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(54) **POLYMER OVERMOLDED BARIATRIC CLAMP AND METHOD OF INSTALLING**

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**Related U.S. Application Data**

- (63) Continuation of application No. 18/739,672, filed on Jun. 11, 2024, now Pat. No. 12,318,093, which is a continuation of application No. 17/403,645, filed on Aug. 16, 2021, now Pat. No. 12,023,039, which is a continuation of application No. 16/664,447, filed on Oct. 25, 2019, now Pat. No. 11,317,924, which is a continuation of application No. 13/963,998, filed on Aug. 9, 2013, now Pat. No. 10,456,141.
- (60) Provisional application No. 61/681,601, filed on Aug. 9, 2012, provisional application No. 61/798,128, filed on Mar. 15, 2013.

**Publication Classification**

(51) **Int. Cl.**

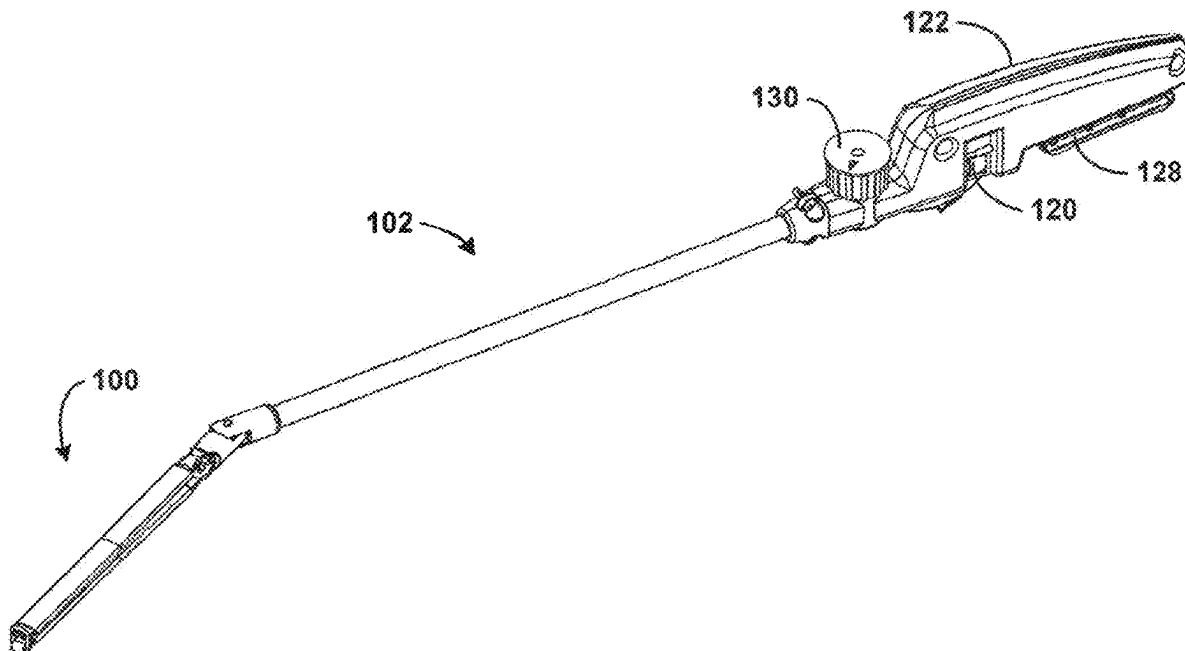
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*A61B 17/00* (2006.01)  
*A61B 17/04* (2006.01)  
*A61B 17/064* (2006.01)  
*A61B 17/128* (2006.01)  
*A61B 17/29* (2006.01)

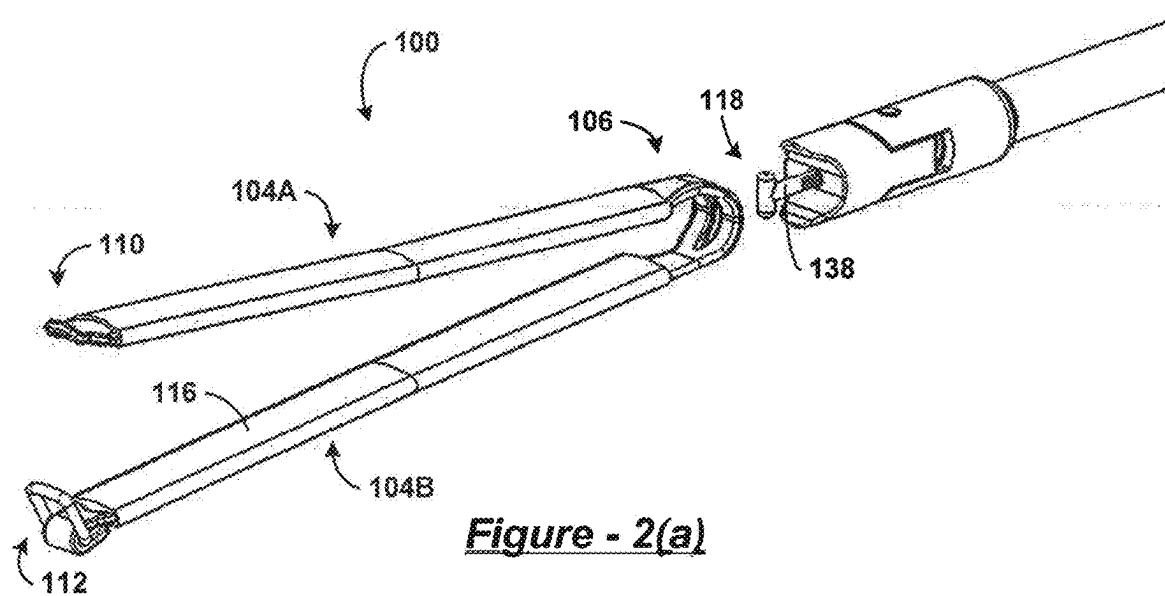
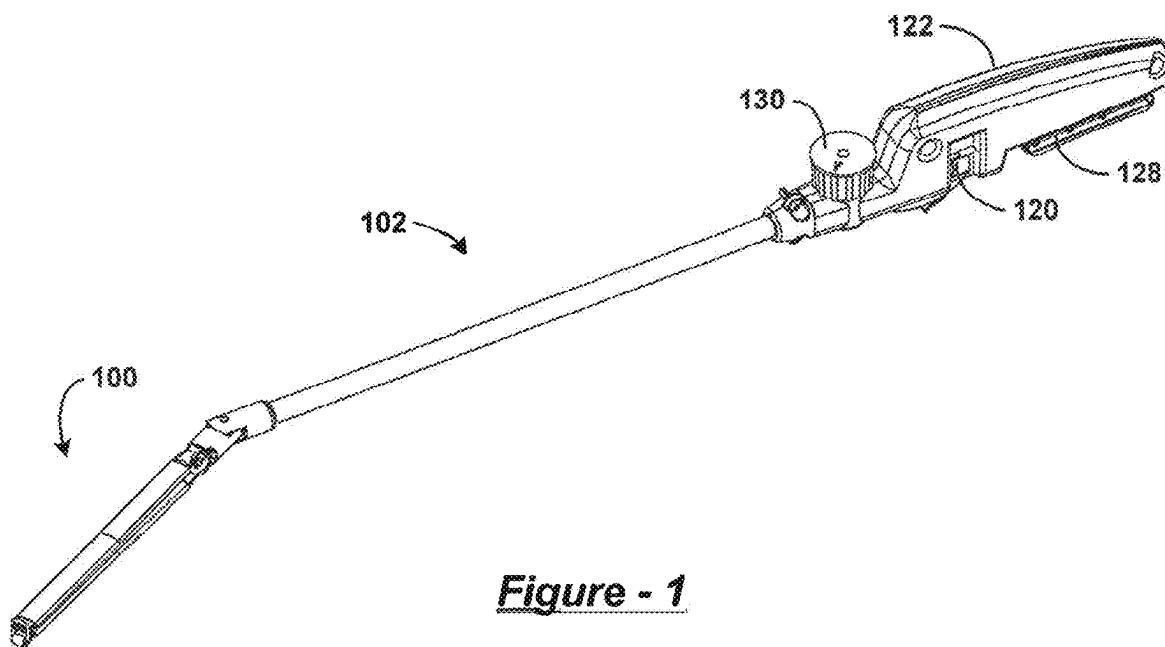
(52) **U.S. Cl.**

CPC ..... *A61B 17/122* (2013.01); *A61B 17/0643*  
(2013.01); *A61B 17/128* (2013.01); *A61B 17/1285*  
(2013.01); *A61B 2017/00336*  
(2013.01); *A61B 2017/00424* (2013.01); *A61B 2017/00477*  
(2013.01); *A61B 2017/00818* (2013.01); *A61B 2017/00876* (2013.01); *A61B 17/0482* (2013.01); *A61B 2017/2927* (2013.01)

**ABSTRACT**

A bariatric clamp including a partition-forming section including first and second elongated members separated by a first distance; and a passage-forming section including a bight portion. The bight portion includes a first bend section and a second bend section each having a member extending away from the axis of the clamp; and third and fourth members separated by a second distance; and a flexible hinge joining the third and fourth members. When the bariatric clamp is in the closed position, the second distance is greater than the first distance. The flexible hinge may be stretchable to accommodate different stomach thicknesses.





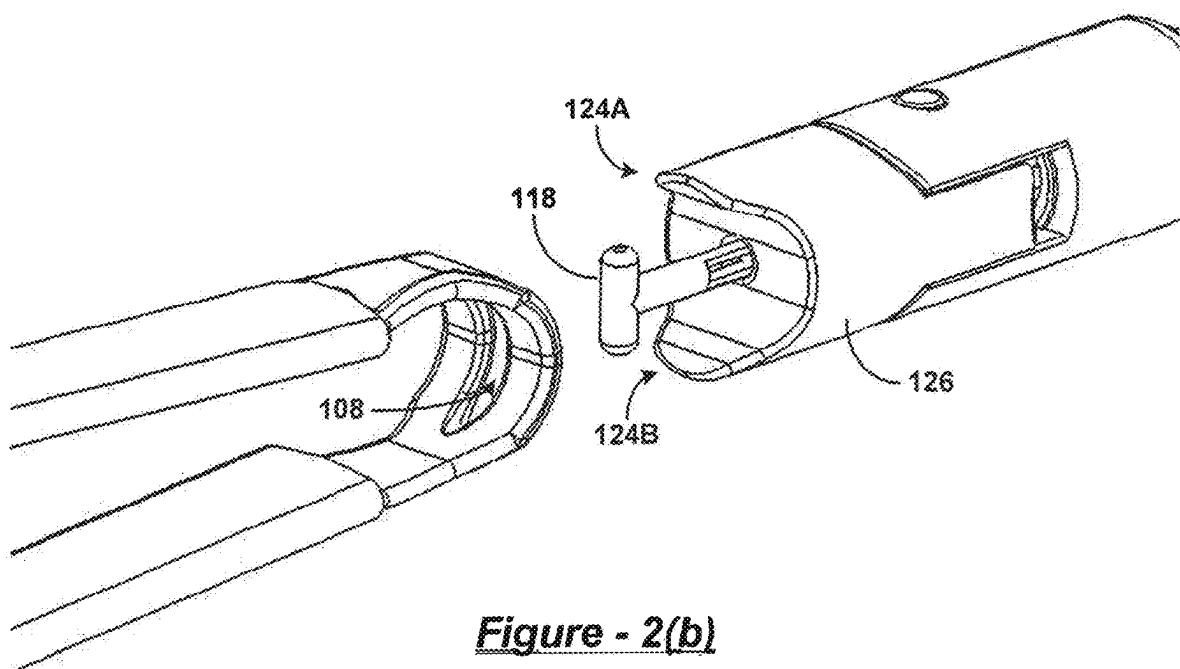


Figure - 2(b)

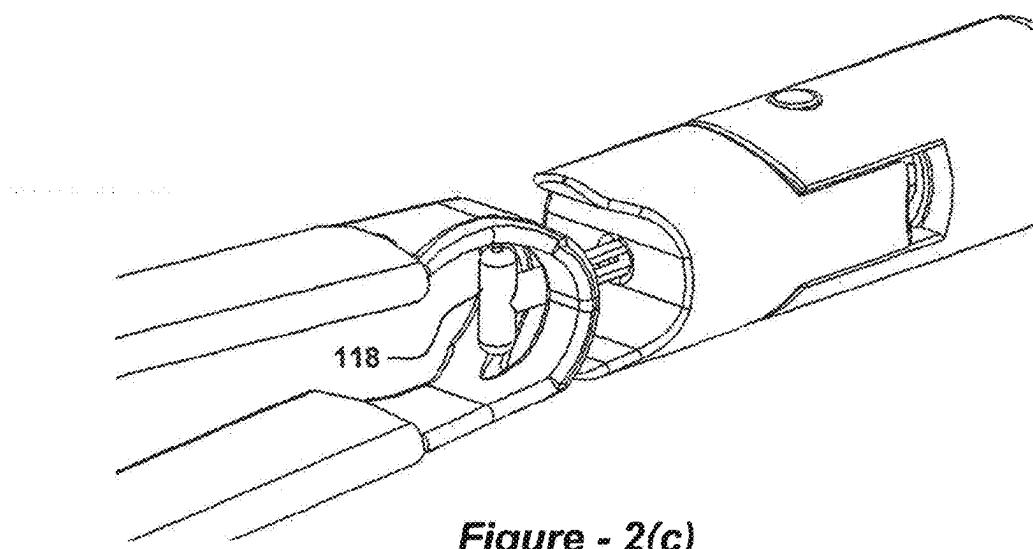
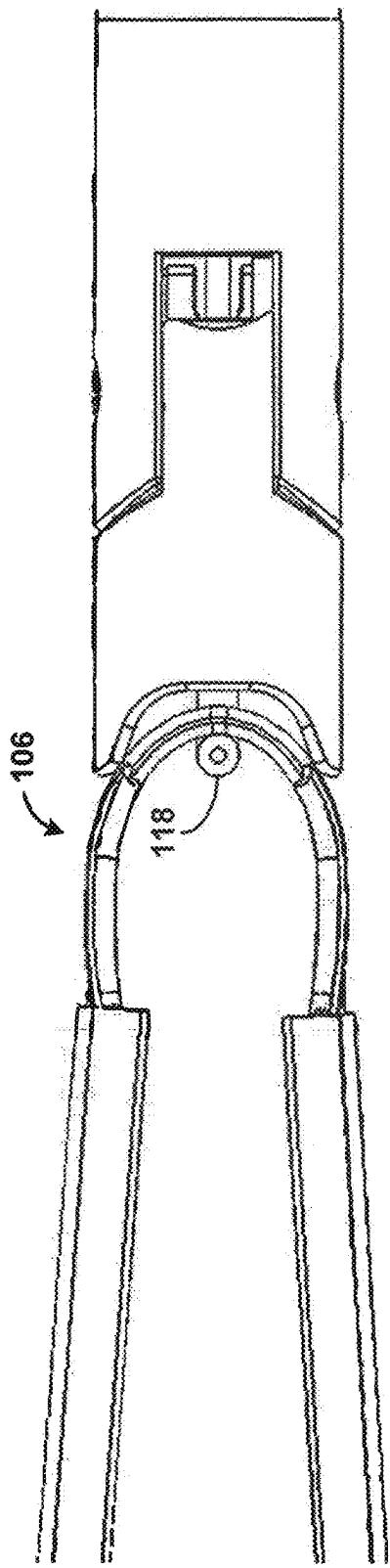
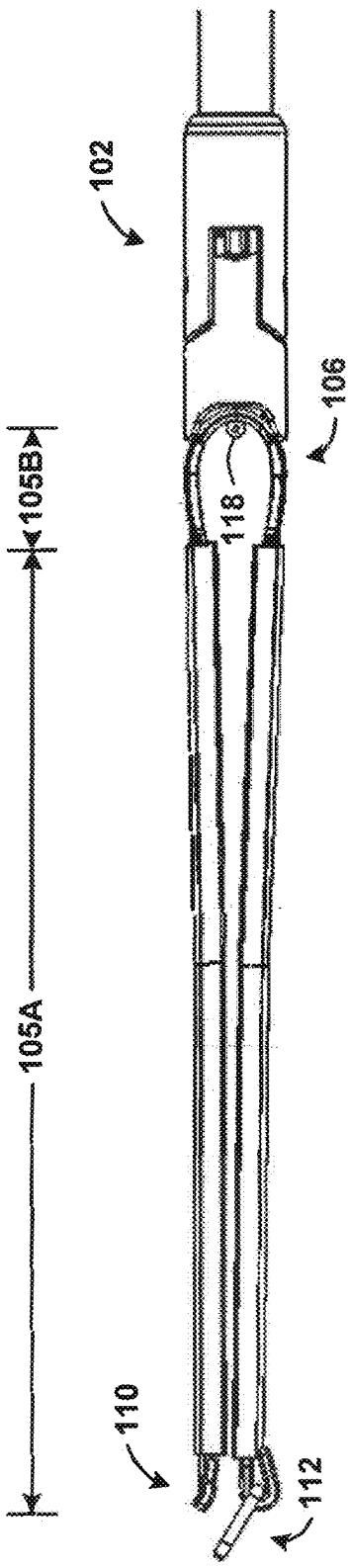


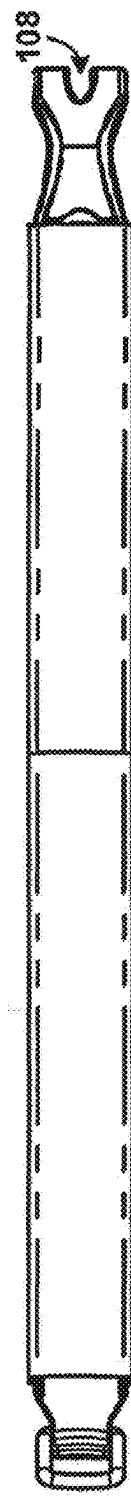
Figure - 2(c)



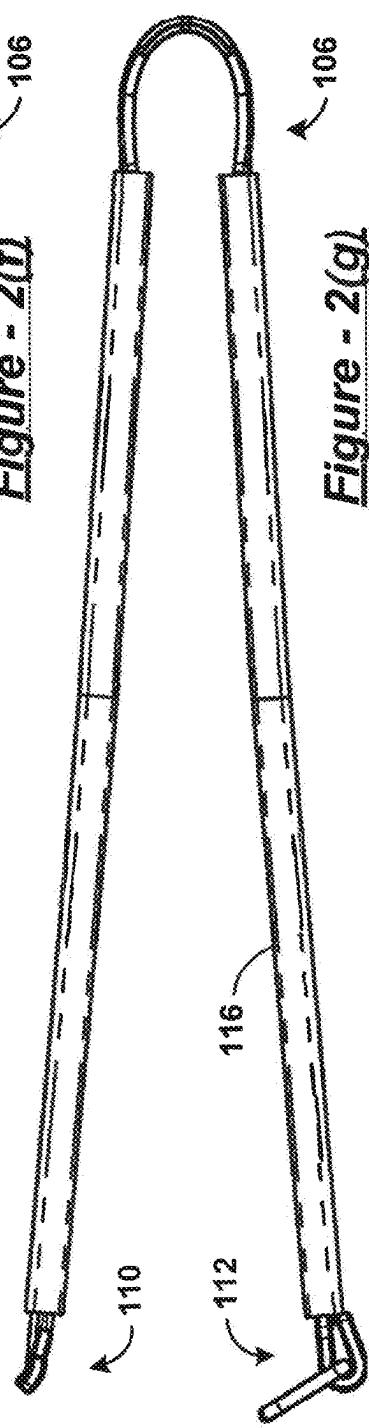
*Figure - 2(d)*



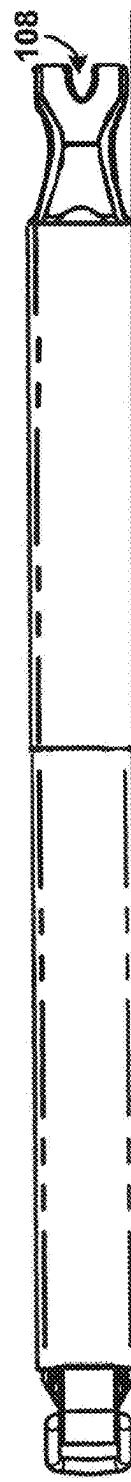
*Figure - 2(e)*



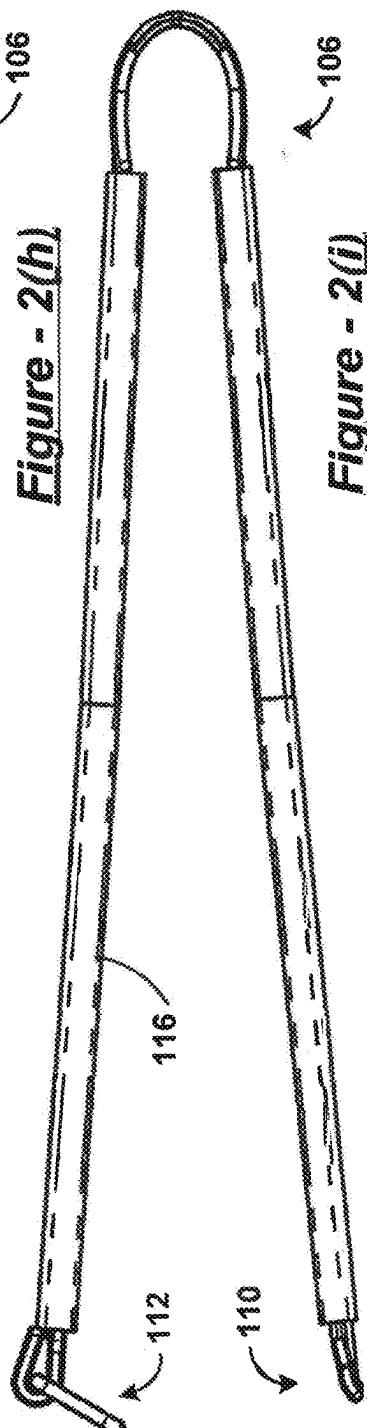
*Figure - 2(f)*



*Figure - 2(g)*



*Figure - 2(h)*



*Figure - 2(i)*

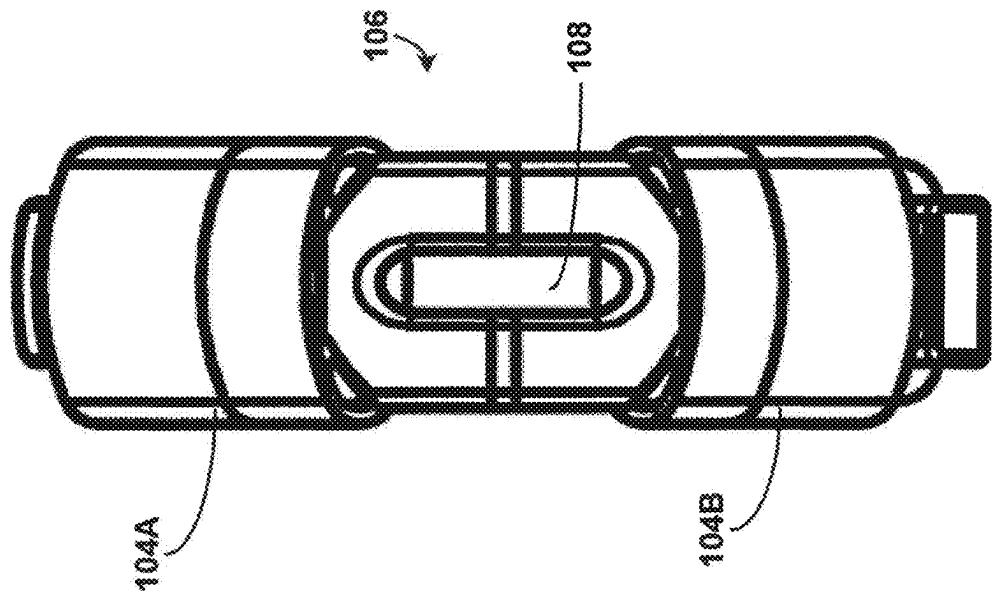


Figure - 2(l)

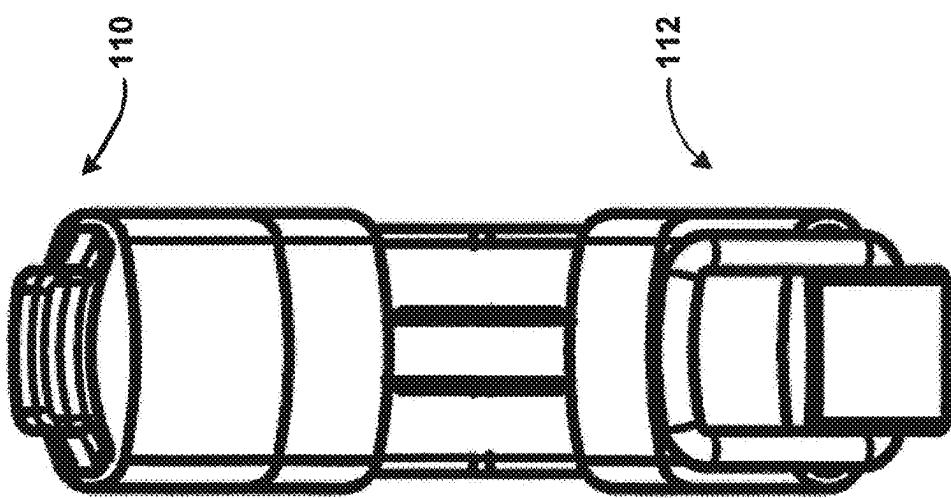
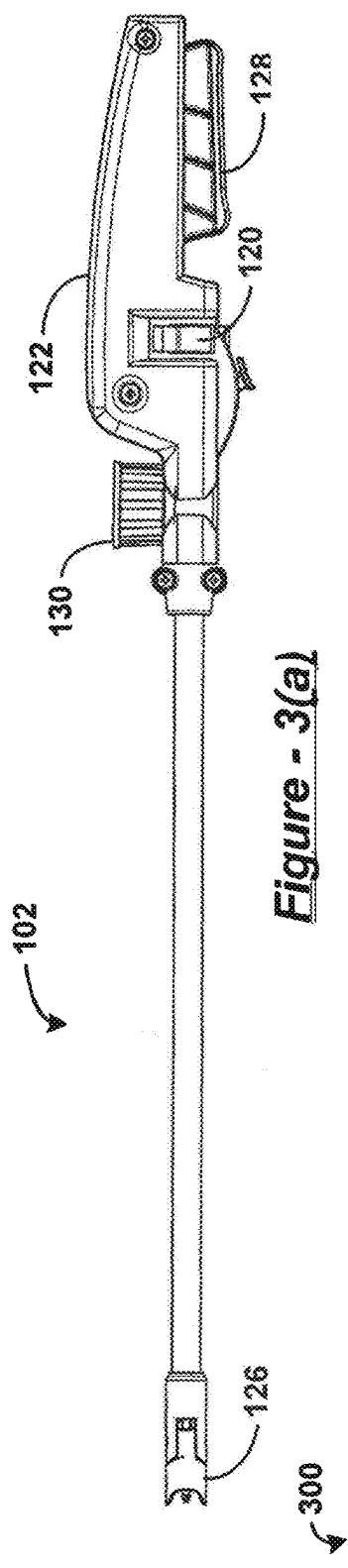
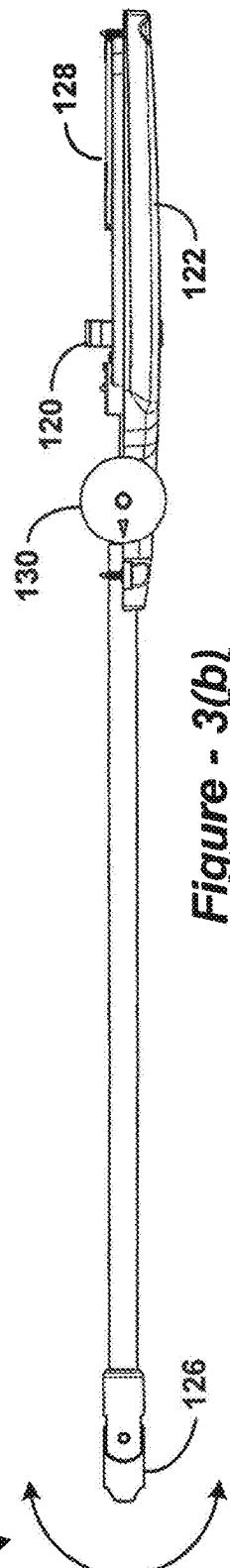


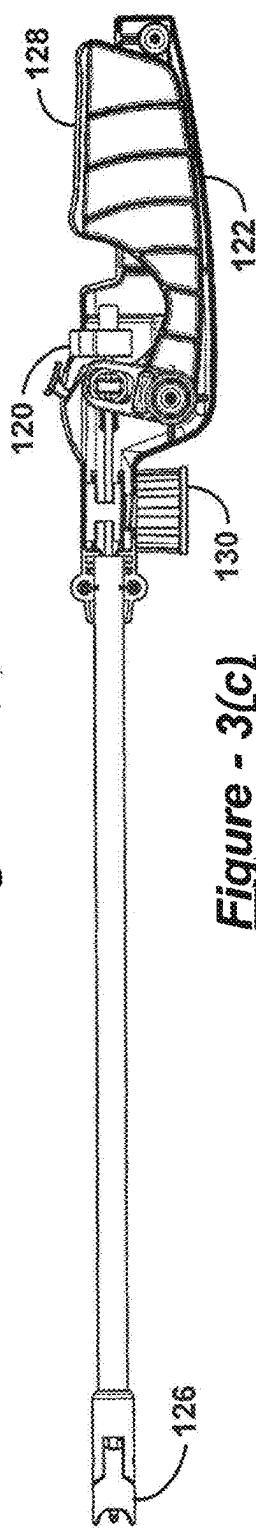
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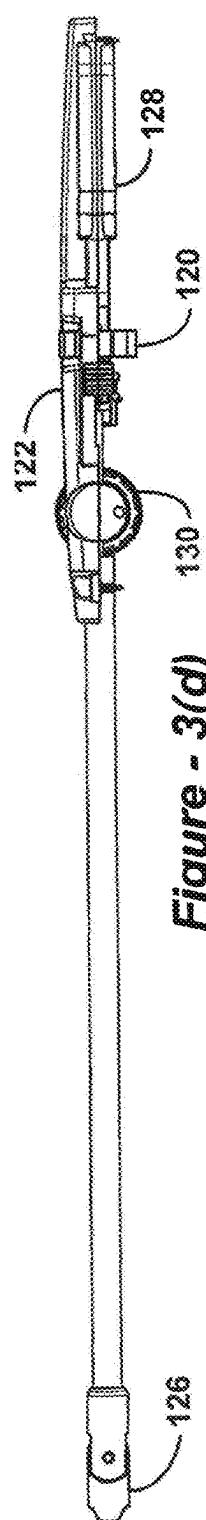
*Figure - 3(a)*



*Figure - 3(b)*



*Figure - 3(c)*



*Figure - 3(d)*

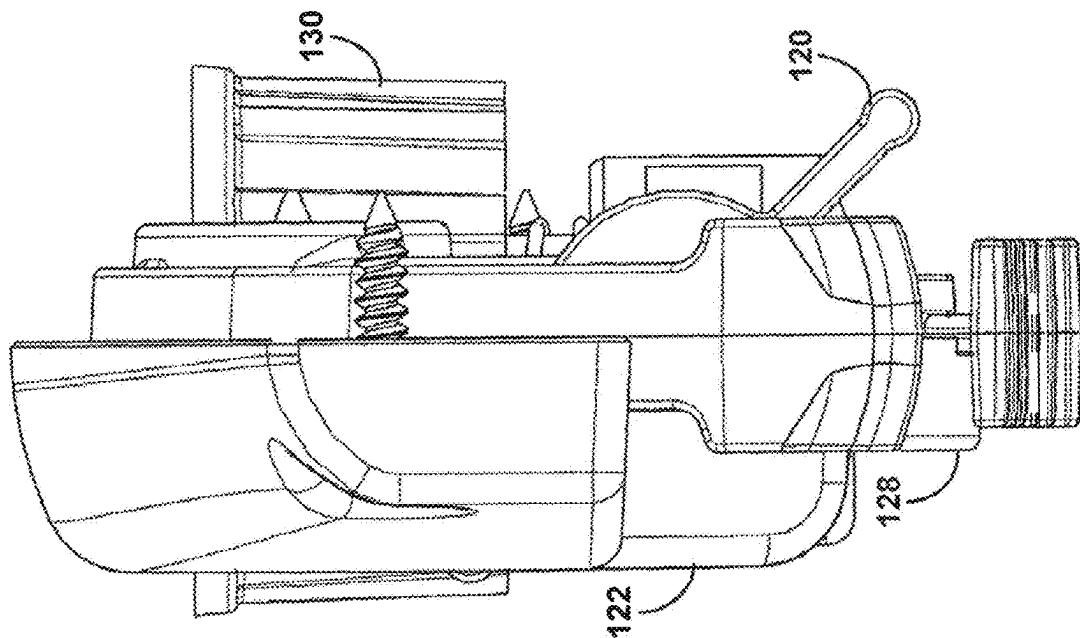


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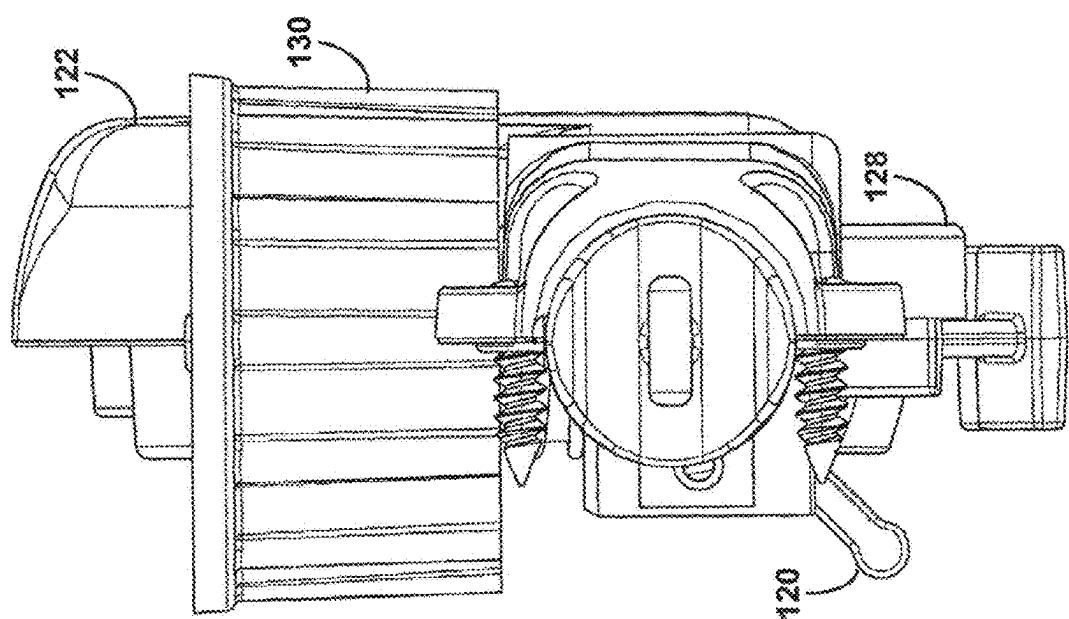


