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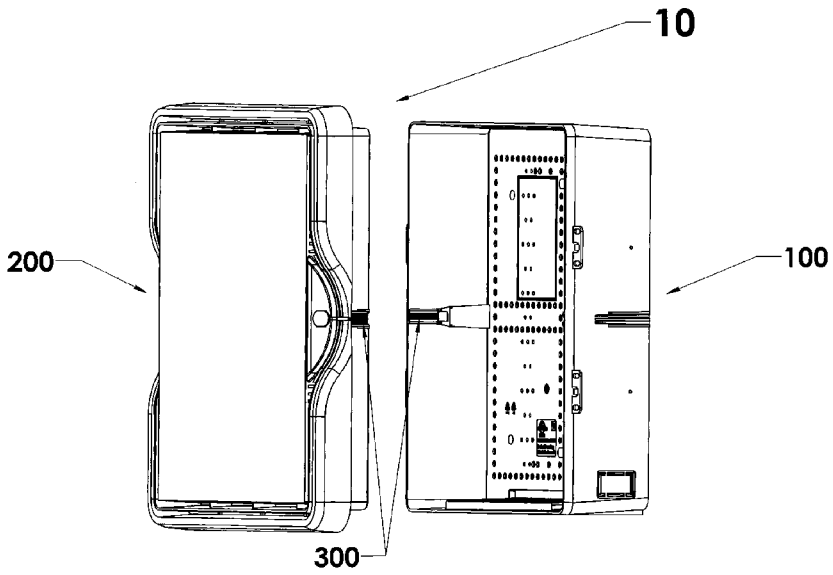

FIG. 1

(57) Abstract: One aspect of the present disclosure is an exemplary networking enclosure apparatus. The apparatus may comprise a receptacle installable in different locations and positions and a lid telescopically interactable with the receptacle. The receptacle may comprise first alignment surfaces and a first magnet. The lid may comprise second alignment surfaces and a second magnet. And the first alignment surfaces may be engageable with the second alignment surfaces to move the lid toward the receptacle into a closed configuration with a magnetic interaction between the first magnet and the second magnet.

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NETWORKING ENCLOSURE APPARATUS, KIT, AND METHODS

TECHNICAL FIELD

Aspects of the present disclosure may relate to networking enclosure apparatus, kit, and methods. Some aspects may comprise magnetic alignment and interlocking features and/or adaptable installation features.

BACKGROUND

The use of electronic devices and cables in single residences, multiple-dwelling units and commercial premises, necessitates the use of networking enclosures mounted on or in walls or other locations of the premises.

Companies dealing with installation and service of this type of enclosures required the development of enclosures adapted to be placed in different locations and positions, easy to access and secure.

Attempts have been made to comply with those requirements, or, at least, to alleviate the existing shortcomings. Thus, for example, US Patent No. 9,470, 867, granted on Oct. 18, 2016 to James et al, for a “RETAINING ENCLOSURE FOR ABOVE-GROUND FIBER OPTIC/CABLE NETWORK TERMINAL” discloses an enclosure using double flange brackets, dowels, hooks, etc., for hinging a panel to a tray, the former and the latter constituting the basic components of the retaining enclosure. An eyelet bracket extending outwardly from the try and an opposing eyelet bracket extending from the panel are secured together by a bolt-nut. Lack of simplicity and low cost-effective performance constitute the main shortcomings of this retaining enclosure.

Another example is US Patent No. 8,457,464, granted on Jun. 4, 2013 to O'Connor for a “CABLE ENCLOSURE AND RADIUS-LIMITING CABLE GUIDE WITH INTEGRAL MAGNETIC DOOR CATCH” discloses a door catch arrangement for cable enclosures. The door catch includes magnetic catch components on the door and on an adjacent open-ended, flared, radius-limiting cable guide installed in at least one open-ended cable port of the enclosure. Although the above-mentioned cable enclosure uses magnets for a door catch, those magnets have a different use and are differently positioned when compared with aspects described herein.

SUMMARY

Aspects of the present disclosure may relate to a network enclosure apparatus with almost effortless, easier/faster assembling and disassembling. Some aspects may relate to manufacturing a quality networking enclosure apparatus using advanced, consistent/repeatable production processes. Other aspects may provide a lightweight network enclosure apparatus with an improved presentation.

Broadly speaking, a networking enclosure apparatus according to the present disclosure may comprise: (i) magnetic alignment and interlocking features for containing and/or securing electronic devices in the apparatus; and (ii) adaptable installation features for accommodating different electronic devices and/or permitting different installations of the apparatus in different locations and positions.

One aspect of the present disclosure is an exemplary networking enclosure apparatus. For example, the enclosure apparatus may comprise: a receptacle; a lid telescopically interacting with the receptacle by partially penetrating into or by retracting from the receptacle; and magnetic elements attached to the receptacle and to the lid. The magnetic elements may be configured to align and interlock the receptacle with the lid. The receptacle may comprise a cuboid body, such as a monobloc of hard plastic material. The receptacle may comprise: an erect back wall; a pair of lateral walls extending along lateral extremities of and perpendicularly to the erect back wall; a top wall extending horizontally and/or be coplanar with the respective upper edges of the erect back wall, the pair of lateral walls; and a bottom wall extending horizontally and/or coplanar with the respective lower edges of the erect back wall and of the pair of lateral walls.

The network enclosure apparatus may comprise a pair of first entrapping pockets. Each one of the pair of first entrapping pockets may extend laterally, inwards to define a parallelepipedic cavity. Each entrapping pocket may comprise: a front opening constituting an extension of the parallelepipedic cavity; and an elongated window facing, along a whole length of the first entrapping pocket, an interior of the receptacle. Each first entrapping pocket may comprise: a pair of opposed, parallel and horizontally extending segments, inwardly projecting from each one of the pair of lateral walls; a pair

of slanted segments following the pair of opposed, parallel and horizontally extending segments; and a pair of opposed, vertical segments extending from the pair of slanted segments and delimiting the elongated window. The first entrapping pocket may start from the front extremity of each wall of the pair of lateral walls and may form a diverging surface that extends inwardly into the receptacle, starting from the front opening and continuing along a whole length of the first entrapping pocket.

The lid may comprise a hard plastic unitary structure that comprises an external shell provided with internal enveloping surfaces, wherein an internal shell, provided with external enveloped surfaces, is integrated. The external shell may comprise a frame shape comprising: a pair of laterally spaced, vertical sides; a top side extending horizontally, coplanar with upper edges of the pair of laterally spaced, vertical sides; and a bottom side extending horizontally, coplanar with lower edges of the pair of laterally spaced, vertical sides. Each one of the pair of laterally spaced, vertical sides of the external shell may comprise a prism-shaped recess comprising a plurality of faces (e.g., six faces). Each face may be rectangular or rectangular-shaped. The prism-shaped recess may be located at approximately midway between the top side and the bottom side, and may extend into an interior of the external shell. A pair of opposed horizontal edges at an entrance of prism-shaped recess may be chamfered to facilitate alignment and insertion of the first entrapping pocket.

Each of the prism-shaped recess may extend laterally, inwards into a second entrapping pocket. Each second entrapping pocket may be defined: firstly by an opening entrance, coplanar with a front of each one of the pair of laterally spaced, vertical sides; and secondly, by a lateral extending window for facing the first entrapping pocket. Each second entrapping pocket may be further defined by a pair of opposed flanks starting from the front extremity of each one of the pair of laterally spaced, vertical sides and extending divergently and inward into the external shell. Each one of the pair of opposed flanks may be so inclined as to glidingly engage a slanted segment of each first entrapping pocket; and each one of the pair of laterally spaced, vertical sides ending backwards in one recessed circular segment, may be traversed by an opening.

The recessed circular segment and the opening may be adapted for lodging a camlock. The internal shell may comprise an end wall coplanar with and spaced from an end contour of the external shell; and the end wall may comprise a closing chord surface of the recessed circular segment. Several ties may be provided with first and second ends. The first ends may be attached to a zone spaced internally from an entrance of the external shell and/or the second ends may be joined to partial contour zones situated at a top and a bottom of the end wall. Parts of the end wall may correspond to the recessed circular segments and/or be used for grabbing and positioning the enclosure apparatus.

A first magnet element may be captured in the first entrapping pocket and the second entrapping pocket that are positioned at one side (e.g., at left) of the enclosure apparatus. The first magnet element may be rendered captive with an interferential fit. Correspondingly, a second magnet element may be captured in the first entrapping pocket and in the second entrapping pocket that are positioned at another side (e.g., at right) of the enclosure apparatus. The second magnet also may be rendered captive with an interferential fit. A clearance may be established between the elongated window of the first entrapping pocket and the lateral extending window of the second entrapping pocket. When said lid is positioned for insertion into the receptacle, the first magnet may collaboratively interact with the second magnet for easily aligning the lid into the receptacle. When the lid, by translation, reaches a position where the elongated window confronts the lateral extending window, the first magnet may interact with the second magnet to releasably secure the lid to the receptacle. An interstitial space may be established between the first magnet and the second magnet when the first magnet and the second magnet are in a confronted position. At least one of the first and second magnets may be a permanent metal magnet.

The lid may comprise a frame unit laterally spaced from an exterior of the external shell of the lid; and encompassing the external shell. The frame unit may include an external frame joined to an internal frame. The external frame may be joined frontally to the internal frame via a flat zone and/or essentially parallel to the internal frame. The frame unit may have a top and a bottom horizontal wall and a pair of opposed vertical walls

joined at the extremities of the top and bottom horizontal walls. Each one of the pair of opposed vertical walls may be discontinued at their middle by an indented circular segment corresponding to the recessed circular segment. The external frame of the frame unit may be connected to the internal frame of the frame unit by frangible links. The links may be located at an end of the internal frame of the frame unit and connected to an outside surface of the external shell of the lid so that the frame unit may be detached from the lid. The frame unit may be normally used to cover an unaesthetic transitional zone between an exterior surface of the enclosure apparatus (e.g., of the external enclosure) and an interior surface of a wall opening; and optionally be removed for different installations.

The networking enclosure apparatus may comprise a connector succeeding each first entrapping pocket. The connector may extend inwardly into the receptacle and/or be adaptable to cooperate with a camlock. The connector may comprise an adapter with a U-shape body having an initial edge spaced from an inside surface of each one of the pair of lateral walls and an end edge in contact with an inside surface of each one of the pair of lateral walls. As a result, the adapter may occupy an inclined position, behind which a hollow zone is formed. The adapter may comprise a pair of spaced legs, each spaced leg of the pair of spaced legs being wedge-shaped with a narrow extremity coinciding with the initial edge. The pair of spaced legs may be divergently extending. A pair of stop shoulders may follow the adapter and the flank end edge. The connector may comprise a toothed extension incorporating a channel shape section interconnected with a comb shape section having several parallel, vertical teeth. The channel shaped section may be configured to engage, with a light-press fit, the U-shaped adapter. An L-shaped lever may be used to provide a firm connection between one of the several parallel, vertical teeth and an adaptable camlock installed in the lid to pre-empt unauthorized access.

Another aspect of the present disclosure is another exemplary networking enclosure apparatus. For example, the apparatus may comprise: a receptacle installable in different locations and positions, the receptacle comprising a first structure comprising first alignment surfaces and a first magnet; and a lid that telescopically interacts with the

receptacle, the lid comprising a second structure comprising second alignment surfaces and a second magnet, the first alignment surfaces being engageable with the second alignment surfaces to align and interlock the lid with the receptacle using a magnetic force between the first magnet and the second magnet.

The receptacle may comprise a back wall and a plurality of openings extending through the back wall to receive one or more attachment elements for mounting electronic devices in the receptacle. The first structure may be located on an interior surface of the receptacle. The first alignment surfaces may be located on opposite sides of the first magnet, and the second alignment surfaces may be located on opposite sides of the second magnet. The first alignment surfaces may be engageable with the second alignment surfaces to maintain a space between the first magnet and the second magnet. The first alignment surfaces may be engageable with the second alignment surfaces to maintain a space between an interior surface of the receptacle and an exterior surface of the lid.

The first structure may define a first pocket containing the first magnet and the second structure defines a second pocket for the second magnet. A central portion of the first magnet in the first pocket may be exposed to a central portion of the second magnet in the second pocket. The first alignment surfaces may be engageable with the second alignment surfaces to maintain a space between the central portion of the first magnet and the central portion of the second magnet. The lid may comprise a front wall and a plurality of openings extending through the front wall to permit air flows into and out of the receptacle. The first structure may comprise a first locking portion and the lid may comprise a second locking portion operable with the first locking portion to lock the lid onto the receptacle.

The lid may be movable between a plurality of telescoping positions relative to the receptacle; the first locking portion may comprise a plurality of teeth separated by a plurality of spaces; and the second locking portion may comprise a lever insertable into the plurality of spaces to lock the lid onto the receptacle in one or more of the plurality of telescoping positions. The lid may comprise an inner frame comprising the second structure and an external shell removably attached to the inner frame.

Another aspect of the present disclosure is an exemplary networking enclosure method. For example, the method may comprise: telescopically interacting a lid with a receptacle by engaging first alignment surfaces of a first structure on the receptacle with second alignment surfaces of a second structure on the lid; and aligning and interlocking the lid with the receptacle using a magnetic force between a first magnet of the first structure and a second magnet of the second structure. Engaging the first alignment surfaces with the second alignment surfaces may comprise receiving the first alignment surfaces in a recess defined by the second alignment surfaces. Aligning and interlocking the lid with the receptacle may comprise: moving the second alignment surfaces relative to the first alignment surfaces; and maintaining a position of the first alignment surfaces relative to the second alignment surfaces with the magnetic force.

The method may comprise locking the lid onto the receptacle. Locking the lid may comprise engaging a first locking portion on the lid with a second locking portion on the first structure. The receptacle may comprise a back wall and a plurality of openings extending through the back wall, and the method may comprise installing the receptacle in a position at a location using one or more of the plurality of openings. The method may comprise attaching one or more electronic devices to the back wall with one or more attachment elements using another one or more of the plurality of openings. The method may comprise removing an external shell of the receptacle before installing the receptacle in the position at the location.

Another aspect of the present disclosure is an exemplary networking enclosure kit. For example, the kit may comprise: an apparatus comprising: a receptacle installable in different locations and positions, the receptacle comprising a first structure comprising first alignment surfaces and a first magnet; and a lid that telescopically interacts with the receptacle, the lid comprising a second structure comprising second alignment surfaces and a second magnet, the first alignment surfaces being engageable with the second alignment surfaces to align and interlock the lid with the receptacle using a magnetic force between the first magnet and the second magnet; a locking mechanism comprising: a first locking portion engageable with the first structure; and a second locking portion engageable with the second structure, the first portion being operable

with the first locking portion to lock the lid onto the receptacle; and one or more attachment elements for mounting electronic devices in the receptacle.

Another aspect of the present disclosure is another exemplary networking enclosure apparatus. For example, the apparatus may comprise: a receptacle installable in different locations and positions; and a lid telescopically interactable with the receptacle. The receptacle may comprise first alignment surfaces and a first magnet; and the lid may comprise second alignment surfaces and a second magnet. The first alignment surfaces may be engageable with the second alignment surfaces to move the lid toward the receptacle with a magnetic interaction between the first magnet and the second magnet.

The receptacle may comprise a back wall and a plurality of openings extending through the back wall to receive one or more attachment elements for mounting electronic devices in the receptacle. The first magnet may be located on an interior surface of the receptacle, and the second magnet may be located on an exterior surface of the lid. The first alignment surfaces may be located on opposite sides of the first magnet, and the second alignment surfaces may be located on opposite sides of the second magnet. The first alignment surfaces and the second alignment surfaces may maintain a space between the first magnet and the second magnet when the lid is moved toward the receptacle into the closed configuration. The space may be maintained between a central portion of the first magnet and a central portion of the second magnet.

The lid may comprise a plurality of vents configured to permit air flows into and out of the receptacle. The plurality of vents may permit air flows into a bottom portion of the receptacle and out of a top portion of the receptacle. The plurality of vents may be spaced apart around a perimeter of the lid. A frame unit may be removably attached to the lid. The frame unit may be removably attached with one or more frangible links extending between the frame unit and the lid. The first alignment surfaces may be engageable with the second alignment surfaces to move the lid toward the receptacle along an axis extending into the receptacle; and the first magnet and the second magnet may be polarized along their respective lengths in a direction generally perpendicular with the axis so that a north or south pole of the first magnet interacts with

an opposite south or north pole of the second magnet when the first alignment surfaces are engaged with the second alignment surfaces.

The apparatus may comprise: a raised portion spaced apart from a wall of the receptacle; and a plurality of apertures extending through the raised portion. The plurality of apertures may comprise at least one knock-out aperture comprising a knock-out portion that is removable to permit entry of one or more cables. The at least one knock-out aperture may be configured to receive a dual keystone adapter when the knock-out portion is removed. The apparatus may comprise at least one foot engageable with a wall of the receptacle and configured to support the apparatus on an external surface or attach the apparatus to the external surface.

The receptacle may comprise a first locking portion and the lid may comprise a second locking portion operable with the first locking portion to lock the lid onto the receptacle. The lid may be movable between a plurality of telescoping positions relative to the receptacle to expand or contract an interior volume of the apparatus; and the first and second locking portions may be operable to lock the lid onto the receptacle at each of the plurality of telescoping positions. The first locking portion may comprise a plurality of teeth separated by a plurality of spaces corresponding to the plurality of telescoping positions; and a portion of the second locking portion may be insertable into one of the plurality of spaces to lock the lid onto the receptacle at a corresponding one of the plurality of telescoping positions.

Another aspect of the present disclosure is another networking enclosure kit. For example, the kit may comprise a networking enclosure apparatus, a locking mechanism, and one or more attachment elements. The networking enclosure apparatus may comprise: a receptacle installable in different locations and positions, the receptacle comprising first alignment surfaces and a first magnet; and a lid telescopically interactable with the receptacle, the lid comprising second alignment surfaces and a second magnet. The first alignment surfaces may be engageable with the second alignment surfaces to move the lid toward the receptacle into a closed configuration with a magnetic interaction between the first magnet and the second magnet.

The locking mechanism may comprise a first locking portion engageable with the first structure of the receptacle and a second locking portion engageable with the second structure of the lid. The second locking portion may be operable with the first locking portion to lock the lid onto the receptacle. The one or more attachment elements may be operable to attach the receptacle to an external surface or secure electronic devices within the receptacle.

Another aspect of the present disclosure is another exemplary networking enclosure apparatus. For example, the apparatus may comprise: a receptacle installable in different locations and positions, the receptacle comprising first alignment surfaces; a lid telescopically interactable with the receptacle, the lid comprising second alignment surfaces engageable with the first alignment surfaces to guide the lid toward the receptacle into a closed configuration; and a frame unit removably attached to the lid.

The frame unit may be removably attached to the lid with one or more frangible links extending between the frame unit and the lid. An outer perimeter of the frame unit may be greater than an outer perimeter of the receptacle. The frame unit may comprise one or more attachment openings located outside of the outer perimeter of the receptacle. The receptacle may comprise a back wall and a plurality of openings extending through the back wall to receive one or more attachment elements for mounting electronic devices in the receptacle.

The apparatus may comprise a first magnet located on the receptacle and a second magnet located on the lid. The first alignment surfaces may be engageable with the second alignment surfaces to move the lid toward the receptacle into a closed configuration with a magnetic interaction between the first magnet and the second magnet. The first magnet may be located on an interior surface of the receptacle; and the second magnet may be located on an exterior surface of the lid. The first alignment surfaces may be located on opposite sides of the first magnet, and the second alignment surfaces may be located on opposite sides of the second magnet. The first alignment surfaces and the second alignment surfaces may maintain a space between the first magnet and the second magnet when the lid is moved toward the receptacle into the closed configuration. The lid may comprise a plurality of vents spaced apart to

permit air flows into and out of the receptacle. The receptacle may comprise a first locking portion, and the lid may comprise a second locking portion operable with the first locking portion to lock the lid onto the receptacle.

Another aspect of the present disclosure is another exemplary networking enclosure method. For example, the method may comprise: telescopically interacting a lid with a receptacle by engaging first alignment surfaces on the receptacle with second alignment surfaces on the lid; and moving the lid toward the receptacle into a closed configuration by moving the first alignment surfaces relative to the second alignment surfaces with a magnetic interaction between a first magnet on the receptacle and a second magnet on the lid.

