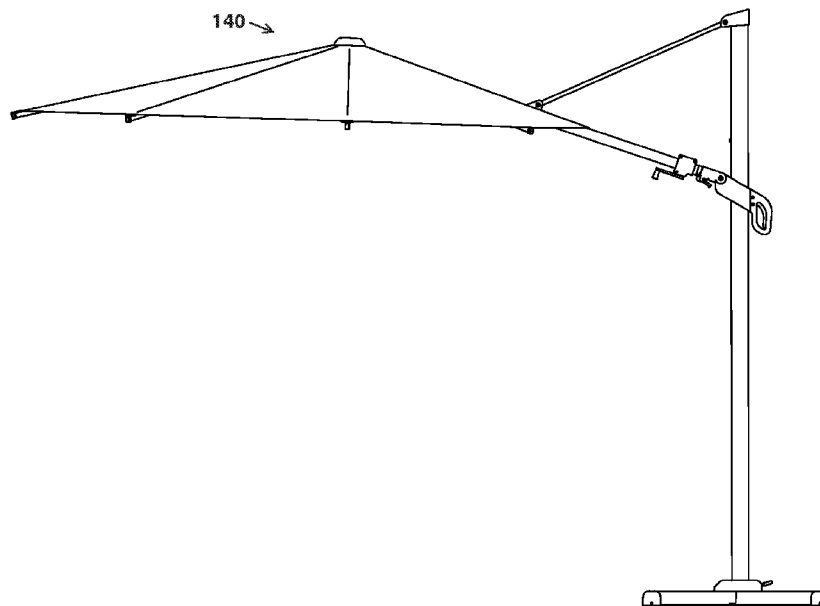




- (51) **International Patent Classification:**
A45B 25/02 (2006.01) *A45B 23/00* (2006.01)
A45B 25/00 (2006.01) *A45B 25/14* (2006.01)
- (21) **International Application Number:**
PCT/IB2023/000186
- (22) **International Filing Date:**
31 March 2023 (31.03.2023)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**
63/326,768 01 April 2022 (01.04.2022) US
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- (81) **Designated States** (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CV, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IQ, IR, IS, IT, JM, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, MG, MK, MN, MU, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH,

(54) **Title: CANTILEVER UMBRELLA**

FIG. 72



(57) **Abstract:** Disclosed are example embodiments of a cantilever-canopy umbrella. An example may be a five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector- screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy including a 360-degree-locking disk (109). The example embodiment also includes a plurality of umbrella-pole- locking four-wall tunnels (110). The example embodiment also includes a noise-cancelling tunnel-and-disk-protecting housing (111). The example embodiment also includes a noise-cancelling tunnel-and- disk-protecting flange (112) slid over said noise-cancelling tunnel-and- disk-protecting housing. The example embodiment includes a multi- height-adjustable easy-slide-and-lift 360-degree-rotatable canopy-supporting vertical mast (114) secured to a 360-degree-rotatable noise-cancelling rotatable-floating-table-adaptable rotatable-floating- chair-adaptable pole-supporting vertebrae (108). The example embodiment also includes a plu-



WO 2023/187472 A1

TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS,
ZA, ZM, ZW.

(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, CV, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SC, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, ME, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Published:

- *with international search report (Art. 21(3))*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

rality of multi-height-adjustable holes (115) drilled into said multi-height-adjustable easy-slide-and-lift 360-degree-rotatable canopy-supporting vertical mast. The example embodiment includes a rain-blocking top-strut-lifting weather cap (116) secured to said multi-height-adjustable easy-slide-and-lift 360-degree-rotatable canopy-supporting vertical mast.

CANTILEVER UMBRELLA

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] The present Application for Patent claims priority to Provisional Application No. 63/326,768 entitled “FIVE-DEVICE-IN-ONE PHYSICALLY-IMPAIRED-ASSISTING EASY-SLIDE-AND-LIFT DOG-RUN-ADAPTABLE LAND-YACHT-ADAPTABLE PROJECTOR-SCREENADAPTABLE ANTI-WOBBLING FOOT-PEDAL-OPERATED ROBOT-ASSEMBLED CANTILEVER-CANOPY UMBRELLA” filed April 1, 2022, and assigned to the assignee hereof and hereby expressly incorporated by reference herein.

TECHNICAL FIELD

[0002] The present invention relates to a cantilever umbrella, specifically and not by way of limitation, some embodiments are related to cantilever umbrella configured to provide multiple functions.

BACKGROUND

[0003] A number of cantilever umbrellas have been introduced.

[0004] U.S. Patent No. 4,771,723, issued 1988-09-20, to Terry V. Friesen, relates to a sailboard assembly is disclosed which has a body on which the user stands, a mast, boom and sail assembly for propulsion of the board. The mast-boom-sail assembly is mounted to the board by a mast mounting assembly which permits limited angular displacement of the mast about a generally normal orientation to the board for maneuvering of the center of pressure of the sail and yet provides support of the mast above the board upon release of the boom. The sailboard assembly also preferably includes a steering assembly having a rudder and foot-operated turntables that are used to turn the rudder.

[0005] U.S. Patent No. 5,116,258, issued 1992-05-26, to Johan Vennik, relates to a collapsible umbrella against for instance sunlight, rain and so on, consisting of a shaft and a number of ribs fixed pivotally relative thereto for supporting fabric-like material, which ribs are each pivotally connected to the one end of a rod-like stretcher, the other end of which is displaceable in lengthwise direction of the shaft characterized in that said shaft takes a hollow form and serves as guiding for

a common control rod connected to the stretcher rods. It is suitable for stationary use and it is suspended from above to avoid obstruction of the space underneath the umbrella. To allow the umbrella to be collapsed the shaft thereof is hollow and it accommodates a common control rod connected to all the stretchers, the other sides whereof are connected with the ribs. The umbrella is suspended from a carrier pivotally connected to a standard. Such a standard may bear several umbrellas.

[0006] U.S. Patent No. 5,143,008, issued 1992-09-01, to Lawrence W. Hall, relates to a windsurfing board or sailboard is shown having a dash for supporting a sailboarder and an improved rudder gear assembly. The dash projects upward from the sailboard and is positioned such that the sailboarder may prop his shins against the dash for support and balance. The improved rudder gear assembly provides a series of intermeshed gears whereby the sailboarder may control a rudder by turning the gears with his or her feet.

[0007] U.S. Patent No. 5,169,111, issued 1992-12-08, to Raymond C. Dunaj, relates to a stand for receiving and stabilizing a shade umbrella. The stand includes a collapsible bag attached by its base portion to a rigid tubular sleeve member. The sleeve member is adapted for receiving and retaining various sizes of umbrella shafts passing therethrough. The collapsible bag may be charged, by way of its mouth, with sand, soil and the like to provide additional weight to the umbrella during windy conditions. After use the bag is emptied so that the stand may be collapsed for easy transport and storage.

[0008] U.S. Patent No. 5,263,505, issued 1993-11-23, to Cheon J. Yeom, relates to an oblong umbrella having a hood adapted to be extended oppositely so as to shield several people and which is foldable and extendable in a bellows manner for convenient handling and storage. An umbrella comprises a main shaft, an upper hub secured to the main shaft, a lower runner slidably inserted on the main shaft, main spokes connected to the upper hub, main stretcher links connected to the lower runner at inner ends thereof and to middle parts of the main spokes at the outer ends thereof, two upper frames connected to the upper hub which are projected oppositely, two lower frames connected to the lower runner which are connected to middle parts of the upper frames at middle parts thereof, an upper hinge connected to outer ends of the lower frames, a lower hinge connected to outer ends of the upper frames, second spokes connected to the upper hinges, second stretcher

links connected to the lower hinge and to middle parts of the second spokes, and a hood secured to outer ends of the main and second spokes. In another embodiment, a mediate runner is disposed between the upper hub and the lower runner. Two frames are pivotally connected to both sides of the mediate runner to form a X-shaped configuration. The frames are each connected at a middle part of a half thereof to the outer end of an upper stretcher link connected to the upper hub and at a middle part of the other half thereof to the outer end of a lower stretcher link connected to the lower runner.

[0009] U.S. Patent No. 5,735,302, issued 1998-04-07, to Fortunato Saliva, relates to an adjustable hanging sunshade umbrella is provided which comprises a side standard, a transverse arm joined to the side standard in cantilevered fashion, a central rod, support and operation means for a protective covering connected to the central rod, and a position-adjusting device adapted to cause rotation of the central rod relative to the axis of the transverse arm and lock it to the desired inclination of the protective covering.

[0010] U.S. Patent No. 5,785,069, issued 1998-07-28, to Gustav Adolf Glatz, relates to a standing umbrella has a mast on which the inner end of an outwardly and inwardly movable carrier beam is guided with the outer end of the beam carrying an umbrella stick of a collapsible umbrella and with the carrier beam being held by a connecting strut linkedly arranged between the upper end of the mast the carrier beam. A drive mechanism shifts the inner end of the carrier beam along the length of the mast and the mast has two guide tracks spaced from one another and so profiled that guide elements running there along and carried by the inner end of the mast are held by the shape of the tracks against movement transversely to the direction in which the inner end of the carrier beam is shifted; and the drive mechanism for shifting the inner end of the carrier beam and a drive mechanism for opening and closing the umbrella are so combined with one another that they operate simultaneously in common.

[0011] U.S. Patent No. 5,937,882, issued 1999-08-17, to Kenneth A. Harbaugh, relates to an umbrella supported by a mast located alongside the umbrella canopy. The umbrella canopy includes a radial arm connected to an element slidably mounted along the mast. A brace pivotably attaches to the arm and extends to the top of the mast. A flexible line extends from a winder within the mast, over a fixed pulley located at the top of a mast, a second pulley mounted on the sliding

element, and then travels through the arm and around a third pulley located at the central region of the umbrella. This line operates the opening mechanism of the umbrella, and also selectively moves the slider element along the mast to adjust the tilt of the canopy assembly.

[0012] U.S. Patent No. 6,305,394, issued 2001-10-23, to Ben Reese, disclosed herein is a portable sunshade comprising a mast structure extending in a generally vertically direction, means for attaching the mast structure at its lower end to a support structure, a boom extending outwardly from the mast structure, having first and second ends, the first end being movably attached to the mast structure, a hub assembly attached to the second end of the boom, a plurality of elongated support ribs extending radially from the hub assembly, each of said support ribs, having one end rotatably attached to the hub assembly, a canopy positioned over the elongated support ribs and fastened thereto, the canopy having an opening in it corresponding to a predetermined position along the boom, and a boom support strut pivotably attached at one end to the upper end of the mast structure, and at the other end pivotably secured to boom at a predetermined position along the length of it, the boom support strut extending through the opening in the canopy at the point where it is connected to the boom.

[0013] U.S. Patent No. 6,321,763, issued 2001-11-27, to Joen Shen Ma, relates to an umbrella which includes a panel attached to a crown and supported by ribs. A runner is coupled to the ribs by stretchers to be movable with respect to the crown. A pole located beside the panel is arranged upright with a slide mounted thereon to be movable along the pole. An arm has an end pivoted to the slide and is further supported by a link pivoted to both the pole and the arm. A first rope to which the slide is attached is movably received in the pole and supported by an upper pulley and a crank whereby by actuating the crank the first rope moves the slide along the pole. A second rope movably received in the arm having an end fixed to the pole via a pulley fixed on the slide and an opposite end extending beyond the arm and through the crown to be fixed to the runner whereby by moving the slide along the pole, the arm is rotated between a closed position and an open position where the runner is moved toward the crown by the second rope. Spaced tabs are formed on the arm to be received in grooves defined in the crown when the arm is moved to the open positioned for securely attaching the panel to the arm thereby allowing the panel to be moved

with the arm for adjusting the orientation thereof. A locking device is provided in the arm for selectively securing the second rope.

[0014] U.S. Patent No. 7,861,734, issued 2011-01-04, to Oliver Joen-an Ma, relates to an umbrella hub is provided that is operative to engage an umbrella cord for maintaining an umbrella in an open position. The hub can comprise a hub body, a channel, a passage section, and an engagement section. The hub body can comprise a series of projections extending outwardly from the hub body. The channel can be formed in one of the projections of the hub body. The channel can be configured to allow the cord to pass therethrough. Further, the passage section can be configured to allow the cord to pass freely therethrough. Finally, the engagement section can be configured to engage the cord to prevent upward movement of the cord relative to the hub body.

[0015] U.S. Patent No. 7,913,708, issued 2011-03-29, to Kwong Yuen Yung, relates to a one-handed operating mechanism for opening and closing umbrella comprises a handle (1) connected to the bottom end of the stem of the umbrella, an elbow member (2) at its curve pivotally connected to said handle (1), a connecting member (3) with its upper end connected to a slide sliding along the stem to open or close the umbrella, said handle (1) is provided with a channel (4) extending from the upper end to the lower end of the handle to accommodate said elbow member (2) and said connecting member (3) to be moving therein, said channel (4) possesses a bottom side (13), said elbow member (2) possesses a handgrip section (5) exposed outside said channel (4) for palm squeezing, and an actuating section (6) located inside said channel (4) for mutual driving with said connecting member. The connecting member is driven by way of operating the elbow member, thereby driving the slide to slide along the stem to push the runner upward toward the crown to open the umbrella.

[0016] U.S. Patent No. 8,104,492, issued 2012-01-31, to Wu Wei Dan, relates to an adjustable offset umbrella has a generally vertical main pole and a sliding member slidably mounted to the main pole. The sliding member includes a locking mechanism for securing it at a desired location along the main pole. One end of an arm is associated with the sliding member, and the other end supports an umbrella canopy. A winding mechanism is associated with the sliding member and moves with it. A line extends from the winding mechanism to the umbrella canopy. Operating the

winding mechanism opens and closes the umbrella canopy, and moving the sliding member up or down the main pole adjusts the angle of the canopy with respect to the main pole.

[0017] U.S. Patent No. 8,360,080, issued 2013-01-29, to Kai Liu and Zhonglin Wang, relates to an umbrella, particularly a sun umbrella or rain umbrella, comprising a holding structure and an umbrella roof attached thereto by means of a joint, the joint being able to be locked by means of a cable or Bowden wire running through at least one part of the holding structure, characterized in that the joint is designed as a purely rotating joint, wherein an engagement element located on the umbrella roof is connected to the cable or Bowden wire or is otherwise mechanically operationally connected thereto, in order to releaseably engage in a segment of the joint associated with the holding structure to lock the joint.

[0018] U.S. Patent No. 9,220,325, issued 2015-12-29, to Oliver Joen-an Ma, relates to an umbrella is provided that has a transverse member mounted canopy control module. The umbrella has a support structure and a canopy. The support structure has a first support member having an upper end and a second support member. The second support member has a first end disposed adjacent to the first support member and a second end disposed away from the first end. The second support member extending along a longitudinal axis disposed transverse to the first support member. The canopy has an upper hub. The upper hub is pivotally coupled with the second support member. The umbrella also has an enclosure disposed at the first end of the second support member. A canopy control mechanism is disposed in the enclosure to alter the configuration of the canopy.

[0019] U.S. Patent No. 9,271,551, issued 2016-03-01, to Oliver Joen-an Ma, relates to a rib connector is provided that has a first arm, a second arm, and a transverse member. The first arm has an inner wall, a first recess in the inner wall, and an inclined surface that extends toward the first recess. The second arm has an inner wall and a second recess. The second recess is positioned opposite to the first recess. The transverse member is located between the first arm and the second arm. The transverse member connects the first arm and the second arm. The transverse member is disposed adjacent to a space located between the first and second arms. The space is configured to receive an umbrella rib. A varying distance is provided between the inclined surface and the inner wall of the second arm such that the distance is less at a first position along the inclined surface

than at a second position along the inclined surface. The first position is between the first recess and the second position.

[0020] U.S. Patent No. 9,289,038, issued 2016-03-22, to Oliver Joen-an Ma, relates to an umbrella is provided that has a transverse member mounted canopy control module. The umbrella has a support structure and a canopy. The support structure has a first support member having an upper end and a second support member. The second support member has a first end disposed adjacent to the first support member and a second end disposed away from the first end. The second support member extending along a longitudinal axis disposed transverse to the first support member. The canopy has an upper hub. The upper hub is coupled with the second support member. The umbrella also has an enclosure disposed at the first end of the second support member. A canopy control mechanism is at least partially disposed in the enclosure to alter the configuration of the canopy.

[0021] U.S. Patent No. 9,930,942, issued 2018-04-03, to Oliver Joen-an Ma, relates to umbrella assemblies described herein are configured to retract and extend, tilt side to side, and open and close. In some embodiments, the umbrella assembly can include a cantilevered beam. The umbrella assembly can further include a tilt mechanism operable to rotate the canopy frame. The umbrella assembly can include a clutch mechanism fixed to the cantilevered beam. The umbrella assembly can also include an integrated mechanism to both open and close the canopy frame and raise and lower the cantilevered beam.

[0022] U.S. Patent No. 10,136,709, issued 2018-11-27, to Oliver Joen-an Ma, relates to a *cantilever umbrella* assembly is provided that includes an upright pole, a runner, a transverse pole, and a canopy. The upright pole includes an upright guide surface. The runner is coupled with the upright pole and has a bearing coupled with the guide surface for guiding the runner along the upright pole. The *cantilever umbrella* assembly includes a deployable tension member with a first end disposed in the transverse pole and a second end coupled with the canopy.

[0023] U.S. Patent No. 10,537,161, issued 2020-01-21, to Dee Volin, relates to a wind-lift-eliminating self-adjusting self-stabilizing arthritic-aiding umbrella comprises: a flow-directing chapeau attached to a chapeau crown, an upper cone rotatably attached to a cable conduit for preventing the umbrella from radially twisting clockwise and counterclockwise out of shape, a

lower tube for centering the upper cone, a stanchion, an intersector bolted to the stanchion, a supporting-arm intersector, a top-hub, a canopy-height-and-tilt-adjusting arthritic-hand-aiding handle slidably connected to the stanchion, a height-adjusting arthritic-hand-aiding trigger springably and pivotably attached to the handle for providing aid to arthritic hands to operate the handle without discomfort and for providing means to slidably lower and raise the handle to adjust the umbrella, a supporting arm pivotably attached to the lifting-arm intersector and the supporting-arm intersector, a lifting arm pivotably attached to the handle and the top-hub intersector, the supporting-arm intersector pivotably attached to the lifting arm, a deploying cable, a cable spool molded into the handle and attached to the cable, an arthritic-hand-aiding crank, an arthritic-hand-aiding-crank paddle rotatably connected to the crank for providing aid to arthritic hands to operate the crank providing means to deploy and retract the umbrella without discomfort, a reversible wind-pressure-releasing and cooling-funnel canopy for providing a cover to protect users from weather elements and for releasing air pressure below the umbrella, an opening is cut into the canopy, a top-hub-ring, the cable conduit rotatably attached to the top-hub-ring, the top-hub intersector pivotably attached to the top-hub-ring, a bottom-shuttle-hub-ring, the lower cone rotatably attached to the bottom-shuttle-hub-ring, the cable connected to the bottom hub-ring, upper-ribs, wind-lift-eliminating self-adjusting funnel-and-canopy-tension-adjusting springs for adjustably tensioning the canopy and for customizingly relieving air pressure below the umbrella to stabilize and to eliminate lift and vibration from wind gusts, adjustable-tension-canopy-spring brackets springably securing the wind-lift-eliminating self-adjusting funnel-and-canopy-tension-adjusting springs to the upper-ribs, lower-ribs pivotably screwed to the bottom-shuttle-hub-ring and the upper-ribs, a stanchion base-mounting plate attached to the stanchion, and base-stabilizing feet bolted to the base-mounting-plate.

[0024] U.S. Patent No. 10,925,362, issued 2021-02-23, to Xiong Luo, relates to a hand-operated cantilever umbrella includes a vertical column (1), a transverse rod (2), a drawing rod (3), an umbrella frame (4) and an umbrella adjustment mechanism (5). The bottom end of the transverse rod (2) is hinged to the slider disposed on the vertical column (1), the umbrella frame (4) hinged to the top end of the transverse rod (2), a large rib connector (470) and a drawing rod connector (30) are rotatably disposed on the middle portion of the transverse rod (2). The large rib connector (470) has a stopper (471) resisting against the drawing rod connector (30). The umbrella

is simple and rational in structure, and the open and fold operation is more convenient and quick, moreover, since the product does not need any rope to withstand wind in the open process and the subsequent use stage, it is more labor-saving to open, higher in strength and more stable in structure.

[0025] U.S. Patent No. 10,932,536, issued 2021-03-02, to Chengxi Kong, relates to a *cantilever umbrella* including a frame having an upper tray and a lower tray is provided. Two first crossed rods, a transverse rod and a first long rib are articulated to the upper tray. Two second crossed rods and two first short ribs are articulated to the lower tray. One of the two first short ribs is articulated to a middle portion of the transverse rod and the other one is articulated to a middle portion of the first long rib. A middle portion of each second crossed rod is articulated to a middle portion of the first crossed rod on a same side. An end of each first crossed rod is articulated with a short-rib tray which is articulated to a short rib, and an end of each second crossed rod is articulated with a long-rib tray which is articulated to a long rib. The short ribs each has one end articulated to the short-rib tray and another end articulated to a middle portion of one of the long ribs. The upper tray and the two long-rib trays are each disposed with a cap thereon, and a canopy fabric is covered on the long ribs to form three canopies.

[0026] U.S. Patent No. D738,610, issued 2015-09-15, to Oliver Joen-an Ma, relates to the ornamental designs for an umbrella runner, as shown and described.

[0027] U.S. Patent No. D809,284, issued 2018-02-06, to Zhun-An Ma, relates to the ornamental designs for an umbrella runner, as shown and described.

[0028] U.S. Patent No. D848,139, issued 2019-05-14, to Oliver Joen-an Ma, relates to the ornamental design for an umbrella frame, as shown and described.

[0029] U.S. Patent No. D911,018, issued 2021-02-23, to James Fisher, relates to the ornamental design for a cantilever umbrella, as shown and described.

[0030] U.S. Patent No. 20020129847, issued 2002-09-19, to Mark J.S. Ma, relates to a parasol opening device is incorporated in a parasol for opening/closing a canopy of the parasol. The parasol includes a tubular post for movably receiving the parasol opening device therein. The parasol

opening device is movable along the post between an open position and a closed position. A canopy support arm has a first end pivotally attached to the parasol opening device and a second end to which a canopy system is pivoted. A link has a first end pivoted to the post and a second end pivotally attached to a slide which is movable along the arm. A rope having a predetermined and fixed length partially extends through the post, the parasol opening device and the arm with a first end of the rope fixed to the post and a second end of the rope attached to a runner of the canopy system whereby driving the rope causes the canopy system to open/close. The parasol opening device includes a movement control device for guiding/controlling the parasol opening device to move along the post between the open position and the closed position and thus driving the rope to open/close the parasol.

[0031] U.S. Patent No. 20060254628, issued 2006-11-16, to Chuen-Jong Tseng, relates to a standing umbrella includes a mast, an operating member, a carrier beam, a collapsible umbrella, a tension member, and two connecting struts. The operating member is mounted on and is movable along the mast between upper and lower positions. The carrier beam is pivoted to the operating member. The collapsible umbrella is pivoted to the carrier beam, and is foldable. The tension member is secured to the mast, and extends along the mast and the carrier beam to connect with the collapsible umbrella. The connecting struts are spaced apart from each other, and are pivoted to an upper end of the mast and a middle portion of the carrier beam.

[0032] U.S. Patent No. 20140251394, issued 2014-09-11, to Oliver Joen-an Ma, relates to an umbrella hub is provided that includes a hub body and a plurality of slots. The hub body extends between an outer periphery and a central aperture configured to receive an umbrella pole. The slots comprise a pivot zone configured to receive and retain a mounting pin of an umbrella rib or strut. The hub can be loaded in a generally horizontal direction. Deflectable surfaces enable rigid pins of the umbrella rib or strut to be engaged with the hub for pivoting therein.

[0033] A need exists for an improved cantilever umbrella over the designs discussed above.

SUMMARY

[0034] In one example implementation, an embodiment includes a cantilever umbrella.

[0035] Disclosed are example embodiments of a five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella. The cantilever-canopy umbrella includes a rotatable-floating-table-locking rotatable-floating-chair-locking rotatable-umbrella-locking foot-pedal. The cantilever-canopy umbrella includes a 360-degree-four-wall-tunnel-locking disk. The cantilever-canopy umbrella includes a plurality of umbrella-pole-locking four-wall tunnels formed into said 360-degree-four-wall-tunnel-locking disk. The cantilever-canopy umbrella includes a noise-cancelling tunnel-and-disk-protecting housing. The cantilever-canopy umbrella includes a noise-cancelling tunnel-and-disk-protecting flange slid over said noise-cancelling tunnel-and-disk-protecting housing. The cantilever-canopy umbrella includes a multi-height-adjustable easy-slide-and-lift 360-degree-rotatable canopy-supporting vertical mast secured to said 360-degree-rotatable noise-cancelling rotatable-floating-table-adaptable rotatable-floating-chair-adaptable pole-supporting vertebrae. The cantilever-canopy umbrella includes a plurality of multi-height-adjustable holes drilled into said multi-height-adjustable easy-slide-and-lift 360-degree-rotatable canopy-supporting vertical mast. The cantilever-canopy umbrella includes a rain-blocking top-strut-lifting weather cap secured to said multi-height-adjustable easy-slide-and-lift 360-degree-rotatable canopy-supporting vertical mast. The cantilever-canopy umbrella includes a swingable hoist-boom-lifting top strut swingingly secured to said rain-blocking top-strut-lifting weather cap. The cantilever-canopy umbrella includes a height-adjustable physically-impaired-assisting easy-slide-and-lift handle. The cantilever-canopy umbrella includes a physically-impaired-assisting easy-squeeze height-adjusting spring-loaded trigger hingedly secured into said height-adjustable physically-impaired-assisting easy-slide-and-lift handle. The cantilever-canopy umbrella includes a height-adjusting spring-loaded-trigger pin slidably secured to said physically-impaired-assisting easy-squeeze height-adjusting spring-loaded trigger. The cantilever-canopy umbrella includes a physically-impaired-assisting handle-securing easy-slide-and-lift outer housing secured to said height-adjustable physically-impaired-assisting easy-slide-and-lift handle. The cantilever-canopy umbrella includes a noise-cancelling easy-shuttling handle

bearing inserted within said physically-impaired-assisting handle-securing easy-slide-and-lift outer housing. The cantilever-canopy umbrella includes a swingable rain-blocking rotatably-lockable woodpecker-housing cradle hingedly attached to said physically-impaired-assisting handle-securing easy-slide-and-lift outer housing. The cantilever-canopy umbrella includes a physically-impaired-assisting laterally-rotatable-and-lockable spring-loaded teeth-securing woodpecker hingedly attached to said swingable rain-blocking rotatably-lockable woodpecker-housing cradle. The cantilever-canopy umbrella includes a rotatable adjustable locking-teeth housing rotatably inserted within said swingable rain-blocking rotatably-lockable woodpecker-housing cradle. The cantilever-canopy umbrella includes a plurality of physically-impaired-assisting over-rotation-preventing internal stoppers formed to said swingable rain-blocking rotatably-lockable woodpecker-housing cradle. The cantilever-canopy umbrella includes a plurality of rotation-locking teeth formed to said rotatable adjustable locking-teeth housing. The cantilever-canopy umbrella includes a cable-protecting rotatable cantilever hoist-boom secured into said rotatable adjustable locking-teeth housing. The cantilever-canopy umbrella includes an ambidextrous-canopy-deploying-crank housing secured to said cable-protecting rotatable cantilever hoist-boom. The cantilever-canopy umbrella includes an ambidextrous canopy-deploying crank rotatably secured to said ambidextrous-canopy-deploying-crank housing. The cantilever-canopy umbrella includes a tension-locking spring secured to said ambidextrous canopy-deploying crank within said ambidextrous-canopy-deploying-crank housing. The cantilever-canopy umbrella includes a cable-securing-and-winding spindle rotatably secured to said tension-locking spring within ambidextrous-canopy-deploying-crank housing. The cantilever-canopy umbrella includes a single-direction-locking saw-toothed ratcheting gear rotatably secured to said cable-securing-and-winding spindle. The cantilever-canopy umbrella includes a rotation-locking saw-toothed-gear ratcheting finger swingably secured to said single-direction-locking saw-toothed ratcheting gear. The cantilever-canopy umbrella includes a canopy-securing Velcro-and-seam-negating top-strut-connecting flange secured to said cable-protecting rotatable cantilever hoist-boom. The cantilever-canopy umbrella includes a swingable boom-connecting hinge swingably secured to said cable-protecting rotatable cantilever hoist-boom. The cantilever-canopy umbrella includes a canopy-deploying-and-retracting cable secured within said cable-protecting rotatable cantilever hoist-boom. The cantilever-canopy umbrella includes a robot-assembled heat-expandable cold-

contractable upper canopy union swingingly secured to said swingable boom-connecting hinge. The cantilever-canopy umbrella includes a robot-assembled heat-expandable cold-contractable lower canopy union, said canopy-deploying-and-retracting cable threaded through said robot-assembled heat-expandable cold-contractable lower canopy union and tied in a knot. The cantilever-canopy umbrella includes a plurality of robot-assembled heat-expandable cold-contractable holes formed into said robot-assembled heat-expandable cold-contractable upper canopy union and said robot-assembled heat-expandable cold-contractable lower canopy union. The cantilever-canopy umbrella includes a robot-assembled automatically-flaring-and-shielding-rivet-tail injury-preventing hammer-shield. The cantilever-canopy umbrella includes a robot-assembled automatically-flaring-and-shielding-screw-tail injury-preventing hammer-shield formed into said robot-assembled heat-expandable cold-contractable upper canopy union and said robot-assembled heat-expandable cold-contractable lower canopy union. The cantilever-canopy umbrella includes a central canopy-supporting column secured to said robot-assembled heat-expandable cold-contractable upper canopy union. The cantilever-canopy umbrella includes two opposite semi-circular automatic-cable-cleaning scraper formed to said robot-assembled heat-expandable cold-contractable upper canopy union. The cantilever-canopy umbrella includes a plurality of ridge ribs swingingly attached to said robot-assembled heat-expandable cold-contractable upper canopy union. The cantilever-canopy umbrella includes a plurality of ridge-rib-supporting struts swingingly attached to said robot-assembled heat-expandable cold-contractable lower canopy union. The cantilever-canopy umbrella includes a plurality of robot-assembled noise-cancelling rust-preventing strut-end covers secured over said ridge-rib-supporting struts. The cantilever-canopy umbrella includes a plurality of robot-assembled heat-expandable cold-contractable rivets secured through said ridge ribs and through said ridge-rib-supporting struts and through robot-assembled noise-cancelling rust-preventing strut-end covers, said robot-assembled automatically-flaring-and-shielding-rivet-tail injury-preventing hammer-shield attached to said robot-assembled heat-expandable cold-contractable rivets. The cantilever-canopy umbrella includes a plurality of robot-assembled heat-expandable cold-contractable anti-wobbling screws robotically screwed into said robot-assembled heat-expandable cold-contractable upper canopy union and said robot-assembled heat-expandable cold-contractable lower canopy union. The cantilever-canopy umbrella includes a robot-assembled automatic-cable-cleaning dog-run-adaptable land-yacht-sail-adaptable projector-screen-adaptable

rain-collecting crop-irrigating canopy. The cantilever-canopy umbrella includes a plurality of heat-expandable cold-contractable internal-rib-securing ridges. The cantilever-canopy umbrella includes a canopy-securing fan. The cantilever-canopy umbrella includes a canopy-securing robot-sewing-trench formed to said canopy-securing fan. The cantilever-canopy umbrella includes a rib-end-capping rain-blocking end formed to said canopy-securing fan. The cantilever-canopy umbrella includes a plurality of rib-end-capping finger-grabbing ditches formed to said rib-end-capping rain-blocking end.

[0036] Disclosed are example embodiments of a five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella. The cantilever-canopy umbrella includes a rotatable-floating-table-locking rotatable-floating-chair-locking rotatable-umbrella-locking foot-pedal. The cantilever-canopy umbrella includes a 360-degree-four-wall-tunnel-locking disk. The cantilever-canopy umbrella includes a plurality of umbrella-pole-locking four-wall tunnels formed into said 360-degree-four-wall-tunnel-locking disk. The cantilever-canopy umbrella includes a noise-cancelling tunnel-and-disk-protecting housing. The cantilever-canopy umbrella includes a noise-cancelling tunnel-and-disk-protecting flange slid over said noise-cancelling tunnel-and-disk-protecting housing. The cantilever-canopy umbrella includes a multi-height-adjustable easy-slide-and-lift 360-degree-rotatable canopy-supporting vertical mast secured to said 360-degree-rotatable noise-cancelling rotatable-floating-table-adaptable rotatable-floating-chair-adaptable pole-supporting vertebrae. The cantilever-canopy umbrella includes a plurality of multi-height-adjustable holes drilled into said multi-height-adjustable easy-slide-and-lift 360-degree-rotatable canopy-supporting vertical mast. The cantilever-canopy umbrella includes a rain-blocking top-strut-lifting weather cap secured to said multi-height-adjustable easy-slide-and-lift 360-degree-rotatable canopy-supporting vertical mast. The cantilever-canopy umbrella includes a swingable hoist-boom-lifting top strut swingingly secured to said rain-blocking top-strut-lifting weather cap. The cantilever-canopy umbrella includes a height-adjustable physically-impaired-assisting easy-slide-and-lift handle. The cantilever-canopy umbrella includes a physically-impaired-assisting easy-squeeze height-adjusting spring-loaded trigger hingedly secured into said height-adjustable physically-impaired-assisting easy-slide-and-lift handle. The cantilever-canopy umbrella includes a height-adjusting spring-loaded-trigger pin slidably secured

to said physically-impaired-assisting easy-squeeze height-adjusting spring-loaded trigger. The cantilever-canopy umbrella includes a physically-impaired-assisting handle-securing easy-slide-and-lift outer housing secured to said height-adjustable physically-impaired-assisting easy-slide-and-lift handle. The cantilever-canopy umbrella includes a noise-cancelling easy-shuttling handle bearing inserted within said physically-impaired-assisting handle-securing easy-slide-and-lift outer housing. The cantilever-canopy umbrella includes a swingable rain-blocking rotatably-lockable woodpecker-housing cradle hingedly attached to said physically-impaired-assisting handle-securing easy-slide-and-lift outer housing. The cantilever-canopy umbrella includes a physically-impaired-assisting laterally-rotatable-and-lockable spring-loaded teeth-securing woodpecker hingedly attached to said swingable rain-blocking rotatably-lockable woodpecker-housing cradle. The cantilever-canopy umbrella includes a rotatable adjustable locking-teeth housing rotatably inserted within said swingable rain-blocking rotatably-lockable woodpecker-housing cradle. The cantilever-canopy umbrella includes a plurality of physically-impaired-assisting over-rotation-preventing internal stoppers formed to said swingable rain-blocking rotatably-lockable woodpecker-housing cradle. The cantilever-canopy umbrella includes a plurality of rotation-locking teeth formed to said rotatable adjustable locking-teeth housing. The cantilever-canopy umbrella includes a cable-protecting rotatable cantilever hoist-boom secured into said rotatable adjustable locking-teeth housing. The cantilever-canopy umbrella includes an ambidextrous-canopy-deploying-crank housing secured to said cable-protecting rotatable cantilever hoist-boom. The cantilever-canopy umbrella includes an ambidextrous canopy-deploying crank rotatably secured to said ambidextrous-canopy-deploying-crank housing. The cantilever-canopy umbrella includes a tension-locking spring secured to said ambidextrous canopy-deploying crank within said ambidextrous-canopy-deploying-crank housing. The cantilever-canopy umbrella includes a cable-securing-and-winding spindle rotatably secured to said tension-locking spring within ambidextrous-canopy-deploying-crank housing. The cantilever-canopy umbrella includes a single-direction-locking saw-toothed ratcheting gear rotatably secured to said cable-securing-and-winding spindle. The cantilever-canopy umbrella includes a rotation-locking saw-toothed-gear ratcheting finger swingably secured to said single-direction-locking saw-toothed ratcheting gear. The cantilever-canopy umbrella includes a canopy-securing Velcro-and-seam-negating top-strut-connecting flange secured to said cable-protecting rotatable cantilever hoist-boom. The cantilever-

canopy umbrella includes a swingable boom-connecting hinge swingably secured to said cable-protecting rotatable cantilever hoist-boom. The cantilever-canopy umbrella includes a canopy-deploying-and-retracting cable secured within said cable-protecting rotatable cantilever hoist-boom. The cantilever-canopy umbrella includes a robot-assembled heat-expandable cold-contractable upper canopy union swingingly secured to said swingable boom-connecting hinge. The cantilever-canopy umbrella includes a robot-assembled heat-expandable cold-contractable lower canopy union, said canopy-deploying-and-retracting cable threaded through said robot-assembled heat-expandable cold-contractable lower canopy union. The cantilever-canopy umbrella includes a plurality of robot-assembled heat-expandable cold-contractable holes formed into said robot-assembled heat-expandable cold-contractable upper canopy union and said robot-assembled heat-expandable cold-contractable lower canopy union. The cantilever-canopy umbrella includes a robot-assembled automatically-flaring-and-shielding-rivet-tail injury-preventing hammer-shield. The cantilever-canopy umbrella includes a robot-assembled automatically-flaring-and-shielding-screw-tail injury-preventing hammer-shield formed into said robot-assembled heat-expandable cold-contractable upper canopy union and said robot-assembled heat-expandable cold-contractable lower canopy union. The cantilever-canopy umbrella includes a central canopy-supporting column secured to said robot-assembled heat-expandable cold-contractable upper canopy union. The cantilever-canopy umbrella includes two opposite semi-circular automatic-cable-cleaning scraper formed to said robot-assembled heat-expandable cold-contractable upper canopy union. The cantilever-canopy umbrella includes a plurality of ridge ribs swingingly attached to said robot-assembled heat-expandable cold-contractable upper canopy union. The cantilever-canopy umbrella includes a plurality of ridge-rib-supporting struts swingingly attached to said robot-assembled heat-expandable cold-contractable lower canopy union. The cantilever-canopy umbrella includes a plurality of robot-assembled noise-cancelling rust-preventing strut-end covers secured over said ridge-rib-supporting struts. The cantilever-canopy umbrella includes a plurality of robot-assembled heat-expandable cold-contractable rivets secured through said ridge ribs and through said ridge-rib-supporting struts and through robot-assembled noise-cancelling rust-preventing strut-end covers, said robot-assembled automatically-flaring-and-shielding-rivet-tail injury-preventing hammer-shield attached to said robot-assembled heat-expandable cold-contractable rivets. The cantilever-

canopy umbrella includes a plurality of robot-assembled heat-expandable cold-contractable anti-wobbling screws robotically screwed into said robot-assembled heat-expandable cold-contractable upper canopy union and said robot-assembled heat-expandable cold-contractable lower canopy union. The cantilever-canopy umbrella includes a robot-assembled automatic-cable-cleaning dog-run-adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop-irrigating canopy.

[0037] Disclosed are example embodiments of a five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella. The cantilever-canopy umbrella includes a rotatable-floating-table-locking rotatable-floating-chair-locking rotatable-umbrella-locking foot-pedal. The cantilever-canopy umbrella includes a 360-degree-four-wall-tunnel-locking disk. The cantilever-canopy umbrella includes a plurality of umbrella-pole-locking four-wall tunnels formed into said 360-degree-four-wall-tunnel-locking disk. The cantilever-canopy umbrella includes a noise-cancelling tunnel-and-disk-protecting housing. The cantilever-canopy umbrella includes a noise-cancelling tunnel-and-disk-protecting flange slid over said noise-cancelling tunnel-and-disk-protecting housing. The cantilever-canopy umbrella includes a multi-height-adjustable easy-slide-and-lift 360-degree-rotatable canopy-supporting vertical mast secured to said 360-degree-rotatable noise-cancelling rotatable-floating-table-adaptable rotatable-floating-chair-adaptable pole-supporting vertebrae. The cantilever-canopy umbrella includes a plurality of multi-height-adjustable holes drilled into said multi-height-adjustable easy-slide-and-lift 360-degree-rotatable canopy-supporting vertical mast. The cantilever-canopy umbrella includes a rain-blocking top-strut-lifting weather cap secured to said multi-height-adjustable easy-slide-and-lift 360-degree-rotatable canopy-supporting vertical mast. The cantilever-canopy umbrella includes a swingable hoist-boom-lifting top strut swingingly secured to said rain-blocking top-strut-lifting weather cap. The cantilever-canopy umbrella includes a height-adjustable physically-impaired-assisting easy-slide-and-lift handle. The cantilever-canopy umbrella includes a physically-impaired-assisting easy-squeeze height-adjusting spring-loaded trigger hingedly secured into said height-adjustable physically-impaired-assisting easy-slide-and-lift handle. The cantilever-canopy umbrella includes a height-adjusting spring-loaded-trigger pin slidably secured to said physically-impaired-assisting easy-squeeze height-adjusting spring-loaded trigger. The cantilever-canopy umbrella

includes a physically-impaired-assisting handle-securing easy-slide-and-lift outer housing secured to said height-adjustable physically-impaired-assisting easy-slide-and-lift handle. The cantilever-canopy umbrella includes a noise-cancelling easy-shuttling handle bearing inserted within said physically-impaired-assisting handle-securing easy-slide-and-lift outer housing. The cantilever-canopy umbrella includes a swingable rain-blocking rotatably-lockable woodpecker-housing cradle hingedly attached to said physically-impaired-assisting handle-securing easy-slide-and-lift outer housing. The cantilever-canopy umbrella includes a physically-impaired-assisting laterally-rotatable-and-lockable spring-loaded teeth-securing woodpecker hingedly attached to said swingable rain-blocking rotatably-lockable woodpecker-housing cradle. The cantilever-canopy umbrella includes a rotatable adjustable locking-teeth housing rotatably inserted within said swingable rain-blocking rotatably-lockable woodpecker-housing cradle. The cantilever-canopy umbrella includes a plurality of physically-impaired-assisting over-rotation-preventing internal stoppers formed to said swingable rain-blocking rotatably-lockable woodpecker-housing cradle. The cantilever-canopy umbrella includes a plurality of rotation-locking teeth formed to said rotatable adjustable locking-teeth housing. The cantilever-canopy umbrella includes a cable-protecting rotatable cantilever hoist-boom secured into said rotatable adjustable locking-teeth housing. The cantilever-canopy umbrella includes an ambidextrous-canopy-deploying-crank housing secured to said cable-protecting rotatable cantilever hoist-boom. The cantilever-canopy umbrella includes an ambidextrous canopy-deploying crank rotatably secured to said ambidextrous-canopy-deploying-crank housing. The cantilever-canopy umbrella includes a tension-locking spring secured to said ambidextrous canopy-deploying crank within said ambidextrous-canopy-deploying-crank housing. The cantilever-canopy umbrella includes a cable-securing-and-winding spindle rotatably secured to said tension-locking spring within ambidextrous-canopy-deploying-crank housing. The cantilever-canopy umbrella includes a single-direction-locking saw-toothed ratcheting gear rotatably secured to said cable-securing-and-winding spindle. The cantilever-canopy umbrella includes a rotation-locking saw-toothed-gear ratcheting finger swingably secured to said single-direction-locking saw-toothed ratcheting gear. The cantilever-canopy umbrella includes a canopy-securing Velcro-and-seam-negating top-strut-connecting flange secured to said cable-protecting rotatable cantilever hoist-boom. The cantilever-canopy umbrella includes a swingable boom-connecting hinge swingably secured to said cable-

protecting rotatable cantilever hoist-boom. The cantilever-canopy umbrella includes a canopy-deploying-and-retracting cable secured within said cable-protecting rotatable cantilever hoist-boom. The cantilever-canopy umbrella includes a robot-assembled heat-expandable cold-contractable upper canopy union swingingly secured to said swingable boom-connecting hinge. The cantilever-canopy umbrella includes a robot-assembled heat-expandable cold-contractable lower canopy union, said canopy-deploying-and-retracting cable threaded through said robot-assembled heat-expandable cold-contractable lower canopy union and tied. The cantilever-canopy umbrella includes a plurality of robot-assembled heat-expandable cold-contractable holes formed into said robot-assembled heat-expandable cold-contractable upper canopy union and said robot-assembled heat-expandable cold-contractable lower canopy union. The cantilever-canopy umbrella includes a robot-assembled automatically-flaring-and-shielding-rivet-tail injury-preventing hammer-shield. The cantilever-canopy umbrella includes a robot-assembled automatically-flaring-and-shielding-screw-tail injury-preventing hammer-shield formed into said robot-assembled heat-expandable cold-contractable upper canopy union and said robot-assembled heat-expandable cold-contractable lower canopy union. The cantilever-canopy umbrella includes a central canopy-supporting column secured to said robot-assembled heat-expandable cold-contractable upper canopy union. The cantilever-canopy umbrella includes two opposite semi-circular automatic-cable-cleaning scraper formed to said robot-assembled heat-expandable cold-contractable upper canopy union. The cantilever-canopy umbrella includes a plurality of ridge ribs swingingly attached to said robot-assembled heat-expandable cold-contractable upper canopy union. The cantilever-canopy umbrella includes a plurality of ridge-rib-supporting struts swingingly attached to said robot-assembled heat-expandable cold-contractable lower canopy union. The cantilever-canopy umbrella includes a plurality of robot-assembled noise-cancelling rust-preventing strut-end covers secured over said ridge-rib-supporting struts. The cantilever-canopy umbrella includes a plurality of robot-assembled heat-expandable cold-contractable rivets secured through said ridge ribs and through said ridge-rib-supporting struts and through robot-assembled noise-cancelling rust-preventing strut-end covers, said robot-assembled automatically-flaring-and-shielding-rivet-tail injury-preventing hammer-shield attached to said robot-assembled heat-expandable cold-contractable rivets. The cantilever-canopy umbrella includes a plurality of robot-assembled heat-expandable cold-contractable anti-wobbling screws robotically screwed into said robot-assembled heat-expandable

cold-contractable upper canopy union and said robot-assembled heat-expandable cold-contractable lower canopy union.

[0038] The features and advantages described in the specification are not all-inclusive. In particular, many additional features and advantages will be apparent to one of ordinary skill in the art in view of the drawings, specification, and claims. Moreover, it should be noted that the language used in the specification has been principally selected for readability and instructional purposes and may not have been selected to delineate or circumscribe the disclosed subject matter.

BRIEF DESCRIPTION OF THE DRAWINGS

[0039] The foregoing summary, as well as the following detailed description, is better understood when read in conjunction with the accompanying drawings. The accompanying drawings, which are incorporated herein and form part of the specification, illustrate a plurality of embodiments and, together with the description, further serve to explain the principles involved and to enable a person skilled in the relevant arts to make and use the disclosed technologies.

[0040] **FIG. 1** illustrates a perspective view of five-device-in-one physically-impaired-assisting easy- slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella configured as dog run.

[0041] **FIG. 2** illustrates a top view of five-device-in-one physically-impaired-assisting easy-slide-and- lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella configured as a dog run.

[0042] **FIG. 3** illustrates a perspective view of five-device-in-one physically-impaired-assisting easy- slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella collecting rainwater.

[0043] **FIG. 4** illustrates a perspective view of five-device-in-one physically-impaired-assisting easy- slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella irrigating crops.

[0044] FIG. 5 illustrates a left view of five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella configured as sail for a land yacht.

[0045] FIG. 6 illustrates a perspective view of five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella configured as a sail for a land yacht.

[0046] FIG. 7 illustrates a perspective view of five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella configured as a sail for a land yacht.

[0047] FIG. 8 illustrates a perspective view of five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella configured as a sail for a land yacht.

[0048] FIG. 9 illustrates a perspective view of five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella configured for collecting rainwater on a watercraft.

[0049] FIG. 10 illustrates a perspective view of five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella configured for collecting rainwater on a watercraft.

[0050] FIG. 11 illustrates a right view of five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella mounted to a tow hitch configured as a projector screen.

[0051] **FIG. 12** illustrates a perspective view of five-device-in-one physically-impaired-assisting easy- slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella mounted to a tow hitch providing shade cover.

[0052] **FIG. 13** illustrates a right view of five-device-in-one physically-impaired-assisting easy-slide- and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella configured as a free- standing projector screen.

[0053] **FIG. 14** illustrates a perspective view of robot-assembled heat-expandable cold-contractable anti-wobbling screws.

[0054] **FIG. 15** illustrates a perspective view of robot-assembled heat-expandable cold-contractable anti-wobbling screws.

[0055] **FIG. 16** illustrates a perspective view of robot-assembled heat-expandable cold-contractable upper canopy union demonstrating robot-assembled heat-expandable cold-contractable anti-wobbling screws installed.

[0056] **FIG. 17** illustrates a perspective view of robot-assembled heat-expandable cold-contractable lower canopy union demonstrating robot-assembled heat-expandable cold-contractable anti-wobbling screws installed.

[0057] **FIG. 18** illustrates a perspective view of robot-assembled heat-expandable cold-contractable upper canopy union demonstrating robot-assembled heat-expandable cold-contractable anti-wobbling screws robotically installed.

[0058] **FIG. 19** illustrates a perspective view of robot-assembled heat-expandable cold-contractable lower canopy union demonstrating robot-assembled heat-expandable cold-contractable anti-wobbling screws robotically installed.

[0059] **FIG. 20** illustrates a top view of robot-assembled heat-expandable cold-contractable upper canopy union demonstrating robot-assembled heat-expandable cold-contractable anti-wobbling screws installed.

[0060] **FIG. 21** illustrates a top view of robot-assembled heat-expandable cold-contractable lower canopy union demonstrating robot-assembled heat-expandable cold-contractable anti-wobbling screws installed.

[0061] **FIG. 22** illustrates a cross-sectional view of robot-assembled heat-expandable cold-contractable anti-wobbling screws being inserted in robot-assembled heat-expandable cold-contractable upper canopy union.

[0062] **FIG. 23** illustrates a cross-sectional view of robot-assembled heat-expandable cold-contractable anti-wobbling screws heat expanding robot-assembled heat-expandable cold-contractable holes when rotationally inserted.

[0063] **FIG. 24** illustrates a cross-sectional view of robot-assembled heat-expandable cold-contractable anti-wobbling screws heat-expanding robot-assembled heat-expandable cold-contractable holes and flaring and locking when impacting robot-assembled automatically-flaring-and-shielding-screw-tail injury-preventing hammer-shield.

[0064] **FIG. 25** illustrates a cross-sectional view of robot-assembled heat-expandable cold-contractable anti-wobbling screws heat-expanding robot-assembled heat-expandable cold-contractable holes when rotationally inserted.

[0065] **FIG. 26** illustrates a cross-sectional view of robot-assembled heat-expandable cold-contractable anti-wobbling screws flaring and locking when impacting robot-assembled automatically-flaring-and-shielding-screw-tail injury-preventing hammer-shield.

[0066] **FIG. 27** illustrates a right view of height-adjustable physically-impaired-assisting easy-slide-and-lift handle demonstrating how a physically impaired person can operate without need to bend hand or fingers.

[0067] **FIG. 28** illustrates a right view of physically-impaired-assisting handle-securing easy-slide- and-lift outer housing demonstrating how a physically impaired person can operate without need to bend hand or fingers.

[0068] **FIG. 29** illustrates a right view of physically-impaired-assisting laterally-rotatable-and-lockable spring-loaded teeth-securing woodpecker.

[0069] **FIG. 30** illustrates a right view of ambidextrous canopy-deploying crank demonstrating how a physically impaired person can operate without need to bend hand or fingers.

[0070] **FIG. 31** illustrates a perspective view of robot-assembled automatic-cable-cleaning dog-run- adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop- irrigating anti-wobbling canopy system(s) demonstrating how to remove.

[0071] **FIG. 32** illustrates a perspective view of robot-assembled automatic-cable-cleaning dog-run- adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop- irrigating anti-wobbling canopy system(s) demonstrating how to flip over and reattach.

[0072] **FIG. 33** illustrates a perspective view of canopy-deploying-and-retracting cable demonstrating how to untie preparing for robot-assembled automatic-cable-cleaning dog- run-adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop- irrigating anti-wobbling canopy system(s) to be removed.

[0073] **FIG. 34** illustrates a perspective view of canopy-deploying-and-retracting cable demonstrating how to pull out.

[0074] **FIG. 35** illustrates a right view of robot-assembled automatic-cable-cleaning dog-run-adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop-irrigating anti-wobbling canopy system(s) demonstrating removal and flipping 180 degrees.

[0075] **FIG. 36** illustrates a right view of robot-assembled automatic-cable-cleaning dog-run-adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop-irrigating anti-wobbling canopy system(s) demonstrating right-side-up.

[0076] **FIG. 37** illustrates a right view of robot-assembled automatic-cable-cleaning dog-run-adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop-irrigating anti-wobbling canopy system(s) demonstrating upside-down.

[0077] **FIG. 38** illustrates a perspective view of canopy-deploying-and-retracting cable reinstalled.

[0078] **FIG. 39** illustrates a perspective view of canopy-deploying-and-retracting cable demonstrating knot being tied to secure robot-assembled automatic-cable-cleaning dog-run-adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop-irrigating anti-wobbling canopy system(s).

[0079] **FIG. 40** illustrates a perspective view of five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella being configured with a floating table and chair.

[0080] **FIG. 41** illustrates a perspective view of five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella being configured with a floating table and chair.

[0081] **FIG. 42** illustrates a perspective view of five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella being configured with a floating table and chair.

[0082] **FIG. 43A (Prior Art)** and **FIG. 43B** illustrate a perspective view of amount of shipping container space that can be saved by shipping height-adjustable physically-impaired-assisting easy-slide-and-lift handle unfolded in half.

[0083] **FIG. 44** illustrates a perspective view of one side of height-adjustable physically-impaired-assisting easy-slide-and-lift handle.

[0084] FIG. 45 illustrates a perspective view of one side of height-adjustable physically-impaired-assisting easy-slide-and-lift handle.

[0085] FIG. 46 illustrates a perspective view of both halves of height-adjustable physically-impaired- assisting easy-slide-and-lift handle adjacently demonstrating them capable of combining.

[0086] FIG. 47 illustrates a perspective view of both halves of height-adjustable physically-impaired- assisting easy-slide-and-lift handle adjacently demonstrating them capable of combining.

[0087] FIG. 48 illustrates a perspective view of both halves of height-adjustable physically-impaired- assisting easy-slide-and-lift handle adjacently demonstrating them capable of combining.

[0088] FIG. 49 illustrates a perspective view of height-adjustable physically-impaired-assisting easy- slide-and-lift handle combined.

[0089] FIG. 50 illustrates a perspective view of physically-impaired-assisting handle-securing easy- slide-and-lift outer housing.

[0090] FIG. 51 illustrates a perspective view of noise-cancelling easy-shuttling handle bearing.

[0091] FIG. 52 illustrates a perspective view of noise-cancelling easy-shuttling handle bearing being inserted into physically-impaired-assisting handle-securing easy- slide-and-lift outer housing.

[0092] FIG. 53 illustrates a front cross-sectional view of physically-impaired-assisting laterally-rotatable-and-lockable spring-loaded teeth-securing woodpecker locking into rotatable adjustable locking-teeth housing.

[0093] FIG. 54 illustrates a front cross-sectional view of physically-impaired-assisting laterally-rotatable-and-lockable spring-loaded teeth-securing woodpecker disengaging allowing rotatable adjustable locking-teeth housing to rotate.

[0094] FIG. 55 illustrates a front cross-sectional view of swingable rain-blocking rotatably-lockable woodpecker-housing cradle and physically-impaired-assisting over-rotation-preventing internal stopper.

[0095] FIG. 56 illustrates a front cross-sectional view of swingable rain-blocking rotatably-lockable woodpecker-housing cradle demonstrating how physically-impaired-assisting over-rotation-preventing internal stoppers prevent rotatable adjustable locking-teeth housin from over-rotating.

[0096] FIG. 57 illustrates a right view of five-device-in-one physically-impaired-assisting easy-slide- and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella mounted to a tow hitch configured as a projector screen.

[0097] FIG. 58 illustrates a perspective view of five-device-in-one physically-impaired-assisting easy- slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella mounted to a tow hitch providing shade cover.

[0098] FIG. 59 illustrates a front view of 360-degree-rotatable rotatable-floating-table-adaptable rotatable-floating-chair-adaptable foot-pedal-operated umbrella-stabilizing base system(s) attached to a tow hitch.

[0099] FIG. 60 illustrates a front view of 360-degree-rotatable rotatable-floating-table-adaptable rotatable-floating-chair-adaptable foot-pedal-operated umbrella-stabilizing base system(s) attached to a tow hitch by twist-locking 360-degree-rotatable noise-cancelling rotatable-floating-table-adaptable rotatable-floating-chair-adaptable pole-supporting vertebrae.

[00100] FIG. 61 illustrates a perspective view of five-device-in-one physically-impaired-assisting easy- slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti- wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella twist-locked on a land yacht.

[00101] **FIG. 62** illustrates a perspective view of five-device-in-one physically-impaired-assisting easy- slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti- wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella twist-locked to a boat deck.

[00102] **FIG. 63** illustrates a perspective view of five-device-in-one physically-impaired-assisting easy- slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti- wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella twist-locked to truck utility hole.

[00103] **FIG. 64** illustrates a perspective view of robot-assembled heat-expandable cold-contractable anti-wobbling screws.

[00104] **FIG. 65** illustrates a perspective view of robot-assembled heat-expandable cold-contractable anti-wobbling screws.

[00105] **FIG. 66** illustrates a left view demonstrating how robot-assembled heat-expandable cold- contractable rivets are robotically installed and robot-assembled automatically-flaring- and-shielding-rivet-tail injury-preventing hammer-shield is flared to negate need for nuts and bolts.

[00106] **FIG. 67** illustrates a left view demonstrating robot-assembled heat-expandable cold-contractable rivets are installed and robot-assembled automatically-flaring-and- shielding-rivet-tail injury-preventing hammer-shield is flared to lock in place.

[00107] **FIG. 68** illustrates a perspective view of robot-assembled automatically-flaring-and-shielding- rivet-tail injury-preventing hammer-shield robotically installed to lock ridge ribs, ridge-rib-supporting struts, and robot-assembled noise-cancelling rust-preventing strut- end covers together.

[00108] **FIG. 69** illustrates a perspective view of robot-assembled heat-expandable cold-contractable rivets robotically installed to lock ridge ribs, ridge-rib-supporting struts, and robot-assembled noise-cancelling rust-preventing strut-end covers together.

[00109] **FIG. 70** illustrates a perspective view of five-device-in-one physically-impaired-assisting easy- slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti- wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella.

[00110] **FIG. 71** illustrates a perspective view of five-device-in-one physically-impaired-assisting easy- slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti- wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella.

[00111] **FIG. 72** illustrates a left view of five-device-in-one physically-impaired-assisting easy-slide- and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella.

[00112] **FIG. 73** illustrates a left view of five-device-in-one physically-impaired-assisting easy-slide- and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella.

[00113] **FIG. 74** illustrates a perspective view of five-device-in-one physically-impaired-assisting easy- slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti- wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella collapsed.

[00114] **FIG. 75** illustrates a perspective view of five-device-in-one physically-impaired-assisting easy- slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti- wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella collapsed.

[00115] **FIG. 76** illustrates a left view of five-device-in-one physically-impaired-assisting easy-slide- and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella collapsed.

[00116] **FIG. 77** illustrates a left view of five-device-in-one physically-impaired-assisting easy-slide- and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella collapsed.

[00117] **FIG. 78** illustrates a perspective view of robot-assembled automatic-cable-cleaning dog-run- adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop-irrigating anti-wobbling canopy system(s).

[00118] **FIG. 79** illustrates a perspective view of robot-assembled heat-expandable cold-contractable upper canopy union.

[00119] **FIG. 80** illustrates a perspective view of robot-assembled heat-expandable cold-contractable lower canopy union.

[00120] **FIG. 81** illustrates a perspective view of robot-assembled heat-expandable cold-contractable canopy-securing rain-blocking rib-end-capping system.

[00121] **FIG. 82** illustrates a perspective view of robot-assembled heat-expandable cold-contractable canopy-securing rain-blocking rib-end-capping system.