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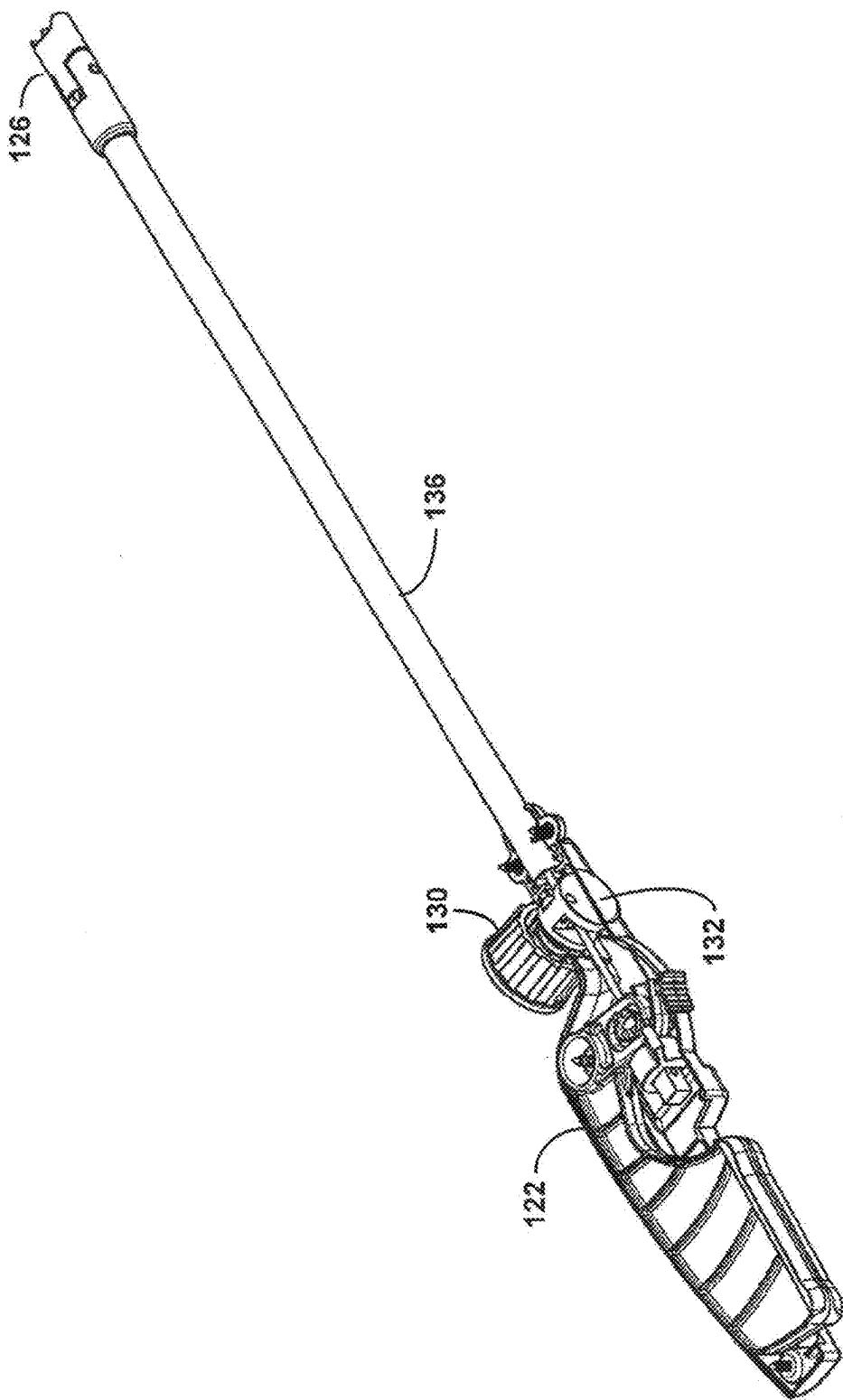


Figure - 4(a)

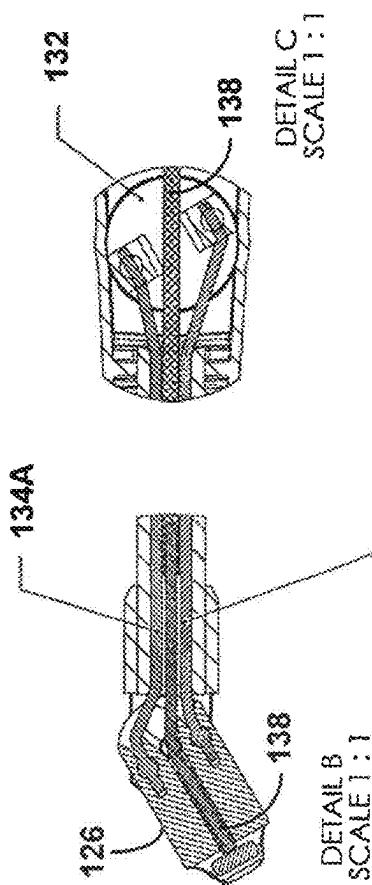


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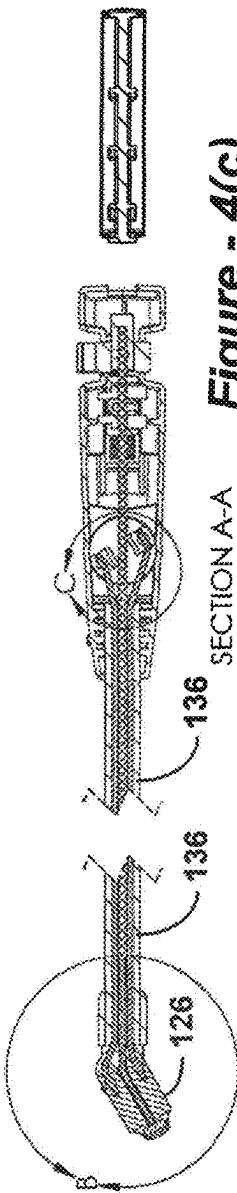


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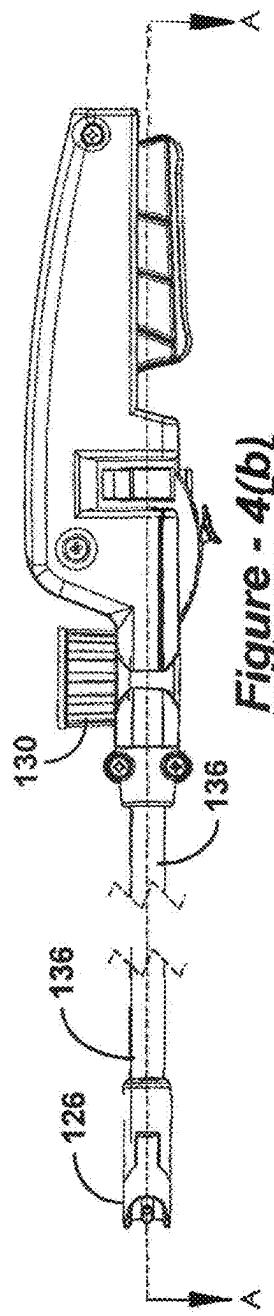


Figure - 4(b)

SECTION A-A

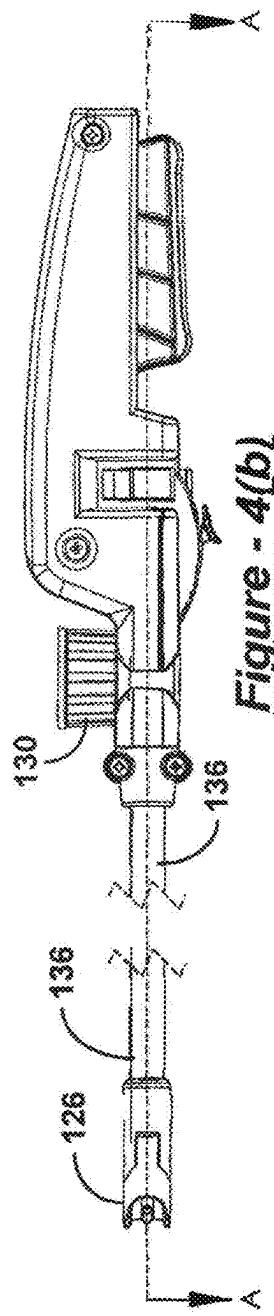
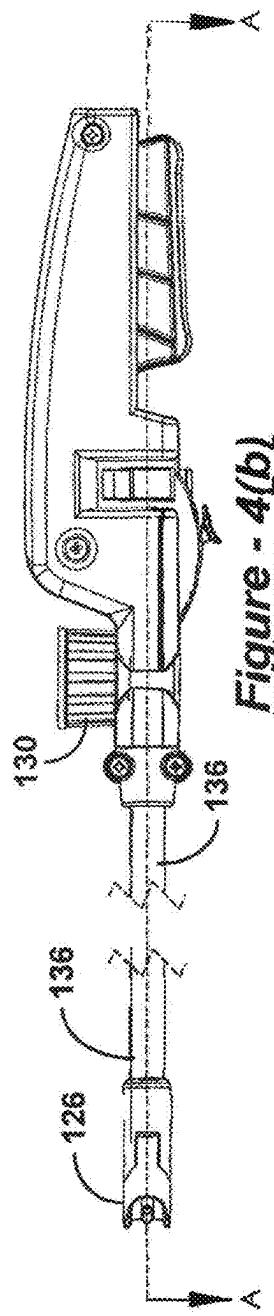


Figure - 4(c)



SECTION A-A

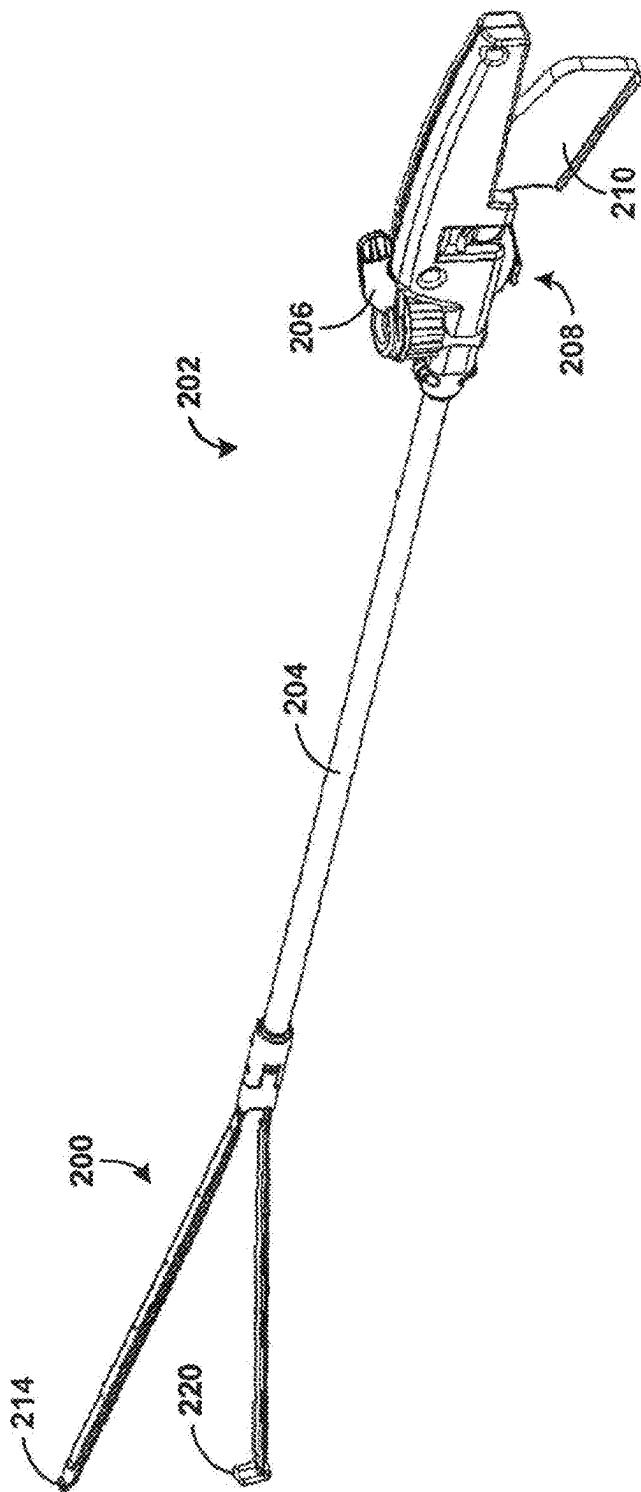


Figure - 5

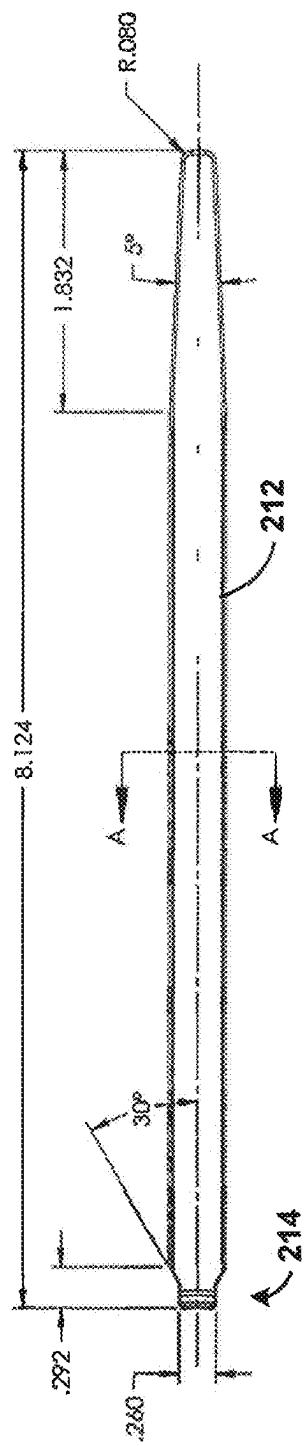


Figure - 6A

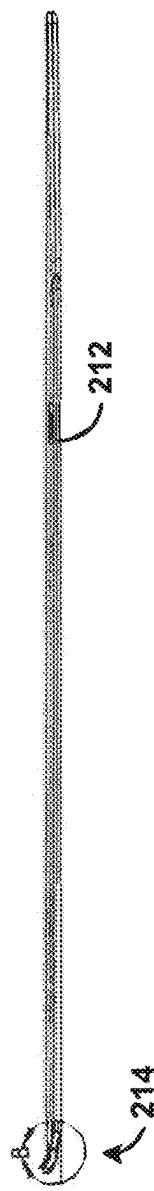
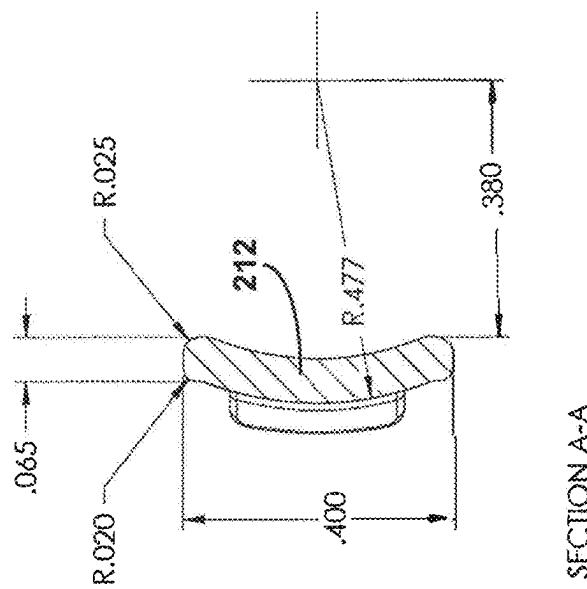


Figure - 6B



SECTION A-A

Figure - 6D

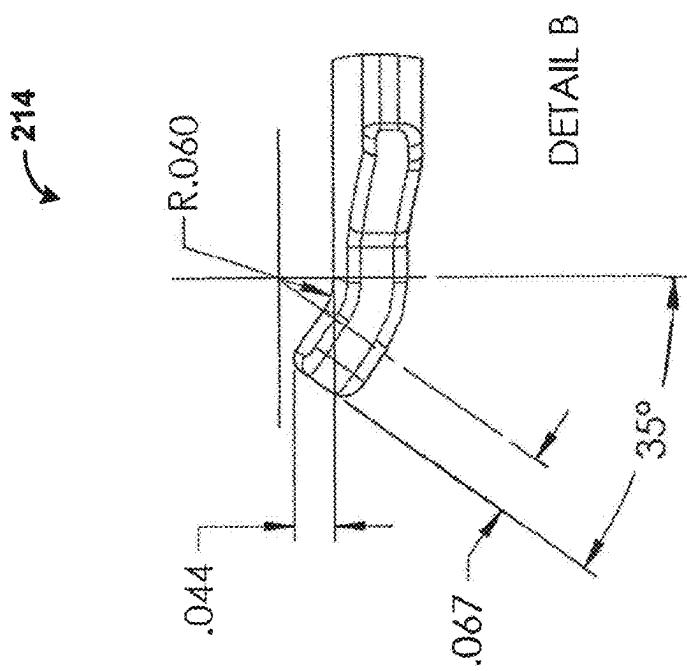
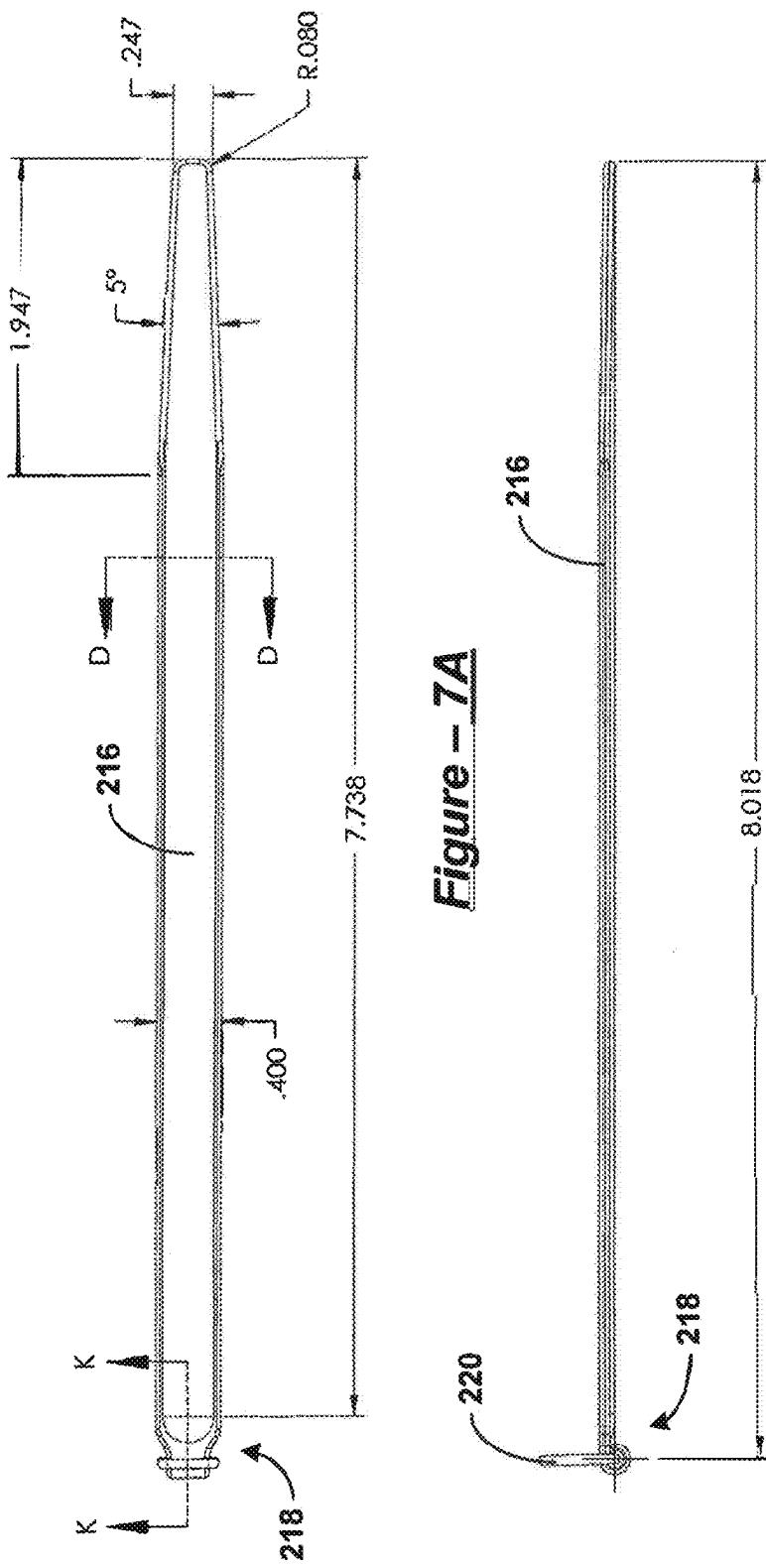


Figure - 6C



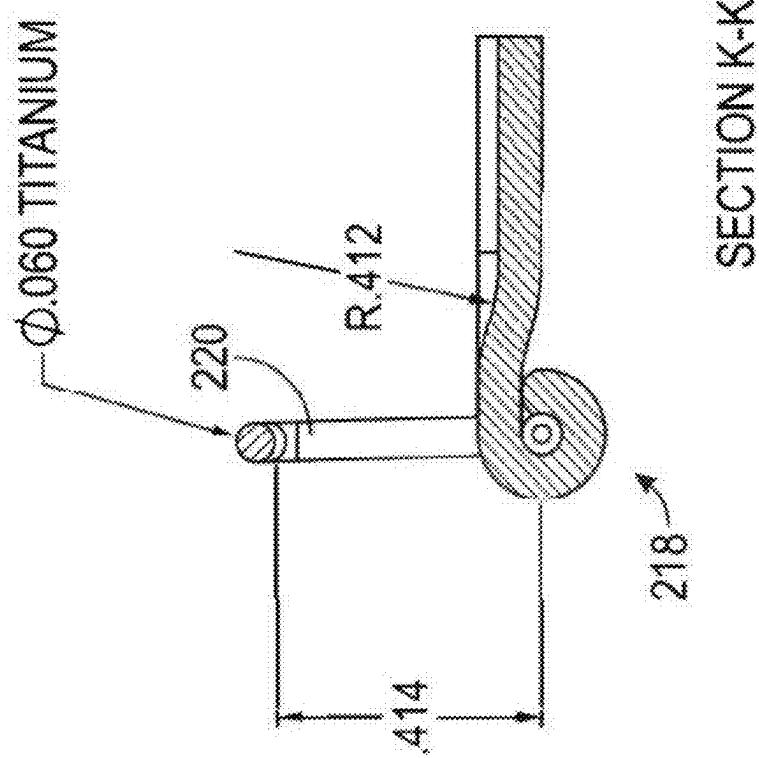


Figure - 7C

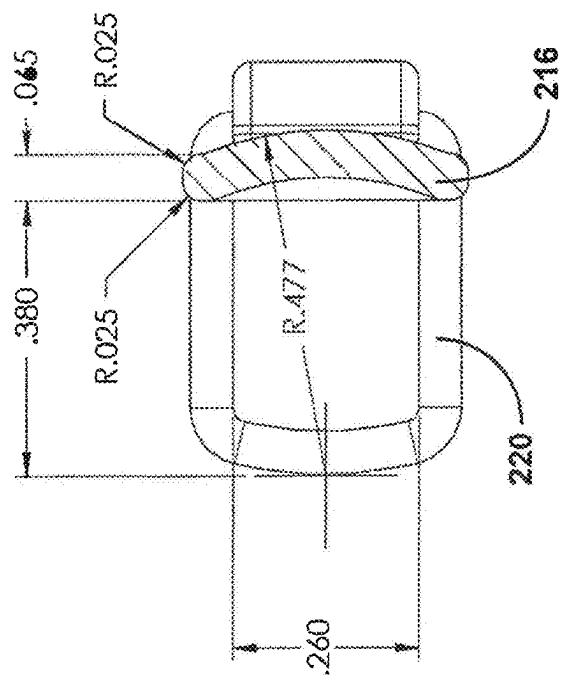


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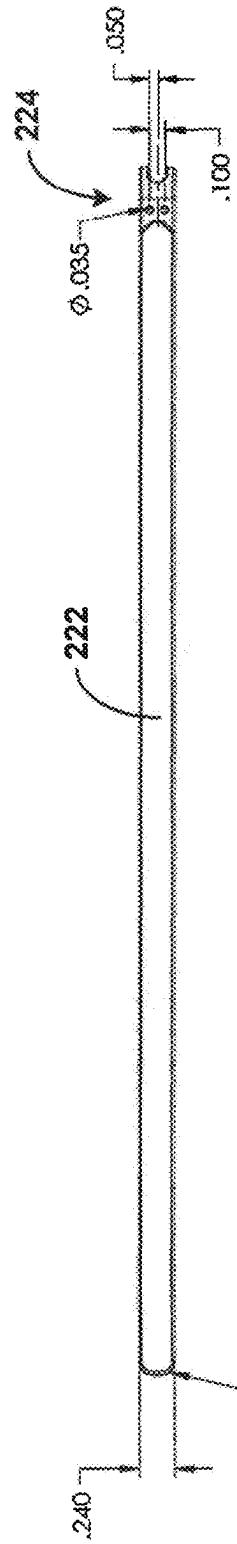


Figure - 8A

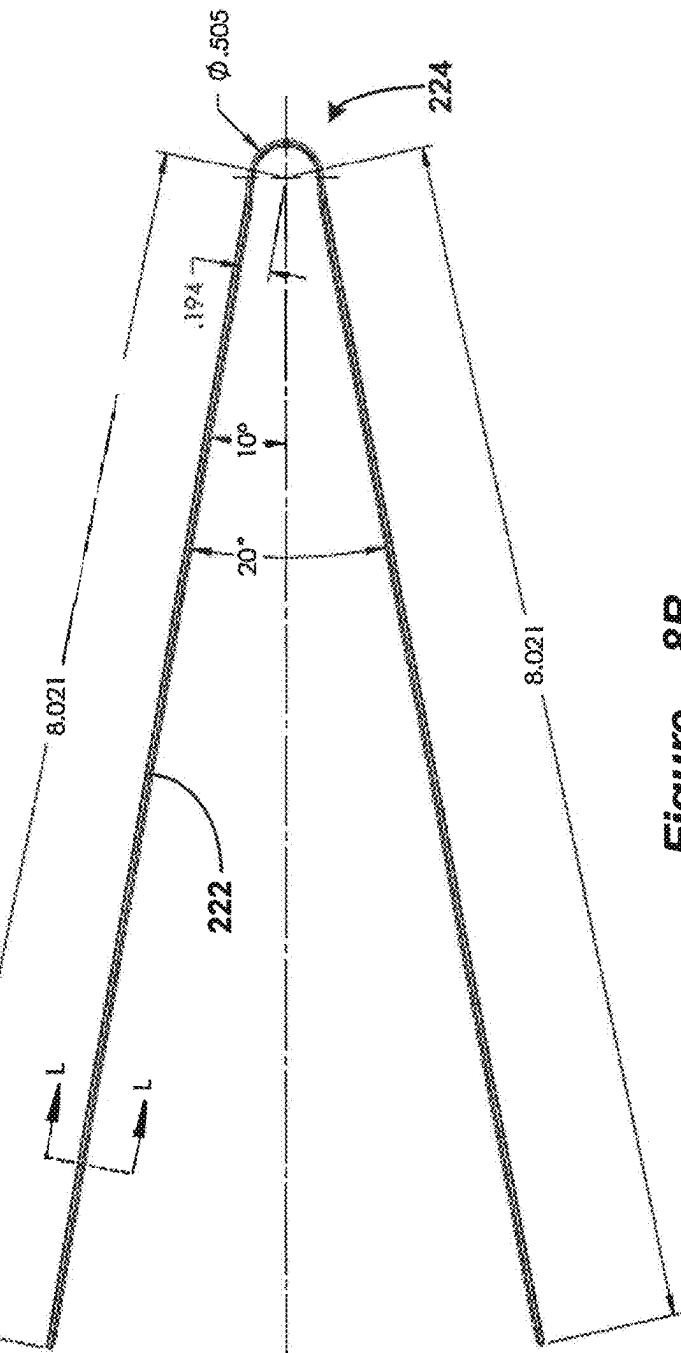


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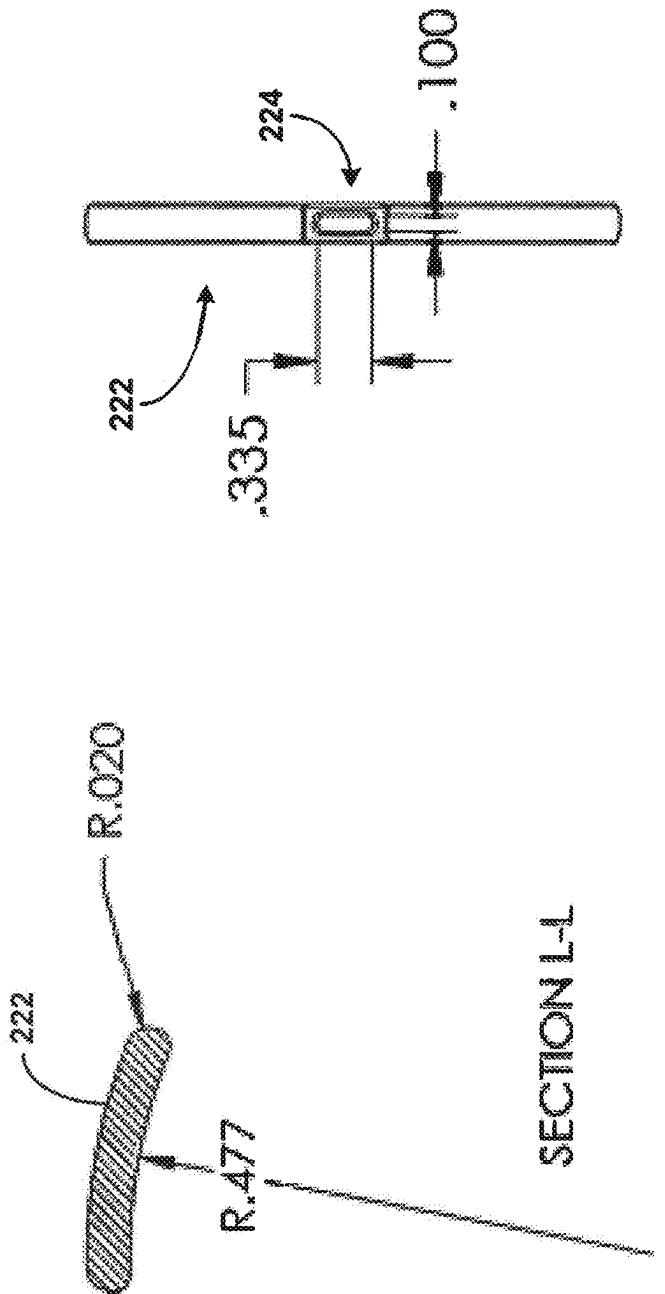
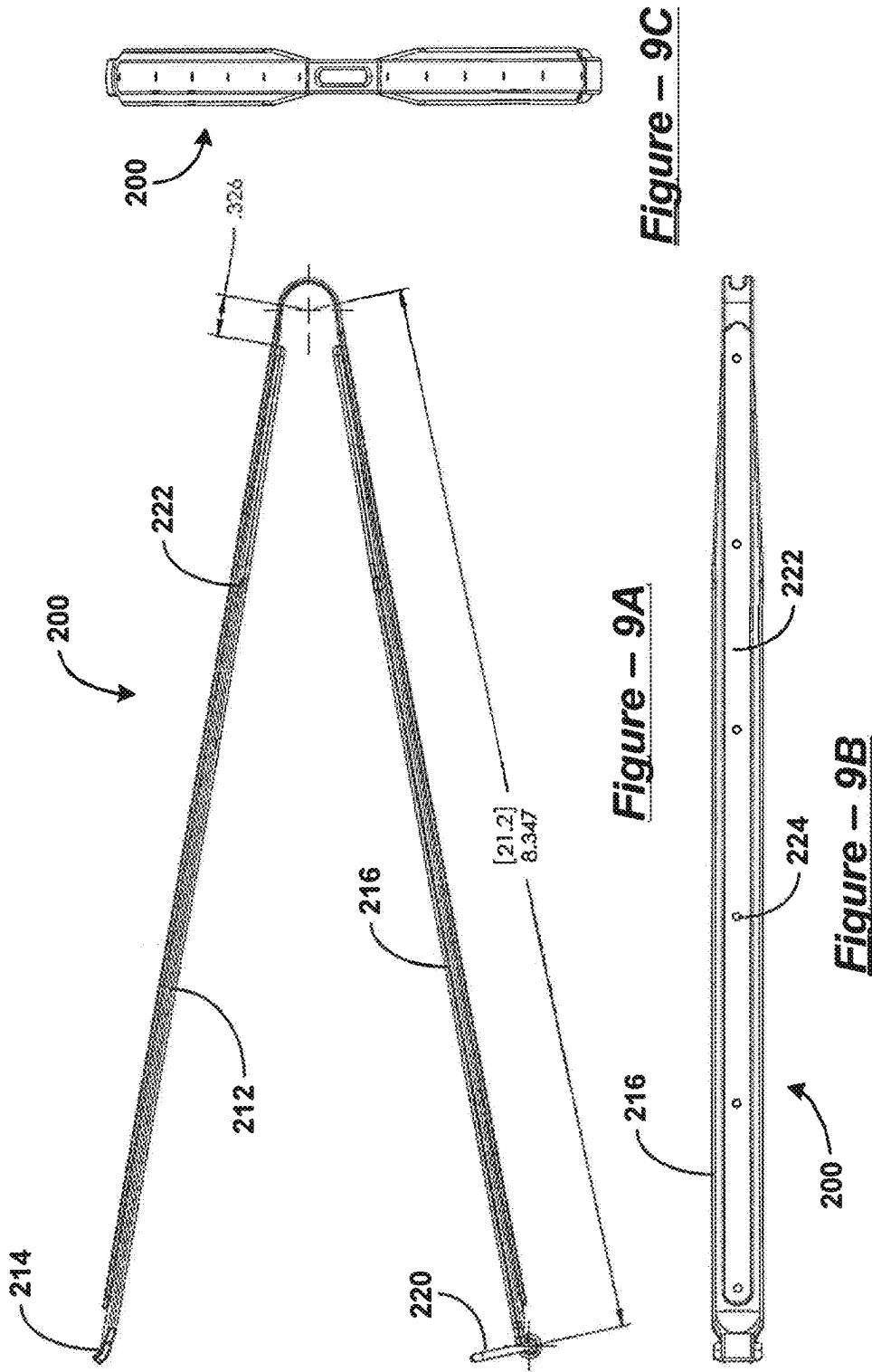
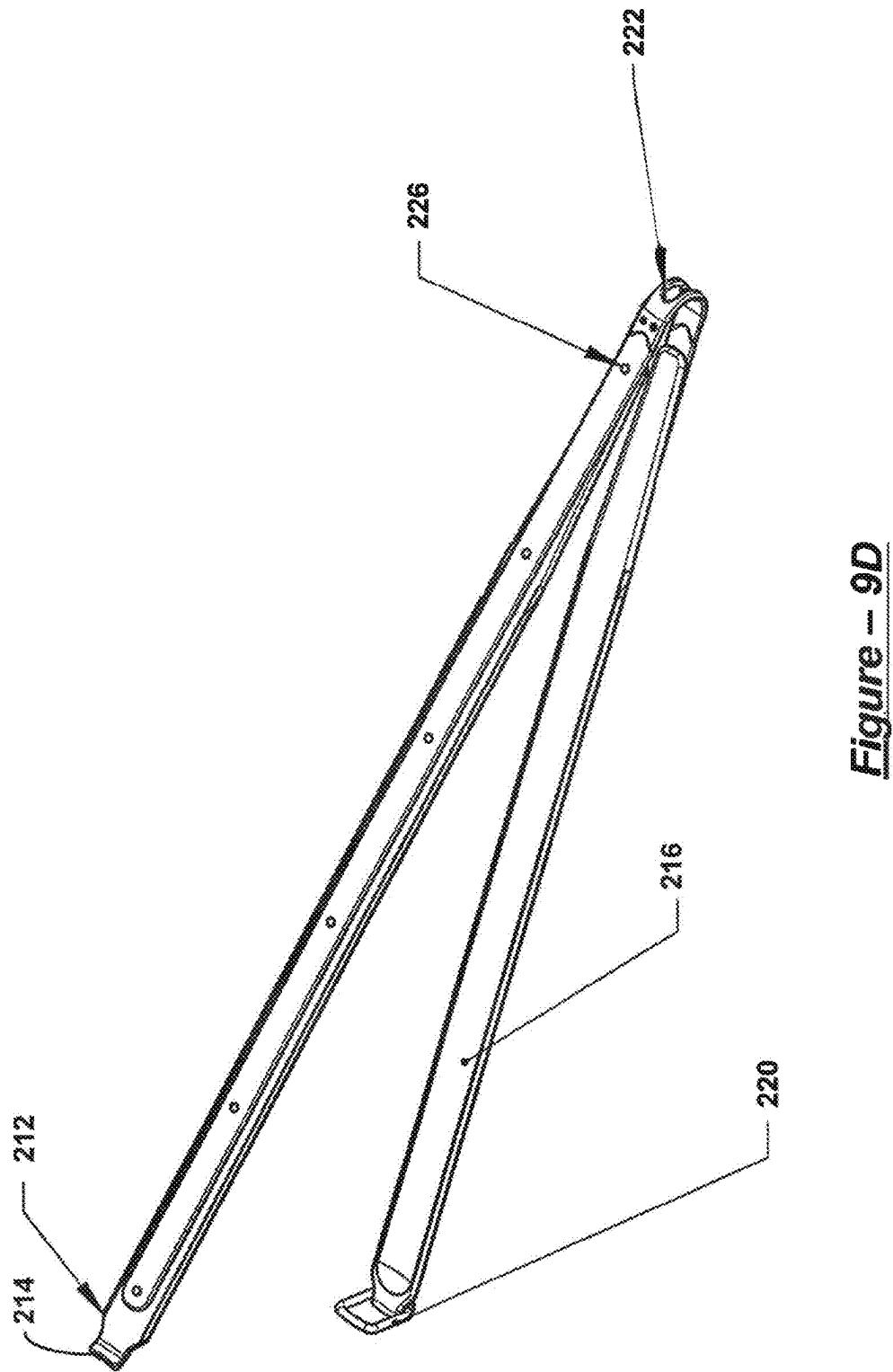
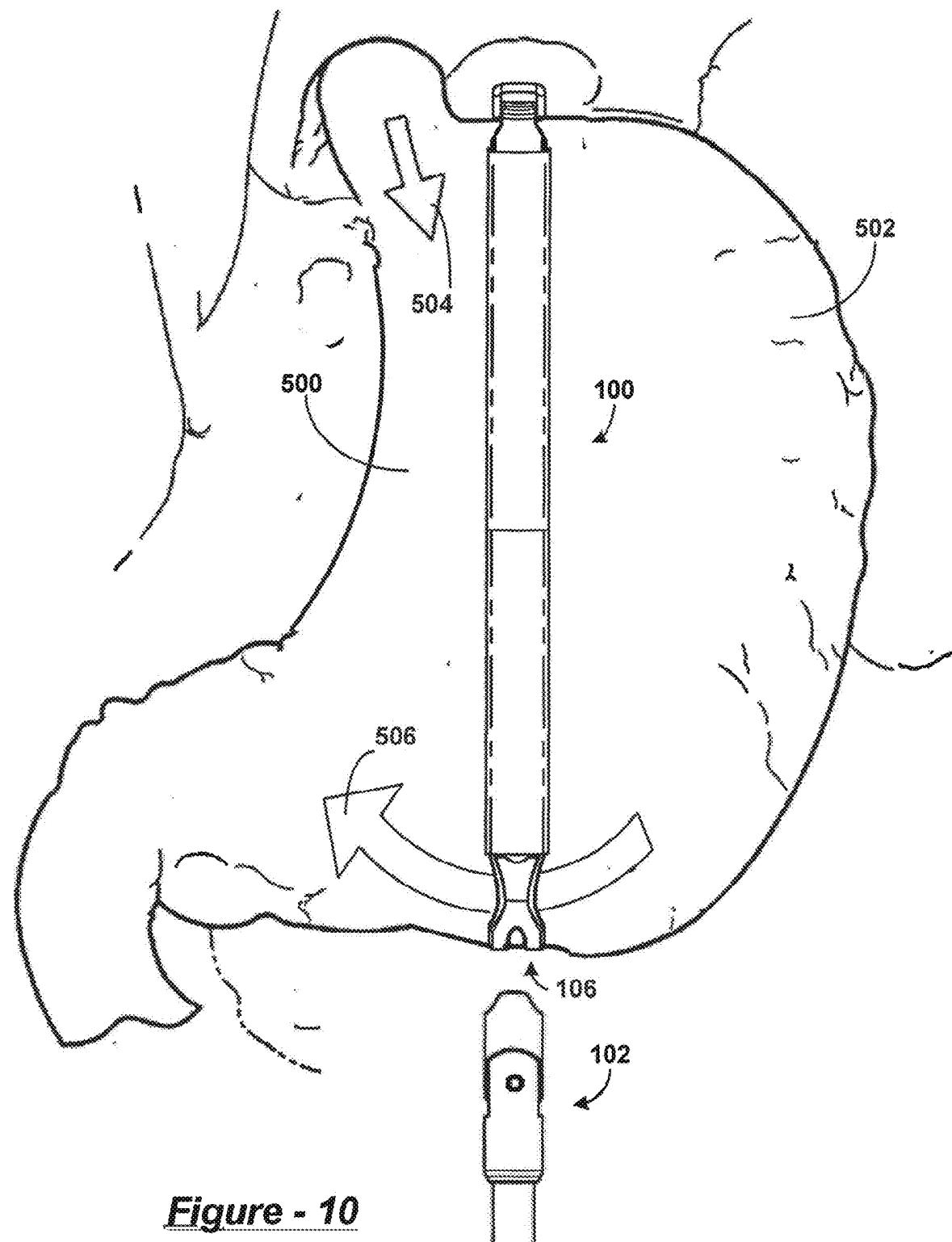


