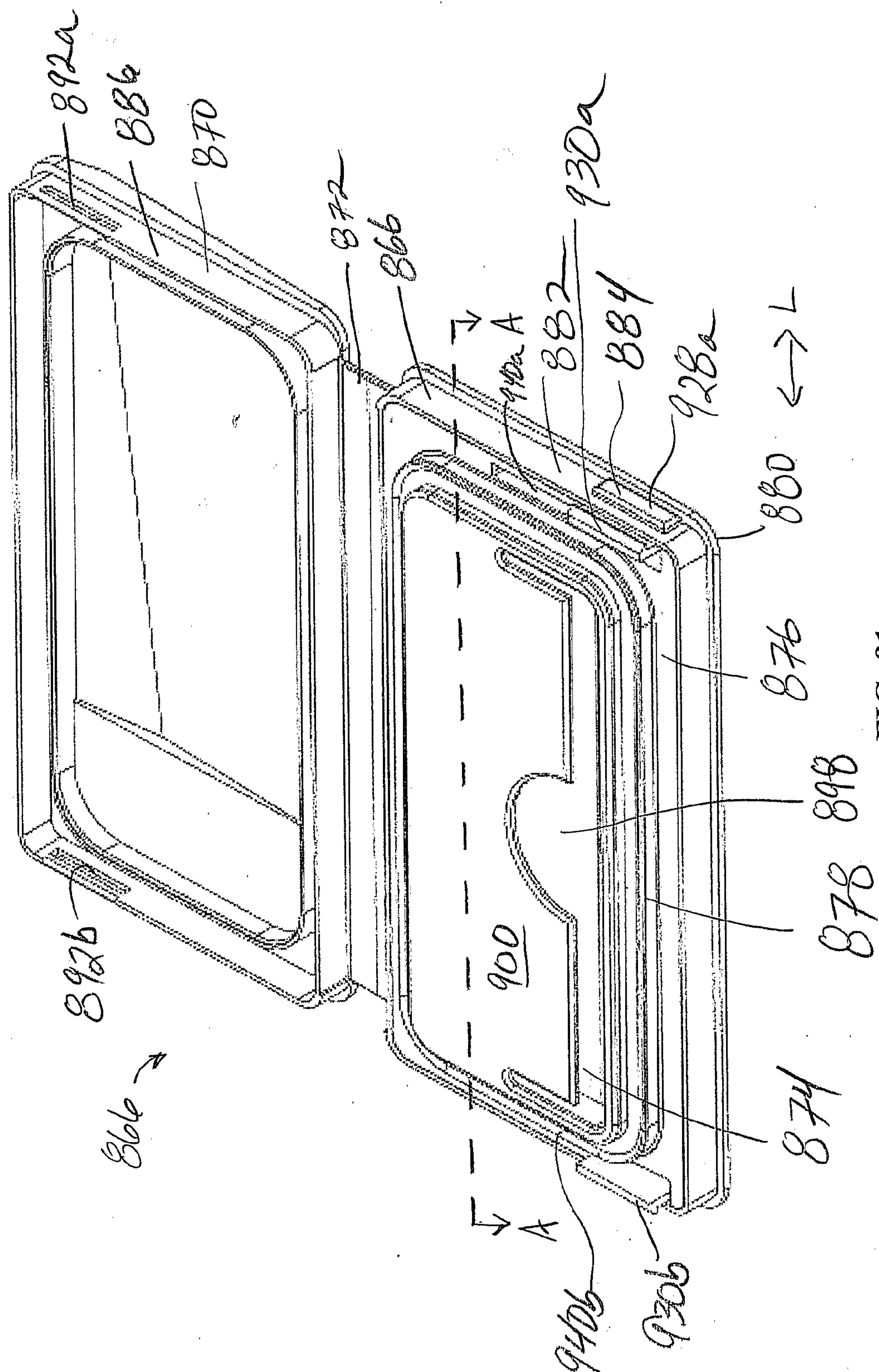


FIG. 91

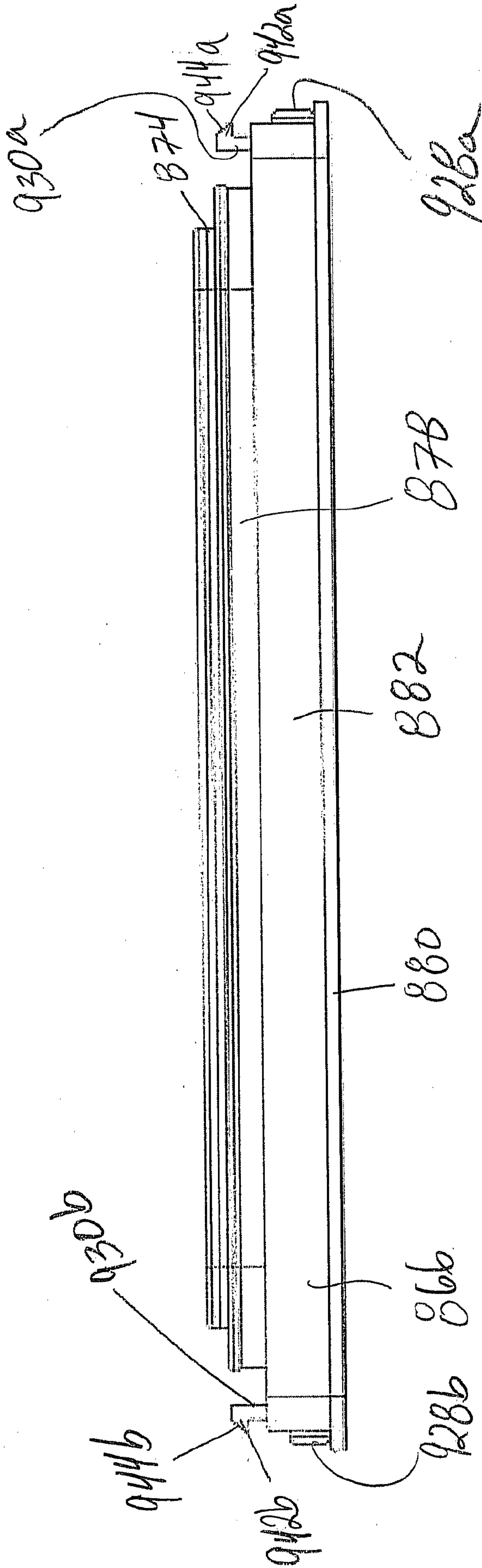
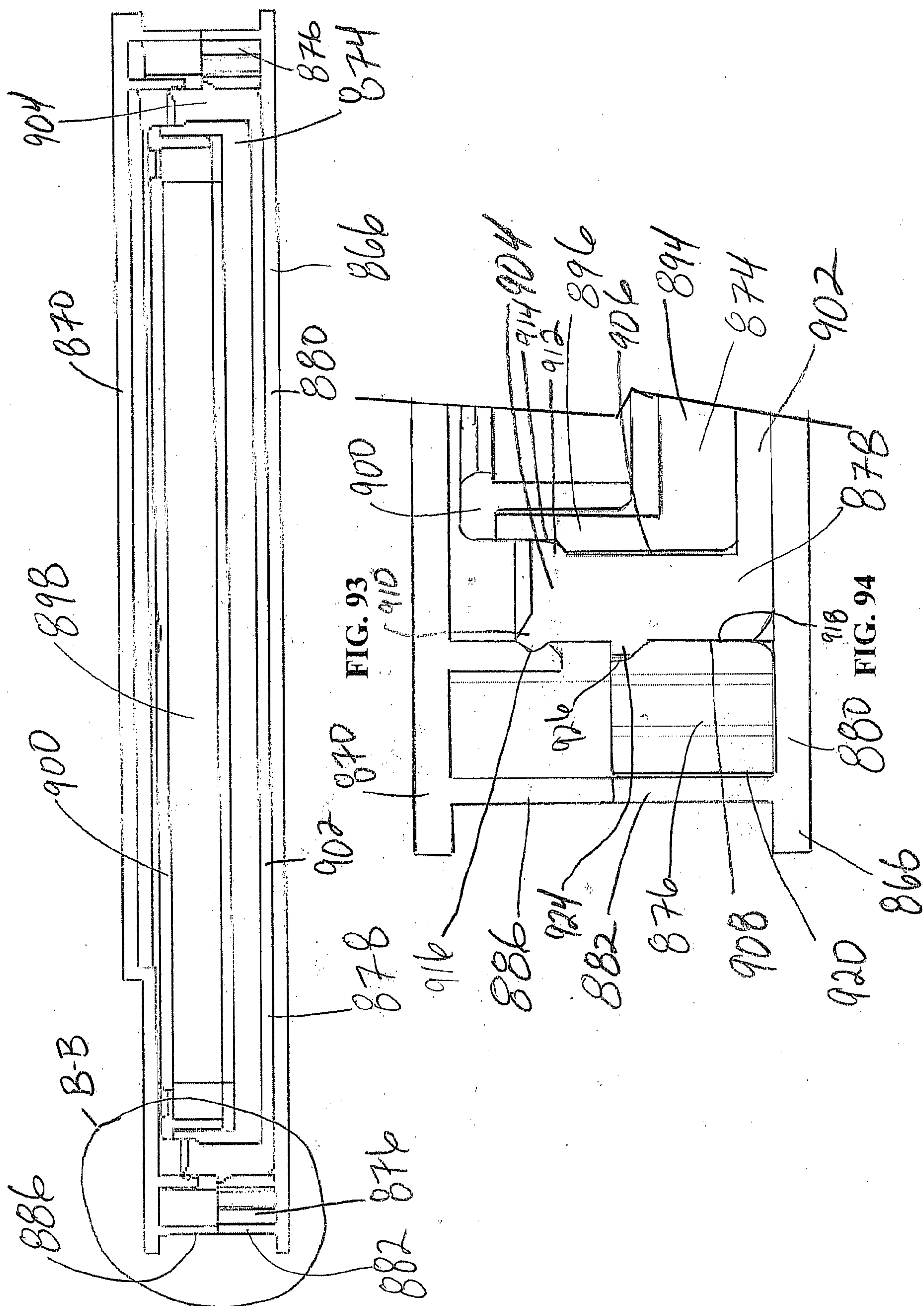