[00122] **FIG. 83** illustrates a perspective view of rotatable rain-blocking physically-impaired-assisting ambidextrous-accommodating canopy-cranking-and-hoisting system(s).

[00123] **FIG. 84** illustrates a perspective view of rotatable rain-blocking physically-impaired-assisting ambidextrous-accommodating canopy-cranking-and-hoisting system(s).

[00124] **FIG. 85** illustrates a perspective view of physically-impaired-assisting laterally-rotatable-and- lockable system(s).

[00125] **FIG. 86** illustrates a perspective view of physically-impaired-assisting laterally-rotatable-and- lockable system(s).

[00126] **FIG. 87** illustrates a perspective view of various components which make up rotatable rain- blocking physically-impaired-assisting ambidextrous-accommodating canopy-cranking- and-hoisting system(s).

[00127] **FIG. 88** illustrates a perspective view of height-adjustable physically-impaired-assisting easy- slide-and-lift handle and physically-impaired-assisting handle-securing easy-slide-and- lift outer housing combined.

[00128] **FIG. 89** illustrates a perspective view of 360-degree-rotatable rotatable-floating-table-adaptable rotatable-floating-chair-adaptable foot-pedal-operated umbrella-stabilizing base system(s).

[00129] **FIG. 90** illustrates a perspective view of 360-degree-rotatable rotatable-floating-table-adaptable rotatable-floating-chair-adaptable foot-pedal-operated umbrella-stabilizing base system(s).

[00130] **FIG. 91** illustrates a perspective view of 360-degree-rotatable rotatable-floating-table-adaptable rotatable-floating-chair-adaptable foot-pedal-operated umbrella-stabilizing base system(s).

[00131] **FIG. 92** illustrates a perspective view of 360-degree-rotatable rotatable-floating-table-adaptable rotatable-floating-chair-adaptable foot-pedal-operated umbrella-stabilizing base system(s).

[00132] **FIG. 93** illustrates a perspective view of base-stabilizing-feet-reinforcing base.

[00133] **FIG. 94** illustrates a perspective view of noise-cancelling tunnel-and-disk-protecting housing.

[00134] **FIG. 95** illustrates a perspective view of 360-degree-rotatable noise-cancelling rotatable- floating-table-adaptable rotatable-floating-chair-adaptable pole-supporting vertebrae and 360-degree-four-wall-tunnel-locking disk.

[00135] **FIG. 96** illustrates a perspective view of rotatable-floating-table-locking rotatable-floating- chair-locking rotatable-umbrella-locking foot-pedal.

[00136] **FIG. 97** illustrates a perspective view of base-stabilizing feet and fillable-weight-securing toes.

[00137] **FIG. 98** illustrates a perspective view of fillable base-stabilizing foot-pedal-housing weight.

[00138] **FIG. 99** illustrates a perspective view of fillable base-stabilizing weights.

[00139] **FIG. 100** illustrates a perspective view of fillable base-stabilizing weights and fillable base- stabilizing foot-pedal-housing weight installed.

[00140] **FIG. 101** illustrates an exploded view of 360-degree-rotatable rotatable-floating-table-adaptable rotatable-floating-chair-adaptable foot-pedal-operated umbrella-stabilizing base system(s).

[00141] **FIG. 102** illustrates a perspective view of 360-degree-rotatable rotatable-floating-table- adaptable rotatable-floating-chair-adaptable foot-pedal-operated umbrella-stabilizing base system(s) and its operation.

[00142] **FIG. 103** illustrates a perspective view of 360-degree-rotatable rotatable-floating-table- adaptable rotatable-floating-chair-adaptable foot-pedal-operated umbrella-stabilizing base system(s) and its operation.

[00143] **FIG. 104** illustrates a perspective view of 360-degree-rotatable rotatable-floating-table- adaptable rotatable-floating-chair-adaptable foot-pedal-operated umbrella-stabilizing base system(s) and its operation.

[00144] **FIG. 105** illustrates a perspective view of 360-degree-rotatable rotatable-floating-table- adaptable rotatable-floating-chair-adaptable foot-pedal-operated umbrella-stabilizing base system(s) and its operation.

[00145] **FIG. 106** illustrates a perspective view of physically-impaired-assisting laterally-rotatable-and- lockable system(s).

[00146] **FIG. 107** illustrates a perspective view of physically-impaired-assisting laterally-rotatable-and- lockable system(s).

[00147] **FIG. 108** illustrates a perspective view of rotatable rain-blocking physically-impaired-assisting ambidextrous-accommodating canopy-cranking-and-hoisting system(s).

[00148] **FIG. 109** illustrates a perspective view of rotatable rain-blocking physically-impaired-assisting ambidextrous-accommodating canopy-cranking-and-hoisting system(s).

[00149] **FIG. 110** illustrates a perspective view of multi-height-adjustable physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti- wobbling handle-and-mast system(s).

[00150] **FIG. 111** illustrates a perspective view of multi-height-adjustable physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti- wobbling handle-and-mast system(s).

[00151] **FIG. 112** illustrates a perspective view of multi-height-adjustable physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti- wobbling handle-and-mast system(s).

[00152] **FIG. 113** illustrates a perspective view of multi-height-adjustable physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti- wobbling handle-and-mast system(s).

[00153] **FIG. 114** illustrates a perspective view of rotatable rain-blocking physically-impaired-assisting ambidextrous-accommodating canopy-cranking-and-hoisting system(s).

[00154] **FIG. 115** illustrates a perspective view of rotatable rain-blocking physically-impaired-assisting ambidextrous-accommodating canopy-cranking-and-hoisting system(s).

[00155] **FIG. 116** illustrates a perspective view of, with an inset cutaway view demonstrating two opposite semi-circular automatic-cable-cleaning scraper.

[00156] **FIG. 117** illustrates a perspective view of canopy-deploying-and-retracting cable and two opposite semi-circular automatic-cable-cleaning scraper.

[00157] **FIG. 118** illustrates a perspective view of robot-assembled automatic-cable-cleaning dog-run- adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop-irrigating anti-wobbling canopy system(s) assembly.

[00158] **FIG. 119** illustrates a perspective view of robot-assembled automatic-cable-cleaning dog-run- adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop-irrigating anti-wobbling canopy system(s) assembly.

[00159] **FIG. 120** illustrates a perspective view of robot-assembled automatic-cable-cleaning dog-run- adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop-irrigating anti-wobbling canopy system(s) assembly.

[00160] **FIG. 121** illustrates a cross-sectional view of multi-height-adjustable physically-impaired- assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling handle-and-mast system(s), physically-impaired-assisting laterally-rotatable-and-lockable system(s), and rotatable rain-blocking physically- impaired-assisting ambidextrous-accommodating canopy-cranking-and-hoisting system(s).

[00161] **FIG. 122** illustrates a perspective view of five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti- wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella configured as a dog run.

[00162] **FIG. 123** illustrates a top view of five-device-in-one physically-impaired-assisting easy-slide- and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella configured as a dog run.

[00163] **FIG. 124** illustrates a perspective view of demonstrating physically-impaired-assisting laterally- rotatable-and-lockable spring-loaded teeth-securing woodpecker used as a hook.

[00164] **FIG. 125** illustrates a perspective view of robot-assembled heat-expandable cold-contractable anti-wobbling screws.

[00165] **FIG. 126** illustrates a perspective view of robot-assembled heat-expandable cold-contractable anti-wobbling screws.

[00166] **FIG. 127** illustrates a cross-sectional view of robot-assembled heat-expandable cold-contractable anti-wobbling screws heat-expanding robot-assembled heat-expandable cold-contractable holes when rotationally inserted.

[00167] **FIG. 128** illustrates a cross-sectional view of robot-assembled heat-expandable cold-contractable anti-wobbling screws 153 flaring and locking when impacting robot-assembled automatically-flaring-and-shielding-screw-tail injury-preventing hammer-shield.

[00168] **FIG. 129** illustrates a cross-sectional view of robot-assembled heat-expandable cold-contractable anti-wobbling screws being inserted in robot-assembled heat-expandable cold-contractable upper canopy union.

[00169] **FIG. 130** illustrates a cross-sectional view of robot-assembled heat-expandable cold-contractable anti-wobbling screws heat expanding robot-assembled heat-expandable cold-contractable holes when rotationally inserted.

[00170] **FIG. 131** illustrates a cross-sectional view of robot-assembled heat-expandable cold-contractable anti-wobbling screws heat-expanding robot-assembled heat-expandable cold-contractable holes and flaring and locking when impacting robot-assembled automatically-flaring-and-shielding-screw-tail injury-preventing hammer-shield.

[00171] **FIG. 132** illustrates a perspective view of robot-assembled heat-expandable cold-contractable upper canopy union demonstrating robot-assembled heat-expandable cold-contractable anti-wobbling screws installed.

[00172] **FIG. 133** illustrates a perspective view of robot-assembled heat-expandable cold-contractable lower canopy union demonstrating robot-assembled heat-expandable cold-contractable anti-wobbling screws installed.

[00173] **FIG. 134** illustrates a perspective view of robot-assembled heat-expandable cold-contractable upper canopy union demonstrating robot-assembled heat-expandable cold-contractable anti-wobbling screws robotically installed.

[00174] **FIG. 135** illustrates a perspective view of robot-assembled heat-expandable cold-contractable lower canopy union demonstrating robot-assembled heat-expandable cold-contractable anti-wobbling screws robotically installed.

[00175] **FIG. 136** illustrates a top view of robot-assembled heat-expandable cold-contractable upper canopy union demonstrating robot-assembled heat-expandable cold-contractable anti-wobbling screws installed.

[00176] **FIG. 137** illustrates a top view of robot-assembled heat-expandable cold-contractable lower canopy union demonstrating robot-assembled heat-expandable cold-contractable anti-wobbling screws installed.

[00177] **FIG. 138** illustrates a cross-sectional view of robot-assembled heat-expandable cold-contractable anti-wobbling screws being inserted in robot-assembled heat-expandable cold-contractable lower canopy union.

[00178] **FIG. 139** illustrates a cross-sectional view of robot-assembled heat-expandable cold-contractable anti-wobbling screws heat-expanding robot-assembled heat-expandable cold-contractable holes and flaring and locking when impacting robot-assembled automatically-flaring-and-shielding-screw-tail injury-preventing hammer-shield.

[00179] **FIG. 140** illustrates a perspective view of robot-assembled automatic-cable-cleaning dog-run- adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop-irrigating anti-wobbling canopy system(s) demonstrating how to remove.

[00180] **FIG. 141** illustrates a perspective view of robot-assembled automatic-cable-cleaning dog-run- adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop-irrigating anti-wobbling canopy system(s) demonstrating how to flip over and reattach.

[00181] **FIG. 142** illustrates a perspective view of canopy-deploying-and-retracting cable demonstrating how to untie preparing for robot-assembled automatic-cable-cleaning dog-run-adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop-irrigating anti-wobbling canopy system(s) to be removed.

[00182] **FIG. 143** illustrates a perspective view of canopy-deploying-and-retracting cable demonstrating how to pull out.

[00183] **FIG. 144** illustrates a right view of robot-assembled automatic-cable-cleaning dog-run- adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop- irrigating anti-wobbling canopy system(s) demonstrating removal and flipping 180 degrees.

[00184] **FIG. 145** illustrates a right view of robot-assembled automatic-cable-cleaning dog-run- adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop- irrigating anti-wobbling canopy system(s) demonstrating right-side-up.

[00185] **FIG. 146** illustrates a right view of robot-assembled automatic-cable-cleaning dog-run- adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop- irrigating anti-wobbling canopy system(s) demonstrating upside down.

[00186] **FIG. 147** illustrates a perspective view of canopy-deploying-and-retracting cable reinstalled.

[00187] **FIG. 148** illustrates a perspective view of canopy-deploying-and-retracting cable demonstrating knot being tied to secure robot-assembled automatic-cable-cleaning dog-run- adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop- irrigating anti-wobbling canopy system(s).

[00188] **FIG. 149** illustrates an exploded view of led-powering canopy solar panel and its installation to robot-assembled heat-expandable cold-contractable upper canopy union.

[00189] **FIG. 150** illustrates a perspective view of robot-assembled automatically-flaring-and-shielding- rivet-tail injury-preventing hammer-shield robotically installed to lock ridge ribs, ridge-rib-supporting struts, and robot-assembled noise-cancelling rust-preventing strut- end covers together.

[00190] **FIG. 151** illustrates a perspective view of robot-assembled heat-expandable cold-contractable rivets robotically installed to lock ridge ribs, ridge-rib-supporting struts, and robot-assembled noise-cancelling rust-preventing strut-end covers together.

[00191] **FIG. 152** illustrates a perspective view of robot-assembled heat-expandable cold-contractable rivets being robotically installed.

[00192] **FIG. 153** illustrates a perspective view of robot-assembled heat-expandable cold-contractable rivets installed.

[00193] **FIG. 154** illustrates a perspective view of robot-assembled noise-cancelling rust-preventing strut-end covers.

[00194] **FIG. 155** illustrates a perspective view of robot-assembled noise-cancelling rust-preventing strut-end covers.

[00195] **FIG. 156** illustrates a left view of robot-assembled heat-expandable cold-contractable rivets installed.

[00196] **FIG. 157** illustrates a left view of robot-assembled heat-expandable cold-contractable rivets robotically impacting robot-assembled automatically-flaring-and-shielding-rivet-tail injury-preventing hammer-shield.

[00197] **FIG. 158** illustrates a right view of five-device-in-one physically-impaired-assisting easy-slide- and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella mounted to a tow hitch configured as a projector screen.

[00198] **FIG. 159** illustrates a front view of 360-degree-rotatable rotatable-floating-table-adaptable rotatable-floating-chair-adaptable foot-pedal-operated umbrella-stabilizing base system(s) attached to a tow hitch.

[00199] **FIG. 160** illustrates a front view of 360-degree-rotatable rotatable-floating-table-adaptable rotatable-floating-chair-adaptable foot-pedal-operated umbrella-stabilizing base system(s) attached to a tow hitch by twist-locking 360-degree-rotatable noise-cancelling rotatable-floating-table-adaptable rotatable-floating-chair-adaptable pole-supporting vertebrae.

[00200] **FIG. 161** illustrates a right view of five-device-in-one physically-impaired-assisting easy-slide- and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella mounted to a tow hitch configured as a projector screen.

[00201] **FIG. 162** illustrates a perspective view of five-device-in-one physically-impaired-assisting easy- slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti- wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella mounted to a tow hitch providing shade cover.

[00202] **FIG. 163** illustrates a perspective view of five-device-in-one physically-impaired-assisting easy- slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti- wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella collecting rainwater.

[00203] **FIG. 164** illustrates a perspective view of five-device-in-one physically-impaired-assisting easy- slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti- wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella irrigating crops.

[00204] **FIG. 165** illustrates a left view of five-device-in-one physically-impaired-assisting easy-slide-and- lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot- pedal-operated robot-assembled cantilever-canopy umbrella configured as sail for a land yacht.

[00205] **FIG. 166** illustrates a perspective view of five-device-in-one physically-impaired-assisting easy- slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti- wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella configured as a sail for a land yacht.

[00206] **FIG. 167** illustrates a perspective view of five-device-in-one physically-impaired-assisting easy- slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti- wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella configured as a sail for a land yacht.

[00207] **FIG. 168** illustrates a perspective view of five-device-in-one physically-impaired-assisting easy- slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti- wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella configured as a sail for a land yacht.

[00208] **FIG. 169** illustrates a perspective view of five-device-in-one physically-impaired-assisting easy- slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti- wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella configured for collecting rainwater on a watercraft.

[00209] **FIG. 170** illustrates a perspective view of five-device-in-one physically-impaired-assisting easy- slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella configured for collecting rainwater on a watercraft.

[00210] **FIG. 171** illustrates a perspective view of five-device-in-one physically-impaired-assisting easy- slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti- wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella being configured with a floating table and chair.

[00211] **FIG. 172** illustrates a perspective view of five-device-in-one physically-impaired-assisting easy- slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti- wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella being configured with a floating table and chair.

[00212] **FIG. 173** illustrates a perspective view of five-device-in-one physically-impaired-assisting easy- slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti- wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella being configured with a floating table and chair.

[00213] **FIG. 174** illustrates a right view of height-adjustable physically-impaired-assisting easy-slide- and-lift handle demonstrating how a physically impaired person can operate without need to bend hand or fingers.

[00214] **FIG. 175** illustrates a right view of physically-impaired-assisting handle-securing easy-slide- and-lift outer housing demonstrating how a physically impaired person can operate without need to bend hand or fingers.

[00215] **FIG. 176** illustrates a right view of physically-impaired-assisting laterally-rotatable-and-lockable spring-loaded teeth-securing woodpecker.

[00216] **FIG. 177** illustrates a right view of physically-impaired-assisting laterally-rotatable-and-lockable spring-loaded teeth-securing woodpecker demonstrating how a physically impaired person can operate without needing to bend hand or fingers.

[00217] **FIG. 178** illustrates a right view of ambidextrous canopy-deploying crank demonstrating how a physically impaired person can operate without need to bend hand or fingers.

[00218] **FIG. 179** illustrates a right view of five-device-in-one physically-impaired-assisting easy- slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella.

[00219] **FIG. 180** illustrates a perspective view of five-device-in-one physically-impaired-assisting easy- slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti- wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella.

[00220] **FIG. 181A (Prior Art)** and **FIG. 181B** illustrate perspective views of amount of shipping container space that can be saved by shipping height-adjustable physically-impaired-assisting easy-slide-and-lift handle unfolded in half.

[00221] **FIG. 182** illustrates a perspective view of both halves of height-adjustable physically-impaired- assisting easy-slide-and-lift handle adjacently demonstrating them capable of combining.

[00222] **FIG. 183** illustrates a perspective view of both halves of height-adjustable physically-impaired- assisting easy-slide-and-lift handle adjacently demonstrating them capable of combining.

[00223] **FIG. 184** illustrates a perspective view of height-adjustable physically-impaired-assisting easy- slide-and-lift handle combined.

[00224] **FIG. 185** illustrates a perspective view of noise-cancelling easy-shuttling handle bearing being inserted into physically-impaired-assisting handle-securing easy- slide-and-lift outer housing.

[00225] **FIG. 186** illustrates a perspective view of height-adjustable physically-impaired-assisting easy- slide-and-lift handle and physically-impaired-assisting handle-securing easy-slide-and- lift outer housing combined.

[00226] **FIG. 187** illustrates a perspective view of base-stabilizing-feet-reinforcing base.

[00227] **FIG. 188** illustrates a perspective view of 360-degree-rotatable noise-cancelling rotatable-floating-table-adaptable rotatable-floating-chair-adaptable pole-supporting vertebrae.

[00228] **FIG. 189** illustrates a front view of 360-degree-rotatable noise-cancelling rotatable-floating-table-adaptable rotatable-floating-chair-adaptable pole-supporting vertebrae.

[00229] **FIG. 190** illustrates a right view of 360-degree-rotatable noise-cancelling rotatable-floating-table-adaptable rotatable-floating-chair-adaptable pole-supporting vertebrae.

[00230] **FIG. 191** illustrates a perspective view of 360-degree-four-wall-tunnel-locking disk.

[00231] **FIG. 192** illustrates a right view of height-adjustable physically-impaired-assisting easy-slide-and-lift handle.

[00232] **FIG. 193** illustrates a right view of physically-impaired-assisting handle-securing easy-slide-and-lift outer housing.

[00233] **FIG. 194** illustrates a right view of physically-impaired-assisting laterally-rotatable-and-lockable spring-loaded teeth-securing woodpecker.

[00234] **FIG. 195** illustrates a right view of ambidextrous canopy-deploying crank.

[00235] **FIG. 196** illustrates a front cross-sectional view of physically-impaired-assisting laterally-rotatable-and-lockable spring-loaded teeth-securing woodpecker locking into rotatable adjustable locking-teeth housing.

[00236] **FIG. 197** illustrates a front cross-sectional view of physically-impaired-assisting laterally- rotatable-and-lockable spring-loaded teeth-securing woodpecker disengaging allowing rotatable adjustable locking-teeth housing to rotate.

[00237] **FIG. 198** illustrates a front cross-sectional view of swingable rain-blocking rotatably-lockable woodpecker-housing cradle and physically-impaired-assisting over-rotation-preventing internal stoppers.

[00238] **FIG. 199** illustrates a front cross-sectional view of swingable rain-blocking rotatably-lockable woodpecker-housing cradle demonstrating how physically-impaired-assisting over-rotation-preventing internal stoppers prevent rotatable adjustable locking-teeth housing from over-rotating.

[00239] **FIG. 200** illustrates a perspective view of robot-assembled heat-expandable cold-contractable canopy-securing rain-blocking rib-end-capping system.

[00240] **FIG. 201** illustrates a perspective view of robot-assembled automatic-cable-cleaning dog-run-adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop-irrigating anti-wobbling canopy system.

[00241] **FIG. 202** illustrates a perspective view of 360-degree-rotatable rotatable-floating-table-adaptable rotatable-floating-chair-adaptable foot-pedal-operated umbrella-stabilizing base system.

[00242] **FIG. 203** illustrates a perspective view of fillable base-stabilizing foot-pedal-housing weight.

[00243] **FIG. 204** illustrates a perspective view of fillable base-stabilizing weights.

[00244] FIG. 205 illustrates a perspective view of base-stabilizing feet.

[00245] FIG. 206 illustrates a perspective view of base-stabilizing feet.

[00246] FIG. 207 illustrates a perspective view demonstrating how base-stabilizing feet are assembled.

[00247] FIG. 208 illustrates a perspective view of base-stabilizing feet assembled.

[00248] FIG. 209 illustrates a perspective view of physically-impaired-assisting handle-securing easy-slide-and-lift outer housing.

[00249] FIG. 210A, FIG. 210B, FIG. 210C, and FIG. 210D illustrate perspective views of rain-blocking top-strut-lifting weather cap.

[00250] FIG. 211A, FIG. 211B, FIG. 211C, and FIG. 211D illustrate perspective views of canopy-securing Velcro-and-seam-negating top-strut-connecting flange.

[00251] FIG. 212A, FIG. 212B, FIG. 212C, FIG. 212D, FIG. 213, FIG. 214A, FIG. 214B, FIG. 215A, FIG. 215B, FIG. 216A, FIG. 216B, FIG. 216C, FIG. 216D, FIG. 217A, FIG. 217B, FIG. 217C, FIG. 217D, FIG. 218, FIG. 219, FIG. 220, FIG. 221, FIG. 222, FIG. 223, FIG. 224, FIG. 225, FIG. 226, FIG. 227, FIG. 228, FIG. 229, FIG. 230A, FIG. 230B, FIG. 230C, FIG. 231A, FIG. 231B, FIG. 231C, FIG. 232A, FIG. 232B, FIG. 233A, FIG. 233B, FIG. 233C, FIG. 233D, FIG. 234A, FIG. 234B, FIG. 234C, and FIG. 234D illustrate perspective views of equivalent variations of components of five-device-in-one physically-impaired-assisting easy-slide- and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella.

[00252] FIG. 235, FIG. 236, FIG. 237, FIG. 238, FIG. 239, and FIG. 240 illustrate perspective views of equivalent variations of five-device-in-one physically-impaired-assisting easy-slide- and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella.

[00253] The figures and the following description describe certain embodiments by way of illustration only. One skilled in the art will readily recognize from the following description that alternative embodiments of the structures and methods illustrated herein may be employed without departing from the principles described herein. Reference will now be made in detail to several embodiments, examples of which are illustrated in the accompanying figures. It is noted that wherever practicable similar or like reference numbers may be used in the figures to indicate similar or like functionality.

DETAILED DESCRIPTION

[00254] The detailed description set forth below in connection with the appended drawings is intended as a description of configurations and is not intended to represent the only configurations in which the concepts described herein may be practiced. The detailed description includes specific details for the purpose of providing a thorough understanding of various concepts. However, it will be apparent to those skilled in the art that these concepts may be practiced without these specific details. In some instances, well known structures and components are shown in block diagram form in order to avoid obscuring such concepts.

[00255] Several aspects of example systems will now be presented with reference to various apparatus and methods. These apparatus and methods will be described in the following detailed description and illustrated in the accompanying drawings by various blocks, components, circuits, processes, algorithms, etc. (collectively referred to as “elements”). These elements may be implemented using various components, hardware, electronic hardware, computer software, or any combination thereof. Whether such elements are implemented as hardware or software depends upon the particular application and design constraints imposed on the overall system.

[00256] DISADVANTAGES OF THE PRIOR ART

[00257] It will be understood that not every disadvantage is addressed by every embodiment.

[00258] The prior art has failed to solve many problems associated with collapsible popup, as follows: No prior art mention or disclose any collapsible popup, having 360-degree-rotatable noise-cancelling rotatable-floating-table-adaptable rotatable-floating-chair-adaptable pole-supporting vertebrae 108. Therefore, the prior art of collapsible popup: is not capable of providing vertical support for multi-height-adjustable easy-slide-and-lift 360-degree-rotatable canopy-supporting vertical mast **114**; is not capable of supporting and rotating floating chair; is not capable of supporting and rotating floating table; and is not capable of twist-locking into a truck utility hole, a tow hitch, a boat deck, and a land yacht.

[00259] No prior art mentions or discloses any collapsible popup, having physically-impaired-assisting handle-securing easy-slide-and-lift outer housing 121. Therefore, the prior art of collapsible popup: is not capable of providing vertical support for multi-height-adjustable easy-slide-and-lift 360-degree-rotatable canopy-supporting vertical mast **114**; is not capable of supporting and rotating floating chair; is not capable of supporting and rotating floating table; and is not capable of twist-locking into a truck utility hole, a tow hitch, a boat deck, and a land yacht.

[00260] No prior art mentions or discloses any collapsible popup, having noise-cancelling easy-shuttling handle bearing 122. Therefore, the prior art of collapsible popup: is not capable of easily sliding physically-impaired-assisting handle-securing easy-slide-and-lift outer housing **121** on multi-height-adjustable easy-slide-and-lift 360-degree-rotatable canopy-supporting vertical mast **114**; is not capable of silently sliding physically-impaired-assisting handle-securing easy-slide-and-lift outer housing **121** on multi-height-adjustable easy-slide-and-lift 360-degree-rotatable canopy-supporting vertical mast **114**; is not capable of providing easy sliding without the need to rollers and other moving parts that can break or wear out over time; and is not capable of providing easy sliding without the need to grease or other lubricant.

[00261] No prior art mentions or discloses any collapsible popup, having physically-impaired-assisting over-rotation-preventing internal stoppers 127. Therefore, the prior art of collapsible popup: is not capable of preventing over rotation of cable-protecting rotatable cantilever hoist-boom **130**; is not capable of preventing injury from over-rotation accidents of cable-protecting

rotatable cantilever hoist-boom **130**; is not capable of rotationally locking position of cable-protecting rotatable cantilever hoist-boom**130**; and is not capable of preventing umbrella from tipping over from over-rotation imbalance.

[00262] No prior art mentions or discloses any collapsible popup, having ambidextrous canopy-deploying crank 132. Therefore, the prior art of collapsible popup: is not capable of providing an ergonomic design to allow a physically impaired person to operate without need to bend hand or fingers; is not capable of easily deploying or retracting robot-assembled automatic-cable-cleaning dog-run-adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop-irrigating anti-wobbling canopy system(s) **140**; is not capable of adjusting desired amount of deployment of robot-assembled automatic-cable-cleaning dog-run-adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop-irrigating anti-wobbling canopy system(s) **140**; and is not capable of ambidextrously accommodating both right handed and left handed users.

[00263] No prior art mentions or discloses any collapsible popup, having canopy-securing Velcro-and-seam-negating top-strut-connecting flange 137. Therefore, the prior art of collapsible popup: is not capable of attaching robot-assembled automatic-cable-cleaning dog-run-adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop-irrigating canopy 154 to cable-protecting rotatable cantilever hoist-boom **130** without need for Velcro; is not capable of attaching robot-assembled automatic-cable-cleaning dog-run-adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop-irrigating canopy 154 to cable-protecting rotatable cantilever hoist-boom **130** without need for additional seam; is not capable of providing locking edges to secure robot-assembled automatic-cable-cleaning dog-run-adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop-irrigating canopy 154 to cable-protecting rotatable cantilever hoist-boom **130**; and is not capable of pivotably connecting swingable hoist-boom-lifting top strut **117** to cable-protecting rotatable cantilever hoist-boom **130**.

[00264] No prior art mentions or discloses any collapsible popup, having led-powering canopy solar panel 146. Therefore, the prior art of collapsible popup: is not capable of providing apparatus for collecting solar energy; is not capable of collecting energy for powering led lights; is not capable

of powering led lights without need to plugged-in electric power; and is not capable of saving money by providing a self-sufficient power source.

[00265] No prior art mentions or discloses any collapsible popup, having robot-assembled noise-cancelling rust-preventing strut-end covers 151. Therefore, the prior art of collapsible popup: is not capable of eliminating need for nuts and bolts reducing manufacturing costs; is not capable of eliminating need for washers reducing manufacturing costs; is not capable of preventing rainwater, dust, and insects from getting inside ridge-rib-supporting struts **150**; and is not capable of noise-cancelling by preventing added noise from components rubbing together.

[00266] No prior art mention or disclose any collapsible popup, having robot-assembled heat-expandable cold-contractable anti-wobbling screws 153. Therefore, the prior art of collapsible popup: is not capable of robotically securing ridge ribs **149** to robot-assembled heat-expandable cold-contractable upper canopy union **141**; is not capable of robotically securing ridge-rib-supporting struts **150** to robot-assembled heat-expandable cold-contractable lower canopy union **142**; is not capable of robotically and automatically heat expanding heat-expandable cold-contractable holes **143** and cold contracting when cooled, locking in place; is not capable of robotically and automatically flaring out when impacting robot-assembled automatically-flaring-and-shielding-screw-tail injury-preventing hammer-shield **145** locking in place; and is not capable of eliminating the need for washers and bolts.

[00267] No prior art mention or disclose any collapsible popup, having robot-assembled automatic-cable-cleaning dog-run-adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop-irrigating canopy 154. Therefore, the prior art of collapsible popup: is not capable of protecting from wind, sun, rain, and snow; is not capable of functioning as a cover for a dog run; is not capable of collecting rainwater on a marine craft; is not capable of collecting rainwater for irrigation; and is not capable of multi-adjustably catching and redirecting wind to maneuver a land-yacht.

[00268] OBJECTS AND ADVANTAGES OF THE INVENTION

[00269] The present invention substantially departs from the conventional concepts and designs of the prior art. In doing so, the present invention provides a five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella, having many unique and significant features, functions, and advantages, which overcome all the disadvantages of the prior art, as follows:

[00270] It is an object of some embodiments to provide a five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella, having 360-degree-rotatable noise-cancelling rotatable-floating-table-adaptable rotatable-floating-chair-adaptable pole-supporting vertebrae 108. Therefore, the five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella may be: capable of providing vertical support for multi-height-adjustable easy-slide-and-lift 360-degree-rotatable canopy-supporting vertical mast 114; capable of supporting and rotating floating chair; capable of supporting and rotating floating table; and capable of twist-locking into a truck utility hole, a tow hitch, a boat deck, and a land yacht.

[00271] It is another object of some embodiments to provide a five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella, having physically-impaired-assisting handle-securing easy-slide-and-lift outer housing 121. Therefore, the five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella may be: capable of providing an arched location for a physically disabled person to deploy umbrella without need to bend hand or fingers; capable of providing a smooth, tapered location for a person with less strength a location to lift to deploy umbrella; capable of protecting noise-cancelling easy-shuttling handle bearing 122; and capable of connecting height-

adjustable physically-impaired-assisting easy-slide-and-lift handle **118** to cable-protecting rotatable cantilever hoist-boom **130**.

[00272] It is still another object of some embodiments to provide a five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen- adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella, having noise-cancelling easy-shuttling handle bearing **122**. Therefore, the five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run- adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot- assembled cantilever-canopy umbrella may be: capable of easily sliding physically-impaired-assisting handle-securing easy-slide-and-lift outer housing **121** on multi-height-adjustable easy-slide-and-lift 360-degree-rotatable canopy-supporting vertical mast **114**; capable of silently sliding physically-impaired-assisting handle-securing easy-slide-and-lift outer housing **121** on multi-height-adjustable easy-slide-and-lift 360-degree-rotatable canopy-supporting vertical mast **114**; capable of providing easy sliding without the need to rollers and other moving parts that can break or wear out over time; and capable of providing easy sliding without the need to grease or other lubricant.

[00273] It is yet still another object of some embodiments to provide a five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen- adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella, having physically-impaired-assisting over-rotation-preventing internal stoppers **127**. Therefore, the five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot- assembled cantilever-canopy umbrella may be: capable of preventing over rotation of cable-protecting rotatable cantilever hoist-boom **130**; capable of preventing injury from over-rotation accidents of cable-protecting rotatable cantilever hoist-boom **130**; capable of rotationally locking position of cable-protecting rotatable cantilever hoist-boom **130**; and capable of preventing umbrella from tipping over from over-rotation imbalance.

[00274] It is a further object of some embodiments to provide a five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella, having

ambidextrous canopy-deploying crank **132**. Therefore, the five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run- adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot- assembled cantilever-canopy umbrella may be: capable of providing an ergonomic design to allow a physically impaired person to operate without need to bend hand or fingers; capable of easily deploying or retracting robot-assembled automatic-cable-cleaning dog-run-adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop- irrigating anti-wobbling canopy system(s) **140**; capable of adjusting desired amount of deployment of robot-assembled automatic-cable-cleaning dog-run-adaptable land-yacht-sail-adaptable projector-screen-adaptable rain- collecting crop-irrigating anti-wobbling canopy system(s) **140**; and capable of ambidextrously accommodating both right handed and left handed users.

[00275] It is an even further object of some embodiments to provide a five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen- adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella, having canopy-securing Velcro-and-seam-negating top-strut-connecting flange **137**. Therefore, the five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot- assembled cantilever-canopy umbrella may be: Capable of attaching robot-assembled automatic-cable-cleaning dog-run-adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop-irrigating canopy 154 to cable-protecting rotatable cantilever hoist-boom **130** without need for Velcro; capable of attaching robot-assembled automatic-cable-cleaning dog-run-adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop-irrigating canopy 154 to cable-protecting rotatable cantilever hoist-boom **130** without need for additional seam; capable of providing locking edges to secure robot-assembled automatic-cable-cleaning dog-run-adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop- irrigating canopy 154 to cable-protecting rotatable cantilever hoist-boom **130**; and capable of pivotably connecting swingable hoist-boom-lifting top strut **117** to cable-protecting rotatable cantilever hoist-boom **130**.

[00276] It is still an even further object of some embodiments to provide a five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector- screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella, having led-powering canopy solar panel **146**. Therefore, the five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run- adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot- assembled cantilever-canopy umbrella may be: capable of providing apparatus for collecting solar energy; capable of collecting energy for powering led lights; capable of powering led lights without need to plugged-in electric power; and capable of saving money by providing a self-sufficient power source.

[00277] It is yet still an even further object of some embodiments to provide a five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector- screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella, having robot-assembled noise-cancelling rust-preventing strut-end covers **151**. Therefore, the five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot- assembled cantilever-canopy umbrella may be: capable of eliminating need for nuts and bolts reducing manufacturing costs; capable of eliminating need for washers reducing manufacturing costs; capable of preventing rainwater, dust, and insects from getting inside ridge-rib-supporting struts **150**; and capable of noise-cancelling by preventing added noise from components rubbing together.

[00278] It is yet still an even further object of some embodiments to provide a five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella, having robot-assembled heat-expandable cold-contractable anti-wobbling screws **153**. Therefore, the five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot- assembled cantilever-canopy umbrella may be: capable of robotically securing ridge ribs **149** to robot-assembled heat-expandable cold-contractable upper canopy union **141**; capable of robotically securing ridge-rib-supporting struts **150** to robot-assembled heat-expandable cold-

contractable lower canopy union **142**; capable of robotically and automatically heat expanding heat-expandable cold-contractable holes **143** and cold contracting when cooled, locking in place; capable of robotically and automatically flaring out when impacting robot-assembled automatically-flaring-and-shielding-screw-tail injury-preventing hammer-shield **145** locking in place; and capable of eliminating the need for washers and bolts.

[00279] It is yet still an even further object of some embodiments to provide a five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector- screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella, having robot-assembled automatic-cable-cleaning dog-run-adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop-irrigating canopy **154**. Therefore, the five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run- adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot- assembled cantilever-canopy umbrella may be: capable of protecting from wind, sun, rain, and snow; capable of functioning as a cover for a dog run; capable of collecting rainwater on a marine craft; capable of collecting rainwater for irrigation; and capable of multi-adjustably catching and redirecting wind to maneuver a land-yacht.

[00280] The five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella may include one or more of: 360-degree-rotatable rotatable-floating-table-adaptable rotatable-floating-chair-adaptable foot-pedal-operated umbrella-stabilizing base system(s), multi-height-adjustable physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling handle-and-mast system(s), physically-impaired-assisting laterally-rotatable-and-lockable system(s), rotatable rain-blocking physically-impaired-assisting ambidextrous-accommodating canopy-cranking-and-hoisting system(s), robot-assembled automatic-cable-cleaning dog-run-adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop-irrigating anti-wobbling canopy system(s), and robot-assembled heat-expandable cold-contractable canopy-securing rain-blocking rib-end-capping system (s).

[00281] COMPONENT

[00282] Referring to 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, FIG. 20, FIG. 21, FIG. 22, FIG. 23, FIG. 24, FIG. 25, FIG. 26, FIG. 27, FIG. 28, FIG. 29, FIG. 30, FIG. 31, FIG. 32, FIG. 33, FIG. 34, FIG. 35, FIG. 36, FIG. 37, FIG. 38, FIG. 39, FIG. 40, FIG. 41, FIG. 42, FIG. 43A (Prior Art), FIG. 43B, FIG. 44, FIG. 45, FIG. 46, FIG. 47, FIG. 48, FIG. 49, FIG. 50, FIG. 51, FIG. 52, FIG. 53, FIG. 54, FIG. 55, FIG. 56, FIG. 57, FIG. 58, FIG. 59, FIG. 60, FIG. 61, FIG. 62, FIG. 63, FIG. 64, FIG. 65, FIG. 66, FIG. 67, FIG. 68, FIG. 69, FIG. 70, FIG. 71, FIG. 72, FIG. 73, FIG. 74, FIG. 75, FIG. 76, FIG. 77, FIG. 78, FIG. 79, FIG. 80, FIG. 81, FIG. 82, FIG. 83, FIG. 84, FIG. 85, FIG. 86, FIG. 87A, FIG. 87B, FIG. 87C, FIG. 87D, FIG. 88, FIG. 89, FIG. 90, FIG. 91, FIG. 92, FIG. 93, FIG. 94, FIG. 95, FIG. 96, FIG. 97, FIG. 98, FIG. 99, and FIG. 100:

[00283] The five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella may include one or more of: 360-degree-rotatable rotatable-floating-table-adaptable rotatable-floating-chair-adaptable foot-pedal-operated umbrella-stabilizing base system **101**, including one or more of: base-stabilizing feet **102**, fillable-weight-securing toes **103**, fillable base-stabilizing weights **104**, fillable base-stabilizing foot-pedal-housing weight **105**, base-stabilizing-feet-reinforcing base **106**, rotatable-floating-table-locking rotatable-floating-chair-locking rotatable-umbrella-locking foot-pedal **107**, 360-degree-rotatable noise-cancelling rotatable-floating-table-adaptable rotatable-floating-chair-adaptable pole-supporting vertebrae **108**, 360-degree-four-wall-tunnel-locking disk **109**, Umbrella-pole-locking four-wall tunnels **110**, noise-cancelling tunnel-and-disk-protecting housing **111**, and noise-cancelling tunnel-and-disk-protecting flange **112**; multi-height-adjustable physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling handle-and-mast system **113**, may include one or more of: multi-height-adjustable easy-slide-and-lift 360-degree-rotatable canopy-supporting vertical mast **114**, multi-height-adjustable holes **115**, rain-blocking top-strut-lifting weather cap **116**, swingable hoist-boom-lifting top strut **117**, height-adjustable physically-impaired-assisting easy-slide-and-lift handle **118**, physically-impaired-assisting easy-squeeze height-adjusting spring-loaded trigger **119**, height-adjusting spring-loaded-trigger pin **120**, physically-impaired-assisting handle-

securing easy-slide-and-lift outer housing **121**, and noise-cancelling easy-shuttling handle bearing **122**; physically-impaired-assisting laterally-rotatable-and-lockable system **123**, may include one or more of: swingable rain-blocking rotatably-lockable woodpecker-housing cradle **124**, physically-impaired-assisting laterally-rotatable-and-lockable spring-loaded teeth-securing woodpecker **125**, rotatable adjustable locking-teeth housing **126**, physically-impaired-assisting over-rotation-preventing internal stoppers **127**, and rotation-locking teeth **128**; rotatable rain-blocking physically-impaired-assisting ambidextrous-accommodating canopy-cranking-and-hoisting system **129**, may include one or more of cable-protecting rotatable cantilever hoist-boom **130**, ambidextrous-canopy-deploying-crank housing **131**, ambidextrous canopy-deploying crank **132**, tension-locking spring **133**, cable-securing-and-winding spindle **134**, single-direction-locking saw-toothed ratcheting gear **135**, rotation-locking saw-toothed-gear ratcheting finger **136**, canopy-securing Velcro-and-seam-negating top-strut-connecting flange **137**, swingable boom-connecting hinge **138**, and canopy-deploying-and-retracting cable **139**; Robot-assembled automatic-cable-cleaning dog-run-adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop-irrigating anti-wobbling canopy system **140**, may include one or more of: robot-assembled heat-expandable cold-contractable upper canopy union **141**, robot-assembled heat-expandable cold-contractable lower canopy union **142**, heat-expandable cold-contractable holes **143**, robot-assembled automatically-flaring-and-shielding-rivet-tail injury-preventing hammer-shield **144**, robot-assembled automatically-flaring-and-shielding-screw-tail injury-preventing hammer-shield **145**, LED-powering canopy solar panel **146**, central canopy-supporting column **147**, two opposite semi-circular automatic-cable-cleaning scraper **148**, ridge ribs **149**, ridge-rib-supporting struts **150**, robot-assembled noise-cancelling rust-preventing strut-end covers **151**, robot-assembled heat-expandable cold-contractable rivets **152**, robot-assembled heat-expandable cold-contractable anti-wobbling screws **153**, and robot-assembled automatic-cable-cleaning dog-run-adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop-irrigating canopy **154**; robot-assembled heat-expandable cold-contractable canopy-securing rain-blocking rib-end-capping system **155**, may include one or more of: heat-expandable cold-contractable internal-rib-securing ridges **156**, canopy-securing fan **157**, canopy-securing robot-sewing-trench **158**, rib-end-capping rain-blocking end **159**, and rib-end-capping finger-grabbing ditches **160**.

[00284] MATERIAL

[00285] Referring to 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, FIG. 20, FIG. 21, FIG. 22, FIG. 23, FIG. 24, FIG. 25, FIG. 26, FIG. 27, FIG. 28, FIG. 29, FIG. 30, FIG. 31, FIG. 32, FIG. 33, FIG. 34, FIG. 35, FIG. 36, FIG. 37, FIG. 38, FIG. 39, FIG. 40, FIG. 41, FIG. 42, FIG. 43A (Prior Art), FIG. 43B, FIG. 44, FIG. 45, FIG. 46, FIG. 47, FIG. 48, FIG. 49, FIG. 50, FIG. 51, FIG. 52, FIG. 53, FIG. 54, FIG. 55, FIG. 56, FIG. 57, FIG. 58, FIG. 59, FIG. 60, FIG. 61, FIG. 62, FIG. 63, FIG. 64, FIG. 65, FIG. 66, FIG. 67, FIG. 68, FIG. 69, FIG. 70, FIG. 71, FIG. 72, FIG. 73, FIG. 74, FIG. 75, FIG. 76, FIG. 77, FIG. 78, FIG. 79, FIG. 80, FIG. 81, FIG. 82, FIG. 83, FIG. 84, FIG. 85, FIG. 86, FIG. 87A, FIG. 87B, FIG. 87C, FIG. 87D, FIG. 88, FIG. 89, FIG. 90, FIG. 91, FIG. 92, FIG. 93, FIG. 94, FIG. 95, FIG. 96, FIG. 97, FIG. 98, FIG. 99, and FIG. 100: 360-degree-rotatable rotatable-floating-table-adaptable rotatable-floating-chair-adaptable foot-pedal-operated umbrella-stabilizing base system(s) **101** may each be made of the combined materials of its components. Base-stabilizing feet **102** may be made of the material of metal. Fillable-weight-securing toes **103** may be made of the material of metal. Fillable base-stabilizing weights **104** may be made of the material of plastic. Fillable base-stabilizing foot-pedal-housing weight **105** may be made of the material of plastic. Base-stabilizing-feet-reinforcing base **106** may be made of the material of metal. Rotatable-floating-table-locking rotatable-floating-chair-locking rotatable-umbrella-locking foot-pedal **107** may be made of the material of metal and plastic. 360-degree-rotatable noise-cancelling rotatable-floating-table-adaptable rotatable-floating-chair-adaptable pole-supporting vertebrae **108** may be made of the material of metal. 360-degree-four-wall-tunnel-locking disk **109** may be made of the material of metal. Umbrella-pole-locking four-wall tunnels **110** may be empty space. Noise-cancelling tunnel-and-disk-protecting housing **111** may be made of the material of metal or plastic. Noise-cancelling tunnel-and-disk-protecting flange **112** may be made of the material of metal or plastic. Multi-height-adjustable physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling handle-and-mast system(s) **113** may be made of the combined materials of its components. Multi-height-adjustable easy-slide-and-lift 360-degree-rotatable canopy-supporting vertical mast **114** may be made of the material of metal. Multi-height-adjustable holes **115** may be empty space. Rain-blocking top-strut-lifting weather cap **116** may be made of the

material of metal or plastic. Swingable hoist-boom-lifting top strut **117** may be made of the material of metal. Height-adjustable physically-impaired-assisting easy-slide-and-lift handle **118** may be made of the material of plastic. Physically-impaired-assisting easy-squeeze height-adjusting spring-loaded trigger **119** may be made of the material of plastic. Height-adjusting spring-loaded-trigger pin **120** may be made of the material of metal. Physically-impaired-assisting handle-securing easy-slide-and-lift outer housing **121** may be made of the material of metal. Noise-cancelling easy-shuttling handle bearing **122** may be made of the material of plastic. Physically-impaired-assisting laterally-rotatable-and-lockable system(s) **123** may be made of the combined materials of its components. Swingable rain-blocking rotatably-lockable woodpecker-housing cradle **124** may be made of the material of metal and plastic. Physically-impaired-assisting laterally-rotatable-and-lockable spring-loaded teeth-securing woodpecker **125** may be made of the material of metal or plastic. Rotatable adjustable locking-teeth housing **126** may be made of the material of metal or plastic. Physically-impaired-assisting over-rotation-preventing internal stoppers **127** may be made of the material of metal or plastic. Rotation-locking teeth **128** may be made of the material of metal or plastic. Rotatable rain-blocking physically-impaired-assisting ambidextrous-accommodating canopy- cranking-and-hoisting system(s) **129** may be made of the combined materials of its components. Cable-protecting rotatable cantilever hoist-boom **130** may be made of the material of metal. Ambidextrous-canopy-deploying-crank housing **131** may be made of the material of metal or plastic. Ambidextrous canopy-deploying crank **132** may be made of the material of metal. Tension-locking spring **133** may be made of the material of metal. Cable-securing-and-winding spindle **134** may be made of the material of metal. Single-direction-locking saw-toothed ratcheting gear **135** may be made of the material of metal. Rotation-locking saw-toothed-gear ratcheting finger **136** may be made of the material of metal. Canopy-securing Velcro-and-seam-negating top-strut-connecting flange **137** may be made of the material of metal or plastic. Swingable boom-connecting hinge **138** may be made of the material of metal or plastic. Canopy-deploying-and-retracting cable **139** may be made of the material of metal or fiber. Robot-assembled automatic-cable-cleaning dog-run-adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop-irrigating anti-wobbling canopy system(s) **140** may be made of the combined materials of its components. Robot-assembled heat-expandable cold-contractable upper canopy union **141** may be made of the material of metal or plastic. Robot-assembled heat-

expandable cold-contractable lower canopy union **142** may be made of the material of metal or plastic. Robot-assembled heat-expandable cold-contractable holes **143** may be empty space. Robot-assembled automatically-flaring-and-shielding-rivet-tail injury-preventing hammer- shield **144** may be made of the material of metal or plastic. Robot-assembled automatically-flaring-and-shielding-screw-tail injury-preventing hammer-shield **145** may be made of the material of metal or plastic. LED-powering canopy solar panel **146** may be made of the material of solar panel. Central canopy-supporting column **147** may be made of the material of metal. Two opposite semi-circular automatic-cable-cleaning scraper **148** may be made of the material of metal or plastic. Ridge ribs **149** may be made of the material of metal. Ridge-rib-supporting struts **150** may be made of the material of metal. Robot-assembled noise-cancelling rust-preventing strut-end covers **151** may be made of the material of metal or plastic. Robot-assembled heat-expandable cold-contractable rivets **152** may be made of the material of metal or plastic. Robot-assembled heat-expandable cold-contractable anti-wobbling screws **153** may be made of the material of metal. Robot-assembled automatic-cable-cleaning dog-run-adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop-irrigating canopy **154** may be made of the material of fabric. Robot-assembled heat-expandable cold-contractable canopy-securing rain-blocking rib-end-capping system **155** may be made of the combined materials of its components. Heat-expandable cold-contractable internal-rib-securing ridges **156** may be made of the material of plastic. Canopy-securing fan **157** may be made of the material of plastic. Canopy-securing robot-sewing-trench **158** may be made of the material of plastic. Rib-end-capping rain-blocking end **159** may be made of the material of plastic. Rib-end-capping finger-grabbing ditches **160** may be made of the material of plastic.

[00286] SHAPE

[00287] Referring to **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, FIG. 20, FIG. 21, FIG. 22, FIG. 23, FIG. 24, FIG. 25, FIG. 26, FIG. 27, FIG. 28, FIG. 29, FIG. 30, FIG. 31, FIG. 32, FIG. 33, FIG. 34, FIG. 35, FIG. 36, FIG. 37, FIG. 38, FIG. 39, FIG. 40, FIG. 41, FIG. 42, FIG. 43A (Prior Art), FIG. 43B, FIG. 44, FIG. 45, FIG. 46, FIG. 47, FIG. 48, FIG. 49, FIG. 50, FIG. 51, FIG. 52, FIG. 53, FIG. 54, FIG. 55, FIG. 56, FIG. 57, FIG. 58, FIG. 59, FIG. 60, FIG. 61, FIG. 62, FIG. 63, FIG. 64, FIG. 65, FIG. 66, FIG. 67, FIG. 68, FIG. 69, FIG. 70, FIG. 71, FIG. 72, FIG. 73, FIG. 74, FIG. 75, FIG. 76, FIG. 77, FIG. 78, FIG. 79, FIG.**

80, FIG. 81, FIG. 82, FIG. 83, FIG. 84, FIG. 85, FIG. 86, FIG. 87A, FIG. 87B, FIG. 87C, FIG. 87D, FIG. 88, FIG. 89, FIG. 90, FIG. 91, FIG. 92, FIG. 93, FIG. 94, FIG. 95, FIG. 96, FIG. 97, FIG. 98, FIG. 99, and FIG. 100: 360-degree-rotatable rotatable-floating-table-adaptable rotatable-floating-chair-adaptable foot-pedal-operated umbrella-stabilizing base system(s) **101** may be formed into the combined shapes of its components. Base-stabilizing feet **102** may be formed into the shape of an elongated-box. Fillable-weight-securing toes **103** may be formed into the shape of a flat. Fillable base-stabilizing weights **104** may be formed into the shape of a semi-triangular. Fillable base-stabilizing foot-pedal-housing weight **105** may be formed into the shape of a semi-triangular. Base-stabilizing-feet-reinforcing base **106** may be formed into the shape of a cylinder. Rotatable-floating-table-locking rotatable-floating-chair-locking rotatable-umbrella-locking foot-pedal **107** may be formed into the shape of a teeter-totter. 360-degree-rotatable noise-cancelling rotatable-floating-table-adaptable rotatable-floating-chair-adaptable pole-supporting vertebrae **108** may be formed into the shape of a spine. 360-degree-four-wall-tunnel-locking disk **109** may be formed into the shape of a flat-cylinder. Umbrella-pole-locking four-wall tunnels **110** may be formed into the shape of a square. Noise-cancelling tunnel-and-disk-protecting housing **111** may be formed into the shape of a dome. Noise-cancelling tunnel-and-disk-protecting flange **112** may be formed into the shape of a round. Multi-height-adjustable physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling handle-and-mast system(s) **113** may be formed into the combined shapes of its components. Multi-height-adjustable easy-slide-and-lift 360-degree-rotatable canopy-supporting vertical mast **114** may be formed into the shape of a semi-cylindrical. Multi-height-adjustable holes **115** may be formed into the shape of a round. Rain-blocking top-strut-lifting weather cap **116** may be formed into the shape of a trapezoidal-cube. Swingable hoist-boom-lifting top strut **117** may be formed into the shape of a tube. Height-adjustable physically-impaired-assisting easy-slide-and-lift handle **118** may be formed into the shape of a D-handle. Physically-impaired-assisting easy-squeeze height-adjusting spring-loaded trigger **119** may be formed into the shape of a curve. Height-adjusting spring-loaded-trigger pin **120** may be formed into the shape of a cylinder. Physically-impaired-assisting handle-securing easy-slide-and-lift outer housing **121** may be formed into the shape of a hollow diamond. Noise-cancelling easy-shuttling handle bearing **122** may be formed into the shape of a hollow diamond. Physically-impaired-assisting laterally-rotatable-and-lockable

system(s) **123** may be formed into the combined shapes of its components. Swingable rain-blocking rotatably-lockable woodpecker-housing cradle **124** may be formed into the shape of a cylinder. Physically-impaired-assisting laterally-rotatable-and-lockable spring-loaded teeth-securing woodpecker **125** may be formed into the shape of a teeter-totter. Rotatable adjustable locking-teeth housing **126** may be formed into the shape of a cylinder. Physically-impaired-assisting over-rotation-preventing internal stoppers **127** may be formed into the shape of a wedge. Rotation-locking teeth **128** may be formed into the shape of a square. Rotatable rain-blocking physically-impaired-assisting ambidextrous-accommodating canopy-cranking-and-hoisting system(s) **129** may be formed into the combined shapes of its components. Cable-protecting rotatable cantilever hoist-boom **130** may be formed into the shape of a tube. Ambidextrous-canopy-deploying-crank housing **131** may be formed into the shape of a square. Ambidextrous canopy-deploying crank **132** may be formed into the shape of a rectangle. Tension-locking spring **133** may be formed into the shape of a spring. Cable-securing-and-winding spindle **134** may be formed into the shape of a cylinder. Single-direction-locking saw-toothed ratcheting gear **135** may be formed into the shape of a gear. Rotation-locking saw-toothed-gear ratcheting finger **136** may be formed into the shape of a hook. Canopy-securing Velcro-and-seam-negating top-strut-connecting flange **137** may be formed into the shape of a square. Swingable boom-connecting hinge **138** may be formed into the shape of an elbow. Canopy-deploying-and-retracting cable **139** may be formed into the shape of a cable. Robot-assembled automatic-cable-cleaning dog-run-adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop-irrigating anti-wobbling canopy system(s) **140** may be formed into the combined shapes of its components. Robot-assembled heat-expandable cold-contractable upper canopy union **141** may be formed into the shape of a cylinder. Robot-assembled heat-expandable cold-contractable lower canopy union **142** may be formed into the shape of a cylinder. Robot-assembled heat-expandable cold-contractable holes **143** may be formed into the shape of a round. Robot-assembled automatically-flaring-and-shielding-rivet-tail injury-preventing hammer-shield **144** may be formed into the shape of a flat. Robot-assembled automatically-flaring-and-shielding-screw-tail injury-preventing hammer-shield **145** may be formed into the shape of a flat. LED-powering canopy solar panel **146** may be formed into the shape of a rounded-cube. Central canopy-supporting column **147** may be formed into the shape of a tube. Two opposite semi-circular automatic-cable-cleaning scraper **148** may be formed into the

shape of a semi-circular blade. Ridge ribs **149** may be formed into the shape of a tube. Ridge-rib-supporting struts **150** may be formed into the shape of a tube. Robot-assembled noise-cancelling rust-preventing strut-end covers **151** may be formed into the shape of a cup. Robot-assembled heat-expandable cold-contractable rivets **152** may be formed into the shape of a cylinder-with-a-flat-head. Robot-assembled heat-expandable cold-contractable anti-wobbling screws **153** may be formed into the shape of a screw. Robot-assembled automatic-cable-cleaning dog-run-adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop-irrigating canopy **154** may be formed into the shape of a flat hexagon. Robot-assembled heat-expandable cold-contractable canopy-securing rain-blocking rib-end-capping system **155** may be formed into the combined shapes of its components. Heat-expandable cold-contractable internal-rib-securing ridges **156** may be formed into the shape of a rib. Canopy-securing fan **157** may be formed into the shape of a fan. Canopy-securing robot-sewing-trench **158** may be formed into the shape of a trench. Rib-end-capping rain-blocking end **159** may be formed into the shape of a cube. Rib-end-capping finger-grabbing ditches **160** may be formed into the shape of a cube indentation.