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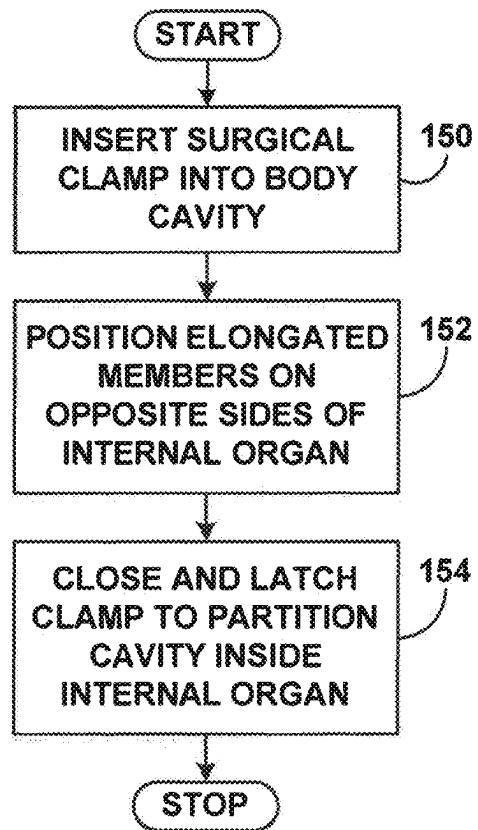
Figure - 8C



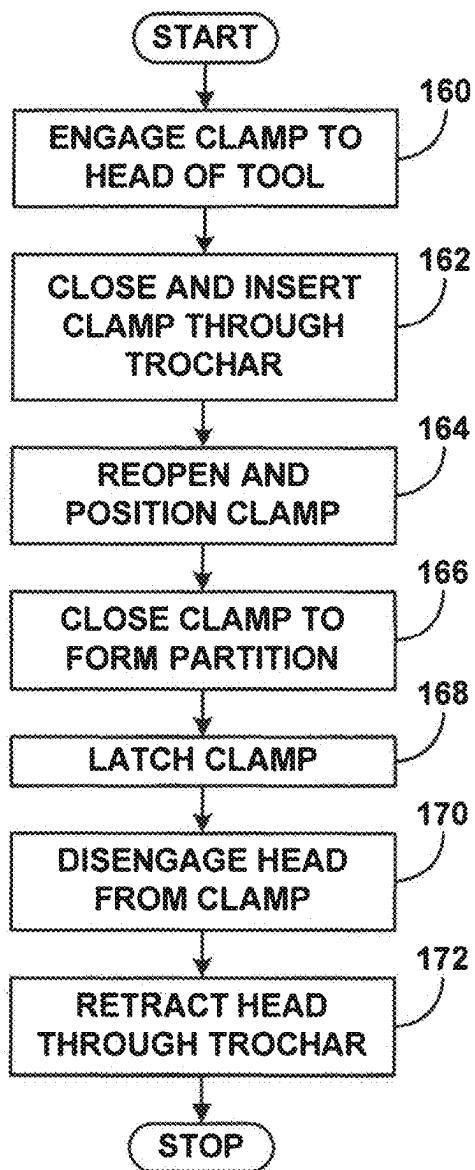




*Figure - 10*



*Figure - 11*



*Figure - 12*

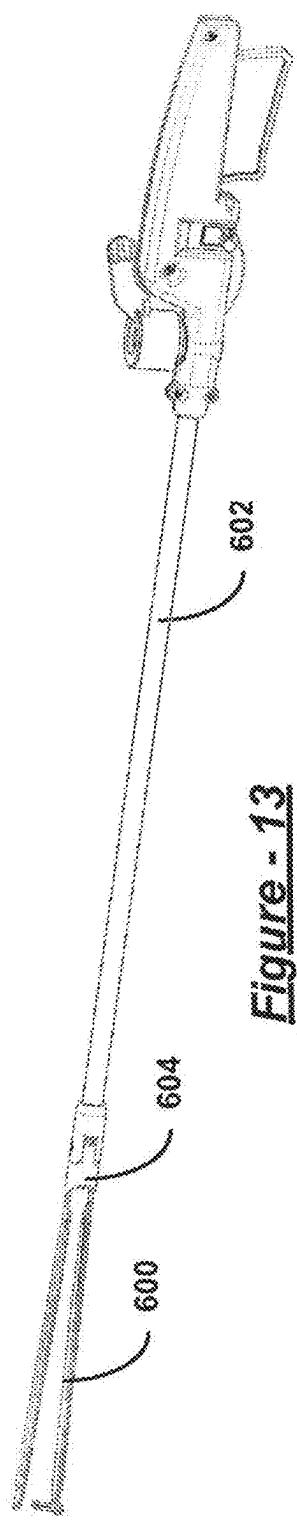


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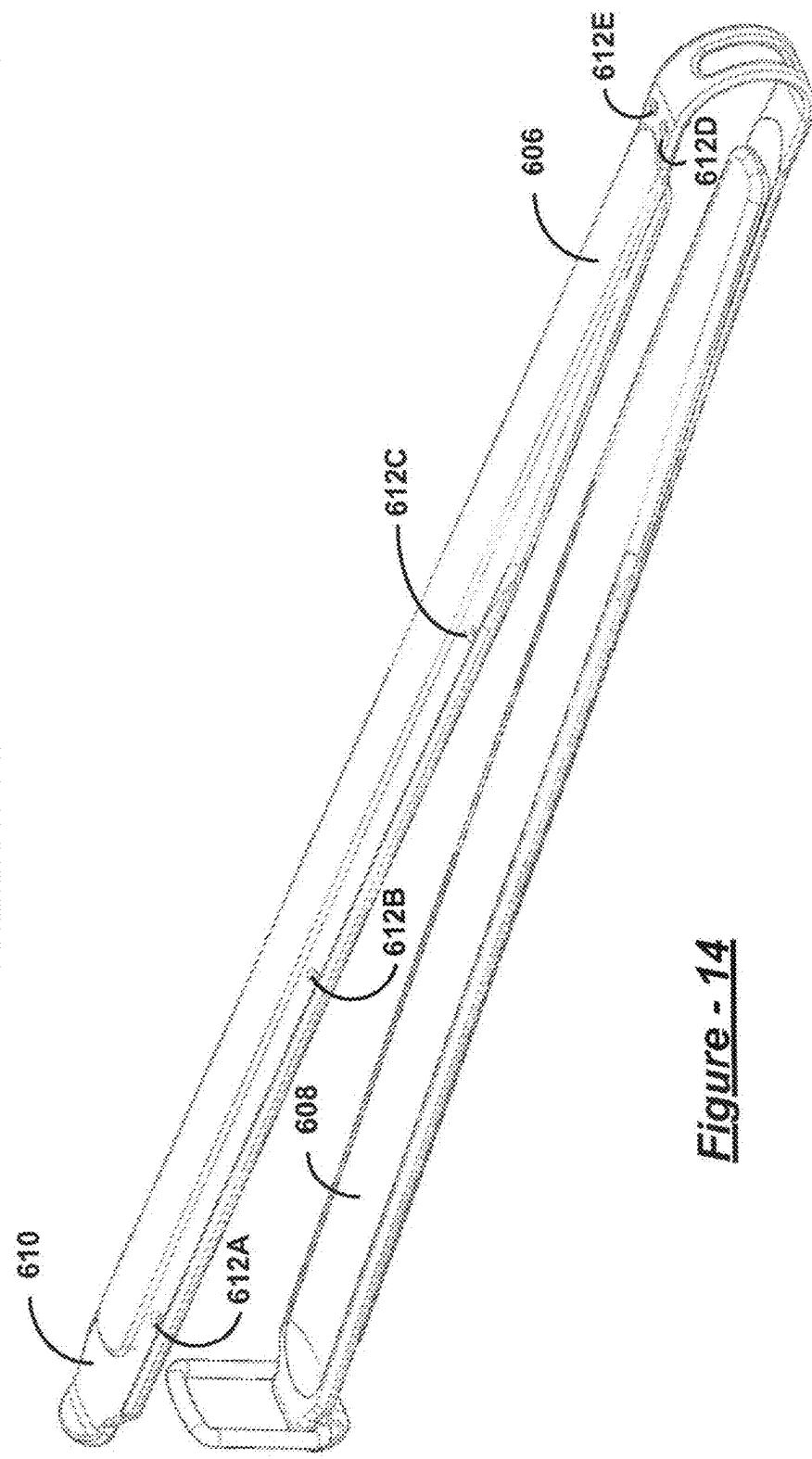


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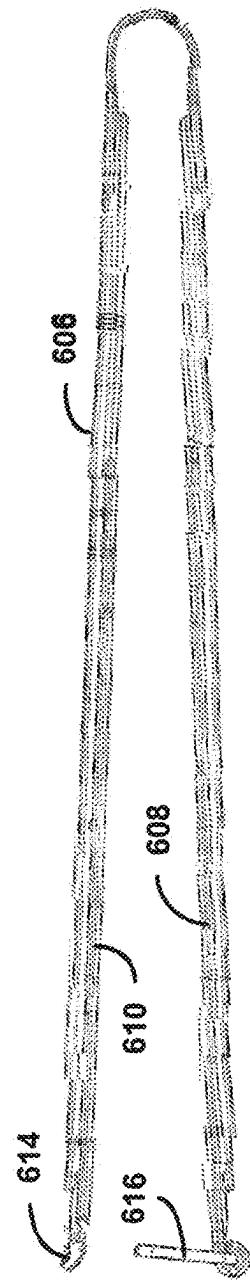
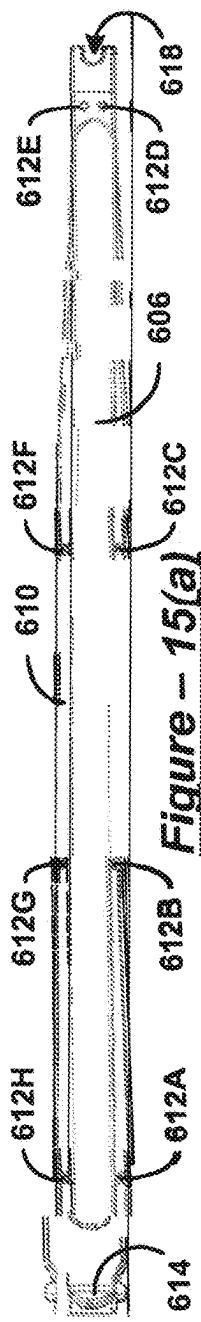


Figure - 15(b)

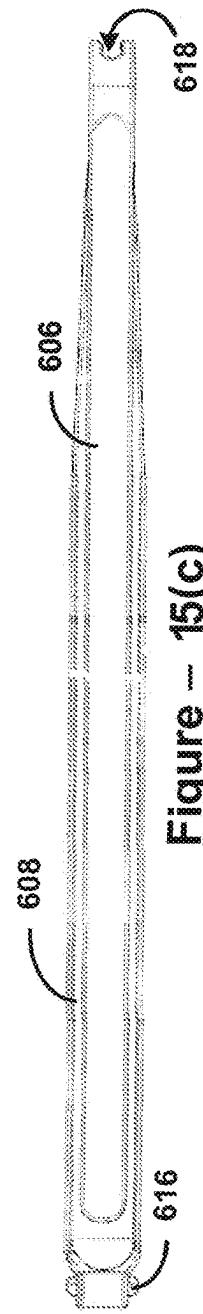


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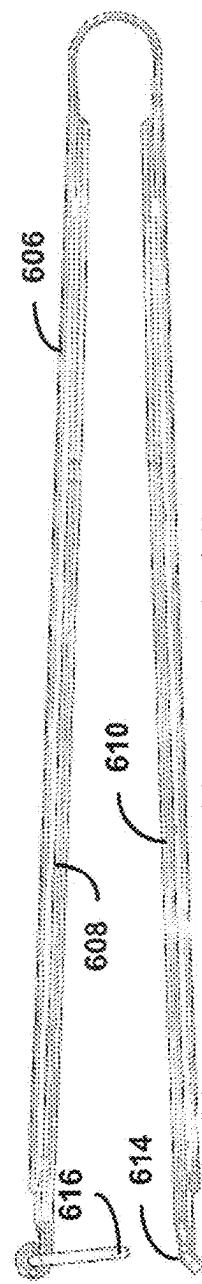


Figure - 15(d)

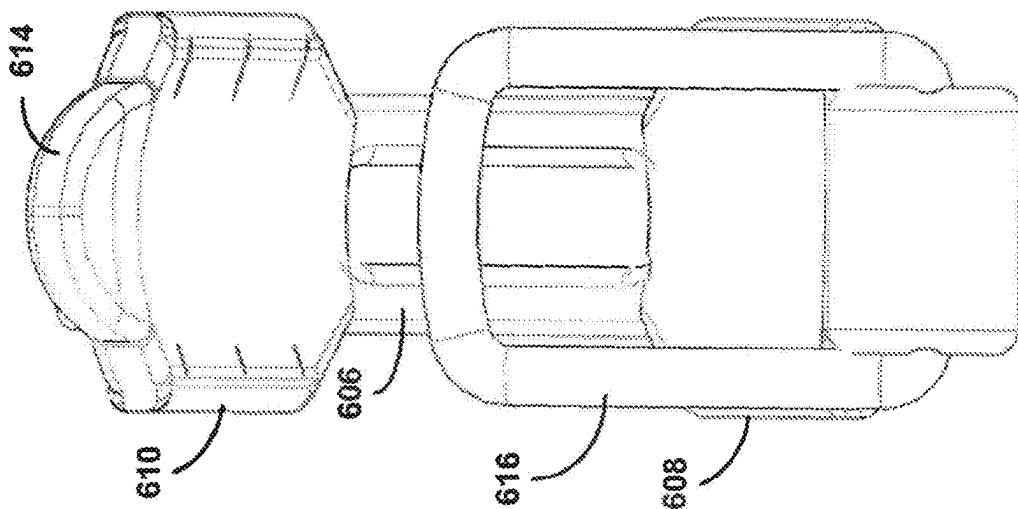


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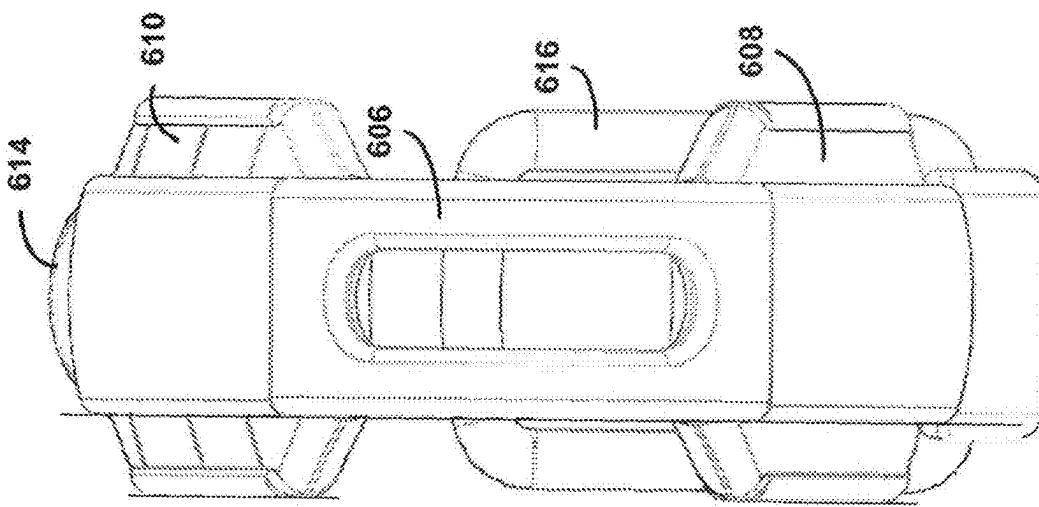


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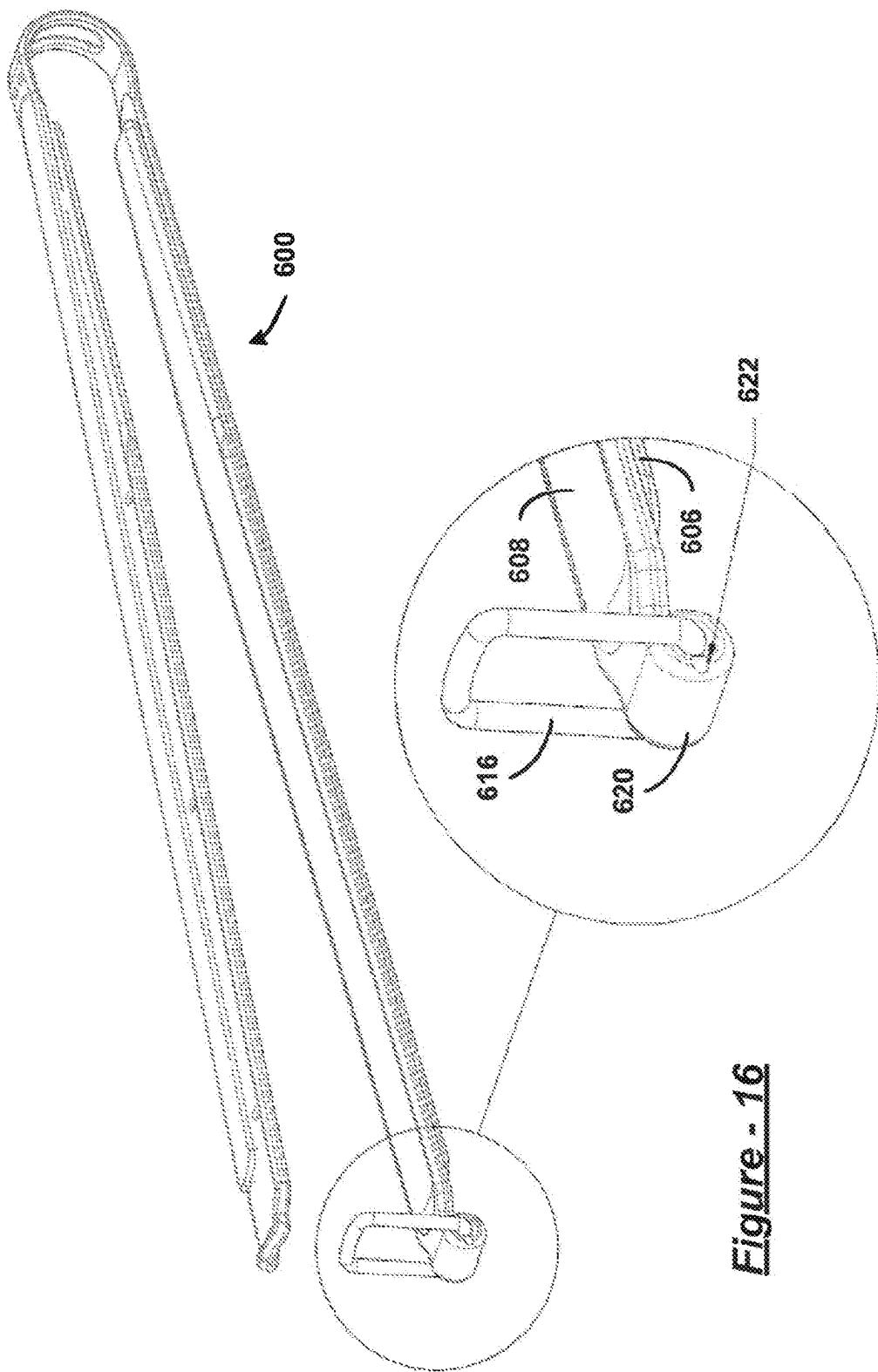


Figure - 16

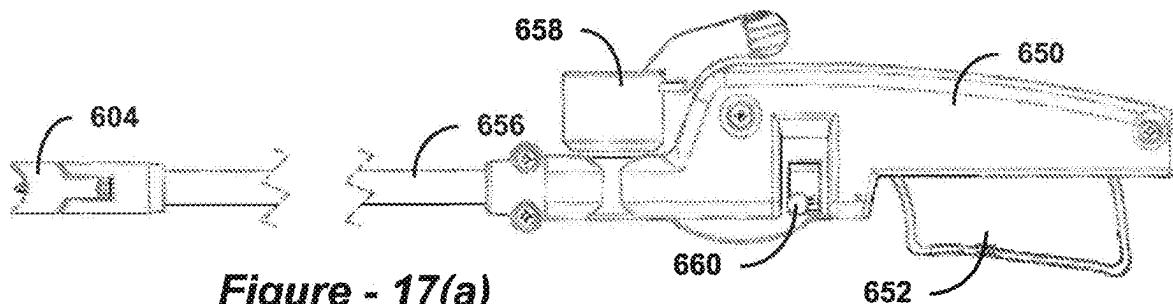


Figure - 17(a)

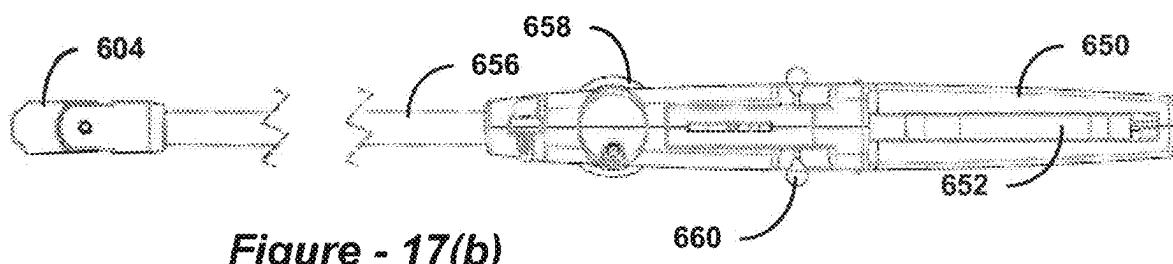


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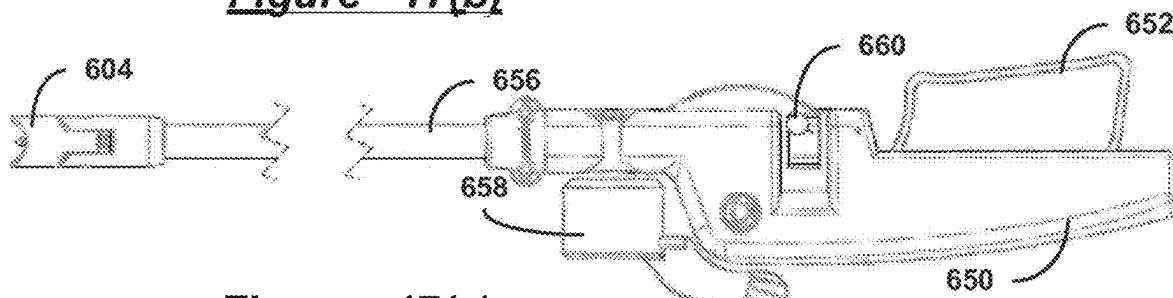


Figure - 17(c)

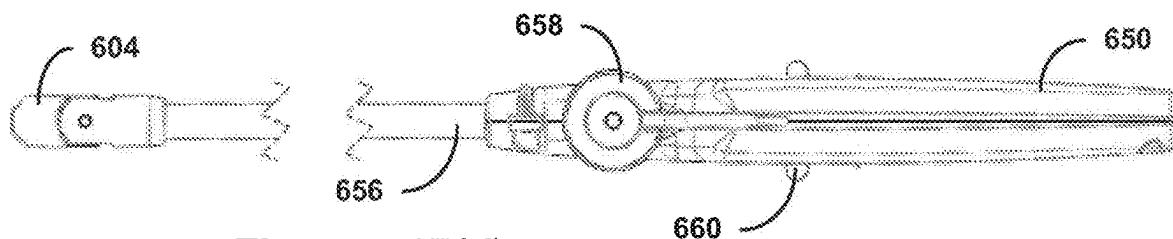


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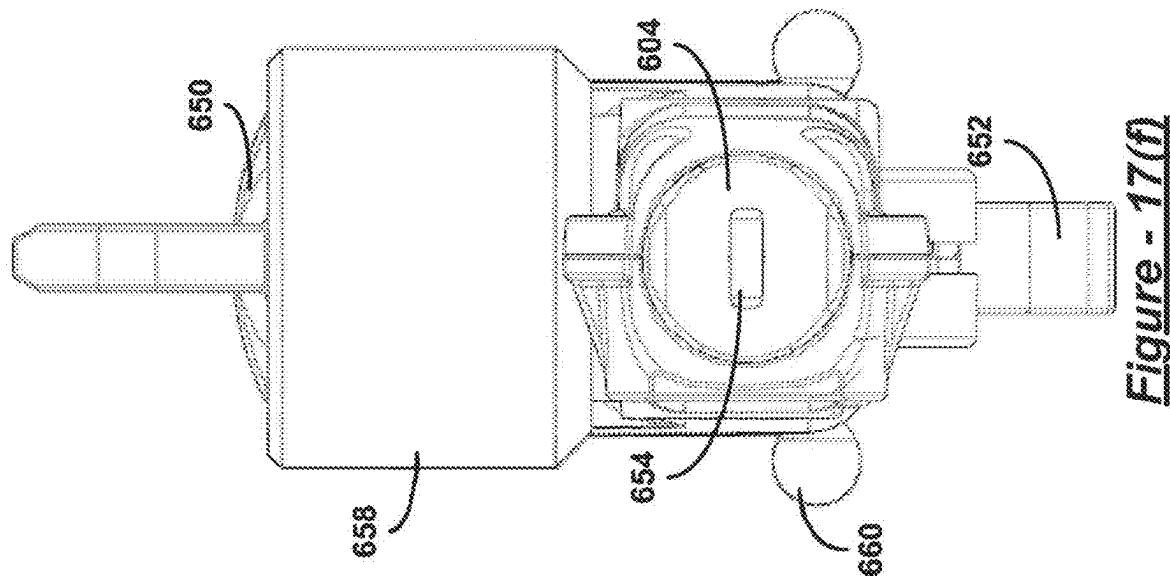


Figure - 17(m)

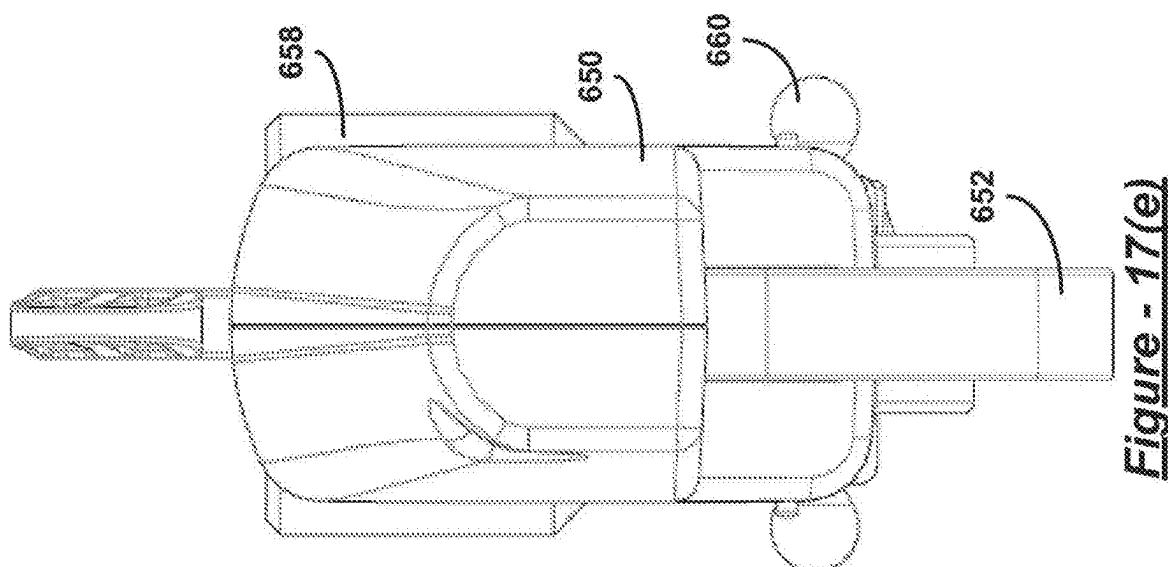
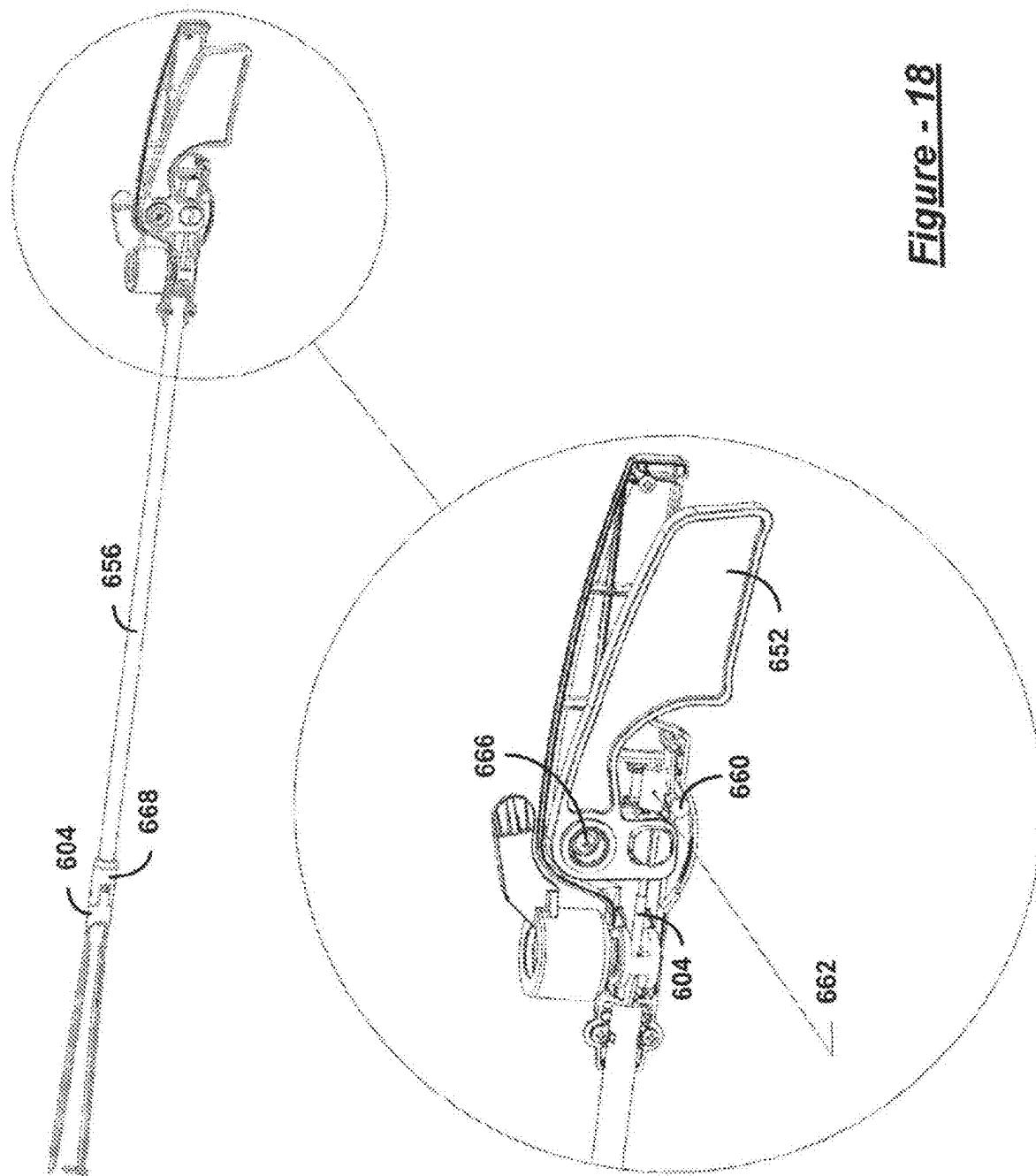