Engaging the first alignment surfaces with the second alignment surfaces may comprise: moving the lid relative to the receptacle until the second alignment surfaces of the lid are generally aligned with the first alignment surfaces of the receptacle; and receiving at least a portion of the first alignment surfaces in a recess defined by the second alignment surfaces. The method may comprise: moving the lid between a plurality of telescoping positions relative to the receptacle to expand or contract an interior volume between the lid and the receptacle; maintaining the interior volume by engaging a first locking portion on the receptacle with a second locking portion on the lid; and locking the lid onto the receptacle by operation of the second locking portion. The method may comprise: locating the receptacle on a wall or in an opening extending into the wall; and attaching the receptacle to a portion of the wall. The method may comprise removing a frame unit from the lid. Removing the frame unit may comprise severing one or more frangible links extending between the frame unit and the lid.

Another aspect of the present disclosure is another exemplary networking enclosure method. For example, the method may comprise: mounting a receptacle inside of an opening extending through a wall; and attaching a lid to the wall so as to surround the receptacle and the opening without contacting the receptacle. The lid may comprise a frame unit removably attached to the lid with frangible links extending between the frame unit and the lid, and attaching the lid may comprise attaching the frame unit to the wall. The frame unit may comprise attachment openings located outside of an outer

perimeter of the receptacle, and attaching the lid may comprise inserting an attachment element into each attachment opening.

Numerous related aspects also are disclosed. It may be understood that both the foregoing summary and the following detailed written descriptions are exemplary and explanatory only, neither being restrictive of the inventions claimed below. In addition to the exemplary aspects described above, further aspects will become apparent by reference to the drawings and by study of the following detailed descriptions.

BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying drawings, which are incorporated in and constitute part of this disclosure, illustrate exemplary aspects that, together with the written descriptions, serve to explain the principles of this disclosure. Numerous aspects are particularly described, pointed out, and distinctively claimed in the written descriptions. Some structural and operational aspects may be even better understood by referencing these descriptions together with the accompanying drawings, of which:

FIG. **1** depicts a perspective, exploded view of an exemplary networking enclosure apparatus comprising a lid and a receptacle;

FIG. **2** depicts a perspective front view of the receptacle shown in FIG. **1** and indicates a local view A;

FIG. **3** depicts a perspective back view of the receptacle shown in FIG. **1**;

FIG. **4** depicts an enlarged image of the local view A shown in FIG. **2**;

FIG. **5** depicts a perspective view of an exemplary toothed extension;

FIG. **6** depicts the toothed extension shown in FIG. **5** ready to engage an exemplary adapter of the receptacle shown in FIG. **1**;

FIG. **7** depicts a perspective front view of the lid shown in FIG. **1** after removal of a portion thereof and indicates a local view B;

FIG. **8** depicts an enlarged image of the local view B shown in FIG. **7**;

FIG. **9** depicts the lid shown in FIG. **7** and indicates local views C, D and E;

FIG. **10** depicts an enlarged image of the local view C shown in FIG. **9**;

FIG. **11** depicts an enlarged image of the local view D shown in FIG. **9**;

FIG. **12** depicts an enlarged image of the local view E shown in FIG. **9**;

FIG. **13** depicts a perspective view of the lid shown in FIG. **1** and indicates an alternate local view L;

FIG. **14** depicts an elevation front view of the lid shown in FIG. **1** and indicates a cross-sectional line F-F;

FIG. **15** depicts the cross-section F-F shown in FIG. **14** and indicates a local view G;

FIG. **16** depicts an enlarged image of the local view G shown in FIG. **15**;

FIG. **17** depicts an elevation back view of the lid shown in FIG. **1** and indicates a local view H;

FIG. **18** depicts an enlarged view of the local view H shown in FIG. **17**;

FIG. **19** depicts a diagrammatic top view of the receptacle shown in FIG. **1** intersected by a vertical cross-section plane I-I extending through a zone where each pair of opposite, adjacent magnets confront each other;

FIG. **20** depicts the vertical cross-section plane I-I shown in FIG. **19**, indicates a local view J, and indicates an exemplary cross-sectional line M-M;

FIG. **21** depicts an enlarged view of the local view J shown in FIG. **20** as comprising a first magnet spaced apart from a second magnet;

FIGs. **22**-**24** depict a collaborative interaction between the first and second magnets shown in FIG. **21**;

FIG. **25** depicts a side cross-sectional view of the networking enclosure apparatus shown in FIG. **1** installed in a wall, in which the view is taken along a cross-sectional line similar to line M-M shown in FIG. **20**;

FIG. **26** depicts a side cross-sectional view of the receptacle shown in FIG. **1** installed on a wall together with the lid shown in FIG. **7**, in which the view is taken along a cross-sectional line similar to line M-M shown in FIG. **20**;

FIG. **27** depicts an exploded side view of the enclosure apparatus shown in FIG. **1**;

FIG. **28** depicts an enlarged image of the alternative local view L shown in FIG. **13**; and

FIGs. **29-35** depict aspects of exemplary methods.

DETAILED DESCRIPTION

Aspects of the present disclosure are not limited to the exemplary structural details and the exemplary arrangements of components described in the written descriptions and illustrated in the accompanying drawings. Accordingly, aspects of this disclosure may be applicable to other aspects and/or capable of being practiced or carried out in various variants of use, including those described herein.

Throughout the written descriptions, specific details are set forth in order to provide a more thorough understanding to persons of ordinary skill in the art. For convenience and ease of description, some well-known elements may be conceptually described to avoid unnecessarily obscuring the focus of this disclosure. In this regard, the written descriptions and accompanying drawings are should be interpreted in an illustrative, rather than a restrictive, sense.

Aspects of the present disclosure reference various exemplary networking enclosure apparatus, kits, and methods. Some aspects are described with reference to a networking enclosure apparatus comprising: a receptacle; a lid telescopically interacting with the receptacle; and/or magnetic elements (e.g., magnets) for aligning and interlocking the lid with the receptacle. Unless claimed, these exemplary aspects are provided for convenience and not intended to limit the present disclosure. Accordingly, the concepts described herein may be utilized for any analogous apparatus, kit, or method, using any type of aligning and/or interlocking means, magnetic or otherwise.

Numerous axes may be described herein, including an exemplary X axis. Some elements may be described as “elongated,” meaning that the element has a length longer than a width along an axis. Terms such as “vertical,” “horizontal,” “front,” “back,” “forward,” “backward,” “top,” “bottom,” “upper,” “lower,” “left,” “right,” and the like, are only used to better understand the description of the present disclosure with reference

to an exemplary working position of use. These terms are provided for convenience and do not limit this disclosure unless claimed.

As used herein, inclusive terms such as “comprises,” “comprising,” constitutes,” “constituting,” “includes,” “including,” “incorporates,” “incorporating,” or any other variation thereof, are intended to cover a non-exclusive inclusion, such that an apparatus, kit, method, or element thereof comprising a list of elements does not include only those elements, but may include other elements not expressly listed therein or inherent thereto. Unless stated otherwise, the term “exemplary” is used in the sense of “example,” rather than “ideal.” Various terms of approximation may be used in this disclosure, including “approximately” and “generally.” Approximately means within plus or minus **10**% of a stated number.

Some aspects are described with reference to conceptual drawings, such as flowcharts with boxes interconnected by arrows. The boxes may be combined, interconnected, and/or interchangeable to provide options for additional modifications according to this disclosure. The arrows may define an exemplary sequence of these operations. Although not required, the order of the sequence may be important. For example, the order of some sequences depicted in FIGs. **30** to **35** may be used to realize various configurations described herein.

Aspects of an exemplary networking enclosure apparatus **10** are now described. As shown in FIG. **1**, networking enclosure apparatus **10** may comprise mechanical and physical elements configured to house electronic devices **50** (e.g., as in FIGs. **25** and **26**). Numerous exemplary mechanical and physical elements of apparatus **10** are described. According to some aspects, for example, network enclosure apparatus **10** may comprise: a receptacle **100**; a lid **200**; and magnetic elements **300**.

For simplification, the term “networking enclosure apparatus **10**” may be interchangeable with “networking assembly with magnetic alignment and interlocking, adaptable to be installed in different locations and positions **10**,” “network enclosure assembly apparatus **10**,” “network enclosure apparatus **10**,” “enclosure apparatus **10**,” or simply “apparatus **10**.” Likewise, without departing from this disclosure, the term

"receptacle **100**" may be interchangeable with "receptacle subassembly **100**"; and the term "lid **200**" may be interchangeable with "lid subassembly **200**."

Receptacle subassembly **100** may comprise a cuboid body. For example, receptacle **100** may comprise a rectangular or prism-shape; and said shape may be formed from a monobloc of polymeric material, such as a plastic and/or other radio-transparent material. Lid subassembly **200** may comprise a corresponding rectangular or prism-shape; and said corresponding shape may be formed from another monobloc of the same or a different polymeric material, such as the same or a different plastic and/or radio-transparent material. The prism-shape of lid **200** may be configured to telescopically interact with the prism-shape of receptacle **100** by partially penetrating into the latter and/or by retracting therefrom. Magnetic elements **300** may be attached to receptacle **100** and lid **200**, and configured to align and interlock the former with the latter. Numerous additional aspects of receptacle **100**, lid **200**, and magnetic elements **300** are now described.

As shown in FIG. **2**, receptacle **100** may comprise: an erect back wall **102**; a pair of lateral walls **110**; a top wall **150**; and a bottom wall **160**. Pair of lateral walls **110** may extend along lateral extremities of erect back wall **102** perpendicularly to erect back wall **102**. Top wall **150** may extend horizontally coplanar with the upper edges of erect back wall **102** and of the pair of lateral walls **110**. Bottom wall **160** may extend horizontally coplanar with the lower edges of erect back wall **102** and of the pair of lateral walls **110**.

As shown in FIGs. **2** and **3**, erect back wall **102** may be provided with a plurality of circular, blind apertures **104** (e.g., as in FIG. **2**); and each aperture **104** may extend coaxially backwards into an integral cylinder **106** (e.g., as in FIG. **3**) having a diameter relatively larger than that of plurality of circular, blind apertures **104**. For example, as shown in FIG. **25**, apertures **104** may be operable with attachment elements **51** (e.g., pins, screws, and the like) to secure electronic accessories in receptacle **100**, such as electronic devices **50**. As also shown in FIGs. **2** and **3**, back wall **102** may further comprise a plurality of circular openings **108** having a diameter relatively larger than that of the plurality of circular, blind apertures **104**. For example, as shown in FIGs. **3** and **26**, plurality of circular openings **108** may be operable with attachment elements **74**

(e.g., pins, screws, and the like) to secure receptacle **100** to an external surface, such as a wall **70**.

As shown in FIG. **4**, receptacle **100** may comprise a pair of first entrapping pockets **112**. Each first entrapping pocket **112** may extend laterally, inwards from each one of the pair of lateral walls **110**, at approximately midway between top wall **150** and bottom wall **160** (e.g., as in FIG. **2**). Each first entrapping pocket **112** may comprise a pair of opposed, parallel and horizontally extending segments **120**, a pair of slanted segments **122**, and a pair of opposed, vertical segments **124**. Opposed, parallel and horizontally extending segments **120** may project inwardly from each one of the pair of lateral walls **110**. Slanted segments **122** may follow horizontally extending segments **120**. As described further below, segments **122** may comprise exemplary "first alignment surfaces."

Opposed, vertical segments **124** may extend from the pair of slanted segments **122** and may delimit an elongated window **118**. Pairs of segments **120**, **122**, and **124** may define: a parallelepipedic cavity **114** between the pair of opposed, parallel and horizontally extending segments **120**; a front opening **116** of entrapping pocket **112** at one end of entrapping pocket **112**; and elongated window **118** between the pair of opposed, vertical segments **124**. To help position the first alignment surfaces, parallelepipedic cavity **114** may be shaped as a multi-faced (e.g., six-faced) polyhedron, such as a rectangular prism. Front opening **116** may comprise an extension of parallelepipedic cavity **114**. As shown in FIG. **4**, elongated window **118** may face, along a whole length of first entrapping pocket **112**, an interior of receptacle **100**; and may extend along an X axis extending longitudinally through cavity **114**. For example, parallelepipedic cavity **114** may end internally with a first pair of end stoppers **126**; and stoppers **126** may be configured to secure a magnet in cavity **114**.

In some aspects, each first entrapping pocket **112** may be located adjacent to an adapter **128**. For example, adapter **128** may further extend inwardly into receptacle **100** and/or be adaptable to cooperate with a camlock. As shown in FIG. **4**, adapter **128** may comprise a U-shape body having an initial zone edge **130** spaced apart from an inside surface of each one of the pair of lateral walls **110**; and an end zone edge **132** in contact with inside surface of each one of the pair of lateral walls **110**. As a result,

adapter **128** may occupy an inclined position, behind which a hollow zone is formed. Adapter **128** may comprise a pair of spaced legs **134**. For example, each spaced leg **134** may be wedge-shaped with a narrow extremity coinciding with initial zone edge **130**. The pair of spaced legs **134** may be divergently extending. As shown in FIG. **4**, a pair of stop shoulders **136** may follow adapter **128** and flank end edge **132**.

Adapter **128** of FIG. **4** may be configured to interact with a toothed extension **138** (FIG **6**). As shown in FIG. **5**, toothed extension **138** may comprise a channel shape section **140** interconnected with a comb shape section **142** having several parallel, vertical teeth **144**. As shown in FIG. **6**, channel shape section **140** may be configured to engage, with a light-press fit, adapter **128**. For example, as shown in FIGs. **5** and **6**, channel shape section **140** may be shaped to receive adapter **128** and lock in place against stop shoulders **136** such that toothed extension **138** is aligned along the X axis with each of the parallel, vertical teeth **144** oriented perpendicular to the X axis. In this example, an L-shaped lever may be used to provide a firm connection between one of several parallel, vertical teeth **144** and a camlock installed in lid **200**. Accordingly, unauthorized access to enclosure apparatus **10** may be pre-empted.

As shown in FIG. **3**, receptacle **100** may comprise a pair of slotted flanges **146**. Pair of slotted flanges **146** may project outwardly from each one of the pair of lateral walls **110** and may be positioned in parallel with erect back wall **102**. The pair of slotted flanges **146** may be used for attaching of enclosure apparatus **10** to an external surface such as a wall of a building via screws or other fasteners, for example. Any number of flanges **146** may be used and/or located anywhere on apparatus **10**. For example, the exemplary four flanges **146** shown in FIG. **3** may likewise be located closer to top wall **150** and/or bottom wall **160** so as to accommodate different installations and/or minimize bending of lateral walls **110** during installation. Additional or alternate flanges **146** also may be located on top wall **150** and/or bottom wall **160**.

As shown in FIGs. **2** and **3**, one or both of the pair of lateral walls **110** may comprise one or more knock-out apertures **111**, and an exterior surface of bottom wall **160** may comprise one or more rails **161**. For example, each knock-out aperture **111** may comprise a knock-out portion that is removable to receive a dual keystone adapter

providing a pathway for data to be transmitted into apparatus **10** when lid **200** is locked onto receptacle **100**. As a further example, described further below with reference to FIG. **27**, one or more rails **161** may be used to support apparatus **10** on and/or attach apparatus **10** to a horizontal surface after removal of frame unit **260**.

As shown in FIG. **2**, a wall of apparatus **10** such as bottom wall **160** may comprise a raised portion **162** having one or more knock-out apertures **163**. For example, each knock-out aperture **163** may comprise a knock-out portion that is removable to receive a cable. Either of knock-out apertures **111** and **163** may comprise one or more knock-out portions. For example, each knock-out aperture **163** of FIG. **2** may comprise a plurality of knock-out portions, any of which may comprise an ellipsoid, a rectangular, or any other shape. The plurality of knock-out portions may be nested together, removed independently, and/or sized to receive any number of cables. As shown, raised portion **162** may be spaced apart from bottom wall **160** to provide clearance for the cable(s) to curve without pinching as they enter receptacle **100** through knock-out apertures **163**.

As also shown in FIG. **2**, bottom wall **160** also may comprise an additional knock-out aperture **164** on each side of raised portion **162**. Similar to apertures **163**, each aperture **164** may comprise a knock-out portion that is removable to receive one or more cables. As described further below with reference to FIG. **27**, each additional knock-out aperture **164** also may be engageable with a foot **165** when the knock-out portion has been removed, allowing apparatus **10** to rest on and/or be attached to a horizontal surface with foot **165**. For example, receptacle **100** may comprise (e.g., be packaged with in a kit) cover plates operable with apertures **163** and/or **164** to re-seal receptacle **100** after the knock-out portions of apertures **163** and/or **164** have been removed.

As shown in FIG. **7**, lid **200** may comprise an external shell **202** and an internal shell **250**; and shells **202** and **250** may be formed from the same monobloc of polymeric material. External shell **202** may comprise internal enveloping surfaces and internal shell **250** may comprise external enveloped surfaces. As shown in FIG. **7**, for example, external shell **202** may have a frame shape comprising: a pair of laterally spaced, vertical sides **204**; a top side **230**; and a bottom side **240**. Top side **230** may extend horizontally, coplanar with the upper edges of the pair of laterally spaced, vertical sides

204. And bottom side **240** may extend horizontally, coplanar with the lower edges of the pair of laterally spaced, vertical sides **204**.

As shown in FIGs. **10** and **11**, each of the pair of laterally spaced, vertical sides **204** may comprise a recess **206** of any shape. As shown, recess **206** may comprise a plurality of faces (e.g., six rectangular faces) and/or be prism-shaped. For example, one prism-shaped recess **206** may be located on each vertical side **204** of lid **200** at approximately midway between top side **230** and bottom side **240** (e.g., as in FIG. **7**); and each recess **206** may extend toward an interior of external shell **202** along the X axis (e.g., as in FIGs. **9** and **10**). A pair of opposed horizontal edges at an entrance of prism-shaped recess **206** may be chamfered to facilitate the alignment and insertion of first entrapping pocket **112** (e.g., as in FIG. **4**).

As shown in FIG. **10**, each recess **206** may extend laterally from the X axis and inwards into lid **200** to define a second entrapping pocket **208**. Each second entrapping pocket **208** may be defined: firstly by an opening entrance **210**, coplanar with a front of each one of the pair of laterally spaced, vertical sides **204**; and secondly, by a lateral extending window **212** extending along the X axis for facing first entrapping pocket **112** (e.g. as in FIG. **4**). Each second entrapping pocket **208** may be further defined by a pair of opposed flanks **214** starting from the front extremity of each one of the pair of laterally spaced, vertical sides **204** and extending divergently and inwardly into external shell **202** (e.g. as in FIG. **9**). Each one of the pair of opposed flanks **214** may be so inclined as to glidingly engage slanted segment **122** of each first entrapping pocket **112** (e.g., as in FIG. **4**). As shown in FIG. **11**, flanks **214** may comprise exemplary “second alignment surfaces” engageable with the exemplary first alignment surfaces described above (e.g., segments **122**, as in FIG. **4**).

As shown in FIG. **8**, each one of the pair of laterally spaced, vertical sides **204** may end backwardly in a recessed circular segment **216** traversed by an opening **218**. Recessed circular segment **216** and opening **218** may be configured to house a camlock.

As shown in FIGs. **7**, **9** and **12**, at least the top side **230** and bottom side **240** of external shell **202** may be provided with a protrusion or outwards projecting flat protrusion **235**. As shown in FIGs. **2**, **9**, and **12**, for example, each protrusion **235** may be used to stop

the advancement of lid **200** along the X axis by engaging the corresponding front faces of walls **150** and **160** of receptacle **100** after elongated window **118** (e.g. as in FIG. **4**) has been moved to oppose lateral extending window **212** (e.g. as in FIG. **10**). As shown in FIG. **7**, internal shell **250** may comprise an end wall **252** that is coplanar with and spaced from a contour of external shell **202**. And as shown in FIG. **8**, end wall **252** may include a closing chord surface **220** of recessed circular segment **216**.

As shown in FIGs. **9** and **12**, lid **200** may comprise a plurality of ties **254**. As shown in FIGs. **7**, **9**, and **12**, plurality of ties **254** may extend along top side **230**, bottom side **240**, and/or vertical sides **204** from end wall **252**. For example, each tie **254** of FIG. **9** may comprise a first end **256** and a second end **258**; each first end **256** may be attached to a zone spaced internally from an entrance of external shell **202**; and each second end **258** may be joined to partial contour zones situated at a top and a bottom of end wall **252**. Plurality of ties **254** may define a plurality of vents **267** extending into lid **200** between each pair of the plurality of ties **254**. As shown in FIGs. **12**, **16**, **18**, and **25**, plurality of vents **267** may permit airflow through lid **200** between internal shell **250** and external shell **202** around a perimeter of internal shell **250**. Each vent **267** may be large enough to permit the airflow and yet small enough to prevent entry of a human finger. As shown in FIG. **8**, parts of end wall **252** that correspond to recessed circular segments **216** may be used for holding and repositioning enclosure apparatus **10** during installation and use.