FIG. 92



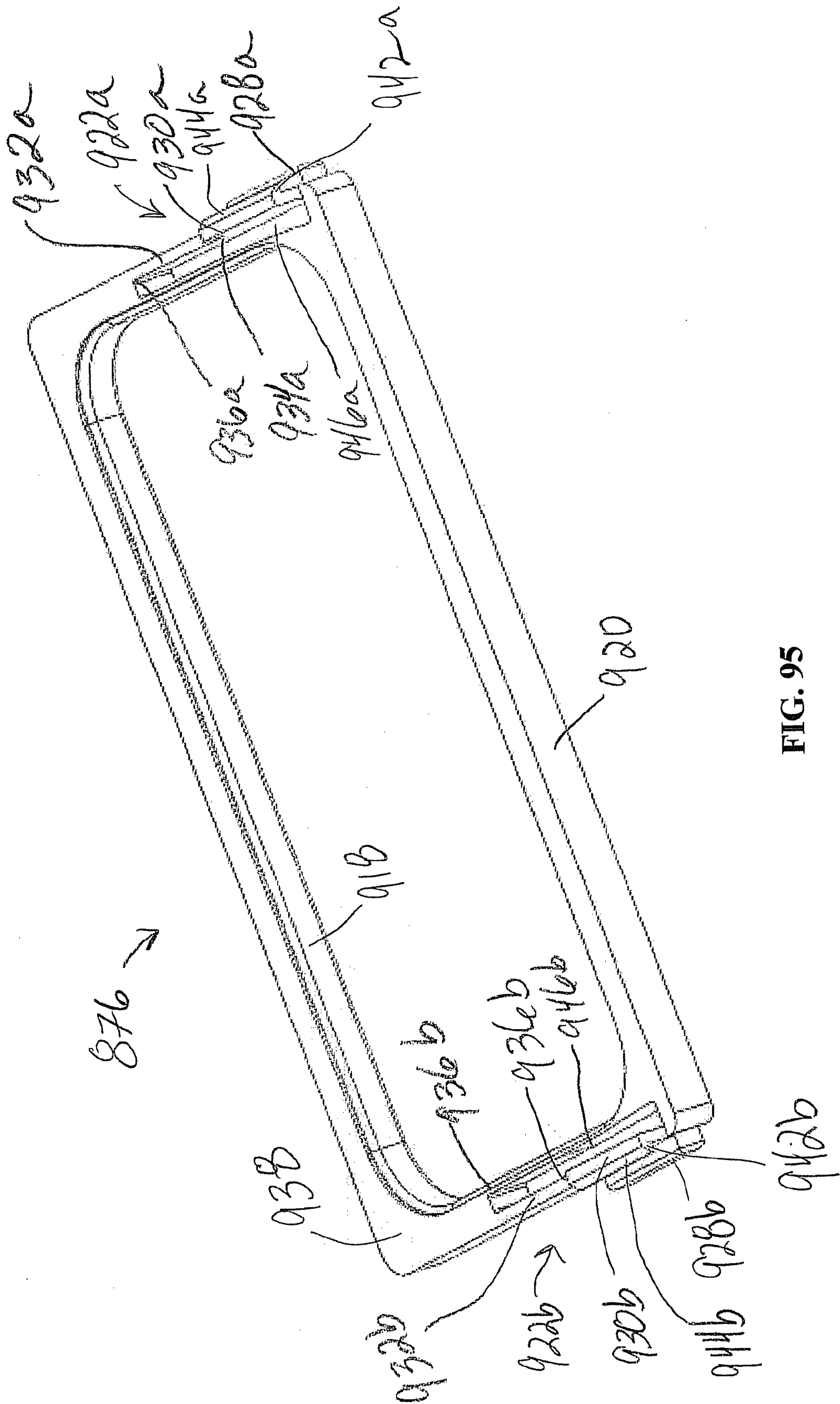
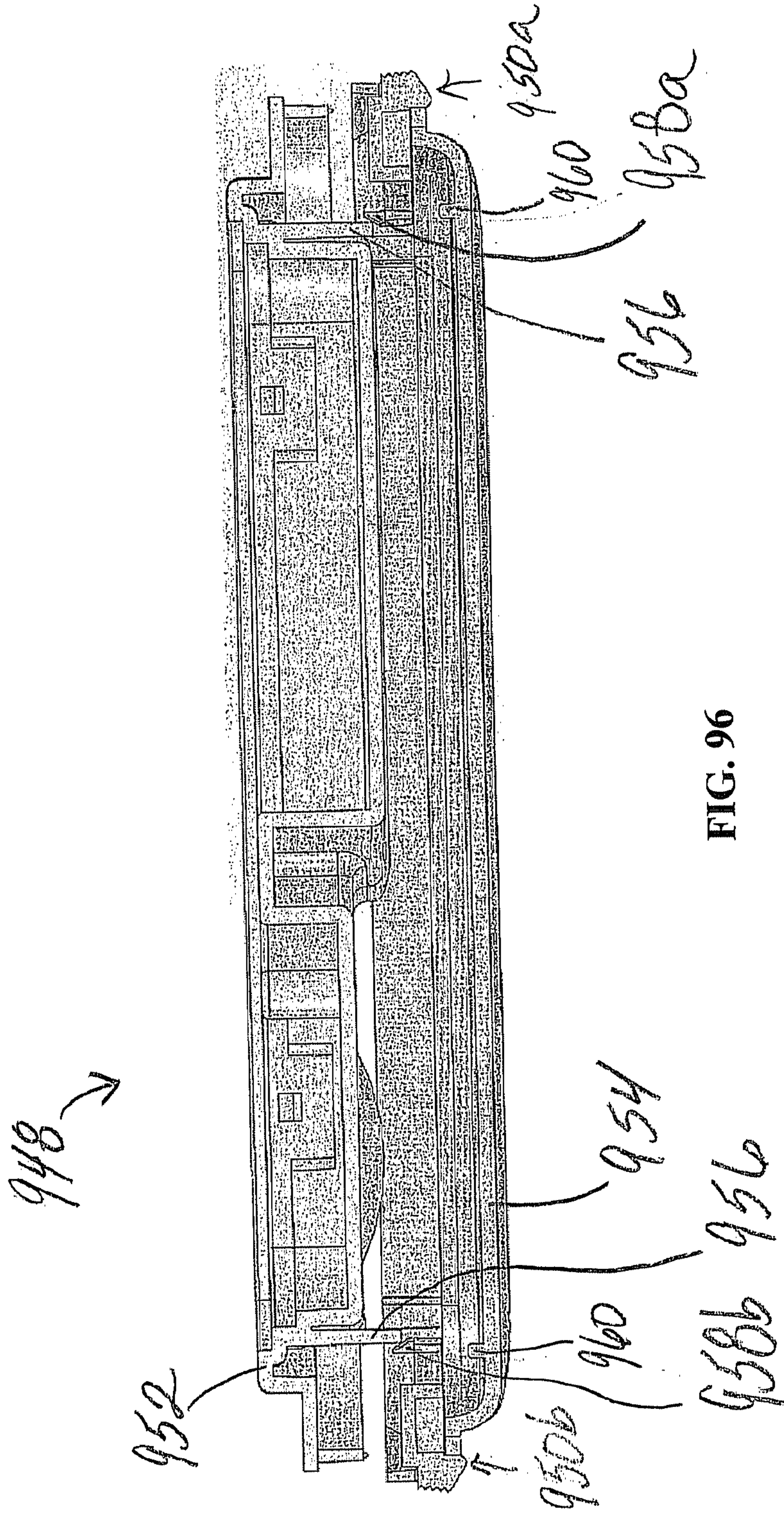