Figure - 17(e)

Figure - 18



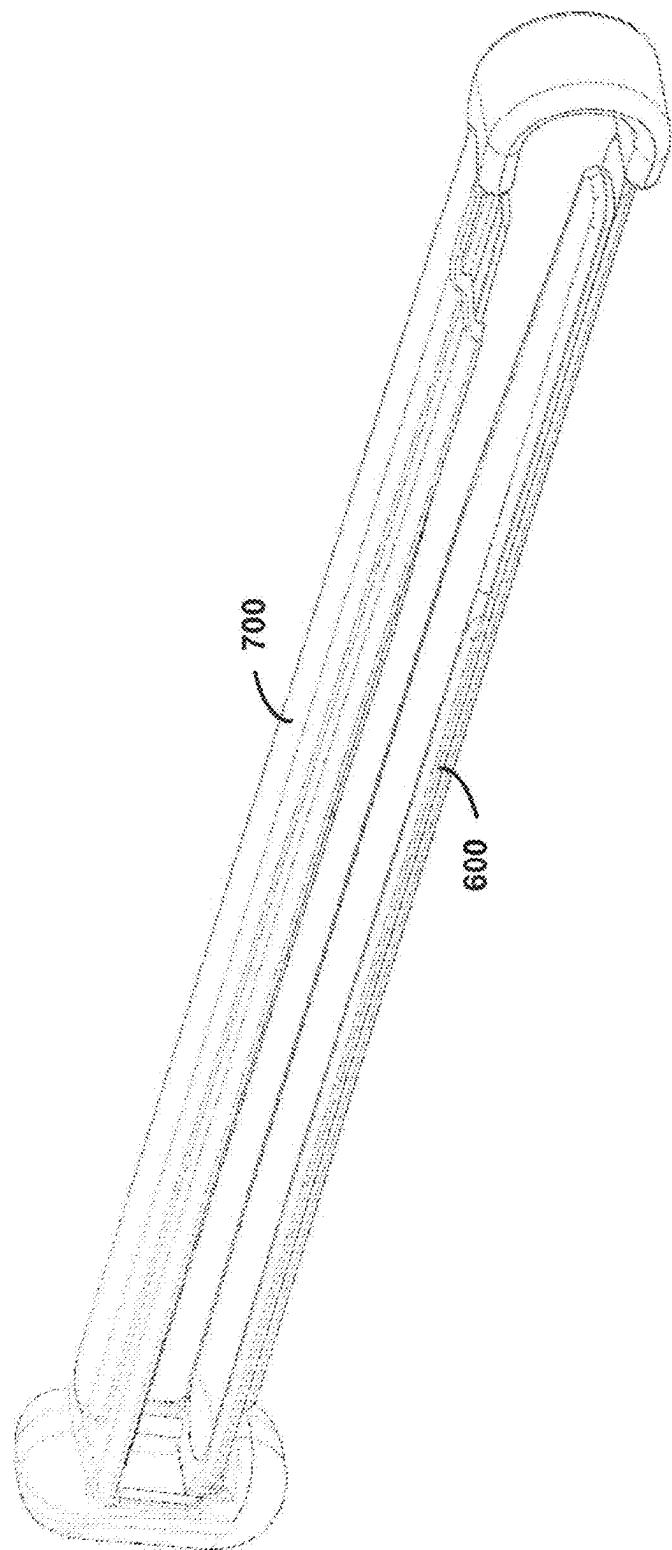
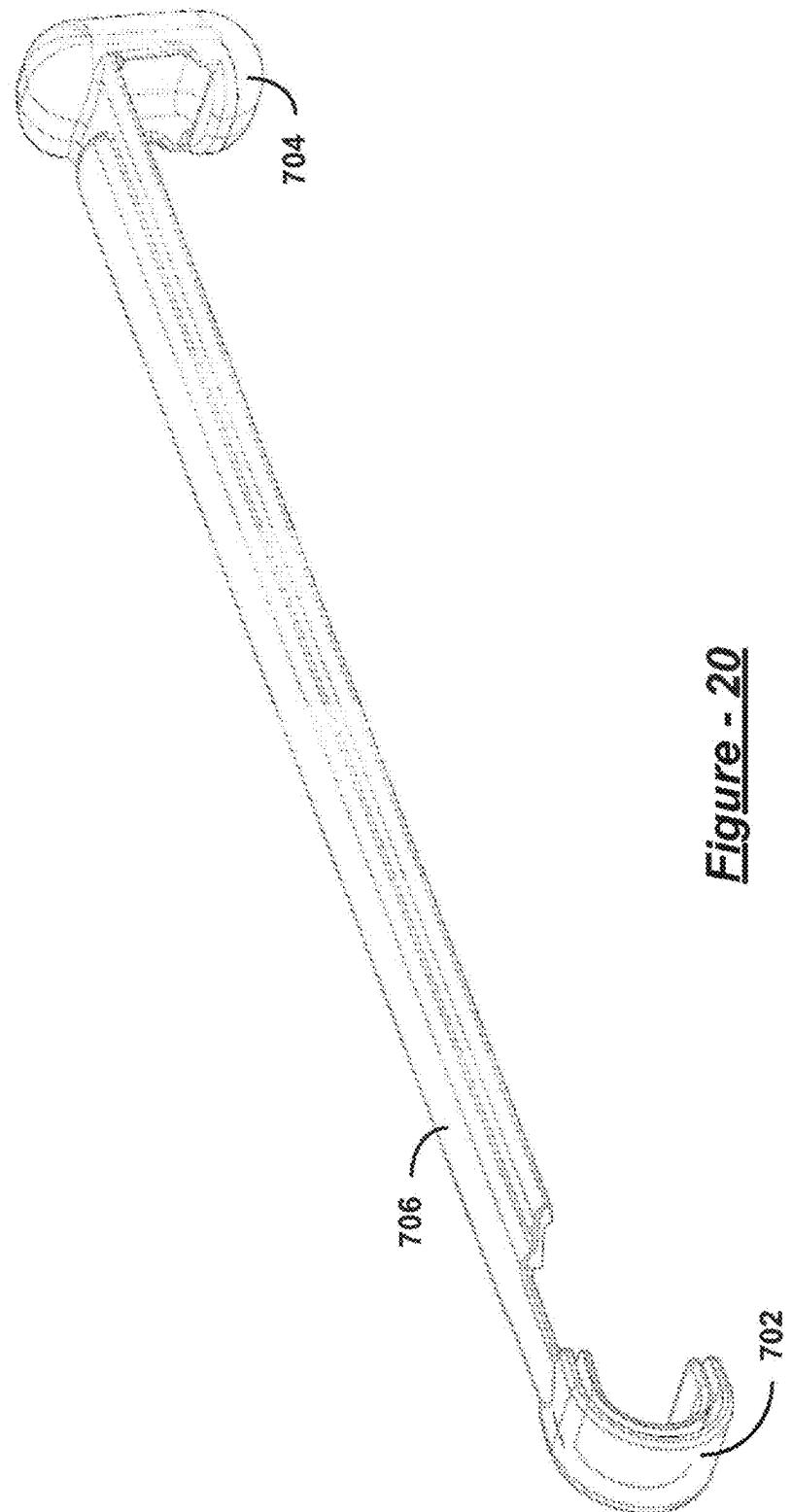


Figure - 19



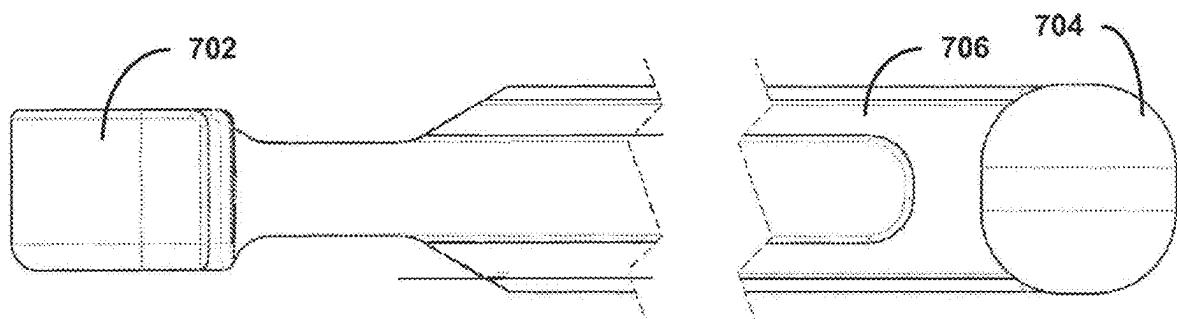


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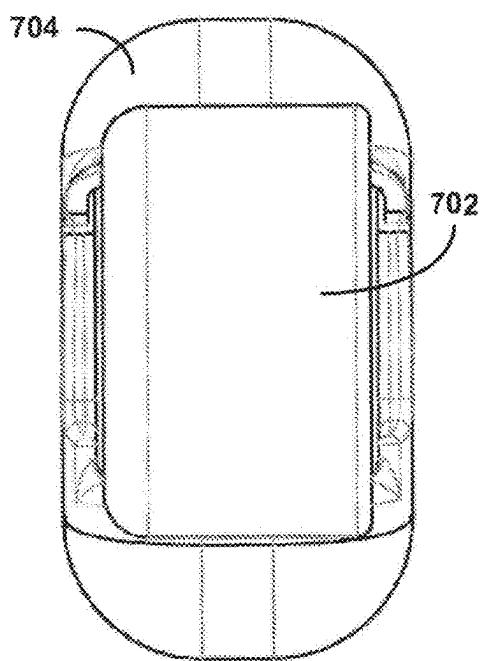


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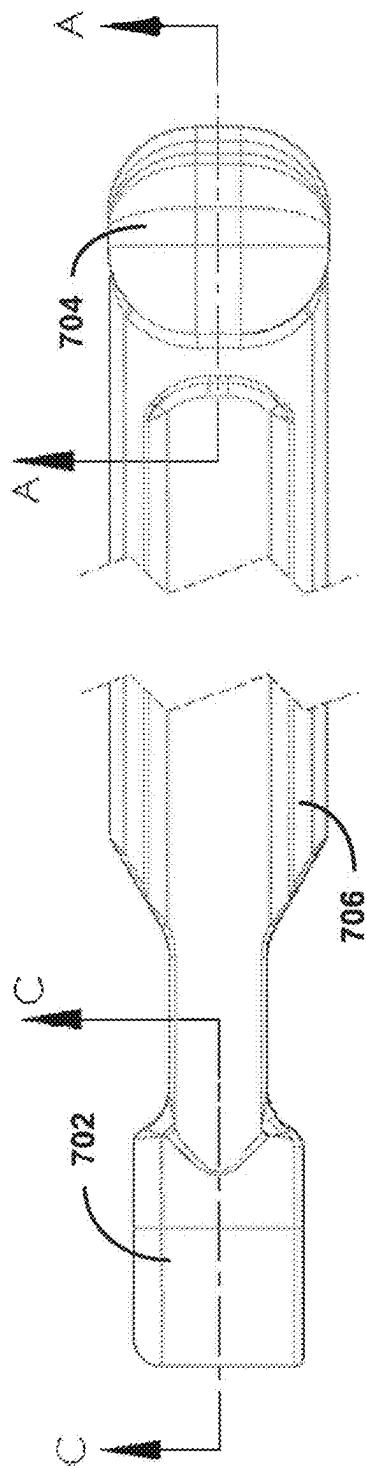


Figure - 23

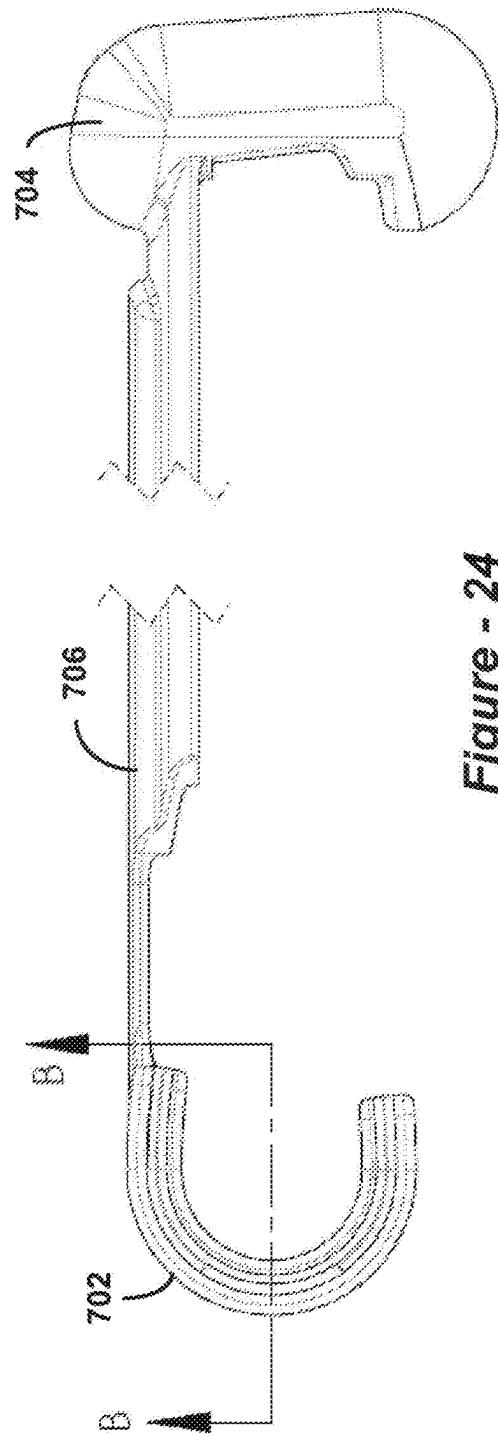
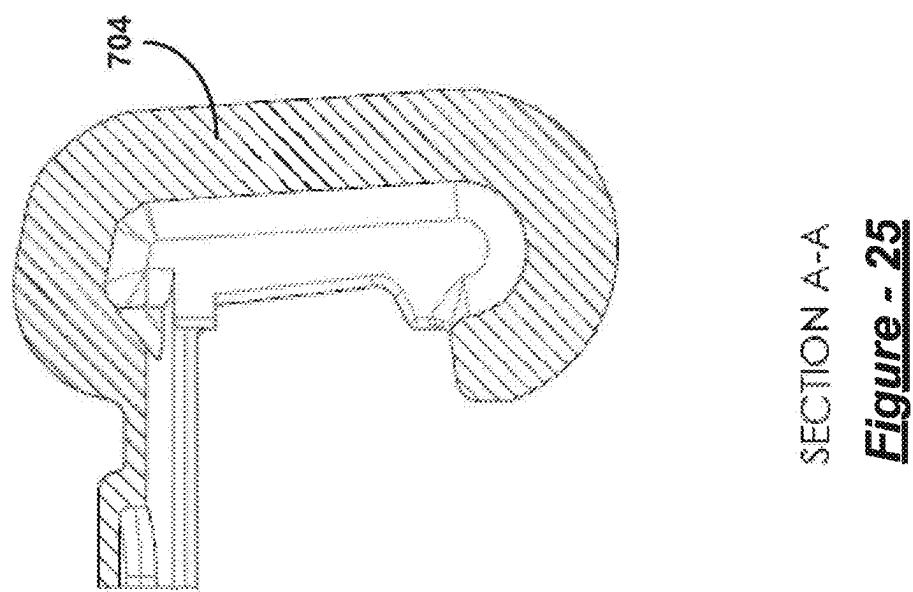
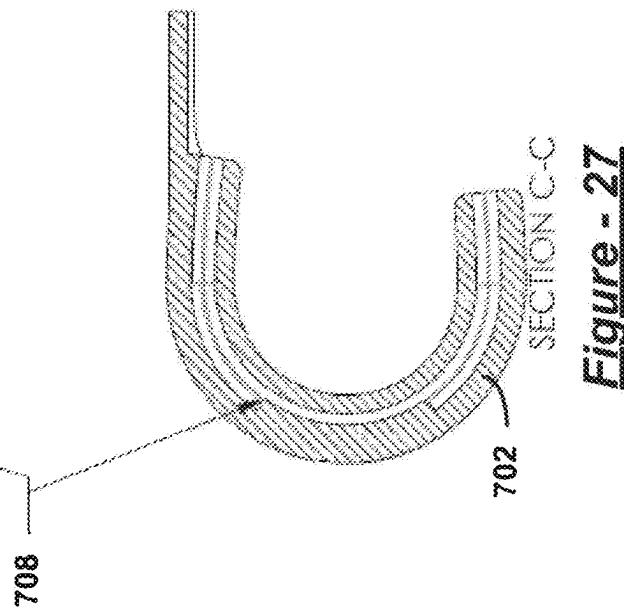
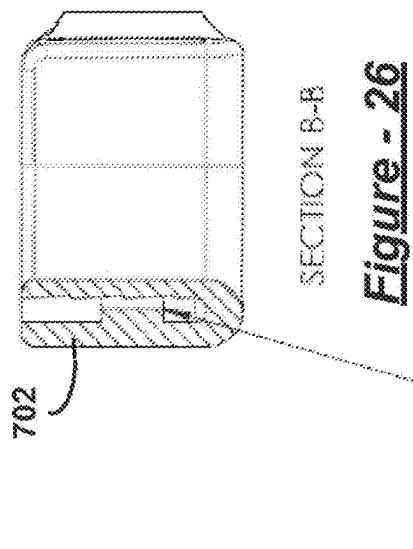
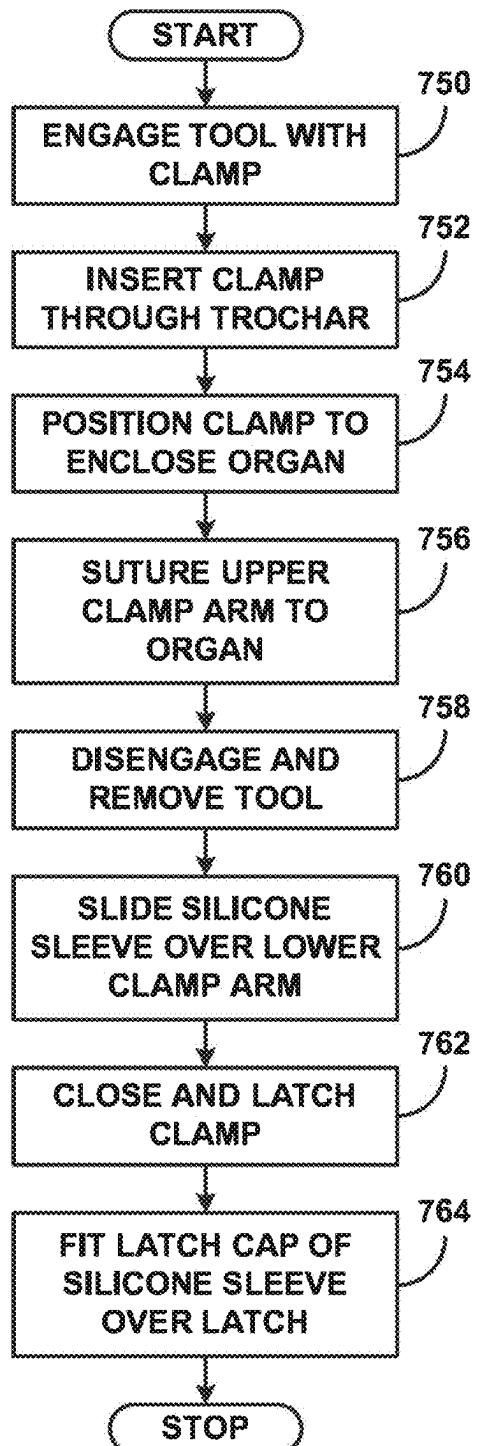


Figure - 24





*Figure - 28*

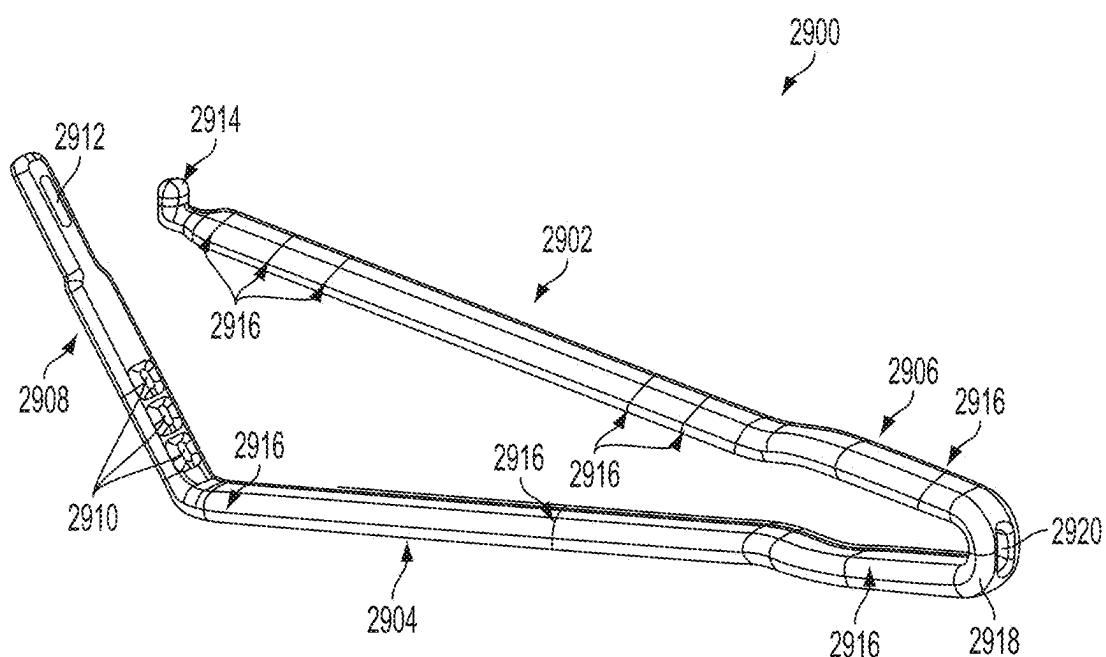


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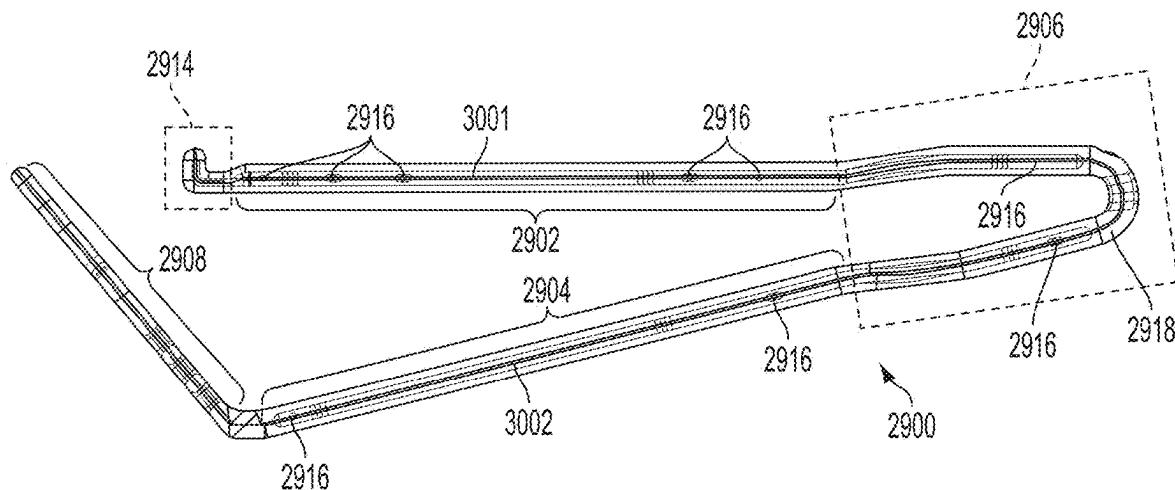


Figure - 30(a)

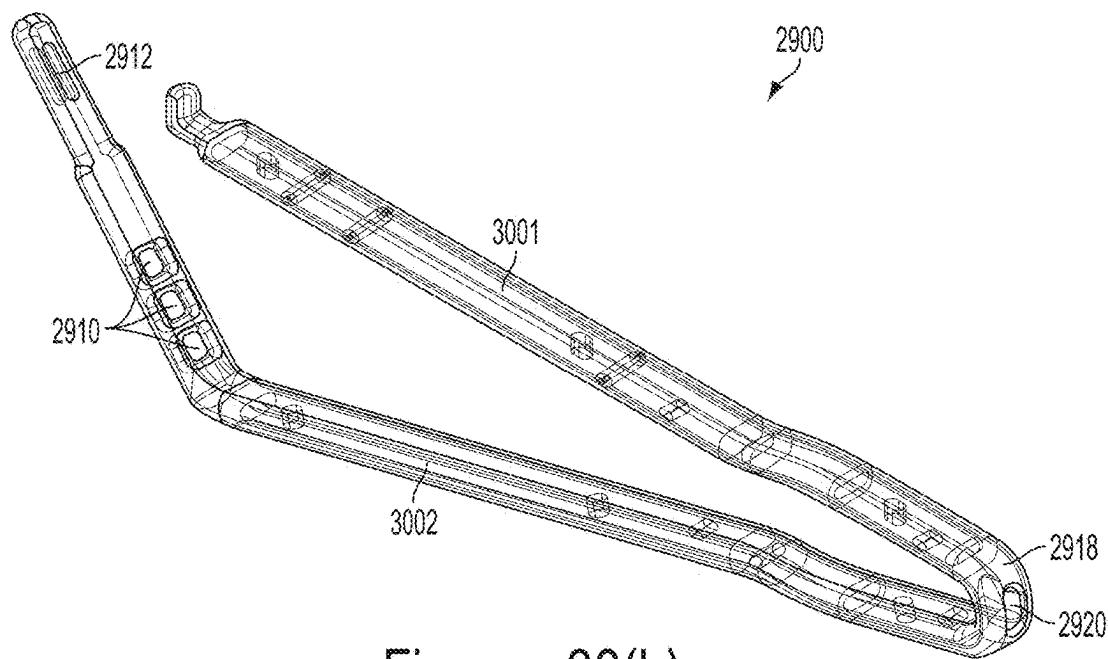


Figure - 30(b)

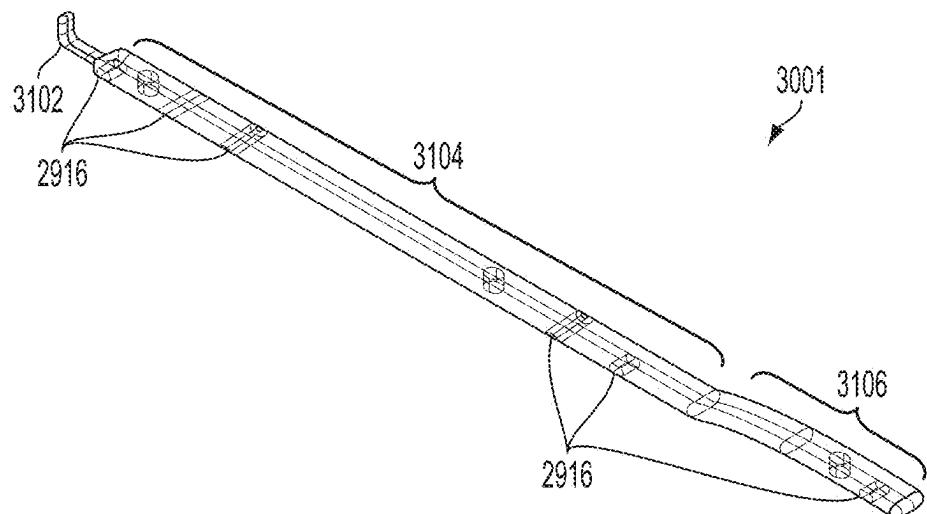


Figure - 31(a)

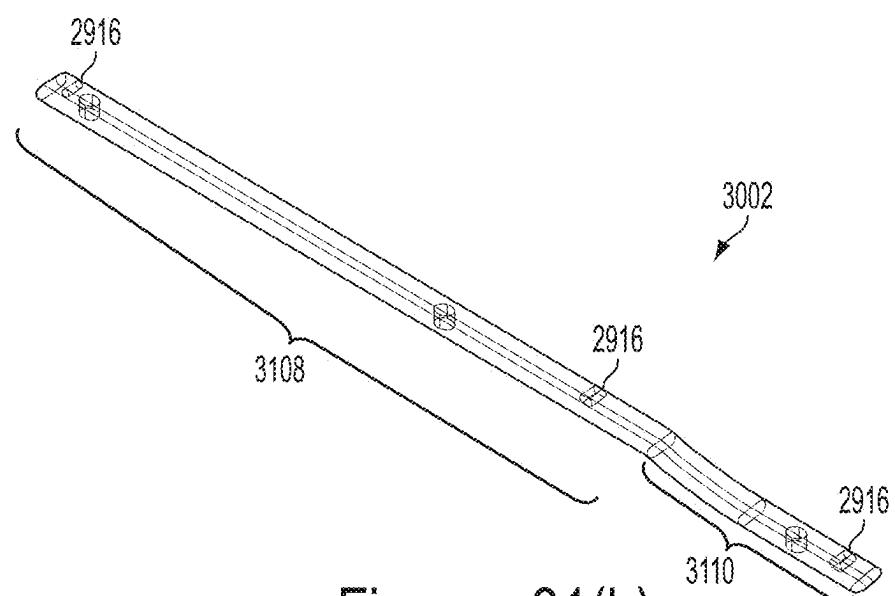


Figure - 31(b)

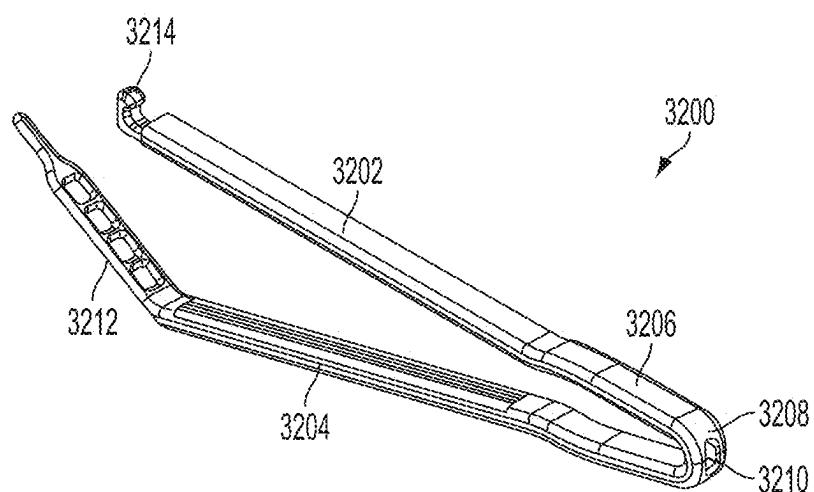


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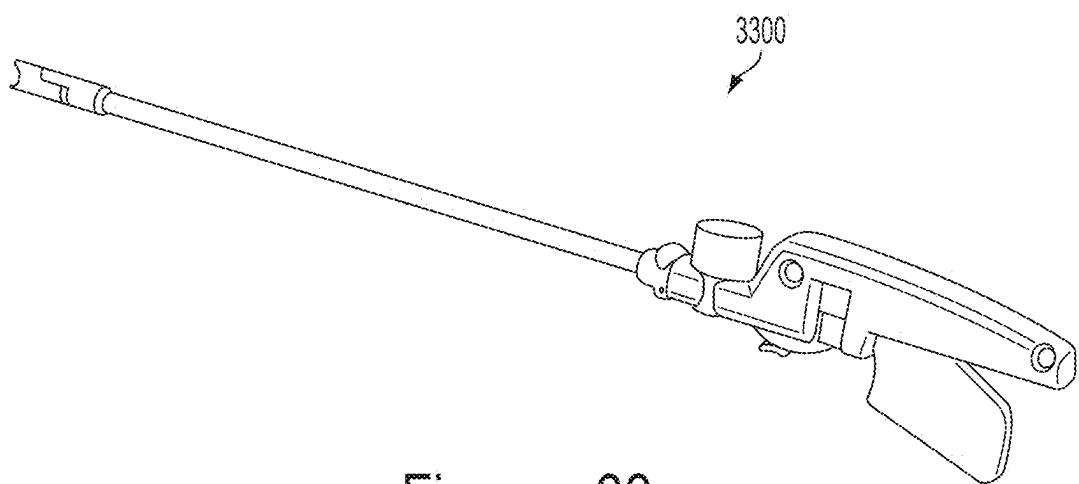