[00288] CONNECTION

[00289] Referring to 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, FIG. 20, FIG. 21, FIG. 22, FIG. 23, FIG. 24, FIG. 25, FIG. 26, FIG. 27, FIG. 28, FIG. 29, FIG. 30, FIG. 31, FIG. 32, FIG. 33, FIG. 34, FIG. 35, FIG. 36, FIG. 37, FIG. 38, FIG. 39, FIG. 40, FIG. 41, FIG. 42, FIG. 43A (Prior Art), FIG. 43B, FIG. 44, FIG. 45, FIG. 46, FIG. 47, FIG. 48, FIG. 49, FIG. 50, FIG. 51, FIG. 52, FIG. 53, FIG. 54, FIG. 55, FIG. 56, FIG. 57, FIG. 58, FIG. 59, FIG. 60, FIG. 61, FIG. 62, FIG. 63, FIG. 64, FIG. 65, FIG. 66, FIG. 67, FIG. 68, FIG. 69, FIG. 70, FIG. 71, FIG. 72, FIG. 73, FIG. 74, FIG. 75, FIG. 76, FIG. 77, FIG. 78, FIG. 79, FIG. 80, FIG. 81, FIG. 82, FIG. 83, FIG. 84, FIG. 85, FIG. 86, FIG. 87A, FIG. 87B, FIG. 87C, FIG. 87D, FIG. 88, FIG. 89, FIG. 90, FIG. 91, FIG. 92, FIG. 93, FIG. 94, FIG. 95, FIG. 96, FIG. 97, FIG. 98, FIG. 99, and FIG. 100: 360-degree-rotatable rotatable-floating-table-adaptable rotatable-floating-chair-adaptable foot-pedal-operated umbrella-stabilizing base system(s) **101** may be connected by the combined connections of its components. Base-stabilizing feet **102** may be welded to fillable-weight-securing toes **103**. Fillable-weight-securing toes **103** may be welded to base-stabilizing feet **102**. Fillable base-stabilizing weights **104** may be secured to base-stabilizing

feet **102**. Fillable base-stabilizing foot-pedal-housing weight **105** may be secured to base-stabilizing feet **102**. Base-stabilizing-feet-reinforcing base **106** may be screwed to base-stabilizing feet **102**. Rotatable-floating-table-locking rotatable-floating-chair-locking rotatable-umbrella-locking foot-pedal **107** may be hingedly secured to base-stabilizing-feet-reinforcing base **106**. 360-degree-rotatable noise-cancelling rotatable-floating-table-adaptable rotatable-floating-chair-adaptable pole-supporting vertebrae **108** may be secured to base-stabilizing-feet-reinforcing base **106**. 360-degree-four-wall-tunnel-locking disk **109** may be secured to base-stabilizing-feet-reinforcing base **106**. Umbrella-pole-locking four-wall tunnels **110** may be formed into 360-degree-four-wall-tunnel-locking disk **109**. Noise-cancelling tunnel-and-disk-protecting housing **111** may be slid over 360-degree-rotatable noise-cancelling rotatable-floating-table-adaptable rotatable-floating-chair-adaptable pole-supporting vertebrae **108**. Noise-cancelling tunnel-and-disk-protecting flange **112** may be slid over noise-cancelling tunnel-and-disk-protecting housing **111**. Multi-height-adjustable physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling handle-and-mast system(s) **113** may be connected by the combined connections of its components. Multi-height-adjustable easy-slide-and-lift 360-degree-rotatable canopy-supporting vertical mast **114** may be secured to 360-degree-rotatable noise-cancelling rotatable-floating-table-adaptable rotatable-floating-chair-adaptable pole-supporting vertebrae **108**. Multi-height-adjustable holes **115** may be drilled into multi-height-adjustable easy-slide-and-lift 360-degree-rotatable canopy-supporting vertical mast **114**. Rain-blocking top-strut-lifting weather cap **116** may be secured to multi-height-adjustable easy-slide-and-lift 360-degree-rotatable canopy-supporting vertical mast **114**. Swingable hoist-boom-lifting top strut **117** may be swingingly secured to rain-blocking top-strut-lifting weather cap **116**. Height-adjustable physically-impaired-assisting easy-slide-and-lift handle **118** may be secured to physically-impaired-assisting handle-securing easy-slide-and-lift outer housing **121**. Physically-impaired-assisting easy-squeeze height-adjusting spring-loaded trigger **119** may be hingedly secured into height-adjustable physically-impaired-assisting easy-slide-and-lift handle **118**. Height-adjusting spring-loaded-trigger pin **120** may be slidably secured to physically-impaired-assisting easy-squeeze height-adjusting spring-loaded trigger **119**. Physically-impaired-assisting handle-securing easy-slide-and-lift outer housing **121** may be secured to height-adjustable physically-impaired-assisting easy-slide-and-lift handle **118**. Noise-cancelling easy-shuttling

handle bearing **122** may be inserted within physically-impaired-assisting handle-securing easy-slide-and-lift outer housing **121**. Physically-impaired-assisting laterally-rotatable-and-lockable system(s) **123** may be connected by the combined connections of its components. Swingable rain-blocking rotatably-lockable woodpecker-housing cradle **124** may be hingedly attached to physically-impaired-assisting handle-securing easy- slide-and-lift outer housing **121**. Physically-impaired-assisting laterally-rotatable-and-lockable spring-loaded teeth- securing woodpecker **125** may be hingedly attached to swingable rain- blocking rotatably-lockable woodpecker-housing cradle **124**. Rotatable adjustable locking-teeth housing **126** may be rotatably inserted within swingable rain-blocking rotatably-lockable woodpecker-housing cradle **124**. Physically-impaired-assisting over-rotation-preventing internal stoppers **127** may be formed to swingable rain-blocking rotatably-lockable woodpecker-housing cradle **124**. Rotation-locking teeth **128** may be formed to rotatable adjustable locking- teeth housing **126**. Rotatable rain-blocking physically-impaired-assisting ambidextrous-accommodating canopy- cranking-and-hoisting system(s) **129** may be connected by the combined connections of its components. Cable-protecting rotatable cantilever hoist-boom **130** may be secured into rotatable adjustable locking-teeth housing **126**. Ambidextrous-canopy-deploying-crank housing **131** may be secured to cable-protecting rotatable cantilever hoist-boom **130**. Ambidextrous canopy-deploying crank **132** may be rotatably secured to ambidextrous-canopy-deploying-crank housing **131**. Tension-locking spring **133** may be secured to ambidextrous canopy- deploying crank **132** within ambidextrous-canopy-deploying-crank housing **131**. Cable-securing-and-winding spindle **134** may be rotatably secured to tension-locking spring **133** within ambidextrous-canopy-deploying-crank housing **131**. Single-direction-locking saw-toothed ratcheting gear **135** may be rotatably secured to cable-securing-and-winding spindle **134**. Rotation-locking saw-toothed-gear ratcheting finger **136** may be swingably secured to single-direction-locking saw-toothed ratcheting gear **135**. Canopy-securing Velcro-and-seam-negating top-strut-connecting flange **137** may be secured to cable-protecting rotatable cantilever hoist-boom **130**. Swingable boom-connecting hinge **138** may be swingably secured to cable- protecting rotatable cantilever hoist-boom **130**. Canopy-deploying-and-retracting cable **139** may be secured within cable- protecting rotatable cantilever hoist-boom **130**. Robot-assembled automatic-cable-cleaning dog-run-adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop-irrigating anti-wobbling canopy system(s) **140** may be connected by the combined

connections of its components. Robot-assembled heat-expandable cold-contractable upper canopy union **141** may be swingingly secured to swingable boom-connecting hinge **138**. Robot-assembled heat-expandable cold-contractable lower canopy union **142** may be secured to ridge-rib-supporting struts **150**. Robot-assembled heat-expandable cold-contractable holes **143** may be formed into robot-assembled heat-expandable cold-contractable upper canopy union **141** and robot-assembled heat-expandable cold-contractable lower canopy union **142**. Robot-assembled automatically-flaring-and-shielding-rivet-tail injury-preventing hammer-shield **144** may be formed into robot-assembled heat-expandable cold-contractable rivets **152**. Robot-assembled automatically-flaring-and-shielding-screw-tail injury-preventing hammer-shield **145** may be formed into robot-assembled heat-expandable cold-contractable upper canopy union **141** and robot-assembled heat-expandable cold-contractable lower canopy union **142**. LED-powering canopy solar panel **146** may be secured to robot-assembled heat-expandable cold-contractable upper canopy union **141**. Central canopy-supporting column **147** may be secured to robot-assembled heat-expandable cold-contractable upper canopy union **141**. Two opposite semi-circular automatic-cable-cleaning scraper **148** may be formed to robot-assembled heat-expandable cold-contractable upper canopy union **141**. Ridge ribs **149** may be swingingly attached to robot-assembled heat-expandable cold-contractable upper canopy union **141**. Ridge-rib-supporting struts **150** may be swingingly attached to robot-assembled heat-expandable cold-contractable lower canopy union **142**. Robot-assembled noise-cancelling rust-preventing strut-end covers **151** may be secured over ridge-rib-supporting struts **150**. Robot-assembled heat-expandable cold-contractable rivets **152** may be secured through ridge ribs **149** and through ridge-rib-supporting struts **150** and through robot-assembled noise-cancelling rust-preventing strut-end covers **151**. Robot-assembled heat-expandable cold-contractable anti-wobbling screws **153** may be robotically screwed into robot-assembled heat-expandable cold-contractable upper canopy union **141** and robot-assembled heat-expandable cold-contractable lower canopy union **142**. Robot-assembled automatic-cable-cleaning dog-run-adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop-irrigating canopy **154** may be attached to canopy-securing fan **157**. Robot-assembled heat-expandable cold-contractable canopy-securing rain-blocking rib-end-capping system **155** may be connected by the combined connections of its components. Heat-expandable cold-contractable internal-rib-securing ridges **156** may be formed to rib-end-capping rain-blocking end **159**. Canopy-securing fan **157** may be formed

to rib-end-capping rain-blocking end **159**. Canopy-securing robot-sewing-trench **158** may be formed to canopy-securing fan **157**. Rib-end-capping rain-blocking end **159** may be formed to canopy-securing fan **157**. Rib-end-capping finger-grabbing ditches **160** may be formed to rib-end-capping rain-blocking end **159**.

[00290] FUNCTION

[00291] Referring to **FIG. 101, FIG. 102, FIG. 103, FIG. 104, FIG. 105, FIG. 106, FIG. 107, FIG. 108, FIG. 109, FIG. 110, FIG. 111, FIG. 112, FIG. 113, FIG. 114, FIG. 115, FIG. 116, FIG. 117, FIG. 118, FIG. 119, FIG. 120, FIG. 121, FIG. 122, FIG. 123, FIG. 124, FIG. 125, FIG. 126, FIG. 127, FIG. 128, FIG. 129, FIG. 130, FIG. 131, FIG. 132, FIG. 133, FIG. 134, FIG. 135, FIG. 136, FIG. 137, FIG. 138, FIG. 139, FIG. 140, FIG. 141, FIG. 142, FIG. 143, FIG. 144, FIG. 145, FIG. 146, FIG. 147, FIG. 148, FIG. 149, FIG. 150, FIG. 151, FIG. 152, FIG. 153, FIG. 154, FIG. 155, FIG. 156, FIG. 157, FIG. 158, FIG. 159, FIG. 160, FIG. 161, FIG. 162, FIG. 163, FIG. 164, FIG. 165, FIG. 166, FIG. 167, FIG. 168, FIG. 169, FIG. 170, FIG. 171, FIG. 172, FIG. 173, FIG. 174, FIG. 175, FIG. 176, FIG. 177, FIG. 178, FIG. 179, FIG. 180, FIG. 181A (Prior Art), FIG. 181B, FIG. 182, FIG. 183, FIG. 184, FIG. 185, FIG. 186, FIG. 187, FIG. 188, FIG. 189, FIG. 190, FIG. 191, FIG. 192, FIG. 193, FIG. 194, FIG. 195, FIG. 196, FIG. 197, FIG. 198, FIG. 199, FIG. 200, FIG. 201, FIG. 202, FIG. 203, FIG. 204, FIG. 205, FIG. 206, FIG. 207, and FIG. 208**: 360-degree-rotatable rotatable-floating-table-adaptable rotatable-floating-chair-adaptable foot-pedal-operated umbrella-stabilizing base system(s) **101** may be for performing the combined functions of its components. Base-stabilizing feet **102** may be for: Stabilizing umbrella. Fillable-weight-securing toes **103** may be for: Securing fillable base-stabilizing weights **104** and fillable base-stabilizing foot-pedal-housing weight **105**. Fillable base-stabilizing weights **104** may be for: Stabilizing umbrella. Fillable base-stabilizing foot-pedal-housing weight **105** may be for: Stabilizing umbrella and protecting rotatable-floating-table-locking rotatable-floating-chair-locking rotatable-umbrella-locking foot-pedal **107**.

[00292] Base-stabilizing-feet-reinforcing base **106** may be for: providing pivot for 360-degree-rotatable noise-cancelling rotatable-floating-table-adaptable rotatable-floating-chair-adaptable pole-supporting vertebrae **108** and 360-degree-four-wall-tunnel-locking disk **109**. Rotatable-floating-table-locking rotatable-floating-chair-locking rotatable-umbrella-locking foot-pedal **107** may be for: Rotationally locking and unlocking 360-degree-four-wall-tunnel-locking

disk **109** in the directions of arrows **179a**, **179b**, **180a**, **180b**, **180c**, **180d**, and **180f** (see **FIG. 89**, **FIG. 90**, **FIG. 91**, **FIG. 92**, **FIG. FIG. 103**, **FIG. 104**, and **FIG. 105**).

[00293] 360-degree-rotatable noise-cancelling rotatable-floating-table-adaptable rotatable-floating-chair-adaptable pole-supporting vertebrae **108** may be for: providing vertical support for multi-height-adjustable easy-slide-and-lift 360-degree-rotatable canopy-supporting vertical mast **114**; supporting and rotating floating chair in the direction of arrow **166** (see **FIG. 41**, **FIG. 42**, **FIG. 171**, and **FIG. 172**); supporting and rotating floating table; and twist-locking into a truck utility hole, a tow hitch, a boat deck, and a land yacht in the directions of arrows **170a** and **170b** (see **FIG. 159**, **FIG 160**, **FIG. 159**, **FIG 160**). 360-degree-four-wall-tunnel-locking disk **109** may be for: providing location for umbrella-pole-locking four-wall tunnels **110**. Umbrella-pole-locking four-wall tunnels **110** may be for: rotationally locking 360-degree-rotatable noise-cancelling rotatable-floating-table-adaptable rotatable-floating-chair-adaptable pole-supporting vertebrae **108**. Noise-cancelling tunnel-and-disk-protecting housing **111** may be for: protecting base-stabilizing-feet-reinforcing base **106**, rotatable-floating-table-locking rotatable-floating-chair-locking rotatable-umbrella-locking foot-pedal **107**, 360-degree-rotatable noise-cancelling rotatable-floating-table-adaptable rotatable- floating-chair-adaptable pole-supporting vertebrae **108**, 360-degree-four-wall- tunnel-locking disk **109**, and umbrella-pole-locking four-wall tunnels **110**. Noise-cancelling tunnel-and-disk-protecting flange **112** may be for: preventing dirt and dust from entering into noise-cancelling tunnel-and-disk-protecting housing **111**.

[00294] Multi-height-adjustable physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling handle-and-mast system(s) **113** may be for performing the combined functions of its components. Multi-height-adjustable easy-slide-and-lift 360-degree-rotatable canopy-supporting vertical mast **114** may be for: vertically supporting umbrella. Multi-height-adjustable holes **115** may be for: providing numerous locking points for umbrella to be adjusted.

[00295] Rain-blocking top-strut-lifting weather cap **116** may be for: preventing rainwater from entering into multi-height-adjustable easy-slide-and-lift 360-degree-rotatable canopy-supporting vertical mast **114**. Swingable hoist-boom-lifting top strut **117** may be for: providing rotation point for swingable hoist-boom-lifting top strut **117**. Height-adjustable physically-impaired-assisting easy-slide-and-lift handle **118** may be for: providing arch to allow a method for

a physically impaired person to raise and lower umbrella without need to bend hand or fingers (see **FIG. 27, and FIG. 174**); raising and lowering robot-assembled automatic-cable-cleaning dog-run-adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop-irrigating anti-wobbling canopy system(s) **140**; providing a tapered, smooth surface for a hand to comfortably lift (see **FIG. 27, and FIG. 174**); and reducing shipping-container space by providing compact design, decreasing package size in the direction of arrow **167** (see **FIG. 43A (Prior Art), FIG. 43B, FIG. 47, FIG. 48, FIG. 449, FIG. 181A (Prior Art), FIG. 181B, FIG. 182, FIG. 183, and FIG. 184**).

[00296] Physically-impaired-assisting easy-squeeze height-adjusting spring-loaded trigger **119** may be for: providing an arch to allow a physically impaired person the ability to release height-adjusting spring-loaded-trigger pin **120** without to need to bend hand or fingers (see **FIG. 27, and FIG. 174**); locking and unlocking height-adjustable physically-impaired-assisting easy-slide-and-lift handle **118** and physically-impaired-assisting handle-securing easy-slide-and-lift outer housing **121** to be raised and lowered; providing arch to allow easy releasing of height-adjusting spring-loaded-trigger pin **120**; and providing a smooth surface for a hand to fit comfortably in the directions of arrows **183a** and **183b** (see **FIG. 110, FIG. 111, and FIG. 186**).

[00297] Height-adjusting spring-loaded-trigger pin **120** may be for: engaging and disengaging from multi-height-adjustable holes **115**. Physically-impaired-assisting handle-securing easy-slide-and-lift outer housing **121** may be for: proving an arched location for a physically disabled person to deploy umbrella without need to bend hand or fingers (see **FIG. 28, and FIG. 175**); proving a smooth, tapered location for a person with less strength a location to lift to deploy umbrella in the directions of arrows **183a** and **183b** (see **FIG. 110, FIG. 111, and FIG. 186**); protecting noise-cancelling easy-shuttling handle bearing **122**; and connecting height-adjustable physically-impaired-assisting easy-slide-and-lift handle **118** to cable-protecting rotatable cantilever hoist-boom **130**.

[00298] Noise-cancelling easy-shuttling handle bearing **122** may be for: easily sliding physically-impaired-assisting handle-securing easy-slide-and-lift outer housing **121** on multi-height-adjustable easy-slide-and-lift 360-degree- rotatable canopy-supporting vertical mast **114** (see **FIG. 28, and FIG. 175**); silently sliding physically-impaired-assisting handle-securing easy-slide-and-lift outer housing **121** on multi-height-adjustable easy-slide-and-lift 360-degree-rotatable canopy-supporting vertical mast **114** in the directions of arrows **183a** and **183b** (see **FIG.**

110, FIG. 111, and FIG. 186); providing easy sliding without the need to rollers and other moving parts that can break or wear out over time; and providing easy sliding without the need to grease or other lubricant.

[00299] Physically-impaired-assisting laterally-rotatable-and-lockable system(s) 123 may be for performing the combined functions of its components. Swingable rain-blocking rotatably-lockable woodpecker-housing cradle 124 may be for: housing physically-impaired-assisting laterally-rotatable-and-lockable spring-loaded teeth-securing woodpecker 125. Physically-impaired-assisting laterally-rotatable-and-lockable spring-loaded teeth-securing woodpecker 125 may be for: locking and unlocking to allow for lateral rotation of cable-protecting rotatable cantilever hoist-boom 130 in the directions of arrows 181a and 181b (see FIG. 28, and FIG. 175) Ergonomically allowing physically impaired person to operate without the need to bend hands and fingers in the directions of arrows 181a and 181b (see FIG. 77).

[00300] Rotatable adjustable locking-teeth housing 126 may be for: providing a location for rotation-locking teeth 128. Physically-impaired-assisting over-rotation-preventing internal stoppers 127 may be for: preventing over rotation of cable-protecting rotatable cantilever hoist-boom 130 in the directions of arrows 169a and 169b (see FIG. 55, FIG. 56, FIG. 198, and FIG. 199); preventing injury from over-rotation accidents of cable-protecting rotatable cantilever hoist-boom 130; rotationally locking position of cable-protecting rotatable cantilever hoist-boom 130; and preventing umbrella from tipping over from over-rotation imbalance.

[00301] Rotation-locking teeth 128 may be for: providing locking positions for positioning robot-assembled automatic-cable-cleaning dog-run-adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop-irrigating anti-wobbling canopy system(s) 140 in the directions of arrows 168a, 168b, 168c, and 169d (see FIG. 53, FIG. 54, FIG. 196, and FIG. 197).

[00302] Rotatable rain-blocking physically-impaired-assisting ambidextrous-accommodating canopy- cranking-and-hoisting system(s) 129 may be for performing the combined functions of its components. Cable-protecting rotatable cantilever hoist-boom 130 may be for: providing far-reaching length to allow for robot-assembled automatic-cable-cleaning dog-run-adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop-irrigating anti-wobbling canopy system(s) 140 to be deployed.

[00303] Ambidextrous-canopy-deploying-crank housing **131** may be for: providing an ambidextrous crank location to comfortably deploy robot-assembled automatic-cable-cleaning dog-run-adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop-irrigating anti-wobbling canopy system(s) **140** in the direction of arrow **182** (see **FIG. 108**, and **FIG. 109**); protecting cable-securing-and-winding spindle **134**; protecting single-direction-locking saw-toothed ratcheting gear **135**; and protecting rotation-locking saw-toothed-gear ratcheting finger **136**.

[00304] Ambidextrous canopy-deploying crank **132** may be for: providing an ergonomic design to allow a physically impaired person to operate without need to bend hand or fingers (see **FIG. 30**, and **FIG. 178**); easily deploying or retracting robot-assembled automatic-cable-cleaning dog-run-adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop-irrigating anti-wobbling canopy system(s) **140**; adjusting desired amount of deployment of robot-assembled automatic-cable-cleaning dog-run-adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop-irrigating anti-wobbling canopy system(s) **140**; and ambidextrously accommodating both right handed and left handed users.

[00305] Tension-locking spring **133** may be for: providing tension-locking force for ambidextrous canopy-deploying crank **132**. Cable-securing-and-winding spindle **134** may be for: winding and unwinding canopy-deploying-and-retracting cable **139** during deployment and retraction.

[00306] Single-direction-locking saw-toothed ratcheting gear **135** may be for: ratchet-locking cable-securing-and-winding spindle **134** when turning ambidextrous canopy-deploying crank **132**.

[00307] Rotation-locking saw-toothed-gear ratcheting finger **136** may be for: locking and unlocking single-direction-locking saw-toothed ratcheting gear **135**.

[00308] Canopy-securing Velcro-and-seam-negating top-strut-connecting flange **137** may be for: attaching robot-assembled automatic-cable-cleaning dog-run-adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop-irrigating canopy **154** to cable-protecting rotatable cantilever hoist-boom **130** without need for Velcro; attaching robot-assembled automatic-cable-cleaning dog-run-adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop-irrigating canopy **154** to cable-protecting rotatable cantilever hoist-boom **130**

without need for additional seam; providing locking edges to secure robot-assembled automatic-cable-cleaning dog-run-adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop-irrigating canopy 154 to cable-protecting rotatable cantilever hoist-boom **130**; and pivotably connecting swingable hoist-boom-lifting top strut **117** to cable-protecting rotatable cantilever hoist-boom **130**.

[00309] Swingable boom-connecting hinge **138** may be for: pivotably connecting robot-assembled automatic-cable-cleaning dog-run-adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop-irrigating anti-wobbling canopy system(s) **140** to cable-protecting rotatable cantilever hoist boom **130**. Canopy-deploying-and-retracting cable **139** may be for: deploying and retracting robot-assembled automatic-cable-cleaning dog-run-adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop-irrigating anti-wobbling canopy system(s) **140**; and tying and untying to release and secure robot-assembled automatic-cable-cleaning dog-run-adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop-irrigating anti-wobbling canopy system(s) **140** and flip 180 degrees in the directions of arrows **177a**, **177b**, **177c**, **177d**, **177e**, **177f**, **177g**, **177i**, and **177j** (see **FIG. 33**, **FIG. 34**, **FIG. 35**, **FIG. 36**, **FIG. 37**, **FIG. 38**, **FIG. 39**, **FIG. 140**, **FIG. 141**, **FIG. 142**, **FIG. 143**, **FIG. 144**, **FIG. 145**, **FIG. 146**, **FIG. 147**, and **FIG. 148**).

[00310] Robot-assembled automatic-cable-cleaning dog-run-adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop-irrigating anti-wobbling canopy system(s) **140** may be for performing the combined functions of its components. Robot-assembled heat-expandable cold-contractable upper canopy union **141** may be for: pivotably connecting ridge ribs **149** in the directions of arrows **171a**, and **172b** (see **FIG. 16**, **FIG. 18**, **FIG. 20**, **FIG. 132**, **FIG. 134**, and **FIG. 136**).

[00311] Robot-assembled heat-expandable cold-contractable lower canopy union **142** may be for: pivotably connecting ridge-rib-supporting struts **150**.

[00312] Robot-assembled heat-expandable cold-contractable holes **143** may be for: heat-expanding when screw robotically enters within and then lockingly cold-contracting around screw-threads when cooled in the directions of arrows **173a**, **173b**, **175d**, and **175e** (see **FIG. 24**, **FIG. 25**, **FIG. 127**, **FIG. 131**, and **FIG. 139**).

[00313] Robot-assembled automatically-flaring-and-shielding-rivet-tail injury-preventing hammer shield **144** may be for: radially expanding and locking in position when robotically inserted in the directions of arrows **185b**, **185c**, and **185d** (see **FIG. 66**, **FIG. 67**, **FIG. 150**, and **FIG. 151**). Robot-assembled automatically-flaring-and-shielding-screw-tail injury-preventing hammer-shield **145** may be for: radially expanding tip of robot-assembled heat-expandable cold-contractable anti-wobbling screws **153** when robotically inserted in the directions of arrows **171a**, **171e**, **175f**, **175g**, and **185h** (see **FIG. 24**, **FIG. 26**, **FIG. 128**, and **FIG. 131**); and preventing injury by covering sharp edges. LED-powering canopy solar panel **146** may be for: providing apparatus for collecting solar energy; collecting energy for powering led lights; powering led lights without need to plugged-in electric power; and saving money by providing a self-sufficient power source.

[00314] Central canopy-supporting column **147** may be for: providing central support for robot-assembled automatic-cable-cleaning dog-run-adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop-irrigating anti-wobbling canopy system(s) **140**.

[00315] Two opposite semi-circular automatic-cable-cleaning scraper **148** may be for: cleaning debris that may accumulate on canopy-deploying-and-retracting cable **139** in the direction of arrow **184** (see **FIG. 116**, and **FIG. 117**). Ridge ribs **149** may be for: supporting robot-assembled automatic-cable-cleaning dog-run-adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop-irrigating canopy **154**.

[00316] Ridge-rib-supporting struts **150** may be for: supporting ridge ribs **149**. Robot-assembled noise-cancelling rust-preventing strut-end covers **151** may be for: eliminating need for nuts and bolts reducing manufacturing costs in the directions of arrows **185b**, and **185c** (see **FIG. 66**, **FIG. 67**, **FIG. 150**, and **FIG. 151**); eliminating need for washers reducing manufacturing costs; preventing rainwater, dust, and insects from getting inside ridge-rib-supporting struts **150**; and noise-cancelling by preventing added noise from components rubbing together.

[00317] Robot-assembled heat-expandable cold-contractable rivets **152** may be for: decreasing assembly man hours by being robotically factory-installed in the directions of arrows **185b**, **185c**, and **185d** (see **FIG. 66**, **FIG. 67**, **FIG. 150**, and **FIG. 151**); decreasing end-user assembly time by being robotically factory-installed; eliminating need for washers; and robotically heat-stamping rivet end securing ridge ribs **149**, ridge-rib-supporting struts **150**, and robot-

assembled noise-cancelling rust-preventing strut-end covers **151** together eliminating need for nuts and bolts.

[00318] Robot-assembled heat-expandable cold-contractable anti-wobbling screws **153** may be for: robotically securing ridge ribs **149** to robot-assembled heat-expandable cold-contractable upper canopy union **141**; robotically securing ridge-rib-supporting struts **150** to robot-assembled heat-expandable cold-contractable lower canopy union **142**; robotically and automatically heat expanding heat-expandable cold-contractable holes **143** and cold contracting when cooled, locking in place; robotically and automatically flaring out when impacting robot-assembled automatically-flaring-and-shielding-screw-tail injury-preventing hammer-shield **145** locking in place in the directions of arrows **185b**, **185c**, and **185d** (see **FIG. 66**, **FIG. 67**, **FIG. 150**, and **FIG. 151**); and eliminating the need for washers and bolts.

[00319] Robot-assembled automatic-cable-cleaning dog-run-adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop-irrigating canopy **154** may be for: protecting from wind, sun, rain, and snow; functioning as a cover for a dog run in the direction of arrow **161** (see **FIG. 1**, **FIG. 2**, **FIG. 122**, and **FIG. 123**); collecting rainwater on a marine craft in the directions of arrows **174a**, and **174b** (see **FIG. 9**, **FIG. 10**, **FIG. 169**, and **FIG. 170**); collecting rainwater for irrigation (see **FIG. 3**, **FIG. 4**, **FIG. 163**, and **FIG. 164**); and multi-adjustably catching and redirecting wind to maneuver a land-yacht in the directions of arrows **161**, **162**, **163**, **164**, **165**, and **176** (see **FIG. 5**, **FIG. 6**, **FIG. 7**, **FIG. 8**, **FIG. 165**, **FIG. 166**, **FIG. 167**, and **FIG. 168**).

[00320] Robot-assembled heat-expandable cold-contractable canopy-securing rain-blocking rib-end-capping system **155** may be for performing the combined functions of its components.

[00321] Heat-expandable cold-contractable internal-rib-securing ridges **156** may be for: securing within ridge ribs **149** (see **FIG. 82**, and **FIG. 200**). Canopy-securing fan **157** may be for: providing a flat surface for adhering to robot-assembled automatic-cable-cleaning dog-run-adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop-irrigating canopy **154** (see **FIG. 82**, and **FIG. 200**).

[00322] Canopy-securing robot-sewing-trench **158** may be for: providing a trench to guide the stitching for securing to robot-assembled automatic-cable-cleaning dog-run-adaptable land-

yacht-sail-adaptable projector-screen-adaptable rain-collecting crop-irrigating canopy **154** (see **FIG. 82**, and **FIG. 200**).

[00323] Rib-end-capping rain-blocking end **159** may be for: protecting ridge ribs **149** from rain and bugs getting within (see **FIG. 82**, and **FIG. 200**). Rib-end-capping finger-grabbing ditches **160** may be for: providing inset for fingers to grip (see **FIG. 82**, and **FIG. 200**).

[00324] VARIATION

[00325] Any component of the five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella can have any shape and size.

[00326] Any component of the five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella can be replaced with an equivalent component.

[00327] Any component of the five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella can be made of any material(s) or any combination of any materials.

[00328] Any component of the five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella can be made of any flexible, semi-flexible, bendable, semi-bendable, stretchable, semi-stretchable, rigid, or semi-rigid material(s).

[00329] Any component-attaching method of the five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella can be replaced with an equivalent method.

[00330] For example, **FIG. 209** illustrates a perspective view of equivalent variations of physically-impaired-assisting handle-securing easy-slide-and-lift outer housing **121**.

[00331] For example, **FIG. 210A**, **FIG. 210B**, **FIG. 210C**, and **FIG. 210D**, illustrates perspective views of equivalent variations of rain-blocking top-strut-lifting weather cap **116**.

[00332] For example, **FIG. 211A**, **FIG. 211B**, **FIG. 211C**, and **FIG. 211D** illustrates perspective views of equivalent variations of canopy-securing Velcro-and-seam-negating top-strut-connecting flange **137**.

[00333] For example, **FIG. 212A**, **FIG. 212B**, **FIG. 212C**, and **FIG. 212D**, illustrates perspective views of equivalent variations of rotatable rain-blocking physically-impaired-assisting ambidextrous-accommodating canopy-cranking-and-hoisting system **129** or of its components.

[00334] For example, **FIG. 213**, **FIG. 214A**, **FIG. 214B**, **FIG. 215A**, **FIG. 215B**, **FIG. 216A**, **FIG. 216B**, **FIG. 216C**, and **FIG. 216D**, illustrates perspective views of equivalent variations of physically-impaired-assisting laterally-rotatable-and-lockable system **123** or of its components.

[00335] For example, **FIG. 217A**, **FIG. 217B**, **FIG. 217C**, and **FIG. 217D**, illustrates perspective views of equivalent variations of rotatable rain-blocking physically-impaired-assisting ambidextrous-accommodating canopy-cranking-and-hoisting system **129**, or of its components.

[00336] For example, **FIG. 218**, **FIG. 219**, **FIG. 220**, **FIG. 221**, **FIG. 222**, **FIG. 223**, and **FIG. 224**, illustrates perspective views of equivalent variations of LED-powering canopy solar panel **146** or of its connecting components.

[00337] For example, **FIG. 225**, **FIG. 226**, **FIG. 227**, **FIG. 228**, **FIG. 229**, **FIG. 230A**, **FIG. 230B**, **FIG. 230C**, **FIG. 231A**, **FIG. 231B**, **FIG. 231C**, **FIG. 232A**, **FIG. 232B**, illustrates perspective views of equivalent variations of robot-assembled automatic-cable-cleaning dog-run-adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop-irrigating anti-wobbling canopy system **140** or of its components.

[00338] For example, **FIG. 233A**, **FIG. 233B**, **FIG. 233C**, **FIG. 233D**, illustrates perspective views of equivalent variations of robot-assembled noise-cancelling rust-preventing strut-end covers **151**.

[00339] For example, **FIG. 234A**, and **FIG. 234B**, illustrate perspective views of equivalent variations of robot-assembled heat-expandable cold-contractable rivets **152**.

[00340] For example, **FIG. 234C**, and **FIG. 234D**, illustrate perspective views of equivalent variations of Robot-assembled heat-expandable cold-contractable anti-wobbling screws **153**.

[00341] For example, **FIG. 235**, **FIG. 236**, **FIG. 237**, **FIG. 238**, **FIG. 239**, and **FIG. 240**, illustrates perspective views of equivalent variations of five-device-in-one physically-impaired-assisting easy-slide- and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella. The present invention substantially departs from the conventional concepts and designs of the prior art. In doing so, some embodiments provides a five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella, having many unique and significant features, functions, and advantages, which overcome all the disadvantages of the prior art, as follows.

[00342] It is an object of some embodiments to provide a five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella, having 360-degree-rotatable noise-cancelling rotatable-floating-table-adaptable rotatable-floating-chair-adaptable pole-supporting vertebrae 108. Therefore, the five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella may be: capable of providing vertical support for multi-height-adjustable easy-slide-and-lift 360-degree-rotatable canopy-supporting vertical mast **114**; capable of supporting and rotating floating chair; capable of supporting and rotating floating table; and capable of twist-locking into a truck utility hole, a tow hitch, a boat deck, and a land yacht.

[00343] It is another object of some embodiments to provide a five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy

umbrella, having physically-impaired-assisting handle-securing easy-slide-and-lift outer housing 121. Therefore, the five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot- assembled cantilever-canopy umbrella may be: capable of providing an arched location for a physically disabled person to deploy umbrella without need to bend hand or fingers; capable of providing a smooth, tapered location for a person with less strength a location to lift to deploy umbrella; capable of protecting noise-cancelling easy-shuttling handle bearing 122; and capable of connecting height-adjustable physically-impaired-assisting easy-slide-and-lift handle 118 to cable-protecting rotatable cantilever hoist-boom 130.

[00344] It is still another object of some embodiments to provide a five-device-in-one physically- impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen- adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella, having noise-cancelling easy-shuttling handle bearing 122. Therefore, the five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run- adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot- assembled cantilever-canopy umbrella may be: capable of easily sliding physically-impaired-assisting handle-securing easy-slide-and-lift outer housing 121 on multi-height-adjustable easy-slide-and-lift 360-degree-rotatable canopy-supporting vertical mast 114; capable of silently sliding physically-impaired-assisting handle-securing easy-slide-and-lift outer housing 121 on multi-height-adjustable easy-slide-and-lift 360-degree-rotatable canopy-supporting vertical mast 114; capable of providing easy sliding without the need to rollers and other moving parts that can break or wear out over time; and capable of providing easy sliding without the need to grease or other lubricant.

[00345] It is yet still another object of some embodiments to provide a five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen- adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella, having physically-impaired-assisting over-rotation-preventing internal stoppers 127. Therefore, the five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot- assembled cantilever-canopy umbrella may be: capable of preventing over rotation of cable-

protecting rotatable cantilever hoist-boom **130**; capable of preventing injury from over-rotation accidents of cable-protecting rotatable cantilever hoist-boom **130**; capable of rotationally locking position of cable-protecting rotatable cantilever hoist-boom **130**; and capable of preventing umbrella from tipping over from over-rotation imbalance.

[00346] It is a further object of some embodiments to provide a five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen- adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella, having ambidextrous canopy-deploying crank 132. Therefore, the five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run- adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot- assembled cantilever-canopy umbrella may be: capable of providing a ergonomic design to allow a physically impaired person to operate without need to bend hand or fingers; capable of easily deploying or retracting robot-assembled automatic-cable-cleaning dog-run-adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop- irrigating anti-wobbling canopy system(s) **140**; capable of adjusting desired amount of deployment of robot-assembled automatic-cable-cleaning dog-run-adaptable land-yacht-sail-adaptable projector-screen-adaptable rain- collecting crop-irrigating anti-wobbling canopy system(s) **140**; and capable of ambidextrously accommodating both right handed and left handed users.

[00347] It is an even further object of some embodiments to provide a five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen- adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella, having canopy-securing Velcro-and-seam-negating top-strut-connecting flange 137. Therefore, the five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot- assembled cantilever-canopy umbrella may be: capable of attaching robot-assembled automatic-cable-cleaning dog-run-adaptable land- yacht-sail-adaptable projector-screen-adaptable rain-collecting crop-irrigating canopy 154 to cable-protecting rotatable cantilever hoist-boom **130** without need for Velcro; capable of attaching robot-assembled automatic-cable-cleaning dog-run-adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop-irrigating

canopy **154** to cable-protecting rotatable cantilever hoist-boom **130** without need for additional seam; capable of providing locking edges to secure robot-assembled automatic-cable-cleaning dog-run-adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop-irrigating canopy **154** to cable-protecting rotatable cantilever hoist-boom **130**; and capable of pivotably connecting swingable hoist-boom-lifting top strut **117** to cable-protecting rotatable cantilever hoist-boom **130**.

[00348] It is still an even further object of some embodiments to provide a five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella, having led-powering canopy solar panel **146**. Therefore, the five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella may be: capable of providing apparatus for collecting solar energy; capable of collecting energy for powering led lights; capable of powering led lights without need to plugged-in electric power; and capable of saving money by providing a self-sufficient power source.

[00349] It is yet still an even further object of some embodiments to provide a five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella, having robot-assembled noise-cancelling rust-preventing strut-end covers **151**. Therefore, the five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella may be: capable of eliminating need for nuts and bolts reducing manufacturing costs; capable of eliminating need for washers reducing manufacturing costs; capable of preventing rainwater, dust, and insects from getting inside ridge-rib-supporting struts **150**; and capable of noise-cancelling by preventing added noise from components rubbing together.

[00350] It is yet still an even further object of some embodiments to provide a five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy

umbrella, having robot-assembled heat-expandable cold-contractable anti-wobbling screws **153**. Therefore, the five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot- assembled cantilever-canopy umbrella may be: capable of robotically securing ridge ribs **149** to robot-assembled heat-expandable cold-contractable upper canopy union **141**; capable of robotically securing ridge-rib-supporting struts **150** to robot-assembled heat-expandable cold-contractable lower canopy union **142**; capable of robotically and automatically heat expanding heat-expandable cold-contractable holes **143** and cold contracting when cooled, locking in place; capable of robotically and automatically flaring out when impacting robot-assembled automatically-flaring-and-shielding-screw-tail injury-preventing hammer-shield **145** locking in place; and capable of eliminating the need for washers and bolts.

[00351] It is yet still an even further object of some embodiments to provide a five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector- screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella, having robot-assembled automatic-cable-cleaning dog-run-adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop-irrigating canopy **154**. Therefore, the five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run- adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot- assembled cantilever-canopy umbrella may be: capable of protecting from wind, sun, rain, and snow; capable of functioning as a cover for a dog run; capable of collecting rainwater on a marine craft; capable of collecting rainwater for irrigation; and capable of multi-adjustably catching and redirecting wind to maneuver a land-yacht.

[00352] Not every embodiment is capable of every objective of the examples described herein.

[00353] One or more elements or aspects or steps, or any portion(s) thereof, from one or more of any of the systems and methods described herein may be combined with one or more elements or aspects or steps, or any portion(s) thereof, from one or more of any of the other systems and methods described herein and combinations thereof, to form one or more additional implementations and/or claims of the present disclosure.

[00354] One or more of the components, steps, features, and/or functions illustrated in the figures may be rearranged and/or combined into a single component, block, feature or function or embodied in several components, steps, or functions. Additional elements, components, steps, and/or functions may also be added without departing from the disclosure. The apparatus, devices, and/or components illustrated in the Figures may be configured to perform one or more of the methods, features, or steps described in the Figures.

[00355] Reference in the specification to “one embodiment” or “an embodiment” means that a particular feature, structure, or characteristic described in connection with the embodiment is included in at least one embodiment of the invention. The appearances of the phrase “in one embodiment” in various places in the specification are not necessarily all referring to the same embodiment.

[00356] The foregoing description of the embodiments of the present invention has been presented for the purposes of illustration and description. It is not intended to be exhaustive or to limit the present invention to the precise form disclosed. Many modifications and variations are possible in light of the above teaching. It is intended that the scope of the present invention be limited not by this detailed description, but rather by the claims of this application. As will be understood by those familiar with the art, the present invention may be embodied in other specific forms without departing from the spirit or essential characteristics thereof. Likewise, the particular naming and division of the modules, routines, features, attributes, methodologies and other aspects are not mandatory or significant, and the mechanisms that implement the present invention or its features may have different names, divisions and/or formats.

[00357] It will be understood that each of the elements and sub-elements may be claimed separately, unless otherwise noted. It will also be understood that other embodiments of the devices described herein may have fewer elements than the combinations of elements described herein in.

[00358] The previous description is provided to enable any person skilled in the art to practice the various aspects described herein. Various modifications to these aspects will be readily apparent to those skilled in the art, and the generic principles defined herein may be applied to other aspects. Thus, the claims are not intended to be limited to the aspects shown herein, but is to

be accorded the full scope consistent with the language claims, wherein reference to an element in the singular is not intended to mean “one and only one” unless specifically so stated, but rather “one or more.” The word “exemplary” is used herein to mean “serving as an example, instance, or illustration.” Any aspect described herein as “exemplary” is not necessarily to be construed as preferred or advantageous over other aspects. Unless specifically stated otherwise, the term “some” refers to one or more. Combinations such as “at least one of A, B, or C,” “one or more of A, B, or C,” “at least one of A, B, and C,” “one or more of A, B, and C,” and “A, B, C, or any combination thereof” include any combination of A, B, and/or C, and may include multiples of A, multiples of B, or multiples of C. Specifically, combinations such as “at least one of A, B, or C,” “one or more of A, B, or C,” “at least one of A, B, and C,” “one or more of A, B, and C,” and “A, B, C, or any combination thereof” may be A only, B only, C only, A and B, A and C, B and C, or A and B and C, where any such combinations may contain one or more member or members of A, B, or C. All structural and functional equivalents to the elements of the various aspects described throughout this disclosure that are known or later come to be known to those of ordinary skill in the art are expressly incorporated herein by reference and are intended to be encompassed by the claims. Moreover, nothing disclosed herein is intended to be dedicated to the public regardless of whether such disclosure is explicitly recited in the claims. The words “module,” “mechanism,” “element,” “device,” and the like may not be a substitute for the word “means.” As such, no claim element is to be construed as a means plus function unless the element is expressly recited using the phrase “means for.”

What is claimed is:

1. A five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella, comprising:

a rotatable-floating-table-locking rotatable-floating-chair-locking rotatable-umbrella-locking foot-pedal;

a 360-degree-four-wall-tunnel-locking disk;

a plurality of umbrella-pole-locking four-wall tunnels formed into said 360-degree-four-wall-tunnel-locking disk;

a noise-cancelling tunnel-and-disk-protecting housing;

a noise-cancelling tunnel-and-disk-protecting flange slid over said noise-cancelling tunnel-and-disk-protecting housing;

a multi-height-adjustable easy-slide-and-lift 360-degree-rotatable canopy-supporting vertical mast secured to said 360-degree-rotatable noise-cancelling rotatable-floating-table-adaptable rotatable-floating-chair-adaptable pole-supporting vertebrae;

a plurality of multi-height-adjustable holes drilled into said multi-height-adjustable easy-slide-and-lift 360-degree-rotatable canopy-supporting vertical mast;

a rain-blocking top-strut-lifting weather cap secured to said multi-height-adjustable easy-slide-and-lift 360-degree-rotatable canopy-supporting vertical mast;

a swingable hoist-boom-lifting top strut swingingly secured to said rain-blocking top-strut-lifting weather cap;

a height-adjustable physically-impaired-assisting easy-slide-and-lift handle;

a physically-impaired-assisting easy-squeeze height-adjusting spring-loaded trigger hingedly secured into said height-adjustable physically-impaired-assisting easy-slide-and-lift handle;

a height-adjusting spring-loaded-trigger pin slidably secured to said physically-impaired-assisting easy-squeeze height-adjusting spring-loaded trigger;

a physically-impaired-assisting handle-securing easy-slide-and-lift outer housing secured to said height-adjustable physically-impaired-assisting easy-slide-and-lift handle;

a noise-cancelling easy-shuttling handle bearing inserted within said physically-impaired-assisting handle-securing easy-slide-and-lift outer housing;

a swingable rain-blocking rotatably-lockable woodpecker-housing cradle hingedly attached to said physically-impaired-assisting handle-securing easy-slide-and-lift outer housing;

a physically-impaired-assisting laterally-rotatable-and-lockable spring-loaded teeth-securing woodpecker hingedly attached to said swingable rain-blocking rotatably-lockable woodpecker-housing cradle;

a rotatable adjustable locking-teeth housing rotatably inserted within said swingable rain-blocking rotatably-lockable woodpecker-housing cradle;

a plurality of physically-impaired-assisting over-rotation-preventing internal stoppers formed to said swingable rain-blocking rotatably-lockable woodpecker-housing cradle;

a plurality of rotation-locking teeth formed to said rotatable adjustable locking-teeth housing;

a cable-protecting rotatable cantilever hoist-boom secured into said rotatable adjustable locking-teeth housing;

an ambidextrous-canopy-deploying-crank housing secured to said cable-protecting rotatable cantilever hoist-boom;

an ambidextrous canopy-deploying crank rotatably secured to said ambidextrous-canopy-deploying-crank housing;

a tension-locking spring secured to said ambidextrous canopy-deploying crank within said ambidextrous-canopy-deploying-crank housing;

a cable-securing-and-winding spindle rotatably secured to said tension-locking spring within ambidextrous-canopy-deploying-crank housing;

a single-direction-locking saw-toothed ratcheting gear rotatably secured to said cable-securing-and-winding spindle;

a rotation-locking saw-toothed-gear ratcheting finger swingably secured to said single-direction-locking saw-toothed ratcheting gear;

a canopy-securing Velcro-and-seam-negating top-strut-connecting flange secured to said cable-protecting rotatable cantilever hoist-boom;

a swingable boom-connecting hinge swingably secured to said cable-protecting rotatable cantilever hoist-boom;

a canopy-deploying-and-retracting cable secured within said cable-protecting rotatable cantilever hoist-boom;

a robot-assembled heat-expandable cold-contractable upper canopy union swingingly secured to said swingable boom-connecting hinge;

a robot-assembled heat-expandable cold-contractable lower canopy union,

said canopy-deploying-and-retracting cable threaded through said robot-assembled heat-expandable cold-contractable lower canopy union and tied in a knot;

a plurality of robot-assembled heat-expandable cold-contractable holes formed into said robot-assembled heat-expandable cold-contractable upper canopy union and said robot-assembled heat-expandable cold-contractable lower canopy union;

a robot-assembled automatically-flaring-and-shielding-rivet-tail injury-preventing hammer-shield;

a robot-assembled automatically-flaring-and-shielding-screw-tail injury-preventing hammer-shield formed into said robot-assembled heat-expandable cold-contractable upper canopy union and said robot-assembled heat-expandable cold-contractable lower canopy union;

a central canopy-supporting column secured to said robot-assembled heat-expandable cold-contractable upper canopy union;

two opposite semi-circular automatic-cable-cleaning scraper formed to said robot-assembled heat-expandable cold-contractable upper canopy union;

a plurality of ridge ribs swingingly attached to said robot-assembled heat-expandable cold-contractable upper canopy union;

a plurality of ridge-rib-supporting struts swingingly attached to said robot-assembled heat-expandable cold-contractable lower canopy union;

a plurality of robot-assembled noise-cancelling rust-preventing strut-end covers secured over said ridge-rib-supporting struts;

a plurality of robot-assembled heat-expandable cold-contractable rivets secured through said ridge ribs and through said ridge-rib-supporting struts and through robot-assembled noise-cancelling rust-preventing strut-end covers,

said robot-assembled automatically-flaring-and-shielding-rivet-tail injury-preventing

hammer-shield attached to said robot-assembled heat-expandable cold-contractable rivets;

a plurality of robot-assembled heat-expandable cold-contractable anti-wobbling screws robotically screwed into said robot-assembled heat-expandable cold-contractable upper canopy union and said robot-assembled heat-expandable cold-contractable lower canopy union;

a robot-assembled automatic-cable-cleaning dog-run-adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop-irrigating canopy;

a plurality of heat-expandable cold-contractable internal-rib-securing ridges;

a canopy-securing fan;

a canopy-securing robot-sewing-trench formed to said canopy-securing fan;

a rib-end-capping rain-blocking end formed to said canopy-securing fan; and

a plurality of rib-end-capping finger-grabbing ditches formed to said rib-end-capping rain-blocking end.

2. The five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella, of claim 1:

further comprising:

a plurality of base-stabilizing feet,

said base-stabilizing feet attached to said rotatable-floating-table-locking rotatable-floating-chair-locking rotatable-umbrella-locking foot-pedal.

3. The five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella, of claim 1:

further comprising:

a plurality of fillable-weight-securing toes,

said fillable-weight-securing toes welded to said base-stabilizing feet.

4. The five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella, of claim 1:

further comprising:

a plurality of fillable base-stabilizing weights,

said fillable base-stabilizing weights secured to said base-stabilizing feet.

5. The five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella, of claim 1:

further comprising:

a fillable base-stabilizing foot-pedal-housing weight,

said fillable base-stabilizing foot-pedal-housing weight secured to said base-stabilizing feet.

6. The five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella, of claim 1:

further comprising:

a base-stabilizing-feet-reinforcing base,

said base-stabilizing-feet-reinforcing base screwed to said base-stabilizing feet and connected to said rotatable-floating-table-locking rotatable-floating-chair-locking rotatable-umbrella-locking foot-pedal.

7. The five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella, of claim 1:

further comprising:

a 360-degree-rotatable noise-cancelling rotatable-floating-table-adaptable rotatable-floating-chair-adaptable pole-supporting vertebrae,

said 360-degree-rotatable noise-cancelling rotatable-floating-table-adaptable rotatable-floating-chair-adaptable pole-supporting vertebrae secured to said base-stabilizing-feet-reinforcing base and slid into said noise-cancelling tunnel-and-disk-protecting housing.

8. The five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella, of claim 1:

further comprising:

an led-powering canopy solar panel,

said led-powering canopy solar panel secured to said robot-assembled heat-expandable cold-contractable upper canopy union.

9. The five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella, of claim 1:

wherein:

said noise-cancelling easy-shuttling handle bearing is made of the material of plastic.

10. A five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella, comprising:

a rotatable-floating-table-locking rotatable-floating-chair-locking rotatable-umbrella-locking foot-pedal;

a 360-degree-four-wall-tunnel-locking disk;

a plurality of umbrella-pole-locking four-wall tunnels formed into said 360-degree-four-wall-tunnel-locking disk;

a noise-cancelling tunnel-and-disk-protecting housing;

a noise-cancelling tunnel-and-disk-protecting flange slid over said noise-cancelling tunnel-and-disk-protecting housing;

a multi-height-adjustable easy-slide-and-lift 360-degree-rotatable canopy-supporting vertical mast secured to said 360-degree-rotatable noise-cancelling rotatable-floating-table-adaptablerotatable-floating-chair-adaptable pole-supporting vertebrae;

a plurality of multi-height-adjustable holes drilled into said multi-height-adjustable easy-slide-and-lift 360-degree-rotatable canopy-supporting vertical mast;

a rain-blocking top-strut-lifting weather cap secured to said multi-height-adjustable easy-slide-and-lift 360-degree-rotatable canopy-supporting vertical mast;

a swingable hoist-boom-lifting top strut swingingly secured to said rain-blocking top-strut-lifting weather cap;

a height-adjustable physically-impaired-assisting easy-slide-and-lift handle;

a physically-impaired-assisting easy-squeeze height-adjusting spring-loaded trigger hingedly secured into said height-adjustable physically-impaired-assisting easy-slide-and-lift handle;

a height-adjusting spring-loaded-trigger pin slidably secured to said physically-impaired-assisting easy-squeeze height-adjusting spring-loaded trigger;

a physically-impaired-assisting handle-securing easy-slide-and-lift outer housing secured to said height-adjustable physically-impaired-assisting easy-slide-and-lift handle;

a noise-cancelling easy-shuttling handle bearing inserted within said physically-impaired-assisting handle-securing easy-slide-and-lift outer housing;

a swingable rain-blocking rotatably-lockable woodpecker-housing cradle hingedly attached to said physically-impaired-assisting handle-securing easy-slide-and-lift outer housing;

a physically-impaired-assisting laterally-rotatable-and-lockable spring-loaded teeth-

securing woodpecker hingedly attached to said swingable rain- blocking rotatably-lockable woodpecker-housing cradle;

a rotatable adjustable locking-teeth housing rotatably inserted within said swingable rain-blocking rotatably-lockable woodpecker-housing cradle;

a plurality of physically-impaired-assisting over-rotation-preventing internal stoppers formed to said swingable rain-blocking rotatably-lockable woodpecker-housing cradle;

a plurality of rotation-locking teeth formed to said rotatable adjustable locking-teeth housing;

a cable-protecting rotatable cantilever hoist-boom secured into said rotatable adjustable locking-teeth housing;

an ambidextrous-canopy-deploying-crank housing secured to said cable-protecting rotatable cantilever hoist-boom;

an ambidextrous canopy-deploying crank rotatably secured to said ambidextrous-canopy-deploying-crank housing;

a tension-locking spring secured to said ambidextrous canopy-deploying crank within said ambidextrous-canopy-deploying-crank housing;

a cable-securing-and-winding spindle rotatably secured to said tension-locking spring within ambidextrous-canopy-deploying-crank housing;

a single-direction-locking saw-toothed ratcheting gear rotatably secured to said cable-securing-and-winding spindle;

a rotation-locking saw-toothed-gear ratcheting finger swingably secured to said single-direction-locking saw-toothed ratcheting gear;

a canopy-securing Velcro-and-seam-negating top-strut-connecting flange secured to

said cable-protecting rotatable cantilever hoist-boom;

a swingable boom-connecting hinge swingably secured to said cable-protecting rotatable cantilever hoist-boom;

a canopy-deploying-and-retracting cable secured within said cable-protecting rotatable cantilever hoist-boom;

a robot-assembled heat-expandable cold-contractable upper canopy union swingingly secured to said swingable boom-connecting hinge;

a robot-assembled heat-expandable cold-contractable lower canopy union,
said canopy-deploying-and-retracting cable threaded through said robot-assembled heat-expandable cold-contractable lower canopy union and tied in a knot;

a plurality of robot-assembled heat-expandable cold-contractable holes formed into said robot-assembled heat-expandable cold-contractable upper canopy union and said robot-assembled heat-expandable cold-contractable lower canopy union;

a robot-assembled automatically-flaring-and-shielding-rivet-tail injury-preventing hammer-shield;

a robot-assembled automatically-flaring-and-shielding-screw-tail injury-preventing hammer-shield formed into said robot-assembled heat-expandable cold-contractable upper canopy union and said robot-assembled heat-expandable cold-contractable lower canopy union;

a central canopy-supporting column secured to said robot-assembled heat-expandable cold-contractable upper canopy union;

two opposite semi-circular automatic-cable-cleaning scraper formed to said robot-assembled heat-expandable cold-contractable upper canopy union;

a plurality of ridge ribs swingingly attached to said robot-assembled heat-expandable cold-contractable upper canopy union;

a plurality of ridge-rib-supporting struts swingingly attached to said robot-assembled heat-expandable cold-contractable lower canopy union;

a plurality of robot-assembled noise-cancelling rust-preventing strut-end covers secured over said ridge-rib-supporting struts;

a plurality of robot-assembled heat-expandable cold-contractable rivets secured through said ridge ribs and through said ridge-rib-supporting struts and through robot-assembled noise-cancelling rust-preventing strut-end covers,

said robot-assembled automatically-flaring-and-shielding-rivet-tail injury-preventing hammer-shield attached to said robot-assembled heat-expandable cold-contractable rivets;

a plurality of robot-assembled heat-expandable cold-contractable anti-wobbling screws robotically screwed into said robot-assembled heat-expandable cold-contractable upper canopy union and said robot-assembled heat-expandable cold-contractable lower canopy union; and

a robot-assembled automatic-cable-cleaning dog-run-adaptable land-yacht-sail-adaptable projector-screen-adaptable rain-collecting crop-irrigating canopy.

11. The five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella, of claim 10:

further comprising:

a plurality of base-stabilizing feet,

said base-stabilizing feet attached to said rotatable-floating-table-locking rotatable-

floating-chair-locking rotatable-umbrella-locking foot-pedal.

12. The five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella, of claim 10:

further comprising:

a plurality of fillable-weight-securing toes,

said fillable-weight-securing toes welded to said base-stabilizing feet.

13. The five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella, of claim 10:

further comprising:

a plurality of fillable base-stabilizing weights,

said fillable base-stabilizing weights secured to said base-stabilizing feet.

14. The five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella, of claim 10:

further comprising:

a base-stabilizing-feet-reinforcing base,

said base-stabilizing-feet-reinforcing base screwed to said base-stabilizing feet and connected to said rotatable-floating-table-locking rotatable-floating-chair-locking rotatable-umbrella-locking foot-pedal.

15. The five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella, of claim 10:

further comprising:

a 360-degree-rotatable noise-cancelling rotatable-floating-table-adaptable rotatable-floating-chair-adaptable pole-supporting vertebrae,

said 360-degree-rotatable noise-cancelling rotatable-floating-table-adaptable rotatable-floating-chair-adaptable pole-supporting vertebrae secured to said base-stabilizing-feet-reinforcing base and slid into said noise-cancelling tunnel-and-disk-protecting housing.

16. A five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella, comprising:

a rotatable-floating-table-locking rotatable-floating-chair-locking rotatable-umbrella-locking foot-pedal;

a 360-degree-four-wall-tunnel-locking disk;

a plurality of umbrella-pole-locking four-wall tunnels formed into said 360-degree-four-wall-tunnel-locking disk;

a noise-cancelling tunnel-and-disk-protecting housing;

a noise-cancelling tunnel-and-disk-protecting flange slid over said noise-cancelling tunnel-and-disk-protecting housing;

a multi-height-adjustable easy-slide-and-lift 360-degree-rotatable canopy-supporting vertical mast secured to said 360-degree-rotatable noise-cancelling rotatable-floating-table-adaptable rotatable-floating-chair-adaptable pole-supporting vertebrae;

a plurality of multi-height-adjustable holes drilled into said multi-height-adjustable easy-slide-and-lift 360-degree-rotatable canopy-supporting vertical mast;

a rain-blocking top-strut-lifting weather cap secured to said multi-height-adjustable easy-slide-and-lift 360-degree-rotatable canopy-supporting vertical mast;

a swingable hoist-boom-lifting top strut swingingly secured to said rain-blocking top-strut-lifting weather cap;

a height-adjustable physically-impaired-assisting easy-slide-and-lift handle;

a physically-impaired-assisting easy-squeeze height-adjusting spring-loaded trigger hingedly secured into said height-adjustable physically-impaired-assisting easy-slide-and-lift handle;

a height-adjusting spring-loaded-trigger pin slidably secured to said physically-impaired-assisting easy-squeeze height-adjusting spring-loaded trigger;

a physically-impaired-assisting handle-securing easy-slide-and-lift outer housing secured to said height-adjustable physically-impaired-assisting easy-slide-and-lift handle;

a noise-cancelling easy-shuttling handle bearing inserted within said physically-impaired-assisting handle-securing easy-slide-and-lift outer housing;

a swingable rain-blocking rotatably-lockable woodpecker-housing cradle hingedly

attached to said physically-impaired-assisting handle-securing easy-slide-and-lift outer housing;

a physically-impaired-assisting laterally-rotatable-and-lockable spring-loaded teeth-securing woodpecker hingedly attached to said swingable rain- blocking rotatably-lockable woodpecker-housing cradle;

a rotatable adjustable locking-teeth housing rotatably inserted within said swingable rain-blocking rotatably-lockable woodpecker-housing cradle;

a plurality of physically-impaired-assisting over-rotation-preventing internal stoppers formed to said swingable rain-blocking rotatably-lockable woodpecker-housing cradle;

a plurality of rotation-locking teeth formed to said rotatable adjustable locking-teeth housing;

a cable-protecting rotatable cantilever hoist-boom secured into said rotatable adjustable locking-teeth housing;

an ambidextrous-canopy-deploying-crank housing secured to said cable-protecting rotatable cantilever hoist-boom;

an ambidextrous canopy-deploying crank rotatably secured to said ambidextrous-canopy-deploying-crank housing;

a tension-locking spring secured to said ambidextrous canopy-deploying crank within said ambidextrous-canopy-deploying-crank housing;

a cable-securing-and-winding spindle rotatably secured to said tension-locking spring within ambidextrous-canopy-deploying-crank housing;

a single-direction-locking saw-toothed ratcheting gear rotatably secured to said cable-securing-and-winding spindle;

a rotation-locking saw-toothed-gear ratcheting finger swingably secured to said single-direction-locking saw-toothed ratcheting gear;

a canopy-securing Velcro-and-seam-negating top-strut-connecting flange secured to said cable-protecting rotatable cantilever hoist-boom;

a swingable boom-connecting hinge swingably secured to said cable-protecting rotatable cantilever hoist-boom;

a canopy-deploying-and-retracting cable secured within said cable-protecting rotatable cantilever hoist-boom;

a robot-assembled heat-expandable cold-contractable upper canopy union swingingly secured to said swingable boom-connecting hinge;

a robot-assembled heat-expandable cold-contractable lower canopy union,
said canopy-deploying-and-retracting cable threaded through said robot-assembled heat-expandable cold-contractable lower canopy union and tied in a knot;

a plurality of robot-assembled heat-expandable cold-contractable holes formed into said robot-assembled heat-expandable cold-contractable upper canopy union and said robot-assembled heat-expandable cold-contractable lower canopy union;

a robot-assembled automatically-flaring-and-shielding-rivet-tail injury-preventing hammer-shield;

a robot-assembled automatically-flaring-and-shielding-screw-tail injury-preventing hammer-shield formed into said robot-assembled heat-expandable cold-contractable upper canopy union and said robot-assembled heat-expandable cold-contractable lower canopy union;

a central canopy-supporting column secured to said robot-assembled heat-expandable

cold-contractable upper canopy union;

two opposite semi-circular automatic-cable-cleaning scraper formed to said robot-assembled heat-expandable cold-contractable upper canopy union;

a plurality of ridge ribs swingingly attached to said robot-assembled heat-expandable cold-contractable upper canopy union;

a plurality of ridge-rib-supporting struts swingingly attached to said robot-assembled heat-expandable cold-contractable lower canopy union;

a plurality of robot-assembled noise-cancelling rust-preventing strut-end covers secured over said ridge-rib-supporting struts;

a plurality of robot-assembled heat-expandable cold-contractable rivets secured through said ridge ribs and through said ridge-rib-supporting struts and through robot-assembled noise-cancelling rust-preventing strut-end covers,

said robot-assembled automatically-flaring-and-shielding-rivet-tail injury-preventing hammer-shield attached to said robot-assembled heat-expandable cold-contractable rivets;
and

a plurality of robot-assembled heat-expandable cold-contractable anti-wobbling screws robotically screwed into said robot-assembled heat-expandable cold-contractable upper canopy union and said robot-assembled heat-expandable cold-contractable lower canopy union.