FIG. 95



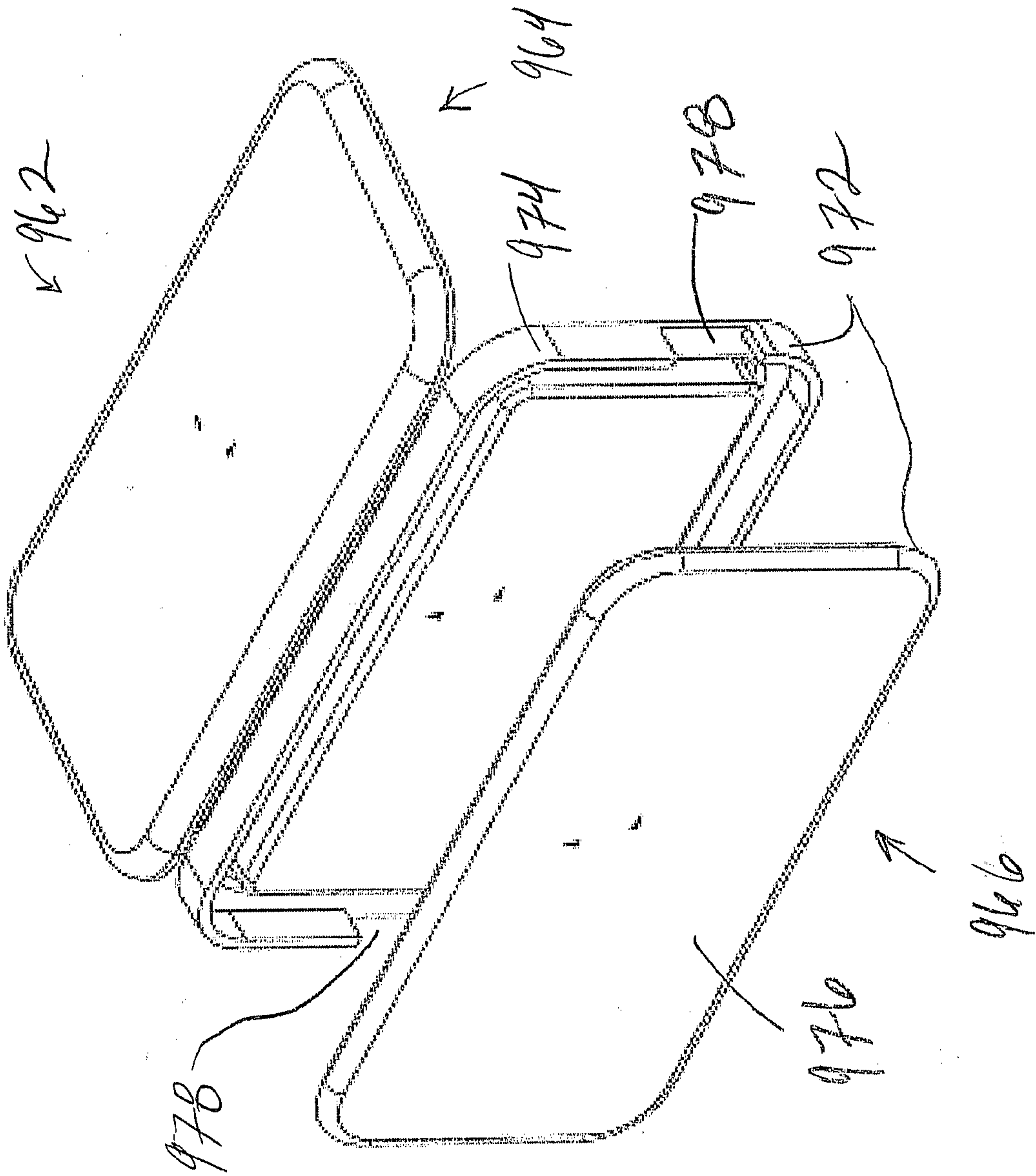


FIG. 98

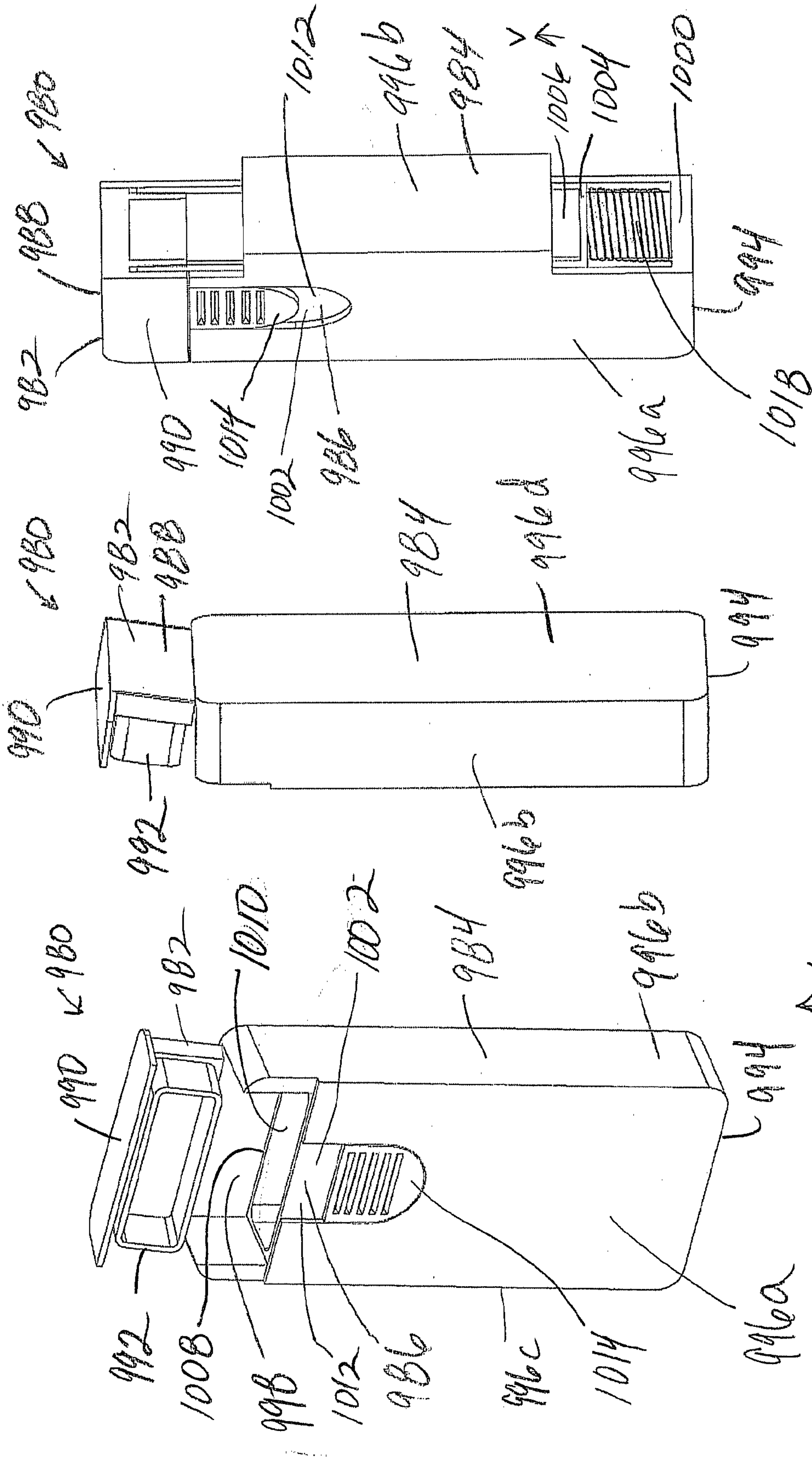


FIG. 101

FIG. 100

FIG. 99

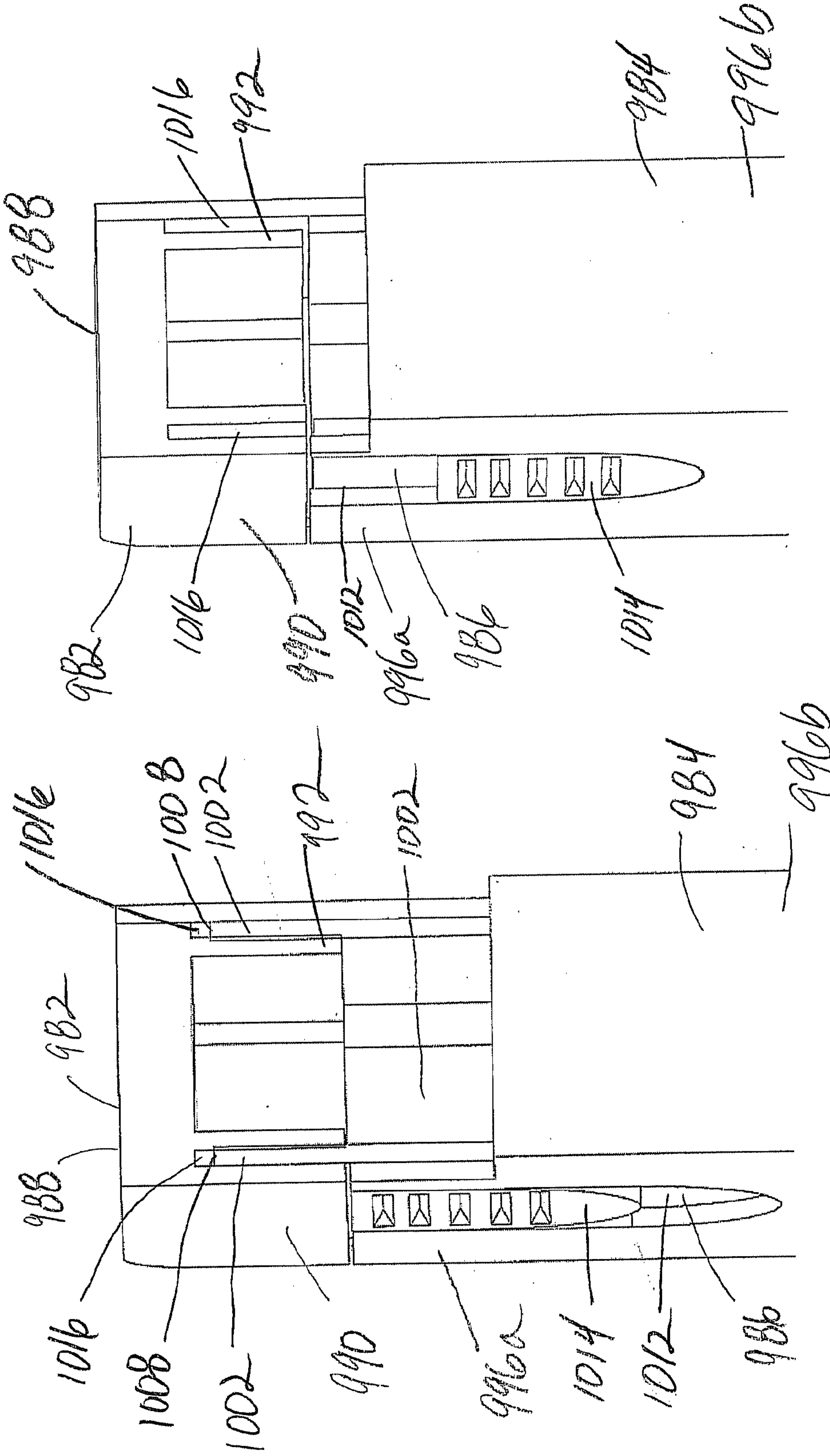


FIG. 103

FIG. 102

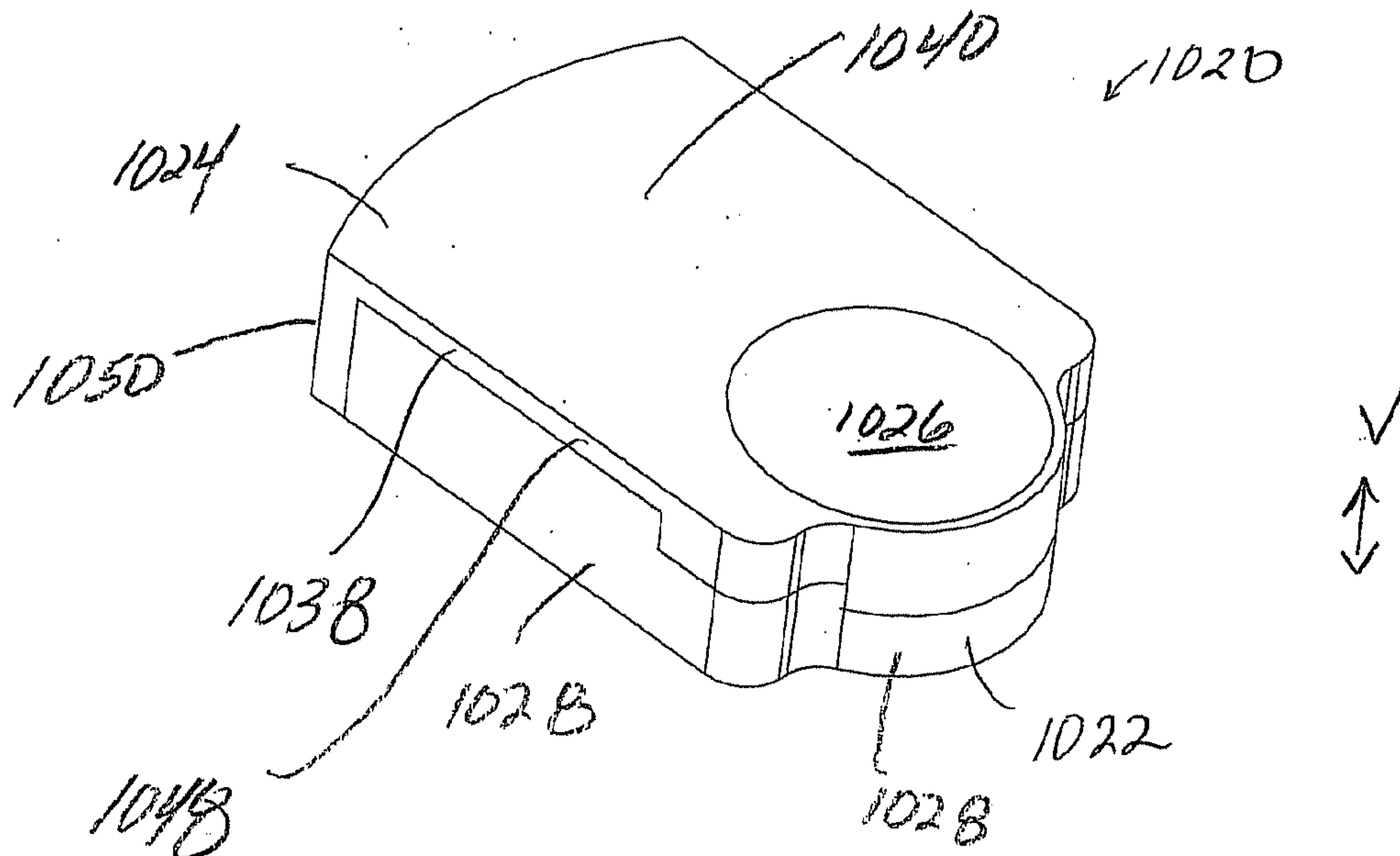