Figure - 33

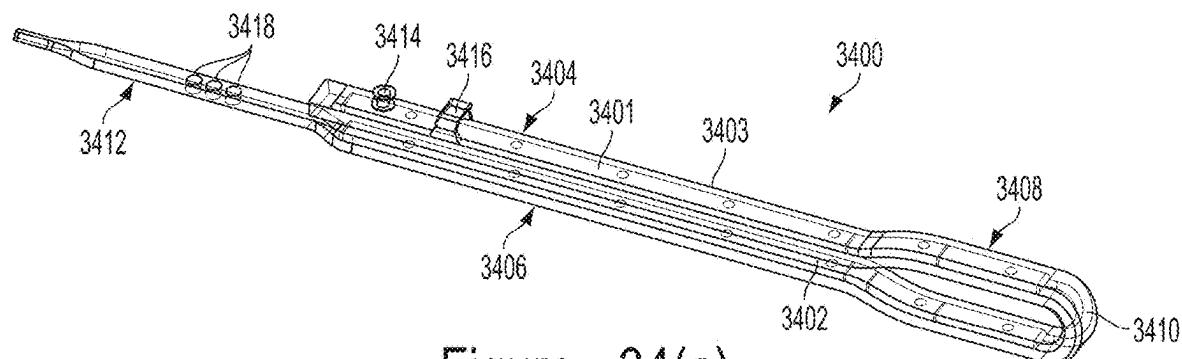


Figure - 34(a)

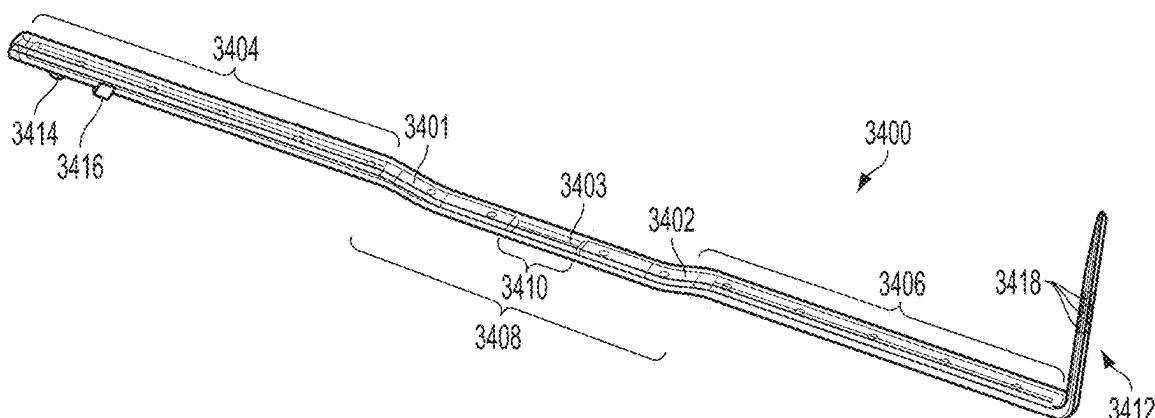


Figure - 34(b)

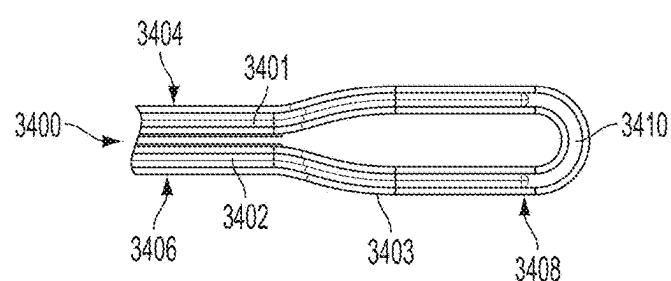


Figure - 34(c)

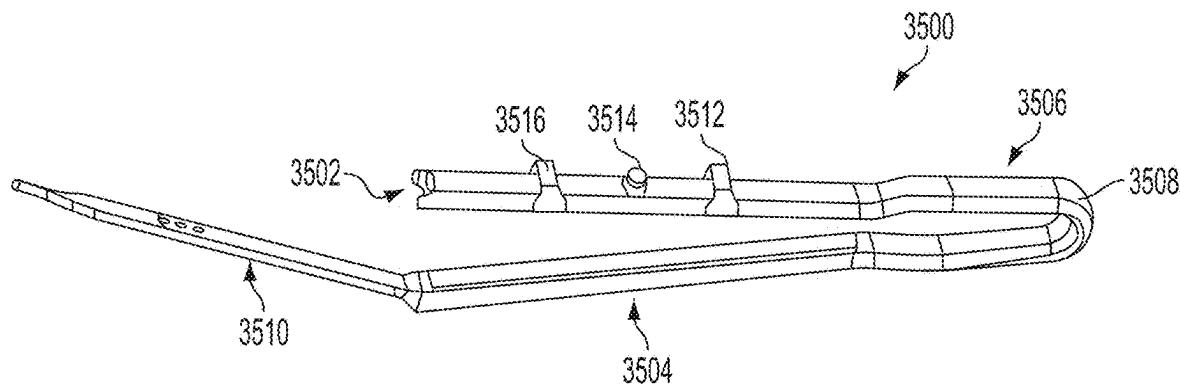


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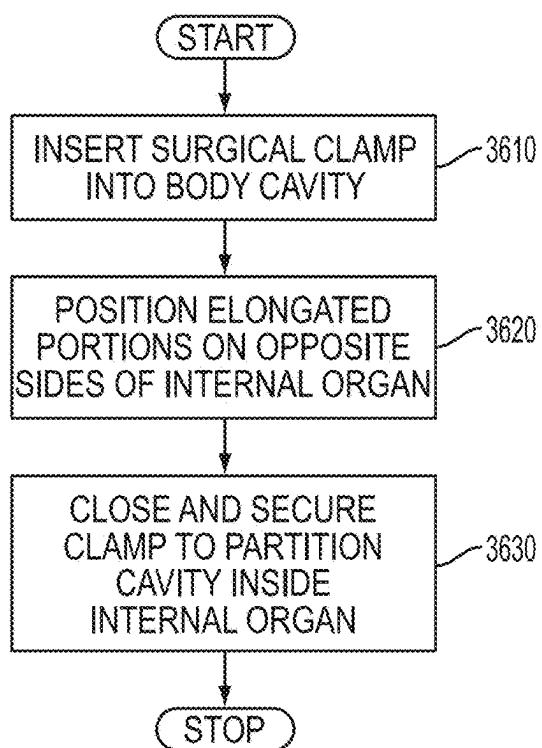


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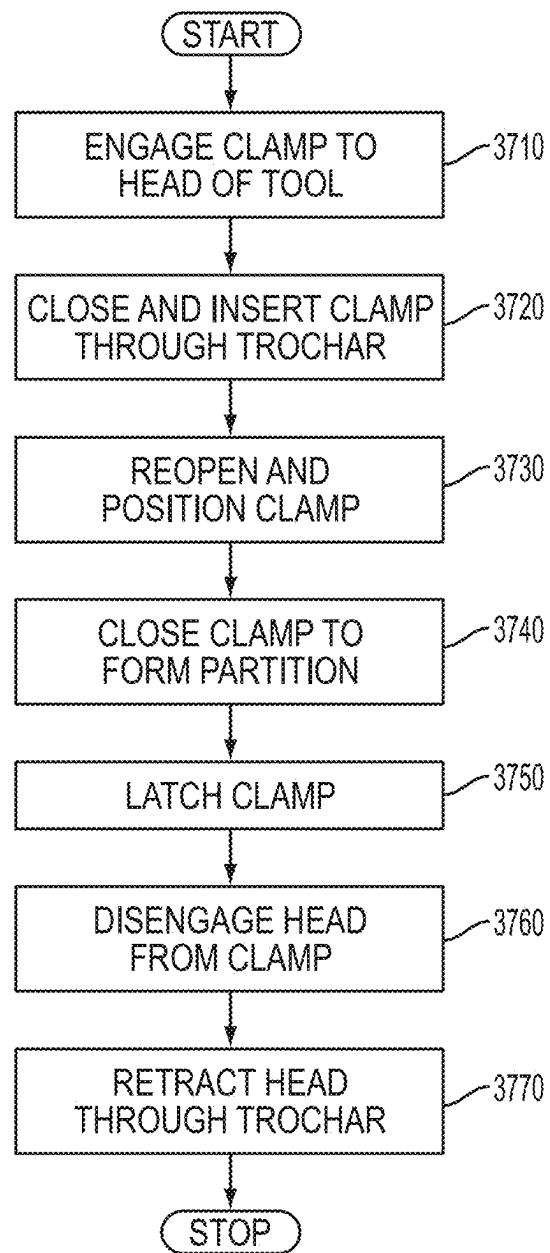


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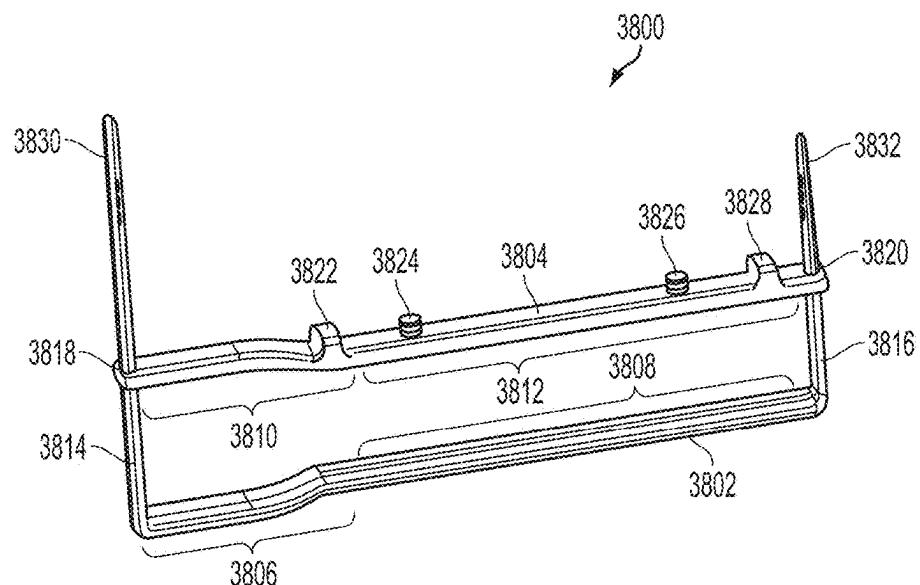


Figure - 38

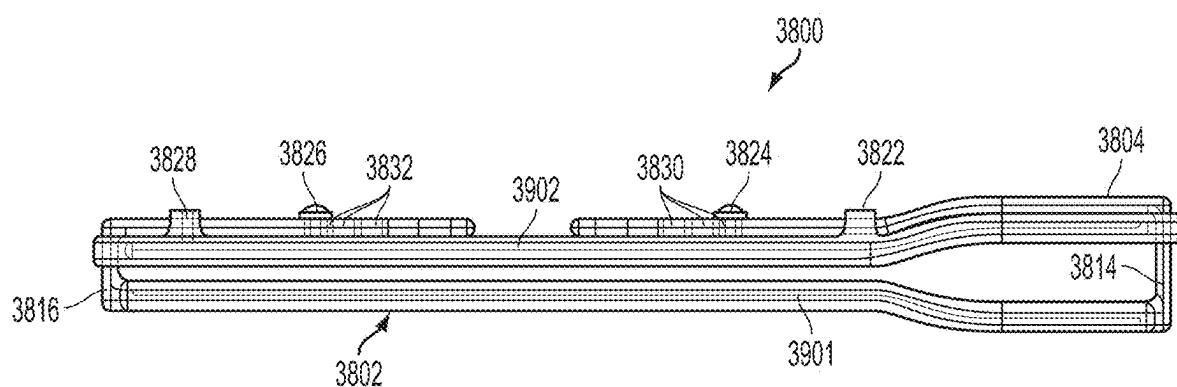


Figure - 39(a)

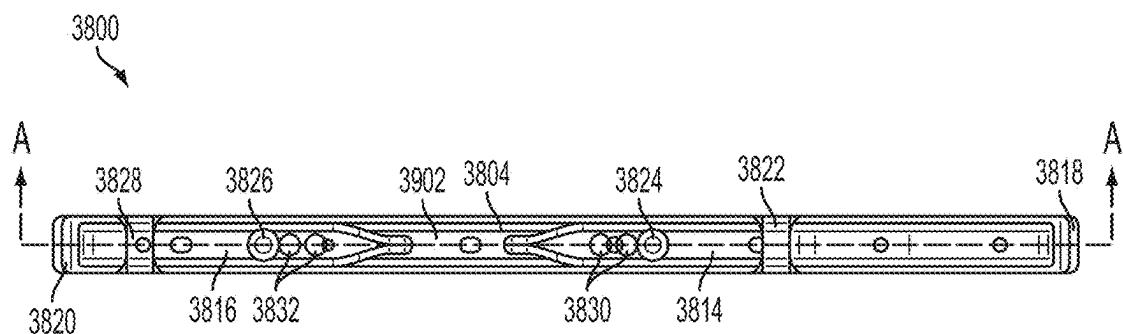


Figure - 39(b)

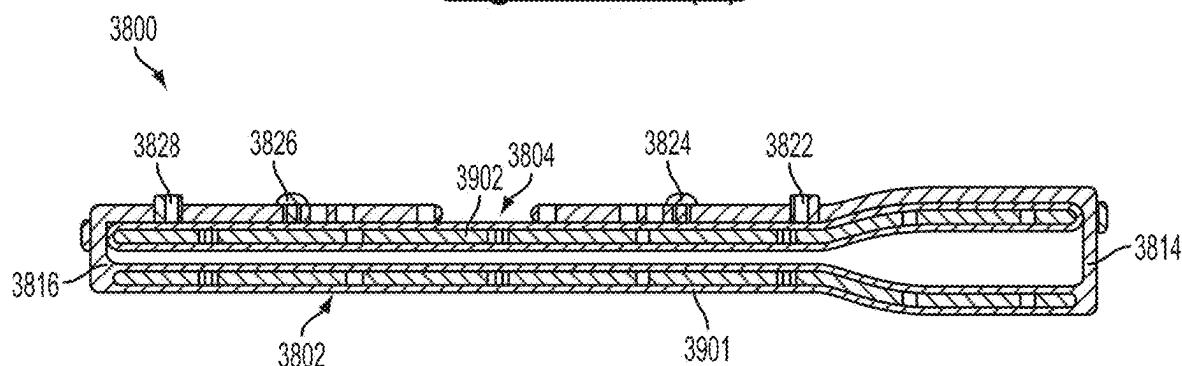


Figure - 39(c)

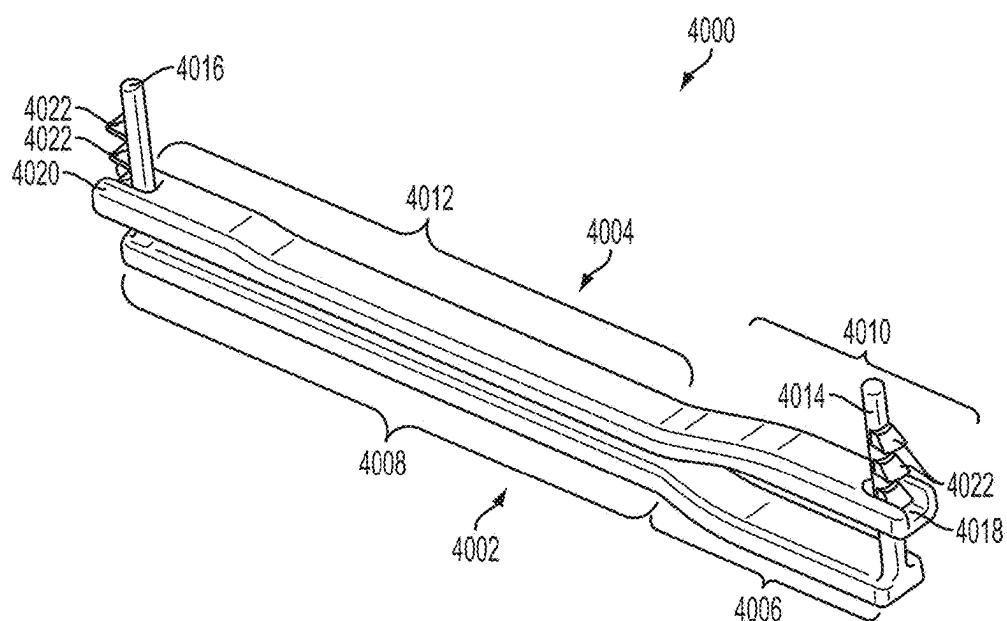
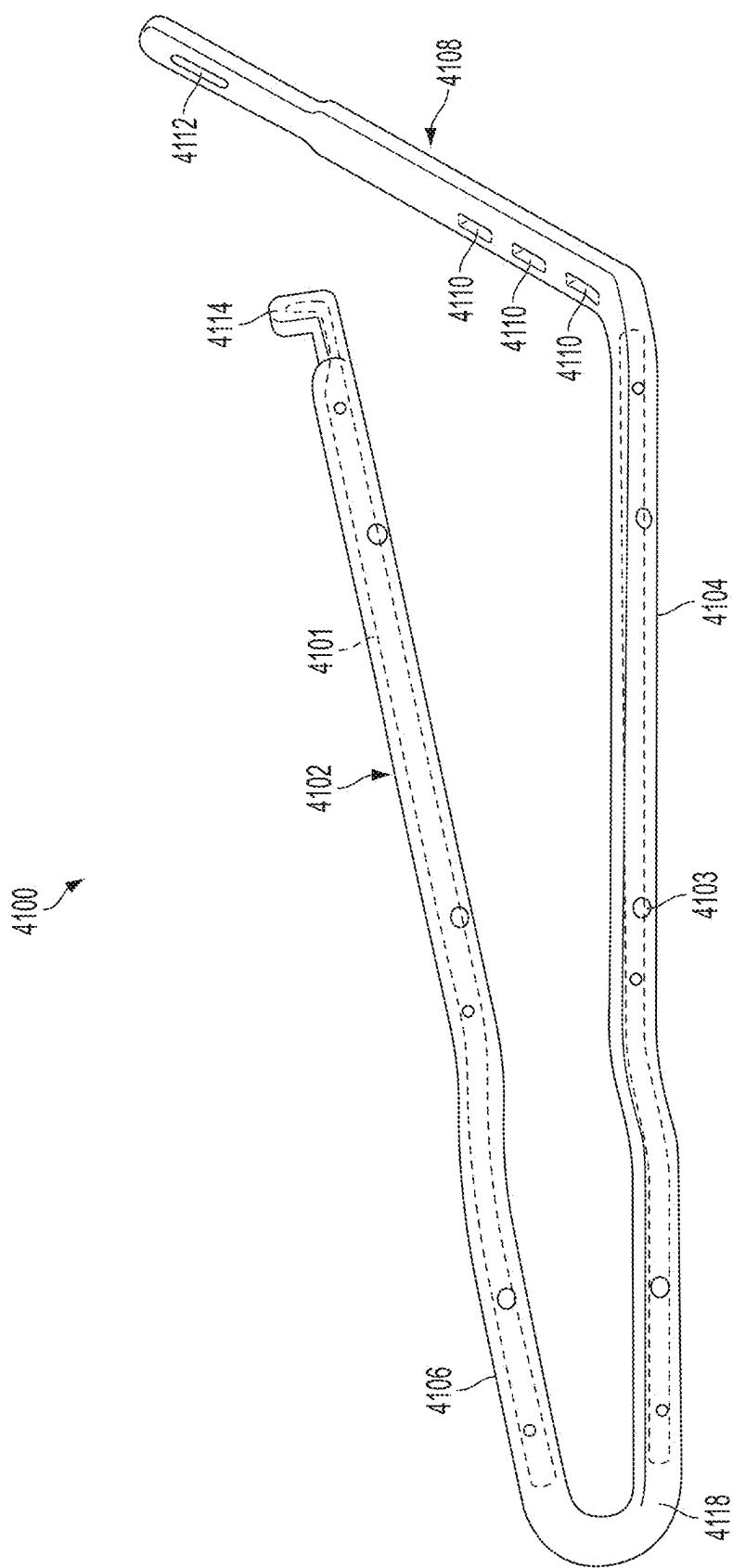


Figure - 40



**Figure - 41(a)**

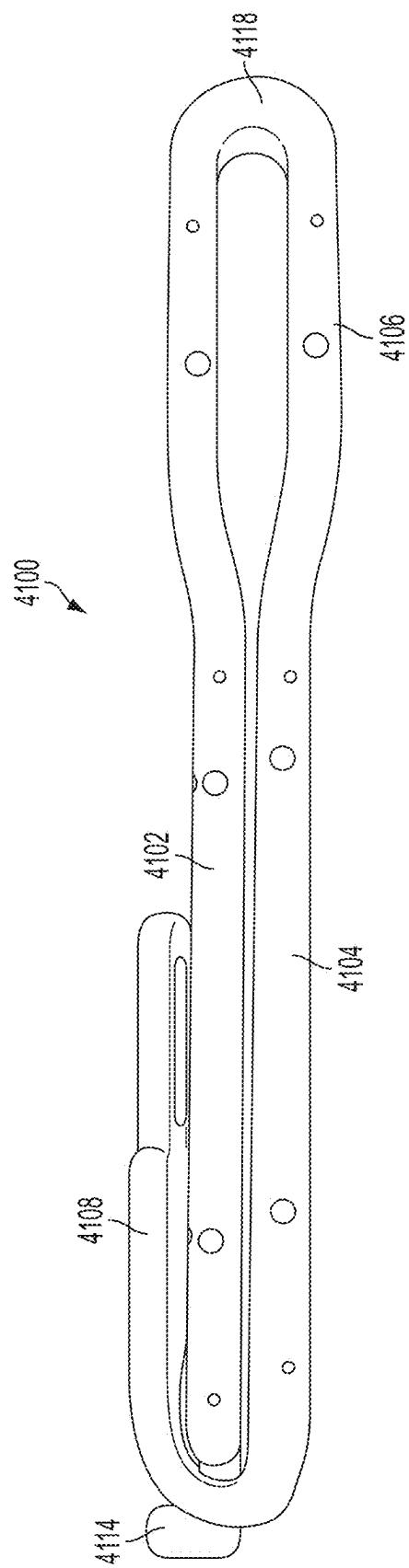


Figure - 41(b)

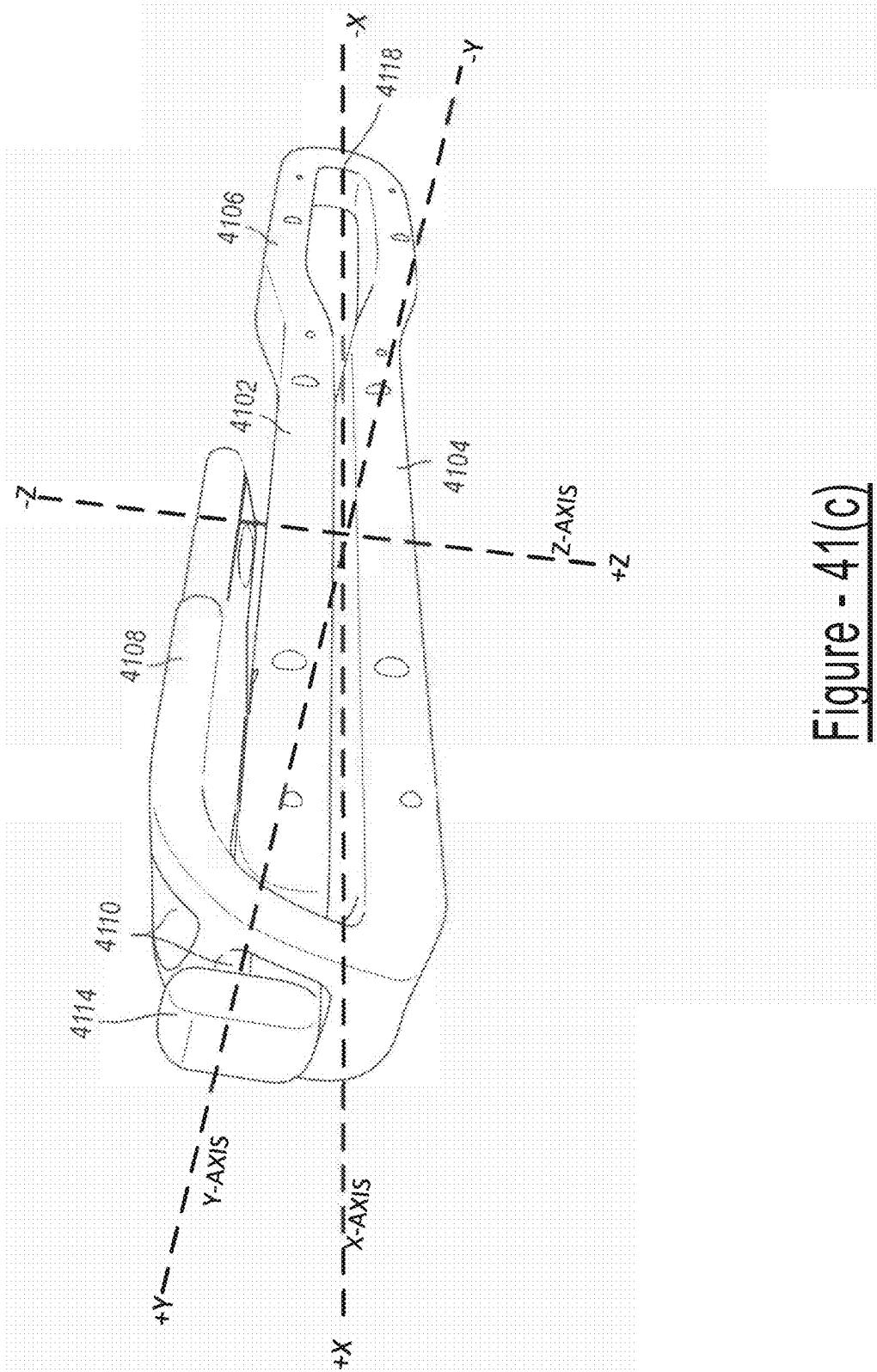


Figure - 41(C)

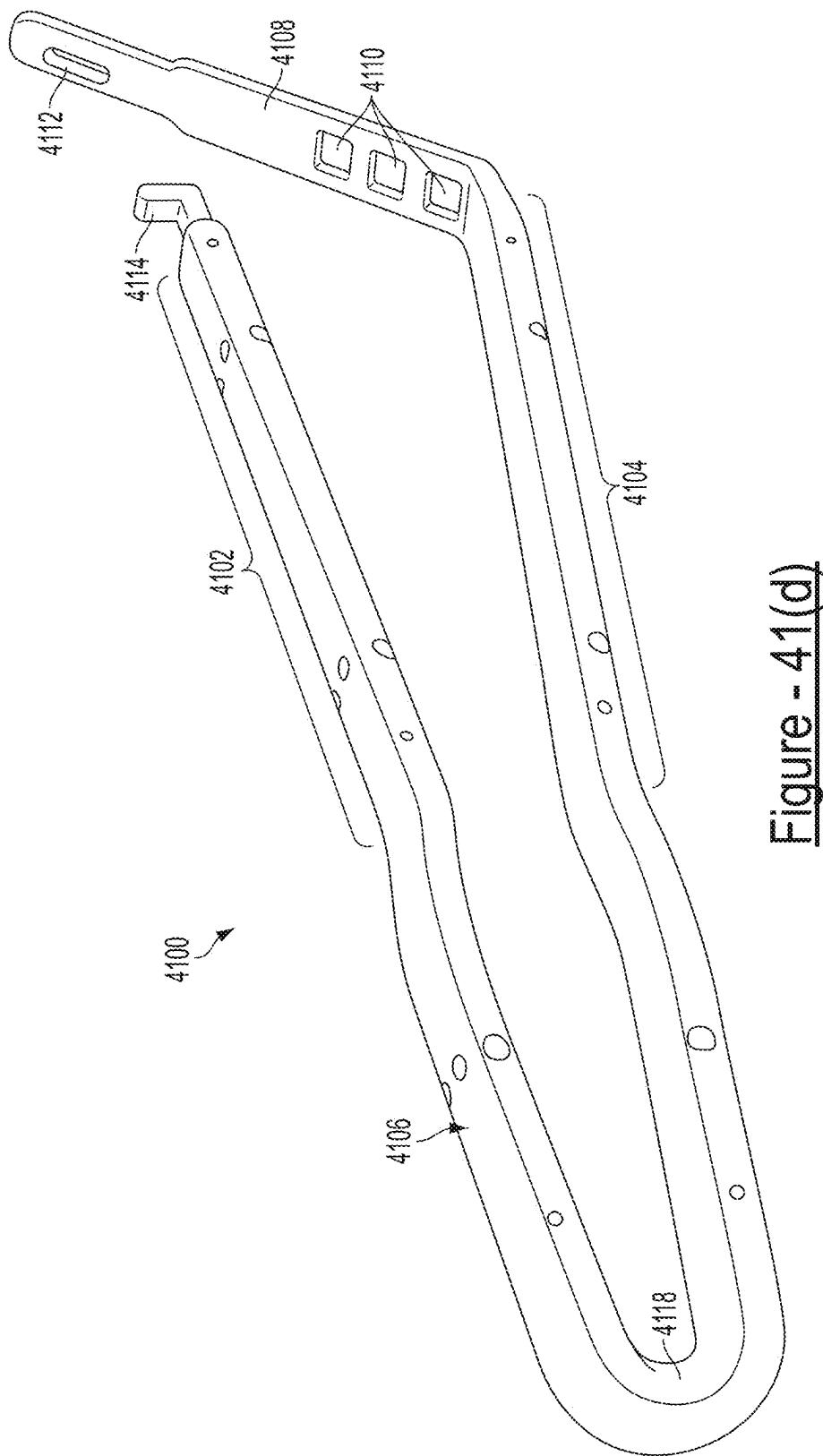


Figure - 41(d)

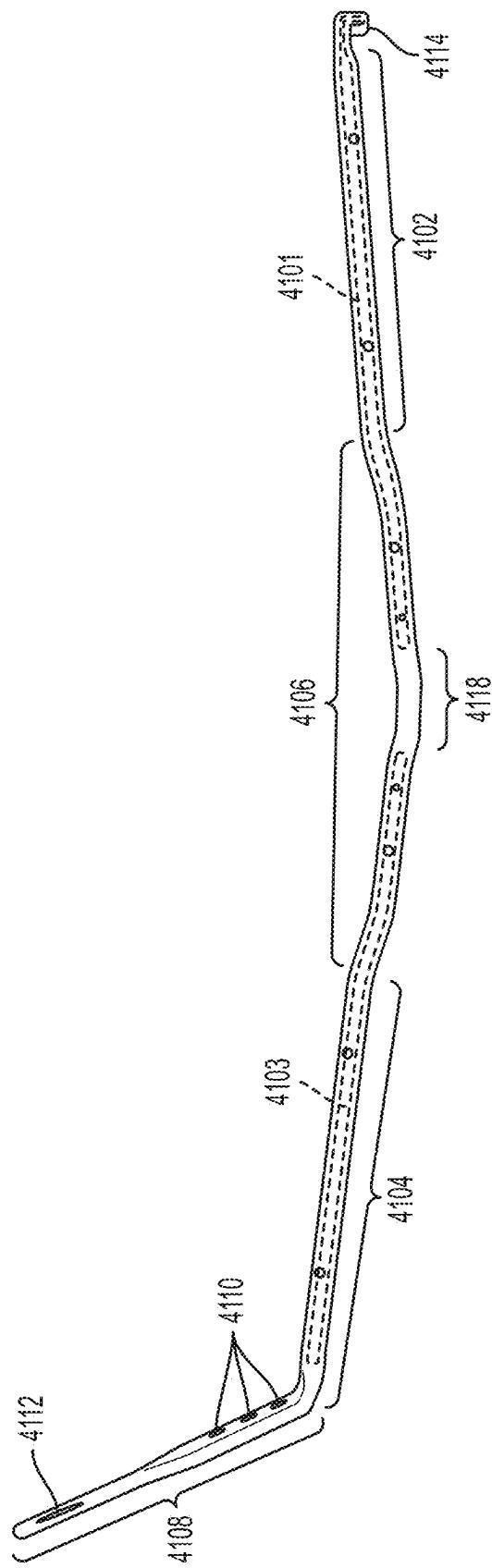
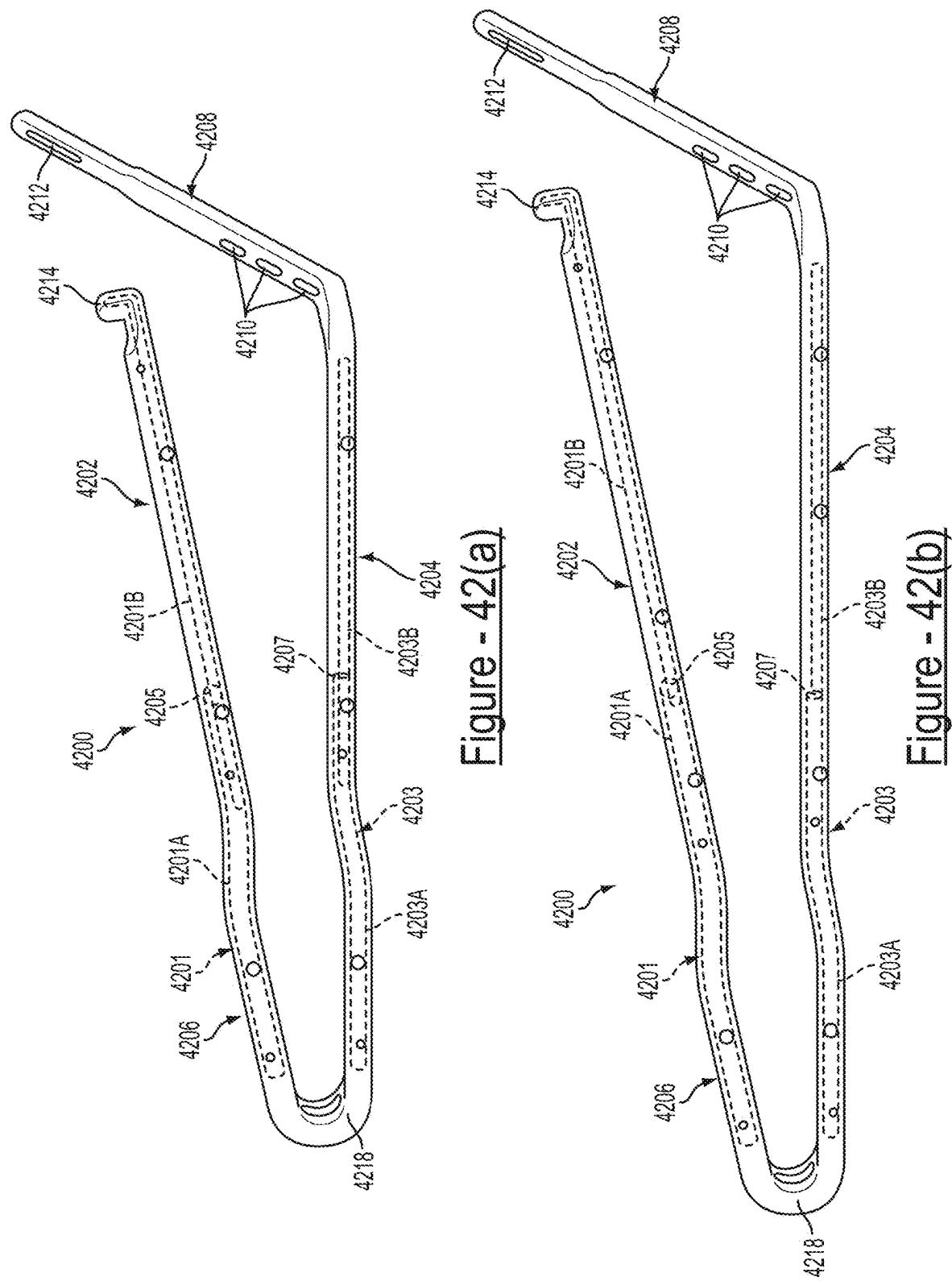