17. The five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella, of claim 16:

further comprising:

a plurality of base-stabilizing feet,

said base-stabilizing feet attached to said rotatable-floating-table-locking rotatable-floating-chair-locking rotatable-umbrella-locking foot-pedal.

18. The five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella, of claim 16:

further comprising:

a plurality of fillable-weight-securing toes,

said fillable-weight-securing toes welded to said base-stabilizing feet.

19. The five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella, of claim 16:

further comprising:

a base-stabilizing-feet-reinforcing base,

said base-stabilizing-feet-reinforcing base screwed to said base-stabilizing feet and connected to said rotatable-floating-table-locking rotatable-floating-chair-locking rotatable-umbrella-locking foot-pedal.

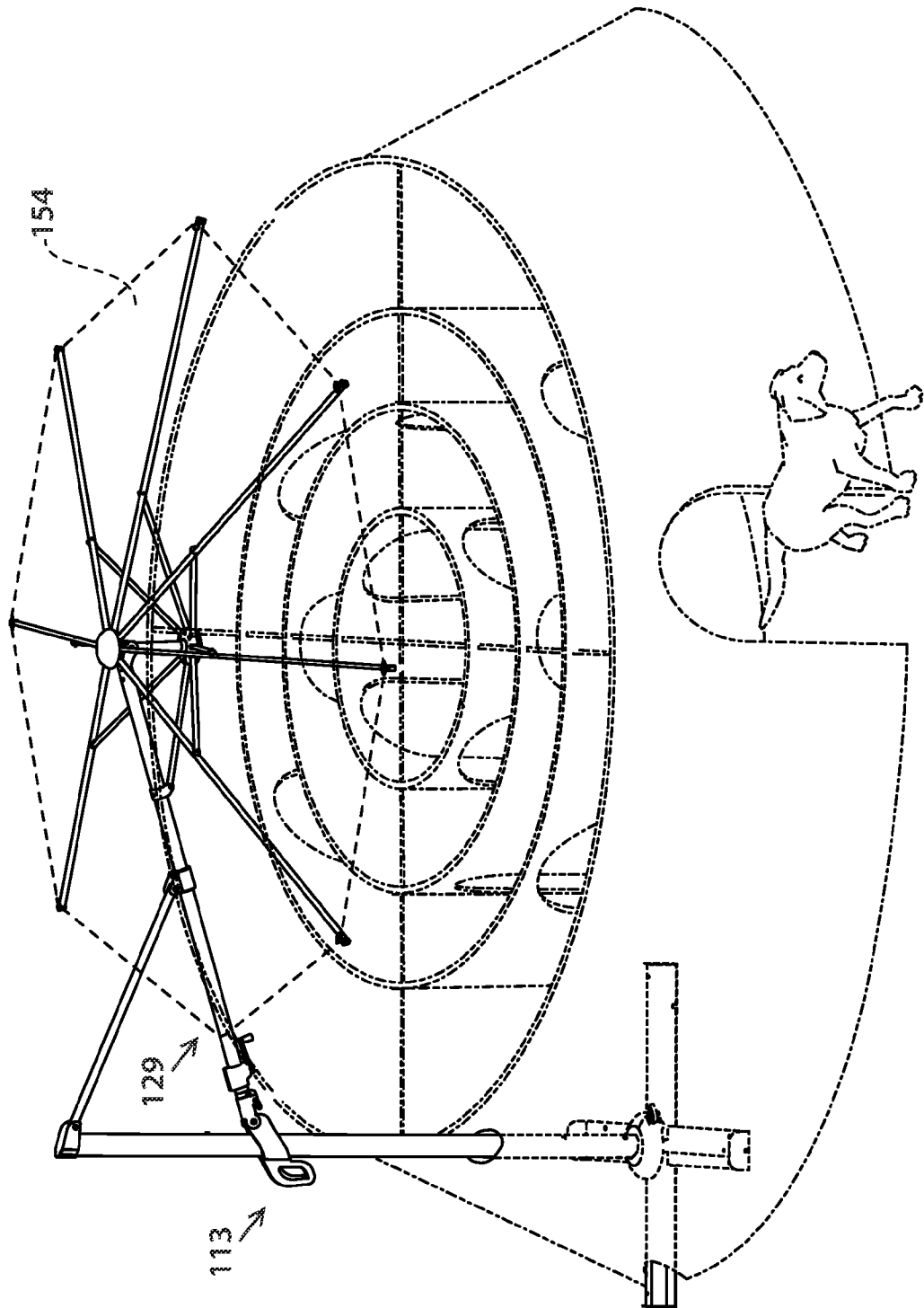
20. The five-device-in-one physically-impaired-assisting easy-slide-and-lift dog-run-adaptable land-yacht-adaptable projector-screen-adaptable anti-wobbling foot-pedal-operated robot-assembled cantilever-canopy umbrella, of claim 16:

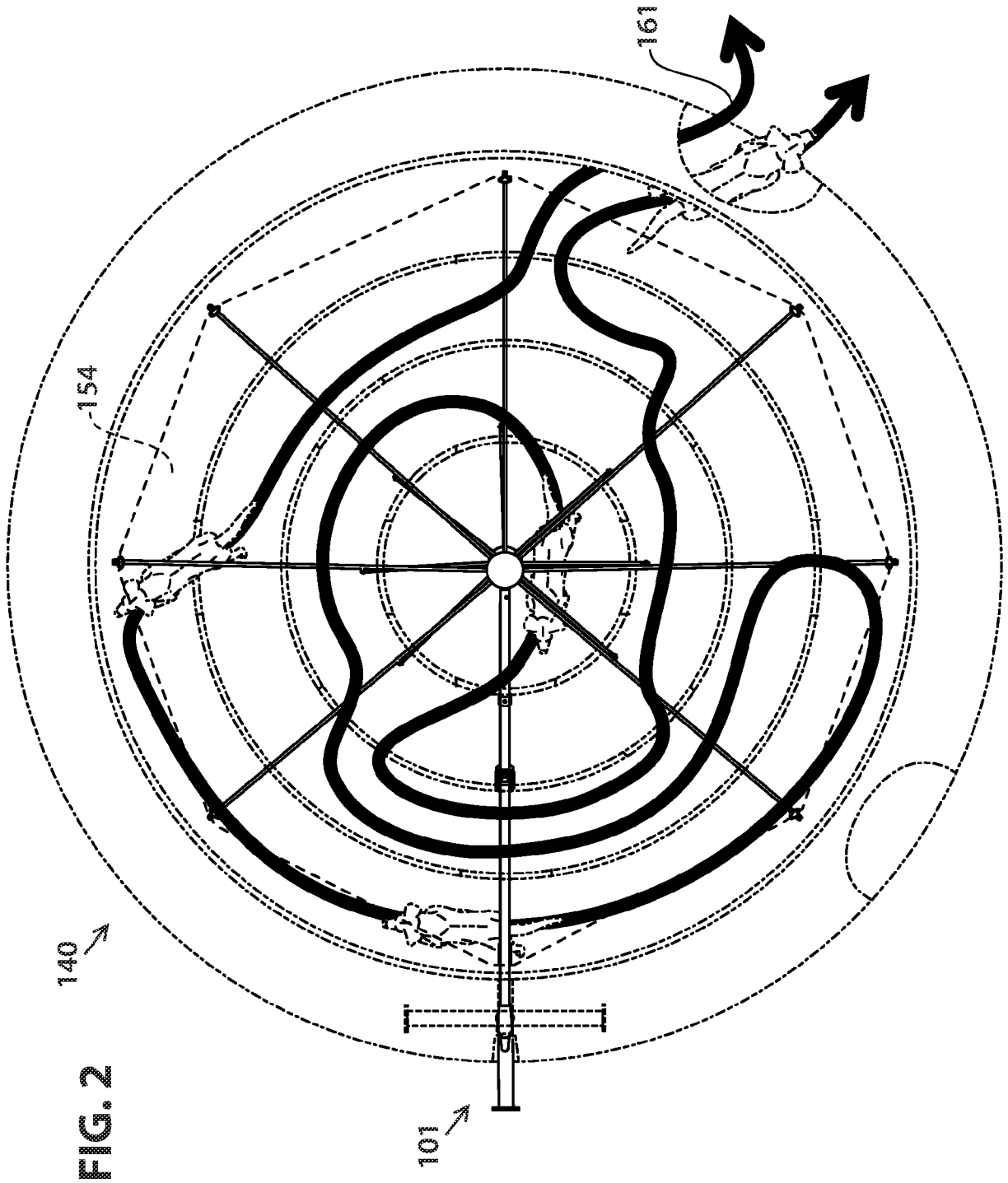
further comprising:

a 360-degree-rotatable noise-cancelling rotatable-floating-table-adaptable rotatable-floating-chair-adaptable pole-supporting vertebrae,

said 360-degree-rotatable noise-cancelling rotatable-floating-table-adaptable rotatable-floating-chair-adaptable pole-supporting vertebrae secured to said base-stabilizing-feet-reinforcing base and slid into said noise-cancelling tunnel-and-disk-protecting housing.

FIG. 1





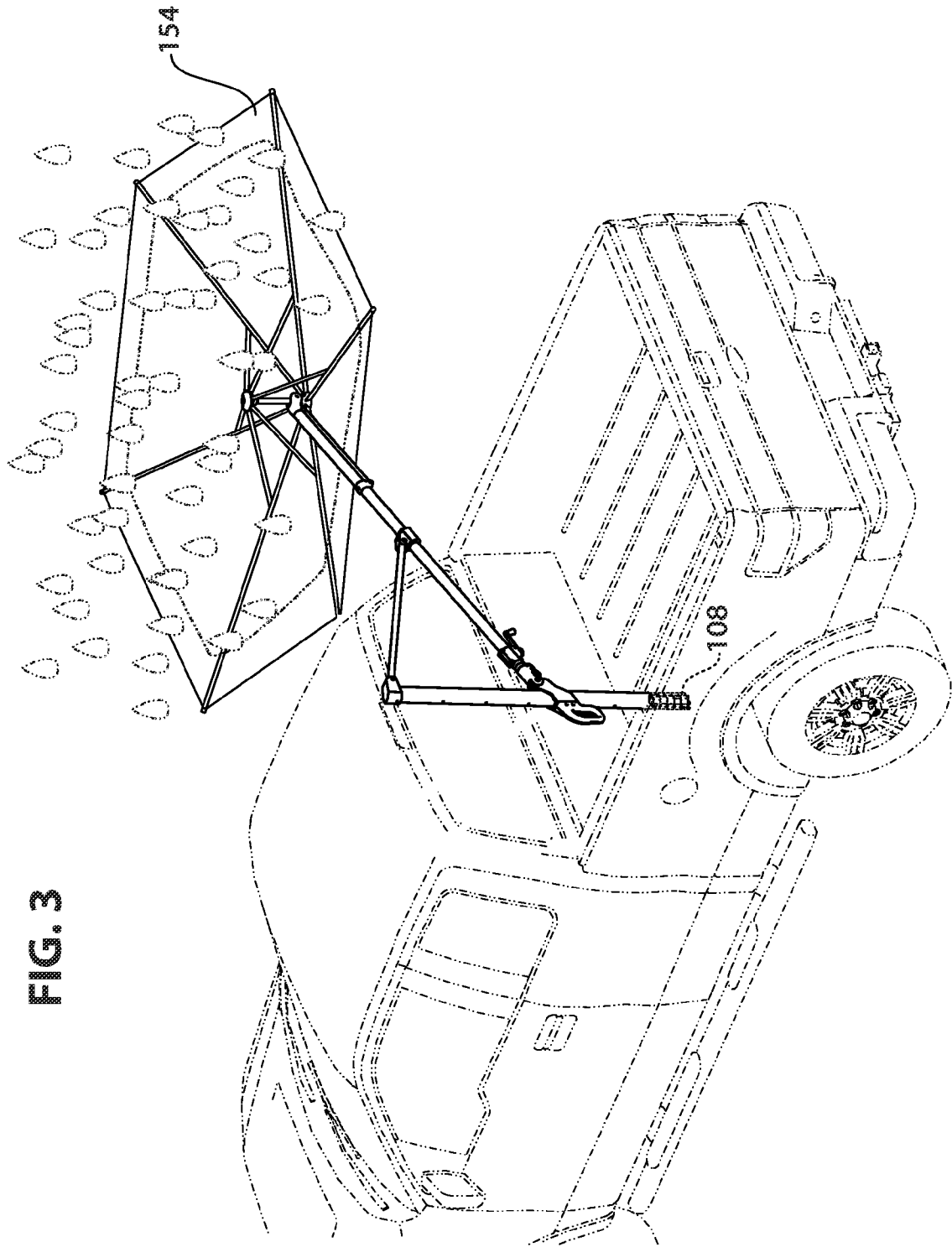


FIG. 3

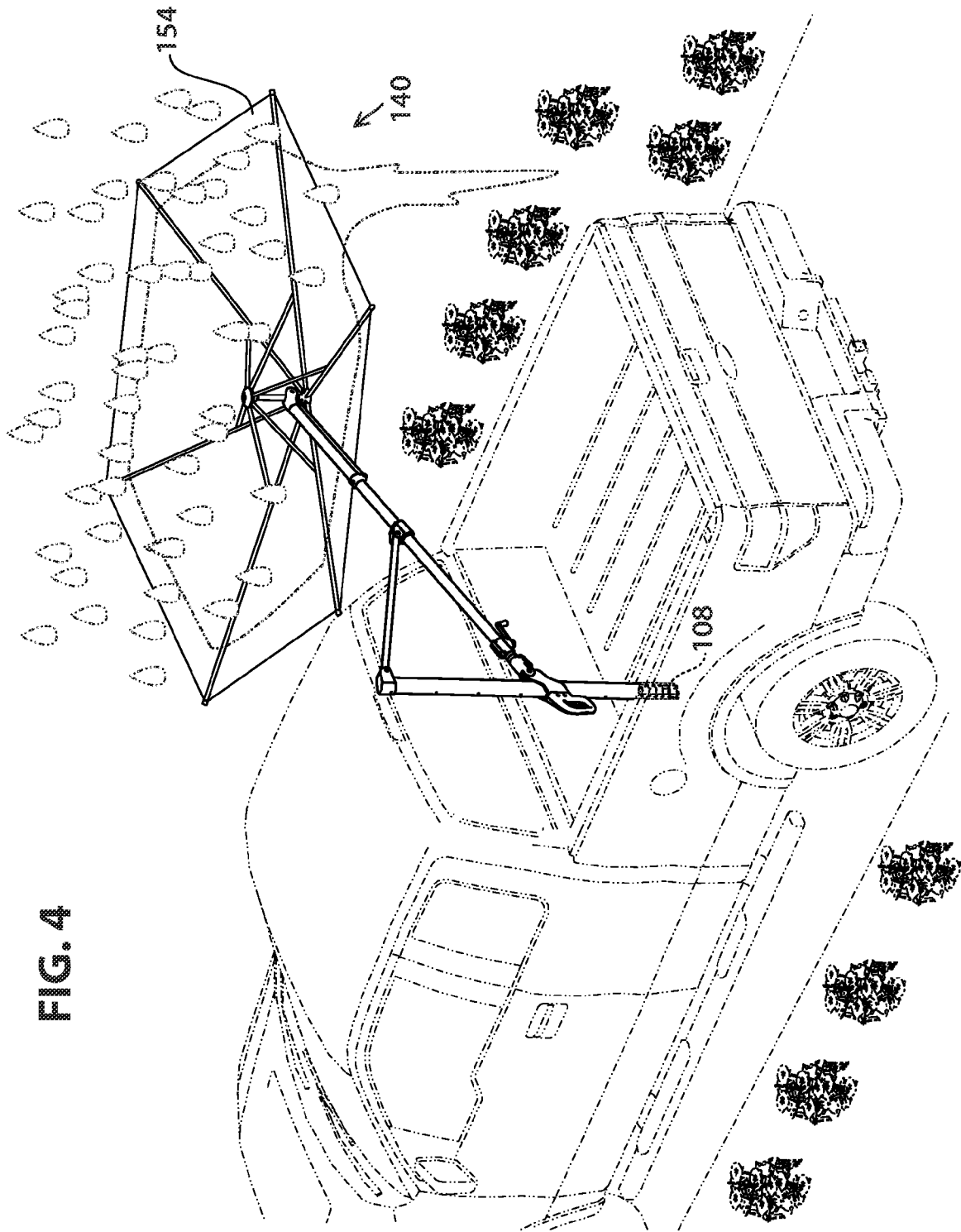


FIG. 4

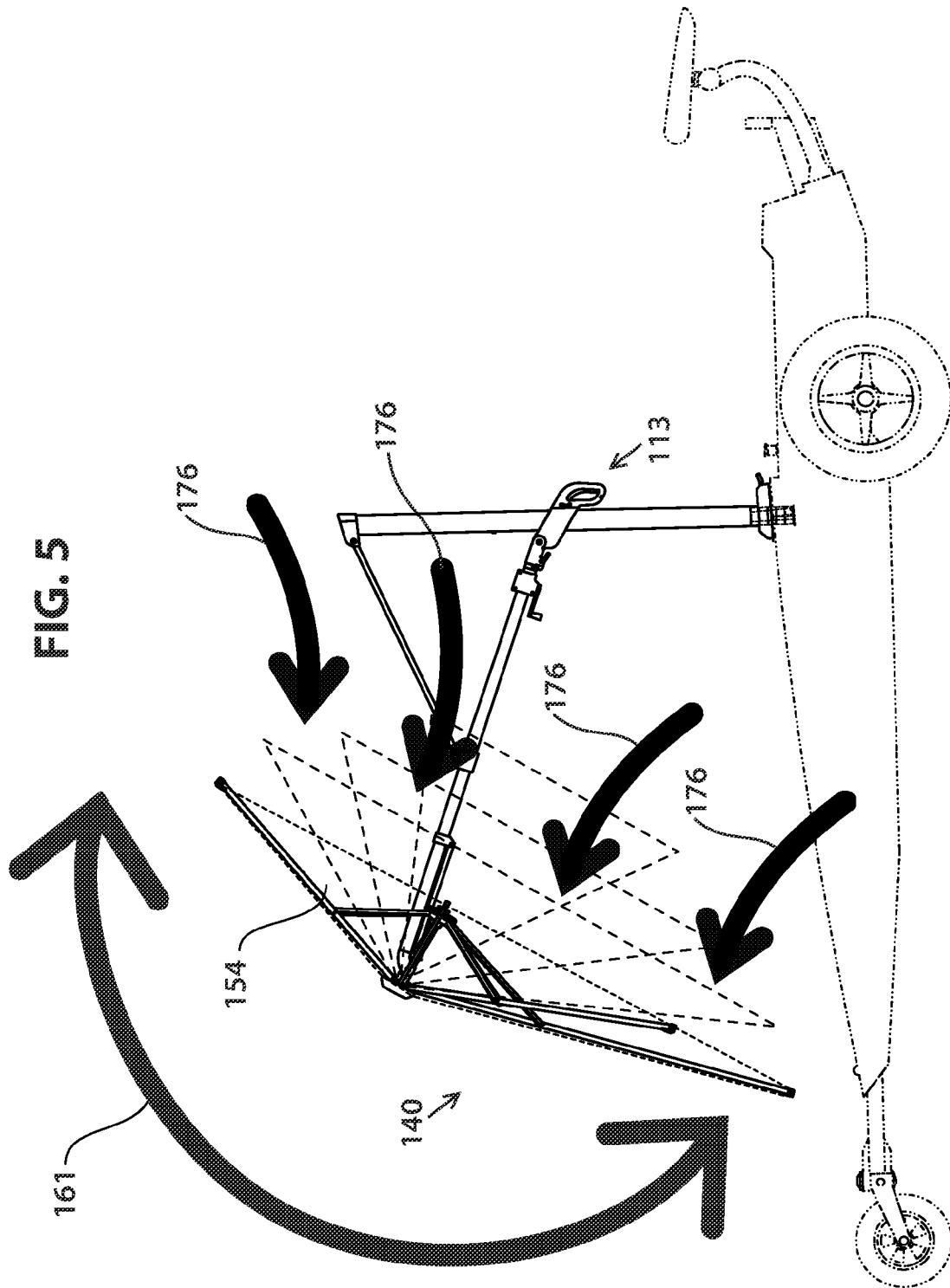
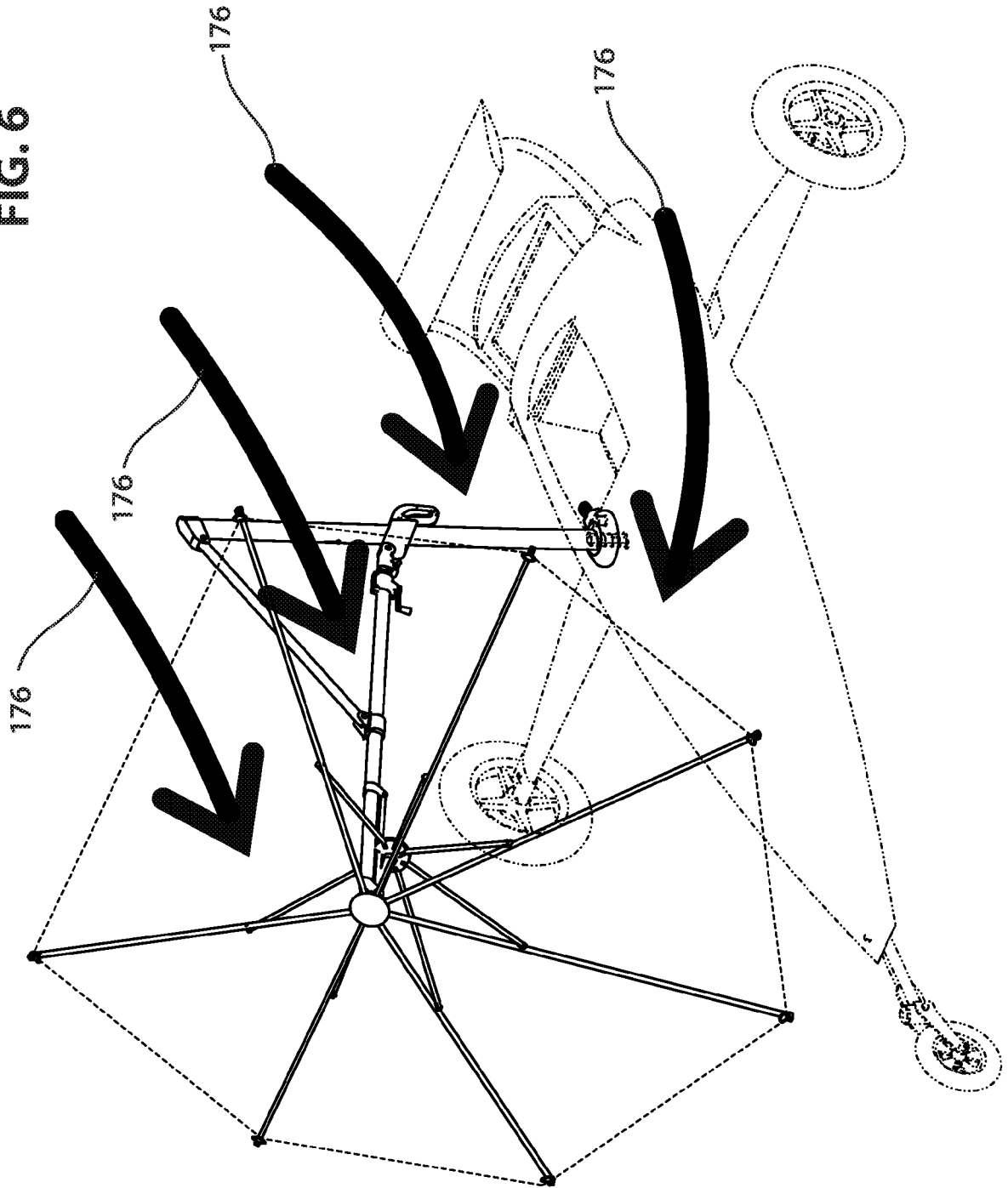
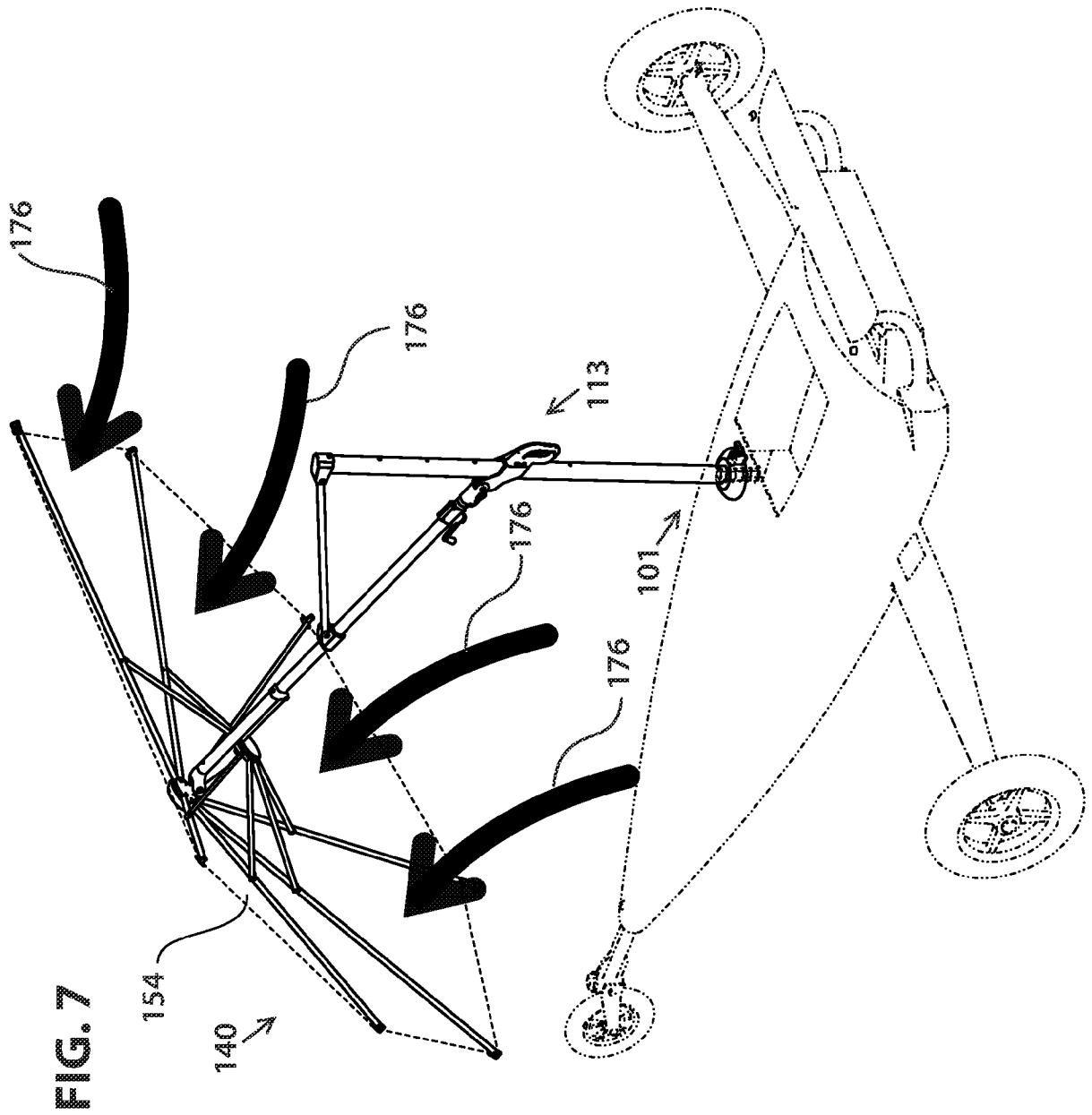
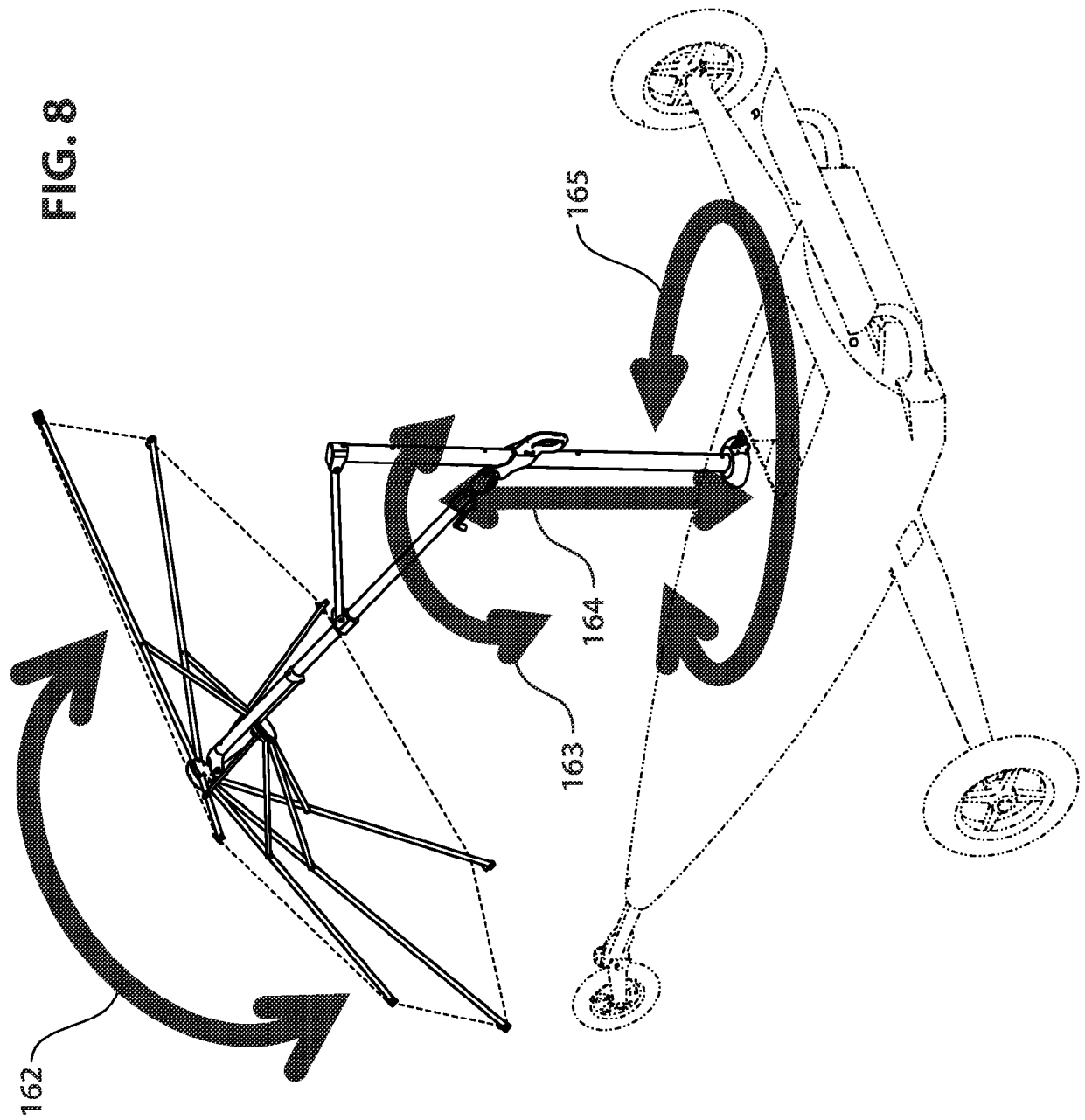


FIG. 6







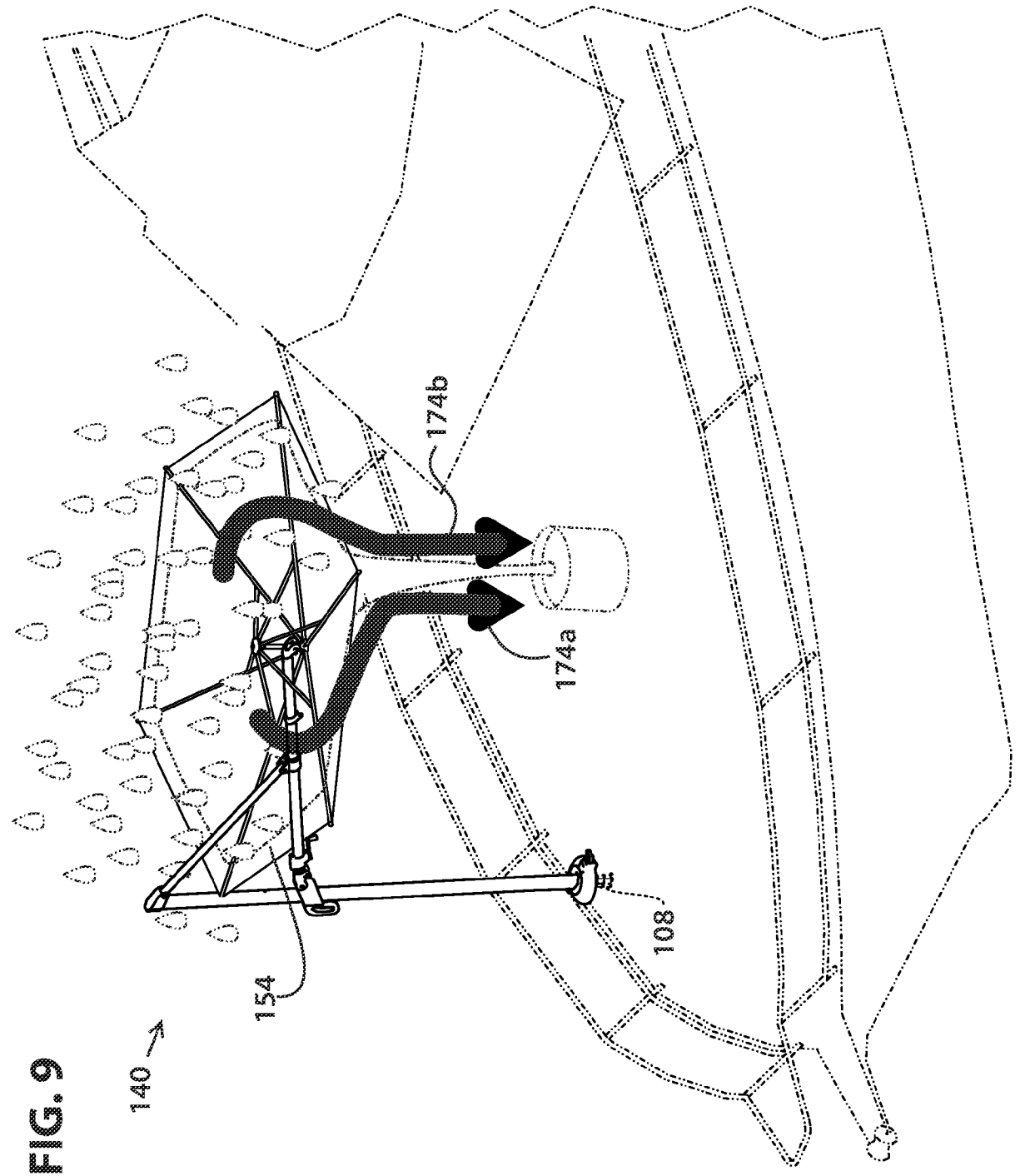


FIG. 10

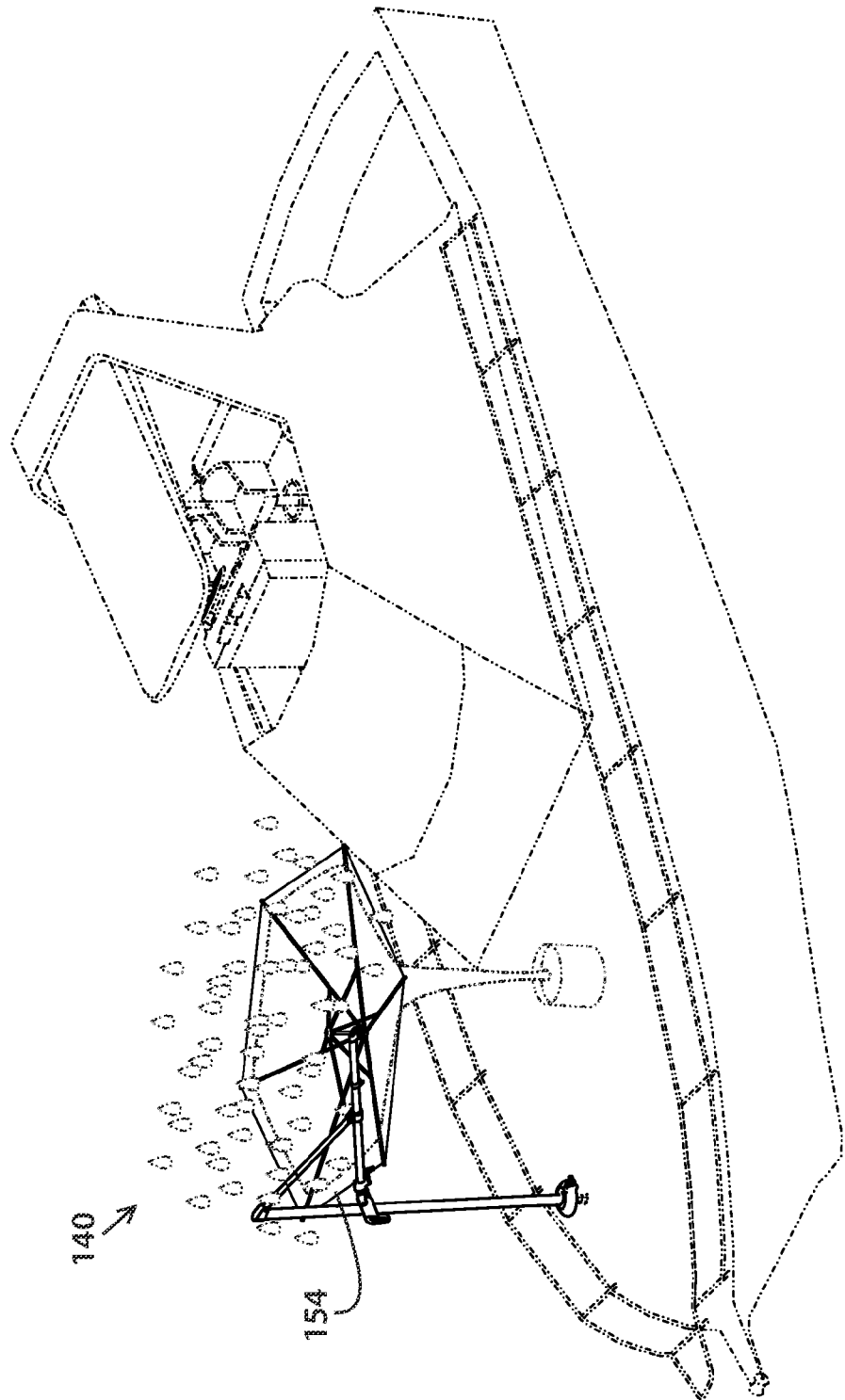


FIG. 11

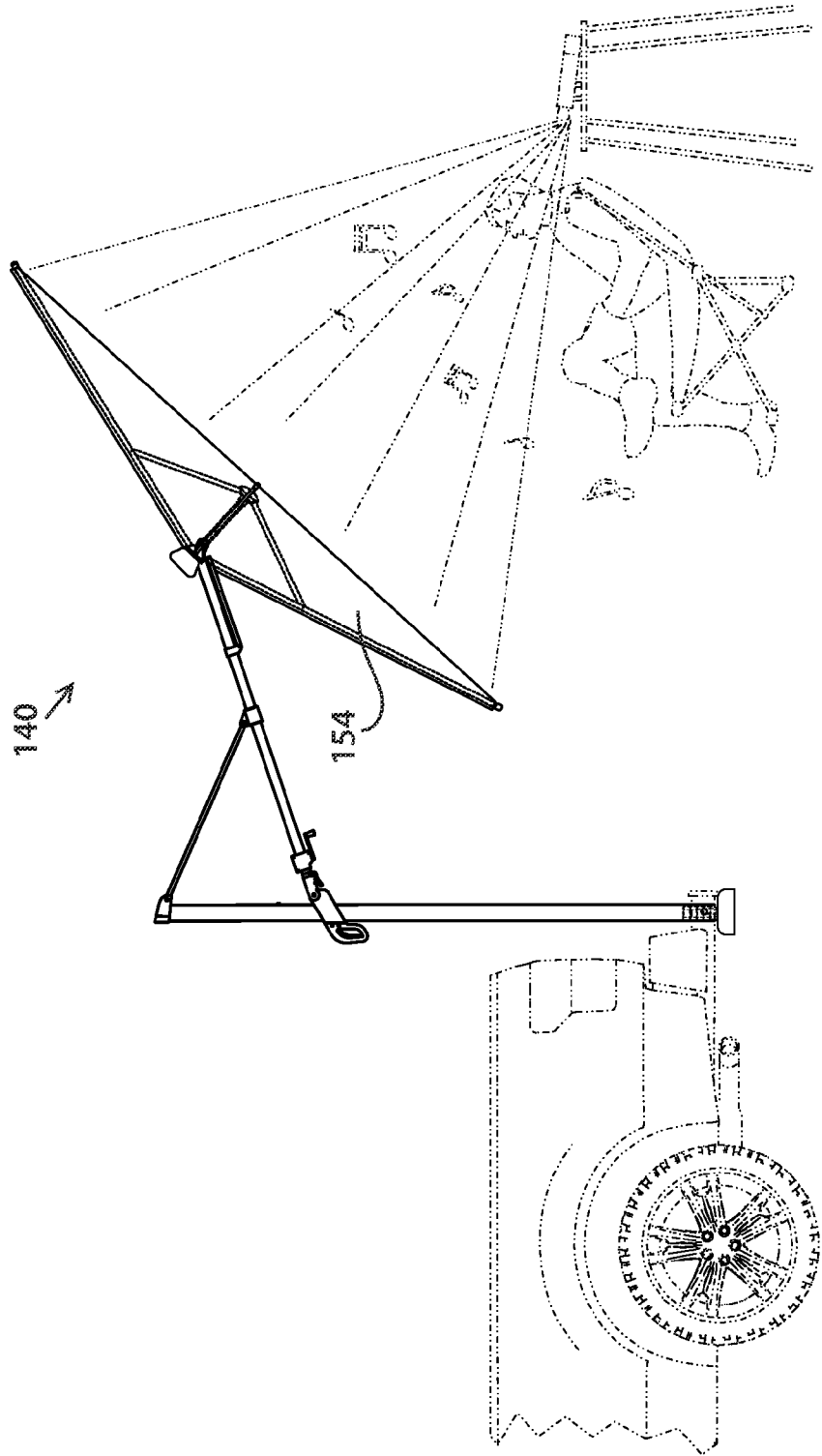


FIG. 12

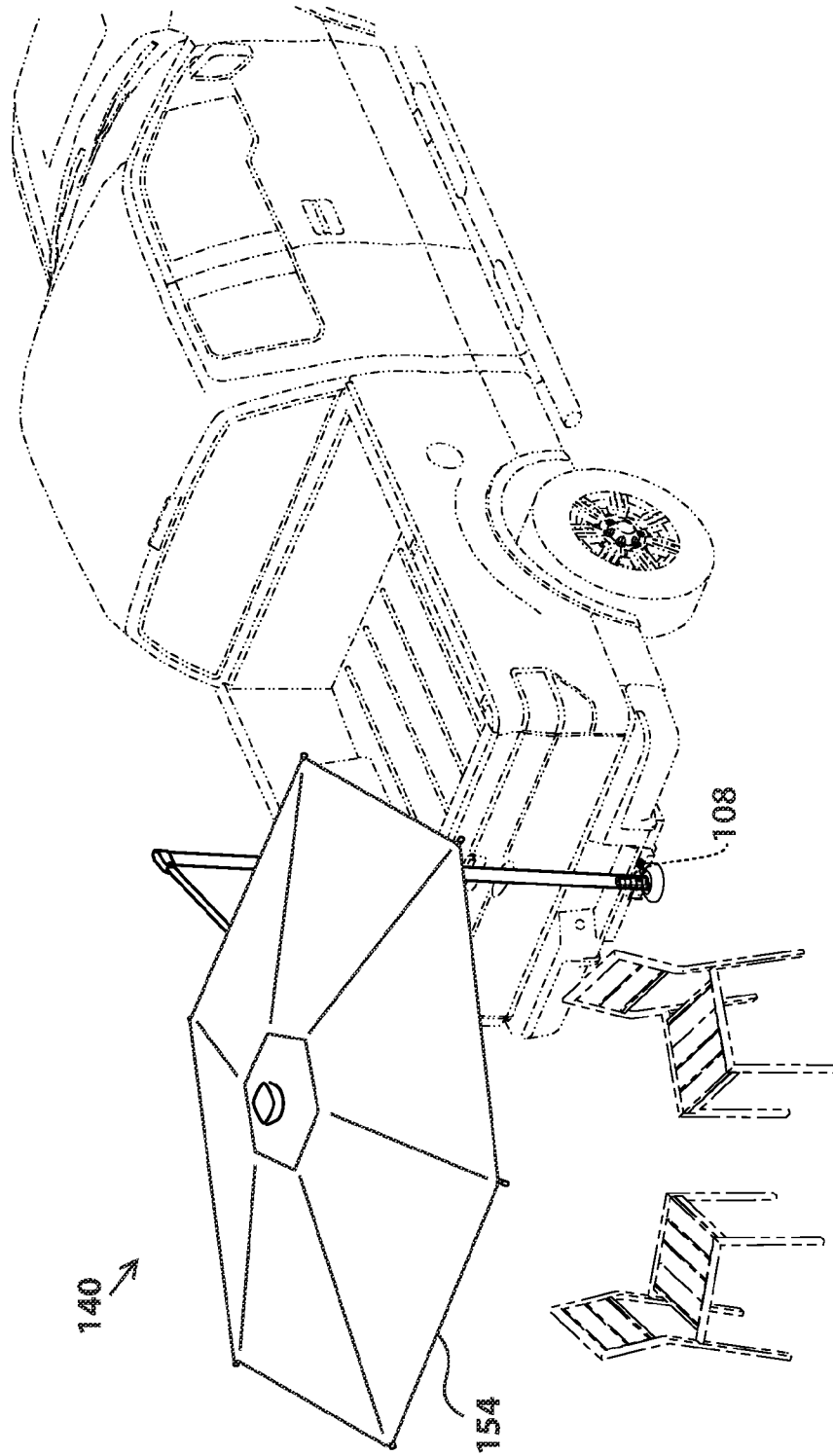
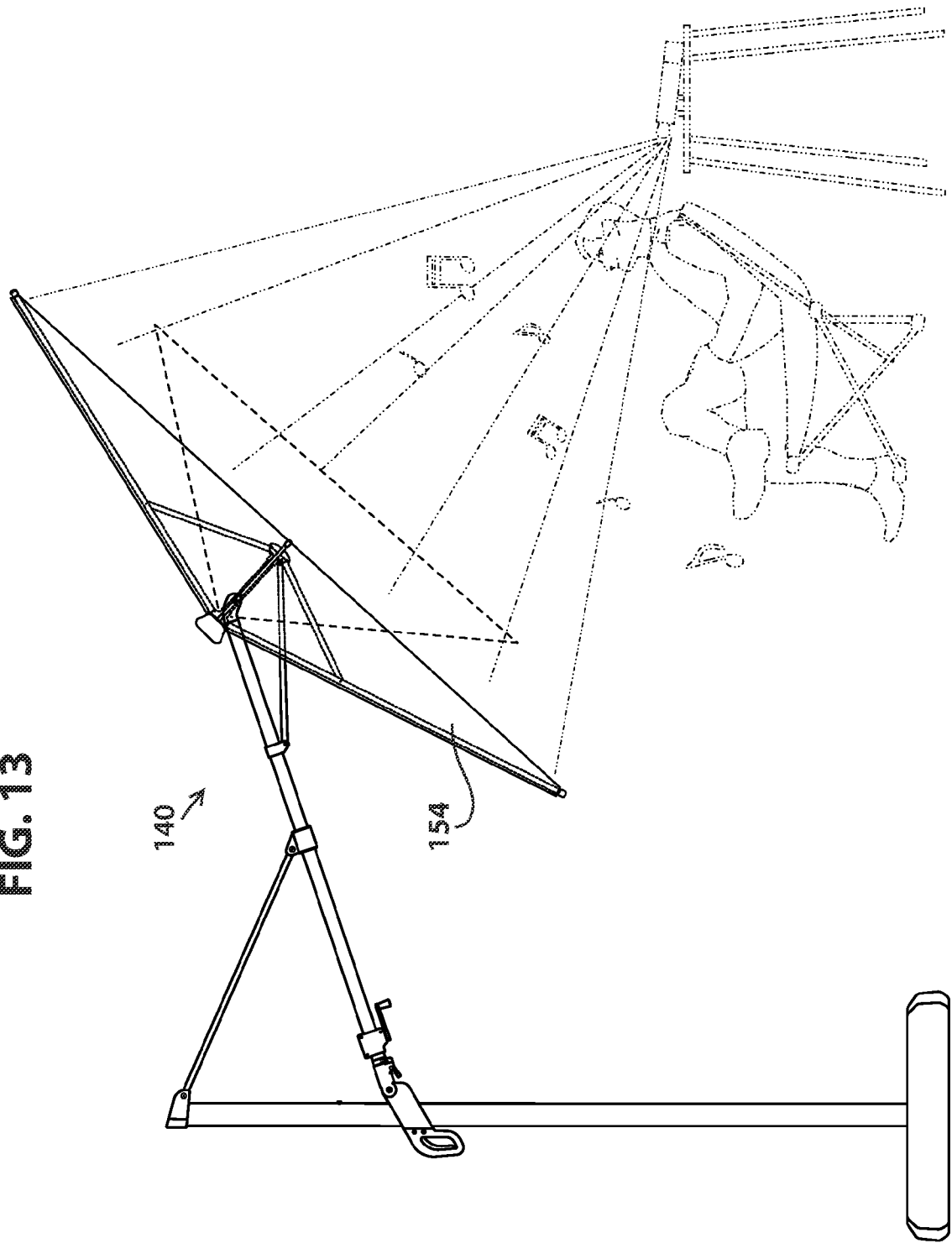


FIG. 13



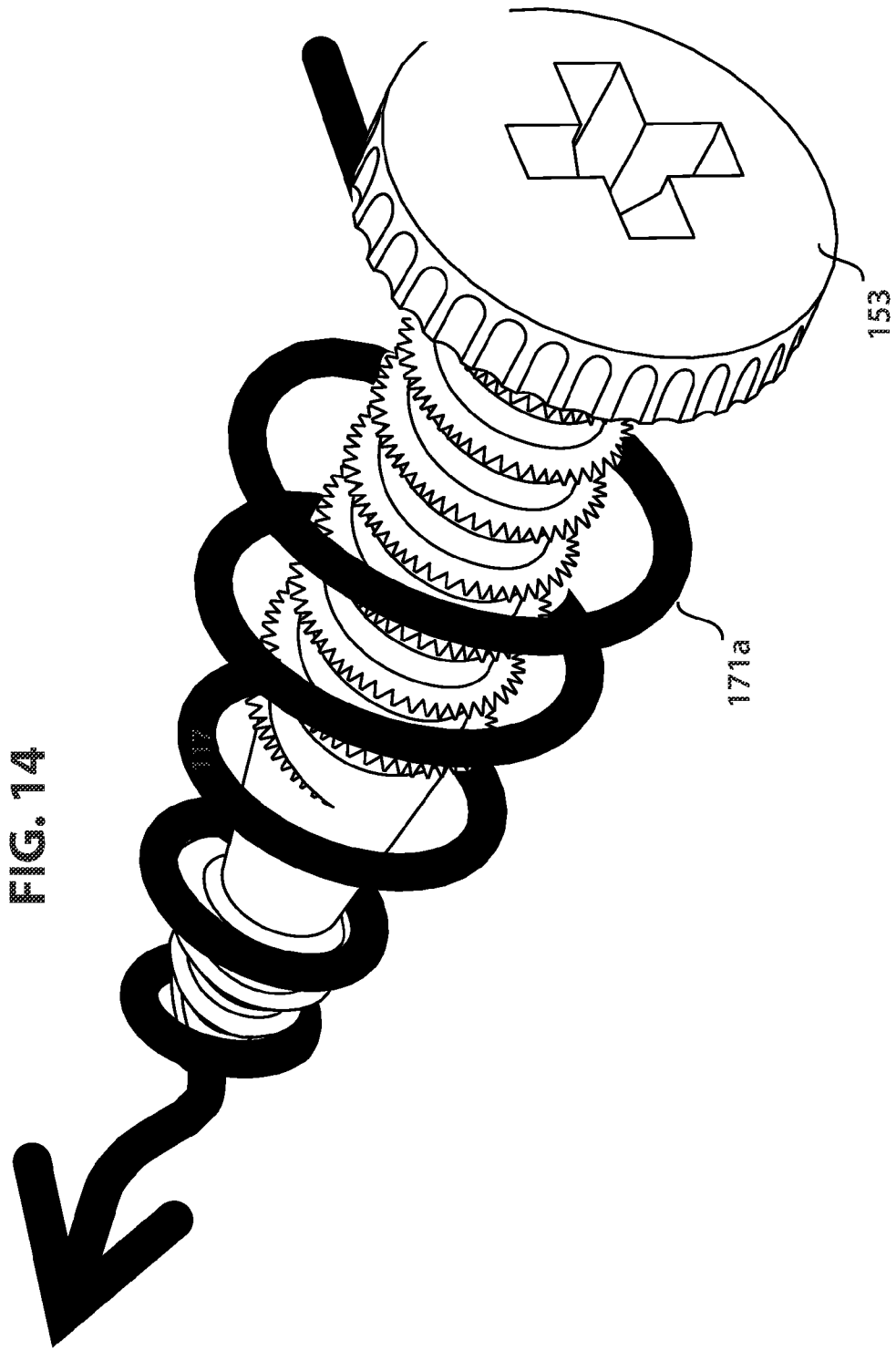
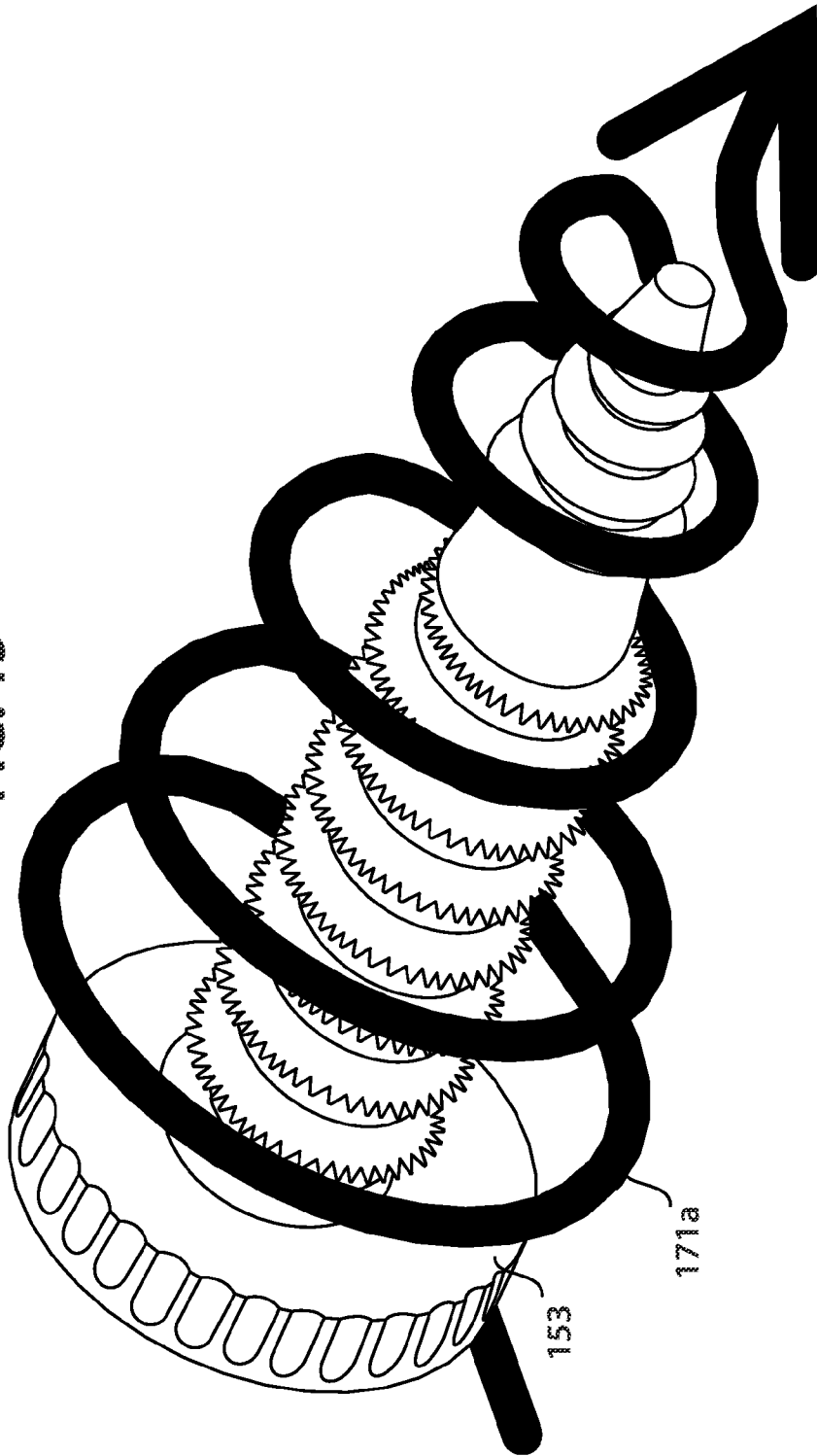