FIG. 104

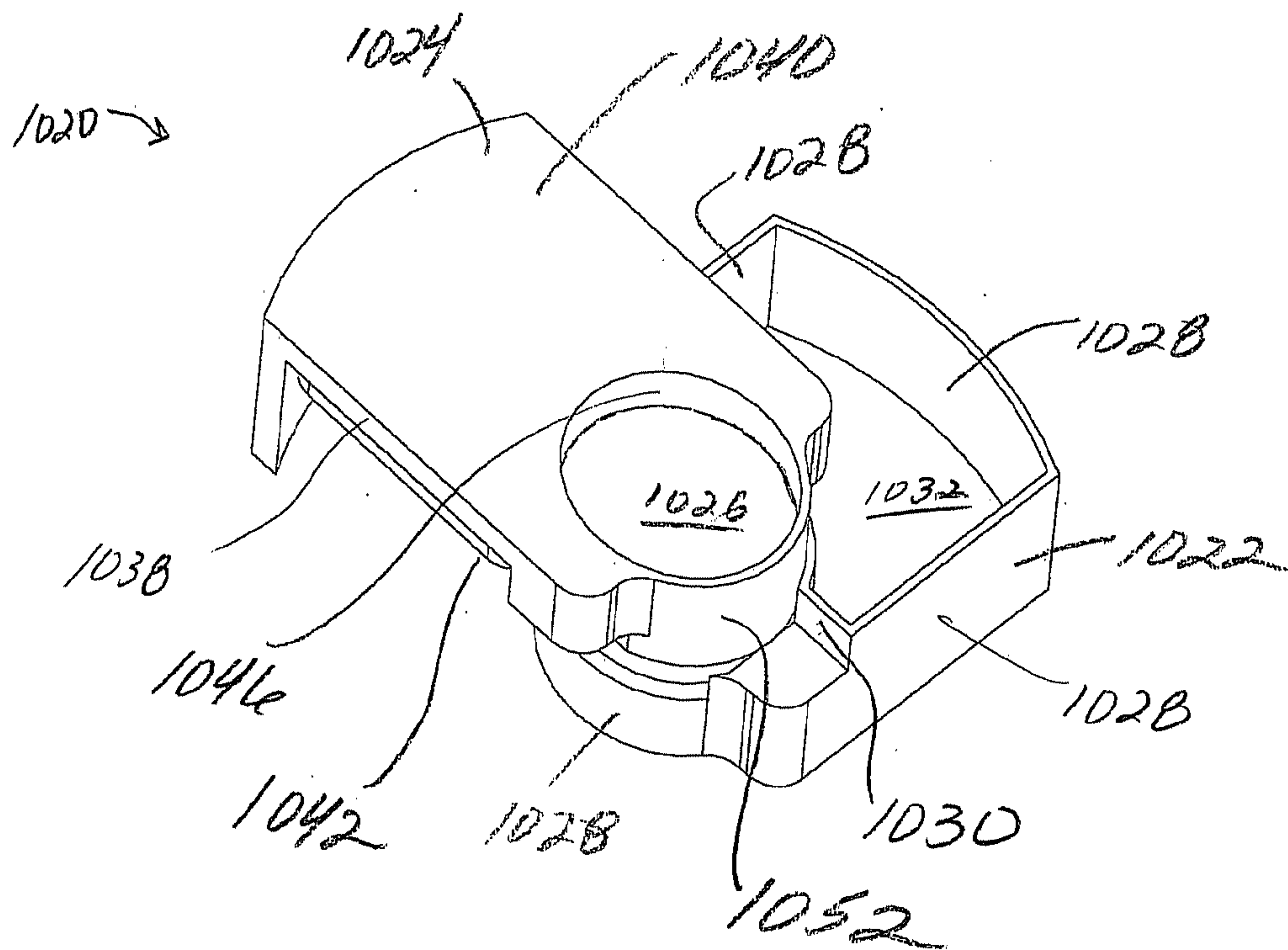


FIG. 105

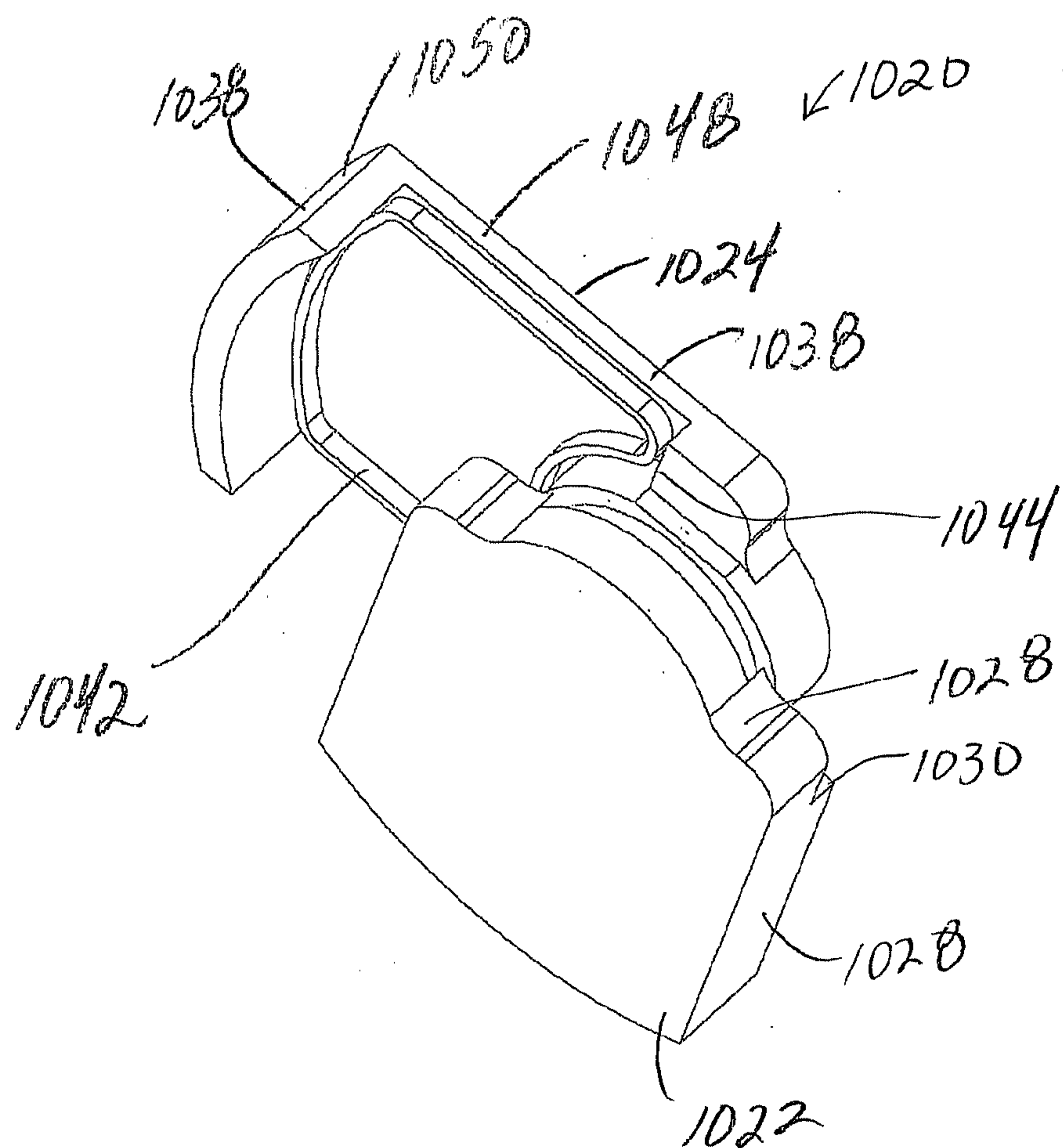
**FIG. 106**

FIG. 107

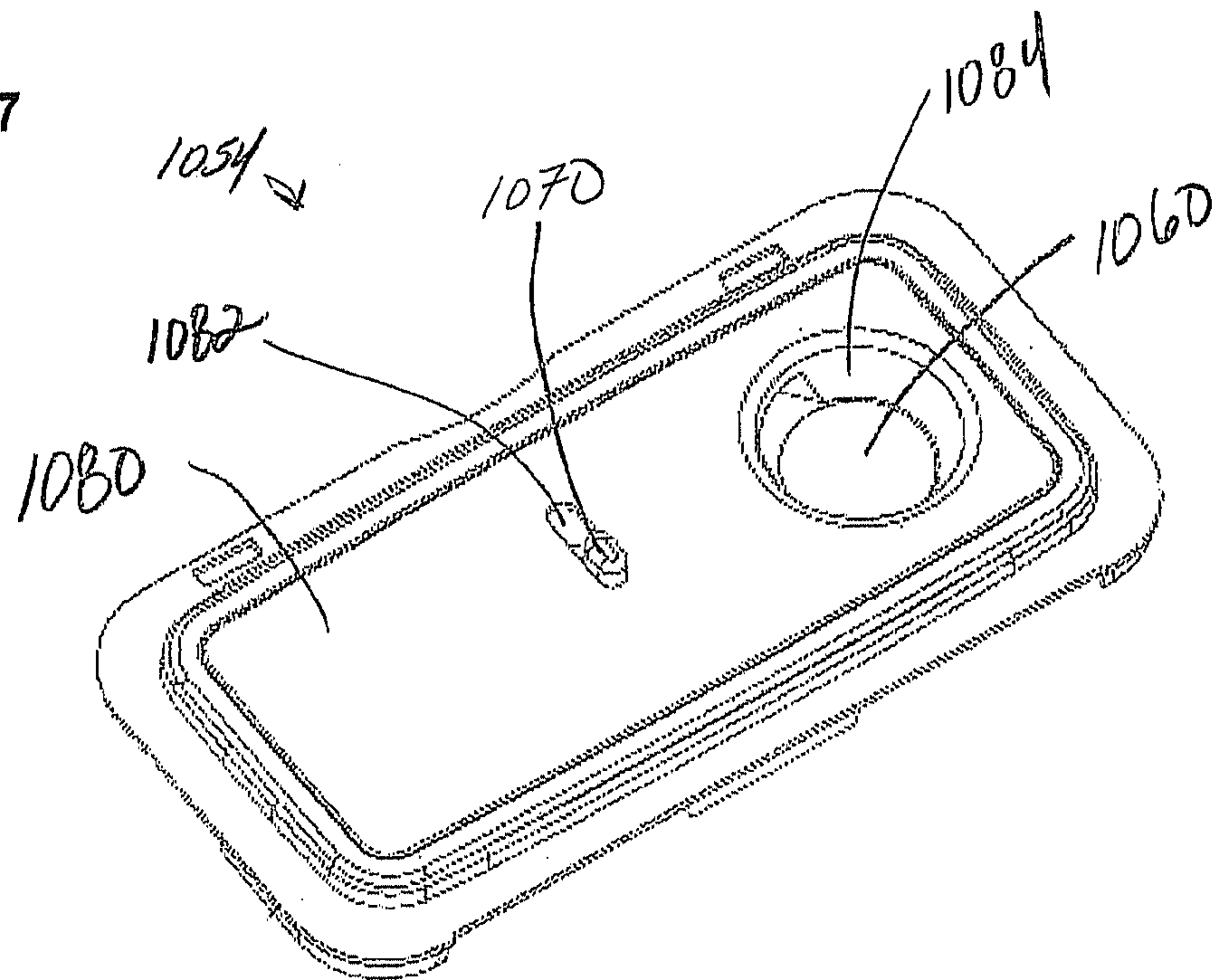
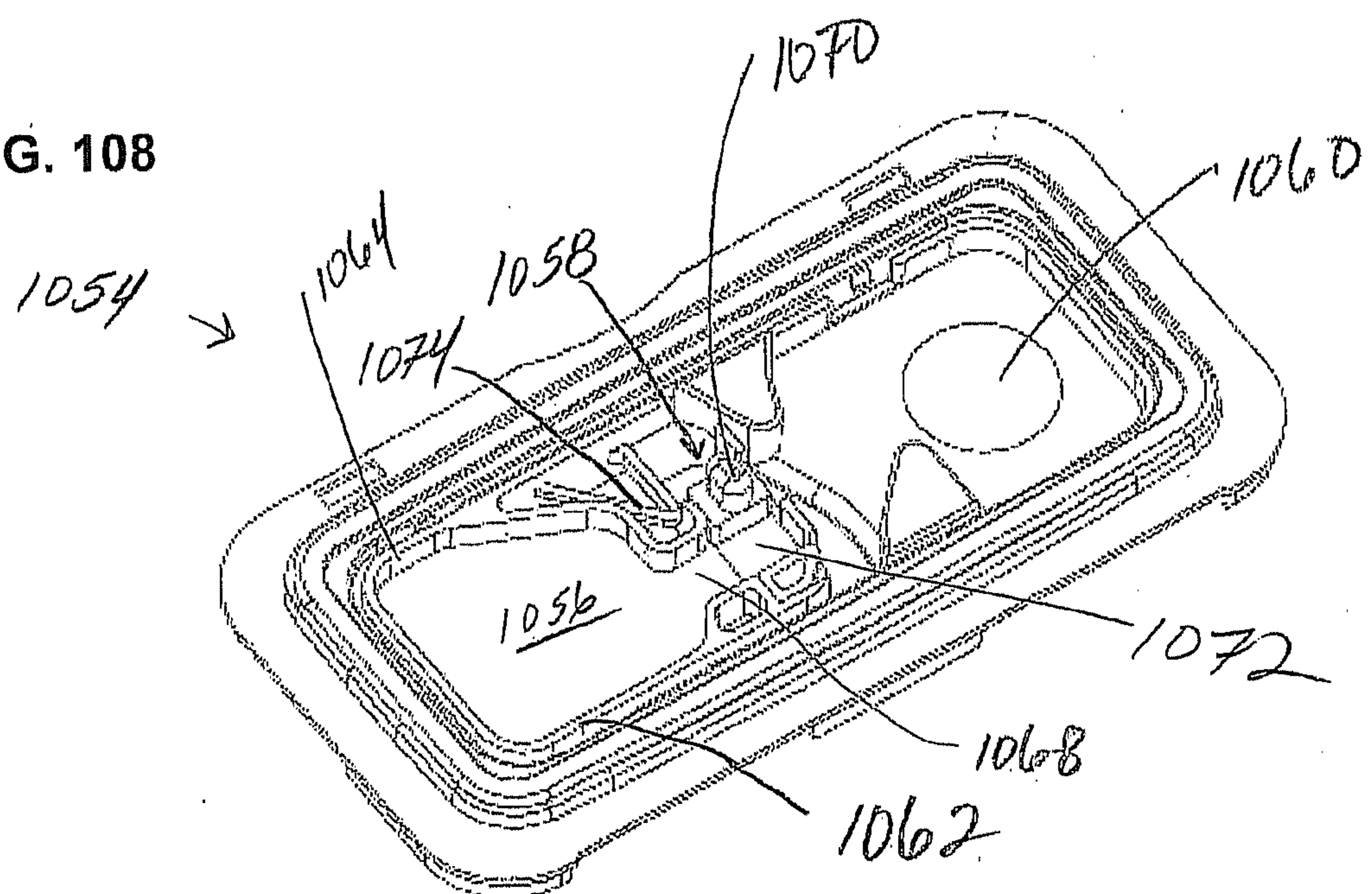