Figure - 41(e)



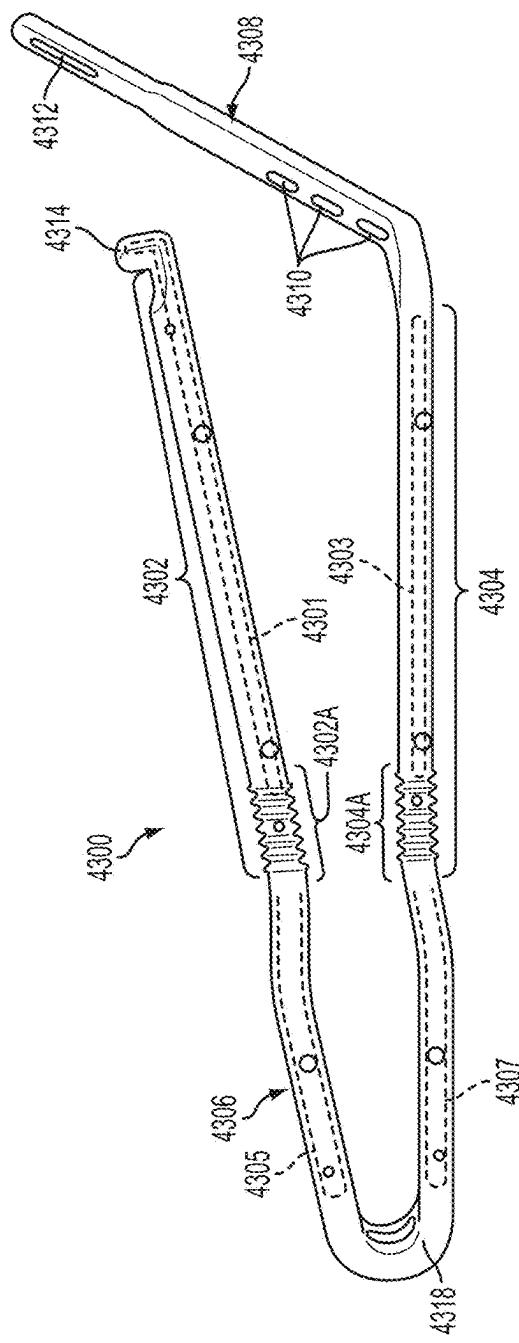


Figure - 43(a)

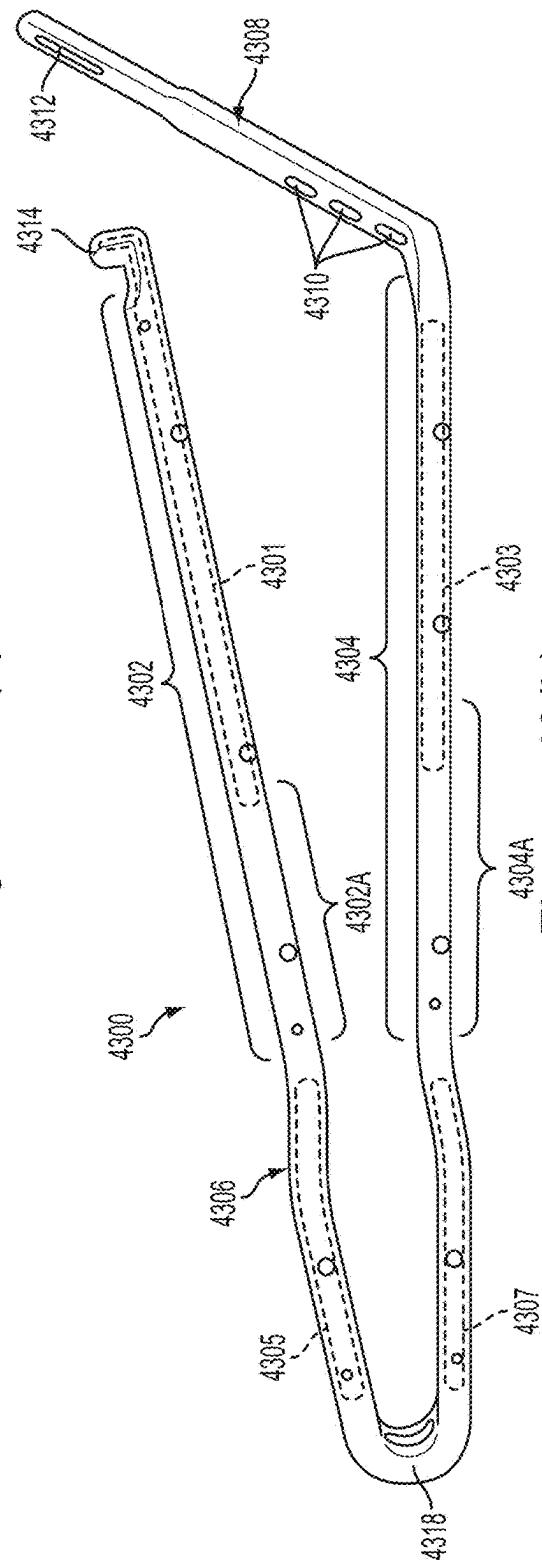


Figure - 43(b)

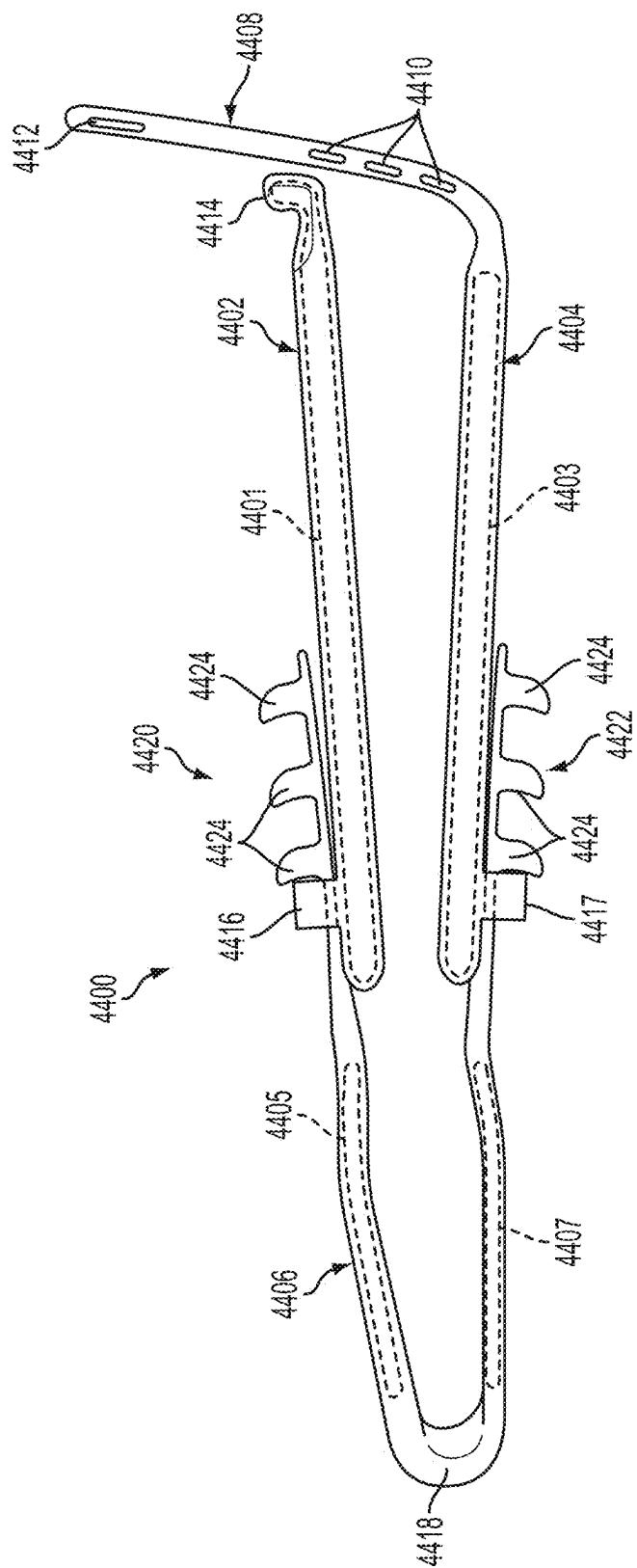
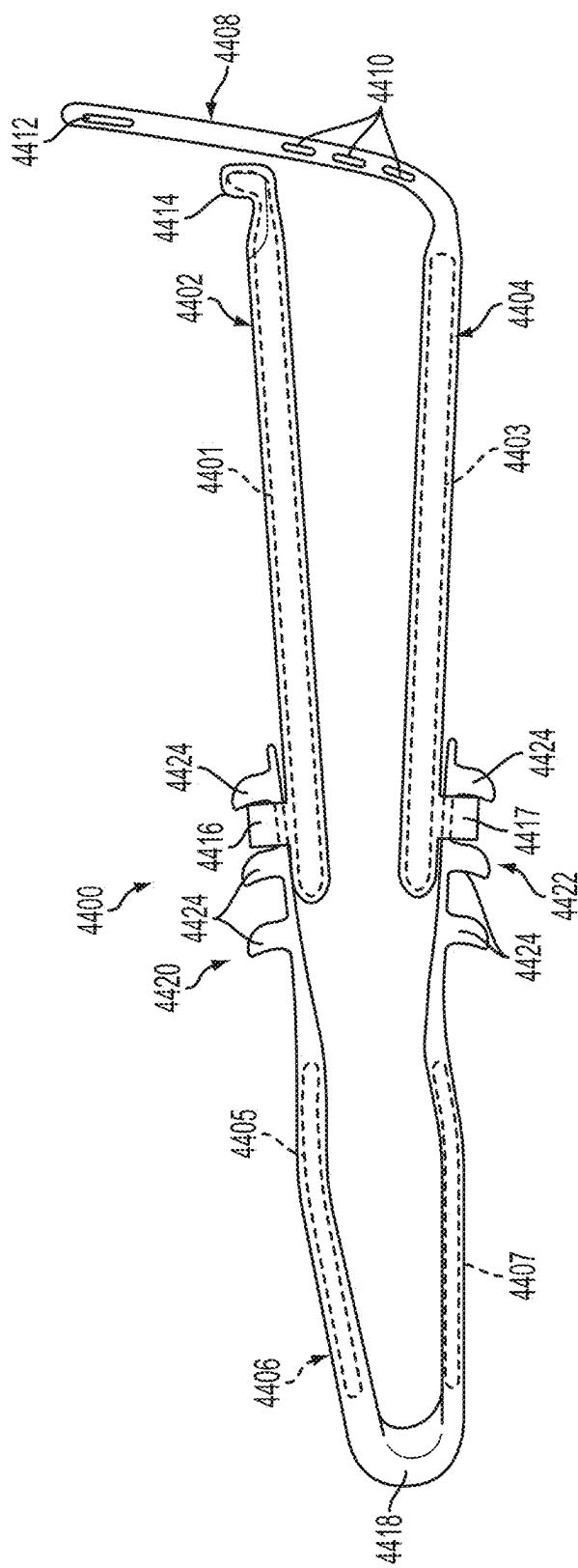


Figure - 44(a)



**Figure - 44(b)**

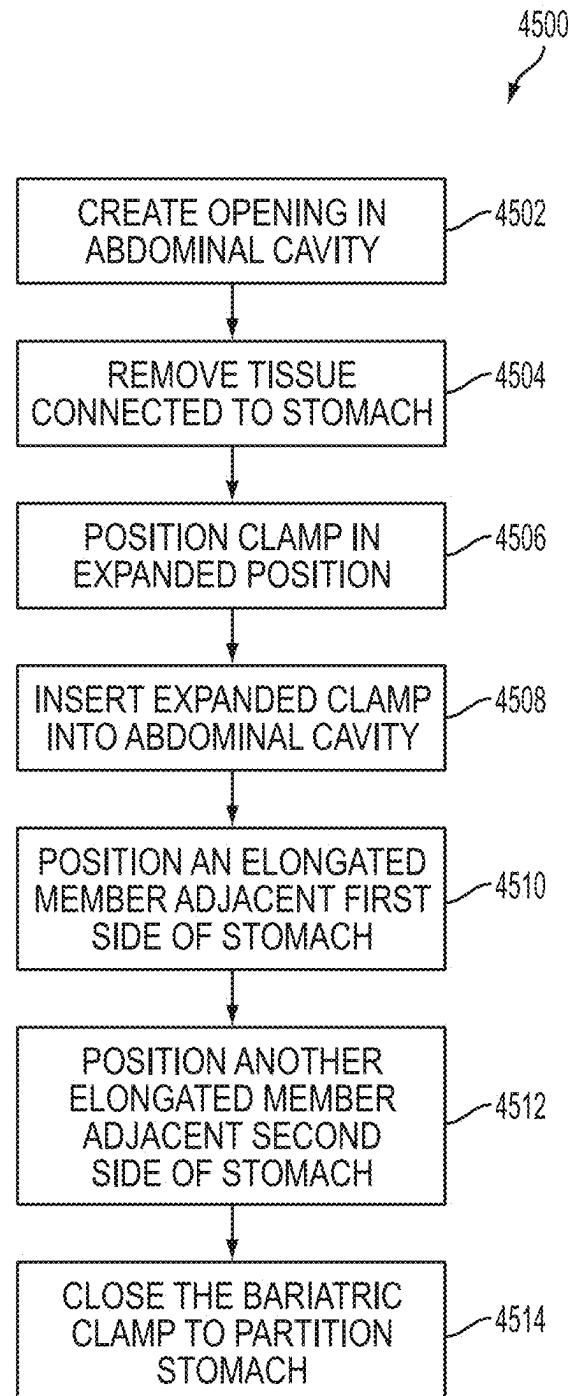


Figure - 45

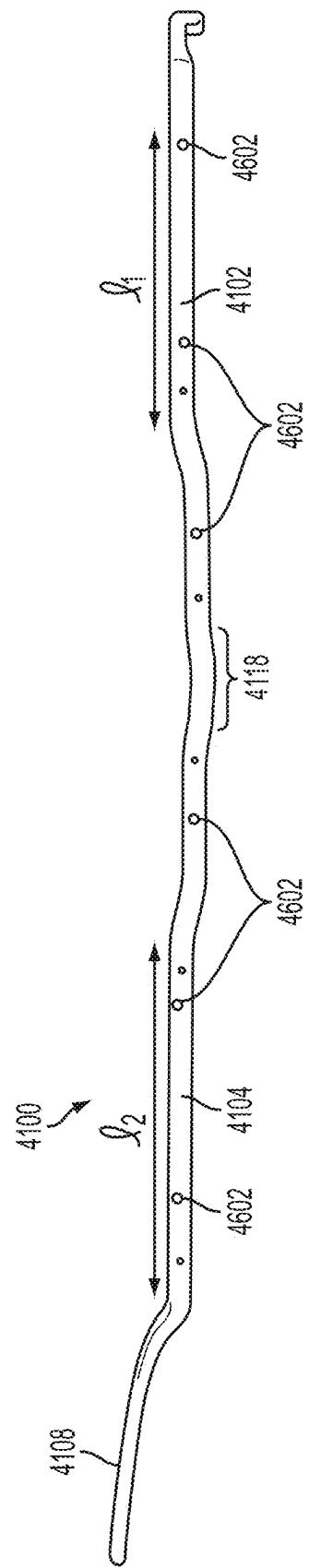


Figure - 46

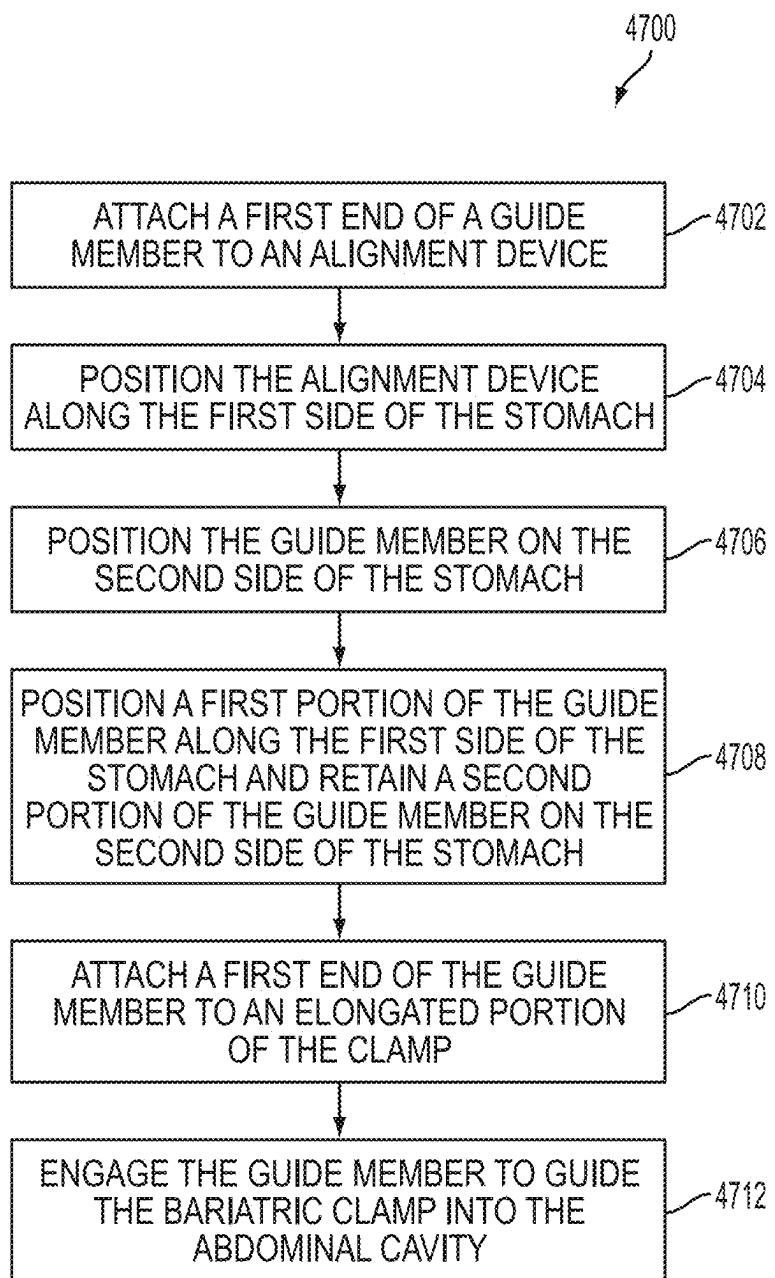


Figure - 47

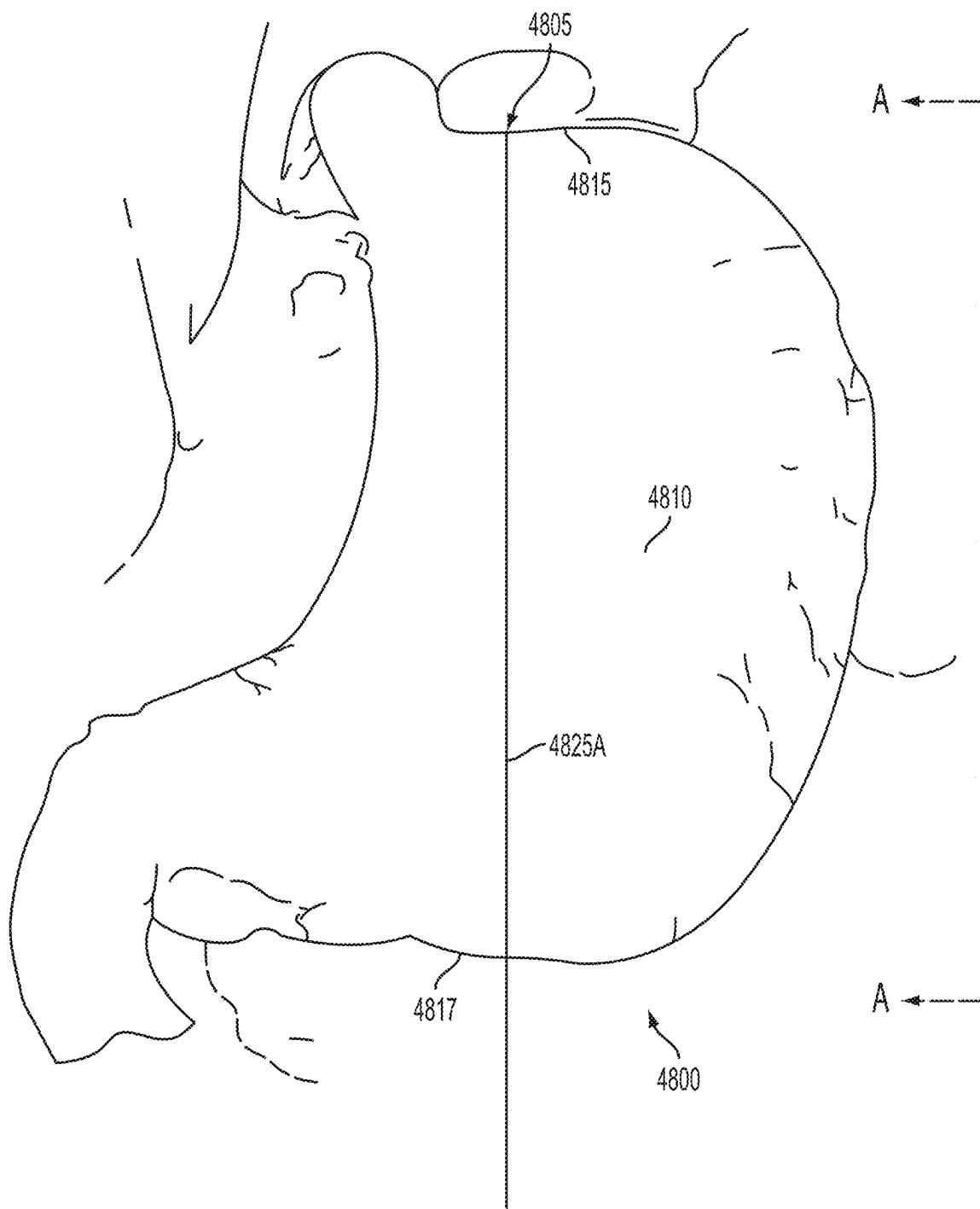


Figure - 48(a)

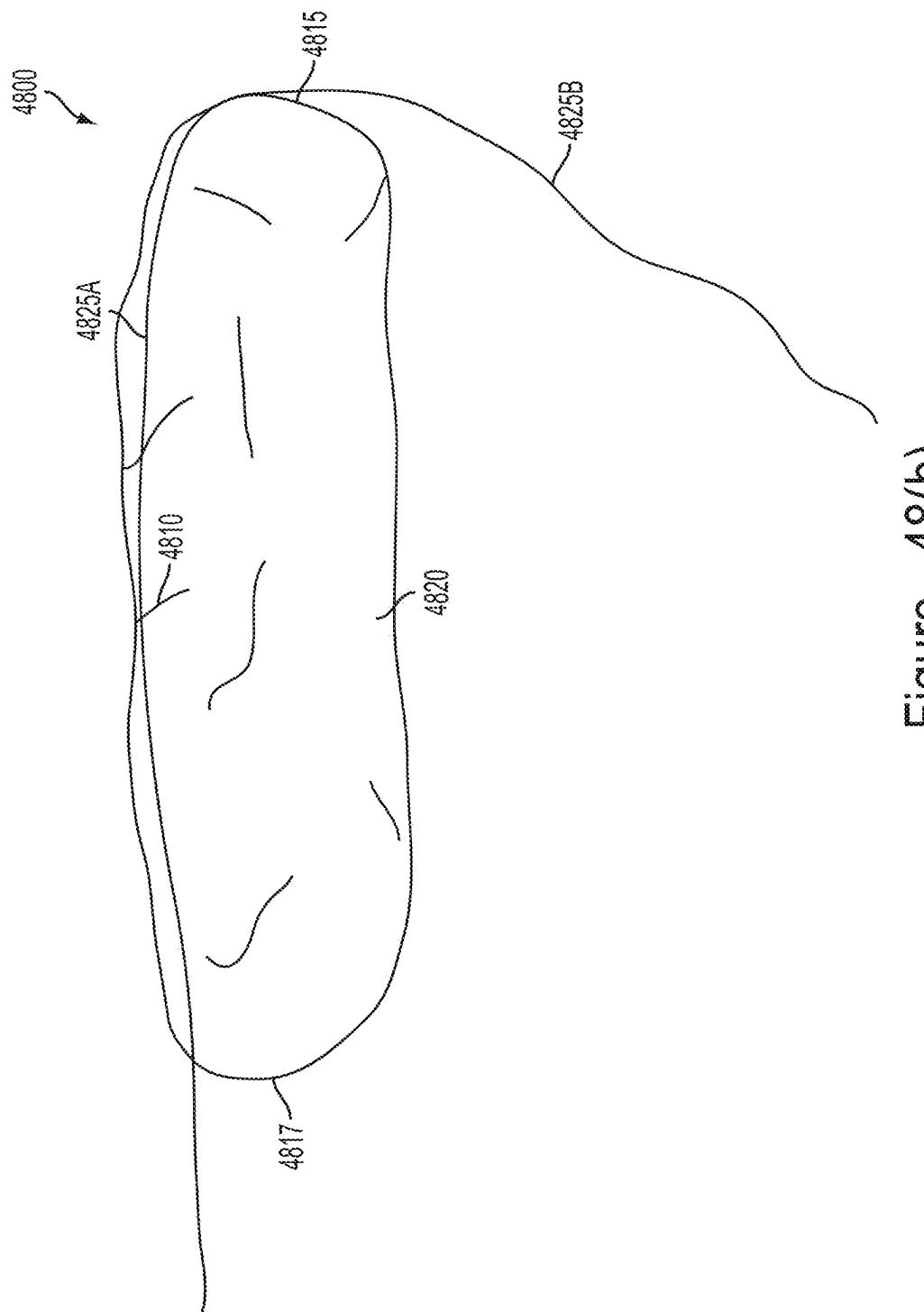


Figure - 48(b)

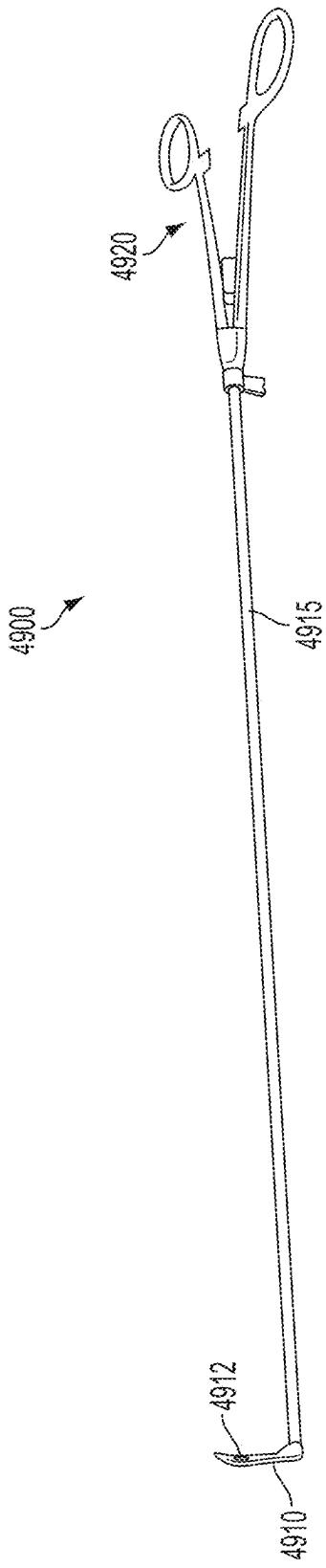


Figure - 49(a)

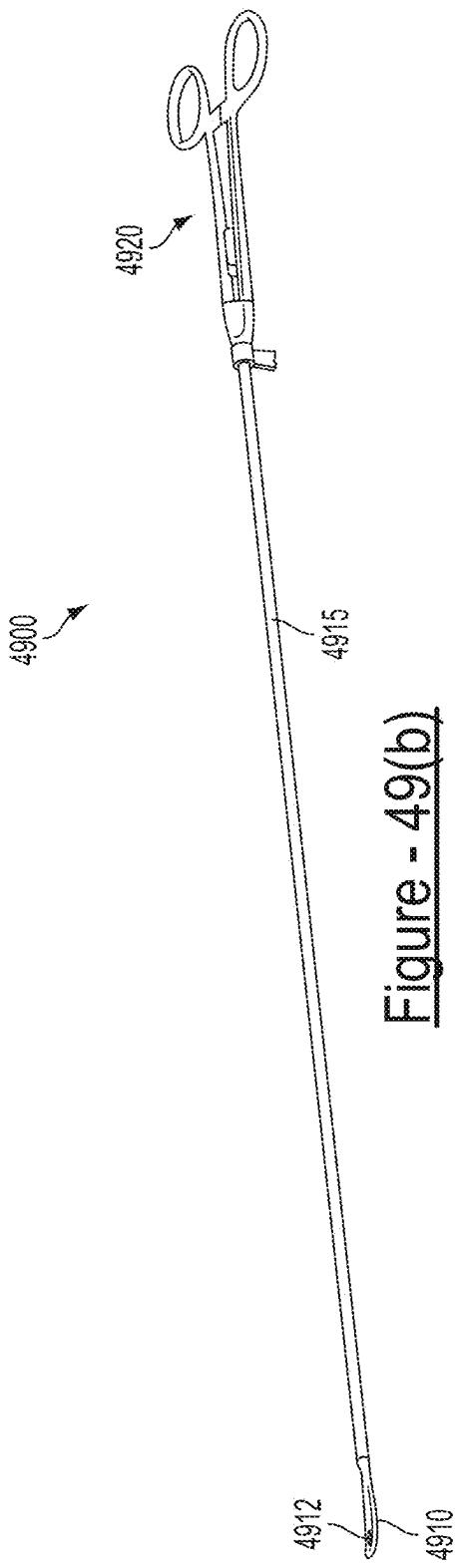


Figure - 49(b)

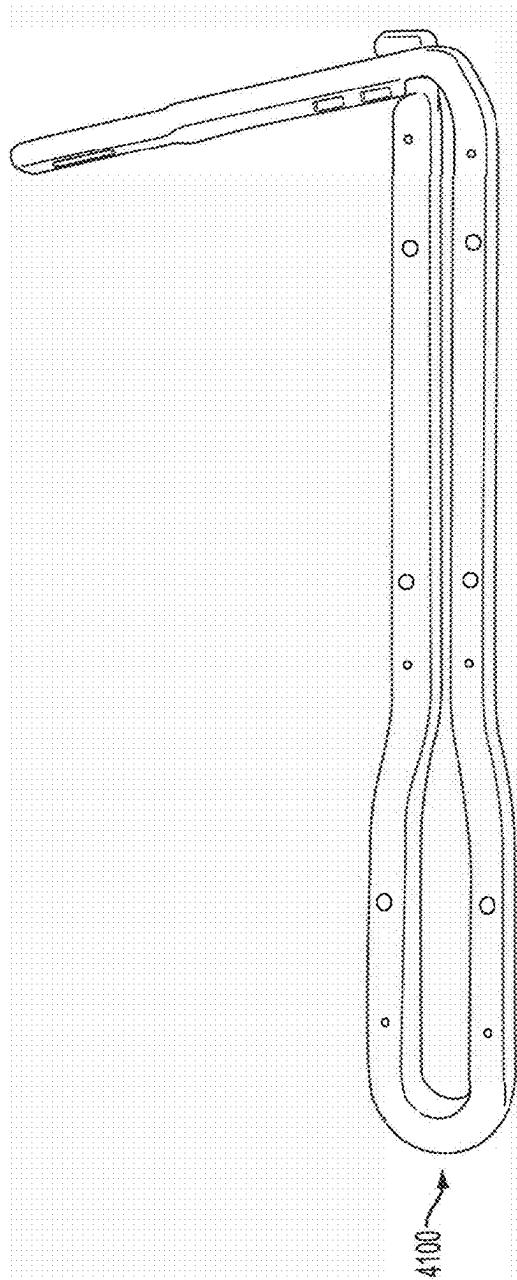


Figure - 50(a)

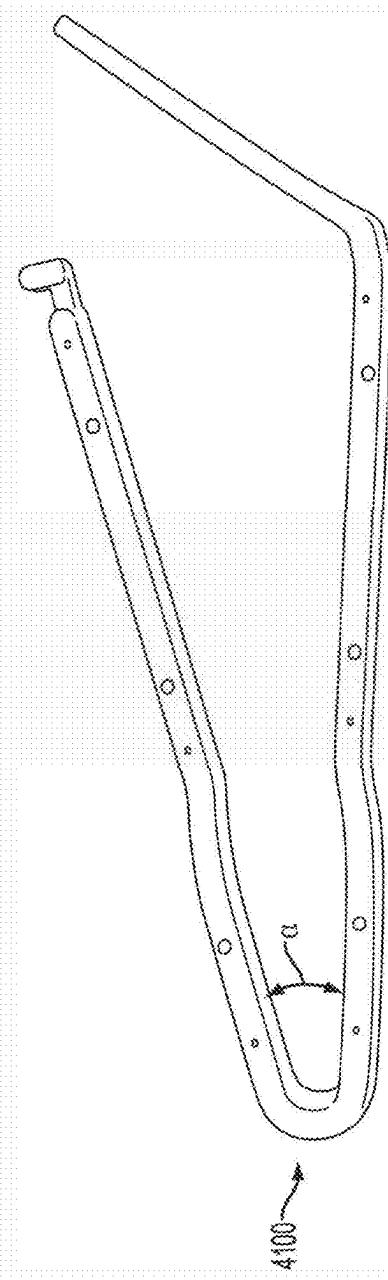


Figure - 50(b)

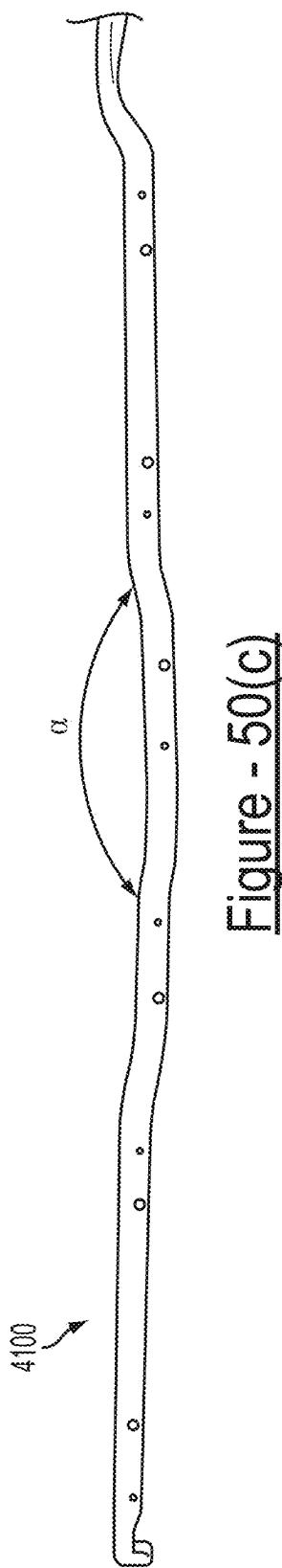


Figure - 50(c)