As shown in FIGs. **13** to **18**, lid **200** may comprise a frame unit **260**. For example, frame unit **260** may be laterally spaced from and encompass an exterior of external shell **202**. As shown in FIG. **16**, frame unit **260** may comprise an external frame **262** joined at the front via a flat zone **264** to a generally parallel internal frame **266** joined at the rear to external shell **202**. As shown in FIG. **13**, frame unit **260** may comprise: a top horizontal wall **268**; a bottom horizontal wall **270**; and a pair of opposed vertical walls **272** joined at the extremities of top and bottom horizontal walls **268** and **270**. As also shown in FIG. **13**, each one of the pair of opposed vertical walls **272** may be discontinuous at approximately their middle by an indented circular segment **274** corresponding to recessed circular segment **216**.

Frame unit **260** may be removable to accommodate different installations of networking enclosure apparatus **10**. For example, frame unit **260** may be attached to external shell **202** of lid **200** when networking enclosure apparatus **10** is installed in-wall (e.g., as in FIG. **25**); and removed from external shell **202** when enclosure apparatus **10** is installed on-wall (e.g., as in FIG. **26**, where removed frame unit **260** is shown with dotted lines) or out-of-wall (e.g., as in FIG. **27**, where unit **260** not shown). As shown in FIG. **18**, for example, frangible links **276** may be located at an end of internal frame **266** to connect an inside surface of internal frame **266** to an outside surface of external shell **202**. In this example, frangible links **276** may be severed to remove frame unit **260** from lid **200**.

As shown in FIG. **21**, magnetic elements **300** may be attached to each side of receptacle **100** and lid **200**, and configured to align and interlock lid **200** with receptacle **100**. Any number of magnetic elements **300** may be used. For example, each magnetic element **300** may comprise a first magnet **305** on receptacle **100** and a second magnet **306** on lid **200**. First magnet **305** may be positioned opposite of second magnet **306** when lid **200** is moved toward receptacle **100**. Multiple first and second magnets **305** and **306** may be used. For example, at least one first magnet **305** may be located in each first entrapping pocket **112** of receptacle **100** (e.g., as in FIG. **4**); and at least one second magnet **306** may be located in each second entrapping pocket **208** of lid **200** (e.g., as in FIG. **10**). A clearance may be established between elongated window **118** of first entrapping pocket **112** and lateral extending window **212** of second entrapping pocket **208** (as shown in FIGs. **4**, **10**, and **21**). At least one of first magnet **305** and second magnet **306** may comprise a permanent magnet operable via a magnetic reaction with the other one of first magnet **305** or second magnet **306** to align and interlock lid **200** with receptacle **100**.

A side view of each magnet **305** and **306** of FIG. **21** taken along axis X-X is shown in FIGs. **22** to **24**. As shown, each magnet **305** and **306** may a cross-section defined by a local longitudinal axis x-x disposed perpendicularly with a local lateral axis y-y, and each local axis x-x may be aligned with axis X-X of FIG. **21**. Each magnet **305** and **306** may be polarized along its local longitudinal axis x-x to define a north pole (“N”) opposite of a south pole (“S”) about its local lateral axis y-y. An outline of an exemplary magnetic field

for each magnet **305** and **306** resulting from this configuration is conceptually shown with circular dotted lines. During operation of apparatus **100**, an edge portion of north pole N of first magnet **305** may be positioned opposite of an edge portion of south pole S of second magnet **306** (or vice versa), causing a collaborative interaction that aligns and interlocks lid **200** with receptacle **100**. In FIGs. **23** and **24**, the collaboration interaction is conceptually shown with vertical dotted lines.

Accordingly, as described herein, networking enclosure apparatus **10** may be operable between: an open configuration, in which lid **200** and receptacle **100** are separated (e.g., as in FIG. **1**); and a closed configuration, in which lid **200** is aligned and interlocked with receptacle **100** (e.g., as in FIGs. **25** to **27**).

In the open configuration, lid **200** may be positioned relative to receptacle **100** until the first alignment surfaces of receptacle **100** are generally aligned with the second alignment surfaces of lid **200**. As described herein, the first alignment surfaces may comprise segments **122** of each first entrapping pocket **112** (e.g., as in FIG. **4**); and the second alignment surfaces may comprise flanks **214** of each recess **206** (e.g., as in FIG. **11**). Accordingly, once generally aligned, lid **200** may be moved toward receptacle **100** along the X axis until a back portion of the second alignment surfaces (e.g., flanks **214**) contacts a front portion of the first alignment surfaces (e.g., segments **122**), allowing lid **200** to be moved further toward receptacle **100** by gliding the second alignment surfaces along the first alignment surfaces via the collaborative interaction between magnets **305** and **306**.

As shown in FIGs. **22** to **24**, the collaborative interaction of first magnet **305** with second magnet **306** may comprise a magnetic shearing interaction, in which north pole N of magnet **305** is operable with south pole S of magnet **306** to move magnets **305** and **306** toward one another into the confronted position, and maintain the confronted position absent a removal force greater than the forces applied by magnets **305** and **306**. As now described, the magnetic shearing interaction may align and interlock lid **200** with receptacle **100** by further moving lid **200** toward receptacle **100**.

As shown in FIG. **22**, lid **200** may be initially moved toward receptacle **100** by an initial pushing force F_p (e.g., applied by a user) sufficient to generally align the first and

second alignment surfaces and/or overcome friction forces therebetween. As shown in FIG. **23**, the magnetic field of first magnet **305** will be begin to collaboratively interact with the magnetic field of second magnet **306**, resulting in a first magnetic closing force F_{M1} applied primarily by first magnet **305** and a second magnetic closing force F_{M2} applied primarily by second magnet **306**. At this point, the interaction of magnetic closing forces F_{M1} and F_{M2} may begin moving lid **200** toward receptacle **100** even if pushing force F_p is no longer applied to lid **200**. As shown in FIGs. **23** and **24**, the interaction of magnetic closing forces F_{M1} and F_{M2} may continue moving lid **200** toward receptacle **100** until equilibrium is reached, at which a center portion of magnet **305** may be aligned with a center portion **306**C of magnet **306** in the confronted position. In this example, protrusion **235** of lid **200** (e.g., as in FIG. **12**) may engage and/or be maintained against walls **150** and **160** (e.g., as in FIG. **2**) by magnetic closing forces F_{M1} and F_{M2} applied by magnets **305** and **306** in the confronted position.

Networking enclosure apparatus **10** may be returned to the open configuration by applying a removal force to lid **200** that is sufficient to overcome the magnetic closing forces F_{M1} and F_{M2} applied by magnets **305** and **306**, thereby allowing lid **200** to be separated from receptacle **100**. In some aspects, the closing forces F_{M1} and F_{M2} applied by magnets **305** and **306** may allow the removal force to be applied by hand.

In the closed configuration, when first magnet **305** and second magnet **306** are in the confronted position shown in FIG. **21**, an interstitial space "S" may be formed between the first and second magnets **305** and **306**. Interstitial space S may prevent the magnets **305** and **306** from coming into direct physical contact with one another and/or fusing together over time. This size and/or strength of magnets **305** and **306** may be directly proportional to the size of interstitial space S. For example, each decrease in space S may exponentially increase the strength of the collaborative interaction between closing forces F_{M1} and F_{M2}, allowing magnets **305** and **306** to be smaller and/or composed of a more-magnetic material (e.g., rare earth metals).

Because of the configuration of slanted segments **122** and vertical segments **124** shown in FIG. **21,** interstitial space S may be defined solely by the thickness of opposed, vertical segment **124** so that distance between the respective center portions of

magnets **305** and **306** is minimized. Although shown as rectangular in FIG. **21**, the cross-sectional shape of magnets **305** and/or **306** may be modified to even further minimize interstitial space S. For example, first magnet **305** may comprise a trapezoidal shape with slanted edges that are aligned with slanted segments **122**; and vertical segments **124** may be modified to accommodate the slanted edges, allowing first magnet **305** to extend further into interstitial space S. Second magnet **306** may be similarly modified according to this disclosure.

When enclosure apparatus **10** is in closed configuration, the plurality of vents **267** between each pair of the plurality of ties **254** (e.g., as in FIG. **12**) may permit airflow in and out of enclosure apparatus **10** through lid **200**. As shown in FIG. **25**, for example, electronic devices **50** may generate heat **40**, and the airflow may cool devices **50** by preventing recirculation of heat **40** inside a portion of enclosure **10**, such as the upper portion. For example, the airflow may comprise a flow of cool air **30** that is input through a first or lower portion of plurality of vents **267**, mixed with heat **40** inside of enclosure **10**, and output through a second or upper portion of vents **267** as a flow of warm air **20**. The distribution of vents **267** around the perimeter of enclosure **10** may allow for input of cool air **30** and output of warm air **20** from any portion of networking enclosure apparatus **10** in any direction, no matter how enclosure apparatus **10** is installed. As shown in FIGs. **7** and **25**, for example, cool air **30** may enter enclosure apparatus **10** through vents **267** located on bottom side **240** and/or bottom portions of vertical sides **204**, and warm air **20** may escape through vents **267** located on top side **230** and/or top portions of vertical sides **204**; and vice versa.

As shown in FIG. **25**, networking enclosure apparatus **10** may be installed in-wall, in which receptacle **100** is located within an opening **71** extending through a wall **70** (e.g., a stud wall) and a wall covering **72** (e.g., drywall). For example, attachment elements (e.g., screws) may be engageable with pair of flanges **146** (e.g., as in FIG. **3**) and a portion of wall **70** or wall covering **72** to secure receptacle **100** inside of opening **71**. As also shown in FIG. **25**, the portion of opening **71** extending through wall covering **72** may have a rough, unsightly edge defining an unaesthetic transitional zone when

apparatus **10** is installed in-wall; and an outer perimeter of frame unit **260** may extend beyond an outer perimeter of receptacle **100** to cover this zone.

Frame unit **260** may be optional, and may be removed from enclosure apparatus **10** during some installations. As shown in FIG. **26**, for example, apparatus **10** also may be installed on-wall, in which receptacle **100** is mounted directly on wall **70** using attachment elements **74** (e.g., screws) and openings **108** (e.g., as in FIG. **2**). In this example, because there may be no unaesthetic transitional zone, frame unit **260** may be detached from lid **200** by severing frangible links **276** (e.g., as in FIG. **18**).

As shown in FIG. **27**, enclosure apparatus **10** also may be installed out-of-wall, such as when placed on and/or attached to a horizontal surface (e.g., a table, floor, or like surface oriented at any angle). In these examples, as before, flow of cool air **30** may be input through a first or lower portion of lid **200** (e.g., through a first portion of vents **267**), mixed with heat **40** inside of enclosure apparatus **10**, and output through a second or upper portion of lid **200** (e.g., through a second portion of vents **267**) as flow of warm air **20**. As shown, frame unit **260** may be removed from lid **200** by severing links **276** when installed out-of-wall for additional stability.

Numerous out-of-wall configurations are shown in FIG. **27**. For example, networking enclosure apparatus **10** may be supported on the horizontal surface (or “free-standing”) by one or more rails **161**. Frame unit **260** may be removed from lid **200** so that the weight of enclosure apparatus **10** and electronic devices **50** (e.g., as shown in FIG. **26**) may be entirely supported by rails **161**. As shown in FIGs. **2** and **3**, any number of rails **161** may be provided and/or spaced apart to support any configuration of apparatus **10**.

As also shown in FIG. **27**, enclosure apparatus **10** may alternatively be supported on and/or attached to the horizontal surface by at least one foot **165**. As shown, each foot **165** may comprise: a support body **166**; a protrusion **167**; a securing opening **168**; and one or more attachment openings **169**. Support body **166** may comprise any shape configured to support and stabilize networking apparatus **10** on the horizontal surface, and protrusion **167** may be engageable with bottom wall **160** of receptacle **100**. For example, once the knock-out portions of apertures **164** (e.g., as in FIG. **2**) have been removed, each protrusion **167** may be engageable with one of apertures **164** so that

each support body **166** may be used to support apparatus **10**. Protrusion **167** may be adhered to aperture **164** for additional stability. Alternatively, an additional attachment element (e.g., a threaded screw) may extend through another aperture of bottom wall **160** (e.g. as in FIG. **2**) to engage securing opening **168** (e.g., via threads therein).

As also shown in FIG. **27**, bottom wall **160** and/or at least one foot **165** may be engageable with another attachment element (e.g., a screw) so that apparatus **10** may be mounted on a side-wall and/or upside-down on a ceiling. For example, either a portion of wall **160** and/or one or more attachment openings **169** of at least one foot **165** may be engageable with another attachment element (e.g., a screw) to attach receptacle **100** to the horizontal surface. In some aspects, the bottom surface of wall **160** and/or each support body **166** may comprise additional fixation means, including adhesives, suction elements, and the like.

Additional aspects of networking enclosure apparatus **10** are shown in FIG. **28**. As shown, apparatus **10** may comprise any number of additional knock-out apertures and/or attachment openings. For example, end wall **252** of lid **200** may comprise a knock-out aperture **280** that, like knock-out aperture **111** of FIGs. **2** and **3**, may comprise a knock-out portion that is removable to receive another dual keystone adapter. Similar and/or different knock-out apertures may be located on any relatively flat surface of apparatus **10**. As a further example, each corner of frame unit **260** of FIG. **28** may comprise an attachment opening **282** that allows lid **200** to be mounted directly to wall **70** and/or wall covering **72** of FIG **25**. In this example, attachment openings **282** may be located outside of an outer perimeter of receptacle **100** so that lid **200** may be attached to wall **70** without contacting receptacle **100**. Additional portions of lid **200** may be removable to accommodate this configuration. For example, all or portions of vertical sides **204** may be removed.

Any variation of enclosure apparatus **10** may include any magnetic elements **300**, including any number of magnets in any shape or spacing configured to produce the collaborative interactions described herein. Any magnetic composition and/or materials may be used. For example, one or both of first and second magnets **305** and **306** may comprise any composition of ferromagnetic materials, including composite materials

and rare-earth magnets comprising boron, cobalt, neodymium, and like alloys of rare-earth elements configured to modify the performance of magnets **305** and **306**.

Additional aspects of the present disclosure are now described with reference to an exemplary method **500** shown in FIGs. **29-34**. For ease of description, aspects of method **500** may be described with reference to apparatus **10**, although similar aspects may likewise be described with reference to any variation thereof.

As shown in FIG. **29**, method **500** may comprise: telescopically interacting lid **200** with receptacle **100** by engaging first alignment surfaces on receptacle **100** with second alignment surfaces on lid **200** (an "interacting step" **520**); and moving lid **200** toward receptacle **100** into a closed configuration by moving the first alignment surfaces relative to the second alignment surfaces with a magnetic interaction between a first magnet **305** on receptacle **100** and a second magnet **306** on lid **200** (a "moving step" **540**). Additional aspects of steps **520** and **540** are now described.

As shown in FIG. **30**, interacting step **520** may comprise intermediate steps for telescopically interacting lid **200** with receptacle **100**. For example, step **520** may comprise: moving lid **200** relative to receptacle **100** until the second alignment surfaces of lid **200** are generally aligned with the first alignment surfaces of receptacle **100** (an "an aligning step" **522**); and receiving at least a portion of the first alignment surfaces in a recess defined by the second alignment surfaces (a "receiving step" **524**). In this example: the first structure may comprise first entrapping pocket **112** and the first alignment surfaces may comprise segments **122**, as shown in FIG. **4**; the second structure may comprise second entrapping pocket **208** and the second alignment surfaces may comprise flanks **214**, as shown in FIGs. **10** and **11**; and the recess may comprise recess **206** of pocket **208**, as also shown in FIGs. **10** and **11**. Accordingly, aligning step **522** may comprise moving lid **200** relative to receptacle **100** until the second flanks **214** are generally aligned with segments **122**; and receiving step **524** may comprise receiving a portion of segments **122** in recess **206**.

Moving step **540** may comprise aligning and interlocking lid **200** with receptacle **100** using a collaborative interaction between first magnet **305** and second magnet **306**. As shown in FIG. **31**, step **540** also may comprise: allowing the collaborative interaction

between first magnet **305** and second magnet **306** to glide the second alignment surfaces over the first alignment surfaces until first magnet **305** and second magnet **306** are in the confronted position (a "gliding step" **542**); and maintaining the confronted position with the collaborative interaction between first magnet **305** and second magnet **306** (a "maintaining step" **544**). For example, gliding step **542** may comprise releasing lid **200** after receiving step **524**; and maintaining step **544** may comprise allowing the center portion of first magnet **305** to obtain equilibrium with the center portion of second magnet **306**, as shown in FIGs. **23** and **24**.

Method **500** may comprise additional locking steps. As shown in FIG. **32**, for example, method **500** may comprise: moving lid **200** between a plurality of telescoping positions relative to receptacle **100** to expand or contract an interior volume between lid **200** and receptacle **100** (a "moving step" **560**); maintaining the interior volume by engaging a first locking portion on receptacle **100** with a second locking portion on lid **200** (a "maintaining step" **562**); and locking lid **200** onto receptacle **100** by operation of the second locking portion (a "locking step **564**"). For example, the first locking portion may comprise toothed extension **138** (e.g., as in FIG. **5**) and the second locking portion may comprise a camlock that is mounted in opening **218** of lid **200** (e.g., as in FIG. **10**). In this example, the camlock may comprise an L-shaped lever that is movable (e.g., rotatable) into a position between teeth **144** of extension **138** to both maintain the interior volume by maintaining a specific distance between lid **200** and receptacle **100** and lock lid **200** onto receptacle **100**.

Method **500** also may comprise additional installation steps. As shown in FIG. **33**, for example, method **500** may comprise: locating receptacle **100** on wall **70** or in wall opening **71** extending into wall **70** (a "locating step" **570**); and attaching receptacle **100** to a portion of wall **70** (an "attaching step" **572**). As shown in FIG. **25**, one or more attachment elements (e.g., screws) may be engageable with pair of flanges **146** (e.g., as in FIG. **3**) and a portion of wall **70** or wall covering **72** to secure receptacle **100** inside of opening **71**. Accordingly, locating step **570** may comprise placing flanges **146** against wall **70**, and attaching step **572** may comprise engaging the attachment elements with flanges **146** and wall **70**. As shown in FIG. **26**, receptacle **100** also may be mounted

directly on wall **70** using one or more attachment elements **74** (e.g., screws) and openings **108**. Accordingly, locating step **570** also may comprise: placing receptacle **100** against wall **70**, and attaching step **572** may comprise engaging attachment elements **74** with wall **70** through openings **108**. As a further example, any method **500** described herein also may comprise attaching one or more electronic devices **50** to back wall **102** with attachment elements **51** extending through back wall **102** of receptacle **100**, as also shown in FIGs. **25** and **26**.

Still other installation steps are contemplated. As shown in FIG. **34**, method **500** also may comprise removing frame unit **260** from lid **200** by severing frangible links **276** extending between frame unit **260** and lid **200** (a "removing step" **580**). In some aspects, method **500** also may comprise: removing the knock-out portions of apertures **111**, **163**, **164**, and/or **180**; engaging protrusion **167** of each foot **165** with one of apertures **164**; attaching one of bottom wall **160** or feet **165** to a surface; and/or any other steps in keeping with this disclosure.

Additional aspects of the present disclosure are now described with reference to another exemplary method **600** shown in FIG. **35**. For ease of description, aspects of method **600** are described with reference to networking enclosure apparatus **10**, although similar aspects may likewise be described with reference to any variation thereof. As shown in FIG. **35**, method **600** may comprise: mounting receptacle **100** inside of opening **71** extending through wall **70** (a "locating step **620**"); and attaching lid **200** to wall **70** so as to surround receptacle **100** and opening **71** without contacting receptacle **100** (an "attaching step **640**").

In keeping with above, locating step **620** may comprise any intermediate steps for attaching receptacle **100** to a portion of wall **70** and/or wall covering **72**. For example, step **620** may comprise: locating receptacle **100** in opening **71** and engaging attachment elements (e.g., screws) with pair of flanges **146** and the portion of wall **70** and/or wall covering **72**. In contrast to above, attaching step **640** may be performed whether or not enclosure apparatus **10** comprises magnets **305** and **306**. For example, attachment openings **282** of FIG. **28** may be located outside of an outer perimeter of receptacle **100** so that lid **200** may be attached to wall **70** without contacting receptacle

100. Accordingly, attaching step **640** may comprise: positioning lid **200** on wall **70** to surround receptacle **100**; and attaching lid **200** directly to wall **70** and/or wall covering **72** by inserting an attachment element into each attachment opening **182** (e.g., as in FIG. **28**) of lid **200**.