FIG. 108



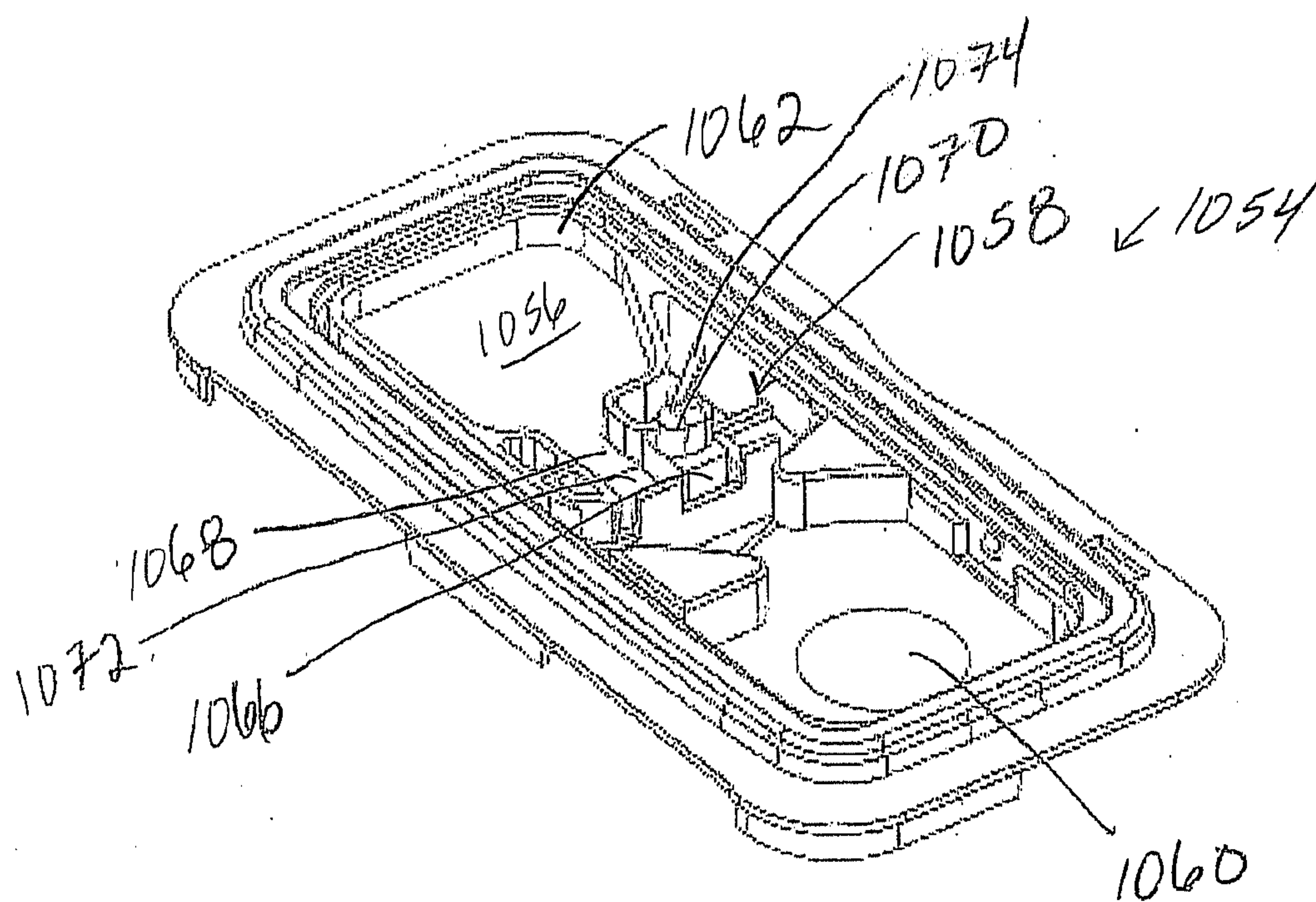


FIG. 109

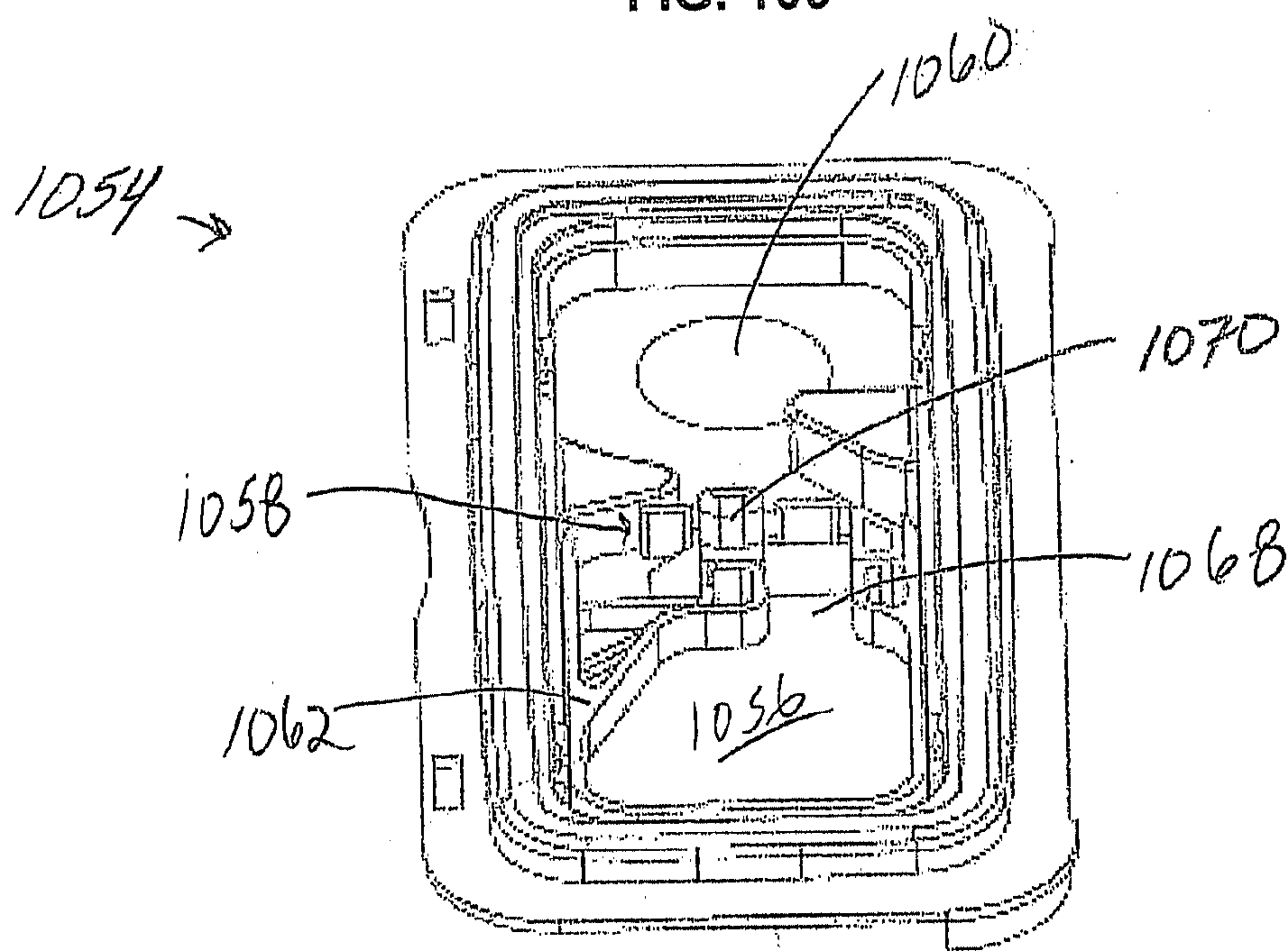


FIG. 110



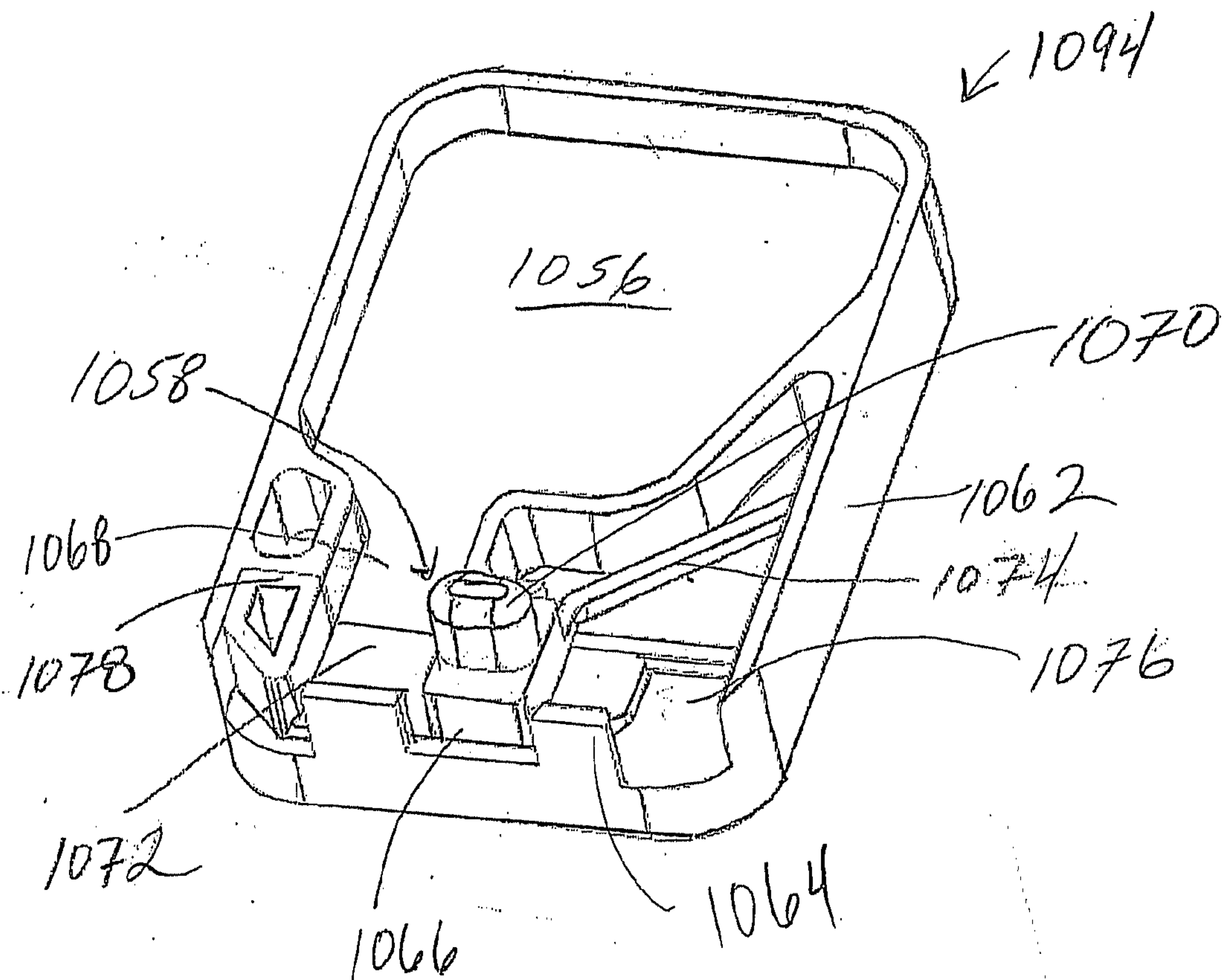


FIG. 111

FIG. 112

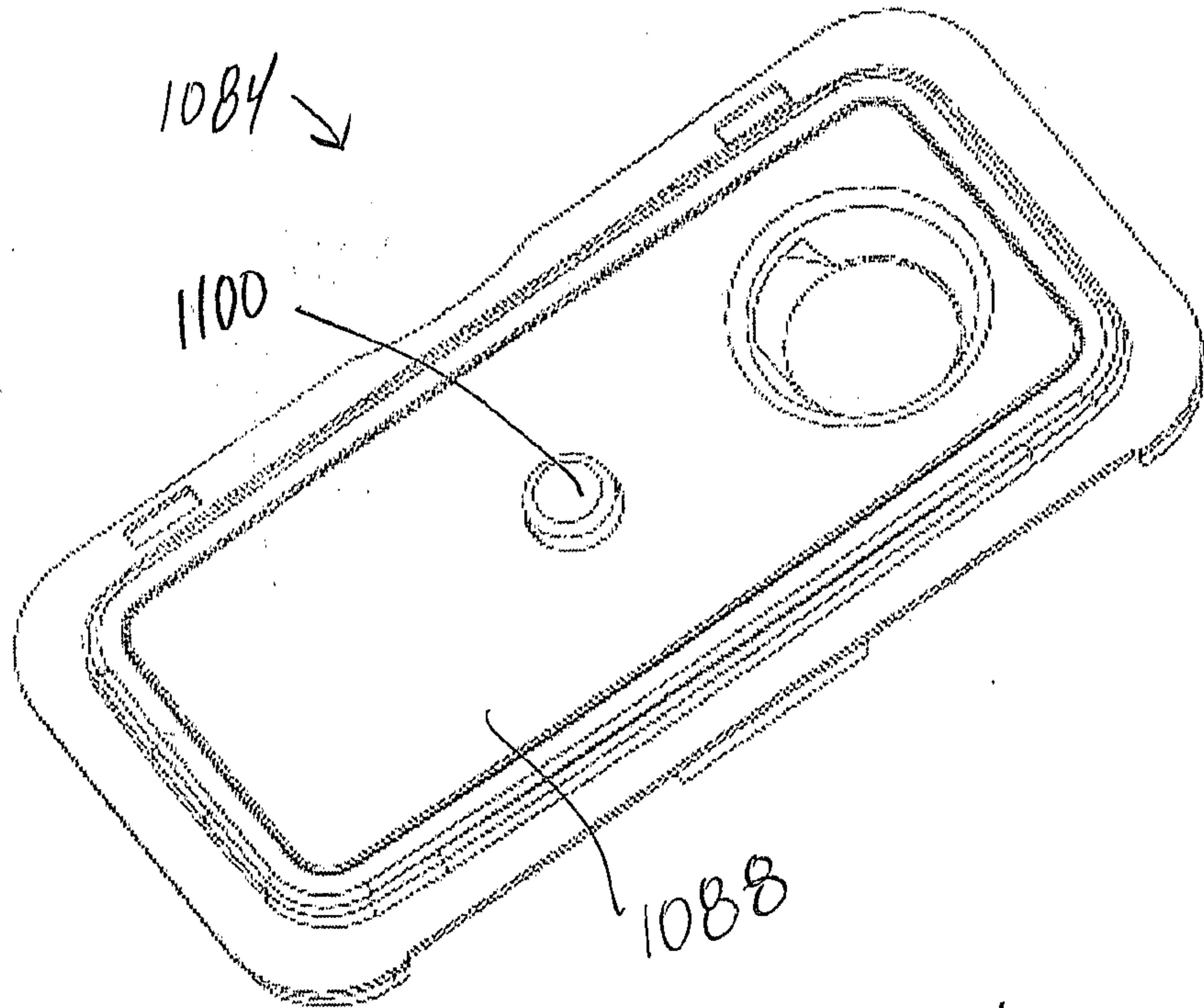
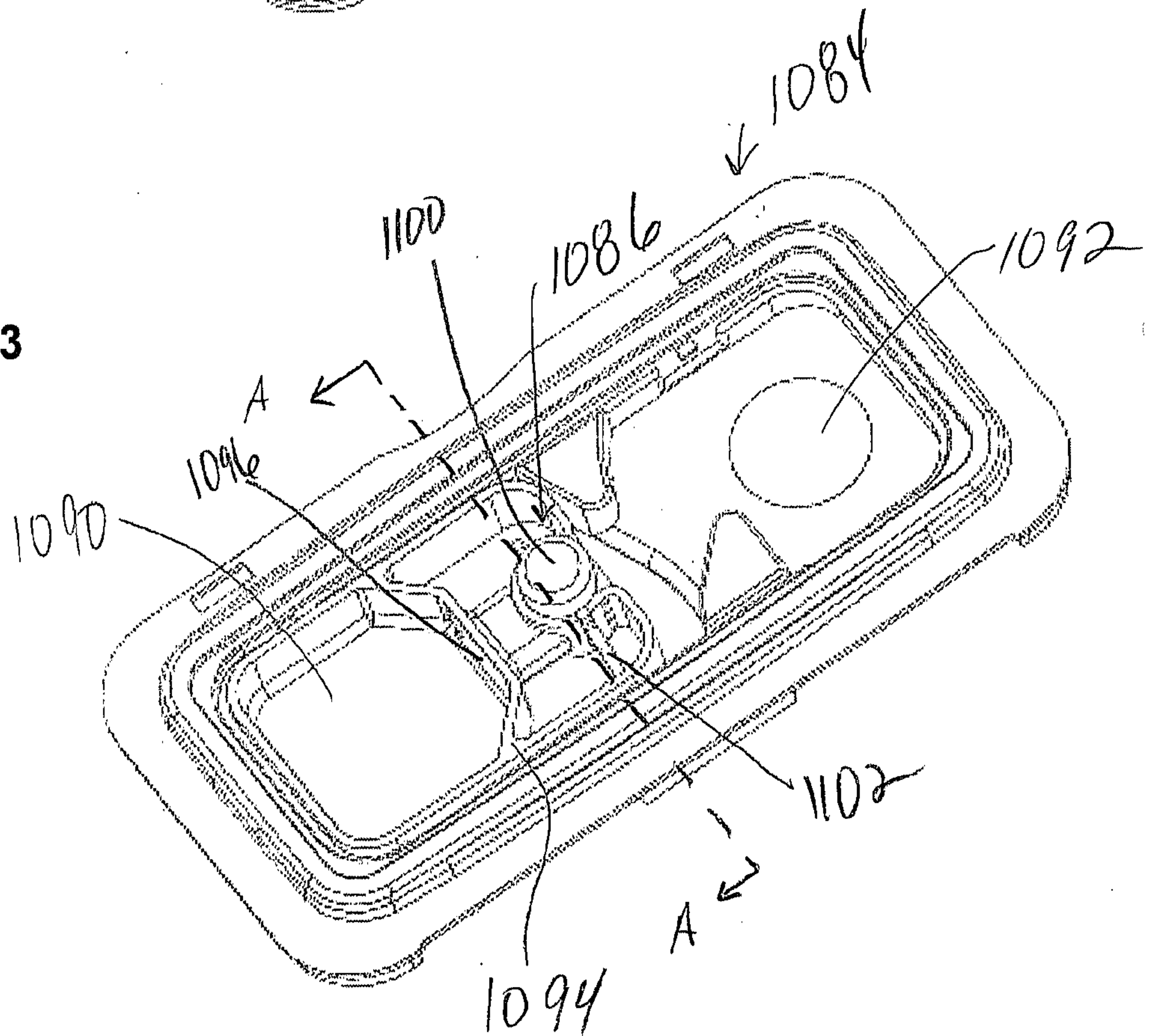
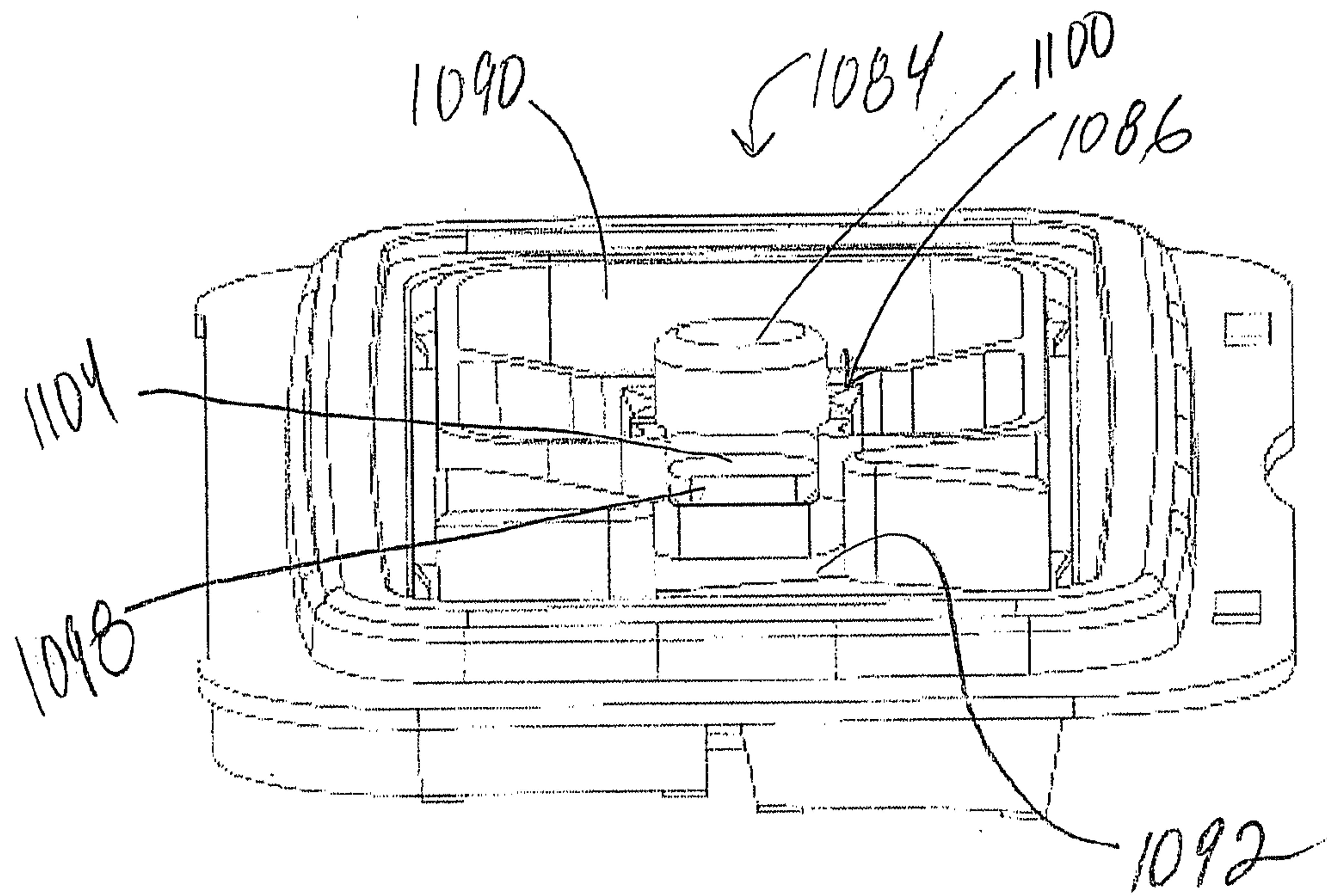
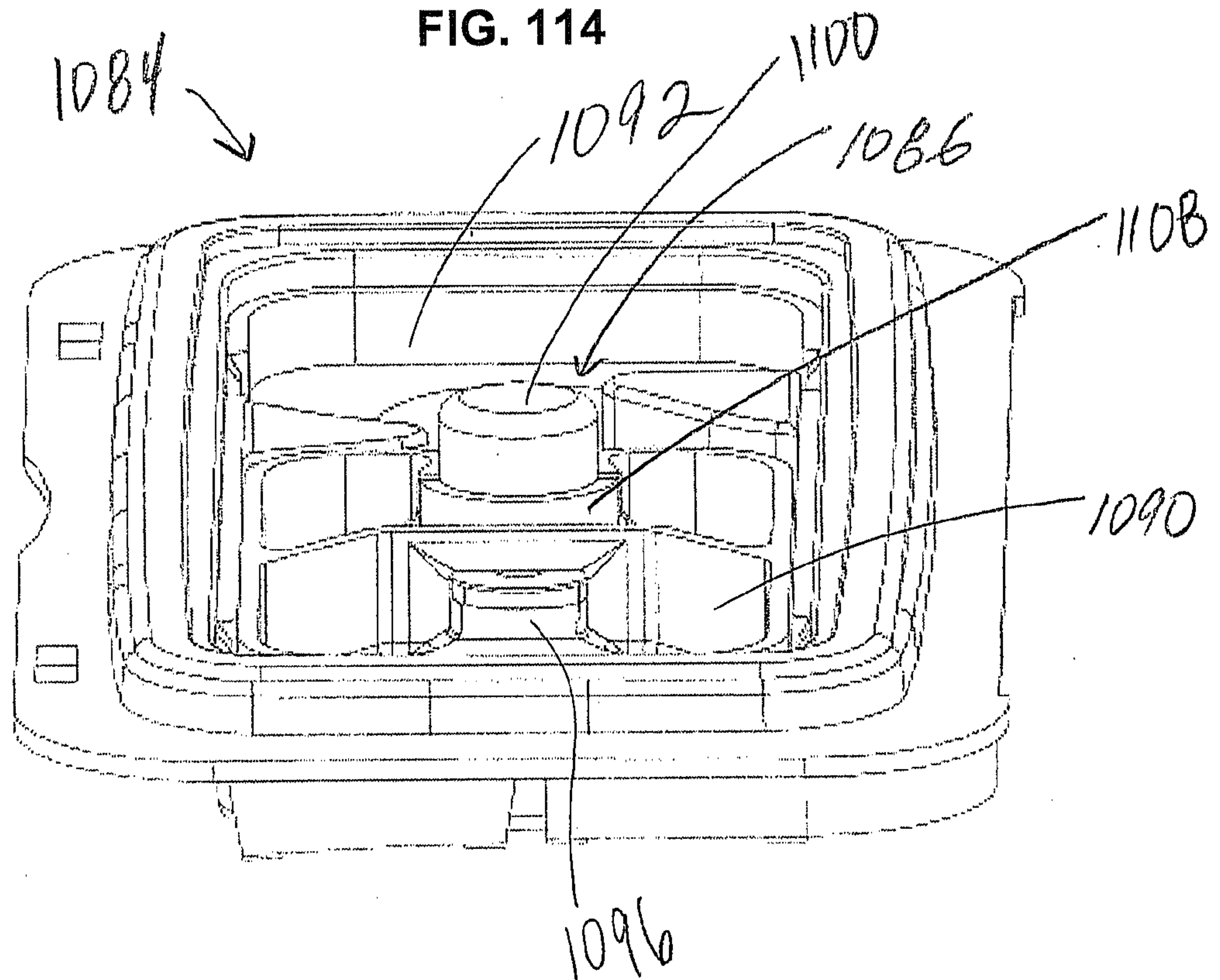