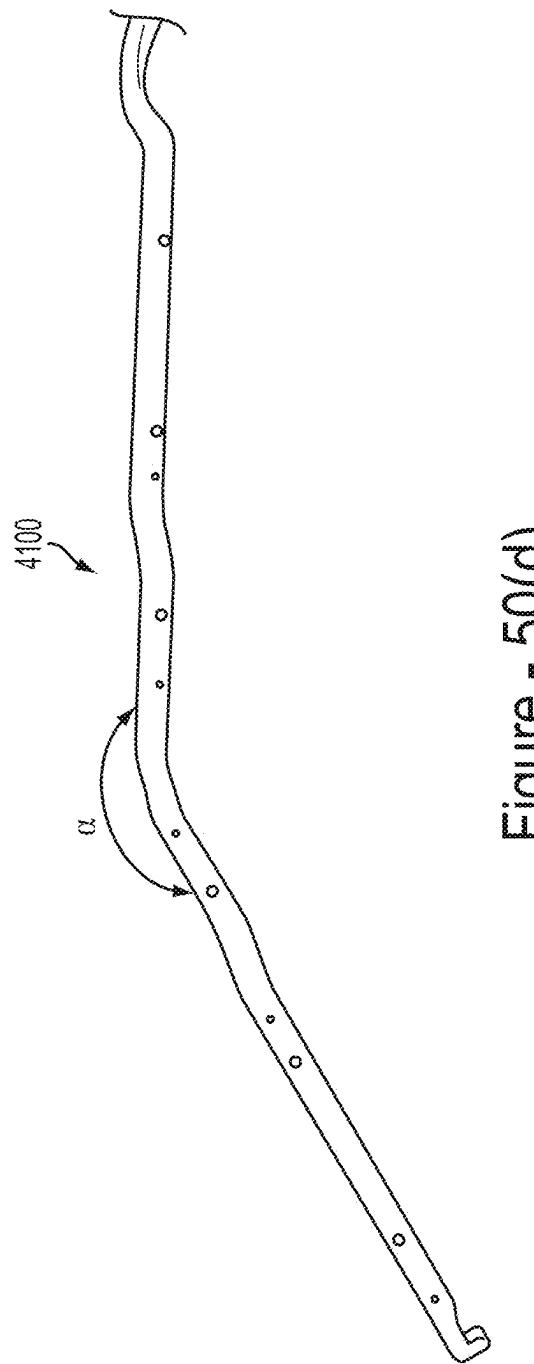


Figure - 50(d)

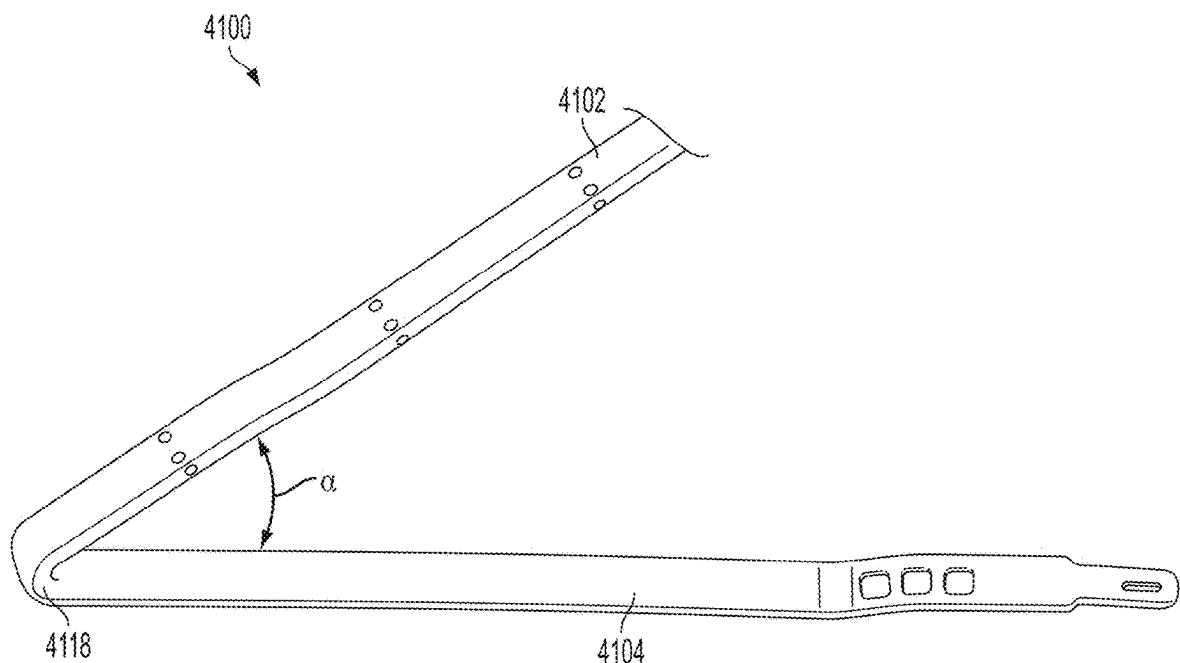


Figure - 51(a)

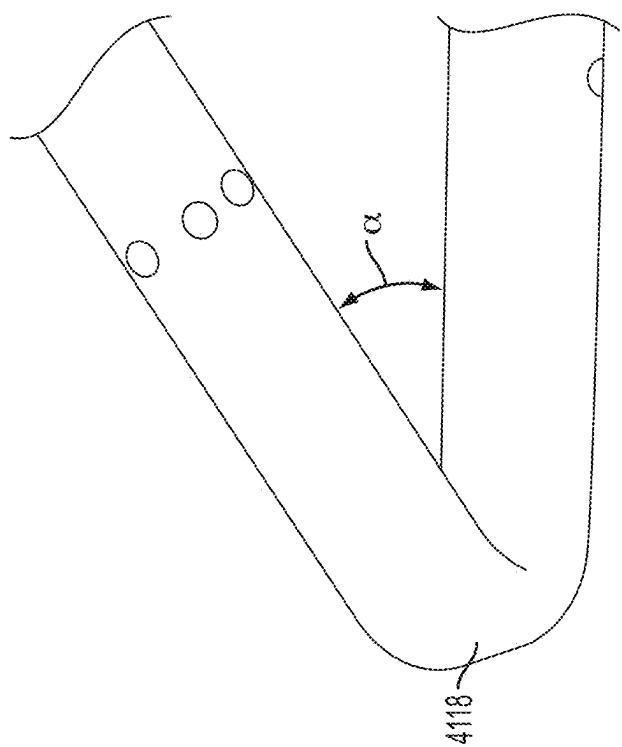


Figure - 51(c)

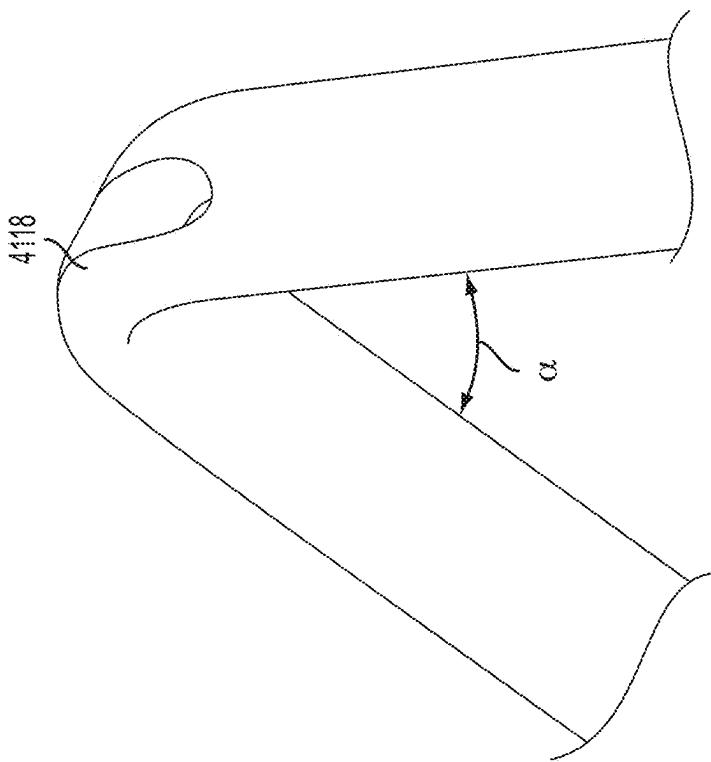


Figure - 51(b)

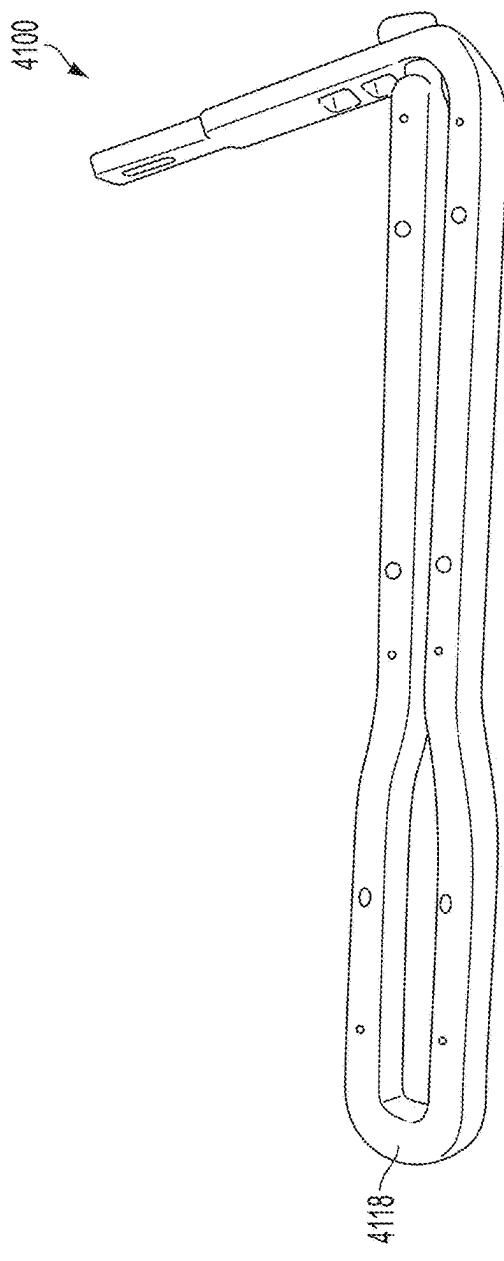


Figure - 52(a)

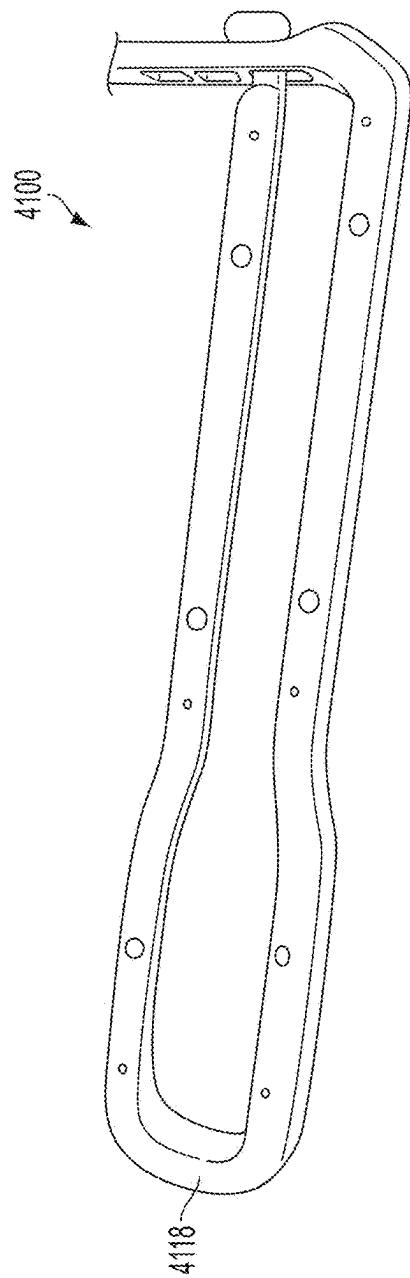


Figure - 52(b)

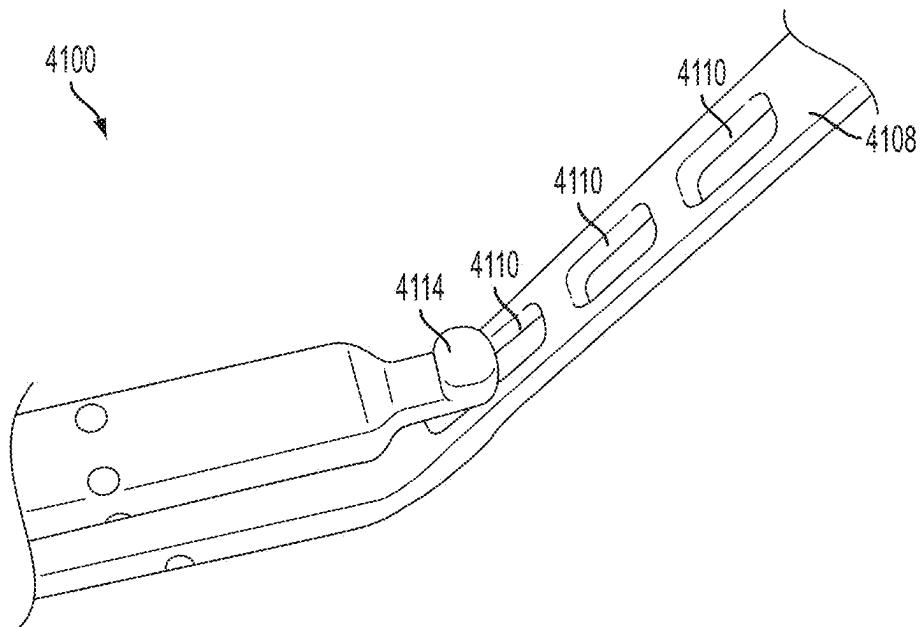


Figure - 53(a)

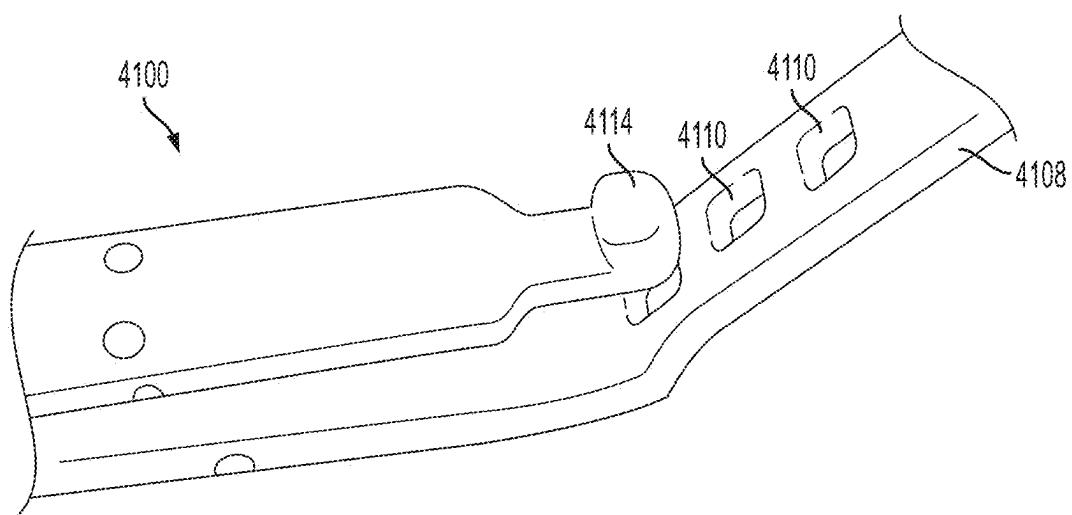


Figure - 53(b)

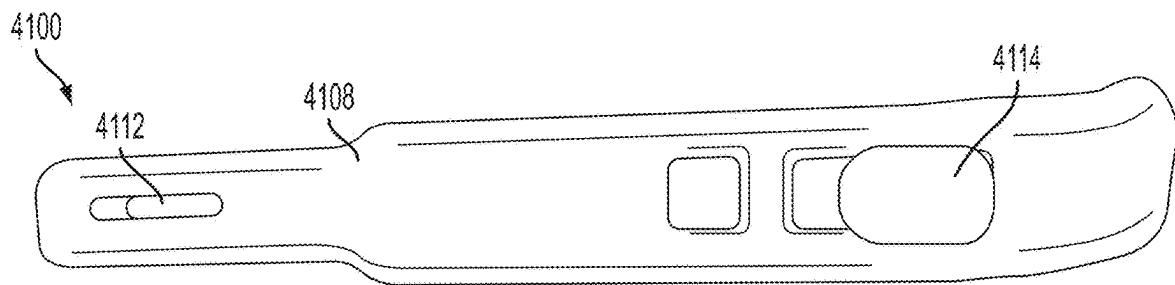


Figure - 53(c)

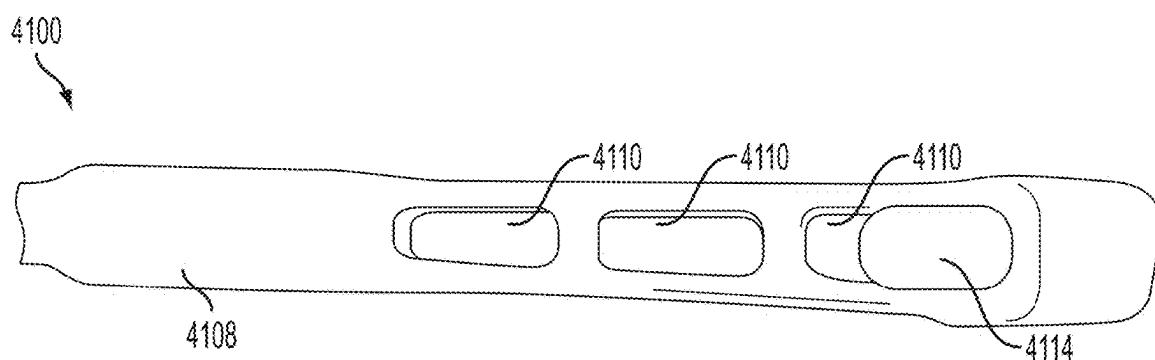


Figure - 53(d)

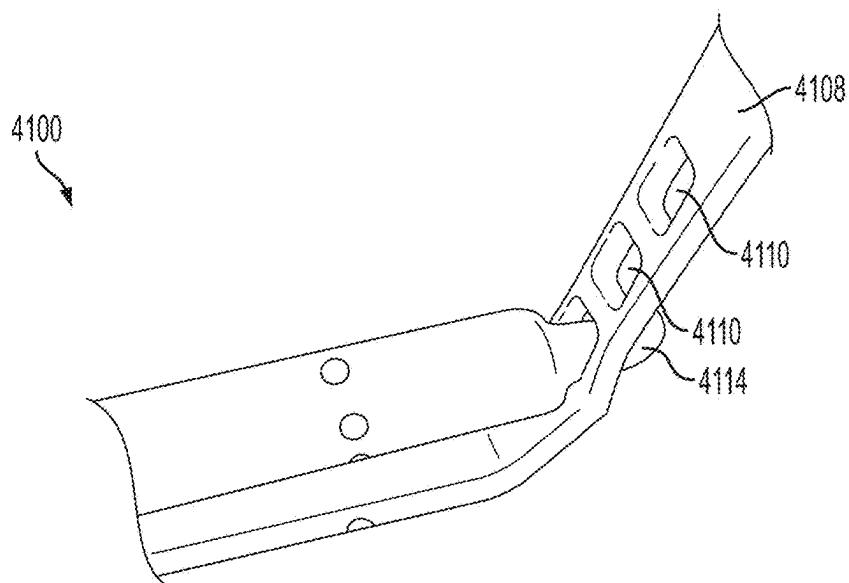


Figure - 53(e)

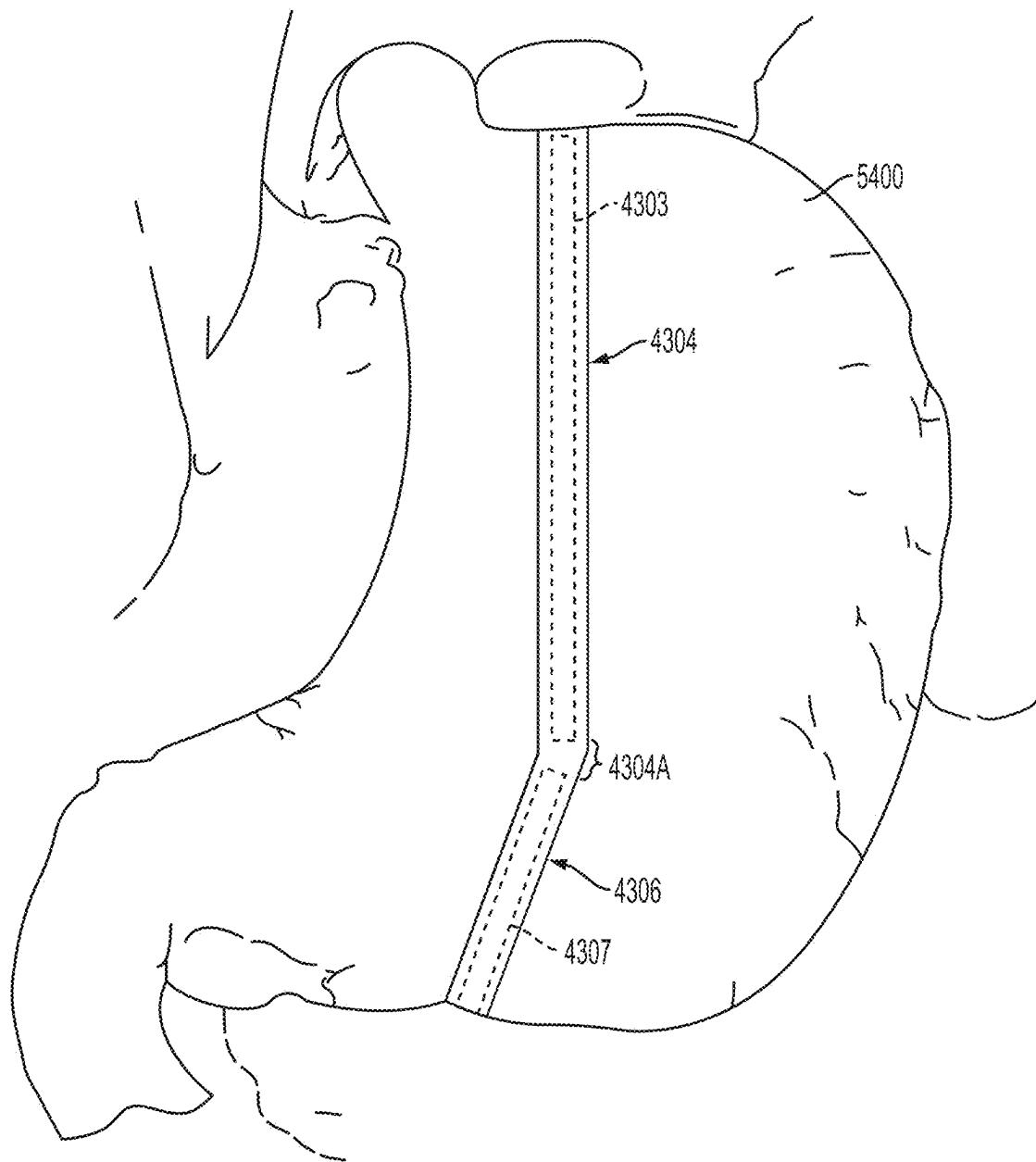


Figure - 54(a)

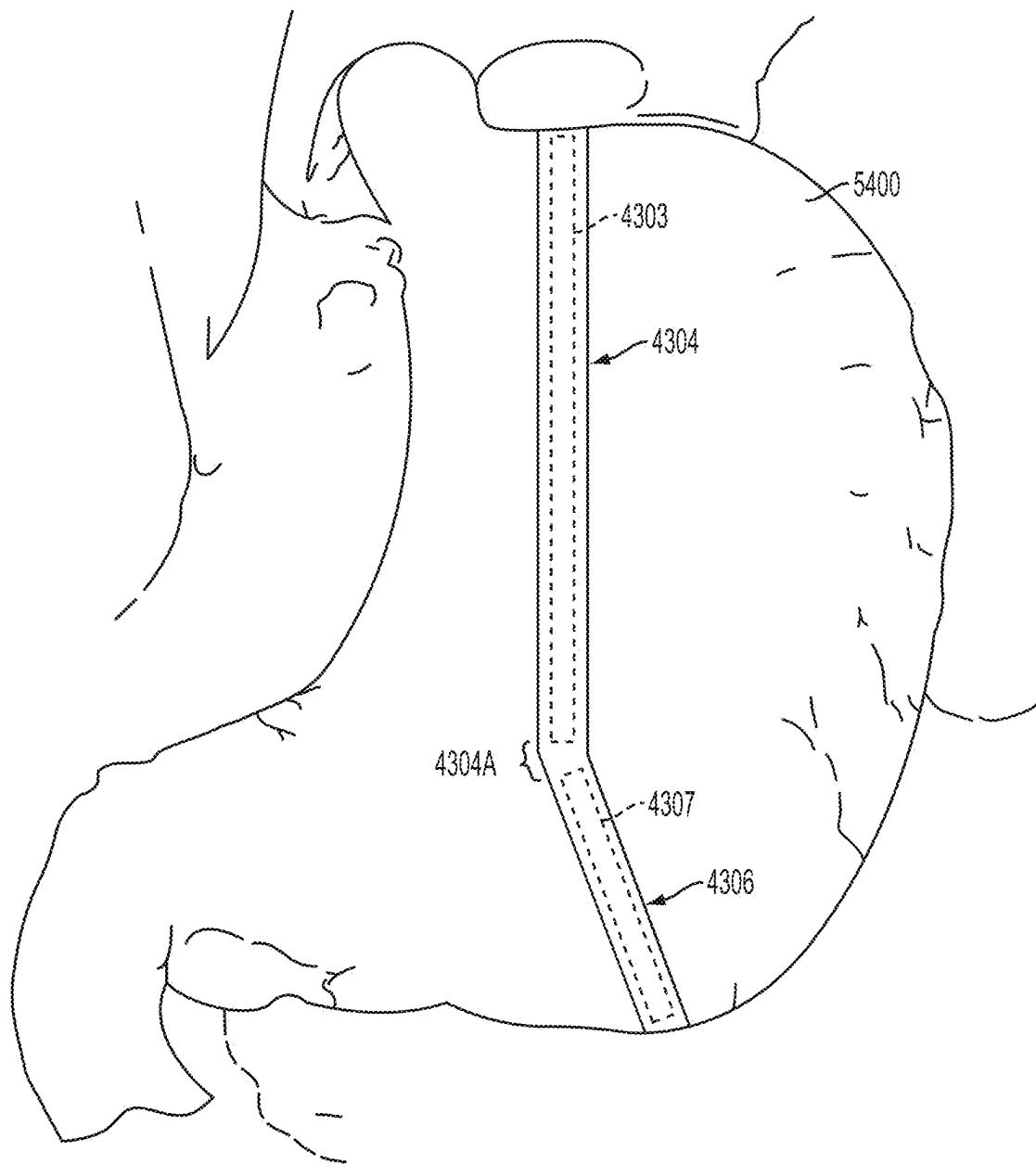


Figure - 54(b)

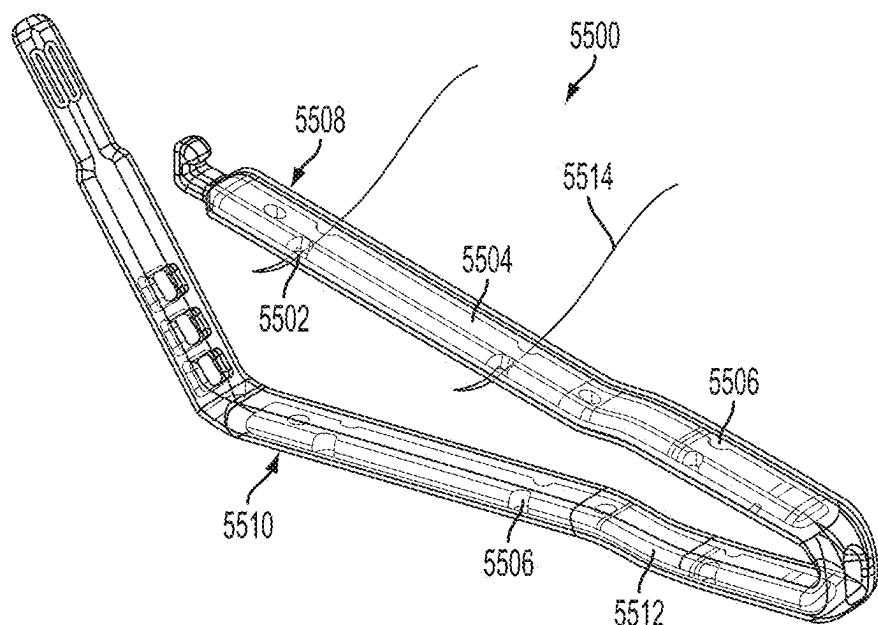


Figure - 55

## POLYMER OVERMOLDED BARIATRIC CLAMP AND METHOD OF INSTALLING

### CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] Pursuant to 35 U.S.C. § 119 (e), this application is a continuation of U.S. patent application Ser. No. 18/739,672, entitled “Polymer Overmolded Bariatric Clamp and Method of Installing,” filed Jun. 11, 2024, which claims priority from U.S. patent application Ser. No. 17/403,645, entitled “Polymer Overmolded Bariatric Clamp and Method of Installing,” filed Aug. 16, 2021, and naming Jesús R. Armenteros, Moises Jacobs, and C. Kenneth French as inventors, which claims priority from U.S. patent application Ser. No. 16/664,447, entitled “Polymer Overmolded Bariatric Clamp and Method of Installing,” filed Oct. 25, 2019, and naming Jesús R. Armenteros, Moises Jacobs, and C. Kenneth French as inventors, which claims priority from U.S. patent application Ser. No. 13/963,998, entitled “Polymer Overmolded Bariatric Clamp and Method of Installing,” filed Aug. 9, 2013, and naming Jesús R. Armenteros, Moises Jacobs, and C. Kenneth French as inventors, which claims priority from U.S. Provisional Patent Application No. 61/681,601, entitled “Polymer Overmolded Bariatric Clamp and Installation Tool,” filed Aug. 9, 2012, naming Jesús R. Armenteros, C. Kenneth French, Moises Jacobs, and Garrett Barker as inventors, and U.S. Provisional Patent Application Ser. No. 61/798,128, entitled “Polymer Overmolded Bariatric Clamp and Method of Installing,” filed Mar. 15, 2013, naming Jesús R. Armenteros, C. Kenneth French, Moises Jacobs, and Garrett Barker as inventors, the disclosures of which are incorporated herein by reference in their entirety.

### FIELD

[0002] The present disclosure relates generally to surgical clamps and surgical clamp installation tools.

### BACKGROUND

[0003] The statements in this section merely provide background information related to the present disclosure and may not constitute prior art.

[0004] Recently, there has been increased interest in employing surgical clamps to partition sections of a stomach. An example of a bariatric surgical clamp can be found in Jacobs et al., U.S. patent application Ser. No. 11/984,452, Jacobs et al., U.S. patent application Ser. No. 11/797,537 and Jacobs et al. U.S. patent application Ser. No. 13/017,666. The aforementioned patent applications are incorporated by reference herein in their entirety for any purpose.

### SUMMARY

[0005] In one embodiment, a method for installing a bariatric clamp having at least a first elongated portion, a second elongated portion, and a flexible hinge, the method comprising: creating an opening in an abdominal cavity of a patient to access a stomach of the patient; removing tissue connected to an exterior surface of the stomach adjacent areas where the bariatric clamp is to be positioned; positioning the bariatric clamp in an open position such that a first end of the first elongated portion and a first end of the second elongated portion are open relative to one another, and a second end of the first elongated portion and the second end of the second elongated portion are linked

through one or more members that include the flexible hinge; inserting the bariatric clamp into the abdominal cavity through the opening while the clamp is positioned in the open position, and wherein the first elongated portion and the second elongated portion of the bariatric clamp separately pass through the opening in the abdominal cavity; positioning the second elongated portion of the bariatric clamp adjacent a portion of the exterior surface of a second side of the stomach; positioning the first elongated portion of the bariatric clamp adjacent a portion of the exterior surface of a first side of the stomach; and closing the bariatric clamp to apply pressure to the portions of the exterior surfaces of the stomach to at least partially partition a cavity inside the stomach.

[0006] In another embodiment, a bariatric clamp having a polymer overmold comprises: a first elongated portion having a first substrate member disposed, at least partially, within the first elongated portion, the first elongated portion including a first adjustable portion; a second elongated portion having a second substrate member disposed, at least partially, within the second elongated portion, the second elongated portion including a second adjustable portion; a bight portion having a first bight substrate member, a second bight substrate member and a flexible hinge formed from the polymer overmold at a proximal end of the bariatric clamp, the bight portion joining the first and second elongated portions; a fastener portion disposed towards a distal end of the second elongated portion; and an engagement portion disposed towards a distal end of the first elongated portion, the engagement portion operable to engage the fastener portion to retain the surgical clamp in a closed position.

[0007] Another embodiment provides a bariatric clamp comprising: a first elongated member having an engagement portion disposed at a first end of the first elongated member and a first receiving portion disposed towards a second end of the first elongated member; a second elongated member having a fastener portion disposed at a first end of the second elongated member and a second receiving portion disposed towards a second end of the second elongated member; and a bight member having a first retention feature operable to couple the bight member to the first receiving portion of the first elongated member, and having a second retention feature operable to couple the bight member to the second receiving portion of the second elongated member; wherein the first elongated member and second elongated member comprise a partition-forming section of the bariatric clamp, and the bight member comprises a passage-forming section of the bariatric clamp.

[0008] In yet another embodiment, the present disclosure provides a bariatric clamp having a polymer overmold, the bariatric clamp comprising: a first elongated portion having a first adjustable substrate member disposed, at least partially, within the first elongated portion; a second elongated portion having a second adjustable substrate member disposed, at least partially, within the second elongated portion; a bight portion having a flexible hinge formed from the polymer overmold at a proximal end of the bariatric clamp, the bight portion joining the first and second elongated portions; a fastener portion disposed towards a distal end of the second elongated portion; and an engagement portion disposed towards a distal end of the first elongated portion, the engagement portion operable to engage the fastener portion to retain the surgical clamp in a closed position.