Additional aspects are now described with reference to an exemplary kit. For ease of description, aspects of the kit may be described with reference to various elements and variations shown in FIGs. **1** to **28**. For example, the kit may comprise: any variation of networking enclosure apparatus **10** described above; a locking mechanism; attachment elements for mounting electronic devices in the receptacle; and/or installation instructions associated therewith.

In some aspects, the locking mechanism may comprise: a first locking portion engageable with the first structure of receptacle **100**; and a second locking portion engageable with the second structure of lid **200** and operable with the first locking portion to lock lid **200** onto receptacle **100**. As described above, the first structure may comprise first entrapping pocket **112**; the second structure may comprise second entrapping pocket **208**; the first locking portion may comprise toothed extension **138**; the second locking portion may comprise the camlock; and the installation instructions may guide attachment of extension **138** to the first structure and the camlock to the second structure. The attachment elements may comprise any like elements described herein, such as elements **51** and/or **74**. Any related installation elements may likewise be included, such as adhesives, related tools, and the like.

Numerous aspects of the present disclosure have been described in detail by the written descriptions and accompanying drawings; however, it is to be understood that these aspects merely exemplify the disclosed subject matters, any of which may be embodied in various forms. Therefore, any specific structural and functional details are not to be interpreted as limiting, but merely as a basis for the claims and as representative basis for teaching the person of ordinary skill in the art to variously employ the present invention in virtually any appropriately detailed structure.

Moreover, while some aspects of this disclosure are described with reference to illustrative aspects for particular applications, the disclosure is not limited thereto. As the

person of ordinary skill in the art with access to the teachings provided herein would recognize, numerous additional aspects, applications, equivalents, modifications, and substitutions may fall in the scope of the aspects described herein. It is therefore intended that the scope of the following appended claims and claims hereafter introduced should be given the broadest interpretation consistent with the description as a whole and not be limited by this disclosure.

EMBODIMENTS IN WHICH AN EXCLUSIVE PROPERTY OR PRIVILEGE IS CLAIMED ARE DEFINED AS FOLLOWS:

1. A networking enclosure apparatus comprising:

a receptacle installable in different locations and positions, the receptacle comprising first alignment surfaces and a first magnet; and

a lid telescopically interactable with the receptacle, the lid comprising second alignment surfaces and a second magnet, and the first alignment surfaces being engageable with the second alignment surfaces to move the lid toward the receptacle into a closed configuration with a magnetic interaction between the first magnet and the second magnet.

2. The apparatus of claim **1**, wherein the receptacle comprises a back wall and a plurality of openings extending through the back wall to receive one or more attachment elements for mounting electronic devices in the receptacle.

3. The apparatus of claim **1** or **2**, wherein:

the first magnet is located on an interior surface of the receptacle; and

the second magnet is located on an exterior surface of the lid.

4. The apparatus of any one of claims **1** to **3**, wherein:

the first alignment surfaces are located on opposite sides of the first magnet; and

the second alignment surfaces are located on opposite sides of the second magnet.

5. The apparatus of any one of claims **1** to **4**, wherein the first alignment surfaces and the second alignment surfaces maintain a space between the first magnet and the second magnet when the lid is moved toward the receptacle into the closed configuration.

6. The apparatus of claim **5**, wherein the space is maintained between a central portion of the first magnet and a central portion of the second magnet.

7. The apparatus of any one of claims **1** to **6**, wherein the lid comprises a plurality of vents configured to permit air flows into and out of the receptacle.

8. The apparatus of claim **7**, wherein the plurality of vents permit air flows into a bottom portion of the receptacle and out of a top portion of the receptacle.

9. The apparatus of claim **7**, wherein the plurality of vents are spaced apart around a perimeter of the lid.

10. The apparatus of any one of claims **1** to **9**, comprising a frame unit removably attached to the lid.

11. The apparatus of claim **10**, wherein the frame unit is removably attached to the lid with one or more frangible links extending between the frame unit and the lid.

12. The apparatus of any one of claims **1** to **11**, wherein:

the first alignment surfaces are engageable with the second alignment surfaces to move the lid toward the receptacle along an axis extending into the receptacle; and

the first magnet and the second magnet are polarized along their respective lengths in a direction generally perpendicular with the axis so that a north or south pole of the first magnet interacts with an opposite south or north pole of the second magnet when the first alignment surfaces are engaged with the second alignment surfaces.

13. The apparatus of any one claims **1** to **12**, comprising:

a raised portion spaced apart from a wall of the receptacle; and

a plurality of apertures extending through the raised portion.

14. The apparatus of claim **13**, wherein the plurality of apertures comprise at least one knock-out aperture comprising a knock-out portion that is removable to permit entry of one or more cables.

15. The apparatus of claim **14**, wherein the at least one knock-out aperture is configured to receive a dual keystone adapter when the knock-out portion is removed.

16. The apparatus of any one claims **1** to **15**, comprising at least one foot engageable with a wall of the receptacle and configured to support the apparatus on an external surface or attach the apparatus to the external surface.

17. The apparatus of any one of claims **1** to **16**, wherein the receptacle comprises a first locking portion and the lid comprises a second locking portion operable with the first locking portion to lock the lid onto the receptacle.

18. The apparatus of claim **17**, wherein:

the lid is movable between a plurality of telescoping positions relative to the receptacle to expand or contract an interior volume of the apparatus; and

the first and second locking portions are operable to lock the lid onto the receptacle at each of the plurality of telescoping positions.

19. The apparatus of claim **18**, wherein:

the first locking portion comprises a plurality of teeth separated by a plurality of spaces corresponding to the plurality of telescoping positions; and

a portion of the second locking portion is insertable into one of the plurality of spaces to lock the lid onto the receptacle at a corresponding one of the plurality of telescoping positions.

20. A networking enclosure kit comprising:

the networking enclosure apparatus of any one of claims **1** to **16**;

a locking mechanism comprising:

a first locking portion engageable with the receptacle, and

a second locking portion engageable with the lid and operable with the first locking portion to lock the lid onto the receptacle; and

one or more attachment elements operable to attach the receptacle to an external surface or secure electronic devices within the receptacle.

21. A networking enclosure apparatus comprising:

a receptacle installable in different locations and positions, the receptacle comprising first alignment surfaces;

a lid telescopically interactable with the receptacle, the lid comprising second alignment surfaces engageable with the first alignment surfaces to guide the lid toward the receptacle into a closed configuration; and

a frame unit removably attached to the lid.

22. The apparatus of claim **21**, wherein the frame unit is removably attached to the lid with one or more frangible links extending between the frame unit and the lid.

23. The apparatus of claim **21** or **22**, wherein an outer perimeter of the frame unit is greater than an outer perimeter of the receptacle.

24. The apparatus of claim **23**, wherein the frame unit comprises one or more attachment openings located outside of the outer perimeter of the receptacle.

25. The apparatus of any one of claims **21** to **24**, wherein the receptacle comprises a back wall and a plurality of openings extending through the back wall to receive one or more attachment elements for mounting electronic devices in the receptacle.

26. The apparatus of any one of claims **21** to **25**, comprising a first magnet located on the receptacle and a second magnet located on the lid, the first alignment surfaces being engageable with the second alignment surfaces to move the lid toward the receptacle into a closed configuration with a magnetic interaction between the first magnet and the second magnet.

27. The apparatus of claim **26**, wherein:

the first magnet is located on an interior surface of the receptacle; and

the second magnet is located on an exterior surface of the lid.

28. The apparatus of claim **27**, wherein:

the first alignment surfaces are located on opposite sides of the first magnet; and

the second alignment surfaces are located on opposite sides of the second magnet.

29. The apparatus of any one of claims **26** to **28**, wherein the first alignment surfaces and the second alignment surfaces maintain a space between the first magnet and the

second magnet when the lid is moved toward the receptacle into the closed configuration.

30. The apparatus of any one of claims **21** to **29**, wherein the lid comprises a plurality of vents spaced apart to permit air flows into and out of the receptacle.

31. The apparatus of any one of claims **21** to **30**, wherein the receptacle comprises a first locking portion and the lid comprises a second locking portion operable with the first locking portion to lock the lid onto the receptacle.

32. A networking enclosure method comprising:

telescopically interacting a lid with a receptacle by engaging first alignment surfaces on the receptacle with second alignment surfaces on the lid; and

moving the lid toward the receptacle into a closed configuration by moving the first alignment surfaces relative to the second alignment surfaces with a magnetic interaction between a first magnet on the receptacle and a second magnet on the lid.

33. The method of claim **32**, wherein engaging the first alignment surfaces with the second alignment surfaces comprises:

moving the lid relative to the receptacle until the second alignment surfaces of the lid are generally aligned with the first alignment surfaces of the receptacle; and

receiving at least a portion of the first alignment surfaces in a recess defined by the second alignment surfaces.

34. The method of claim **32** or **33**, comprising:

moving the lid between a plurality of telescoping positions relative to the receptacle to expand or contract an interior volume between the lid and the receptacle;

maintaining the interior volume by engaging a first locking portion on the receptacle with a second locking portion on the lid; and

locking the lid onto the receptacle by operation of the second locking portion.

35. The method of any one of claims **32** to **34**, comprising:

locating the receptacle on a wall or in an opening extending into the wall; and

attaching the receptacle to a portion of the wall.

36. The method of any one of claims **32** to **35**, comprising removing a frame unit from the lid.

37. The method of claim **36**, wherein removing the frame unit comprises severing one or more frangible links extending between the frame unit and the lid.

38. A networking enclosure method comprising:

mounting a receptacle inside of an opening extending through a wall; and

attaching a lid to the wall so as to surround the receptacle and the opening without contacting the receptacle.

39. The method of claim **38**, wherein the lid comprises a frame unit removably attached to the lid, and attaching the lid comprises attaching the frame unit to the wall.

40. The method of claim **39**, wherein the frame unit comprises attachment openings located outside of an outer perimeter of the receptacle, and attaching the lid comprises inserting an attachment element into each attachment opening of the frame unit.