FIG. 113



**FIG. 114****FIG. 115**

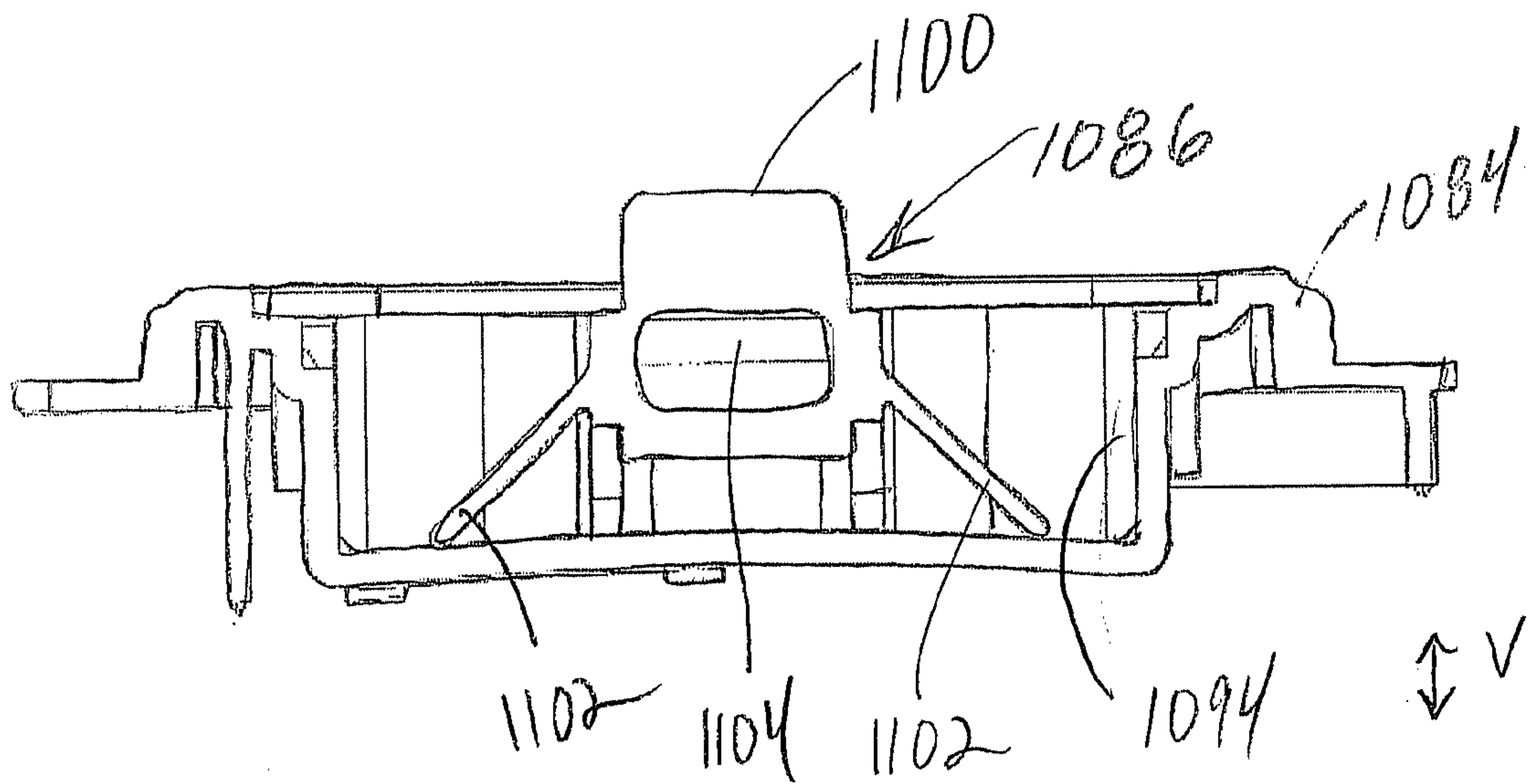
**FIG. 116**

FIG. 117

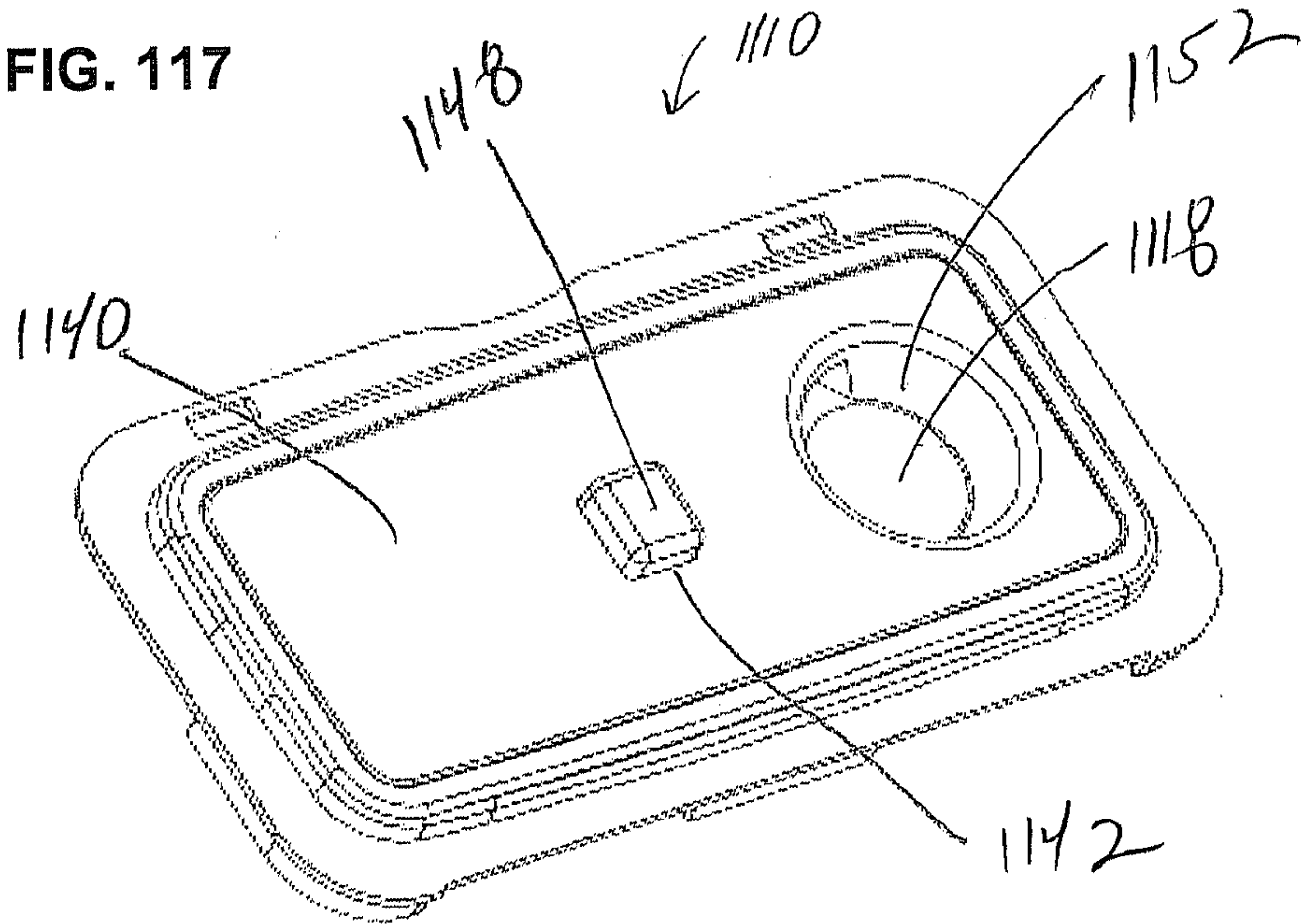
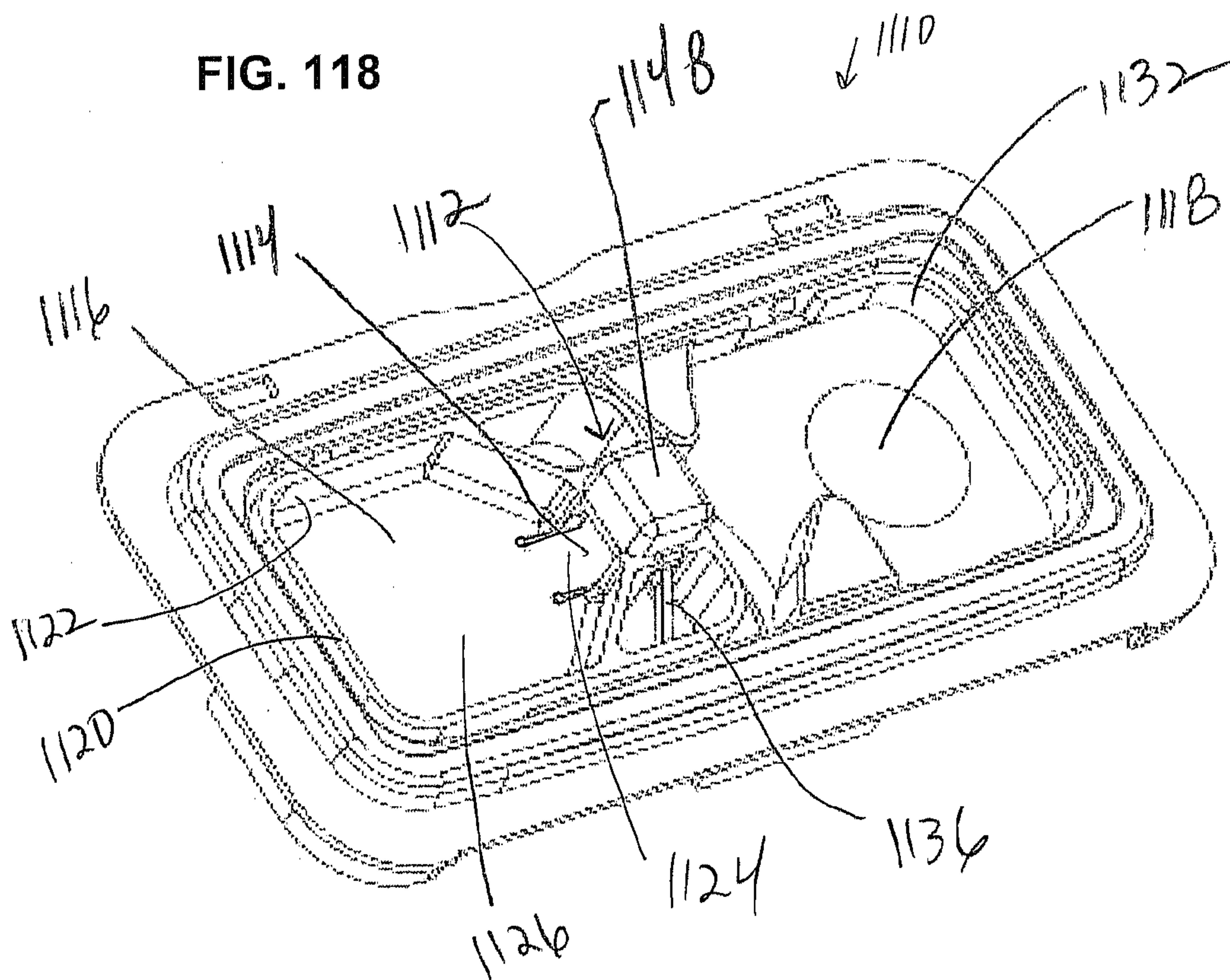