FIG. 14

FIG. 15



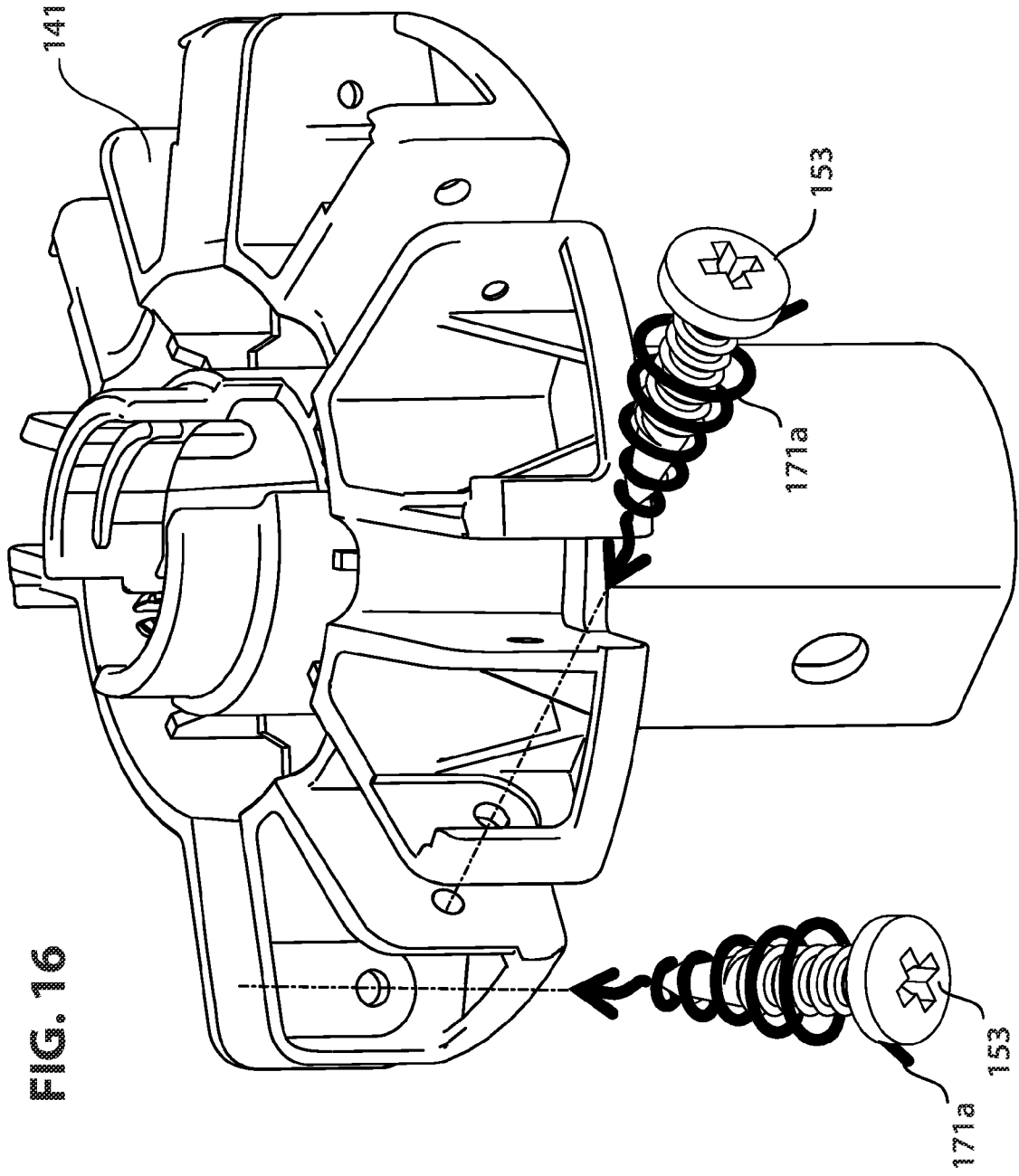
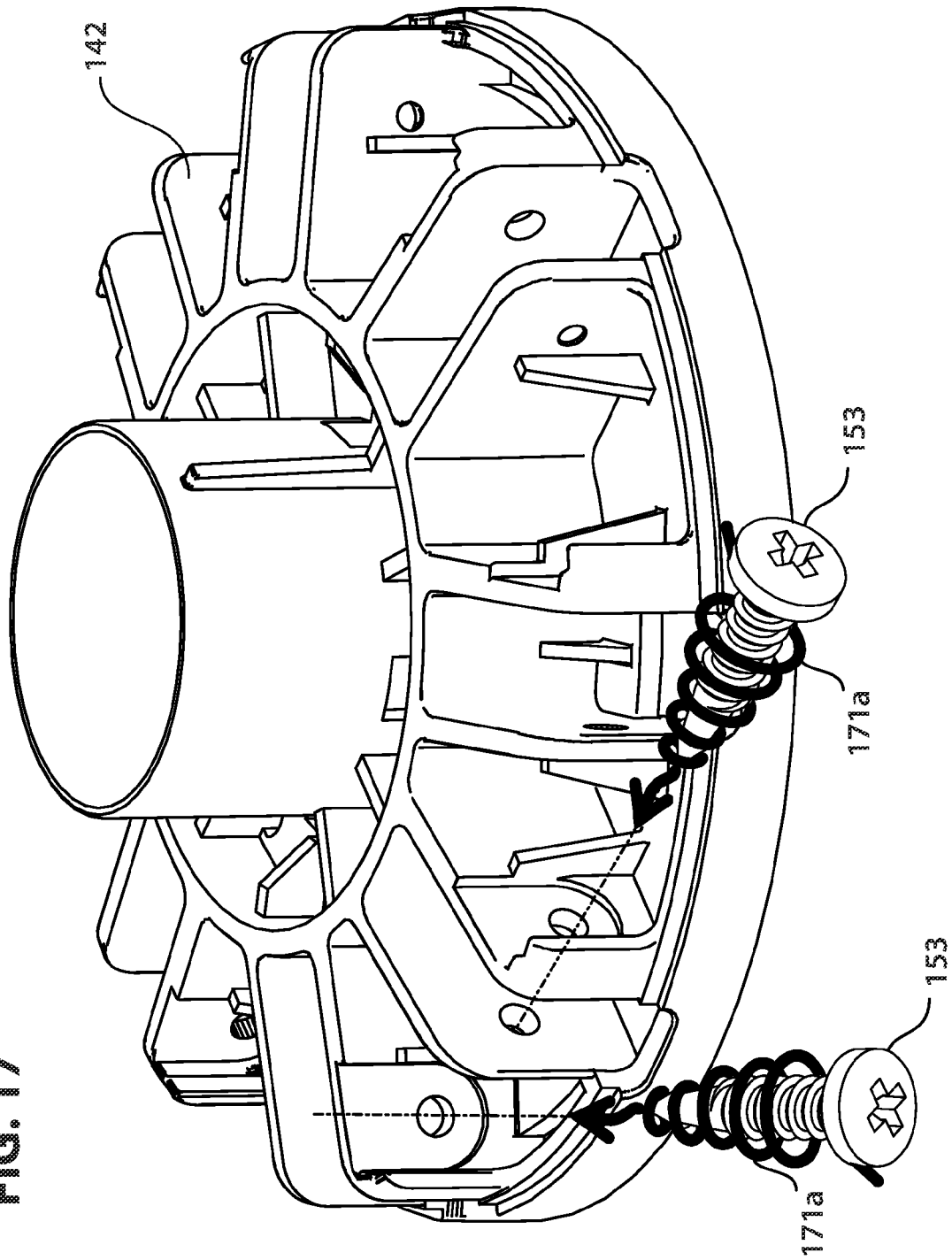
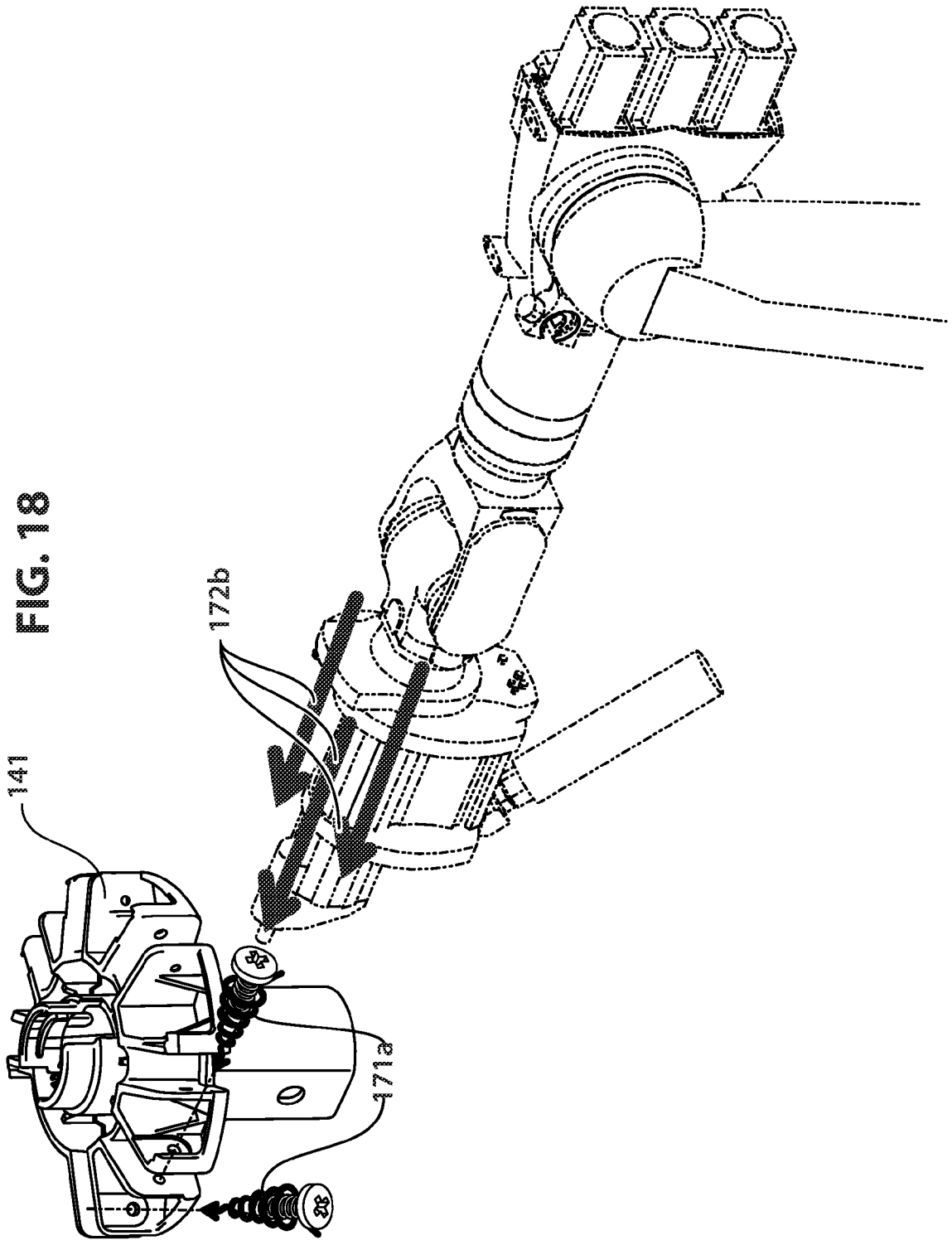
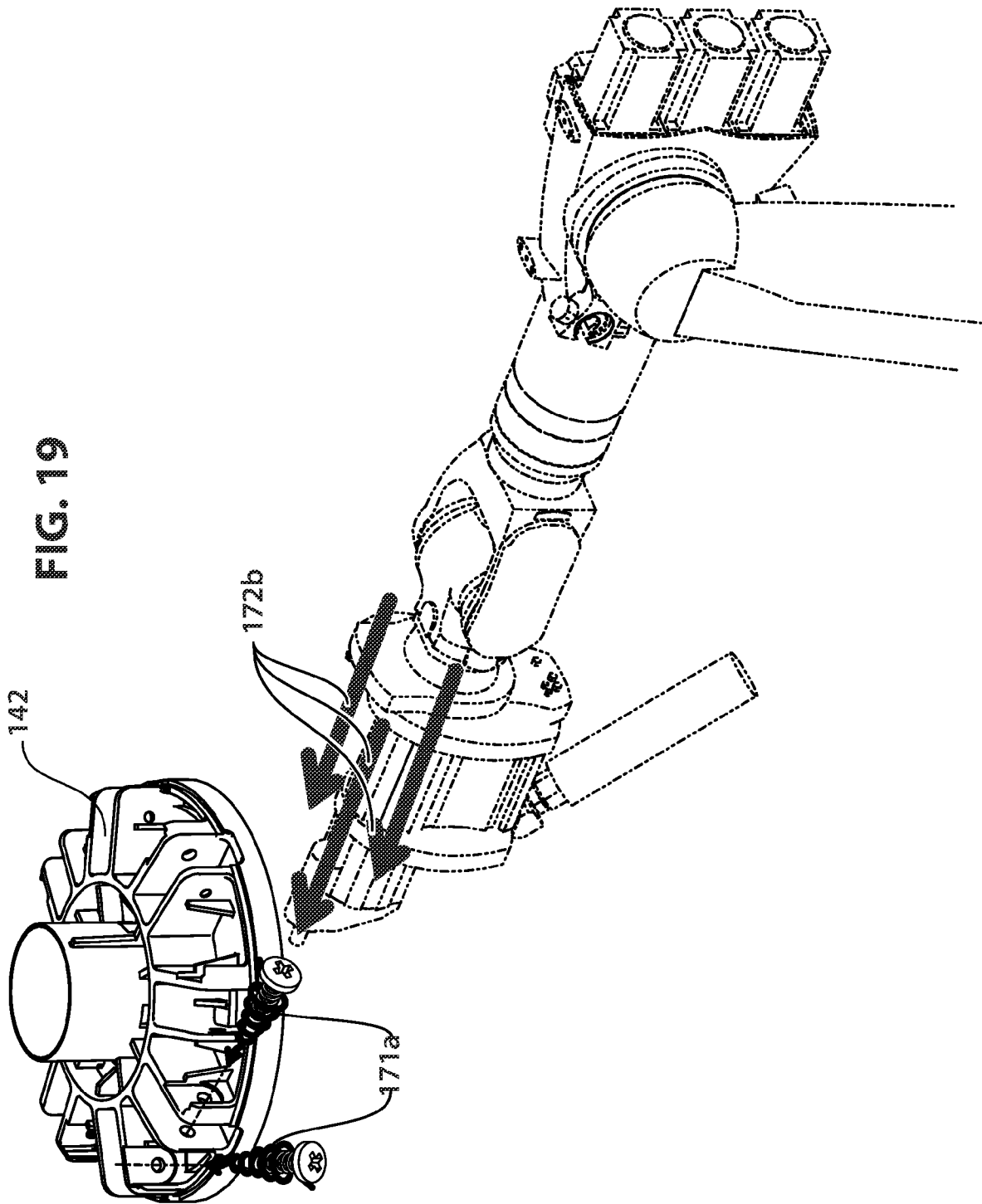
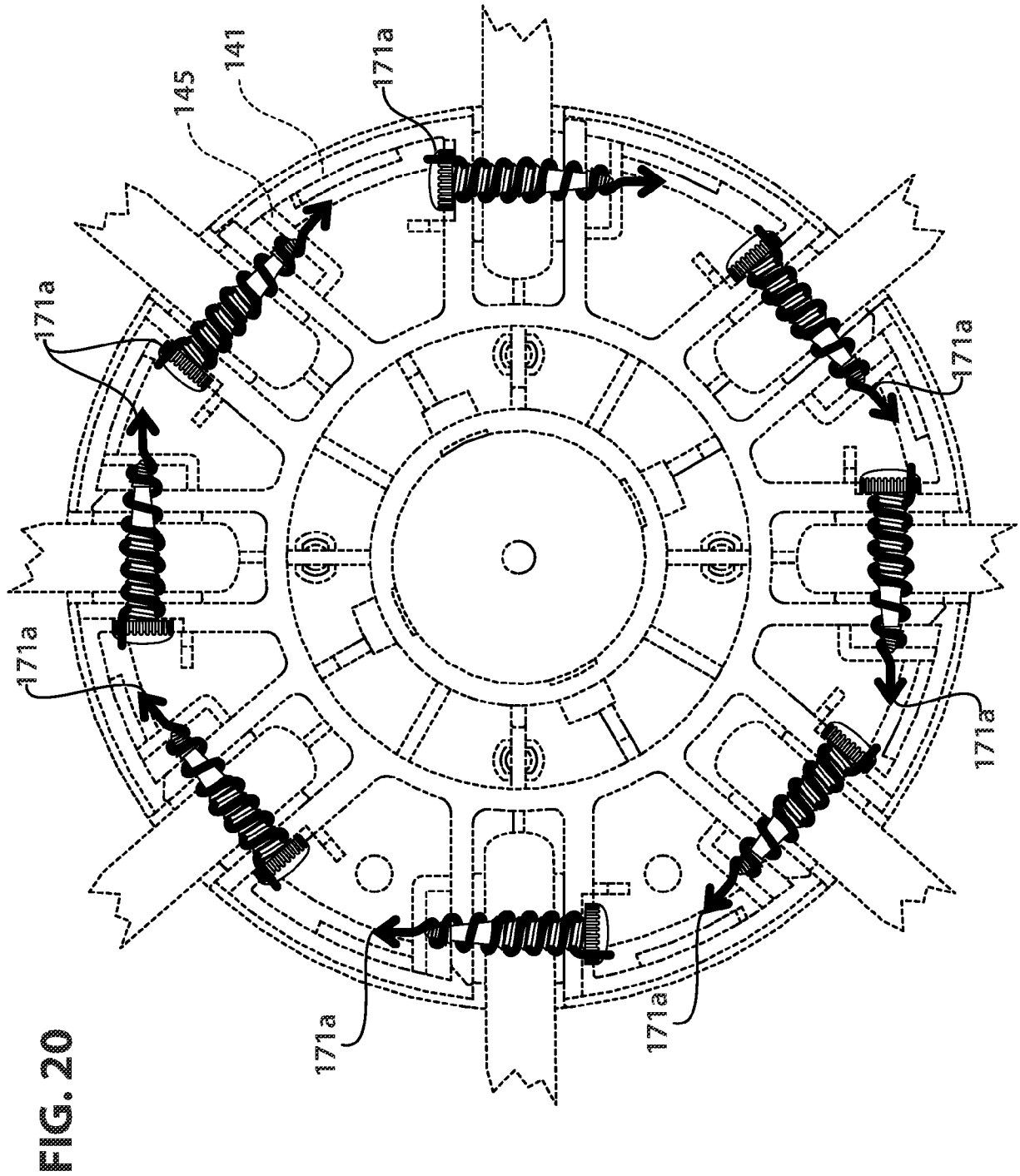


FIG. 17









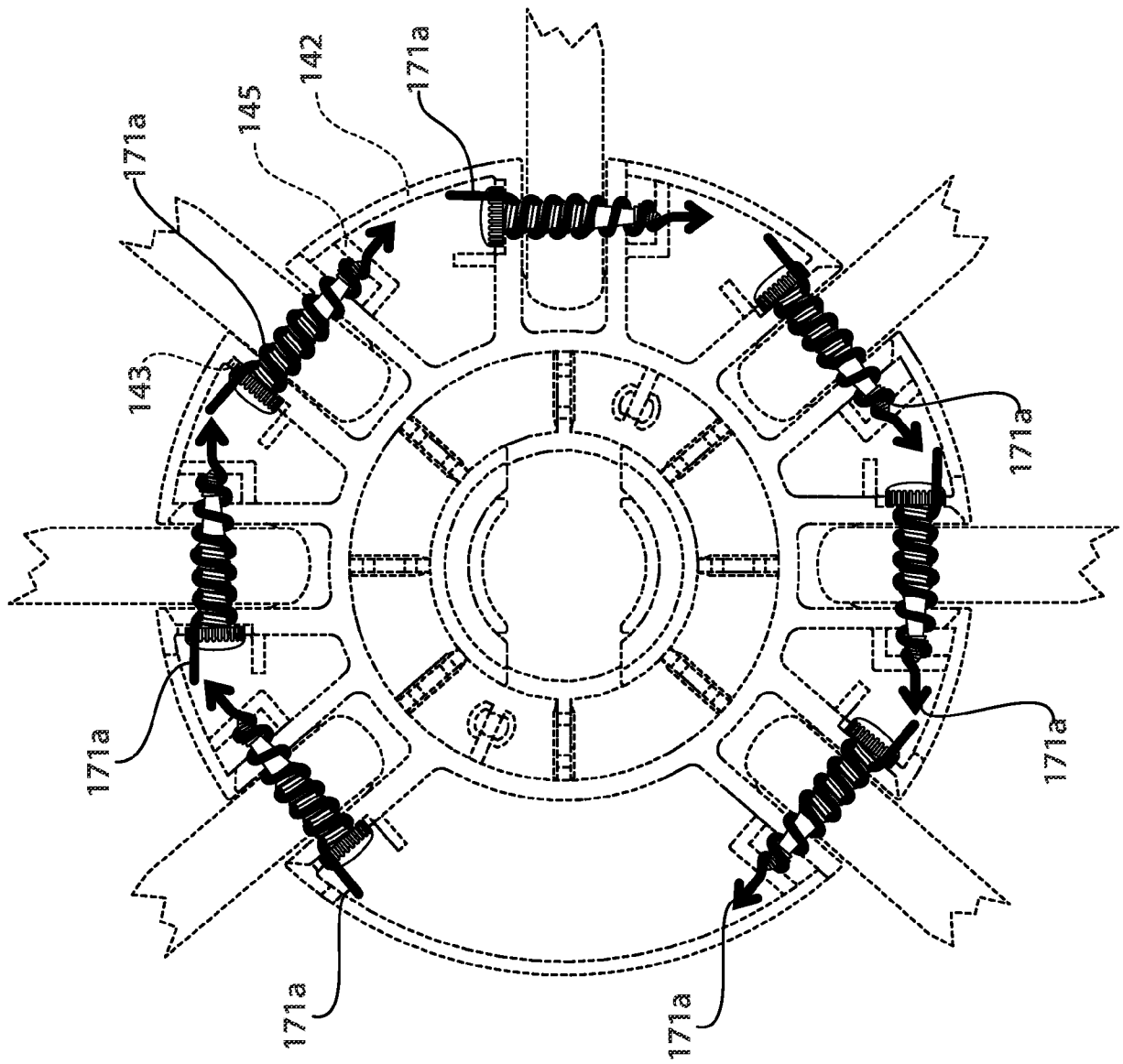


FIG. 21

FIG. 22

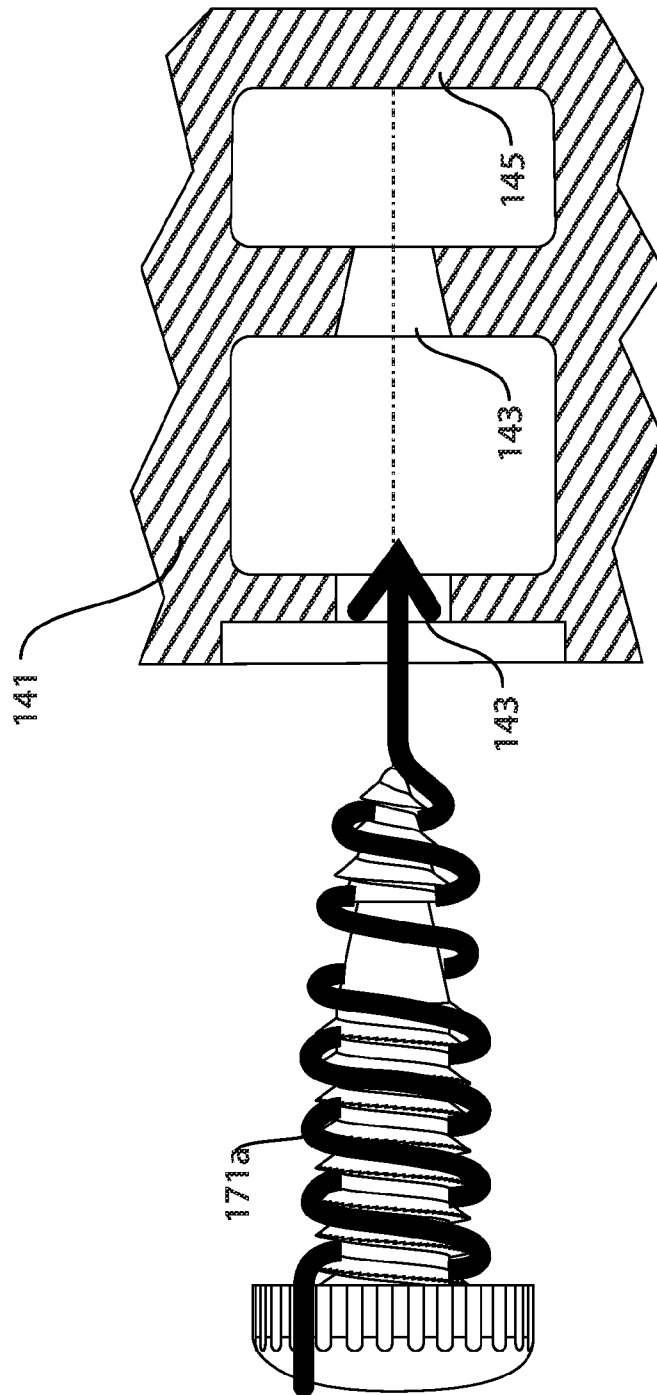


FIG. 23

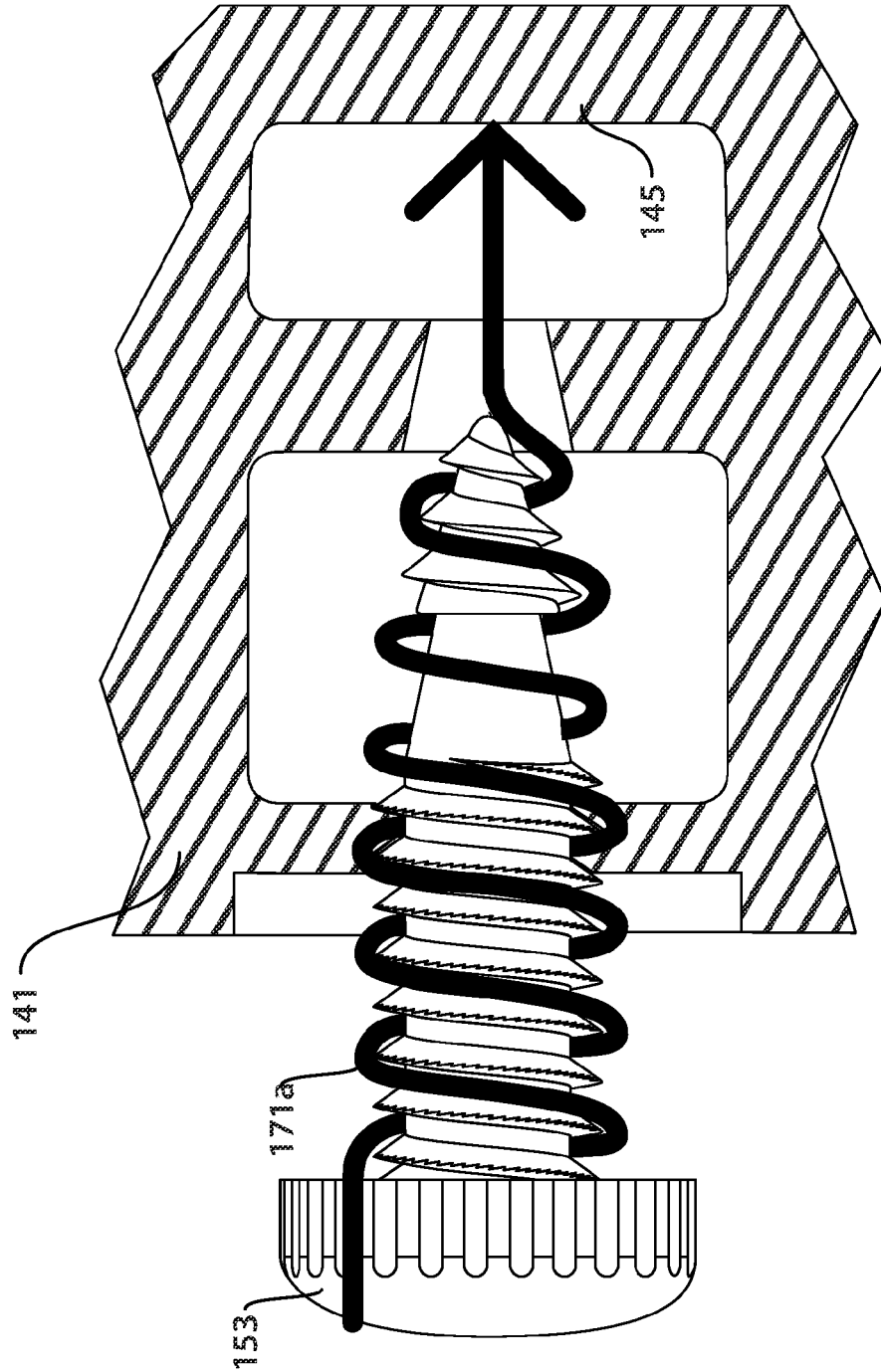


FIG. 24

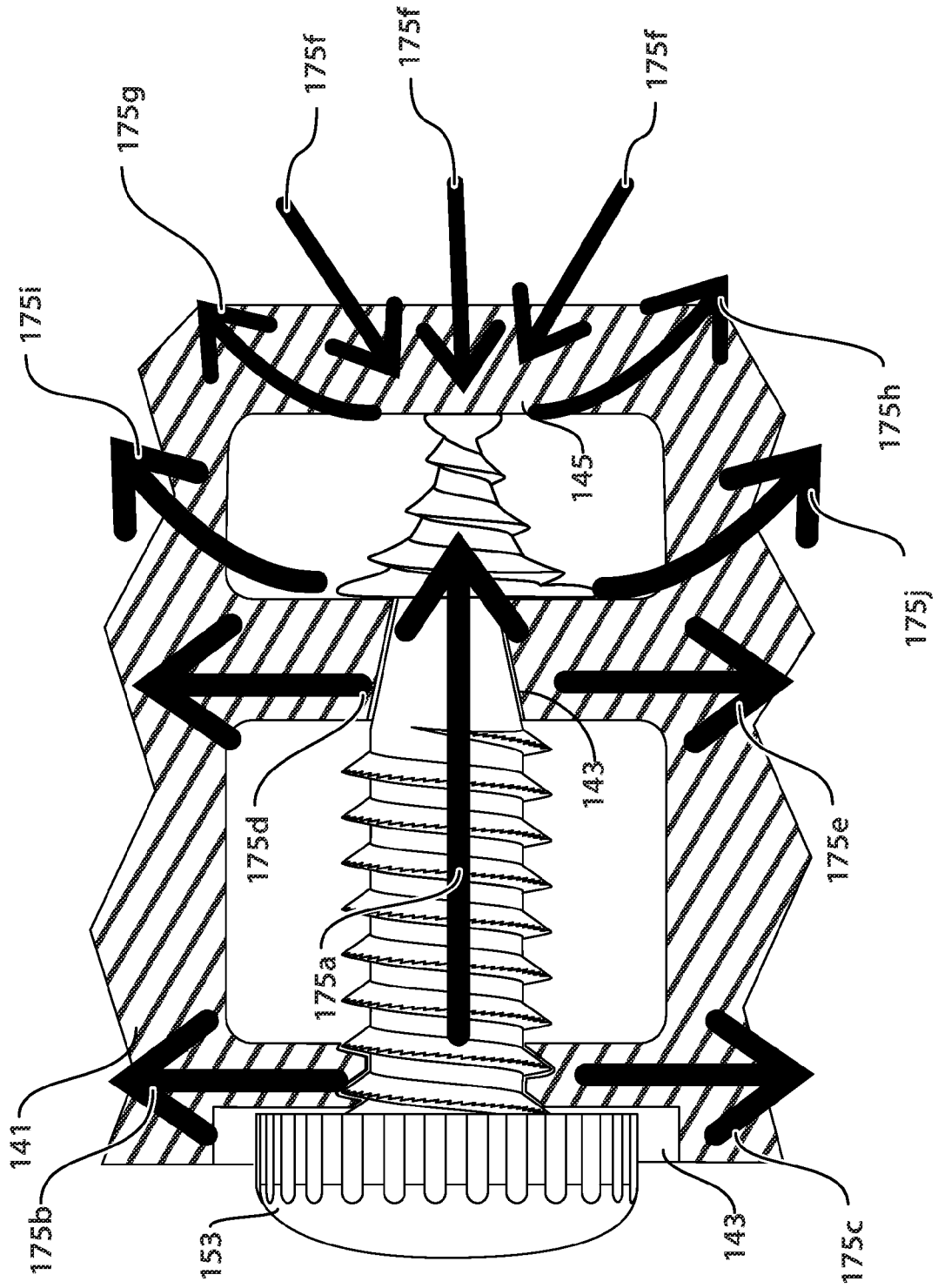


FIG. 25

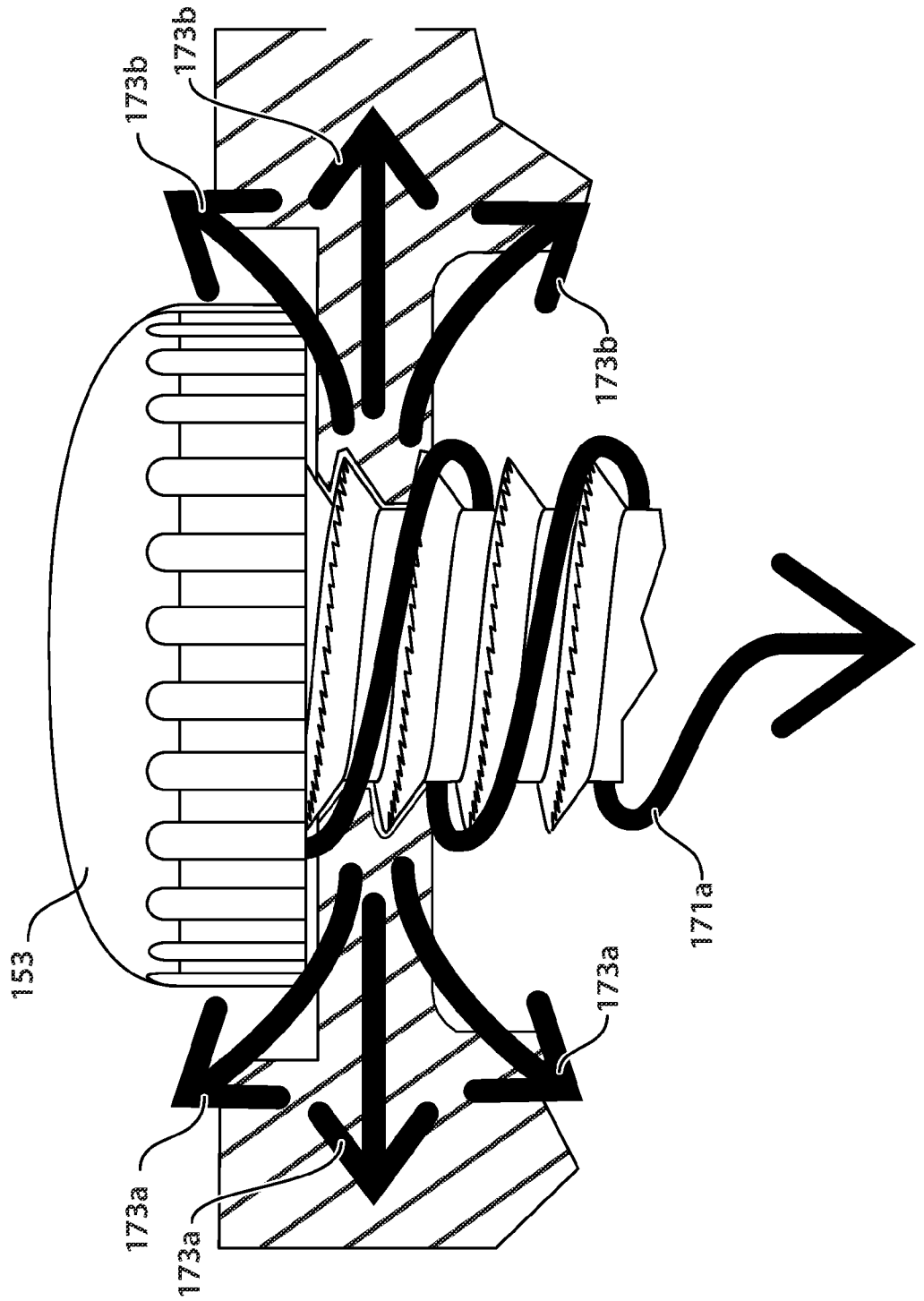
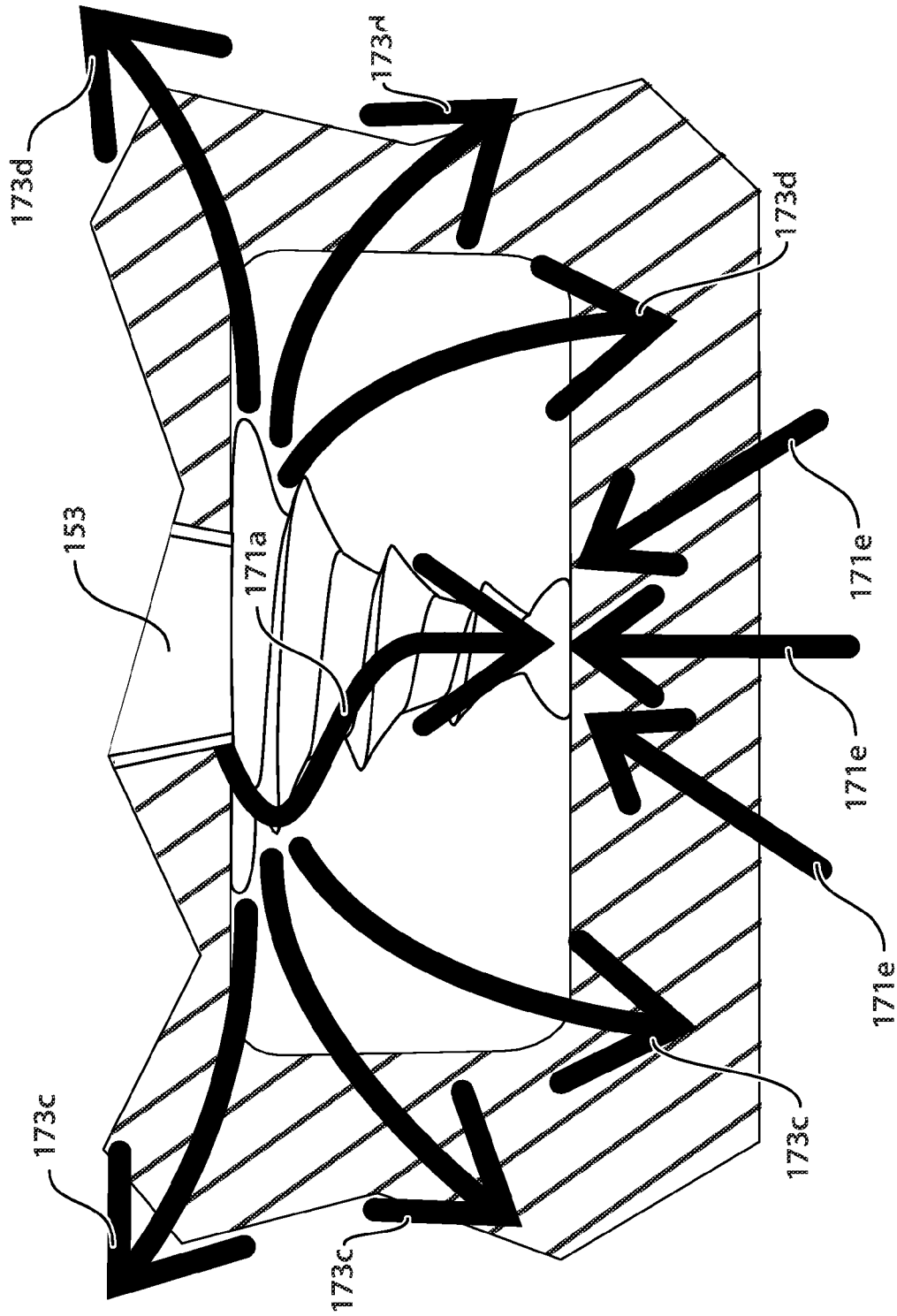


FIG. 26



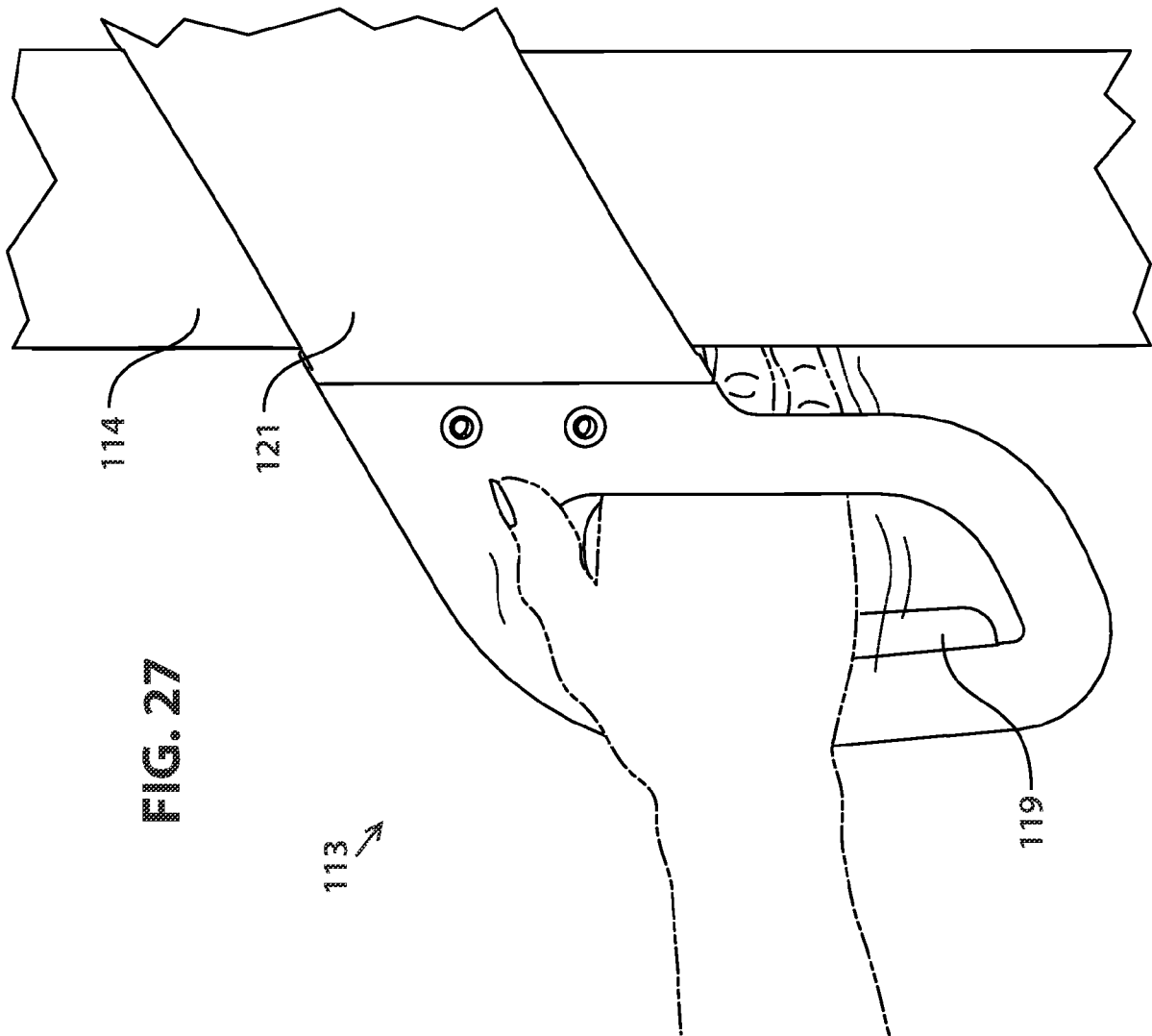


FIG. 27

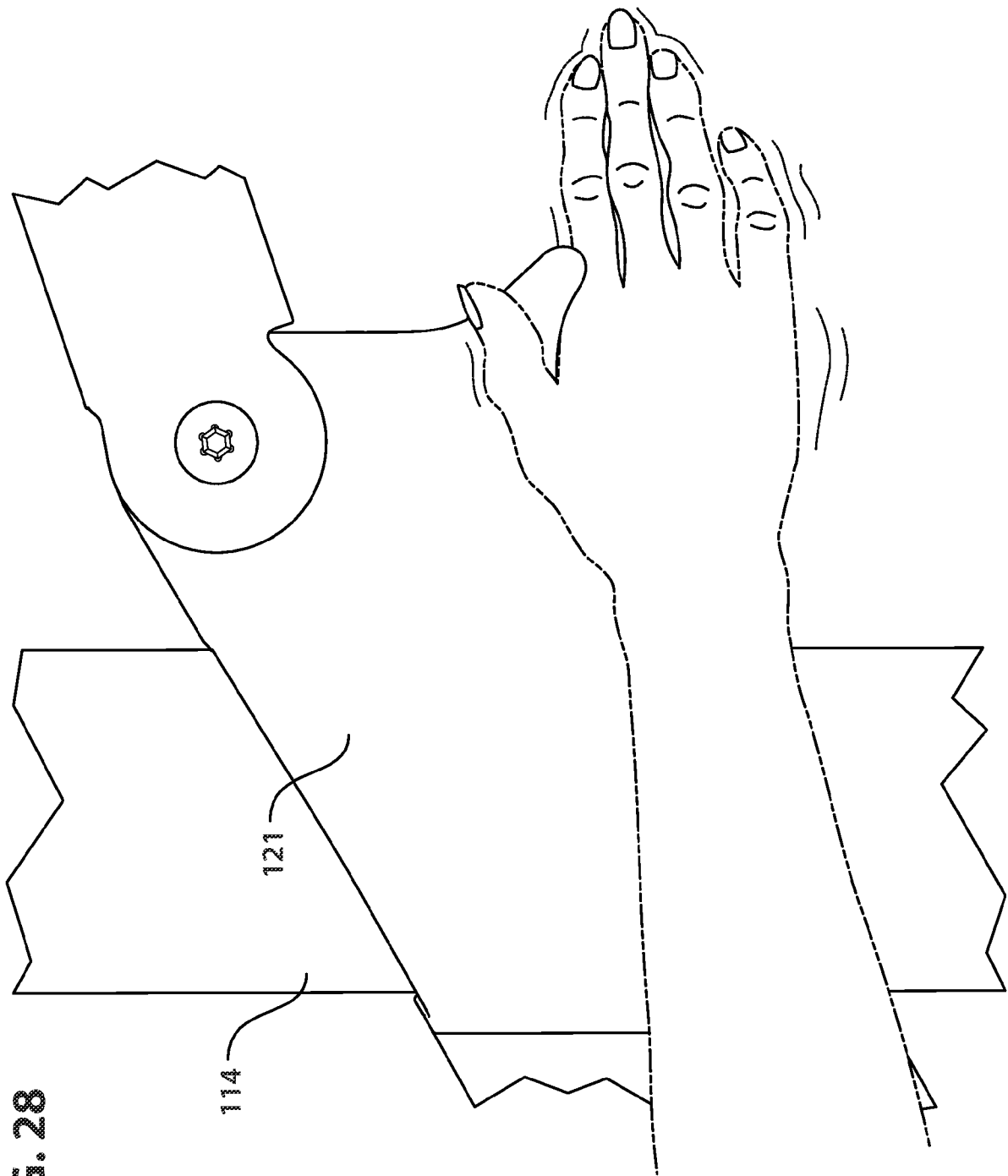


FIG. 28

FIG. 29

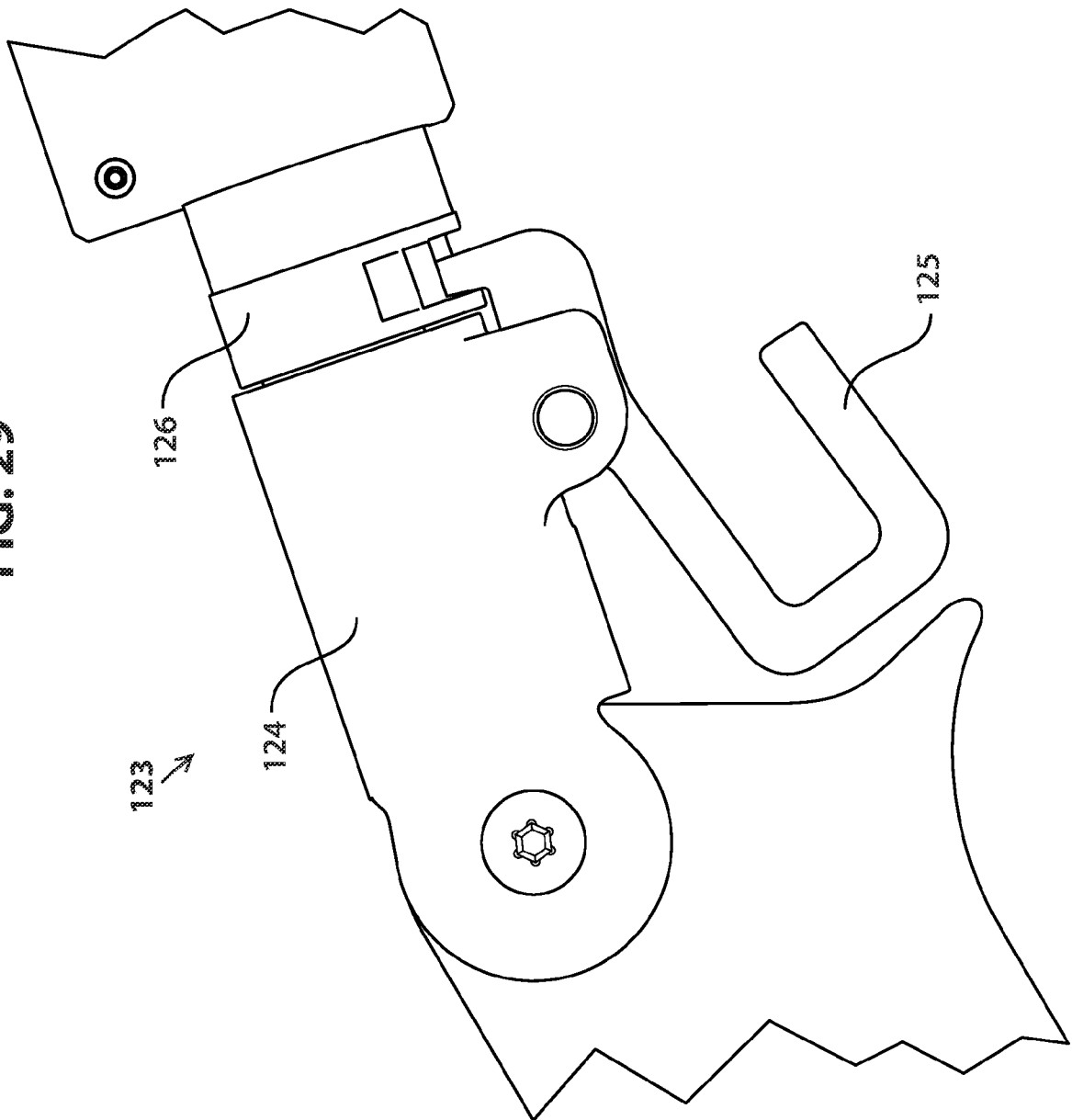
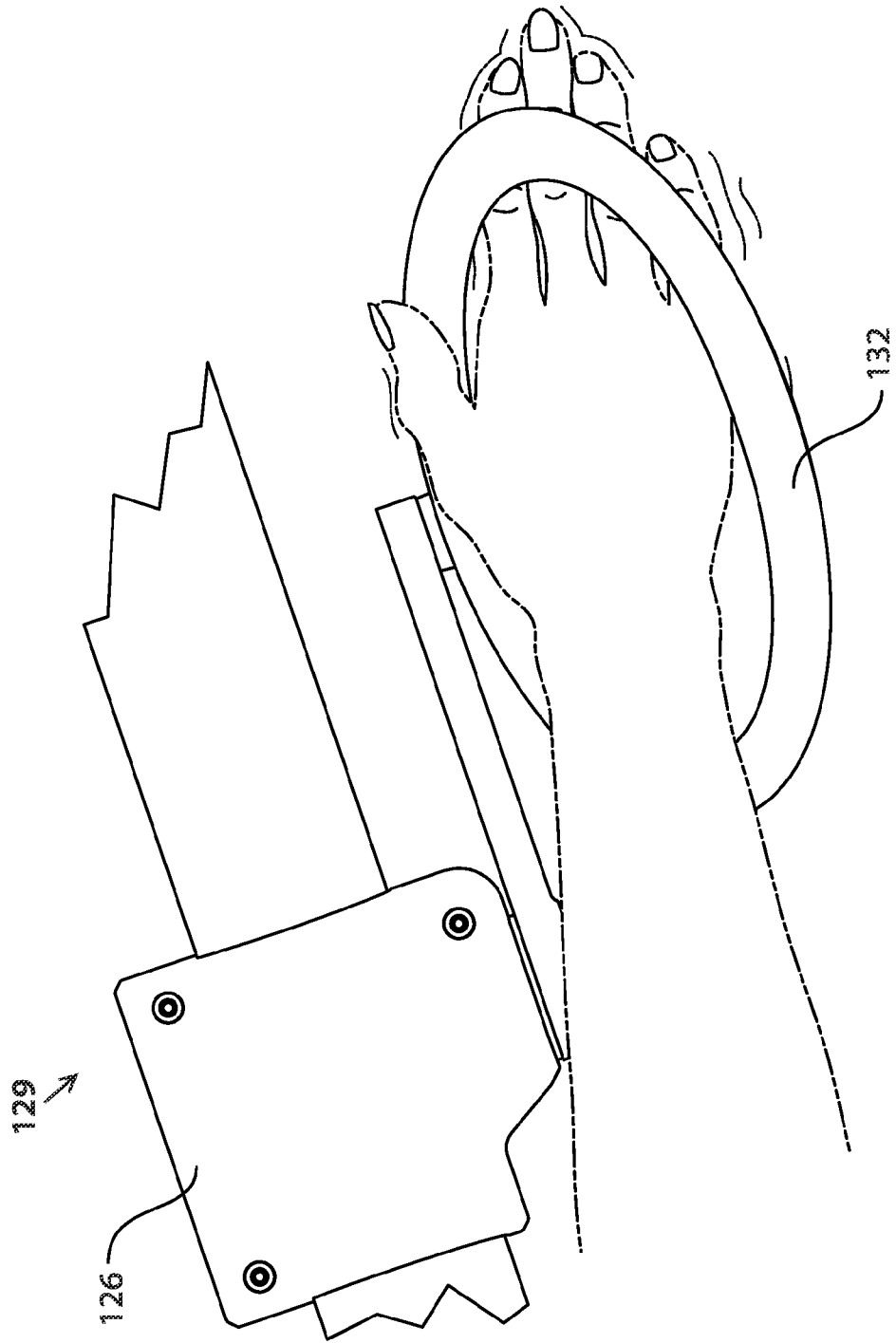
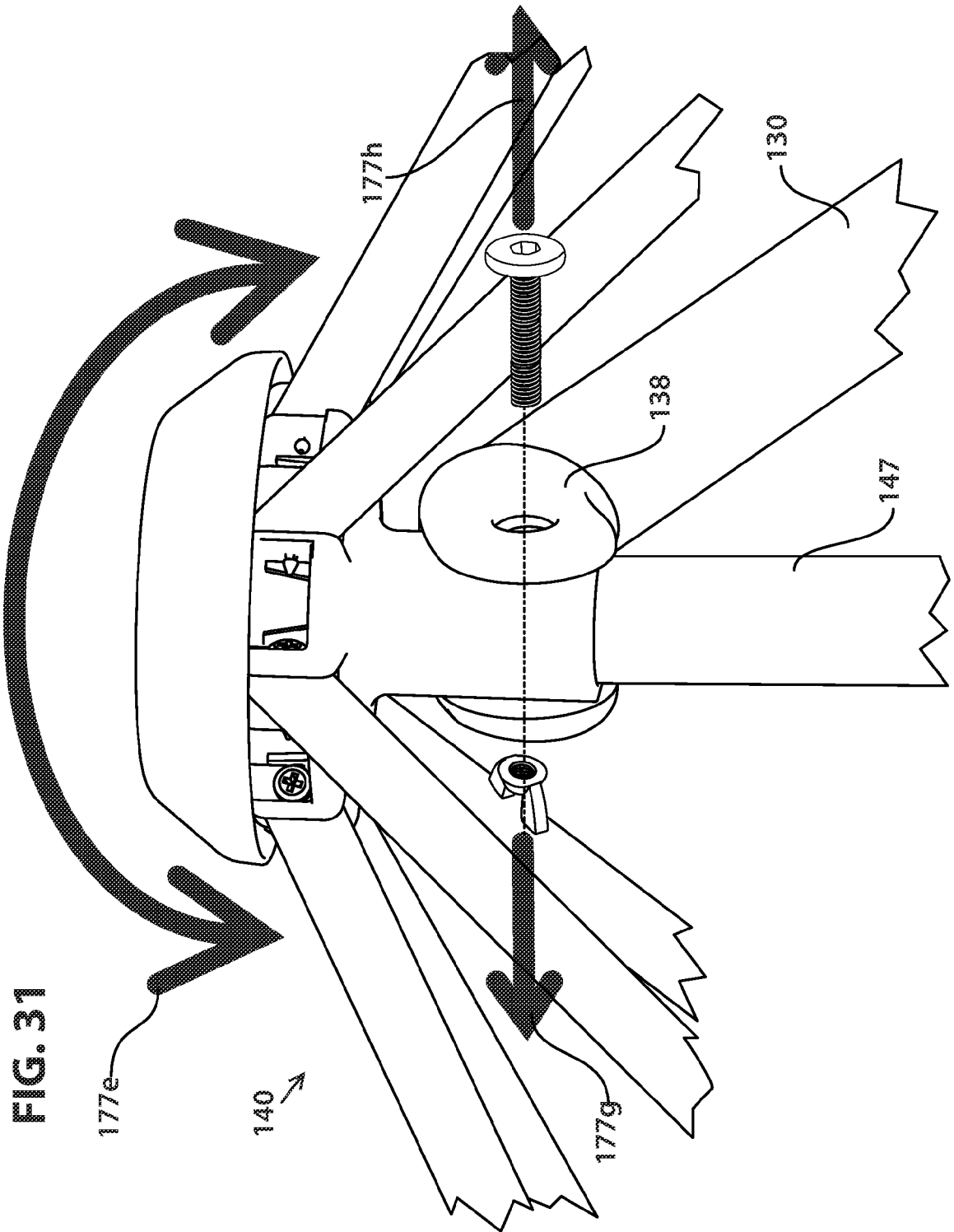