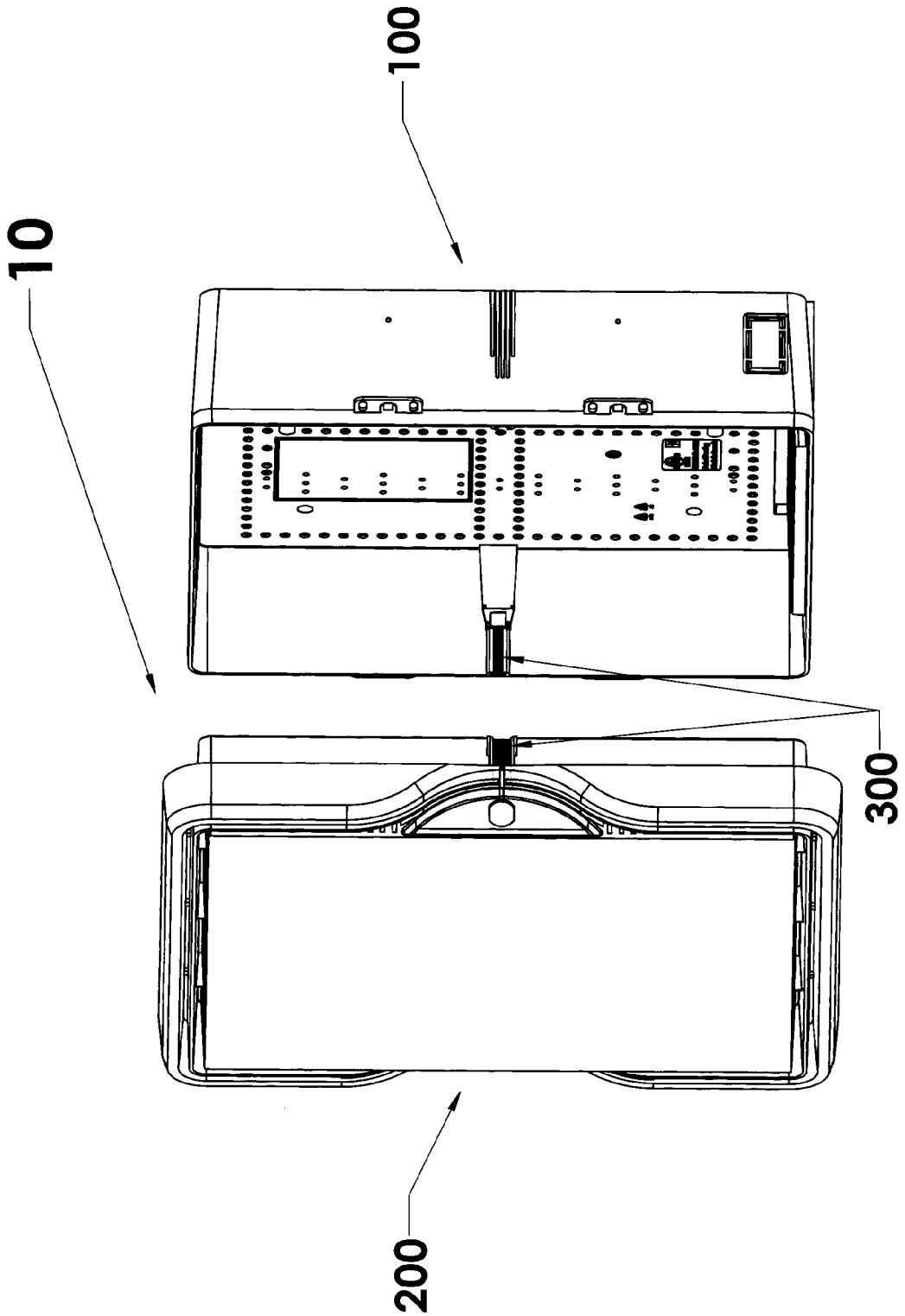


FIG. 1

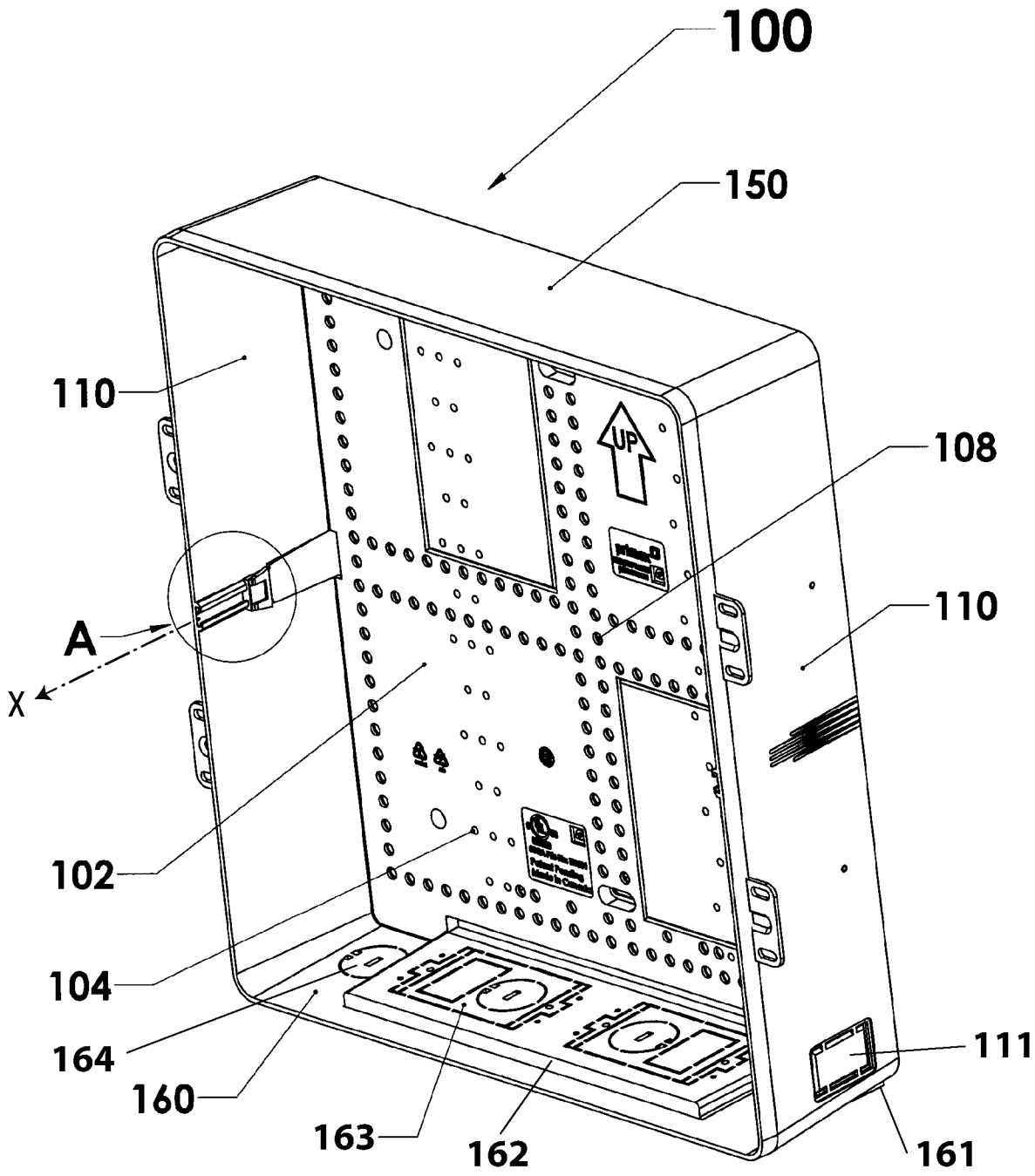


FIG. 2

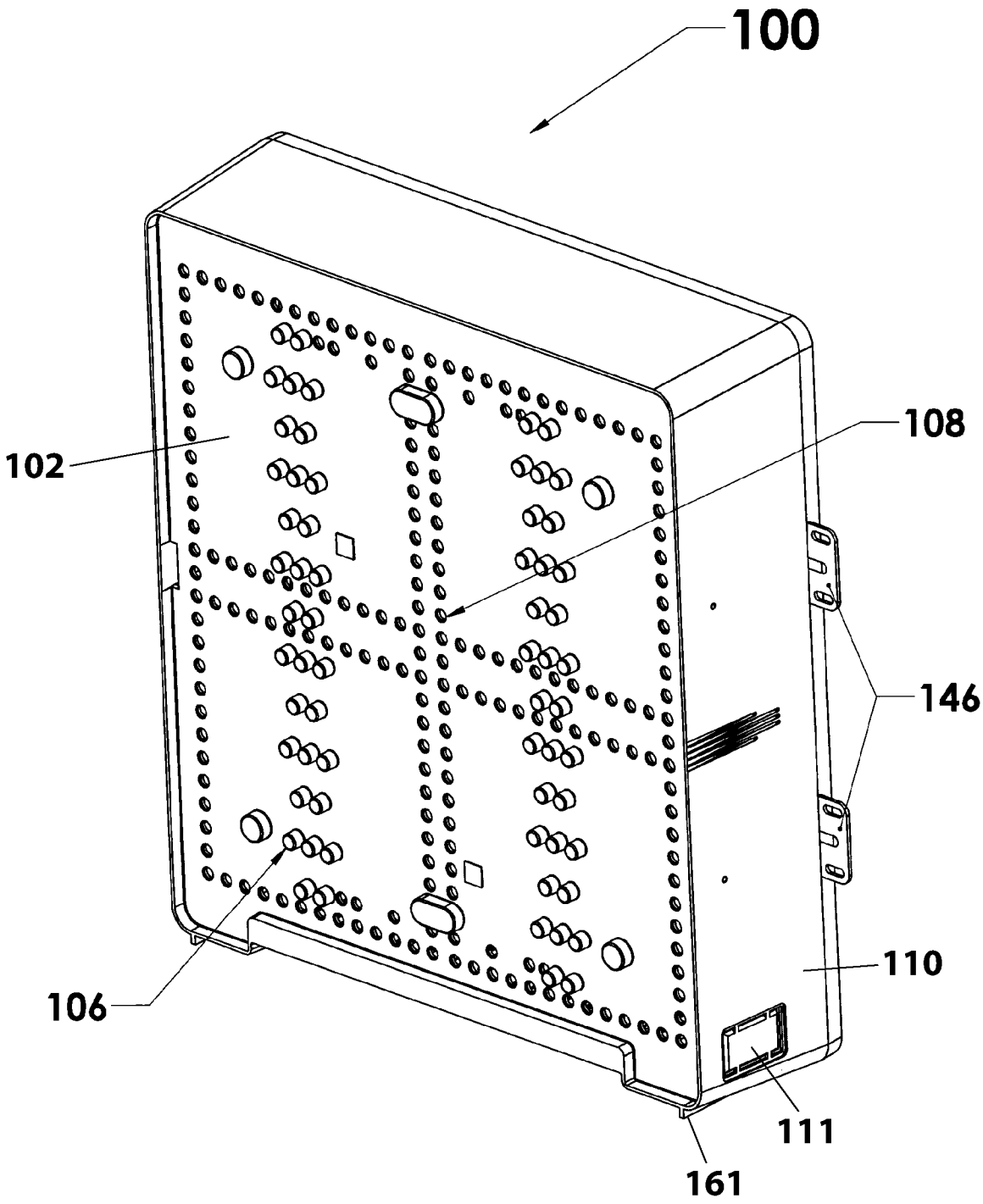


FIG. 3

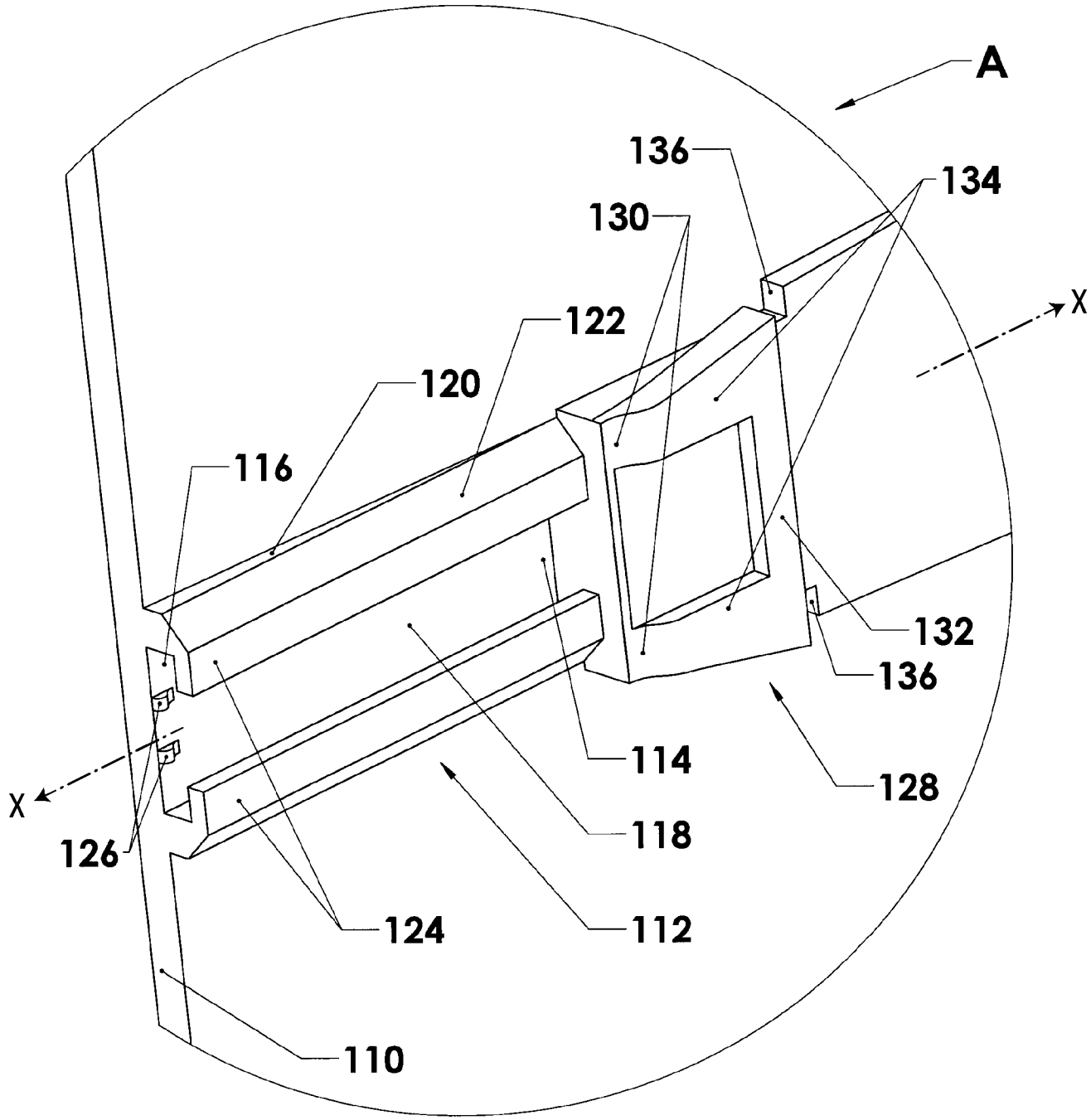


FIG. 4

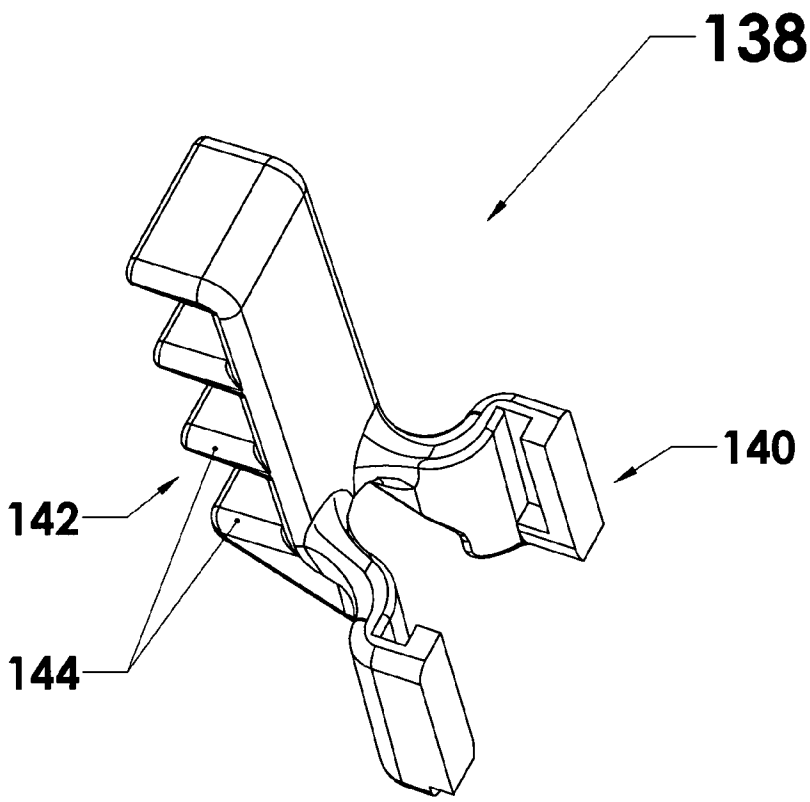


FIG. 5

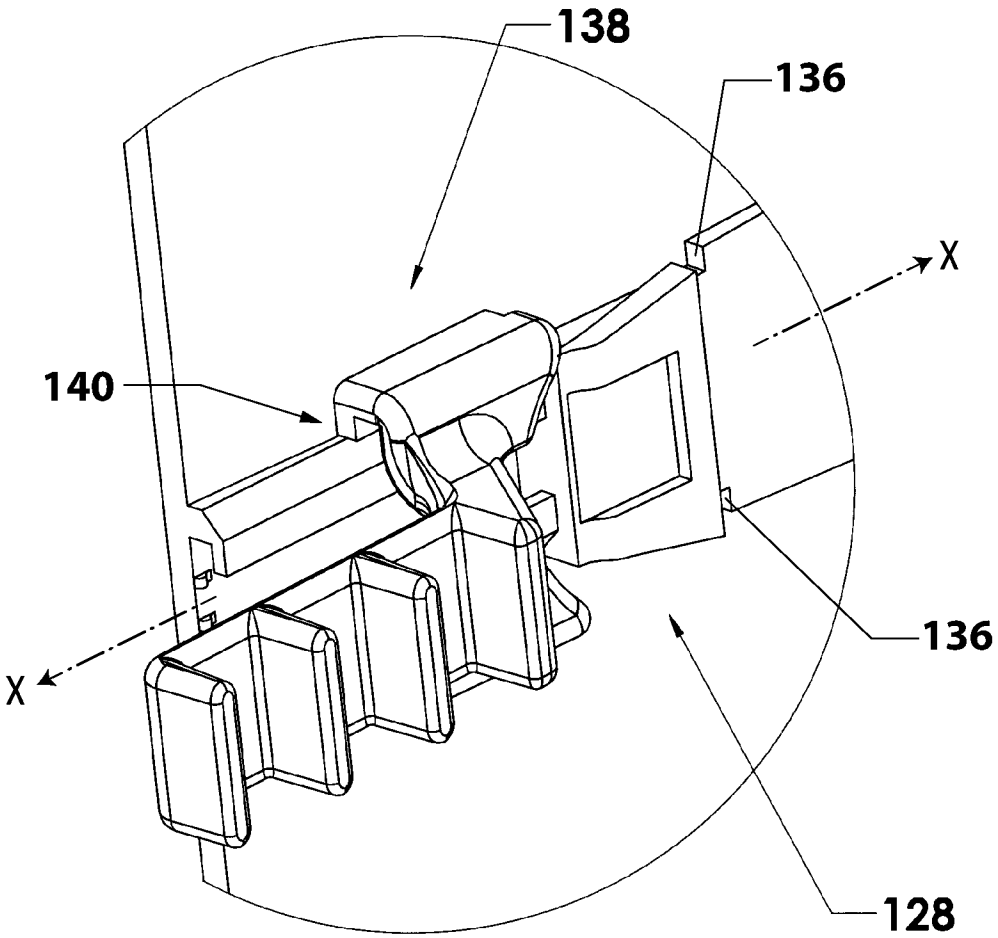


FIG. 6

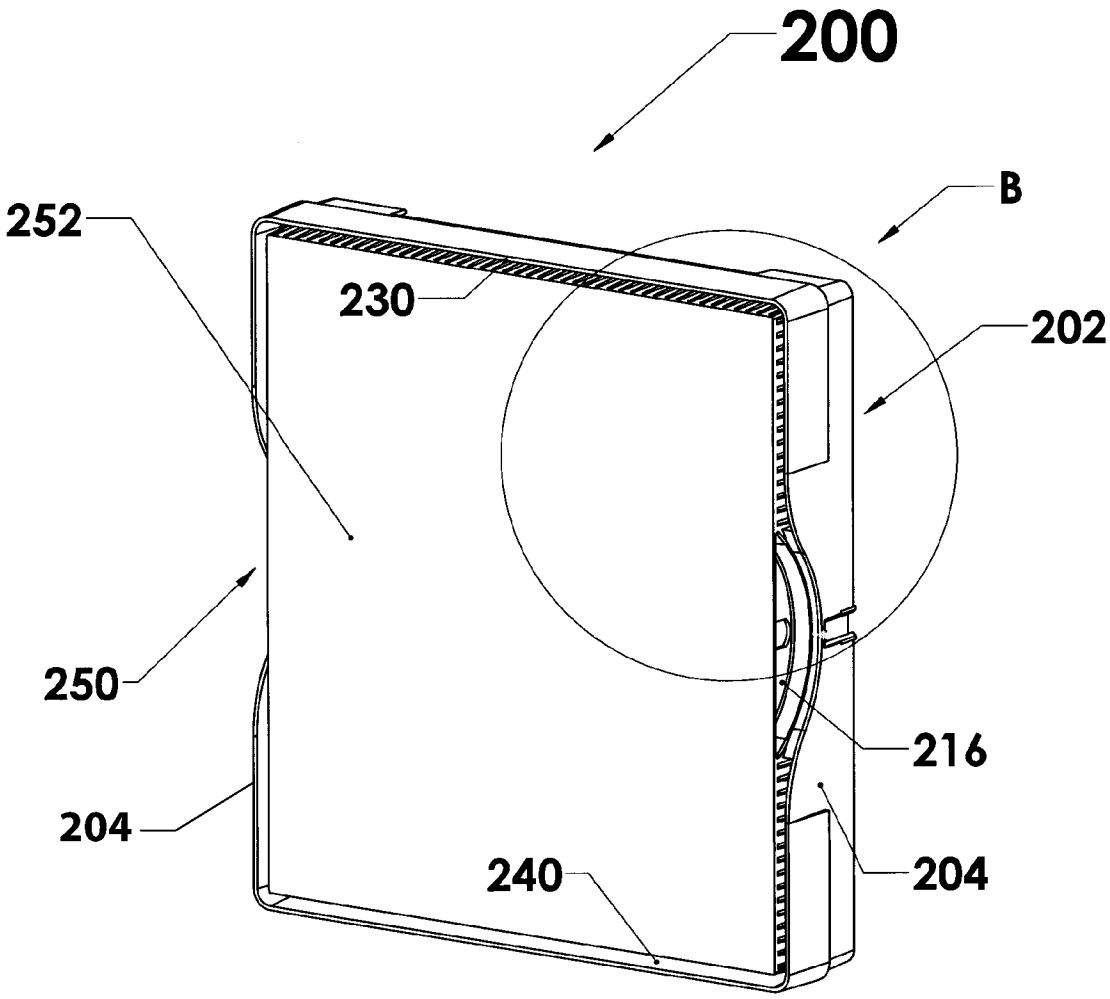


FIG. 7

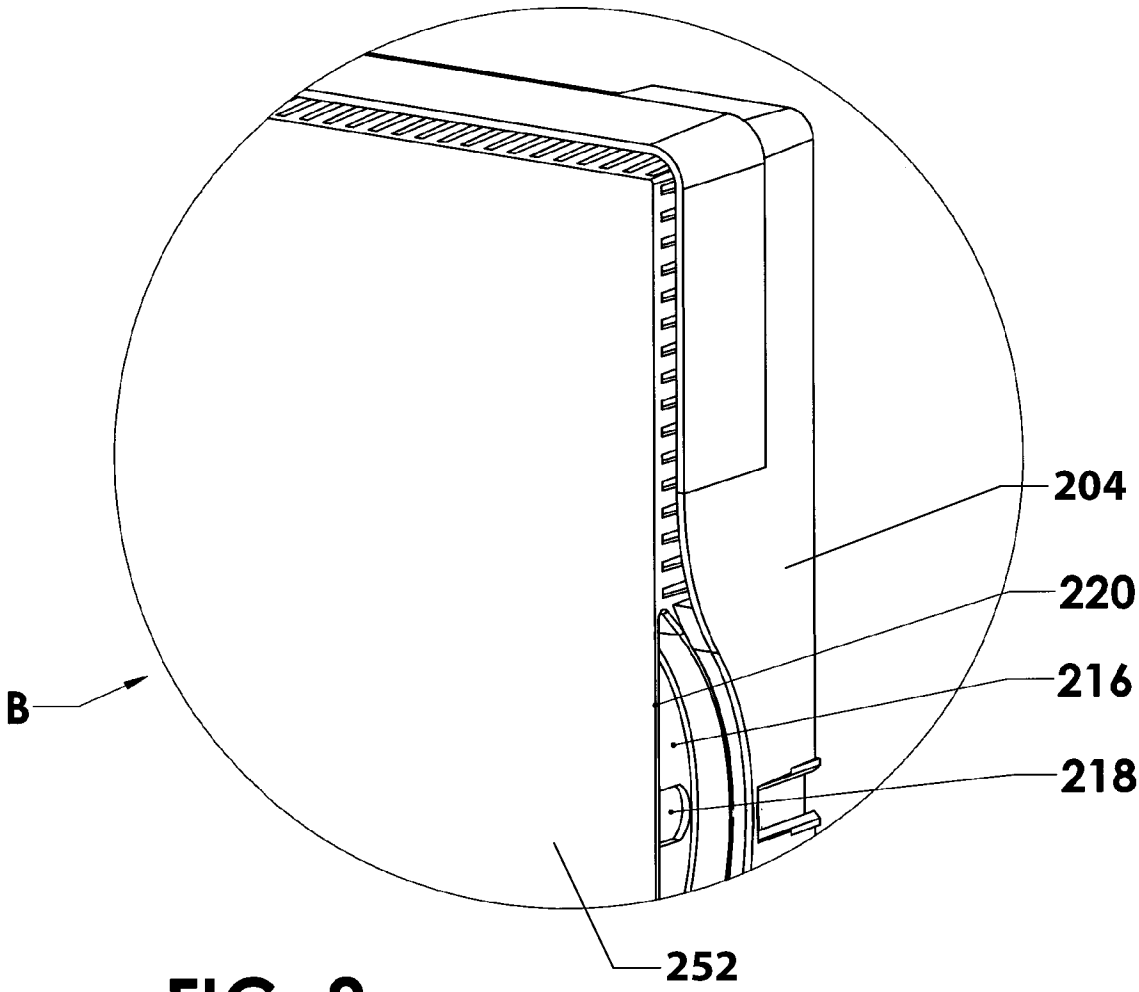


FIG. 8

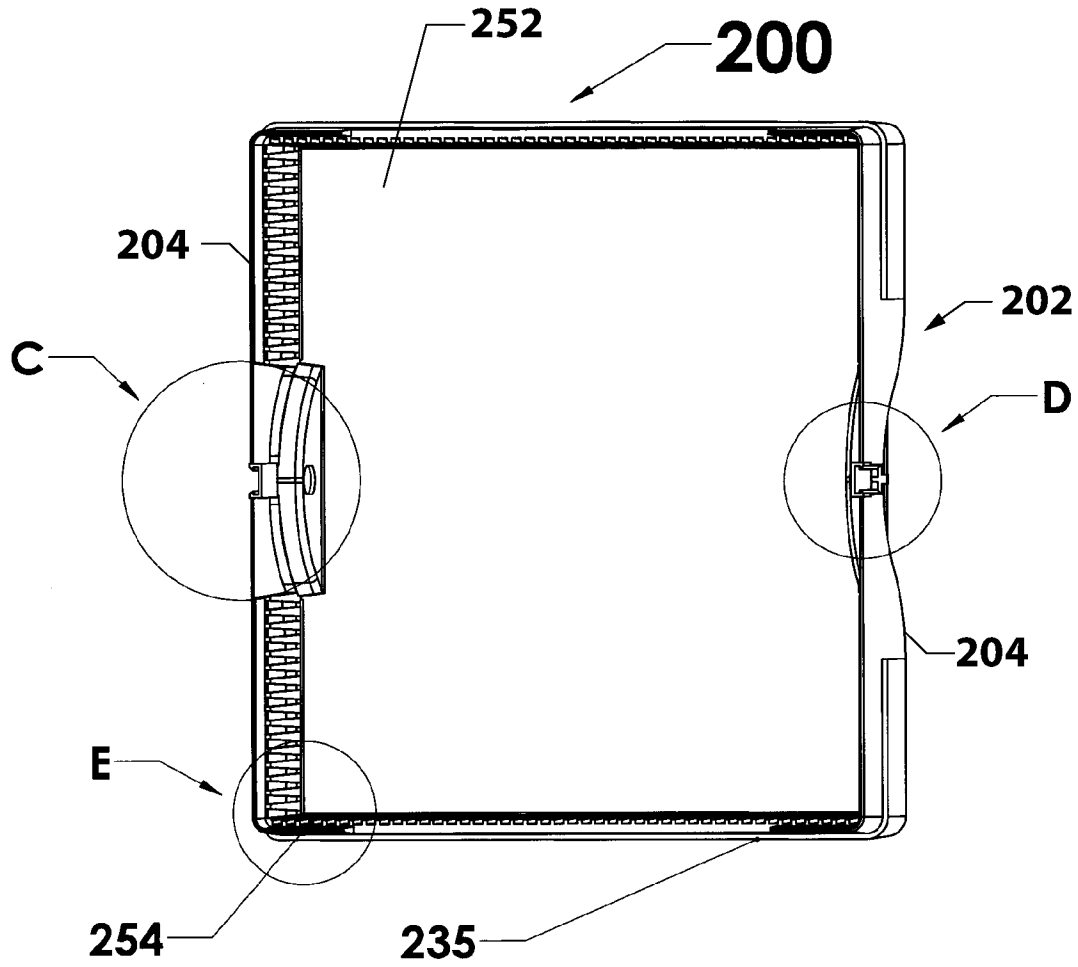


FIG. 9