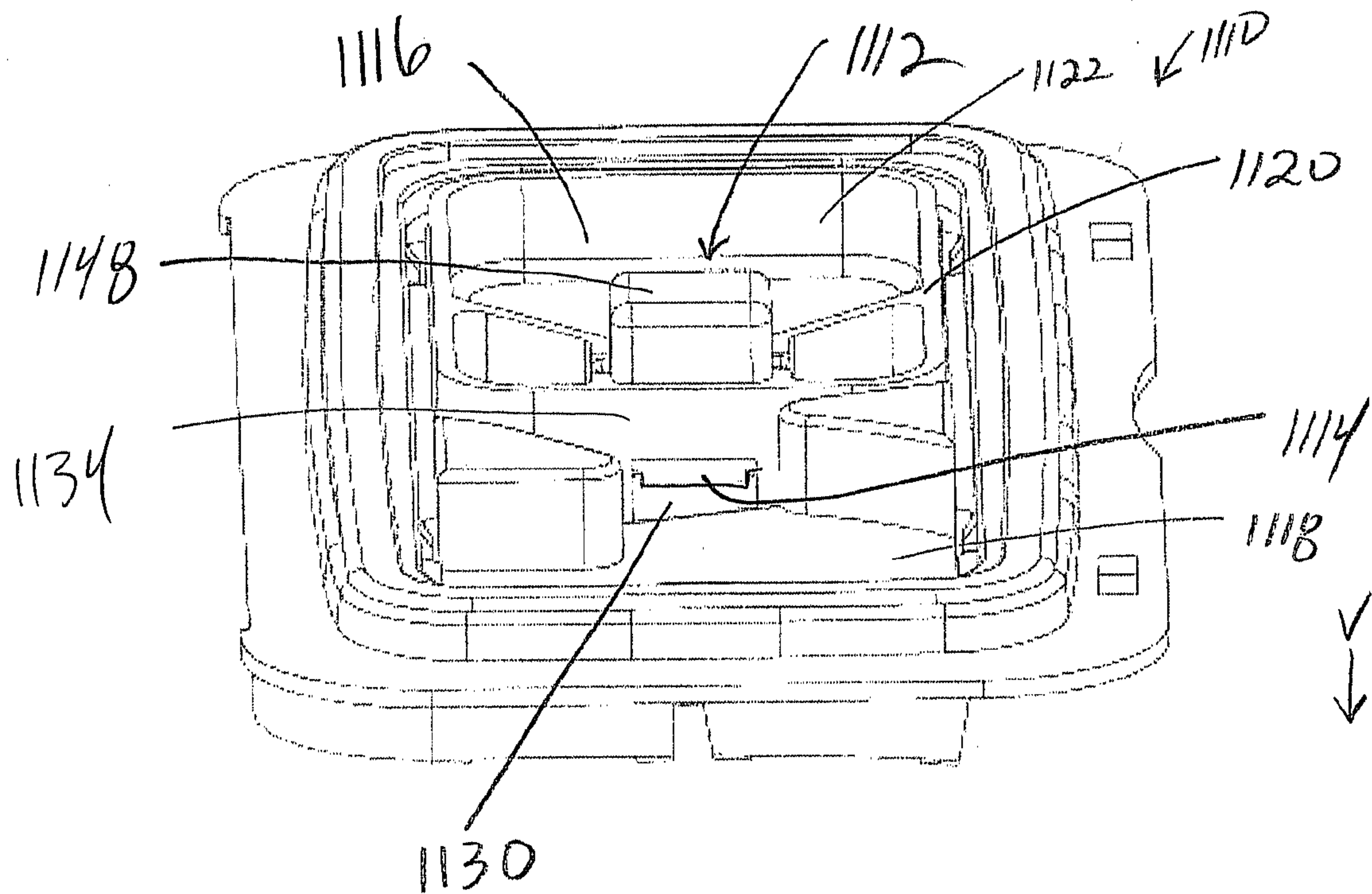
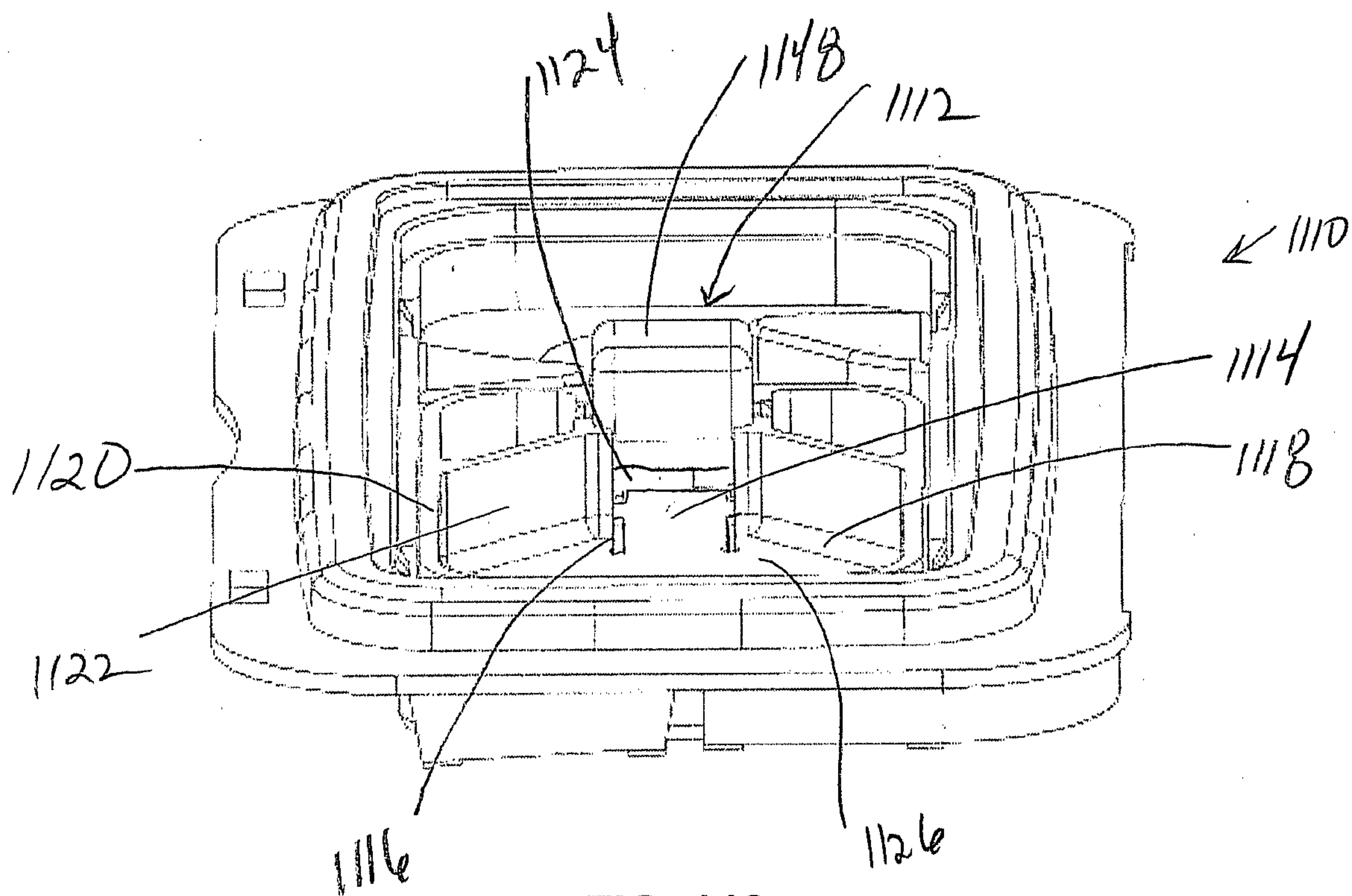
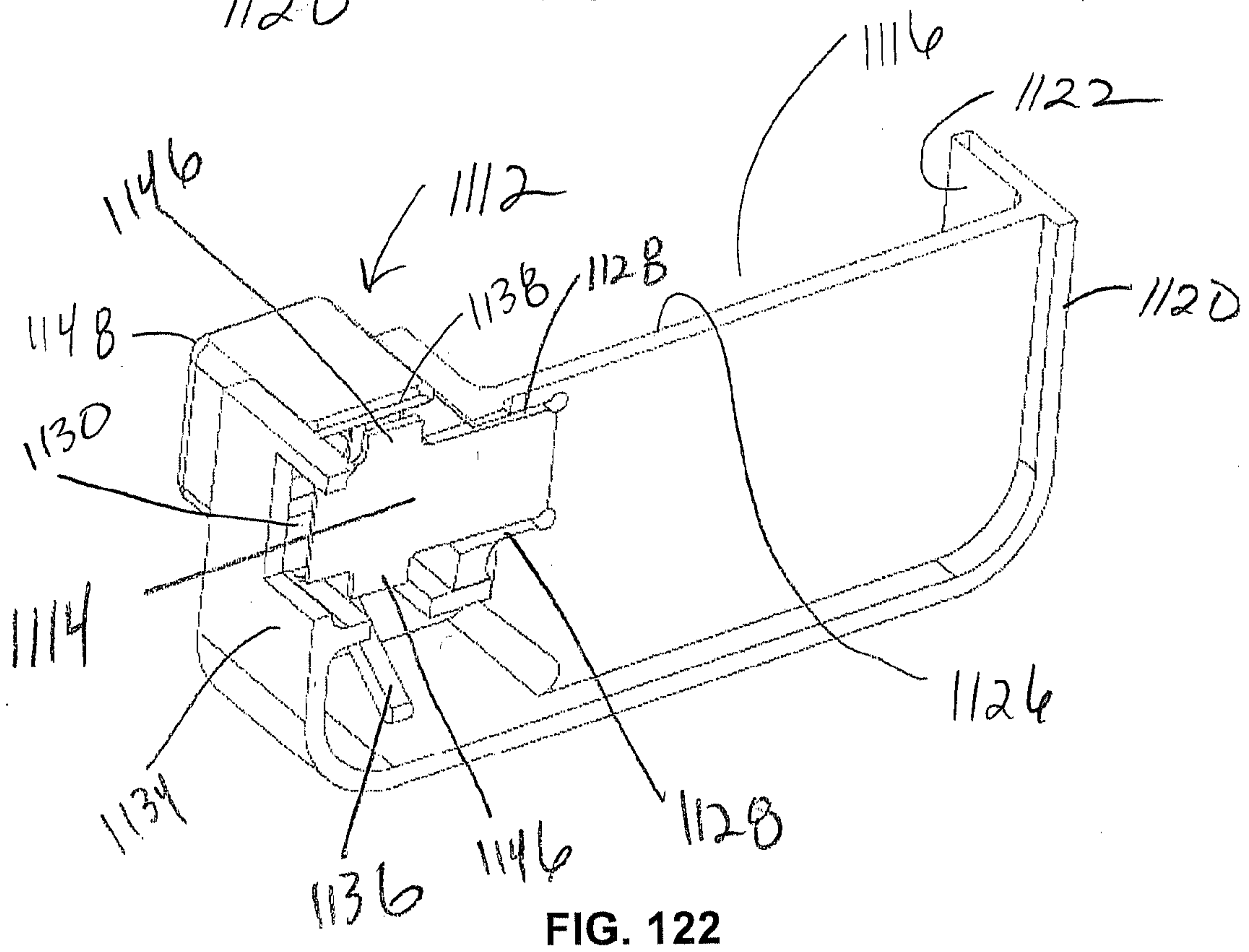
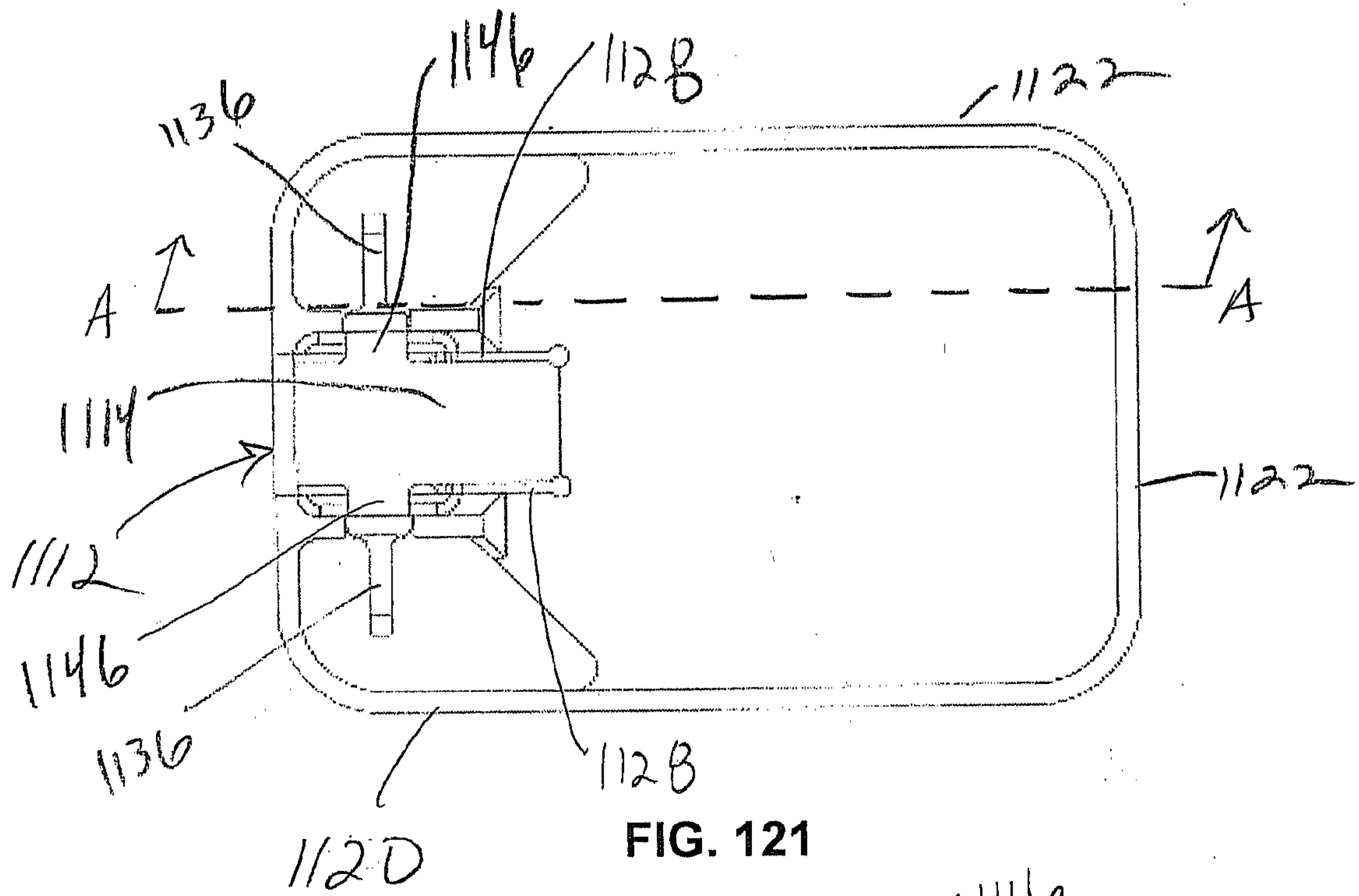