FIG. 30





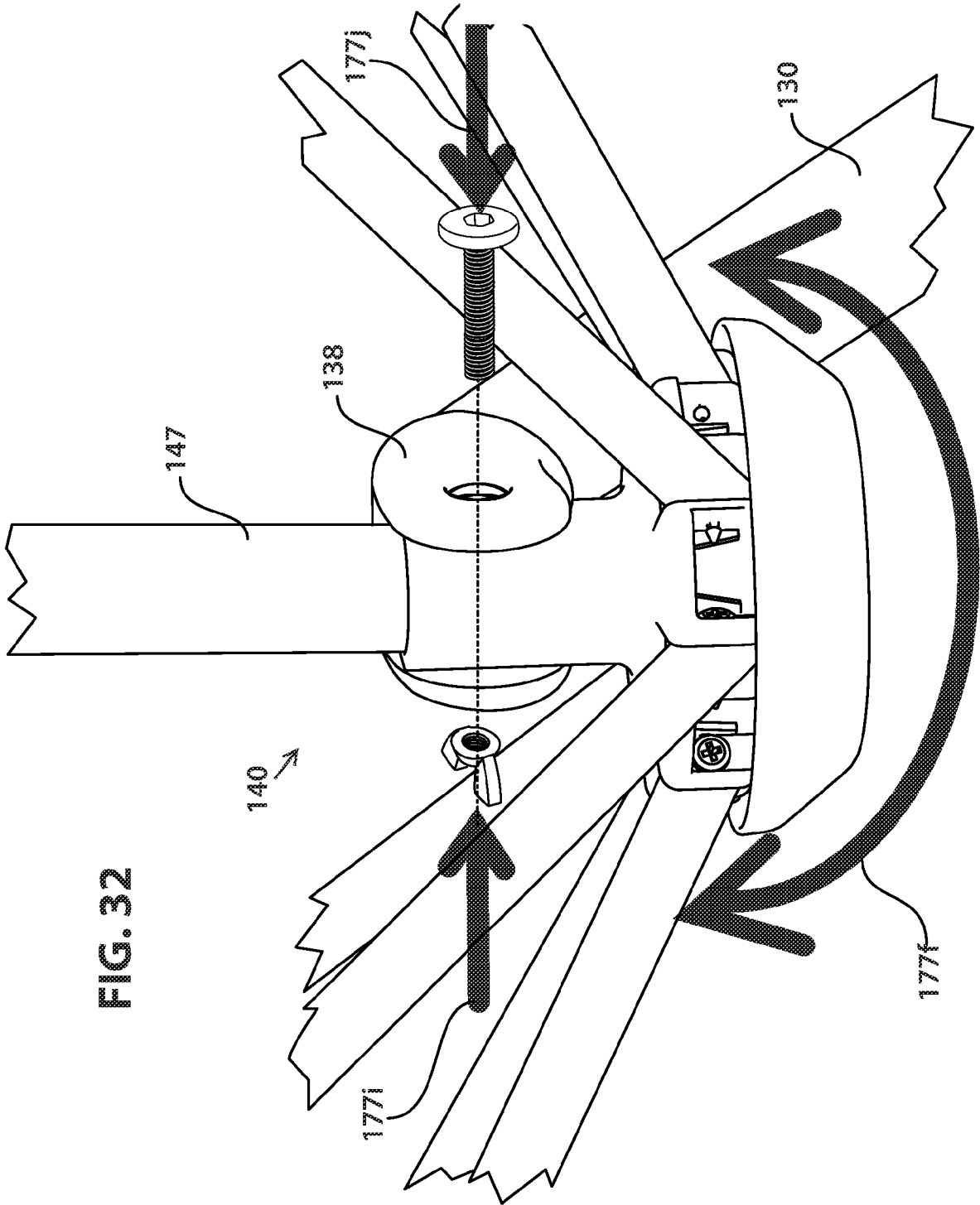


FIG. 32

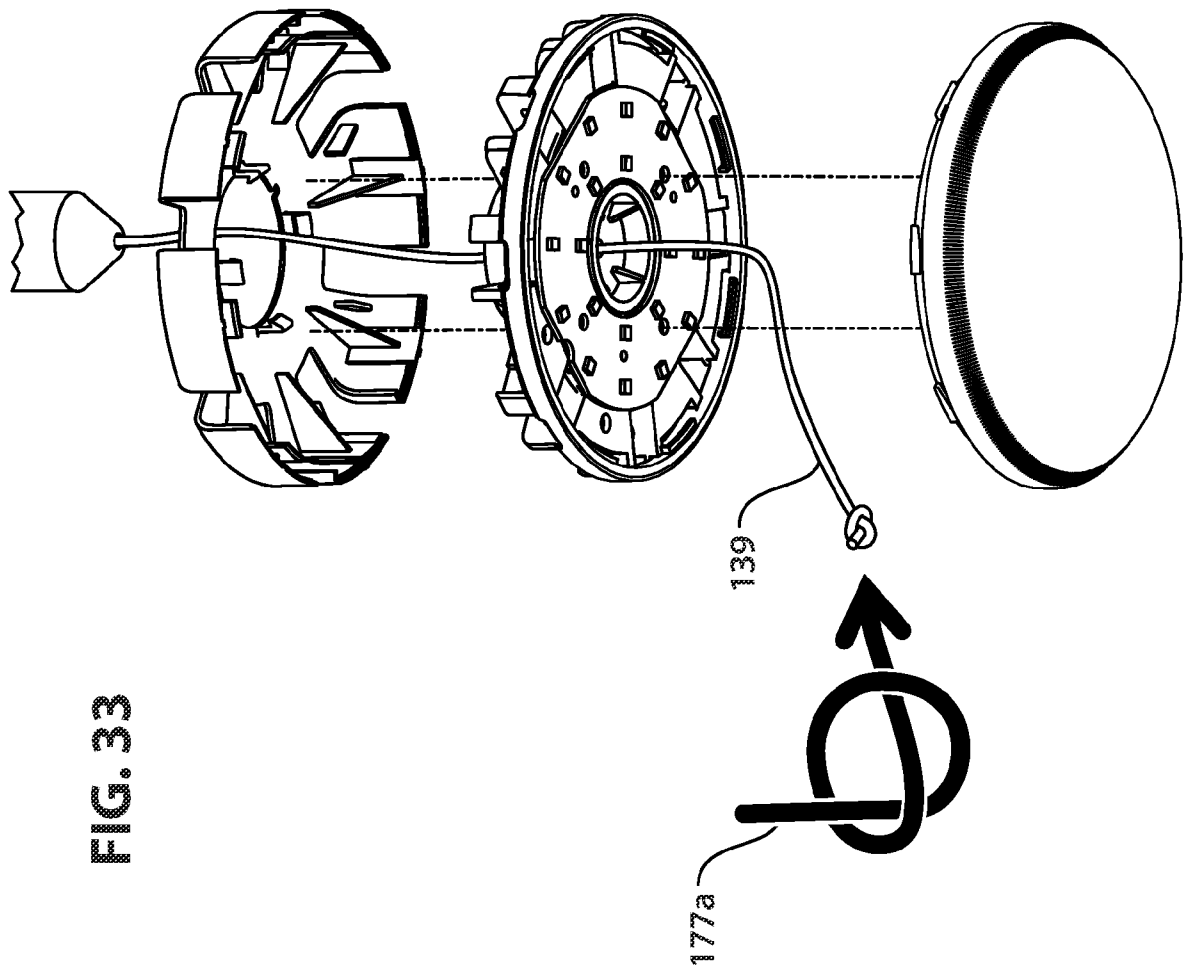


FIG. 33

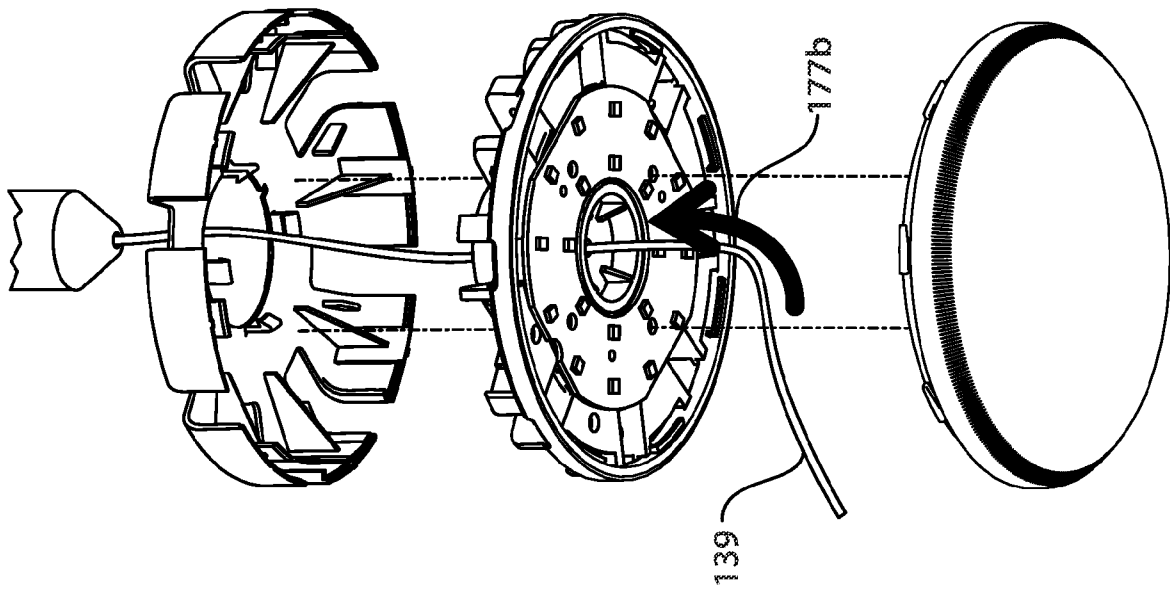
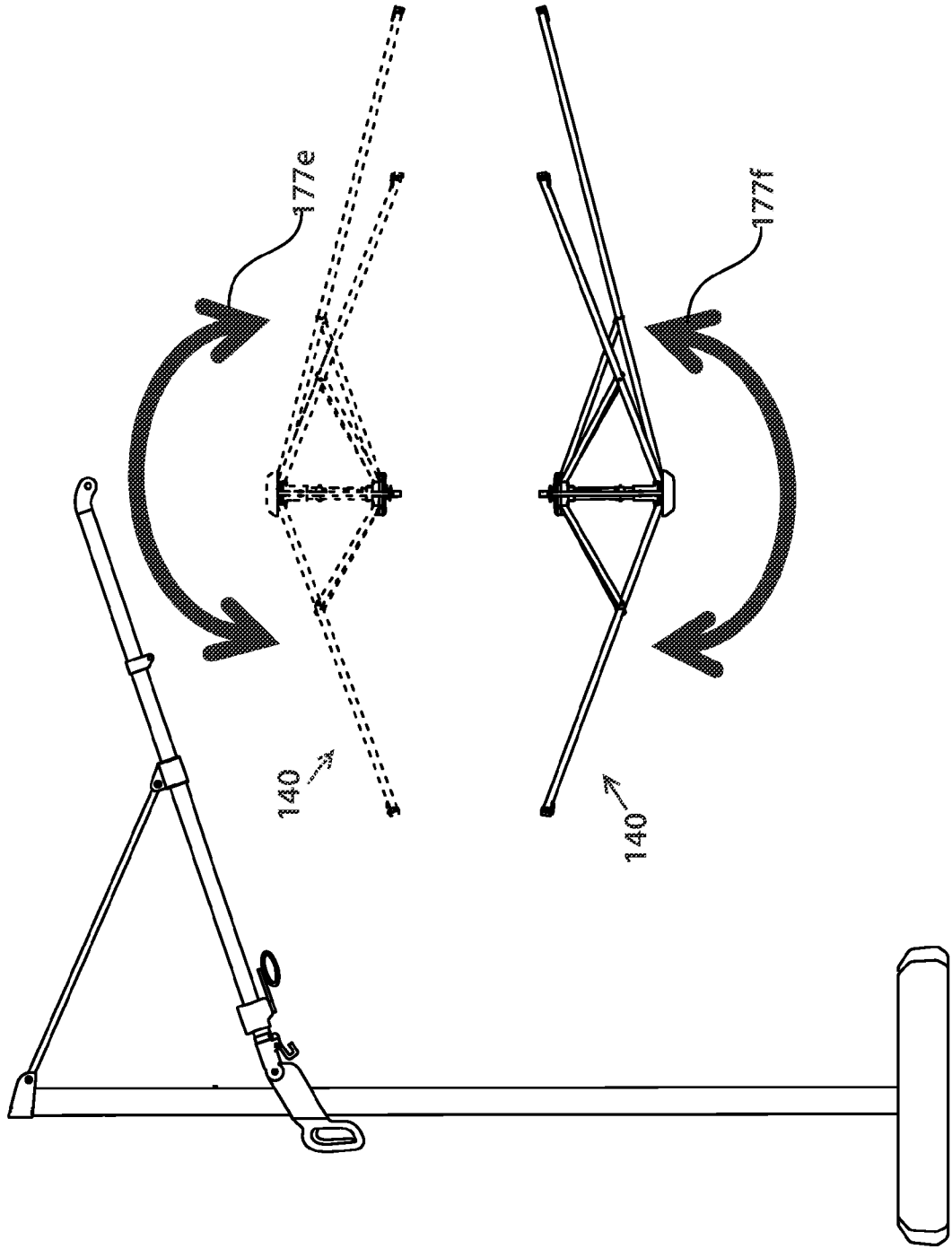


FIG. 34

FIG. 35



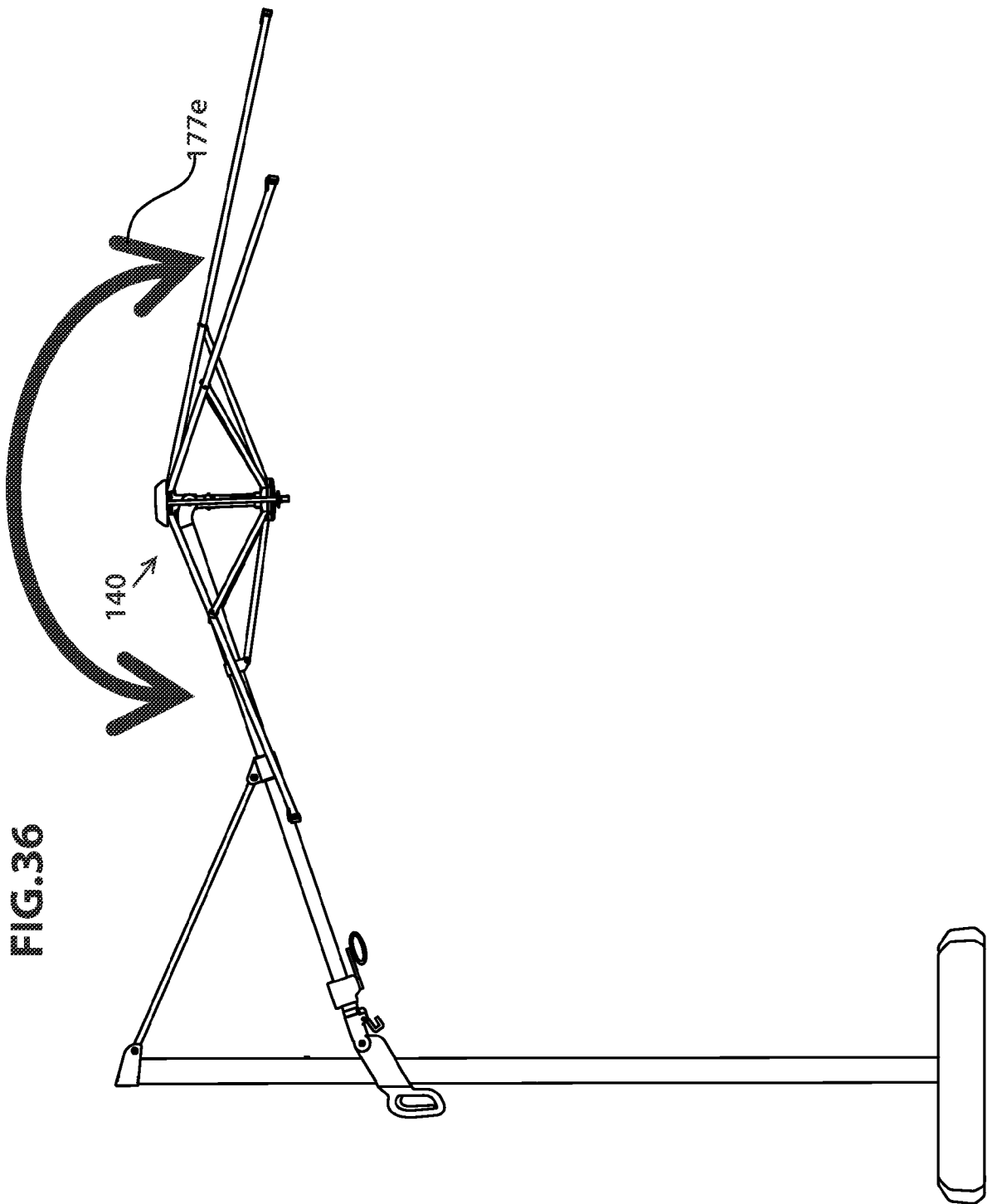
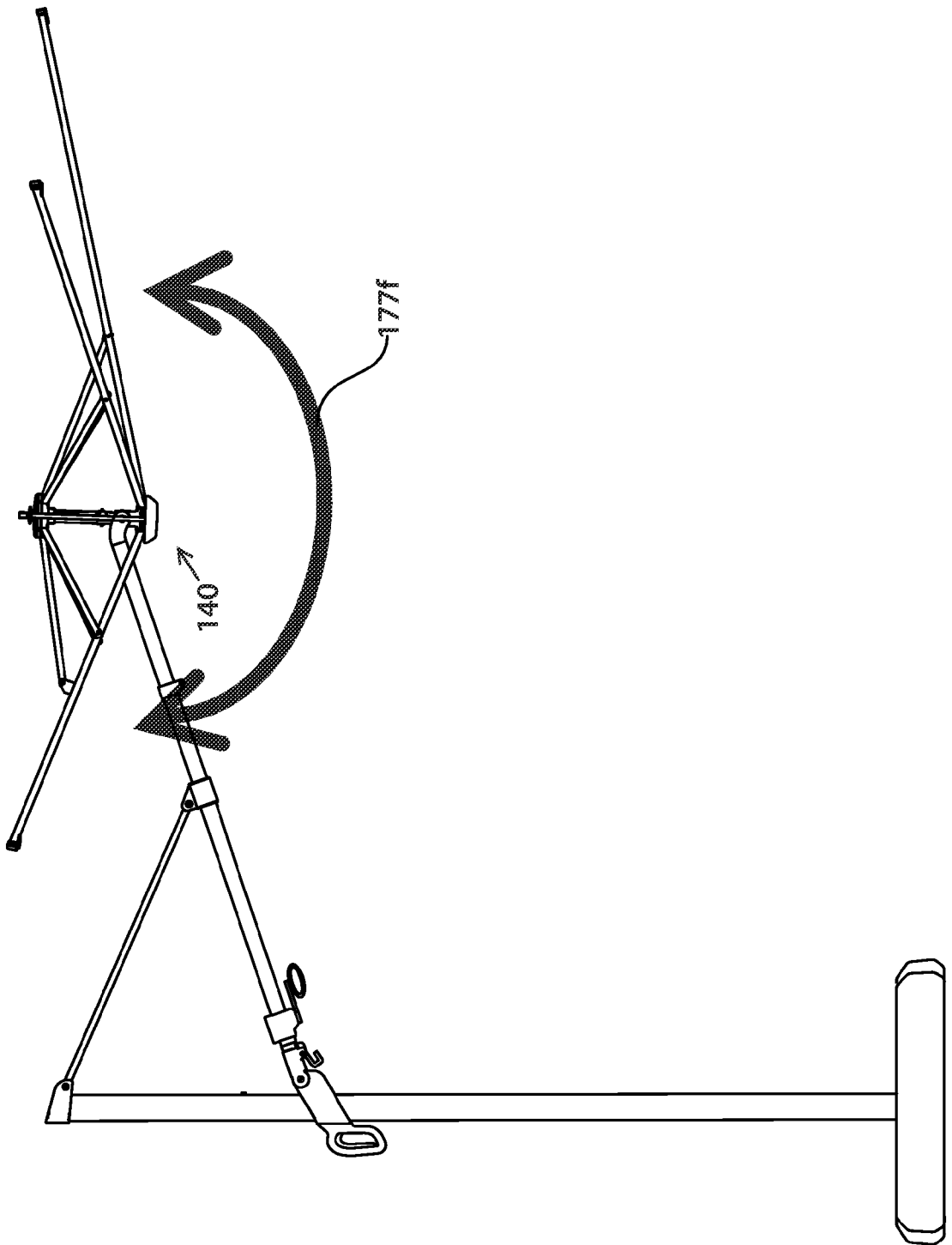


FIG.36

FIG. 37



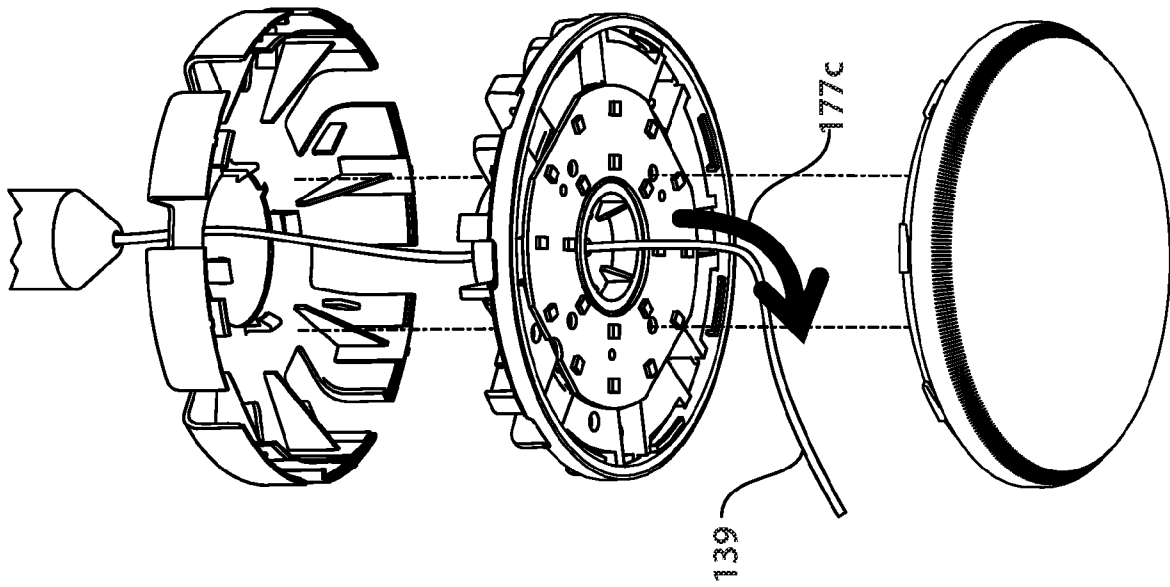


FIG. 38

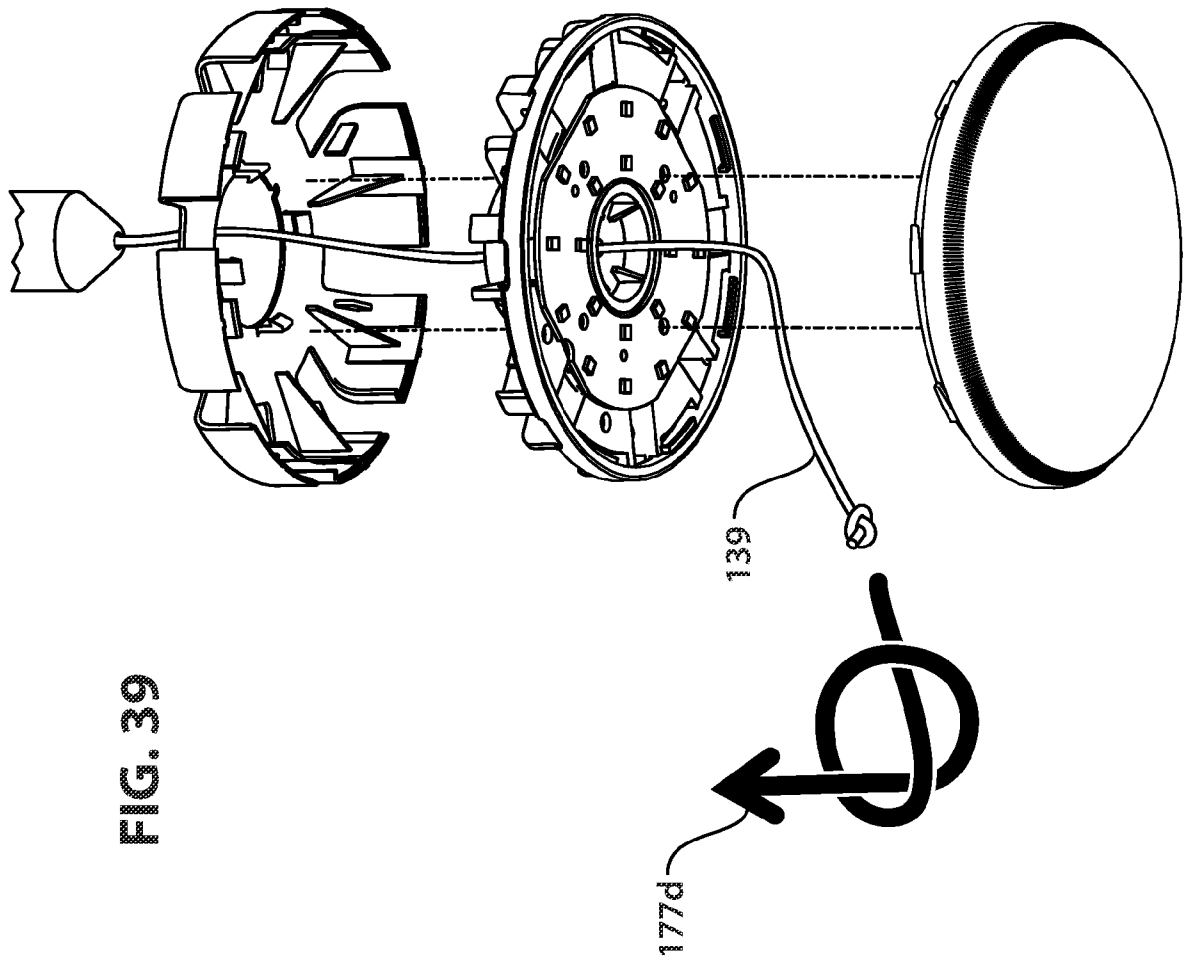


FIG. 39

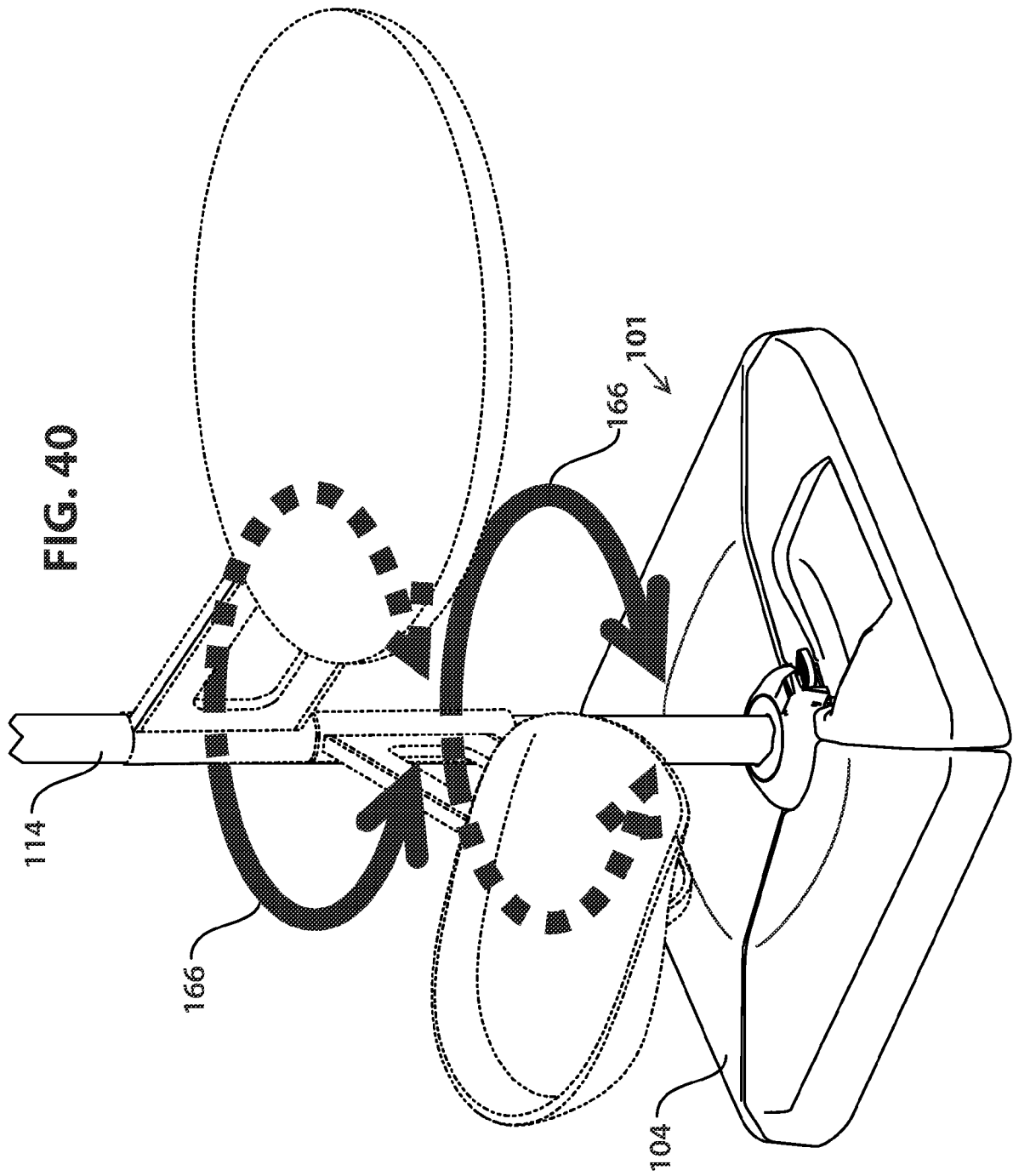
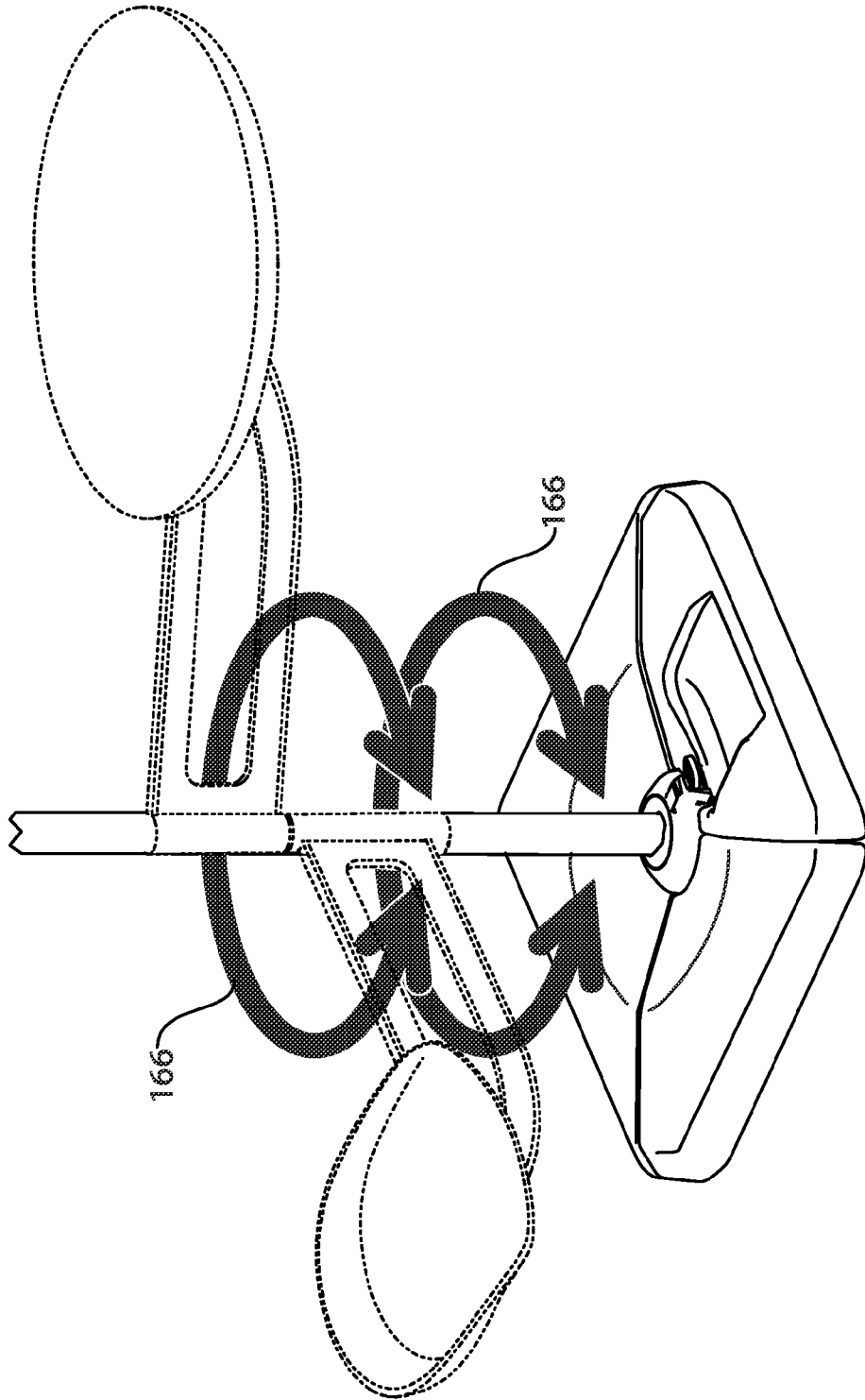


FIG. 41



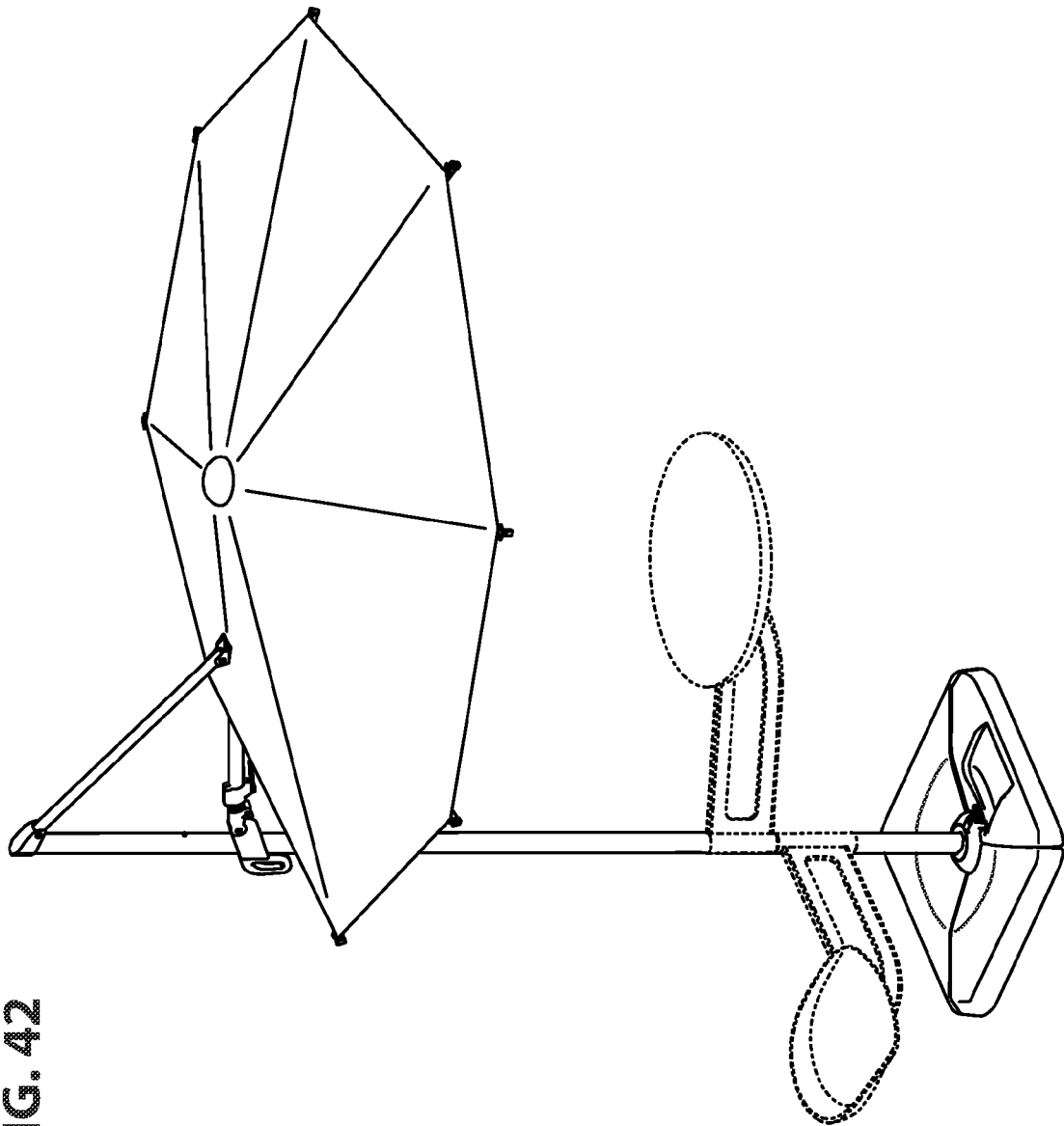


FIG. 42

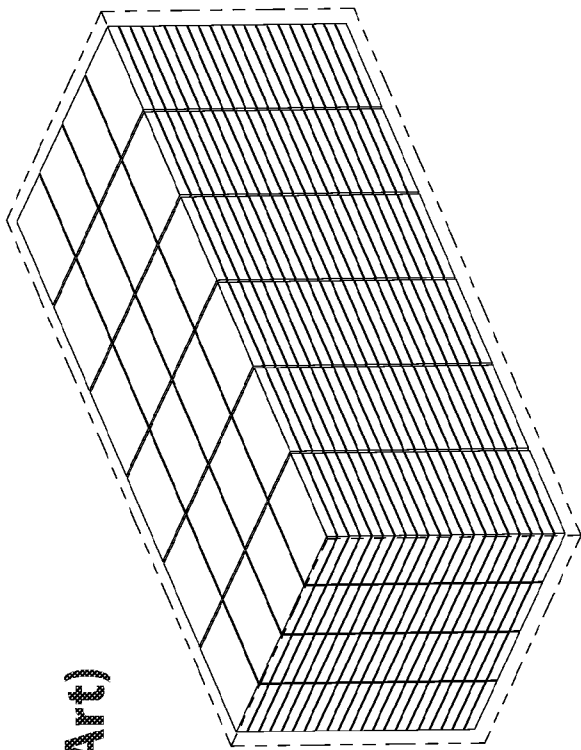


FIG. 43A (Prior Art)

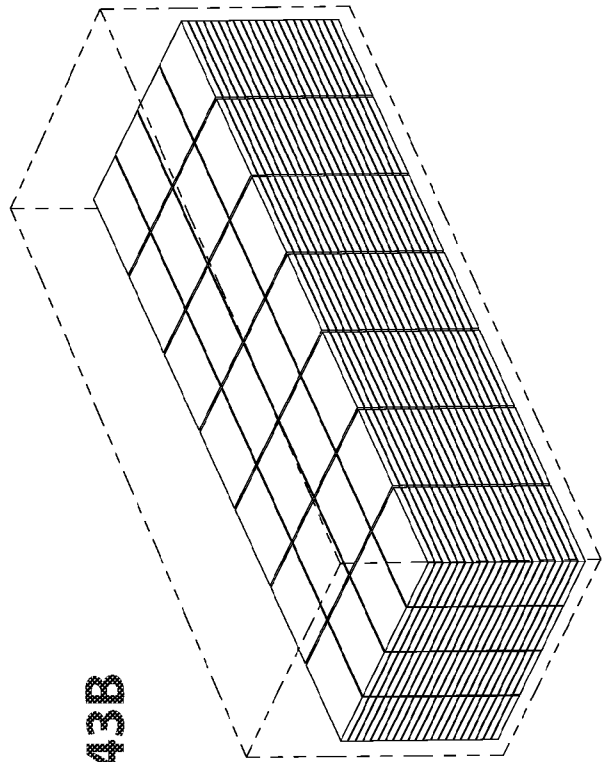


FIG. 43B

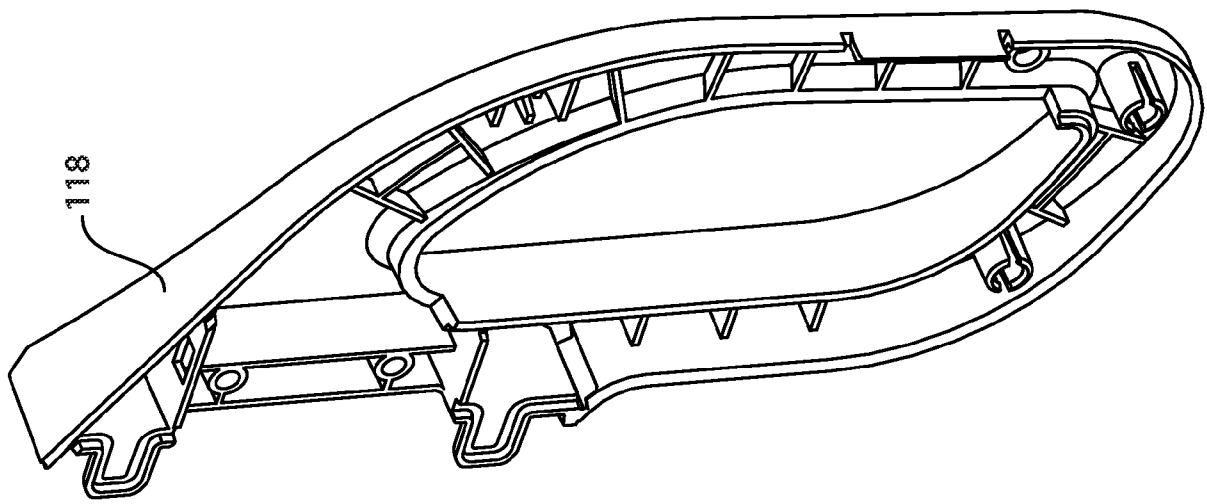


FIG. 44

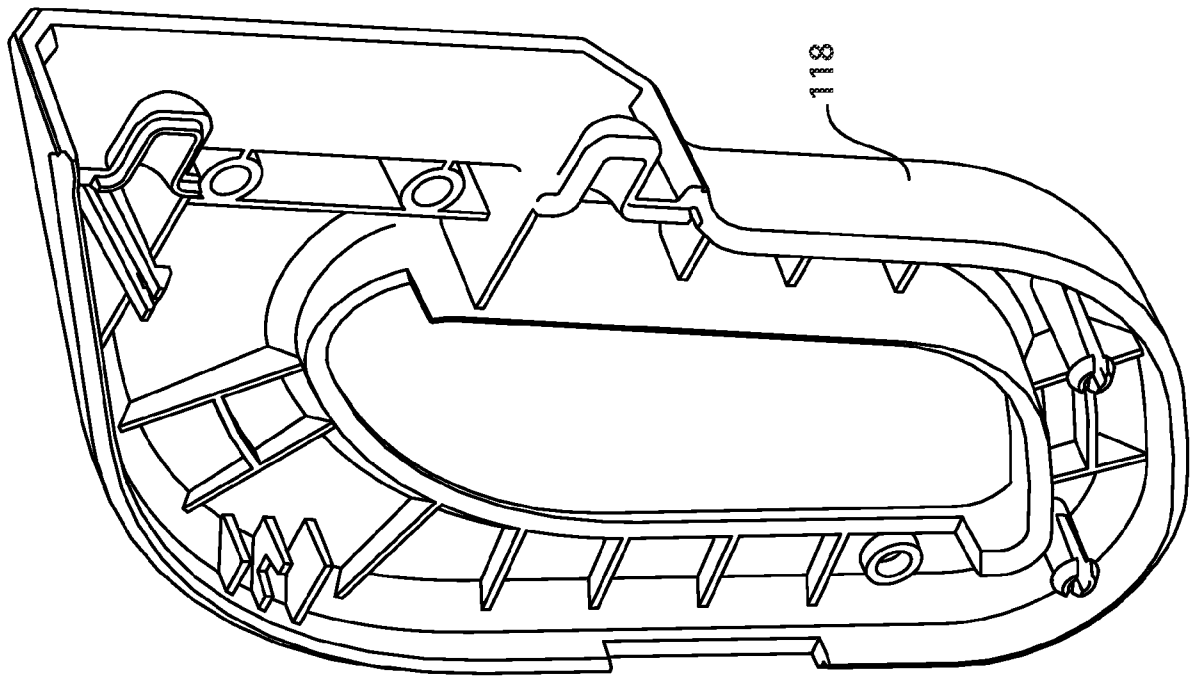


FIG. 45

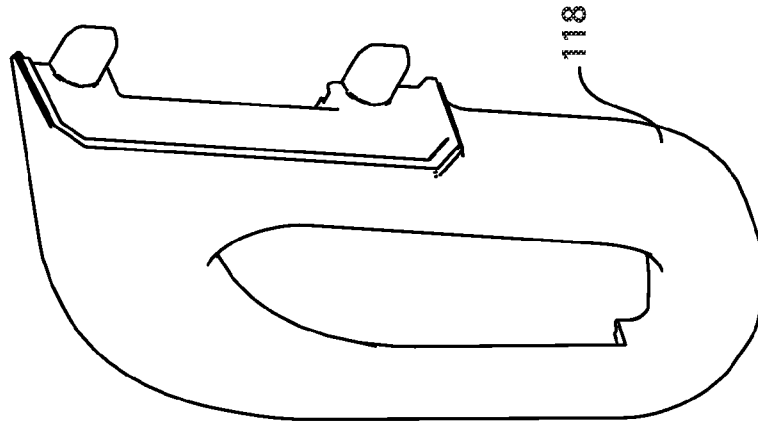
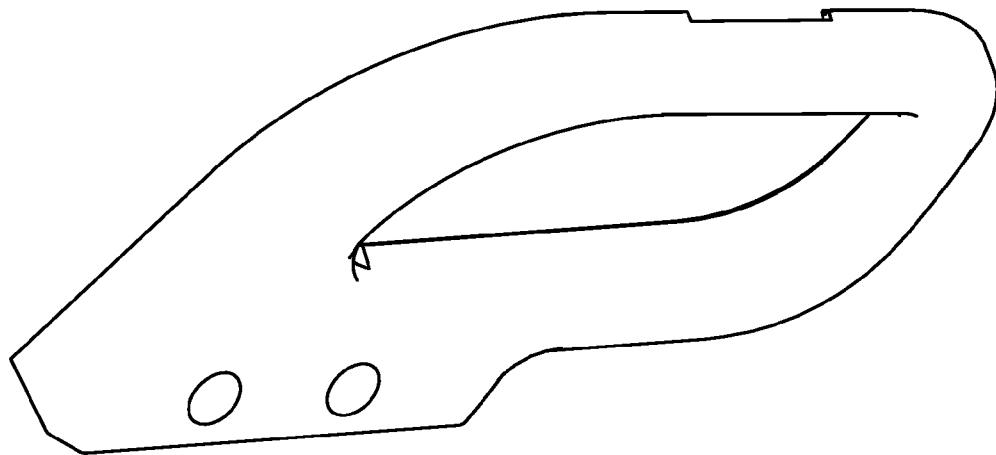


FIG. 46



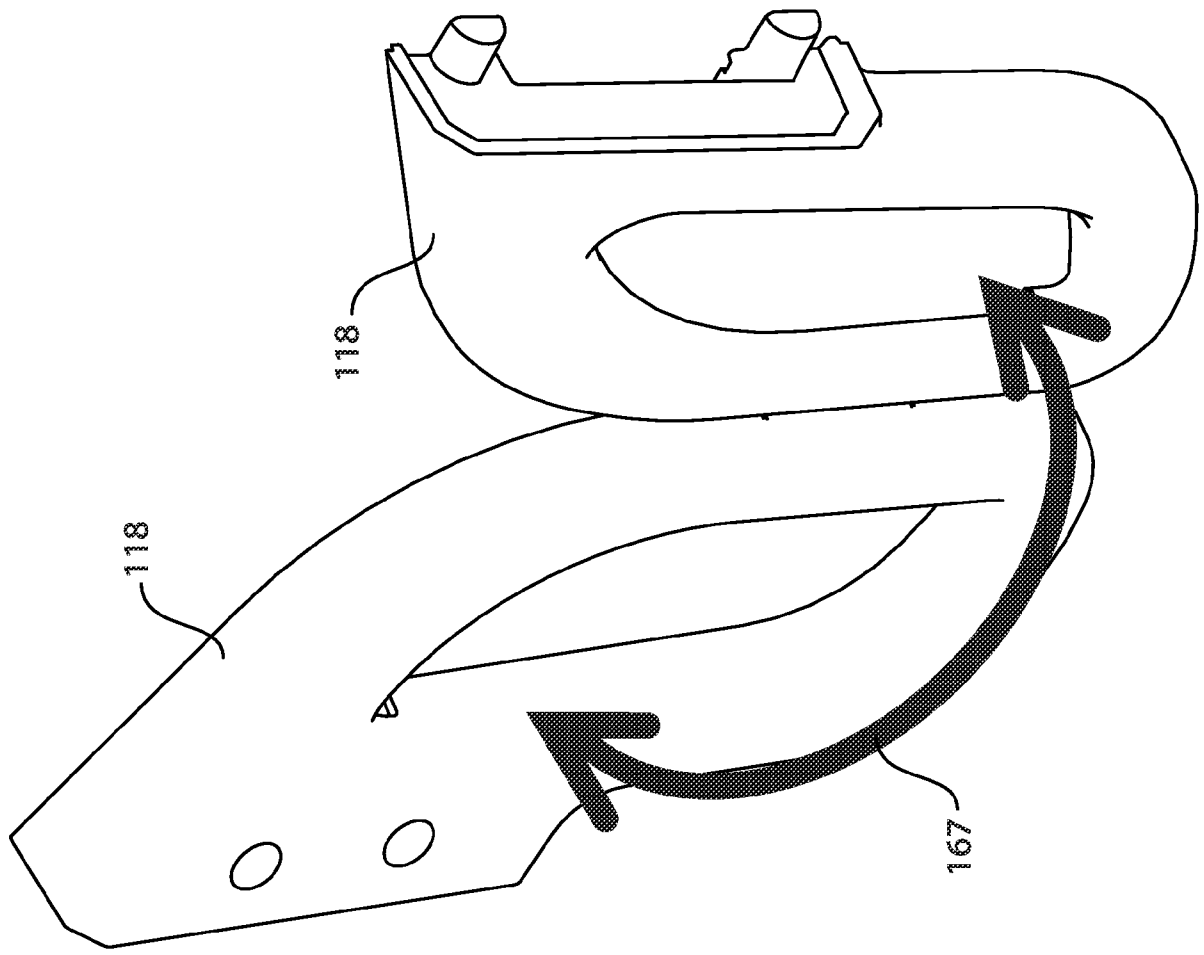
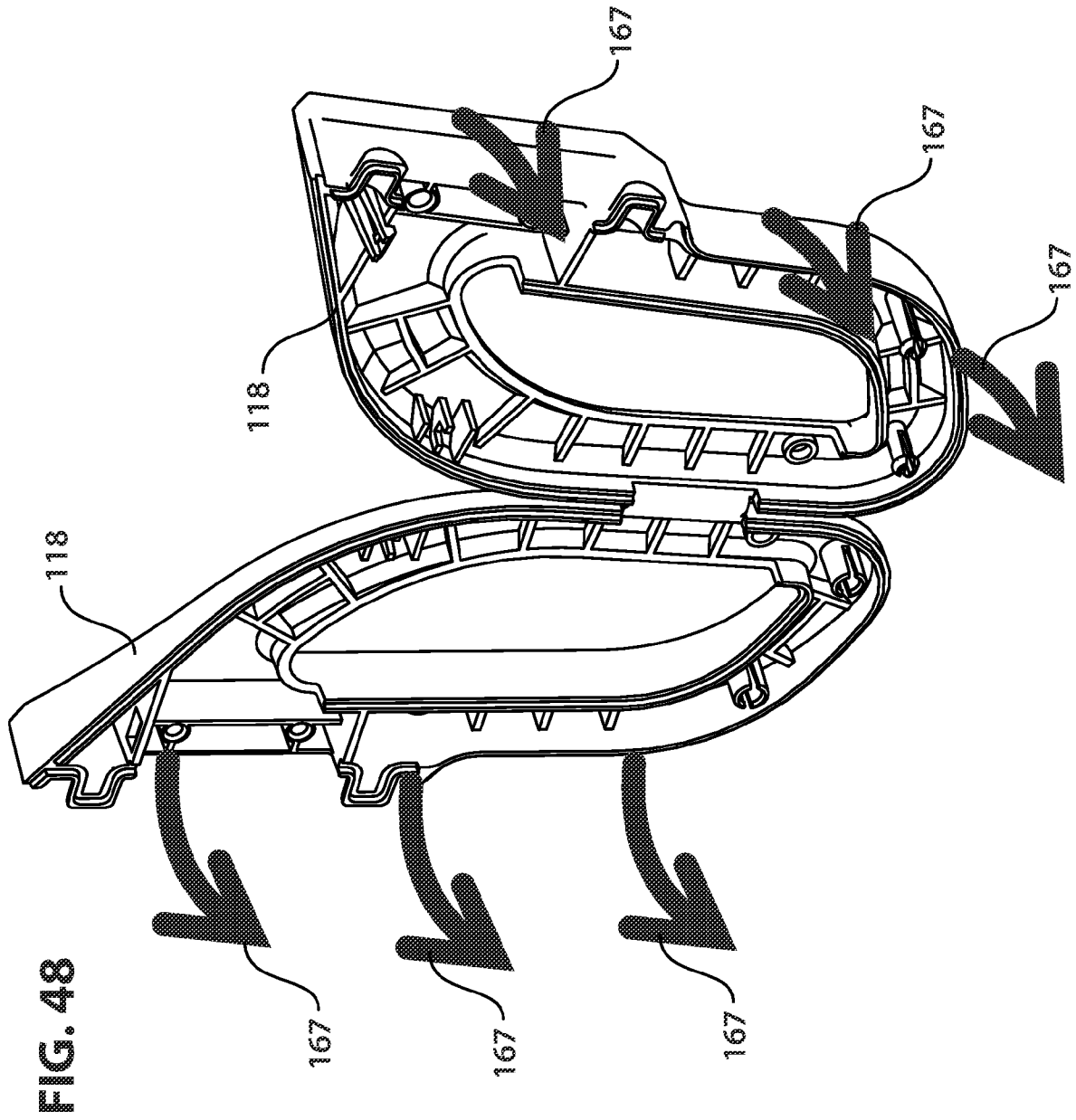


FIG. 47



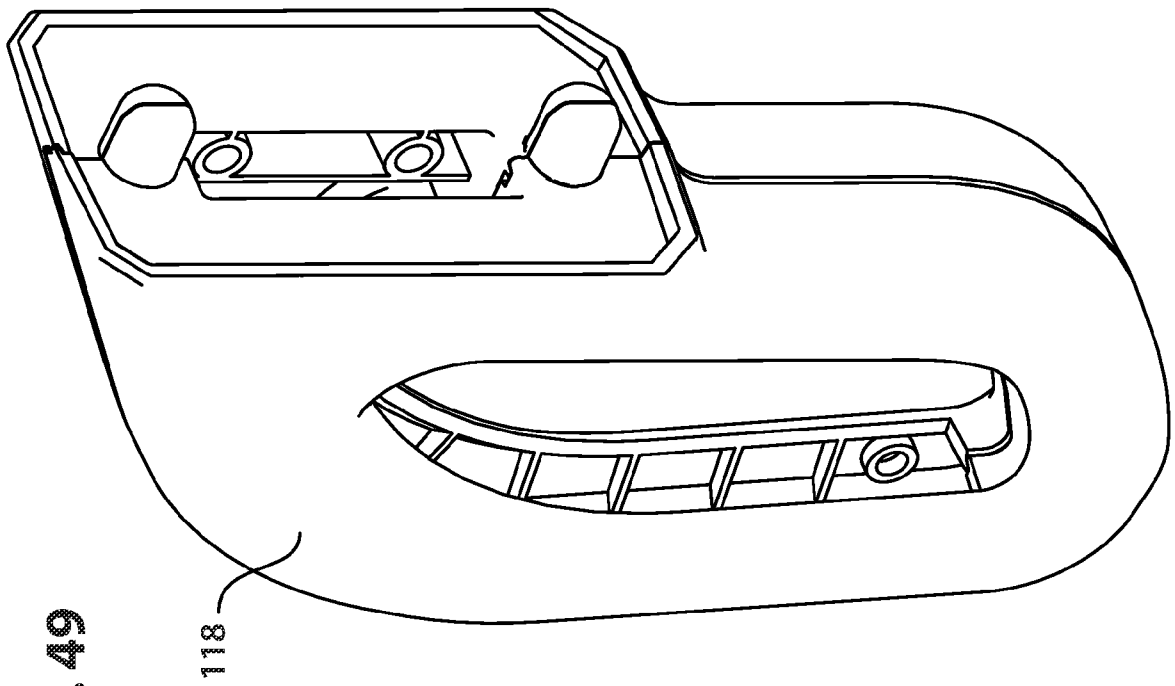


FIG. 49

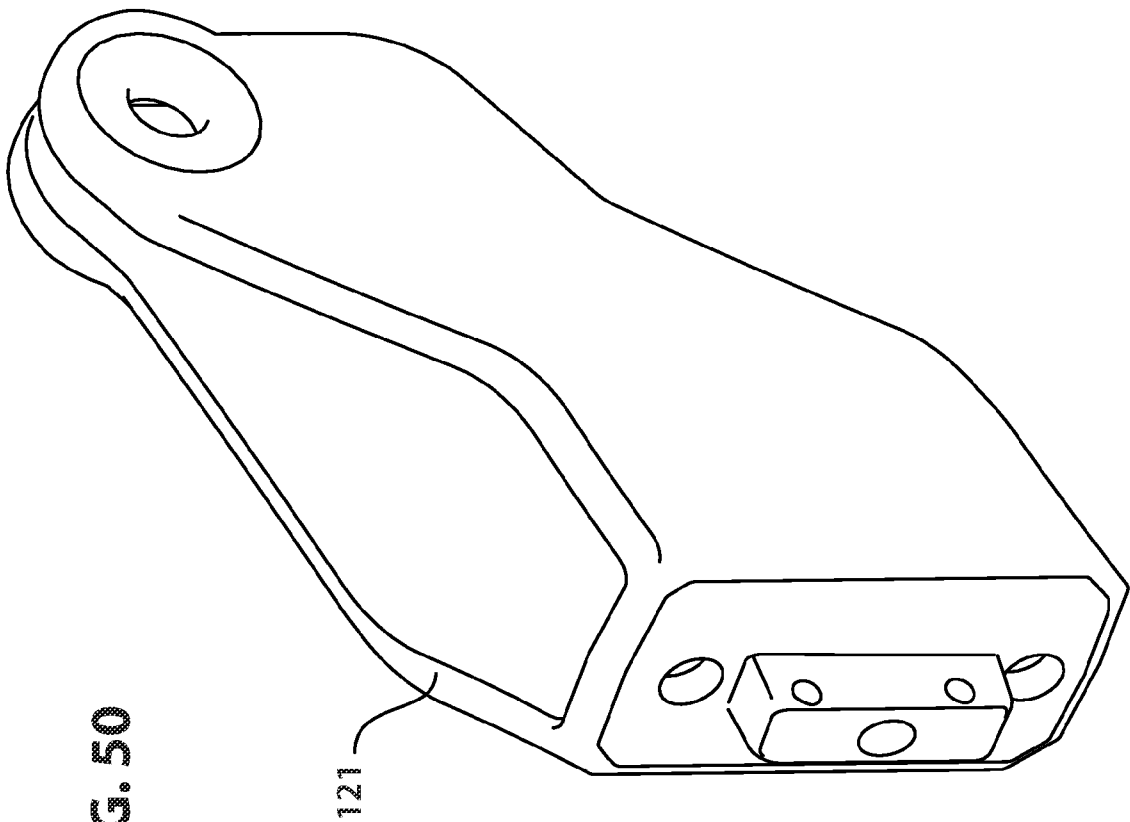


FIG. 50

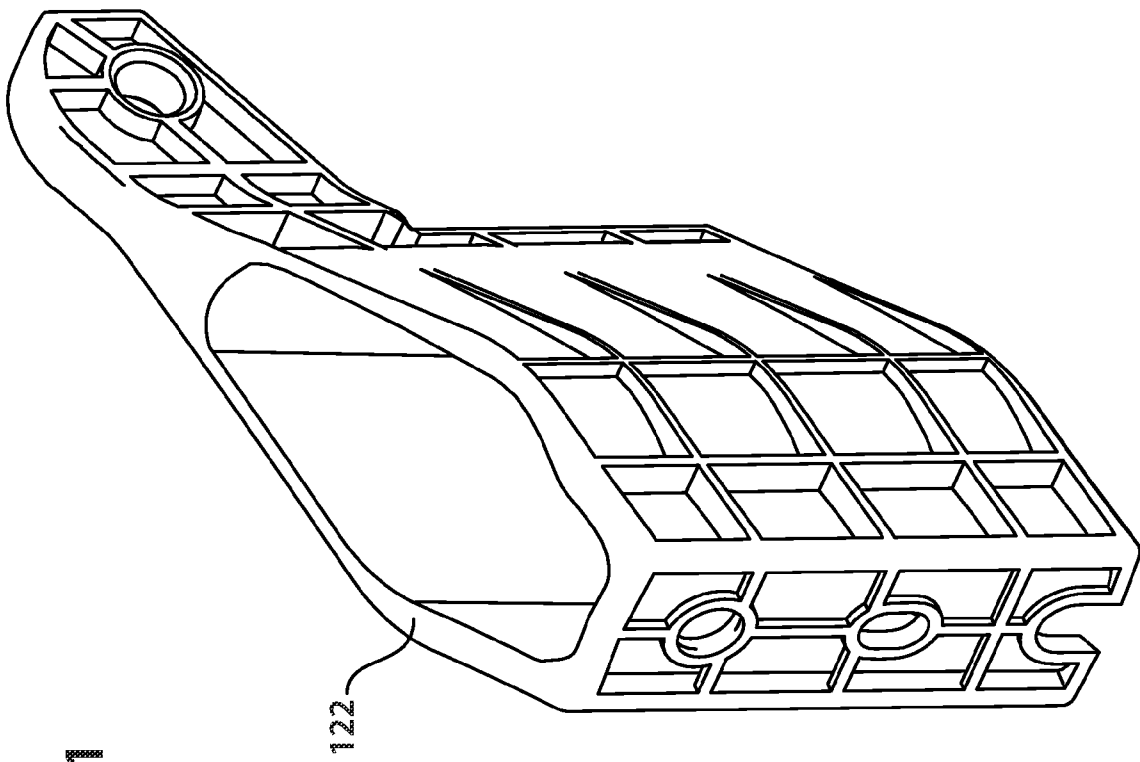


FIG. 51

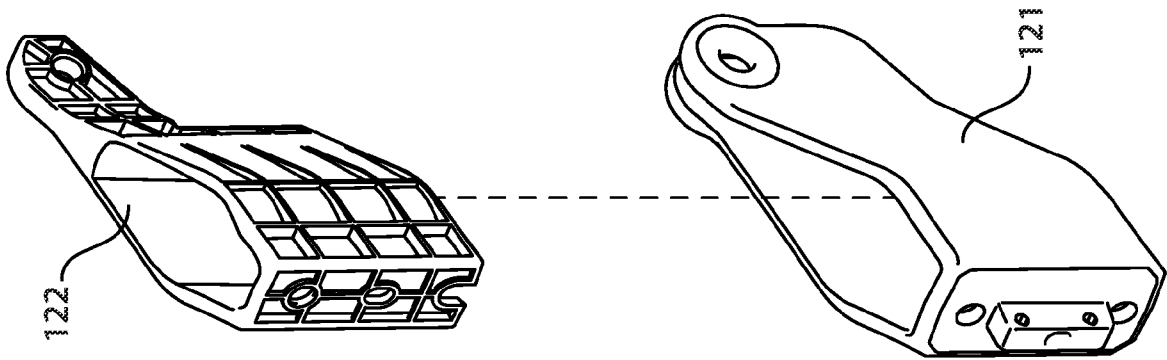
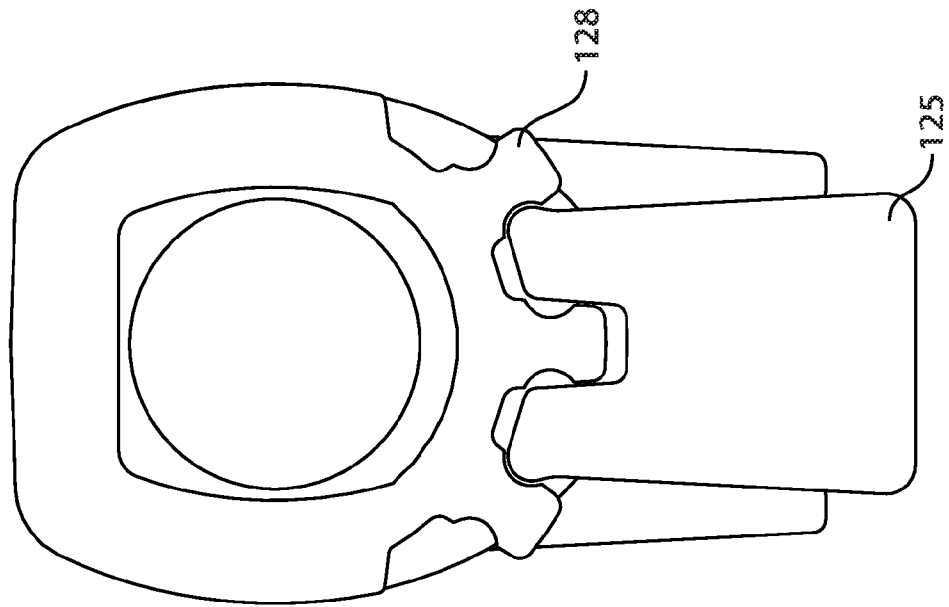