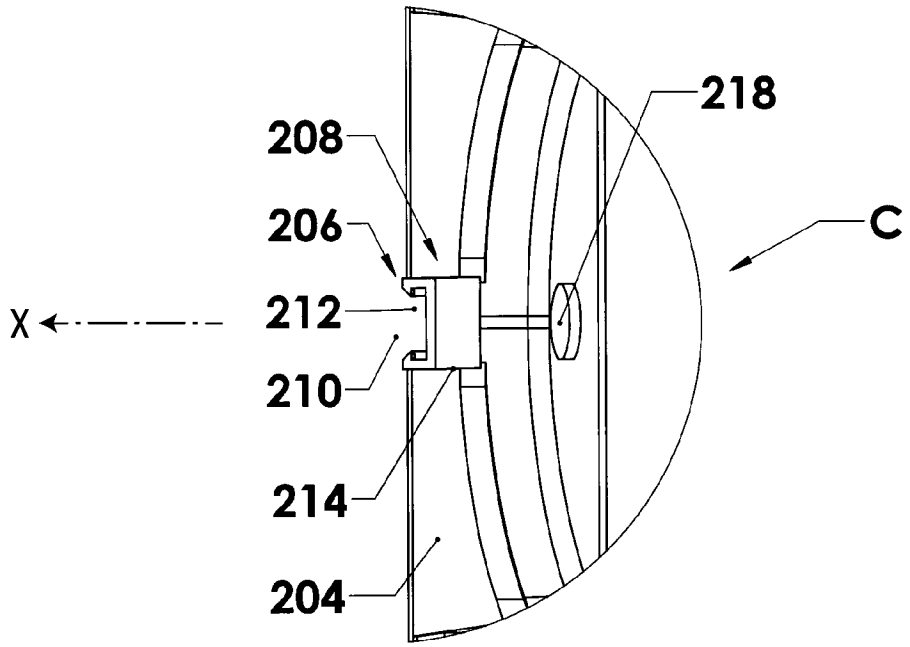


FIG. 10

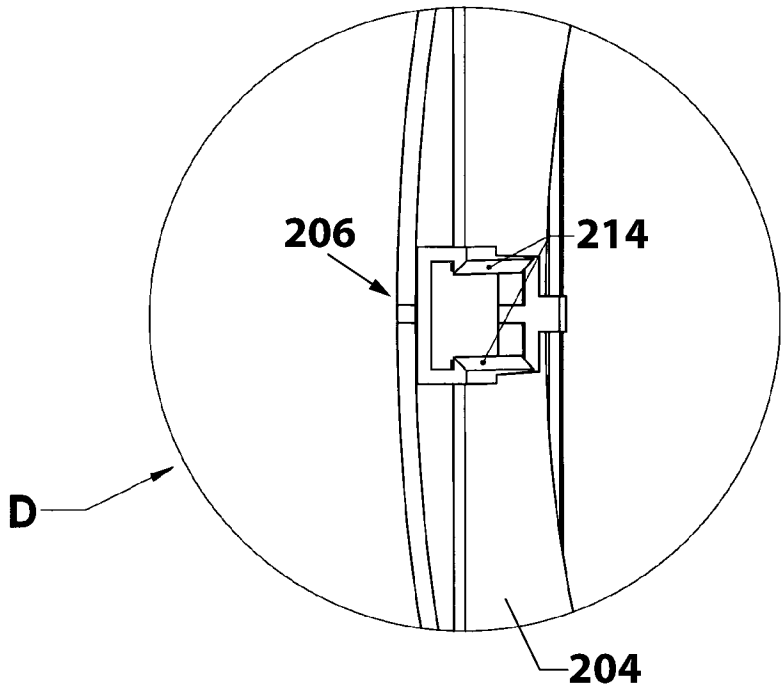


FIG. 11

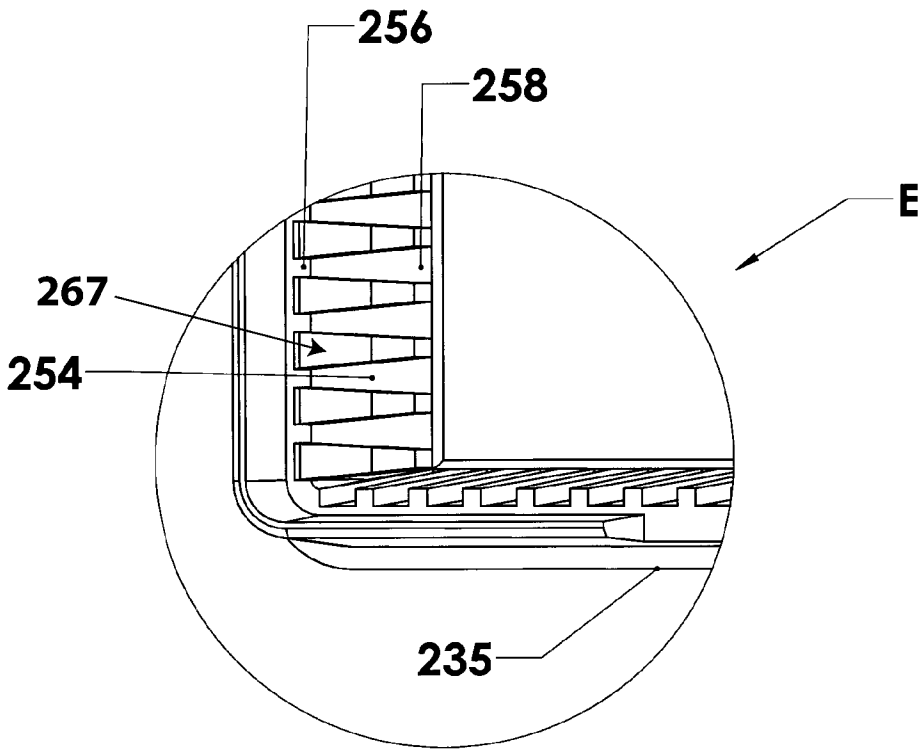


FIG. 12

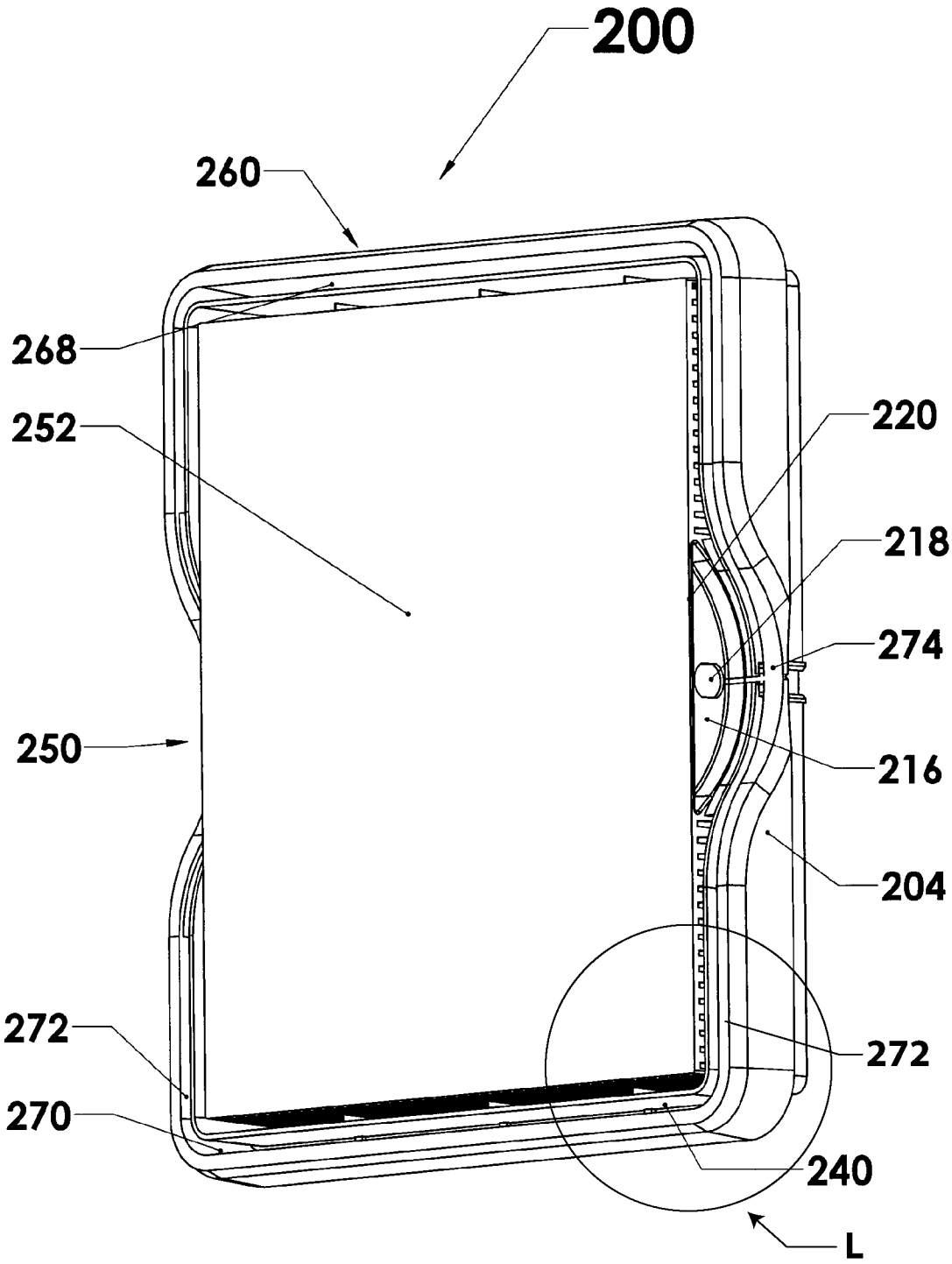


FIG. 13

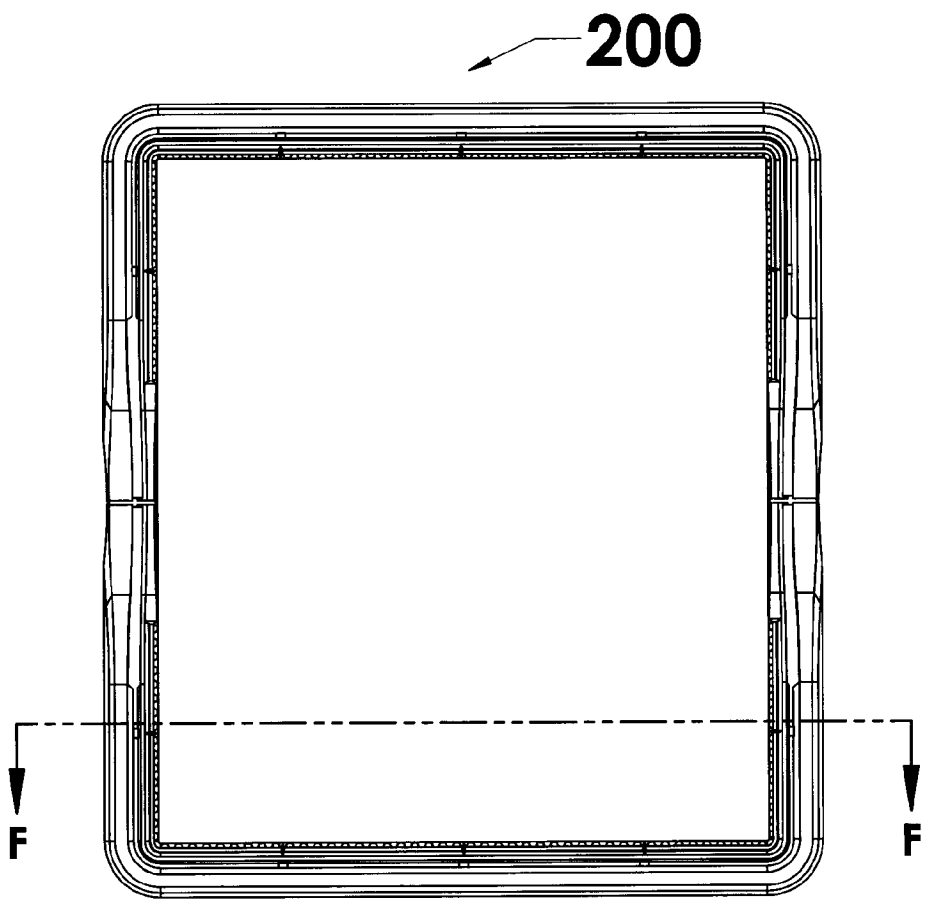


FIG. 14

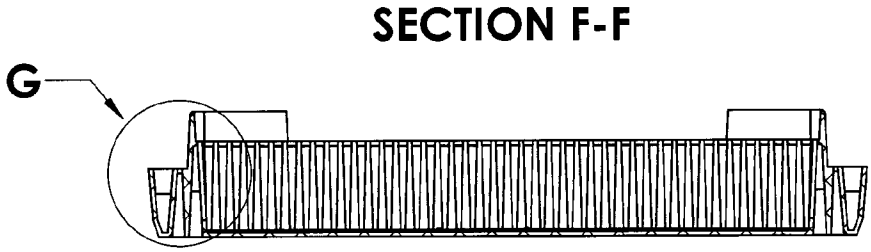


FIG. 15

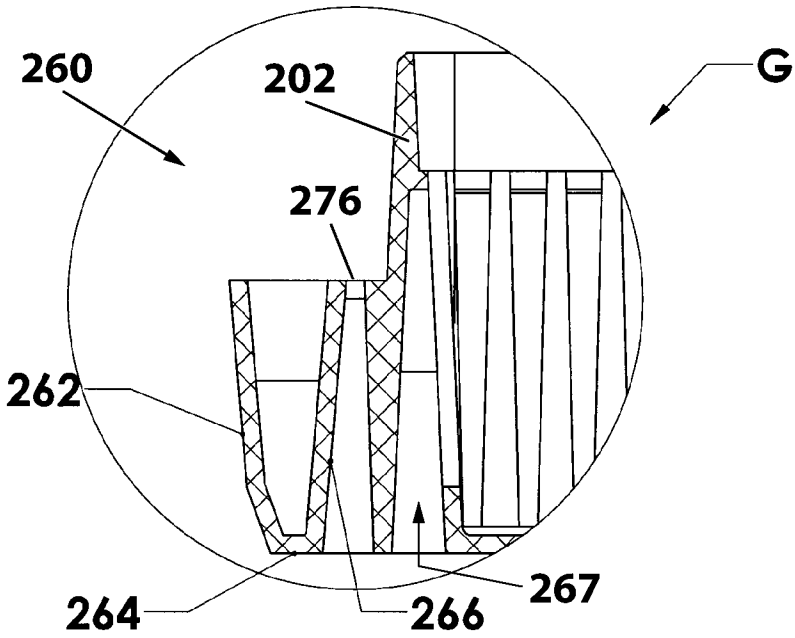


FIG. 16

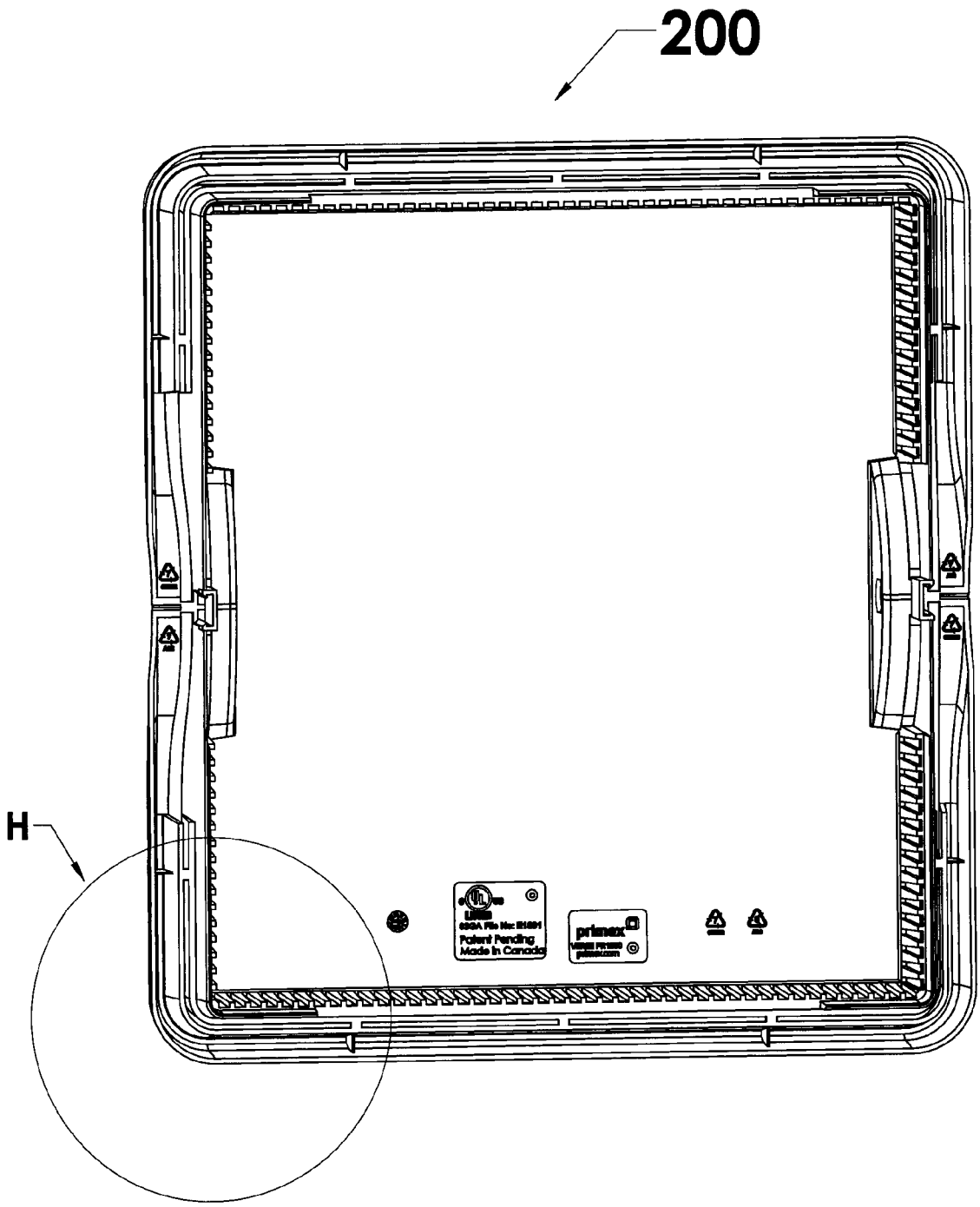


FIG. 17

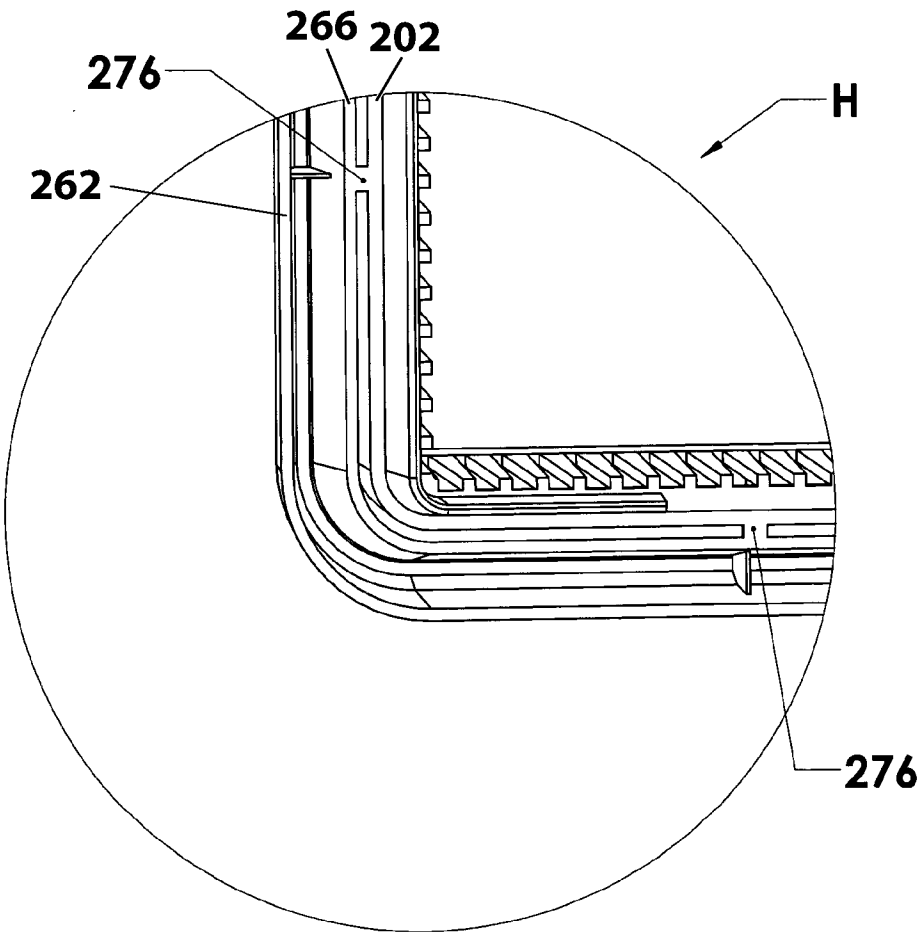