FIG. 118







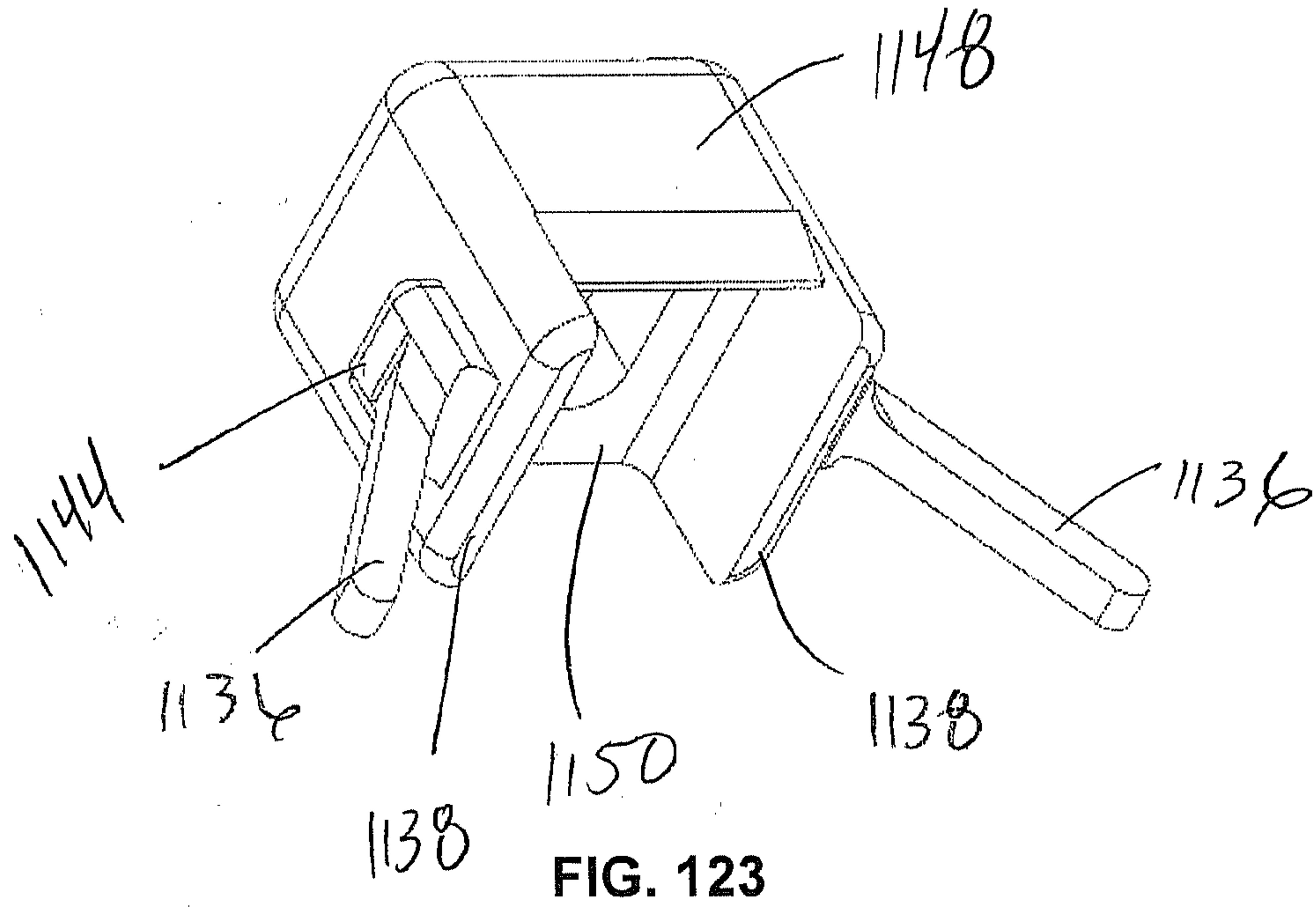


FIG. 113