[0059] FIG. 26 is a cross-sectional view of a proximal end of the silicone sleeve of FIG. 24;

[0060] FIG. 27 is a cross sectional view of a proximal end of FIG. 23;

[0061] FIG. 28 is a flow diagram illustrating a method of performing endoscopic surgery utilizing the silicone sleeve, clamp, and installation tool of FIGS. 13-27;

[0062] FIG. 29 is a perspective view of an embodiment of a one-piece surgical clamp comprised of first and second substrate members overmolded in a polymer material;

[0063] FIGS. 30(a) and 30(b) illustrate respective side and perspective views of the one-piece surgical clamp of FIG. 29, wherein the polymer material is illustrated semitransparent to show the first and second substrate members;

[0064] FIGS. 31(a) and 31(b) illustrate the respective first and second substrate members of the one-piece surgical clamp of FIG. 29;

[0065] FIG. 32 illustrates another embodiment of a one-piece surgical clamp comprised of first and second substrate members overmolded in a polymer material;

[0066] FIG. 33 is a perspective view of an embodiment of an installation tool used to install a one-piece surgical clamp;

[0067] FIGS. 34(a), 34(b) and 34(c) illustrate various views of yet another embodiment of a one-piece surgical clamp comprised of first and second substrate members overmolded in a polymer material;

[0068] FIG. 35 is a perspective view of yet another embodiment of a one-piece surgical clamp comprised of first and second substrate members overmolded in a polymer material;

[0069] FIG. 36 is a flow diagram illustrating an embodiment of a method for clamping an internal organ;

[0070] FIG. 37 is a flow diagram illustrating another embodiment of a method for clamping an internal organ;

[0071] FIG. 38 is a perspective view of an embodiment of a two-piece surgical clamp comprised of first and second substrate members, each overmolded in a polymer material;

[0072] FIGS. 39(a), 39(b) and 39(c) illustrate various views of the two-piece surgical clamp of FIG. 38;

[0073] FIG. 40 is a perspective view of another embodiment of a two-piece surgical clamp comprised of first and second substrate members, each overmolded in a polymer material;

[0074] FIGS. 41(a)-41(e) illustrate various views of an embodiment of a bariatric clamp;

[0075] FIGS. 42(a) and 42(b) illustrate an embodiment of an adjustable bariatric clamp in a retracted position and an extended position, respectively;

[0076] FIGS. 43(a) and 43(b) illustrate an embodiment of an adjustable bariatric clamp in a retracted position and an extended position, respectively;

[0077] FIGS. 44(a) and 44(b) illustrate an embodiment of an adjustable bariatric clamp having a ratchet feature, wherein the clamp is shown in a retracted position and an extended position, respectively;

[0078] FIG. 45 is a flow diagram illustrating a method of installing a bariatric clamp;

[0079] FIG. 46 illustrates the bariatric clamp of FIGS. 41(a)-41(e) in a substantially expanded position;

[0080] FIG. 47 is a flow diagram illustrating a method of inserting a bariatric clamp into the abdominal cavity of the patient;

[0081] FIGS. 48(a) and 48(b) illustrate various views of a patient's stomach;

[0082] FIGS. 49(a) and 49(b) illustrate various views of an example embodiment of an alignment device;

[0083] FIGS. 50(a), 50(b), 50(c) and 50(d) illustrate an embodiment of the disclosed bariatric clamp in various closed and opened positions;

[0084] FIGS. 51(a), 51(b) and 51(c) illustrate an embodiment of the disclosed bariatric clamp in various contorted positions;

[0085] FIG. 52(a) illustrates an embodiment of the disclosed clamp in a closed position, wherein the flexible hinge is in a compressed, or non-expanded position;

[0086] FIG. 52(b) illustrates an embodiment of the disclosed clamp in the closed position wherein the flexible hinge is stretched or expanded;

[0087] FIGS. 53(a)-53(e) illustrate various views of the engagement feature and fastener portion of an embodiment of the disclosed bariatric clamp;

[0088] FIG. 54(a) illustrates an embodiment wherein an embodiment of the disclosed bariatric clamp is installed on a stomach and first and second adjustable portions are hinged such that the bight portion is angled in a first direction relative to the first and second elongated portions;

[0089] FIG. 54(b) illustrates another embodiment wherein an embodiment of the disclosed bariatric clamp is installed on a stomach and first and second adjustable portions are hinged such that the bight portion is angled in a second direction relative to the first and second elongated portions; and

[0090] FIG. 55 illustrates an embodiment of the disclosed clamp having suturing needles embedded in the polymer overmolding.

[0091] For FIGS. 5-9, dimensions are given in inches. However, it should be understood that various embodiments are not limited to the dimensions provided. Such dimensions are purely illustrative.

[0092] For FIGS. 4(b), 4(c), 17(a)-17(d), 21, 23, and 24, broken lines indicate variability in length of the discontinuous portions.

#### DETAILED DESCRIPTION OF THE DRAWINGS

[0093] The following description is merely exemplary in nature and is not intended to limit the present disclosure, application, or uses. It should be understood at the outset that although an exemplary implementation of the present invention is illustrated below, the present invention may be implemented using any number of techniques, whether currently known or in existence. The present invention should in no way be limited to the exemplary implementations, drawings, and techniques illustrated below, including the exemplary design and implementations illustrated and described herein. Additionally, the drawings contained herein are not necessarily drawn to scale, and may be provided in a variety of different dimensions, shapes and configurations. Any provided dimensions are provided only to illustrate a particular exemplary implementation, and should in no way be construed to limit the present invention absent an explicit recitation of such dimensions and then only with respect to the claim or claims reciting the dimension or dimensions.

[0094] Referring to FIG. 1, an embodiment of a surgical clamp 100 (also referred to herein as a bariatric clamp) engages with an embodiment of a surgical clamp installation tool 102. In these embodiments, the clamp 100 and the installation tool 102 are designed for performing bariatric

surgery through a surgical trocar. The clamp 100, in a preferred embodiment, may be approximately fifteen to thirty centimeters in length to accommodate partitioning of a human stomach. To accommodate insertion through a trocar, the closed clamp 100 will preferably have a diameter or circumference less than fifteen millimeters over the entirety of its length or along the majority of its length. A non-handle section of the installation tool 102 intended for insertion through the trocar has a similar diameter or a smaller diameter. It is envisioned that other embodiments of the clamp and installation tool can be of other sizes. It is additionally envisioned that the clamp may be articulated in at least one plane to provide different angles and lengths of partition to the stomach. It is also envisioned that other embodiments of the clamp and installation tool can be used for clamping other parts of the human body and/or for clamping other types of bodies or structures. Finally, it should be understood that the installation tool 102 may be used to install embodiments of the surgical clamp other than those explicitly illustrated in the figures.

[0095] Referring to FIG. 2(a), the surgical clamp 100 has two elongated members 104A and 104B. A bight portion 106 joins the two elongated members at a proximal end of the clamp 100 and biases the two elongated members in an open position at a distal end of the clamp 100. As used herein, a bight is a loop, bend, hinge, corner angle, hollow, fold, or similar structure. In some embodiments, the bight portion has one or more engagement features, such as, for example, a slotted aperture 108 such as that shown in FIG. 2(b). It should be understood that, in some embodiments, the engagement feature(s) of the bight portion may be referred to as an attachment feature. A clasp mechanism, in one embodiment, has a male component 110 disposed on one of the two elongated members at the distal end, and a female component 112 disposed on the other of the two elongated members at the distal end.

[0096] Particularly to partially partition a stomach in performing bariatric surgery, spacing between the two elongated members 104A and 104B effects two or more clamp sections as best shown in FIG. 2(e). At least one of the sections is a partition forming section 105A located nearer the distal end of the clamp 100 than the proximal end of the clamp 100. At least another of the sections is a passage forming section 105B located nearer the proximal end of the clamp 100, such as near the bight portion 106, than the distal end of the clamp 100.

[0097] In order to reduce injury to the partitioned organ, a padding material 116 can be connected to one or more of the two elongated members. For example, padding material 116 can connect to the elongated member 104B at least at a location corresponding to at least part of the partition forming section. In some embodiments, the padding material can be composed predominantly of silicone or fully of silicone, or other polymer material. It is also envisioned that the opposing limbs of the clamp may be fitted with magnets to facilitate closure.

[0098] In some embodiments, the engagement feature at the proximal end of the clamp 100 can be a slotted aperture 108 as shown in FIG. 2(b) having a width and a length larger in size than the width. The length of the slotted aperture can be oriented perpendicular or angled with reference to a longitudinal axis of the clamp 100. It is envisioned that other types engagement features can be employed, such as a socket, a loop, a hook, a clasp, a string, magnet, etc.

[0099] In some embodiments, the male component 110 of the clasp at the distal end of the clamp can be an end of the elongated member 104A that flares away from a longitudinal axis of the clamp when the clamp is forced to a closed position. Accordingly, the female component 112 can be a loop attached to the end of the elongated member 104B and disposed to engage the male component 110 of the elongated member 104A when the clamp is forced to the closed position. This can be seen more clearly in connection with FIG. 2(e). It is envisioned that other types of clasp components can be employed, such as those found in a hinge, such as a living hinge, hook and loop, spring ring, lobster or trigger, toggle, tube, bolt and bolt hole, screw and threaded aperture, or any other type of closure arrangement.

[0100] Returning to FIG. 1 and referring generally to both FIG. 1 and FIG. 2, the clamp 100, in use, engages with the installation tool by the slotted aperture 108. For example, the installation tool 102 has an elongated member, such as a pull-rod 138, having a proximal end and a distal end that has an engagement feature. The distal end of the elongated member of the installation tool 102 engages with the proximal end of the clamp 100 through the slotted aperture 108 of the bight portion 106. In some embodiments, the engagement feature takes the form of a T-bar 118. This T-bar 118 is sized and shaped to allow insertion thereof through the slotted aperture 108 to engage the clamp 100. It is envisioned that another engagement features may have an X-shape, and be sized for insertion through an X-shaped slot in the clamp. Other shapes are also possible.

[0101] The installation tool 102 may include a lever radially engaged with the pull-rod at its proximal end at a handle 122 that may be configured as a thumbwheel 120 that extends out of the handle 122 of the installation tool 102 through an aperture. While the T-bar 118 is inserted through the slotted aperture 108, actuating the thumbwheel 120 can cause the T-bar 118 to rotate ninety degrees as illustrated in one embodiment from a first position shown in FIG. 2(c) and in a second position as shown in FIG. 2(d).

[0102] At this point, retracting the pull rod, which may be achieved by squeezing a trigger 128 to retract the pull rod, forces the proximal end of the clamp 100 up against and progressively further between guide members of the surgical clamp installation tool 102, such as a pair of wedges 124A and 124B, formed in the articulating head 126 of the installation tool 102 (see FIG. 2(b)). A curvature or incline imparted to the articulating head of the installation tool 102 by the pair of wedges can be keyed to a curvature or incline of the bight portion 106 of the clamp 100 in such a way that fully or more fully retracting the pull-rod forces the normally open clamp 100 to a closed position such as that shown in FIG. 2(e).

[0103] Turning to FIGS. 2(f)-2(k), the various clamp features can be readily appreciated. These features include bight portion 106, slotted aperture 108, male component 110, female component 112, and padding material 116. It should be readily understood that the padding material 116 can be configured as a pair of sleeves as shown, but that other configurations may also be employed. Moreover, non-linear shapes may be utilized for various types of applications in clamping various types of organs, as desired.

[0104] Turning now to FIG. 3 and referring generally to FIG. 1 and FIG. 3, retraction of the pull-rod of the installation tool 102 is accomplished by actuation or movement of another lever or trigger that is engaged to the proximal end

of the pull-rod, such as through an axial engagement. This lever can be configured as the trigger 128 that extends out of the handle 122 through an aperture or slotted opening. The shape of the handle and disposition of the trigger are, preferably, ergonomically configured to allow the surgeon to hold the installation tool parallel to the ground near waist level to grip the handle 122 and the trigger 128 in one hand. The thumbwheel 120 is disposed to be within easy reach of the thumb of that hand to facilitate holding of the clamp 100 by the surgeon in the other hand while engaging the clamp to the articulating head 126. The thumbwheel 120 may be conveniently adjusted to rotate the T-bar 118 to a desired position to lock the T-bar 118 to the clamp 100 at the bight portion 106 through the slotted aperture 108. In one embodiment, the thumbwheel 120 may rotate the T-bar 118 by ninety degrees.

[0105] Once the surgeon has rotated and retracted the pull-rod using T-bar 118 and trigger 128 with one hand, the surgeon's other hand becomes free for other tasks, such as actuating yet another lever protruding from the handle 122 and configured, for example, as a dial 130. With the clamp 100 pulled closed or partially closed against the pair of wedges, the head 126 can be articulated from side to side by rotating this dial 130. The motion of the articulating head 126 through rotation of the dial 130 is illustrated in one embodiment in the top view of the installation tool 102 in FIG. 3(b) at arrow 300 showing a range of motion or articulation in one embodiment.

[0106] Turning now to FIG. 4, in some embodiments, turning the dial 130 can turn a hub 132 or connector inside or adjacent the handle 122 that is connected to a pair of guidelines 134A and 134B. These guidelines 134A and 134B, together with pull-rod 138, may extend through an elongated, rigid sleeve, such as a cylindrical tube 136, for connection on either side of a swivel mount of the articulating head 126. It is envisioned that the guidelines can be flexible or rigid, that the cylindrical tube 136 can be rigid or semi-rigid, and that the pull-rod 138 can be rigid or semi-rigid. By semi-rigid, it is meant that the pull-rod 138 can be flexible or partially flexible at least in the plane of articulation along at least part of its length near the distal end of the installation tool 102, but still axially and rotationally rigid or semi-rigid along its length. Thus, when the installation tool 102 and clamp 100 are held parallel to the ground, the pull-rod 138 can be rotated and retracted by actuation of the thumbwheel 120 and trigger 128, and the head 126 can be articulated in a plane orthogonal to the gravity vector by manipulation of the dial 130. The plane of articulation may be adjustable in certain embodiments, or may be set in a desired plane that is not orthogonal to the gravity vector.

[0107] Turning now to FIG. 5, other embodiments of the clamp 200 and installation tool 202 can include a clamp 200 made of multiple pieces, a longer main tube 204, and a thumb lever 206 on the dial 130 to articulate the head of the tool 102 that is attached to the clamp 200. In some embodiments, the clamp 200 can be a three-piece clamp. A ratchet release 208 can also be provided on the installation tool 202 that, when pressed, allows the pull rod to extend, which in turn will release the clamp 200 allowing it to reopen. In other words, as the surgeon presses on the trigger 210, causing the pull-rod to retract and the clamp 200 to close, a ratchet mechanism catches the trigger 210 in the pressed-in posi-

tion. Thus, the pull-rod will remain retracted and clamp 200 will not reopen even if the surgeon releases pressure on the trigger 210.

[0108] Turning now to FIG. 6, and referring generally to FIGS. 6A-6D, one piece of a three-piece clamp can be a rigid member 212 having a male clasp end 214. As will be described further below with reference to FIG. 9, this rigid member 212 serves as one of the elongated members of the clamp 200 for forming the partition that divides the stomach. It can be made of plastic, metal, or any other rigid material. An example material is hardened titanium. FIG. 6(c) demonstrates an exemplary contour of male clasp end 214, while FIG. 6(d) demonstrates an exemplary contour rigid member 212. It should be readily understood that the exemplary contour of rigid member 212 renders it concave on an inner surface to be disposed toward an outer surface of an organ to be clamped, and convex on an outer surface for engagement with a spring component. However, other shapes may be used as desired.

[0109] Turning next to FIG. 7, and referring generally to FIGS. 7A-7D, another piece of the three-piece clamp can be a rigid member 216 having a female clasp end 218 that includes a hinged loop 220. As will be described further below with reference to FIG. 9, this rigid member 216 serves as one of the elongated members of the clamp for forming the partition that divides the stomach. It can be made of plastic, metal, or any other rigid material. An example material is hardened titanium. Similarly, the loop 220 can be made of various materials, an example of which is titanium wire.

[0110] Turning next to FIG. 8, and referring generally to FIGS. 8A-8D, a third piece of the three-piece clamp can be a spring member 222 having a slotted bight portion 224. As will be further described below with reference to FIG. 9, the spring member engages with the rigid members to form the clamp and provides the bight portion that permits formation of a passage between the two partitioned regions of the clamped stomach. It can be made of plastic, metal, or any other springy material. An example material is spring tempered titanium.

[0111] Turning now to FIG. 9, and referring generally to FIGS. 9A-9D, the three-piece clamp can be assembled by engaging the rigid members 212 and 216 to the spring member 222. For example, the rigid members can be welded or coupled to arms of spring member at various locations 226. In one embodiment, the rigid members 212 and 216 can be attached to interior surfaces of the arms of spring member 222, with the loop 220 arranged to hinge towards and engage the male clasp end 214 of the distal end of rigid member 212. Thus, the rigid members 212 and 216 are employed to form a partition, while the spring member 222 forms a passage between the partitioned regions of an organ or body as shown in FIG. 10. These rigid members 212 and 216 may be of non-uniform thickness to accommodate gradual closing of the clamp from the proximal end towards the distal end in such a manner that a non-uniform thickness of an organ, such as walls of a stomach, can be clamped without injury. Alternatively or additionally, sleeves of padding material can be slid over the arms of the clamp, and the padding material can be of non-uniform thickness as desired. It is envisioned that rigid members 212 and 216 and padding material of varying lengths, contours, and thicknesses may be provided to accommodate needs of different patients as desired.

[0112] Turning now to FIG. 10, some embodiments of the surgical clamp installation tool can be used to install the clamp 100 within an abdominal cavity in order to perform bariatric surgery. In particular, the clamp can be positioned, closed, and latched to partition the stomach into a small vertical portion or pouch 500 and an excluded section 502. The vertical pouch 500 receives food at 504, but the food is not able to enter the excluded section 502. Using the installation tool 102 (or 202) to engage with the bight portion 106 of the clamp 100, the clamp 100 may be installed in a substantially vertical position on the stomach in one embodiment. That is, if the human patient having the clamp 100 installed were to stand upright, the longitudinal axis of the clamp 100 would be substantially parallel to the gravity vector. Thus, a passage forming section formed in the bottom of the stomach by the clamp allows gastric juices to flow at 506 from the excluded section 502 into the vertical pouch 500.

[0113] Turning to FIG. 11, a method for clamping an internal organ can include inserting a surgical clamp through an opening into a body of a living organism at block 150. Then the two elongated members of the surgical clamp are positioned on opposite sides of an internal organ of the living organism at block 152. At block 154, closing and latching the surgical clamp to partition a cavity inside the internal organ includes clamping the exterior of the internal organ with the two elongated members.

[0114] As mentioned above, the internal organ can be a human stomach. In this case, closing and latching the clamp can include installing the clamp in a substantially vertical or angled position with a passage forming section of the clamp located towards a bottom of the stomach. This positioning can create a small, vertical stomach pouch and thereby limit the intake of food into an excluded section or portion of the stomach, but still allow gastric juices from the excluded portion of the stomach to flow into the vertical stomach pouch. This partitioning can alter the production of hormones, enzymes and chemicals that affect metabolism, energy levels, hunger, digestion, and absorption of nutrients that are affected by exclusion of gastric fundus and body of the stomach by the partitioning. Sheathing the elongated members of the clamp in silicone padding material along a majority of their length is intended to reduce trauma and/or necrosis of the stomach or other internal organ and enable successful reversal of the surgery. Thus, the method can further include reversing the surgery by removing the clamp.

[0115] Inserting the surgical clamp can include performing natural orifice transluminal endoscopic surgery (NOTES). Alternatively, or additionally, it can include performing a combination of NOTES and an assistant trocar placed into an abdominal cavity. This combination can include two or more of a conventional, laparoscopic, NOTES, and one port technique. The NOTES technique can include at least one of transgastric, transvaginal, transrectal, transcolonic, or combinations thereof. The one port technique is used for the introduction of several instruments, and encompasses a one port abdominal (including umbilical), perineal, retroperitoneal approaches, or combinations thereof.

[0116] Turning to FIG. 12, a method for clamping an internal organ can include engaging a surgical clamp to a head of a surgical clamp installation tool at block 160. At block 162, the surgical clamp installation tool can be employed to close the clamp and insert the clamp through an

opening in a body cavity of a living organism. Then the tool can be employed at block 164 to reopen the clamp and to position elongated members of the clamp on opposite sides of an internal organ within the body cavity. Next, at block 166, the tool can be employed to close the clamp upon the internal organ and thereby partition a cavity inside the internal organ. The limbs, arms, or elongated members of the clamp close in such a fashion as causing a gradual diminishing space between the two limbs, as the space opening extends proximally, accounting for the different thickness of the stomach. The clamp closes in a fashion that exerts enough pressure to maintain the opposite walls closed to each other without creating damage/trauma/ischemia to the stomach or other organ walls themselves. Then at block 168, the clamp can be latched to fix it in position to partition the internal organ and the cavity inside the internal organ. Also, at block 170, the clamp can be disengaged from the head of the surgical clamp installation tool, and the tool can be retracted from the body cavity at block 172. It is envisioned that the clamp may be configured to latch automatically when the clamp is fully closed. Alternatively, the tool may first be disengaged and removed, and the clamp subsequently latched using an additional tool. Moreover, additional steps may be employed to secure the clamp in place, such as using sutures.

[0117] As already described above, padding material can be employed on surfaces of the elongated members of the surgical clamp to reduce damage to the internal organ that would prevent reversal of the surgical procedure. In other embodiments, the thickness or surface contour of the elongated members or arms of the surgical clamp may be provided to align with the particular organ or body being clamped so as to provide the desired pressure or force at each location of the organ or body being clamped. Additionally, engaging the surgical clamp to the head of the surgical clamp installation tool may include passing a T-bar adjacent the end of a pull rod of the installation tool through a slotted aperture formed in a bight portion of the clamp, and rotating the T-bar using a lever or dial. Also, employing the surgical clamp installation tool to close and reopen the clamp may include operating a lever or trigger on a handle of the installation tool to pull and release the pull rod. Further, employing the surgical clamp installation tool to position the elongated members of the surgical clamp may include manipulating a dial on a handle of the installation tool to articulate the head from side to side in a desired plane(s).

[0118] Turning now to FIG. 13, another embodiment of a surgical clamp 600 and surgical installation tool 602 is similar in structure and function to those embodiments described above. One notable difference from the embodiments previously described is that the articulating head 604 of the surgical installation tool 602 is keyed with a curvature or radius configured to hold the clamp 600 securely in place while permitting the clamp 600 to remain in an open position. This configuration permits a surgeon holding the installation tool 602 in one hand to hold the clamp 600 securely in the articulating head 604 of the tool 602 while pressing the distal ends of the clamp 600 together with the other end for entry to a trocar. Once the distal ends of the clamp 600 have entered the trocar, the trocar then holds the ends shut, and permitting the surgeon free use of the other hand. Upon entry to the abdominal cavity, the clamp naturally springs open for engagement with a bodily organ, such

as the stomach, and the surgeon can articulate the head from side to side while it is held securely in the head 604 while still in the open position. Once in position, the surgeon can close the clamp using sutures and/or by applying pressure externally or internally using other surgical tools. Thus, in this particular embodiment, the installation tool 602 may not be employed to close the clamp on an internal organ of the patient, but may be employed to hold, insert, and articulate the clamp into position.

[0119] Referring now to FIG. 14, clamp 600 can have a three piece design similar to that described above. In other words, it can have a spring member 606 that is comprised predominantly of spring steel, and that is engaged with lower and upper rigid members 608 and 610. These rigid members 608 and 610 can be comprised primarily of titanium, and they can have a concavity that increases their rigidity. In addition, suture holes 612A-612E can be provided in upper rigid member 610, as well as in an upper portion of spring member 606. A surgeon can employ these suture holes 612 to secure the clamp 600 in place on a stomach or other bodily organ. It is envisioned that additional or alternative suture holes 612 can be provided, such as in lower rigid member 608 and lower portion of spring member 606, and that positions of the suture holes 612 can be different from those shown. However, as will be more fully described below with reference to FIGS. 19-27, the placement of suture holes in the upper rigid member 608 and upper portion of spring member 606 can permit suturing of the clamp 600 in place prior to application of a silicone sleeve (see FIGS. 19-27) that slides onto the clamp via the un-sutured lower rigid member 608 and lower portion of spring member 606. Yet, once the sleeve is installed, it should be understood that additional suture holes 612 provided in lower rigid member 608 and/or lower portion of spring member 606 may prove useful in a subsequent application of additional sutures.

[0120] Turning now to FIGS. 15(a)-15(f) and referring generally thereto, it should be appreciated that a double row of suture holes 612A-612H can be provided in spring member 606 and upper rigid member 610, a distal portion of which can exhibit a male clasp feature 614 positioned to engage a female clasp feature, such as a wire loop 616, of lower rigid member 608. Suture holes 612D and 612E can be positioned on spring member 606 at a location that lies between a position at which upper rigid member 610 is engaged to spring member 606, and a position at which a slot 618 is formed in a bight portion of spring member 606. In the case that the distal end of upper rigid member 610 exhibits a male clasp feature 614, such as a planular curvature away from a plane in which the upper rigid member 610 predominantly lies, a complimentary female clasp feature can be exhibited by a distal end of lower rigid member 608, such as the aforementioned rectangular wire loop 616 engaged by a hinge formation 620 provided in the distal end of lower rigid member 608. It should be readily understood that the same functionality can be achieved if upper rigid member 610 exhibits the female clasp feature, and lower rigid member 608 exhibits male clasp feature 614. Thus, the positions of the clasp features can be reversed in other embodiments.

[0121] Turning now to FIG. 16, another additional feature of clamp 600 can be a detent 622 that is formed in hinge formation 620, and that engages wire loop 616 of the female clasp feature. This detent 622 can be positioned on the hinge

formation 620 at a location that is most distal when the clamp 600 is held in a closed position, and it can be sized and shaped to hold the wire loop 616 in a lowered position at which the loop 616 lies in a plane parallel to a plane in which lower rigid member 608 predominantly lies. A similar or identical detent (not shown) can be provided on an opposite side of hinge formation 620, and it can be similarly distally positioned to assist in holding the wire loop 616 in the aforementioned lowered position. This lowered position allows the clamp 600 to be inserted through a trocar and guided to enclose a bodily organ, such as a stomach, at which point the aforementioned silicone sleeve (see FIGS. 19-27) can be partially applied. Then, before the silicone sleeve is fully engaged to the clamp 600, wire loop 616 can be forced out of detent 622 into a raised position at which it engages the male clasp feature 614 of the clamp 600.

[0122] Before raising the wire loop 616, it is envisioned that the clamp 600 can be pressed into a closed position by use of two or more graspers inserted into the abdominal cavity through additional trocars (i.e., multiport technique). Then, a suture tag pre-applied to wire loop 616 can be used to force wire loop 616 out of detent 622 into the raised position, resulting in the wire loop 616 engaging the male clasp feature 614 and holding the clamp 600 in the closed position without assistance from the two or more graspers. Alternatively or additionally, it is envisioned that closing and latching of the clamp 600 can be achieved by utilizing any suitable endoscopic surgical tools and techniques as will be readily apparent to one skilled in the art from the present disclosure.

[0123] Turning now to FIGS. 17(a)-17(f) and referring generally thereto, an endoscopic surgical installation tool for engaging and manipulating the clamp can be similar to those described above. For example, the installation tool can have a handle 650, trigger 652, pull rod, T-bar 654, cylindrical tube 656, dial 658 (e.g., with thumb lever), hub, guidelines, and articulating head 604 that are identical or similar to those described above. However, as previously described, a curvature or incline imparted to the head 604 by wedges of the head 604 can be keyed to a bight portion of the previously described clamp so as to hold the clamp in a fully open or predominantly open position when T-bar 654 has been fully retracted by actuation of trigger 652. Additionally, a latch release 660 can be provided that can extend from both sides of handle 650 for ergonomic, ambidextrous operation.

[0124] Turning now to FIG. 18, the latch release 660 can have a hinged plate with a retention spring that forces the latch release 660 upwards to engage a latch 662 provided at a proximal end of pull rod 664. In use, a surgeon can engage the T-bar to the clamp 600 by rotating the clamp 600 and/or installation tool in a common longitudinal axis until the T-bar fits through the notch in the bight portion of the clamp 600, and then rotating the clamp 600 and/or installation tool an integer multiple of ninety degrees until a length direction of the T-Bar is perpendicular to a length direction of the notch. Then, actuation of trigger 652 can retract pull rod until opposing latch surfaces (e.g., edges, extensions, faces, flanges, gouges, hooks, inclines, ledges, lips, notches, overhangs, projections, protrusions, ribs, ridges, skirts, serrations, slits, slots, teeth, wedges, and combinations thereof) of the latch 662 and release 660 can catch and hold the pull rod 664 in a fully retracted or predominantly retracted position.

[0125] Once the latch 662 is engaged, the clamp 600 is ready to be inserted into an inflated abdominal cavity through a trocar as described above, and a seal provided between cylindrical tube 656 and clevis 668 can prevent out gassing from the abdominal cavity through the head 604 and/or cylindrical tube 656. Alternatively, the seal can be provided anywhere inside cylindrical tube 656. In some embodiments, the seal is achieved by using a circular silicone die having a slit and a hole in the middle, with the pull rod 664 threaded through the hole.

[0126] Once the clamp 600 is in position within the abdominal cavity to enclose and partition the stomach or other organ, pressing down on latch release 660 can permit automatic extension of pull rod 664 by action of a torsion spring provided to trigger screw 666 to force de-actuation of trigger 652. The T-bar can then be disengaged from the clamp by rotating the installation tool along its longitudinal axis an integer multiple of ninety degrees and removing it from the trocar. Thus, it should be apparent that, in some embodiments, the pull rod may not be configured to rotate as in alternative embodiments described above, but only to retract and to extend.

[0127] Turning now to FIG. 19, a silicone sleeve 700 can be configured to engage clamp 600. In some embodiments, silicone sleeve 700 can be formed to cover primarily an upper arm and both ends of clamp 600. This silicone sleeve 700 can be used as padding to protect surrounding organs from irritation or damage. Thickness of the silicone can be varied for different applications, such as partitioning an organ, stomach, or vessel.

[0128] Turning now to FIGS. 20-27 and referring generally thereto, the silicone sleeve 700 can have tubular section 702 at a proximal end that slides onto the lower arm of clamp and can be manipulated into position to encapsulate the previously described bight portion of the clamp. The clamp can then be closed and latched as described above. Presuming that the upper arm of the clamp has already been sutured to the organ, stomach, or vessel, a distal end of the sleeve 700 can then be engaged to encapsulate the distal end of the clamp. For this purpose, the distal end of the sleeve 700 can be configured as a latch cap 704 that is form fitted to the closed latch features (see FIG. 25). A padding strip 706 situated between the tubular section 702 and latch cap 704 can be sized to a length of the clamp so as to be stretched taught across the upper arm of the clamp once the sleeve 700 is installed. A slot engaging feature 708 formed inside of tubular section 702 can be provided to engage with the previously described slot in the bight portion of the clamp by plugging the slot, and thus hold the tubular section of the sleeve 700 in place on the bight portion of the clamp.

[0129] Turning now to FIG. 28, a method of performing surgery can begin at step 750 by engaging the previously described clamp to the previously described surgical installation tool in one or more of the previously described manners. Thereafter, the clamp can be inserted through a trocar at step 752, and positioned to enclose an organ (e.g., stomach, vessel, etc.) at step 754. Next, at step 756, an upper arm of the clamp can be sutured to the organ though suture holes supplied in the clamp as previously described, and the installation tool can be disengaged and removed from the trocar at step 758. Thereafter, the previously described silicone sleeve can be slid over a lower arm of the clamp at step 760 as previously described, and the clamp can be closed and latched at step 762. Finally, at step 764, a latch

cap of the silicone sleeve can be fit over the latch of the clamp, and additional sutures can be applied if desired. It should be understood that the sequence of the aforementioned steps can vary in additional or alternative embodiments, and that additional or alternative steps can be employed as will be readily apparent to one skilled in the art.

[0130] FIGS. 29-40 and the accompanying description disclose various embodiments of a surgical clamp overmolded in a polymer material. The surgical clamp is, in one implementation, a laparoscopically implanted device which, when closed and latched or secured, partitions a patient's stomach into two sections, such as two vertical sections or other divisions. The clamp may be installed using standard surgical tools (e.g., clamps, scissors, etc.) and/or, in some embodiments, an installation tool, such as one of the installation tools discussed herein. When the clamp is installed, in one installation, the lesser curvature segment of the stomach forms the Magenstrasse, and the greater curvature segment, including the fundus, is generally excluded from nutritional contact. In one implementation, the clamp includes, at a proximal end, an aperture with an enlarged radius (generally referred to hereafter as the bight portion or passage-forming section), by which gastric juices created by the fundus and the body can empty into the atrum. By excluding the fundus, the clamp may alter or reduce hormones such as, for example, ghrelin, leading to the patient's loss of hunger. Additionally, the clamp acts as a restrictive procedure by reducing the size of the Magenstrasse by creating a small lumen for a vertical passageway of the nutrients along the lesser curvature.

[0131] FIG. 29 illustrates an embodiment, wherein the fully or partially overmolded surgical clamp is of a one-piece design. The one-piece clamp 2900 includes first and second substrate members (shown in FIGS. 30(a), 30(b), 31(a) and 31(b)) overmolded in a polymer or elastomer material to form a first elongated portion 2902, a second elongated portion 2904, a bight portion 2906, a fastener portion 2908, and an engagement portion 2914. As mentioned above, the first and second elongated portions 2902 and 2904 serve as a partition-forming section of the clamp 2900. Referring briefly to both FIGS. 29 and 10, when the clamp 2900 is installed within an abdominal cavity, the first and second elongated portions 2902 and 2904 are engaged to partition the stomach into a small, vertical pouch 500 and an excluded section 502. The bight portion 2906 comprises a passage-forming section located towards the proximal end of the clamp 2900. The passage-forming section allows gastric juices to flow 506 from the excluded section 502 into the vertical pouch 500.

[0132] In accordance with the present disclosure, the term overmolded is intended to describe a product wherein underlying substrate material(s) are substantially fully or partially encapsulated, covered, or coated with one or more layers of one or more overlying materials. For example, in accordance with the embodiment illustrated in FIG. 29, the first and second substrate members comprise the underlying substrate materials, and the overlying polymer or elastomer material comprises the overmolded material, or overmolding. In some embodiments, the overmolding may be of a non-uniform thickness or durometer, or positioned in certain areas, to produce various portions or features (such as a fastener portion, flexible hinge, etc.) and/or to accommodate gradual closing of the clamp from the proximal end towards the distal end in such a manner that a non-uniform thickness





























**14.** The method of claim **13**, further comprising adjusting the first distance by disengaging the engagement portion from a first opening of the fastener portion, and engaging the engagement portion with a second opening of the fastener portion to retain the bariatric clamp in the second closed position that is different from the first closed position.

**15.** The method of claim **10**, wherein inserting the bariatric clamp includes natural orifice transluminal endoscopic surgery (NOTES).

**16.** The method of claim **10**, wherein inserting the bariatric clamp is transgastric, transvaginal, transrectal, transcolonic, or combinations thereof.

**17.** A method of installing a bariatric clamp onto a stomach of a body, the method comprising:

providing a bariatric clamp that may be positioned in an open position or in a first closed position, the bariatric clamp including a partition-forming section and a passage-forming section;

inserting the bariatric clamp into the body through an opening;

positioning a first elongated member of the bariatric clamp on a first side of the stomach, and positioning a second elongated member of the bariatric clamp on a second side of the stomach while the bariatric clamp is in the open position; and

closing and securing the bariatric clamp into the first closed position around the stomach to form a first compartment and a second compartment within the

stomach with the partition-forming section of the bariatric clamp, and to form a fluid passage within the stomach with the passage-forming section of the bariatric clamp such that, when the bariatric clamp is secured on the stomach in the first closed position, the first compartment of the stomach is in fluid communication with the second compartment of the stomach through the fluid passage of the stomach;

wherein the partition-forming section comprises at least a portion of the first elongated member and at least a portion of the second elongated member separated by a first distance; and

wherein the passage-forming section comprises a bight portion, the bight portion comprising a twistable hinge elastically twistable such that the first elongated member is positionable in at least three degrees of freedom with respect to the position of the second elongated member.

**18.** The method of claim **17**, wherein the twistable hinge is elastically stretchable.

**19.** The method of claim **17**, wherein inserting the bariatric clamp includes natural orifice transluminal endoscopic surgery (NOTES).

**20.** The method of claim **19**, wherein inserting the bariatric clamp is transgastric, transvaginal, transrectal, transcolonic, or combinations thereof.

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