FIG. 18

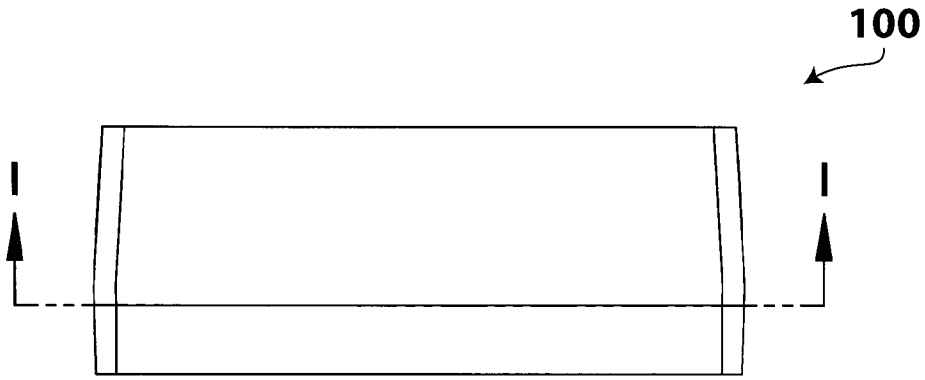
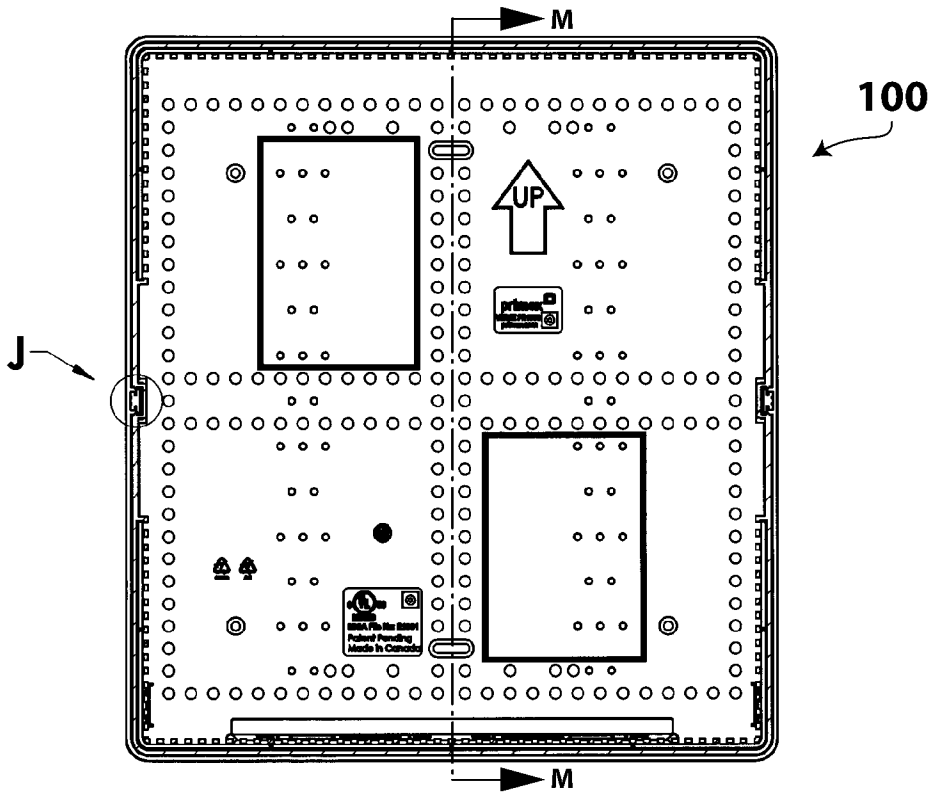


FIG. 19



SECTION I-I

FIG. 20

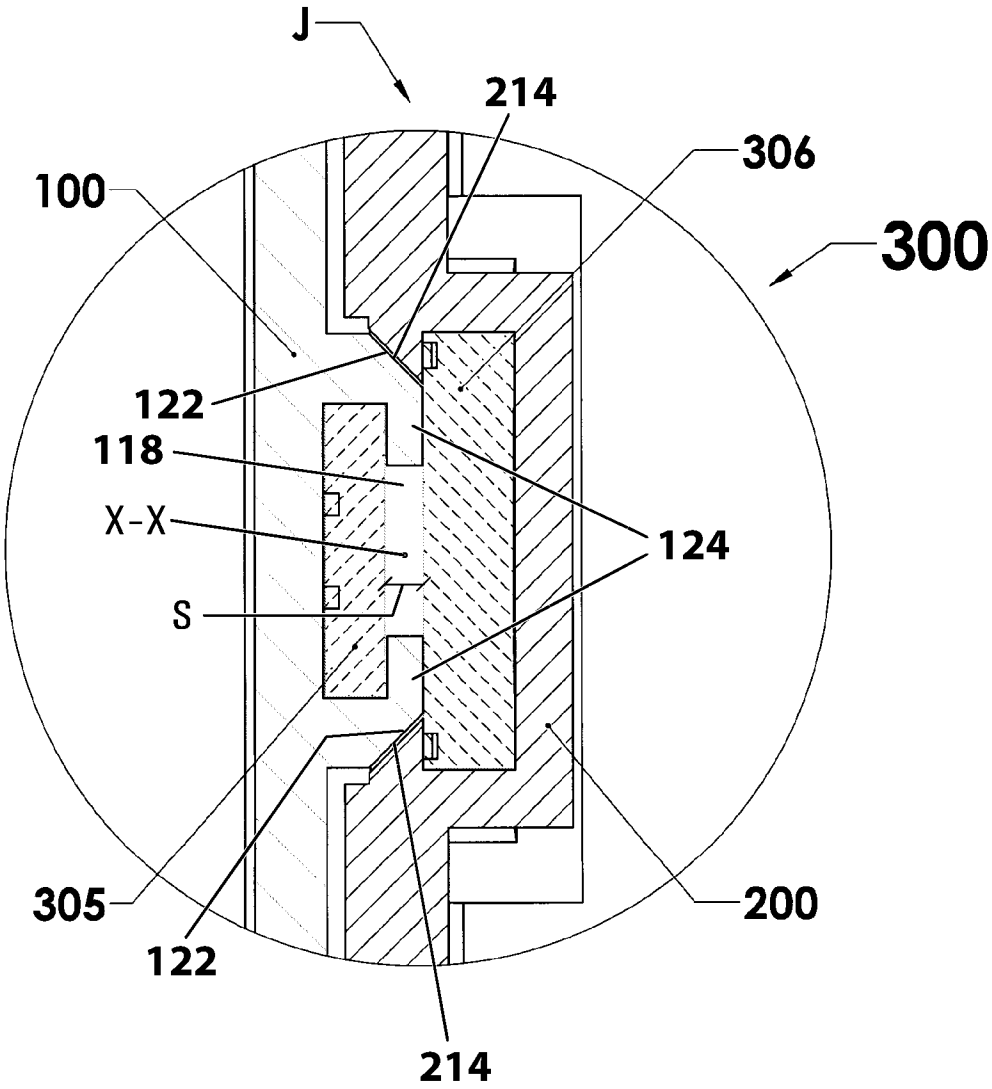


FIG. 21

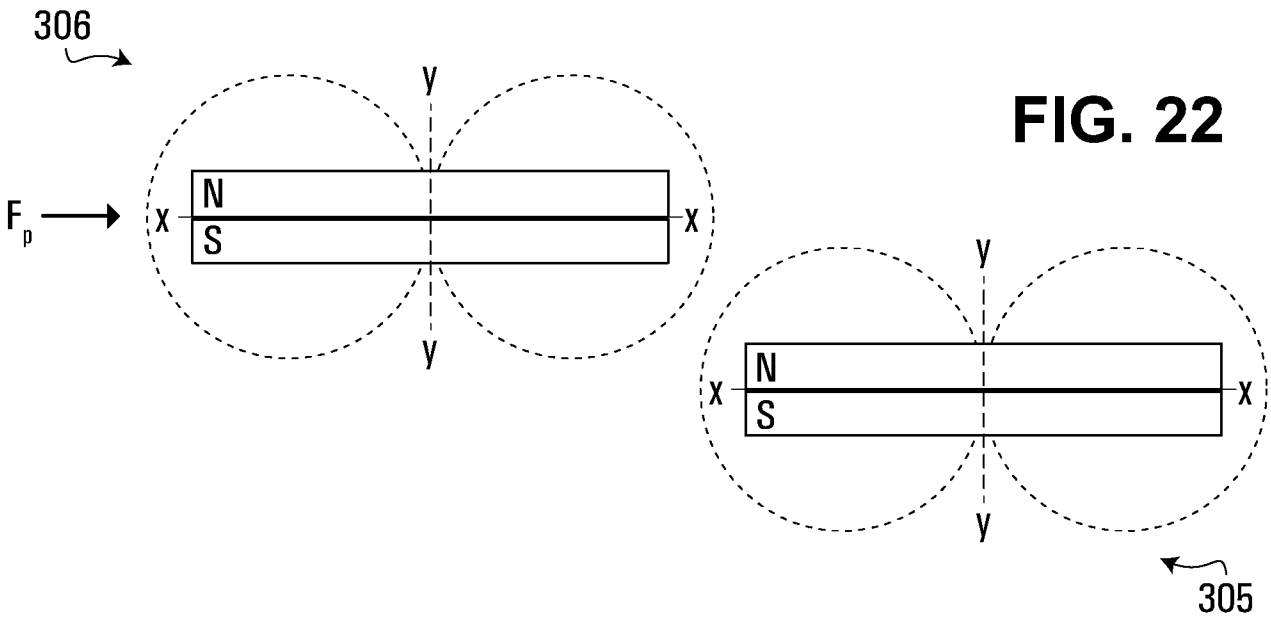


FIG. 22

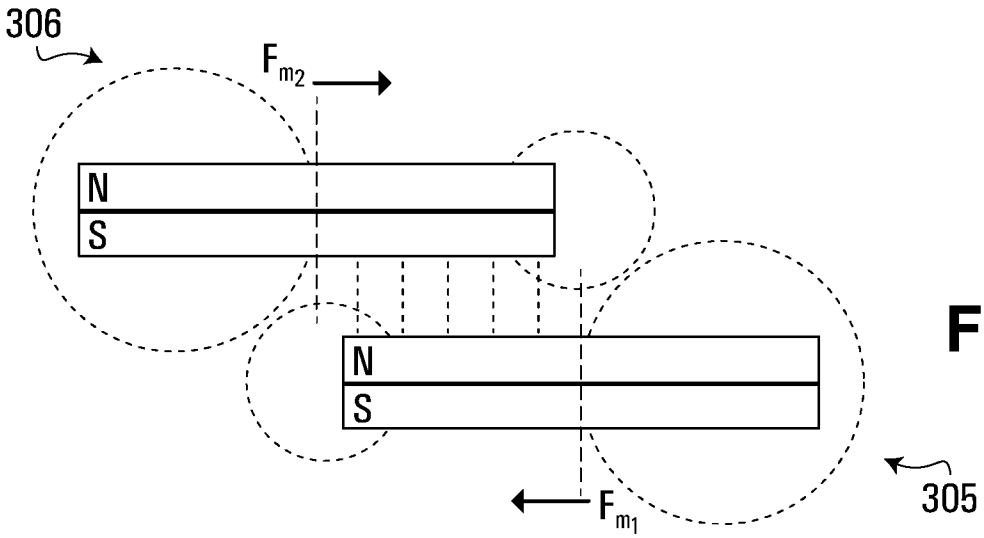


FIG. 23

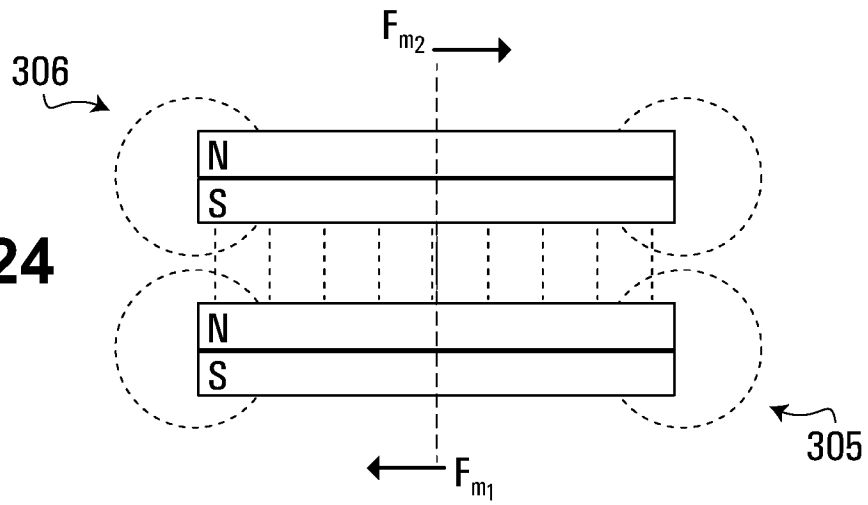


FIG. 24

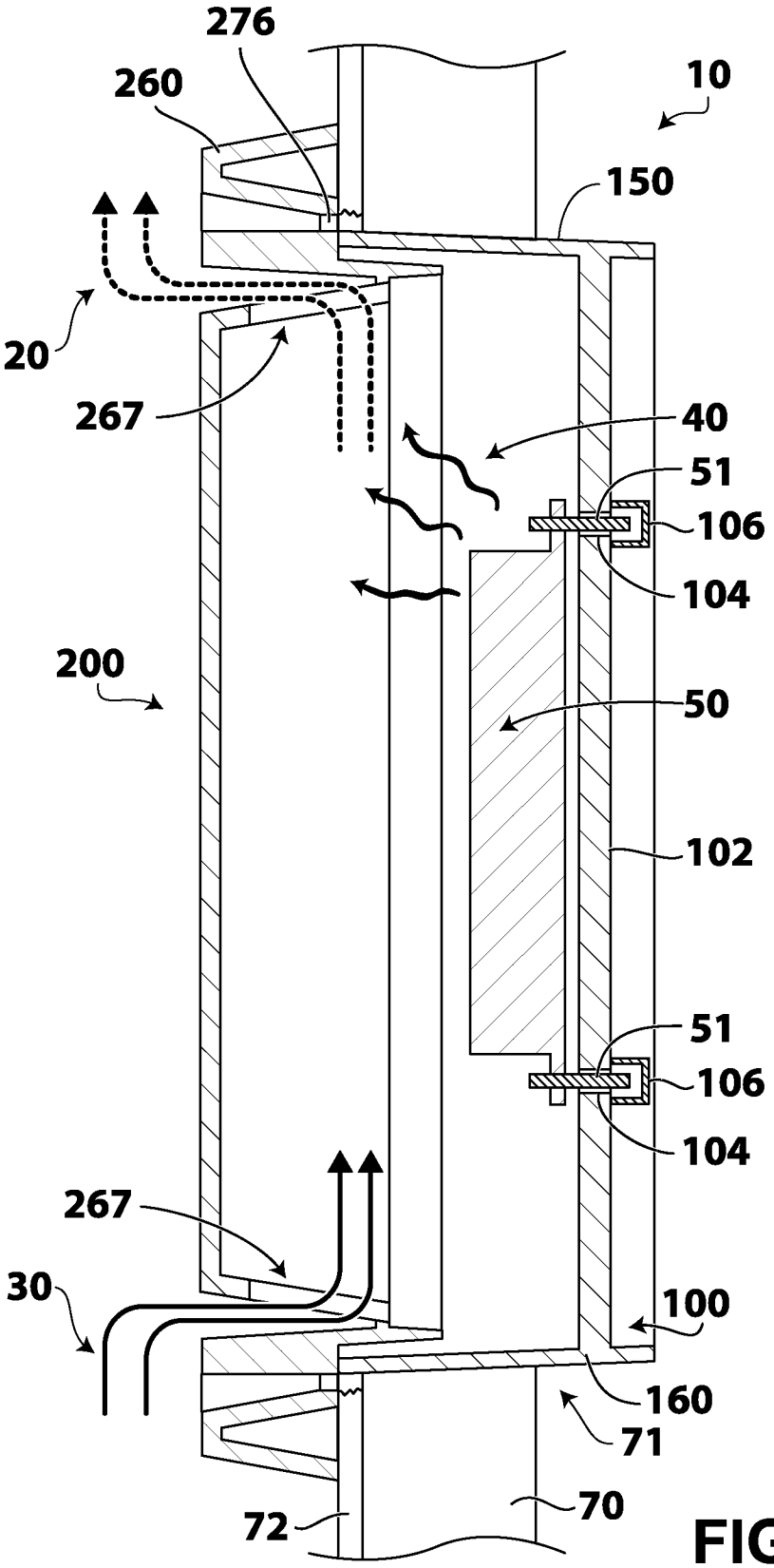

276
260
10
150
20
267
40
51
106
104
200
50
102
51
106
104
267
30
100
160
71
72
70