FIG. 52

FIG. 53



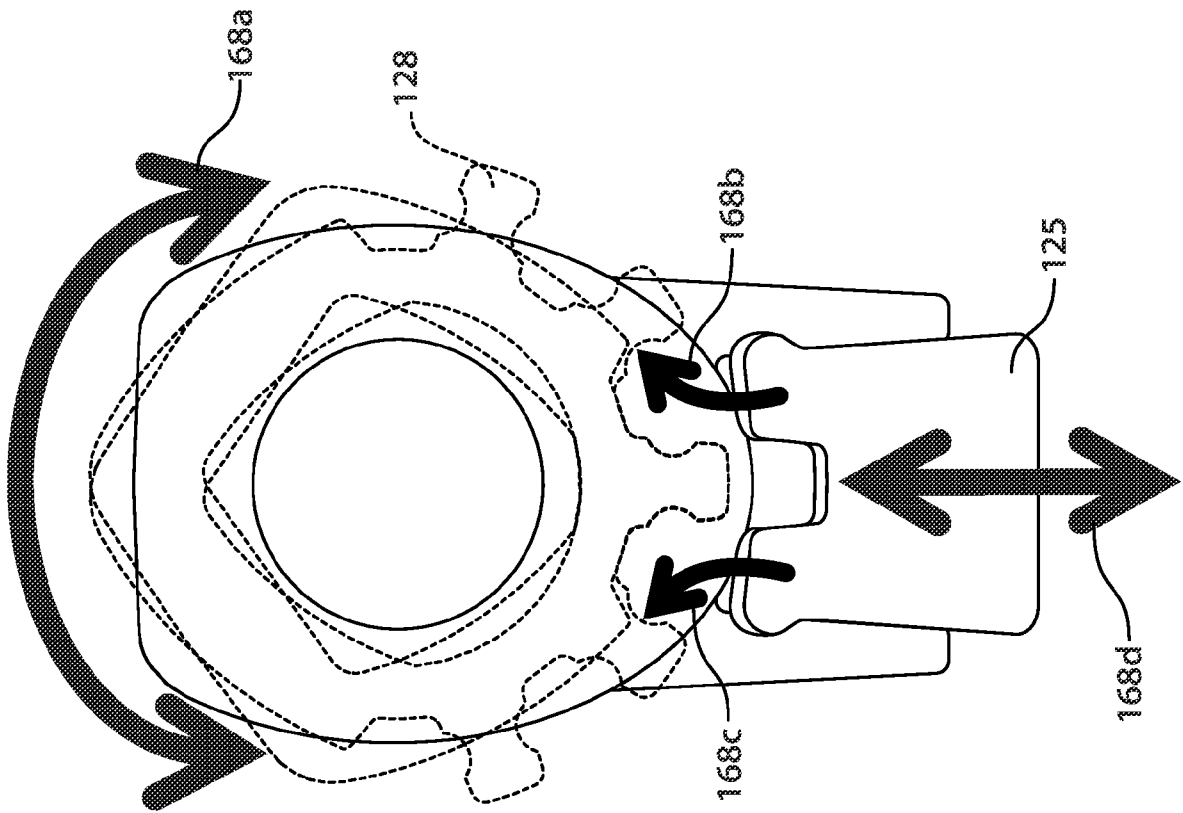
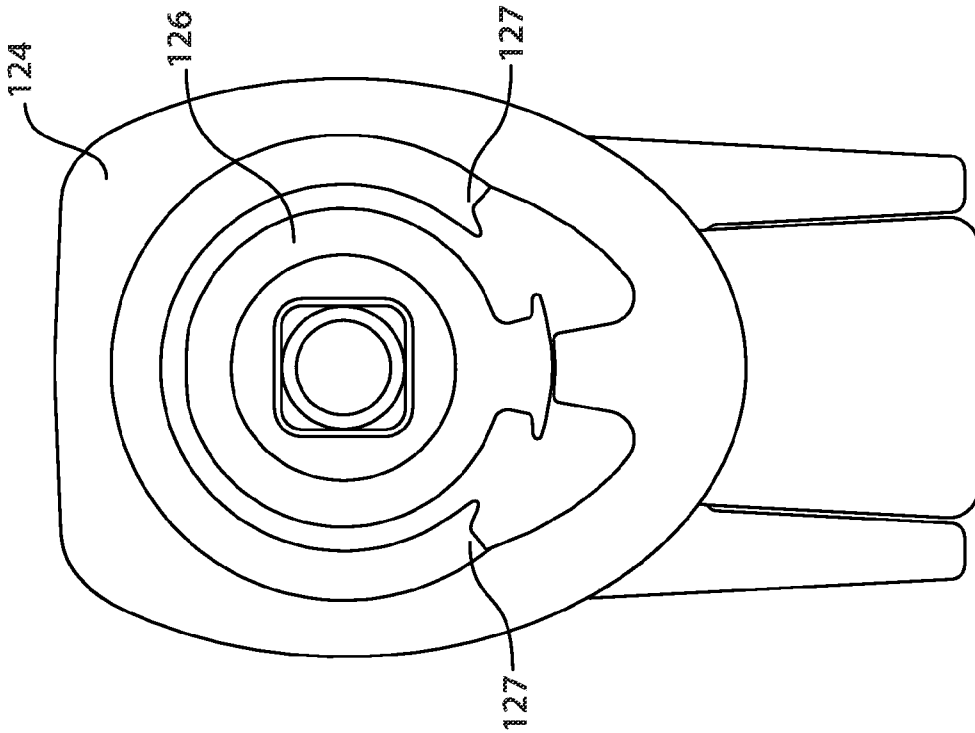


FIG. 54

FIG. 55



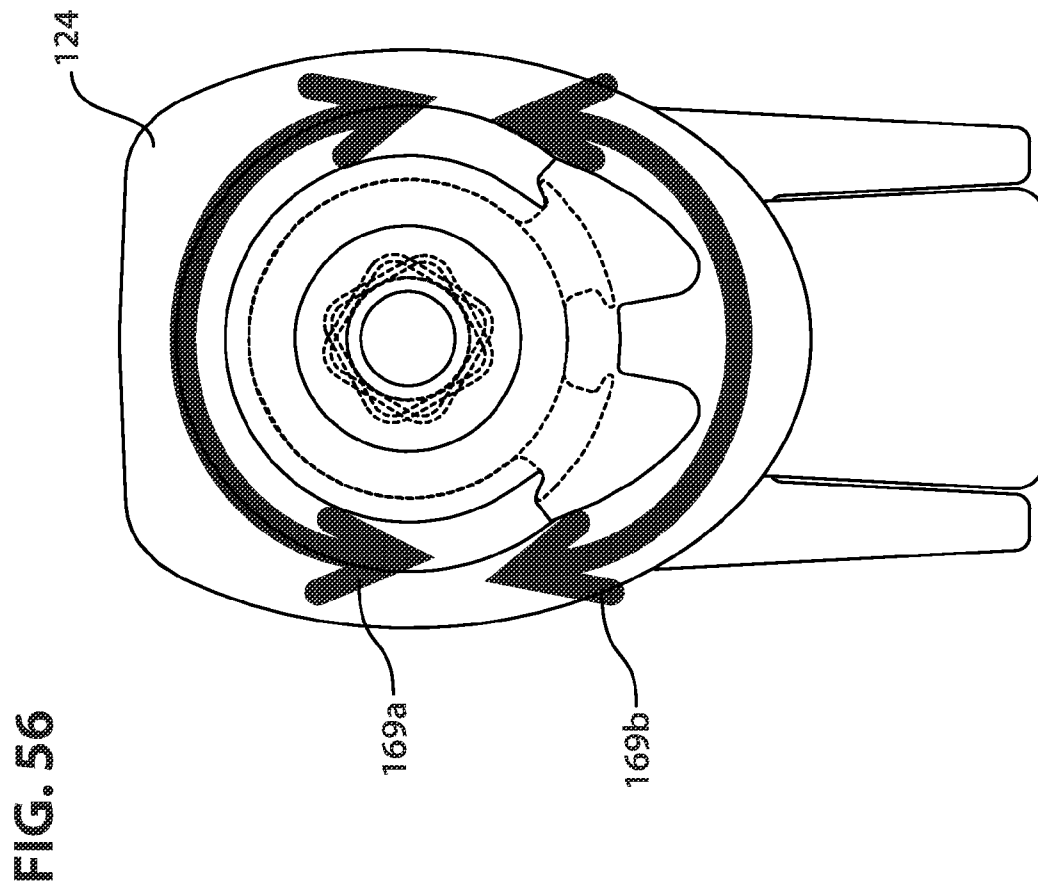


FIG. 57

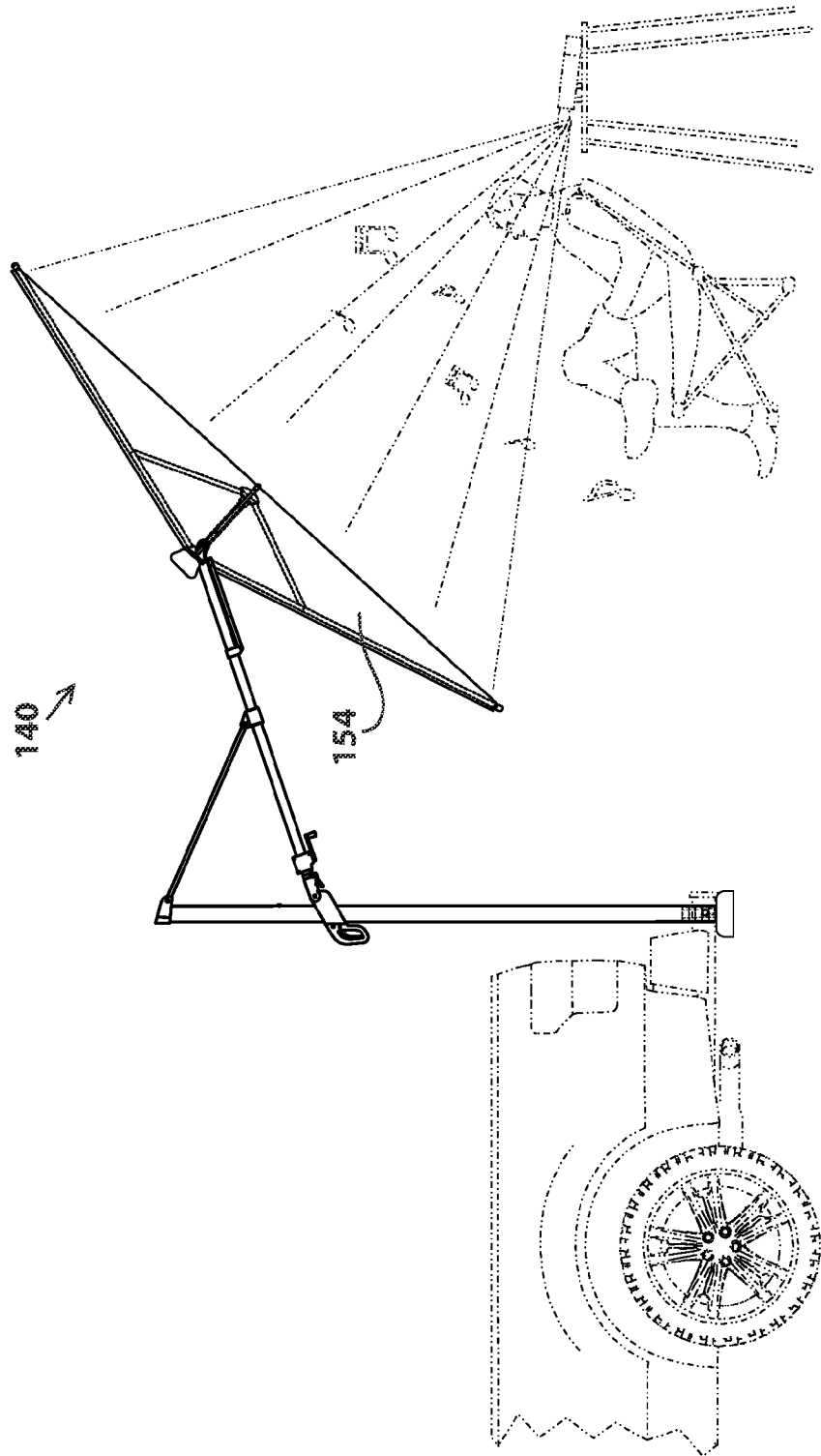
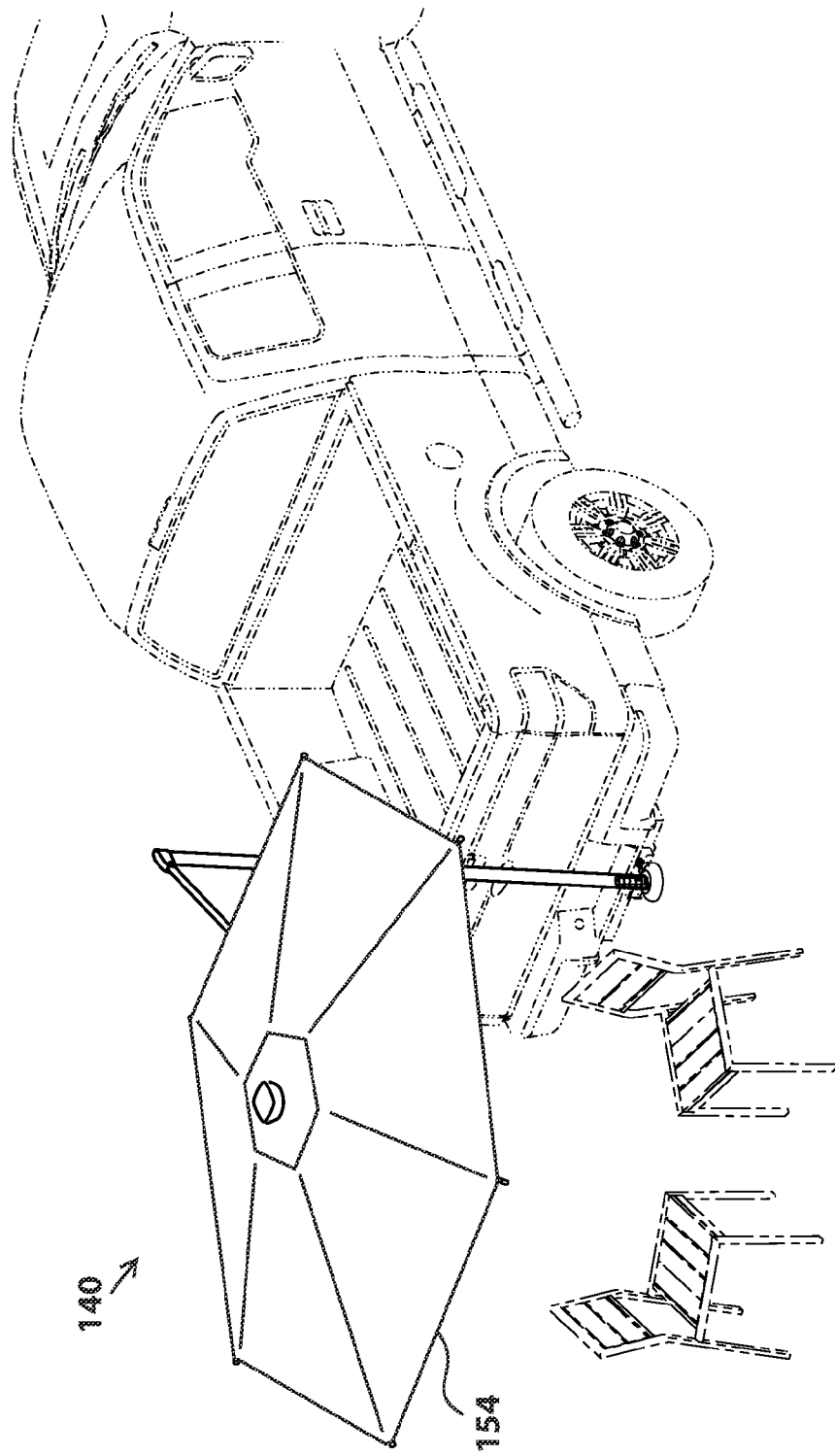


FIG. 58



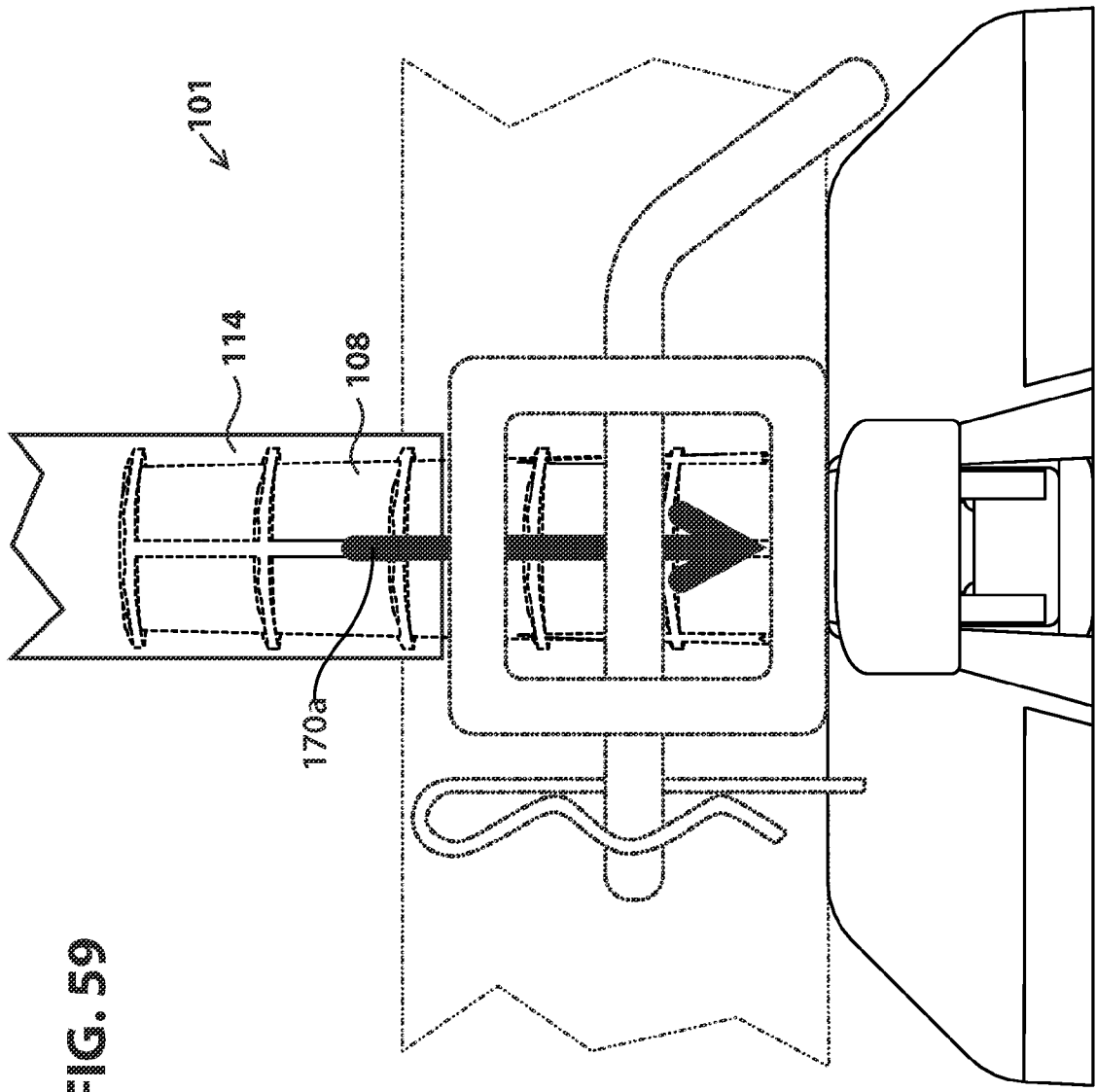


FIG. 59

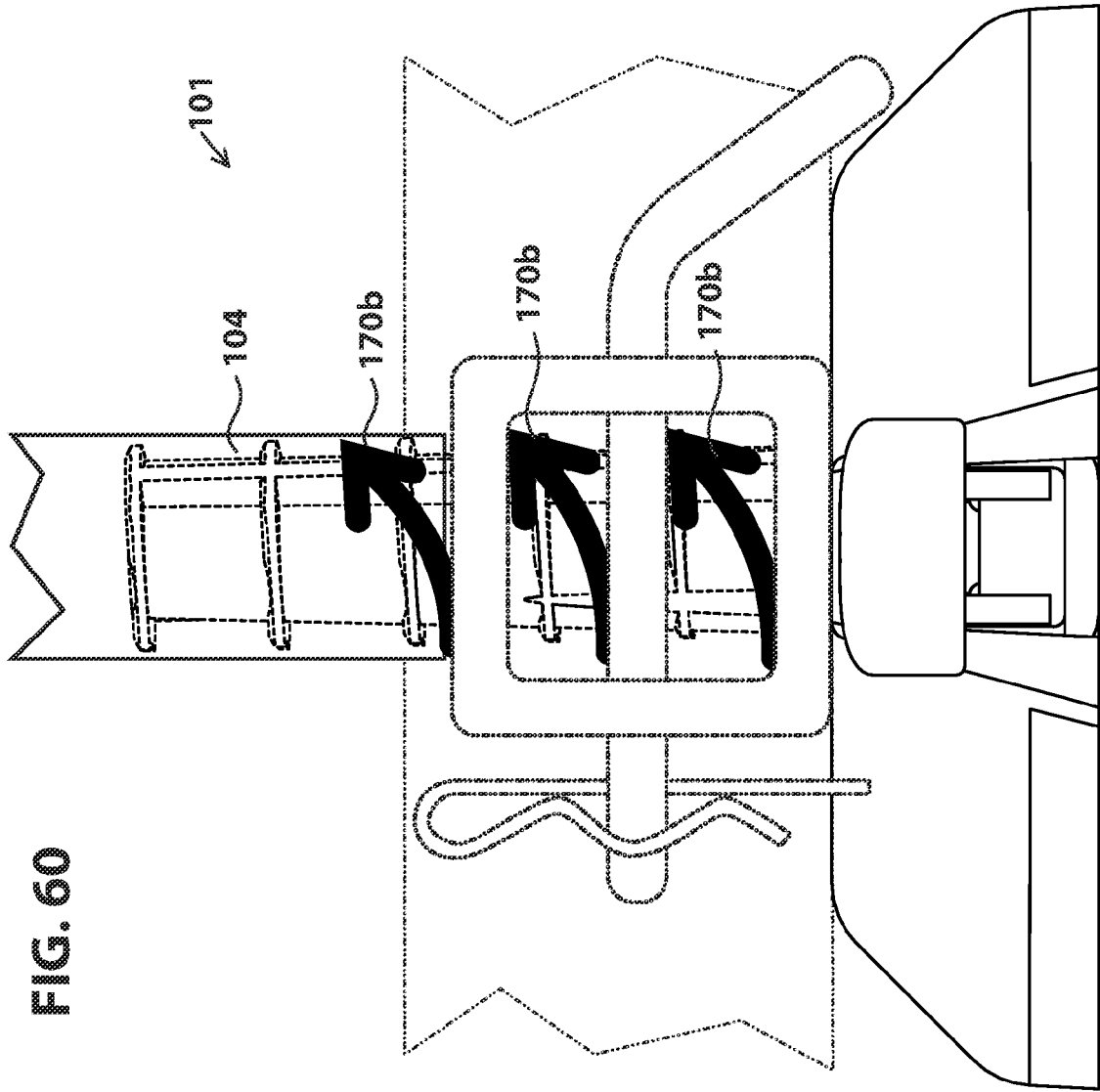
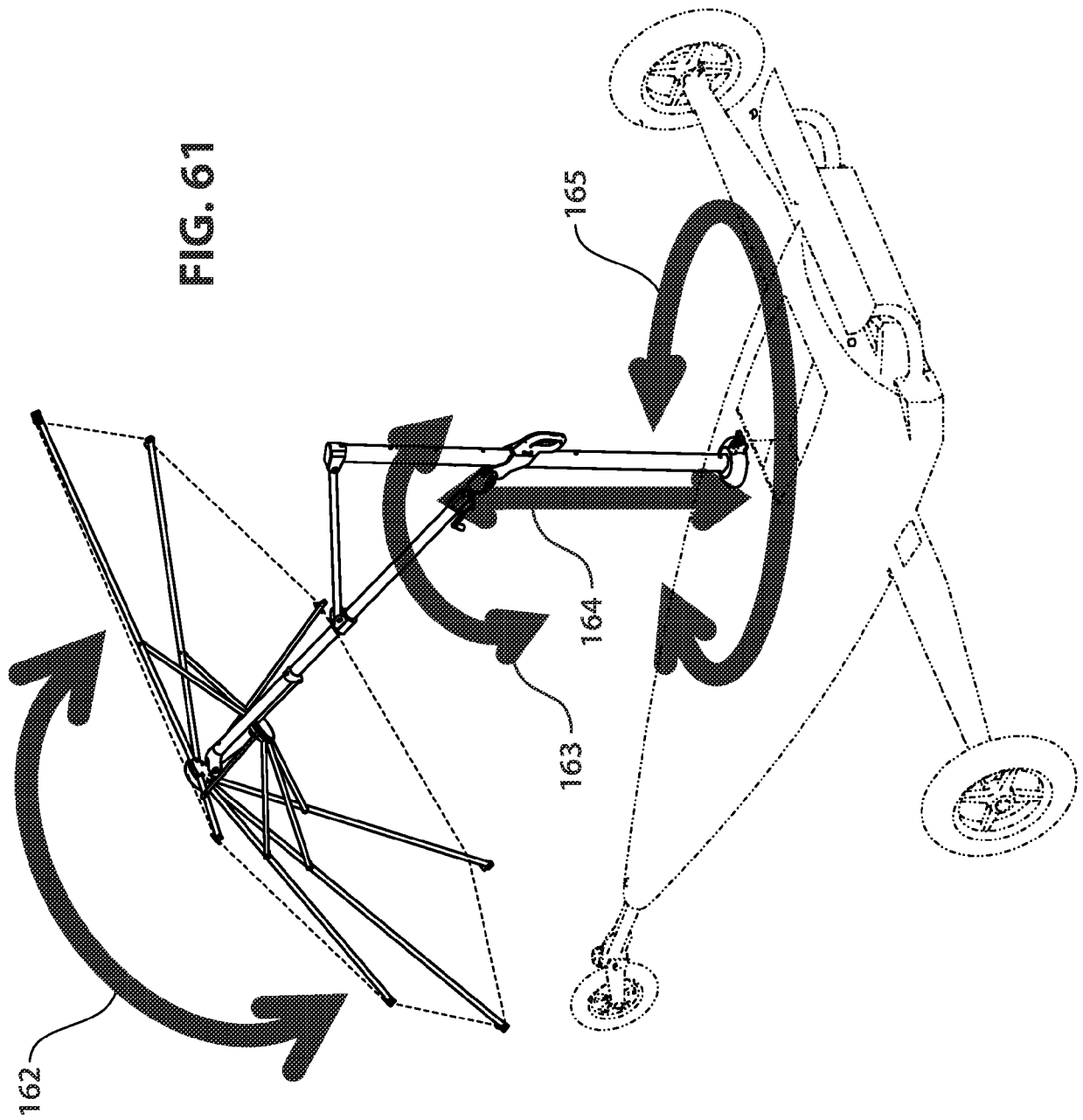


FIG. 60



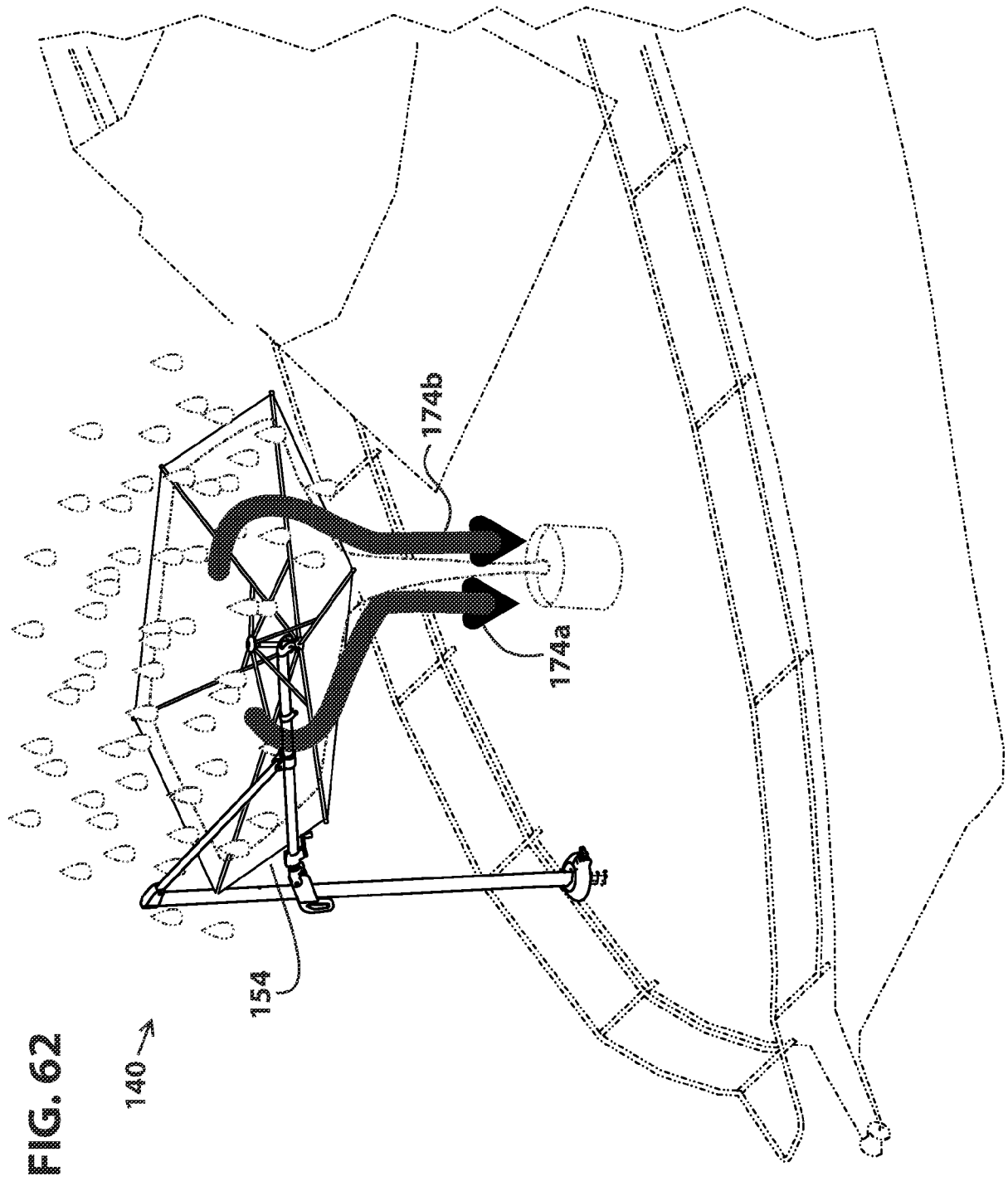


FIG. 63

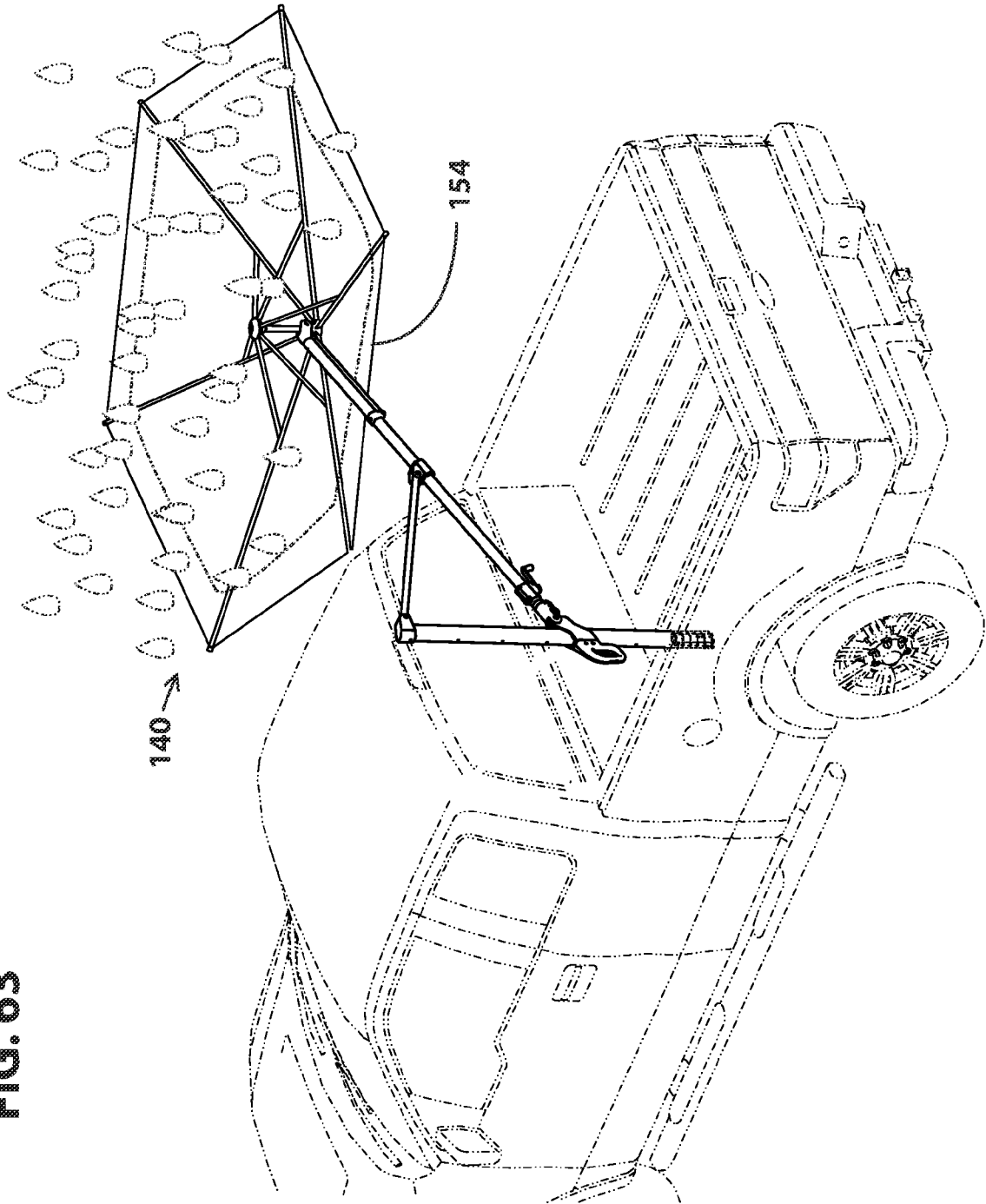


FIG. 64

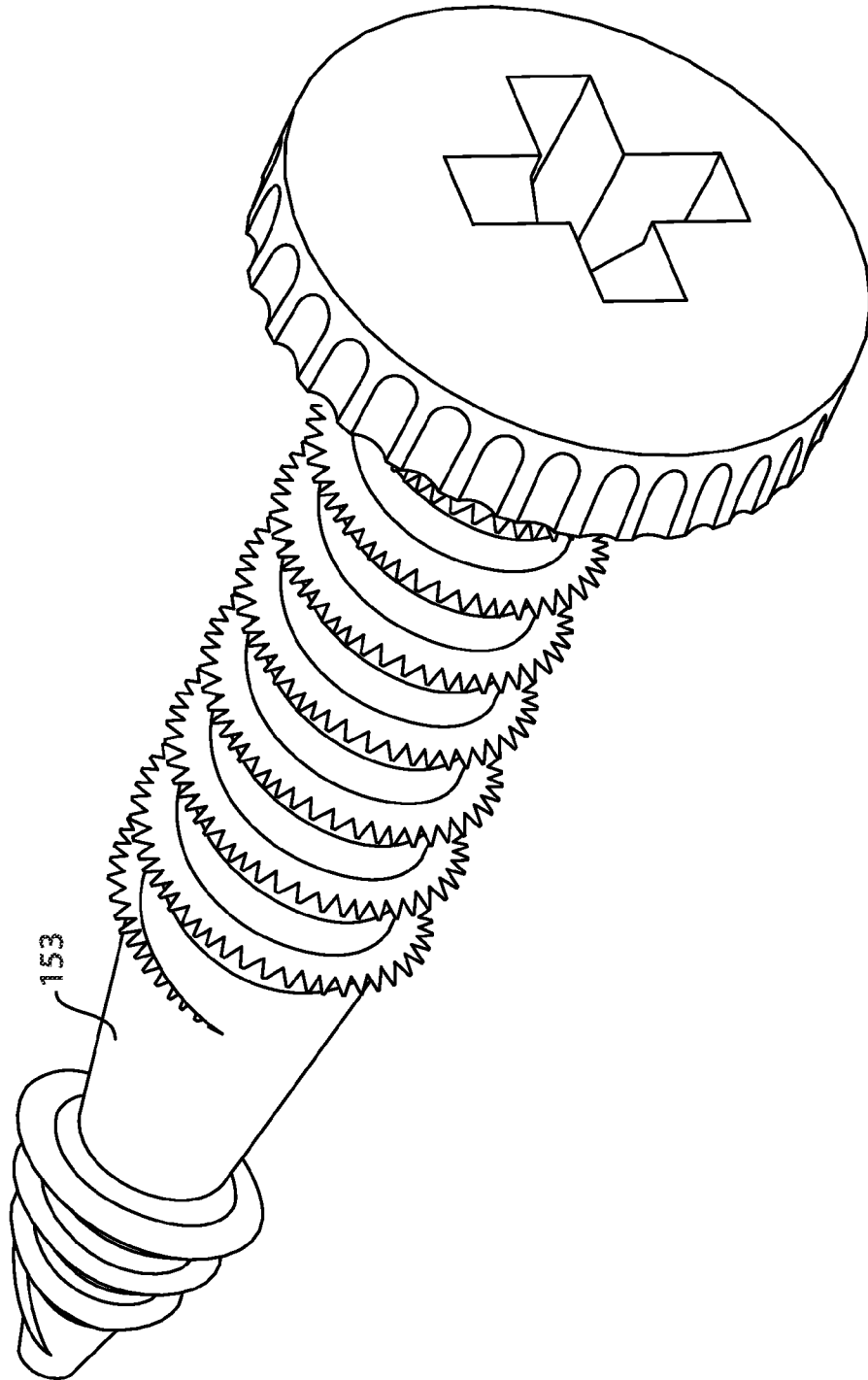
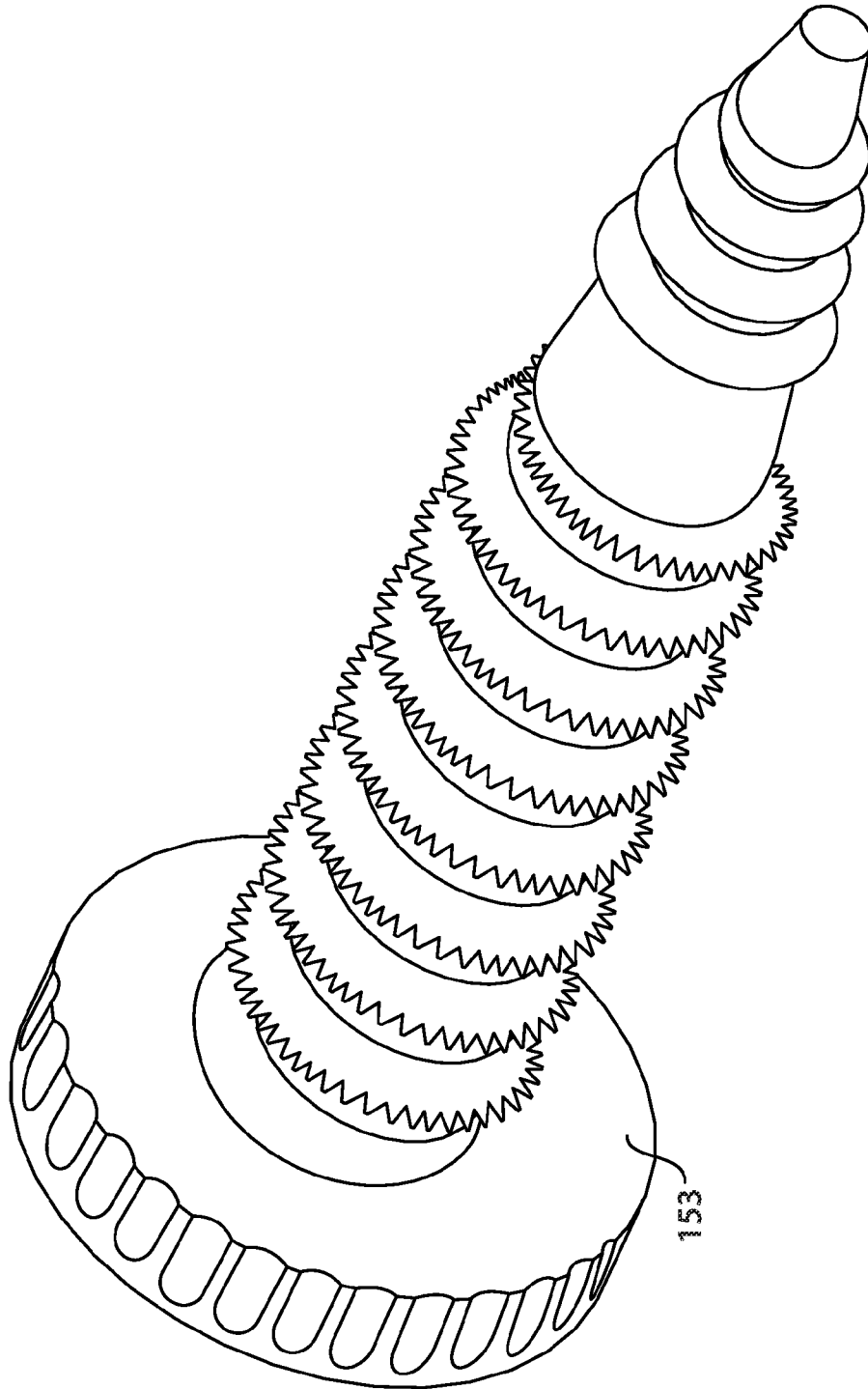


FIG. 65



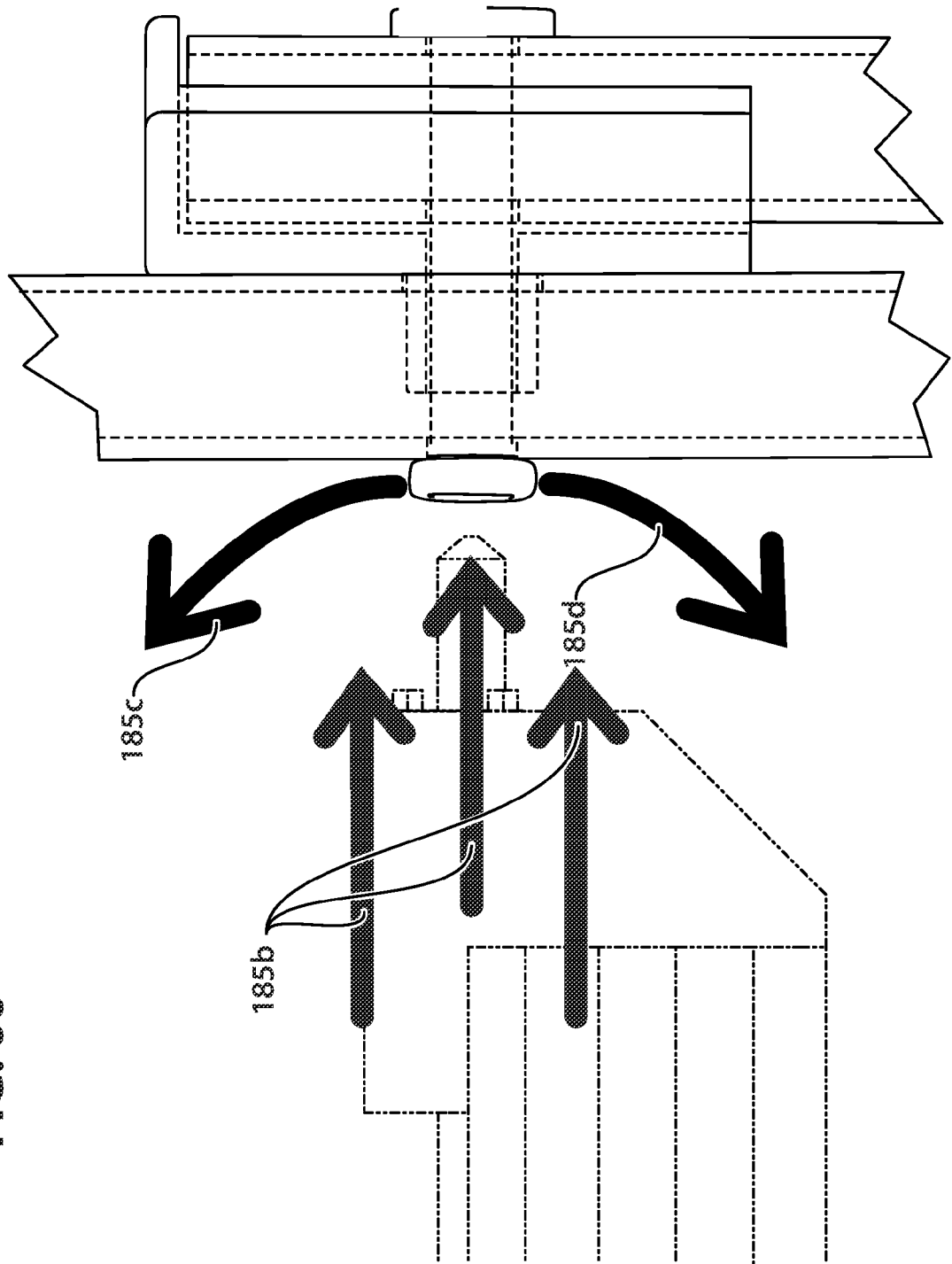


FIG. 66

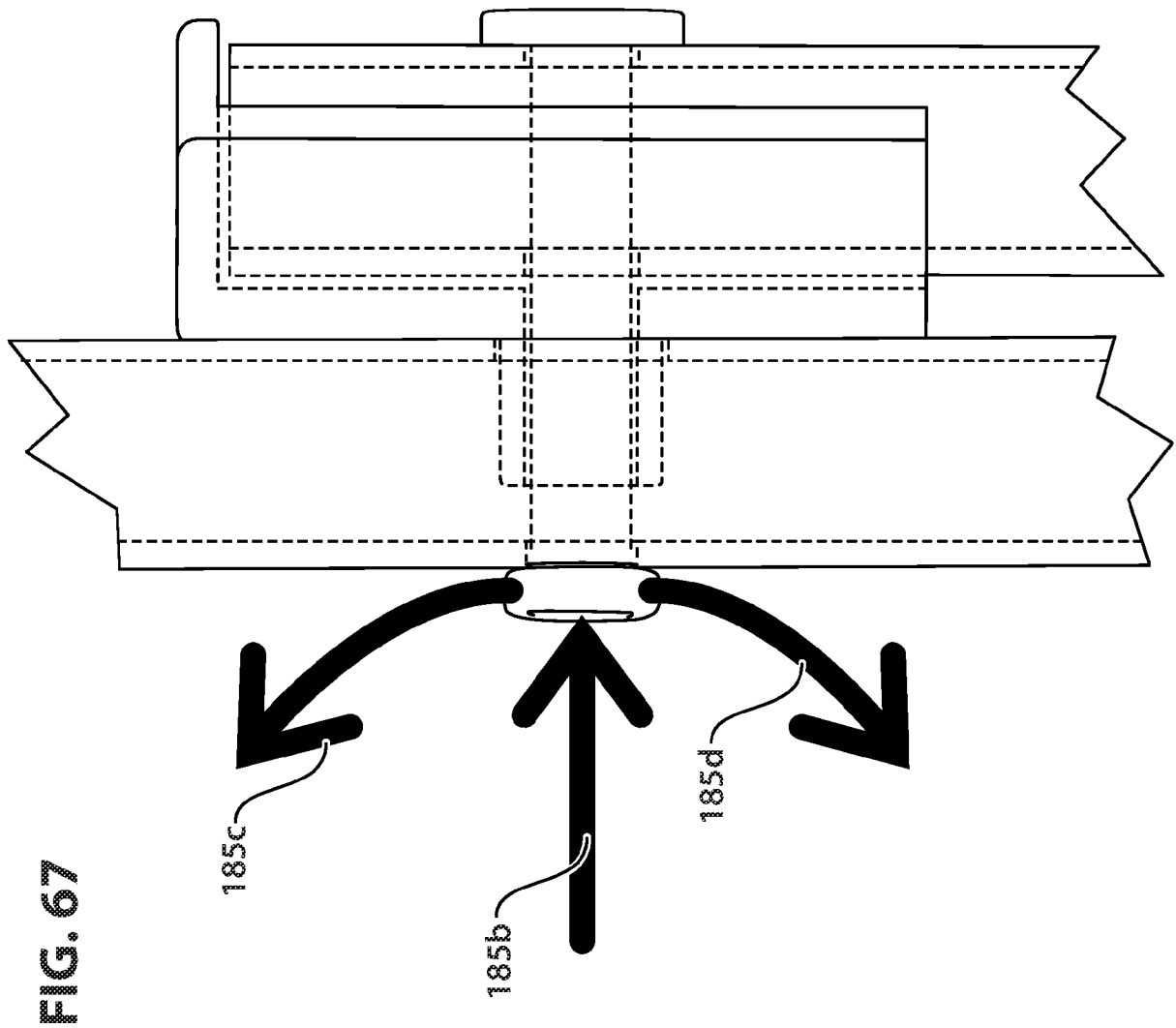
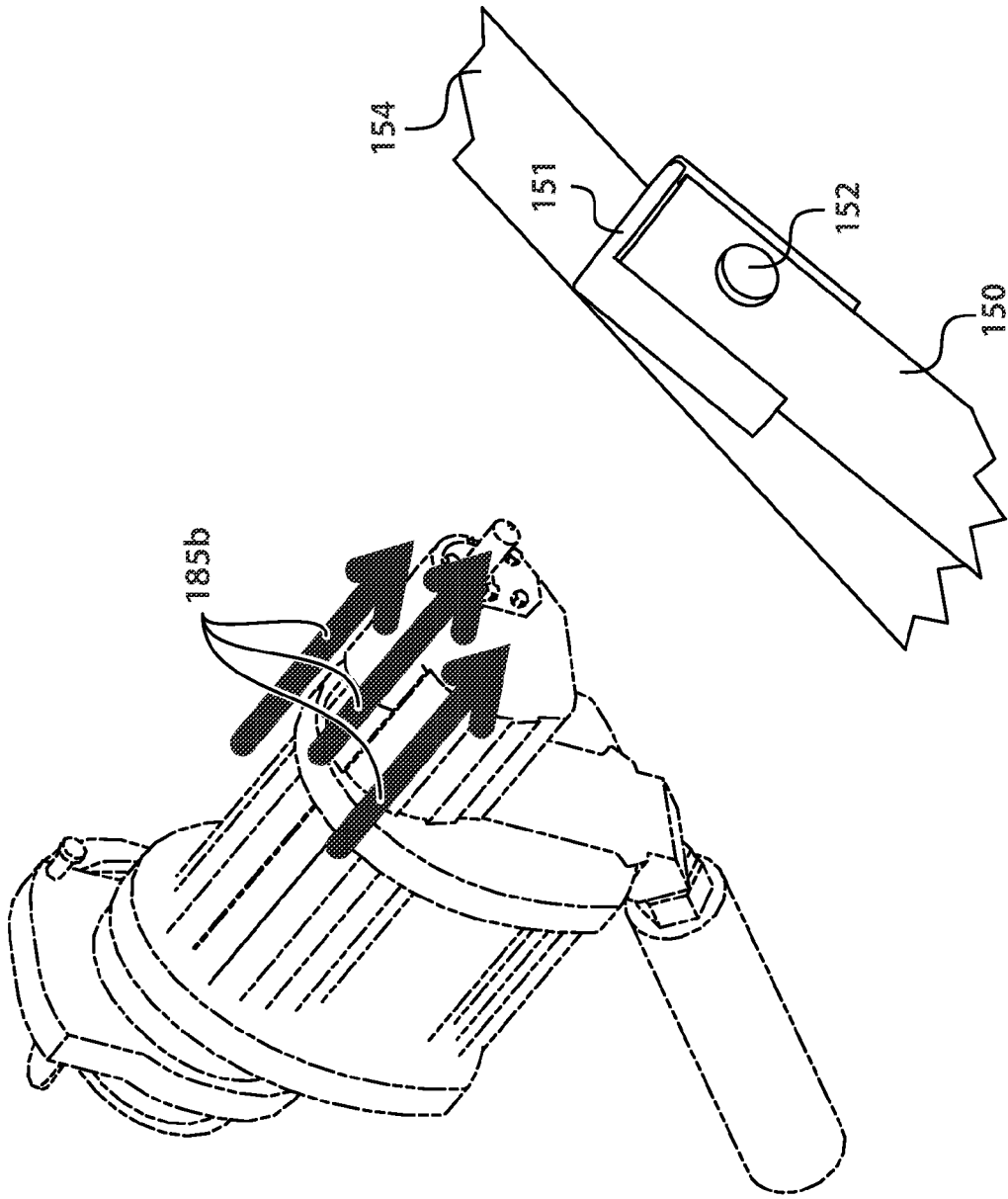