FIG. 25

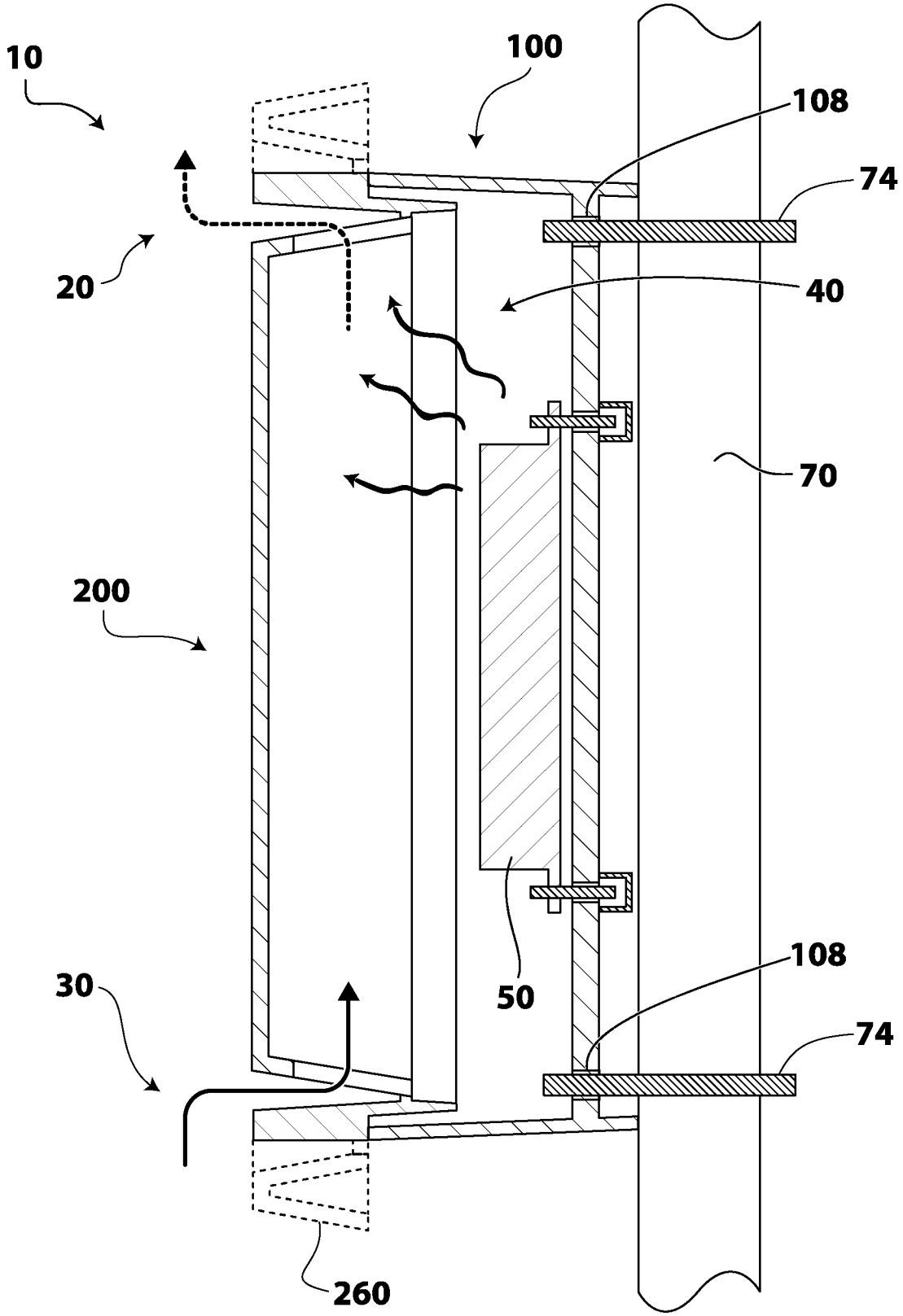


FIG. 26

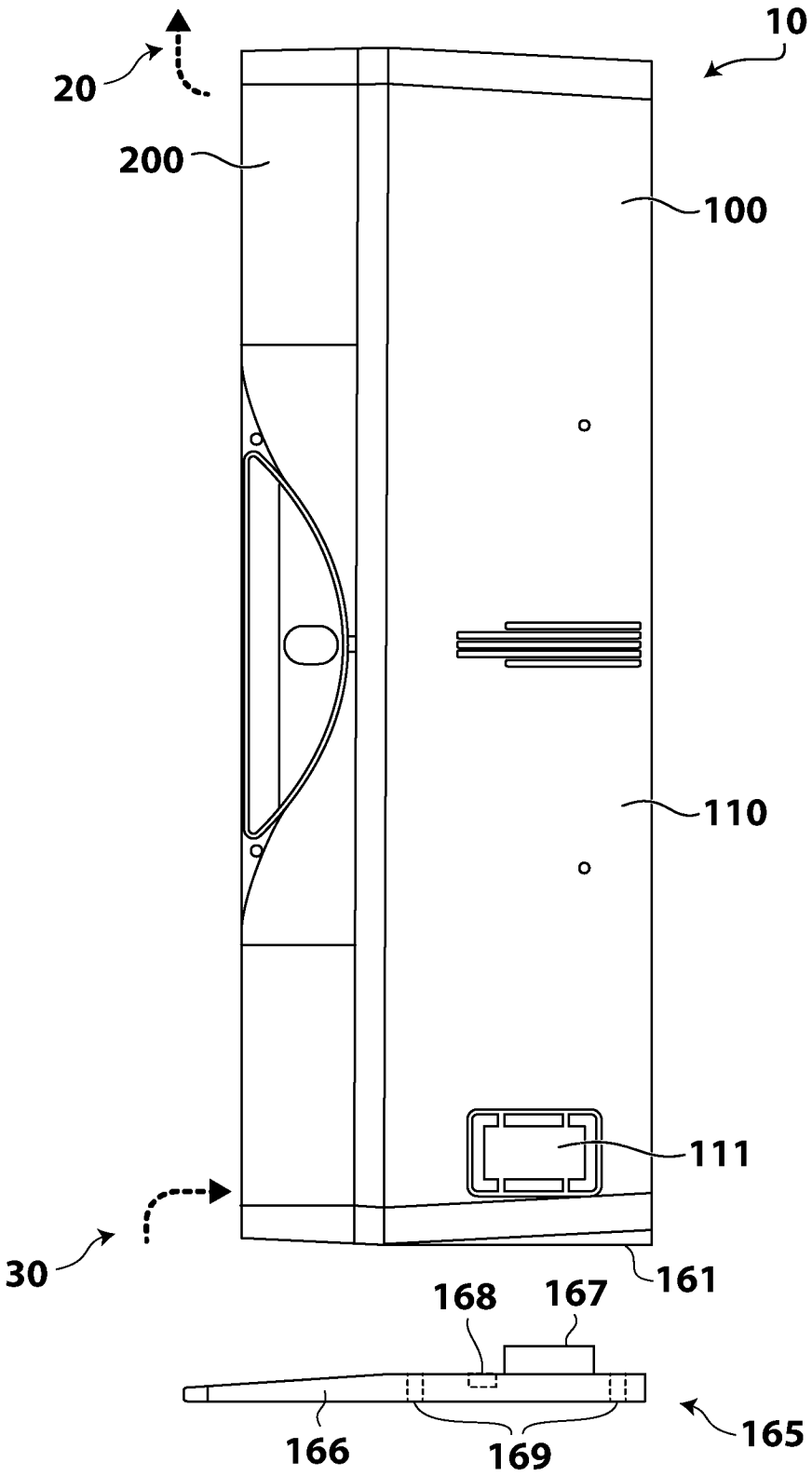


FIG. 27

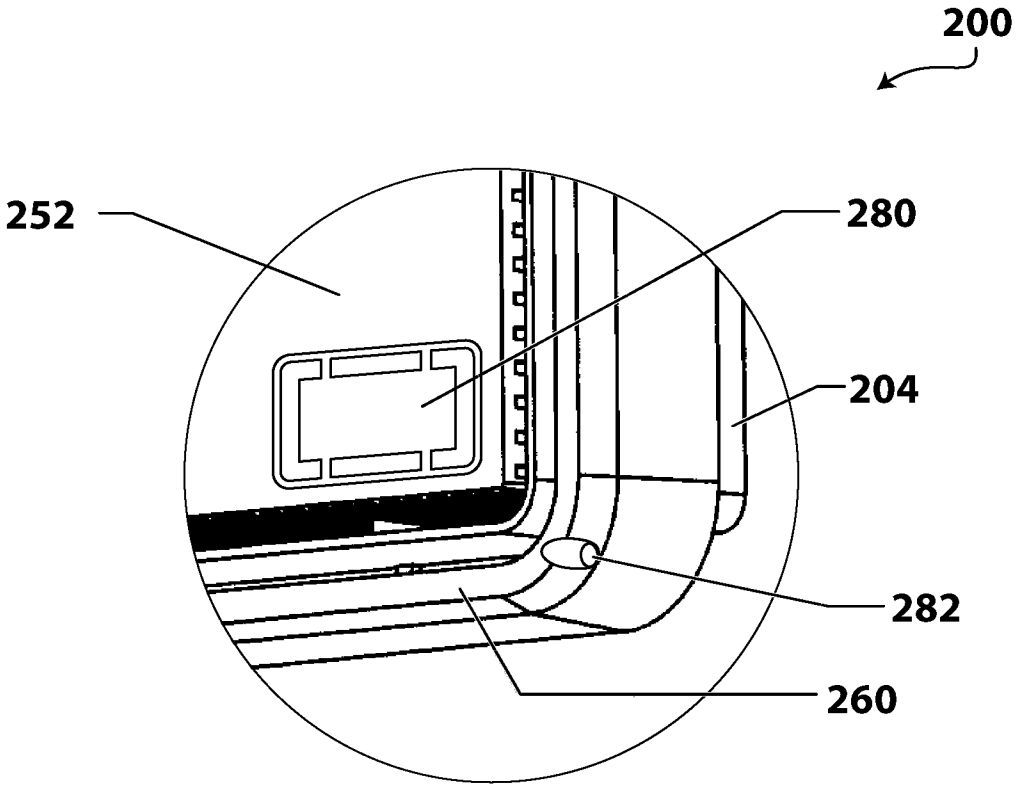


FIG. 28

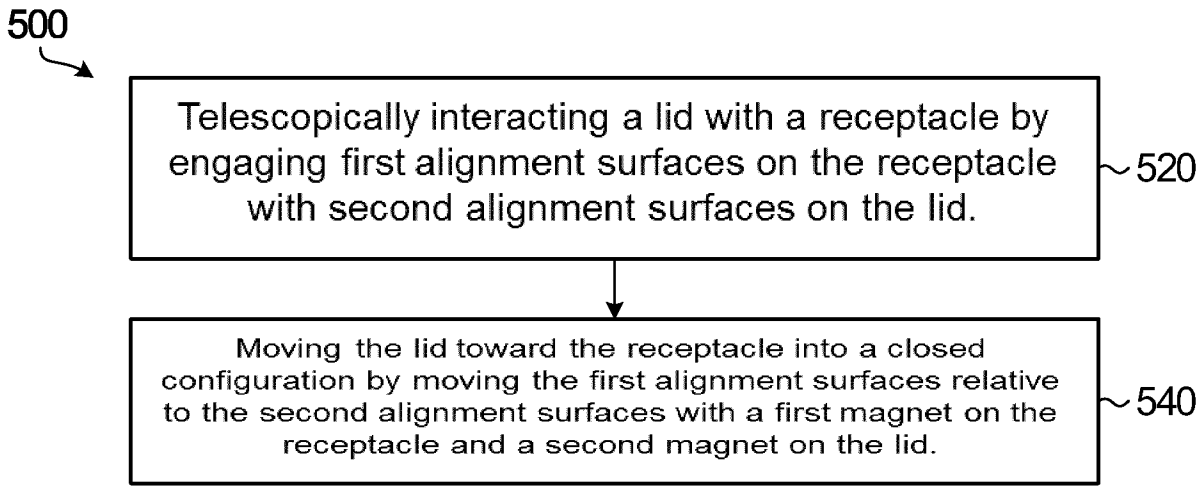


FIG. 29

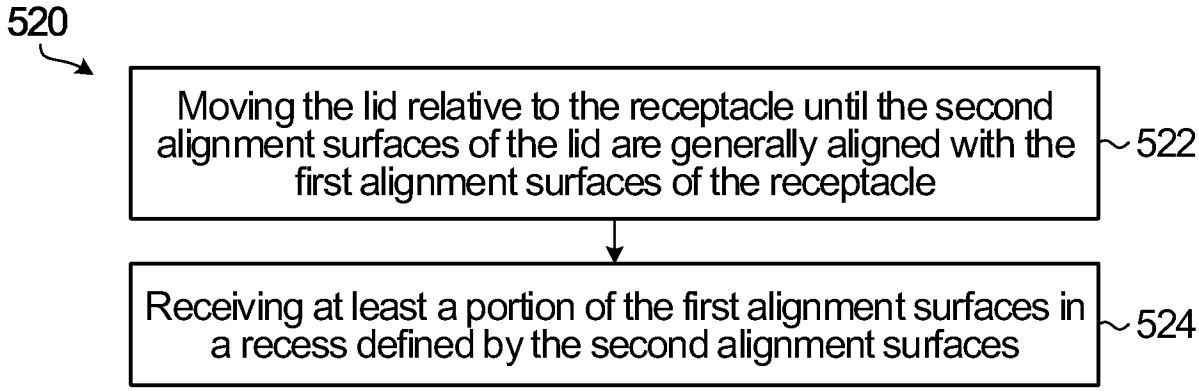


FIG. 30

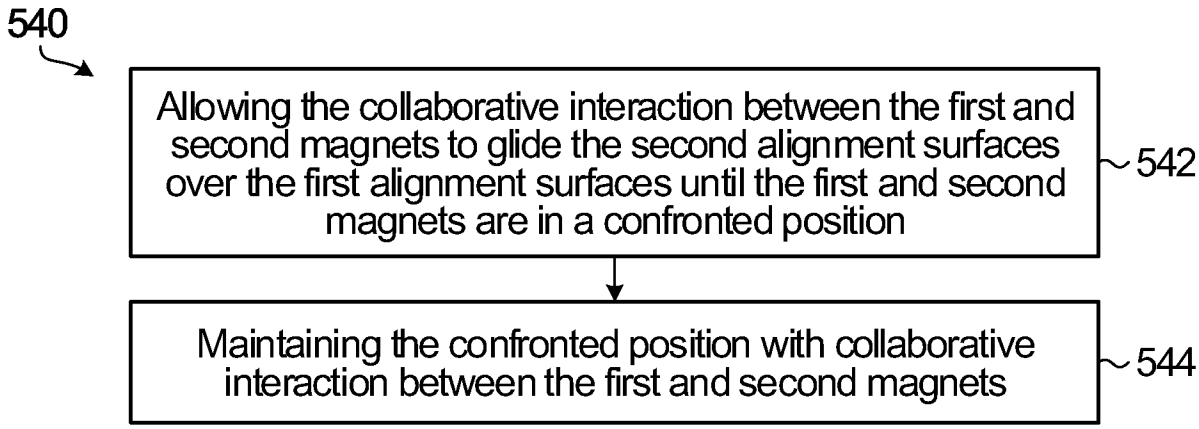


FIG. 31

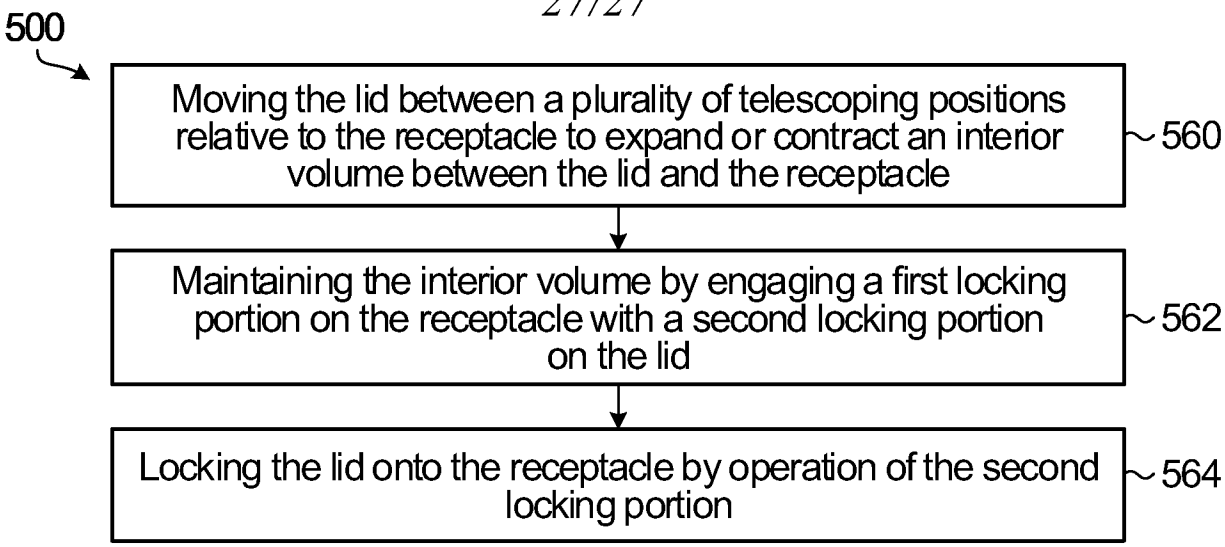


FIG. 32

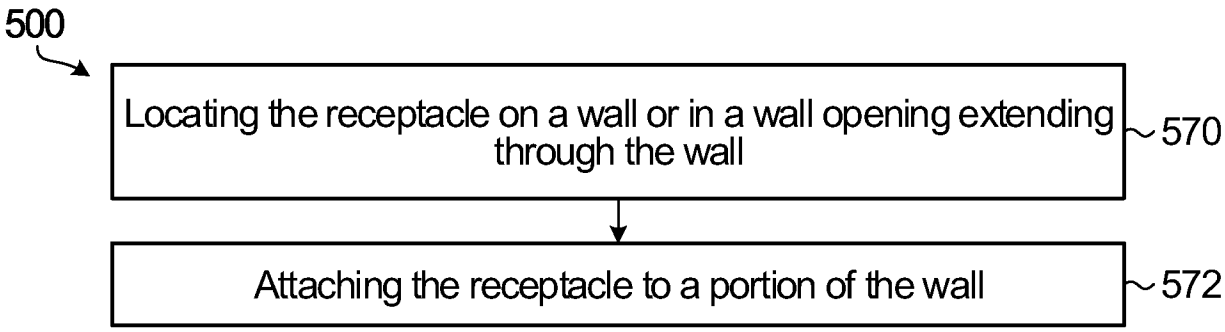


FIG. 33

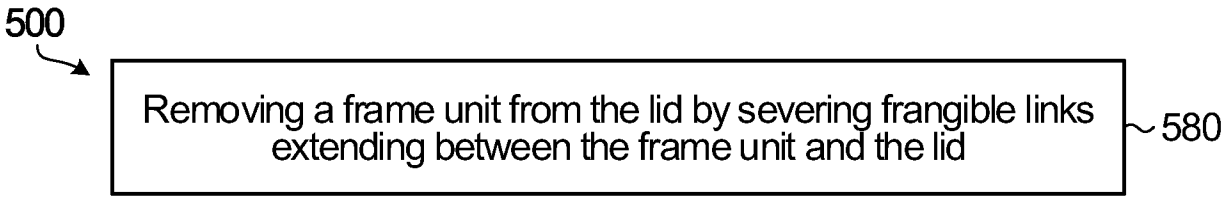


FIG. 34

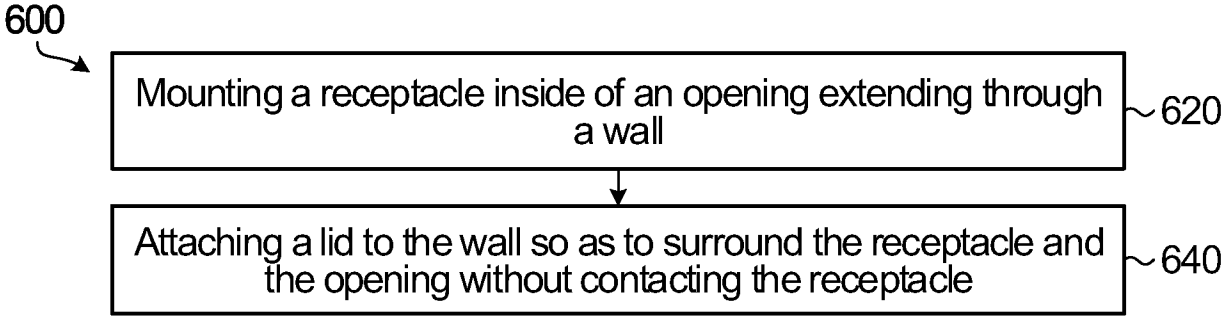


FIG. 35

INTERNATIONAL SEARCH REPORT

International application No.
PCT/CA2018/051397

A. CLASSIFICATION OF SUBJECT MATTER
IPC: ***H05K 5/03*** (2006.01) , ***H05K 7/02*** (2006.01)

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

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC: H05K 5/03 (2006.01) , H05K 7/02 (2006.01)

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

Electronic database(s) consulted during the international search (name of database(s) and, where practicable, search terms used)
Databases: Questel Orbit, Espacenet, Google Patent; key words: lid, align*, magnet*, container, box, bin, holder, case, body, slid*, mov*, telescopic*, surround*, network, enclosure, receptacle, frame, mount*, inside, wall, encompass*, encircle*, opening, install*, cover, cable, contact, electr*

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 9470867 B1 (Chan et al.) 18 October 2016 (18-10-2016) Title, col. 1, lines 16-17, col. 4, lines 33-35	1-37
A	CN 101453840 A (Wang) 10 June 2009 (10-06-2009) fig. 1, Abstract	1-37
A	KR 200417975 Y1 (Kang) 07 June 2006 (07-06-2006) fig. 3, Abstract	1-37
A	JP 2008063934 A (Sasakura) 21 March 2008 (21-03-2008) fig. 2, Abstract	38-40

☐ Further documents are listed in the continuation of Box C.

☑ See patent family annex.

*	Special categories of cited documents:
"A"	document defining the general state of the art which is not considered to be of particular relevance
"E"	earlier application or patent but published on or after the international filing date
"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O"	document referring to an oral disclosure, use, exhibition or other means
"P"	document published prior to the international filing date but later than the priority date claimed
"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&"	document member of the same patent family

Date of the actual completion of the international search 11 January 2019 (11-01-2019)	Date of mailing of the international search report 11 January 2019 (11-01-2019)
Name and mailing address of the ISA/CA Canadian Intellectual Property Office Place du Portage I, C114 - 1st Floor, Box PCT 50 Victoria Street Gatineau, Quebec K1A 0C9 Facsimile No.: 819-953-2476	Authorized officer Ada Che (819) 635-6249

INTERNATIONAL SEARCH REPORT

International application No.
PCT/CA2018/051397

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

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

1. ☐ Claim Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claim Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claim Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

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

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

The claims are directed to a plurality of inventive concepts as follows:

Group A – Claims 1-37 are directed to a networking enclosure apparatus, kit and method comprising the features of a lid telescopically interactable with a receptacle which has first alignment surfaces and a first magnet, the lid has second alignment surfaces and a second magnet, and the first alignment surfaces engageable with the second alignment surfaces to move the lid toward the receptacle in a closed configuration with a magnetic interaction between the first magnet and the second magnet; and

Group B – Claims 38-40 are directed to a networking enclosure method comprising mounting a receptacle inside an opening of a wall and attaching a lid to the wall to surround the receptacle and the opening without contacting the receptacle.

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. ☑ As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claim Nos.:

4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claim Nos.:

Remark on Protest

☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.

☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.

☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/CA2018/051397

Patent Document Cited in Search Report	Publication Date	Patent Family Member(s)	Publication Date
US9470867B1	18 October 2016 (18-10-2016)	None	
CN101453840A	10 June 2009 (10-06-2009)	CN101453840A	10 June 2009 (10-06-2009)
		CN101453840B	28 March 2012 (28-03-2012)
		US2009146537A1	11 June 2009 (11-06-2009)
		US7991444B2	02 August 2011 (02-08-2011)
KR200417975Y1	07 June 2006 (07-06-2006)	None	
JP2008063934A	21 March 2008 (21-03-2008)	JP2008063934A	21 March 2008 (21-03-2008)
		JP2009184741A	20 August 2009 (20-08-2009)