FIG. 68



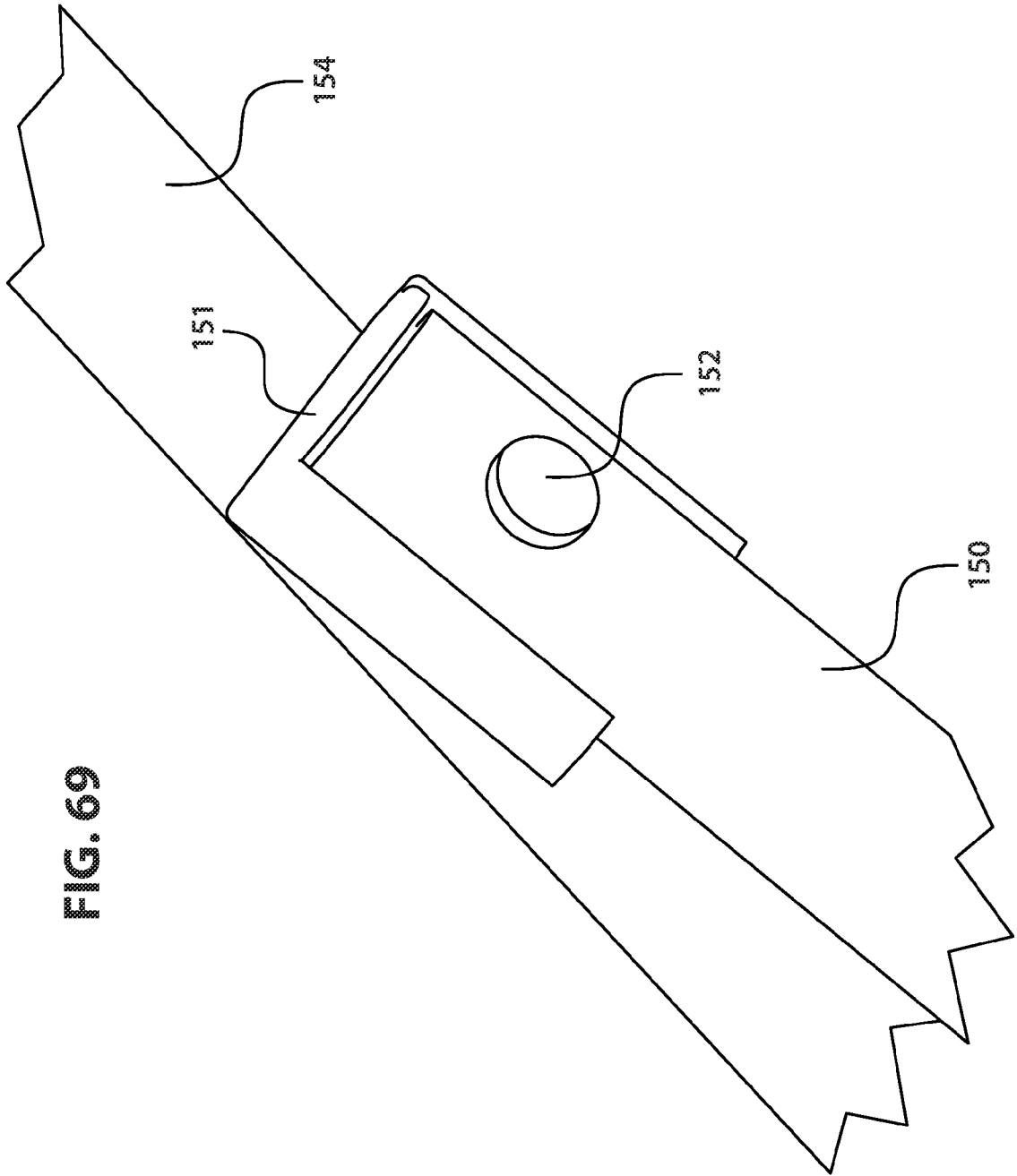


FIG. 69

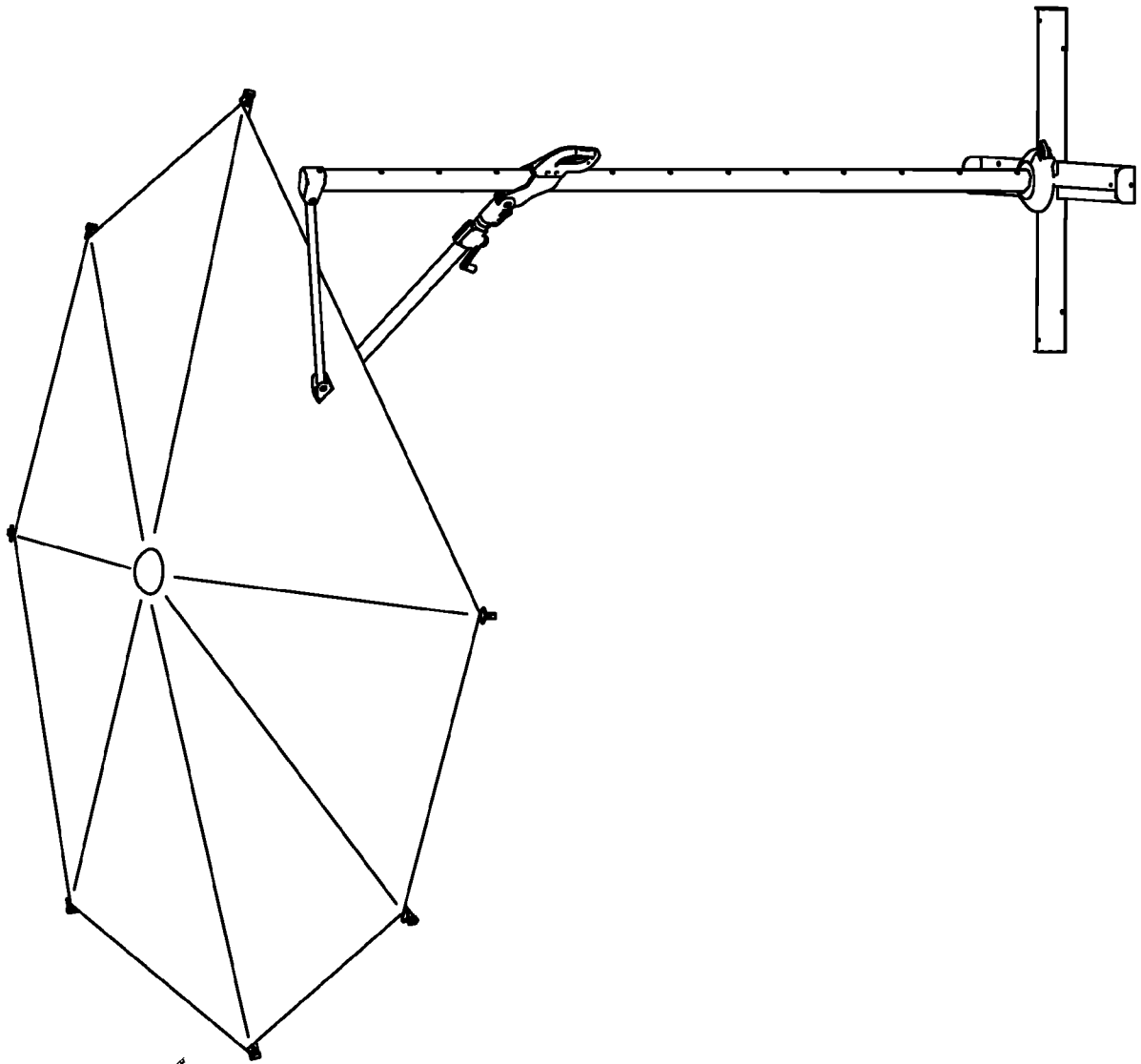


FIG. 70

140 →

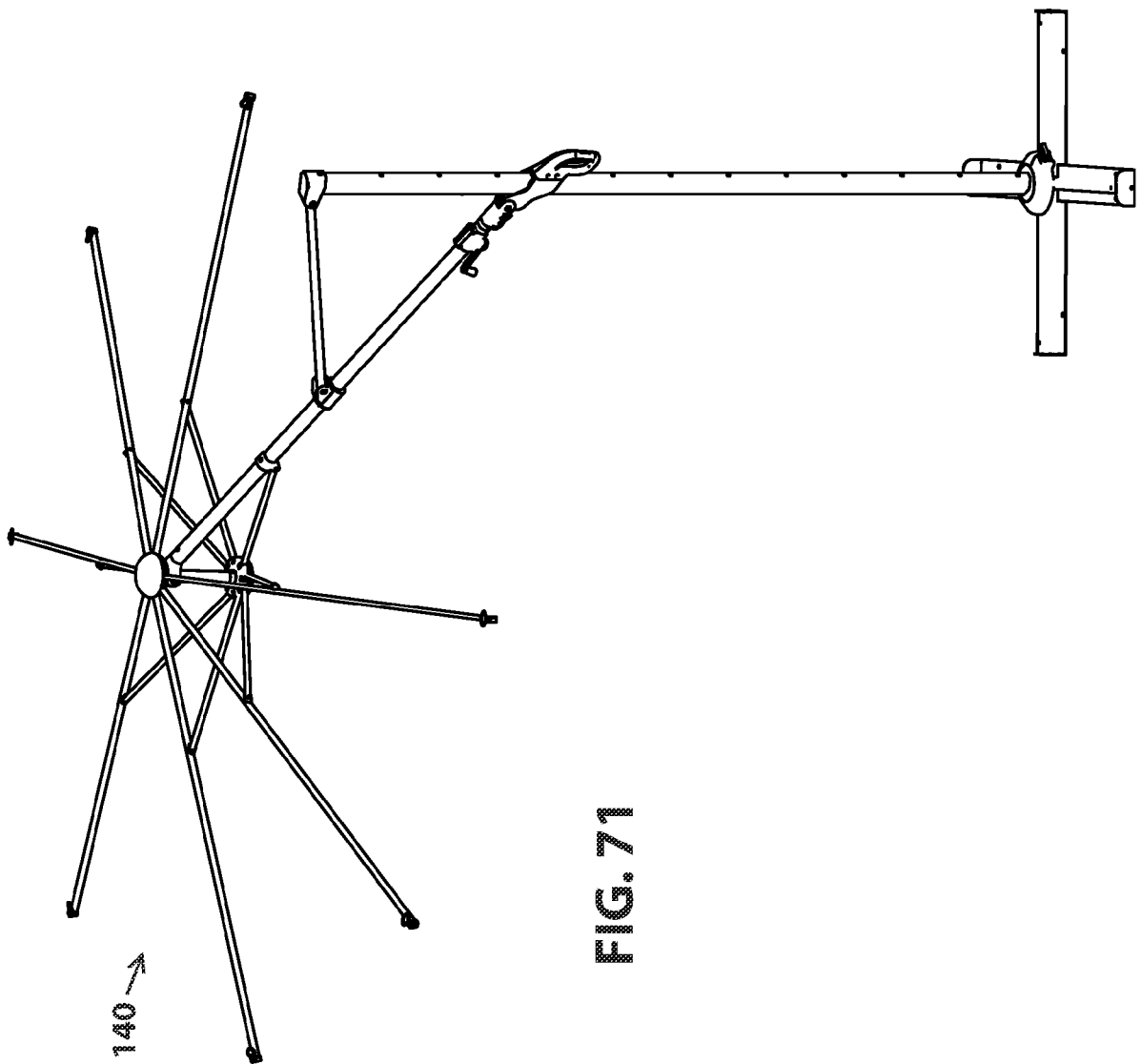


FIG. 71

FIG. 72

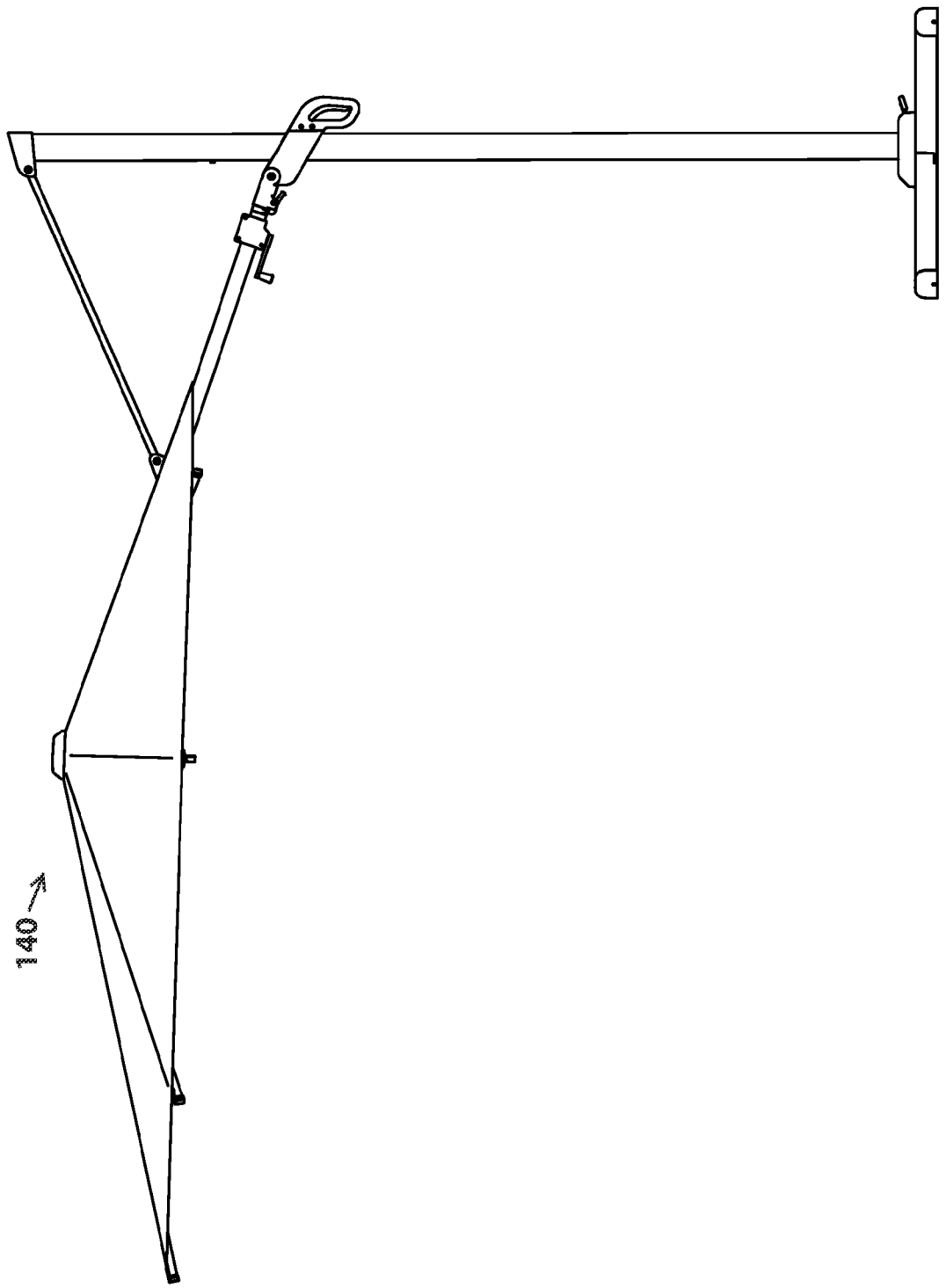
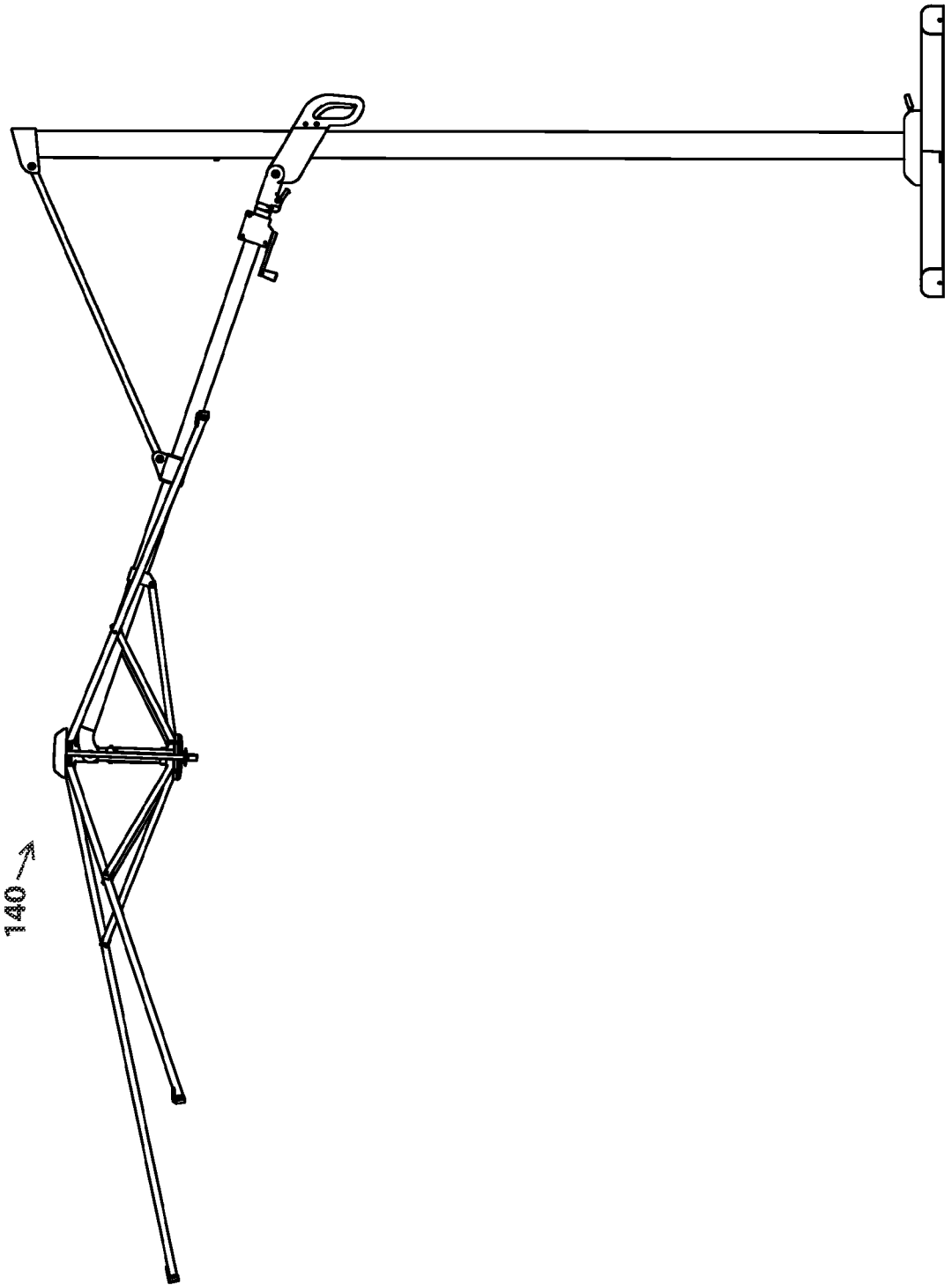
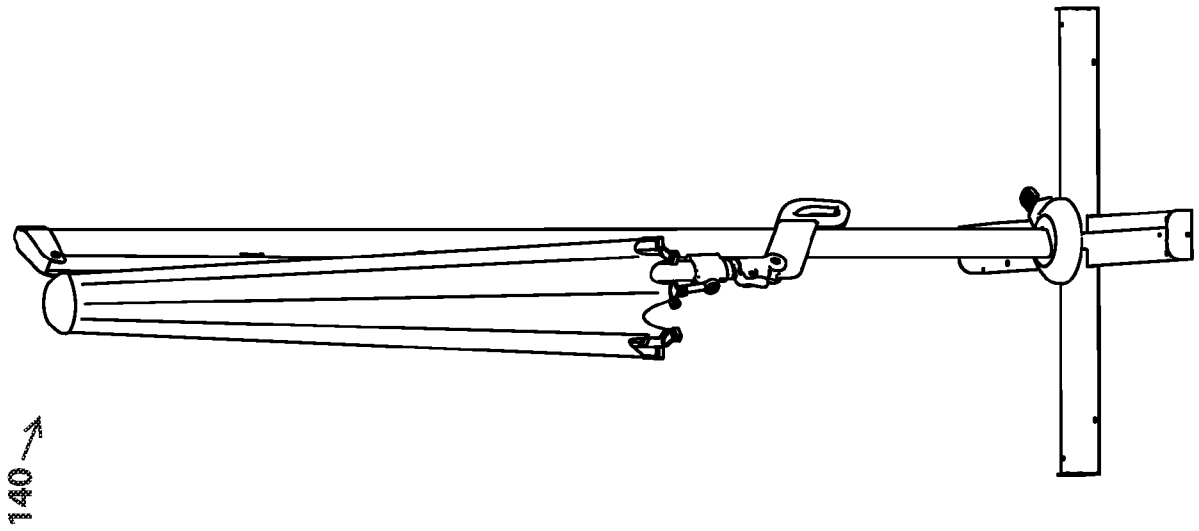


FIG. 73





140 →

FIG. 74

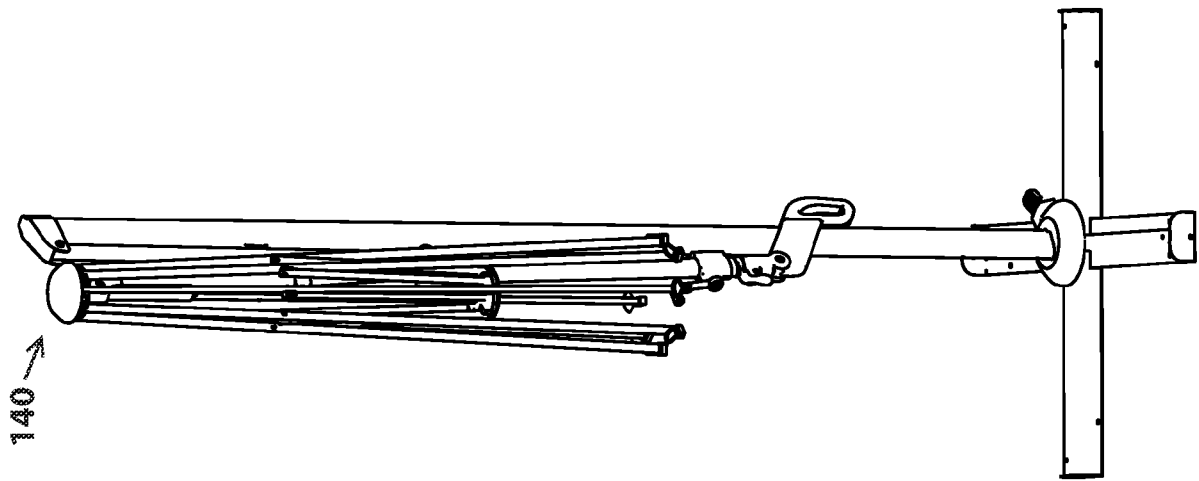
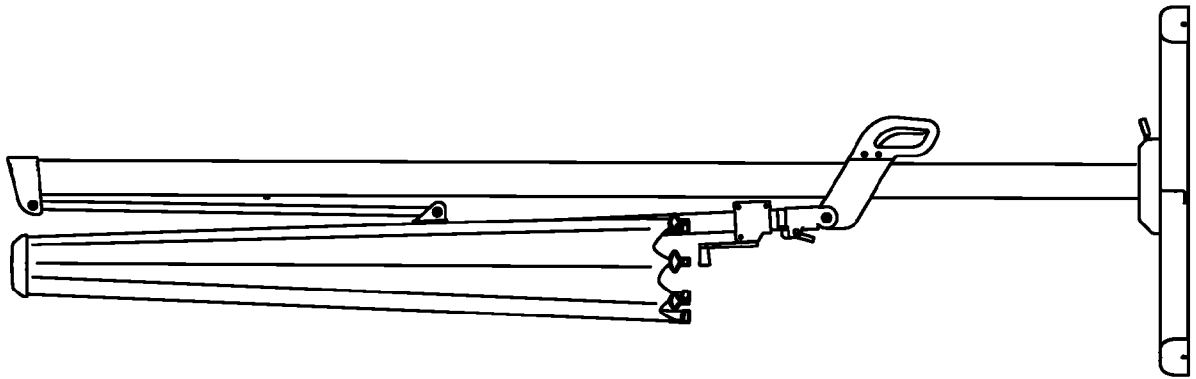
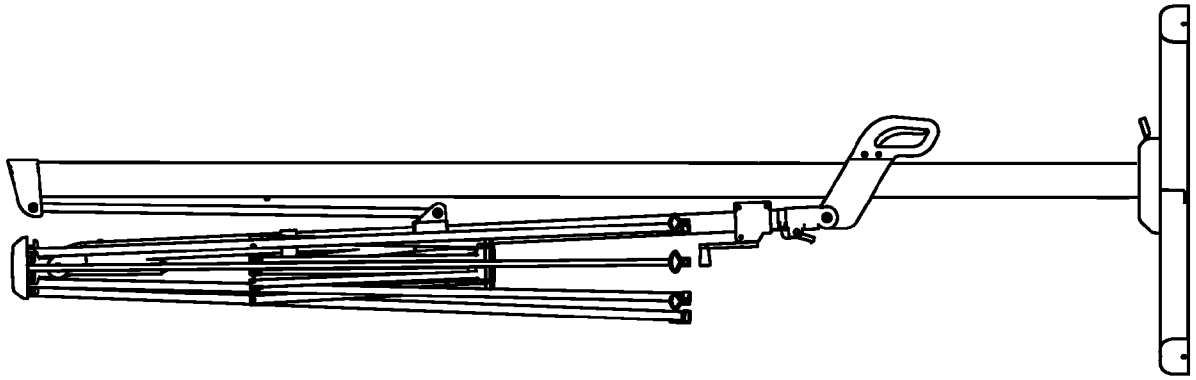


FIG. 75



140 →

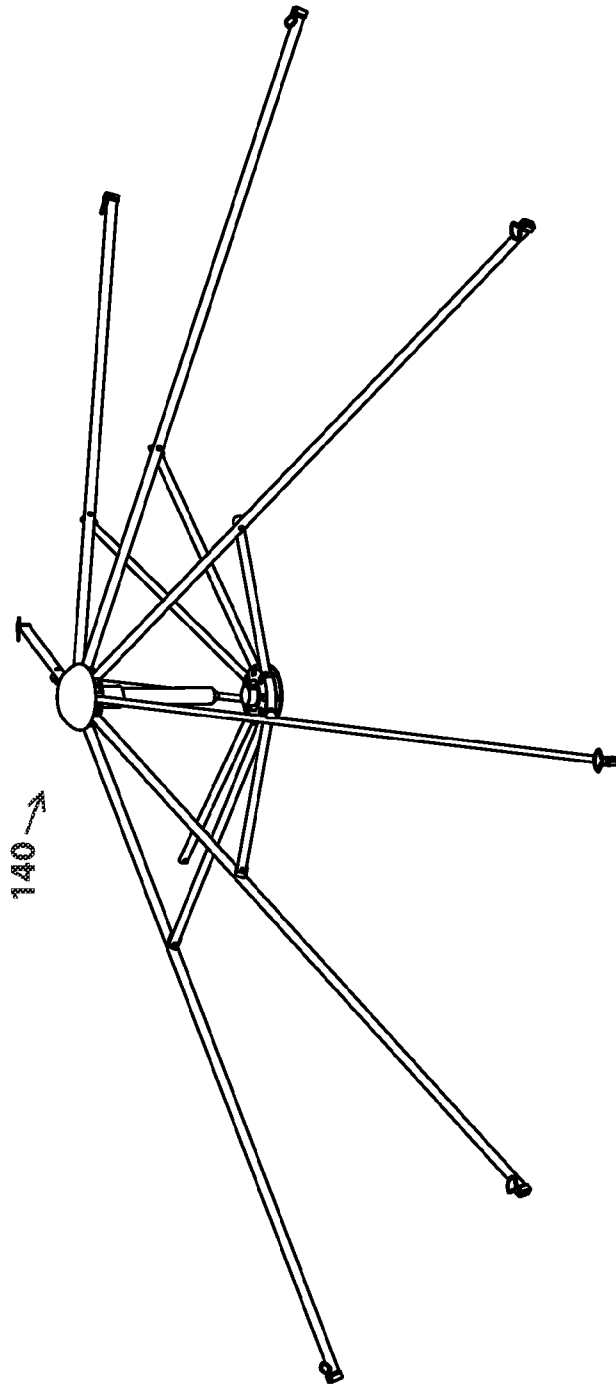
FIG. 76

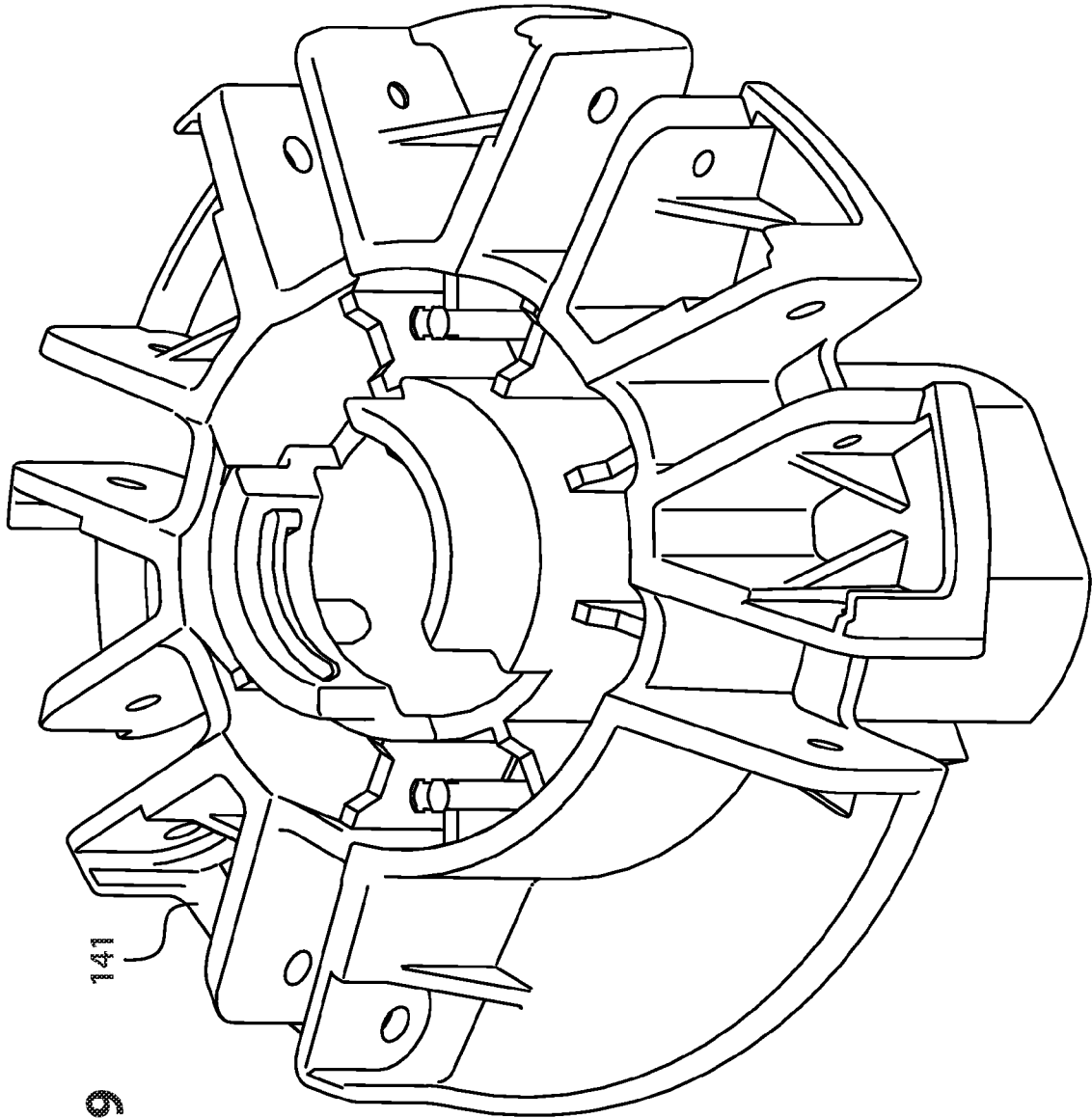


140 →

FIG. 77

FIG. 78

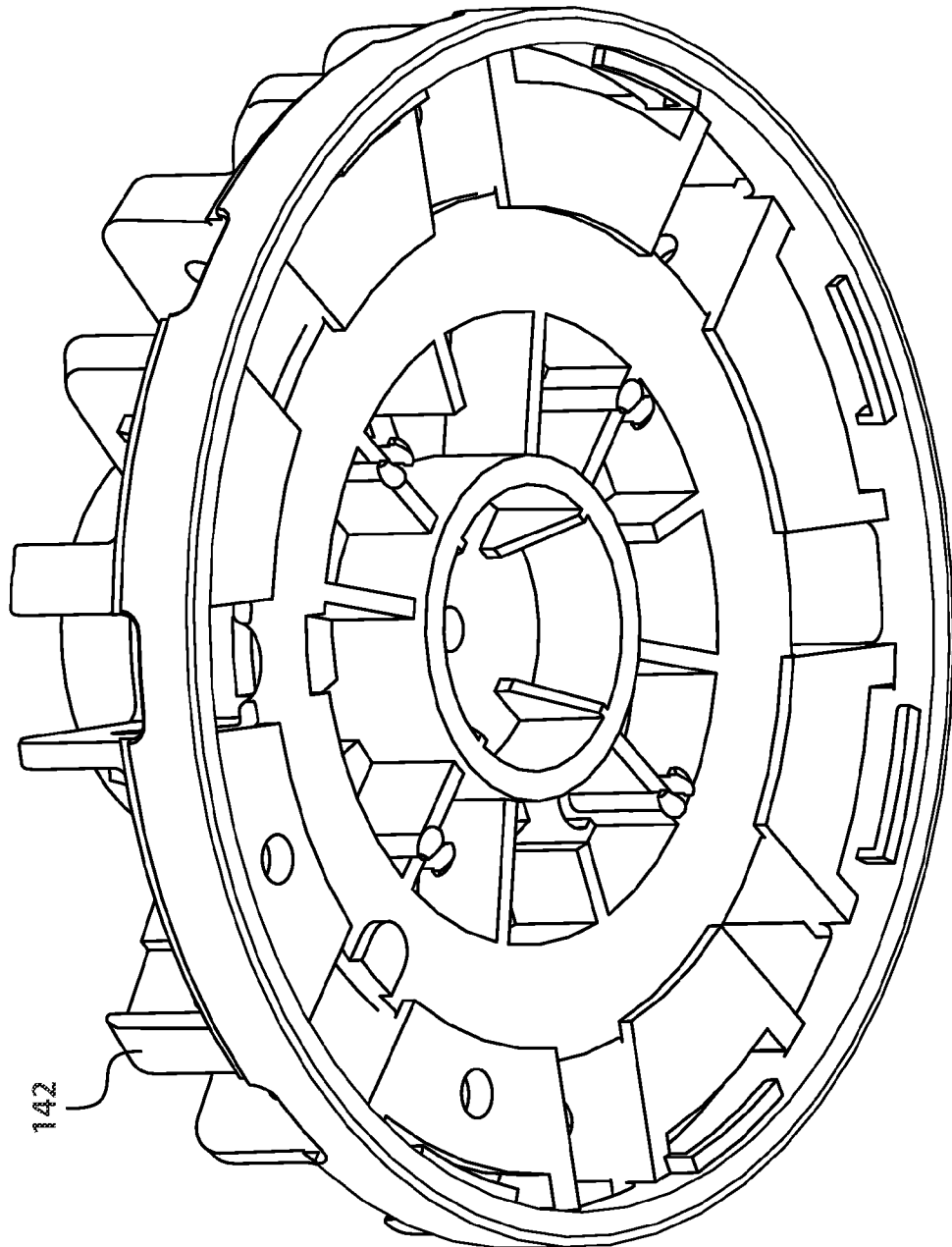




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FIG. 79

FIG. 80



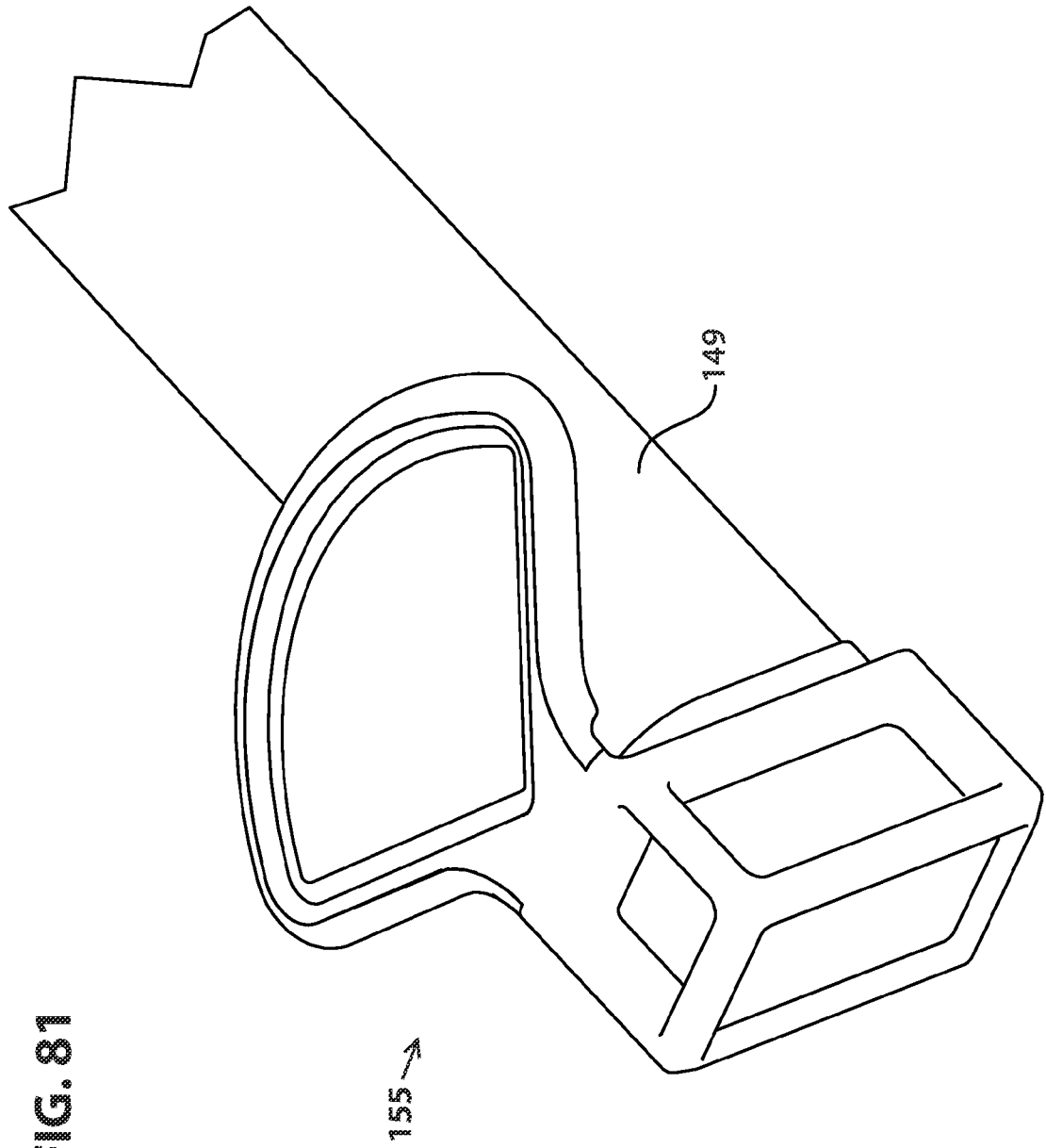
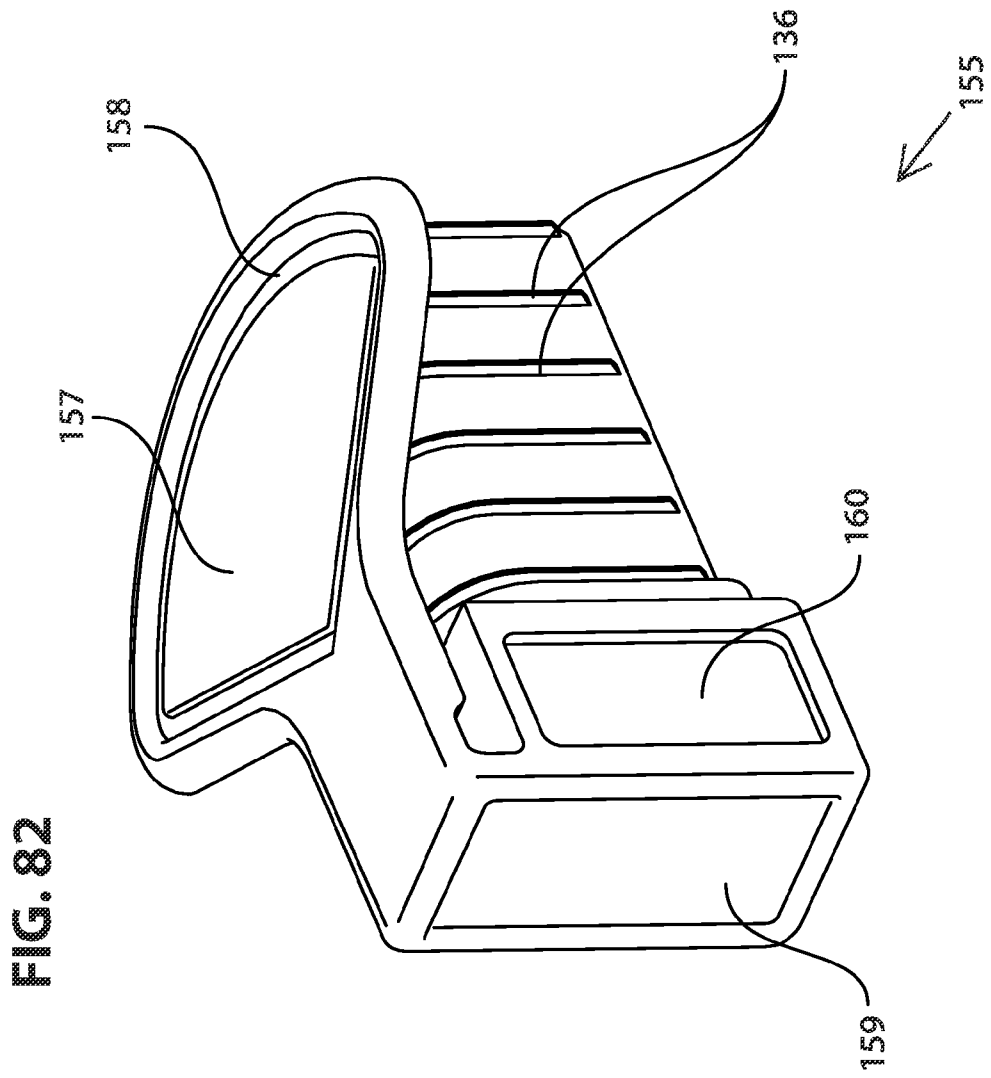
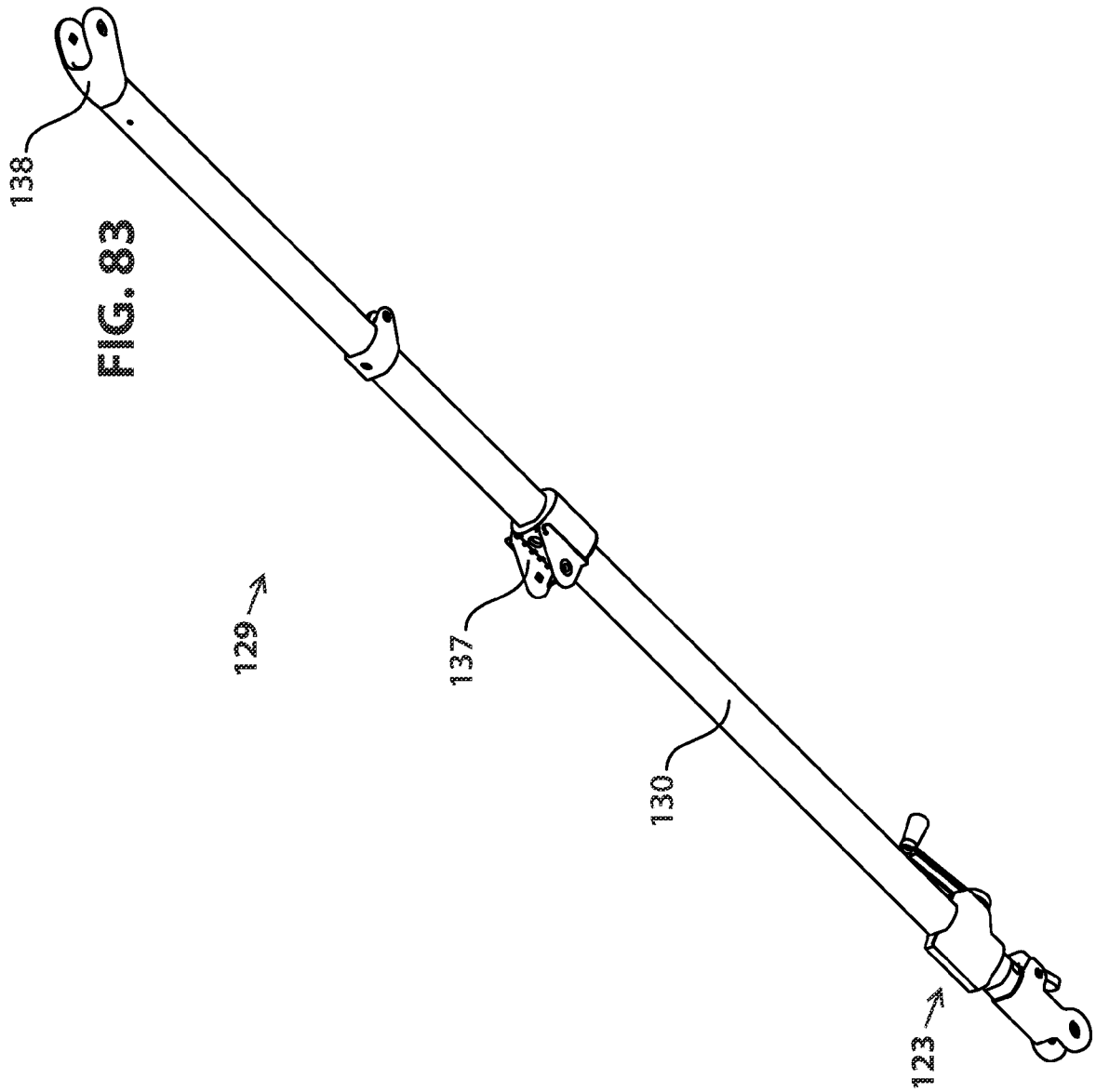
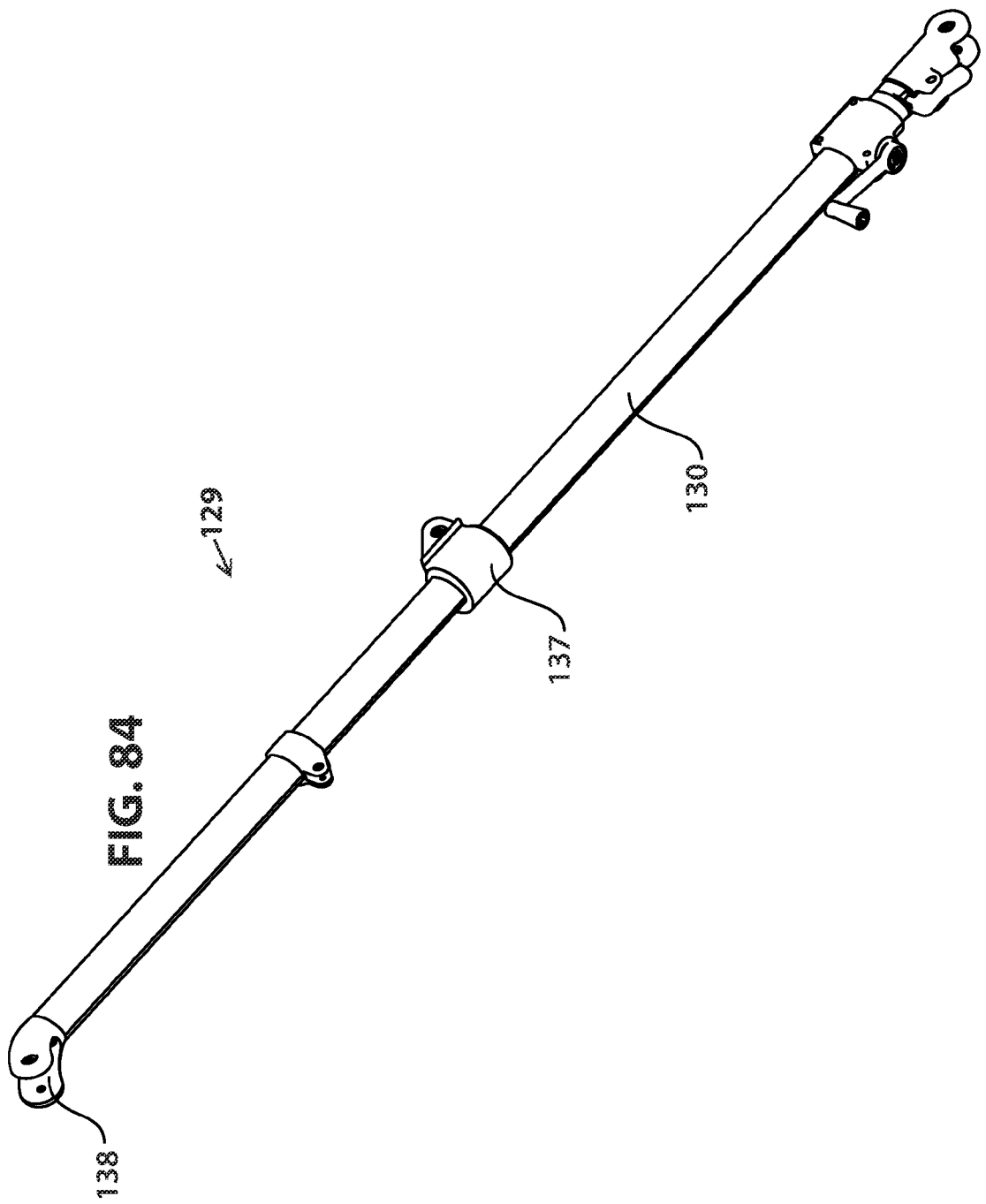


FIG. 81







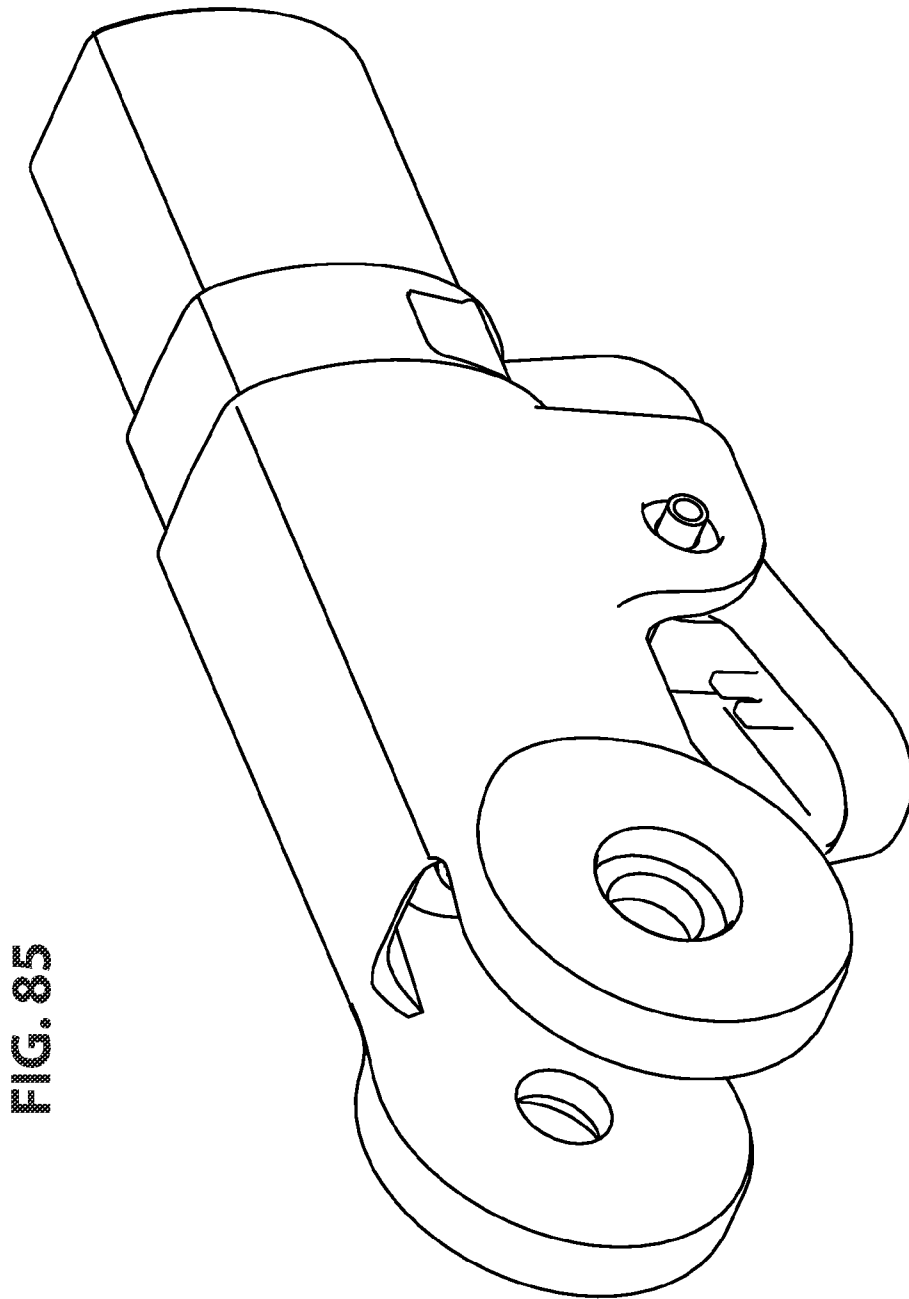


FIG. 85

FIG. 86

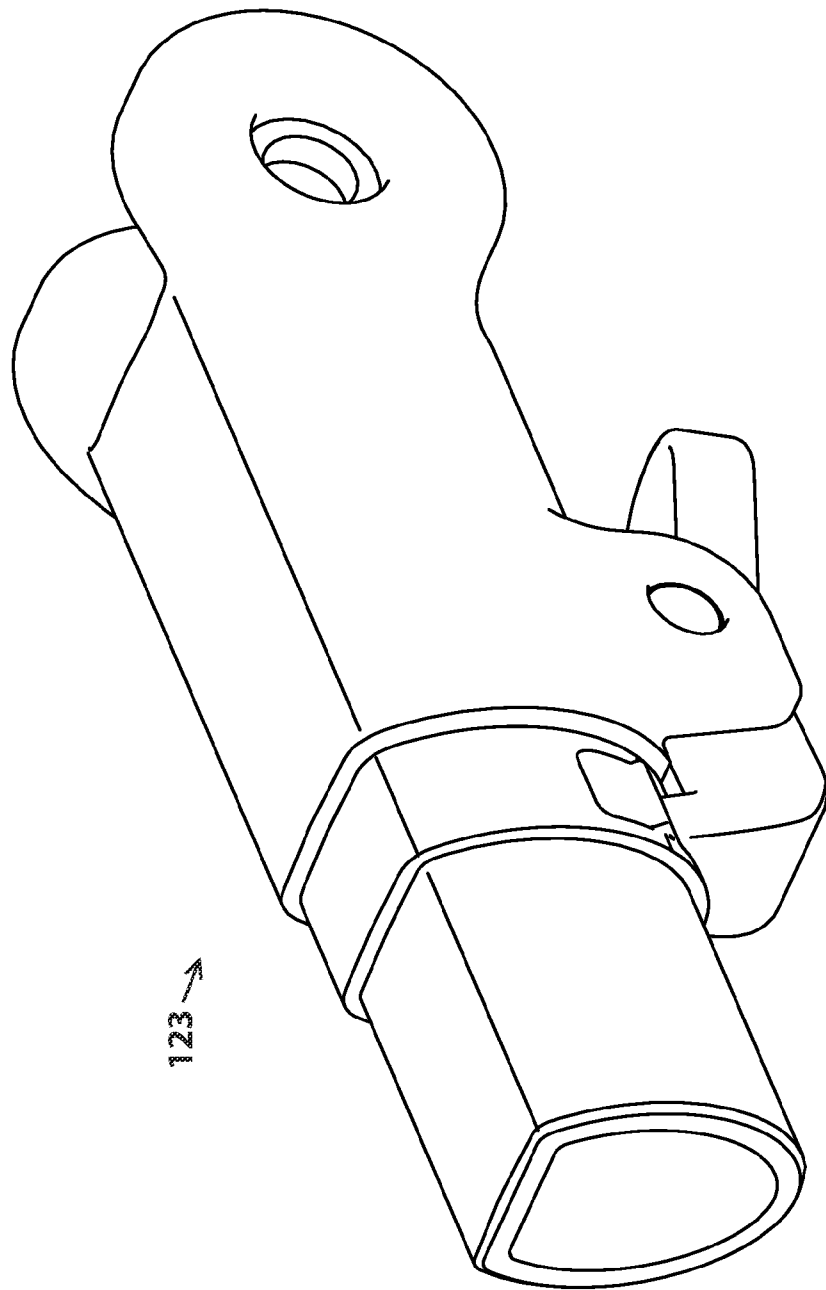


FIG. 87B

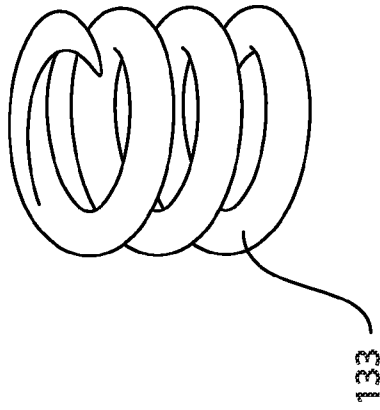


FIG. 87D



FIG. 87A

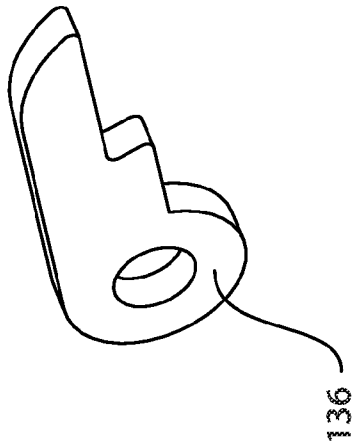


FIG. 87C

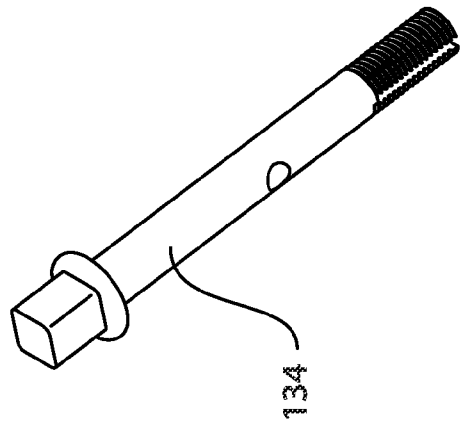
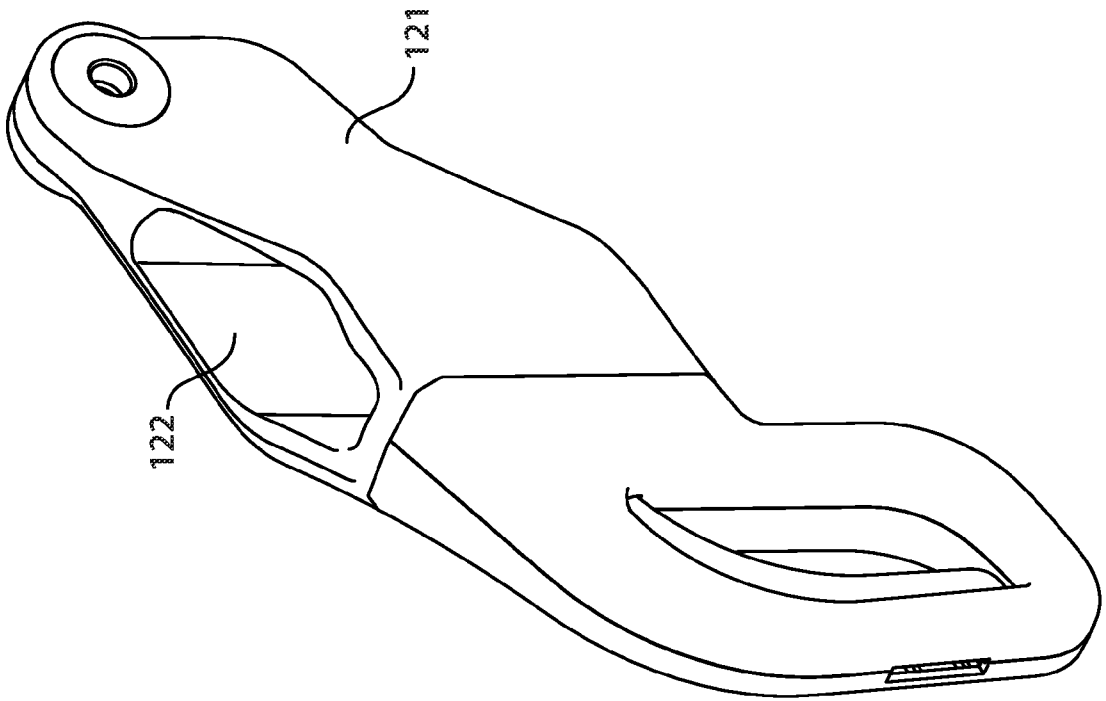


FIG. 88



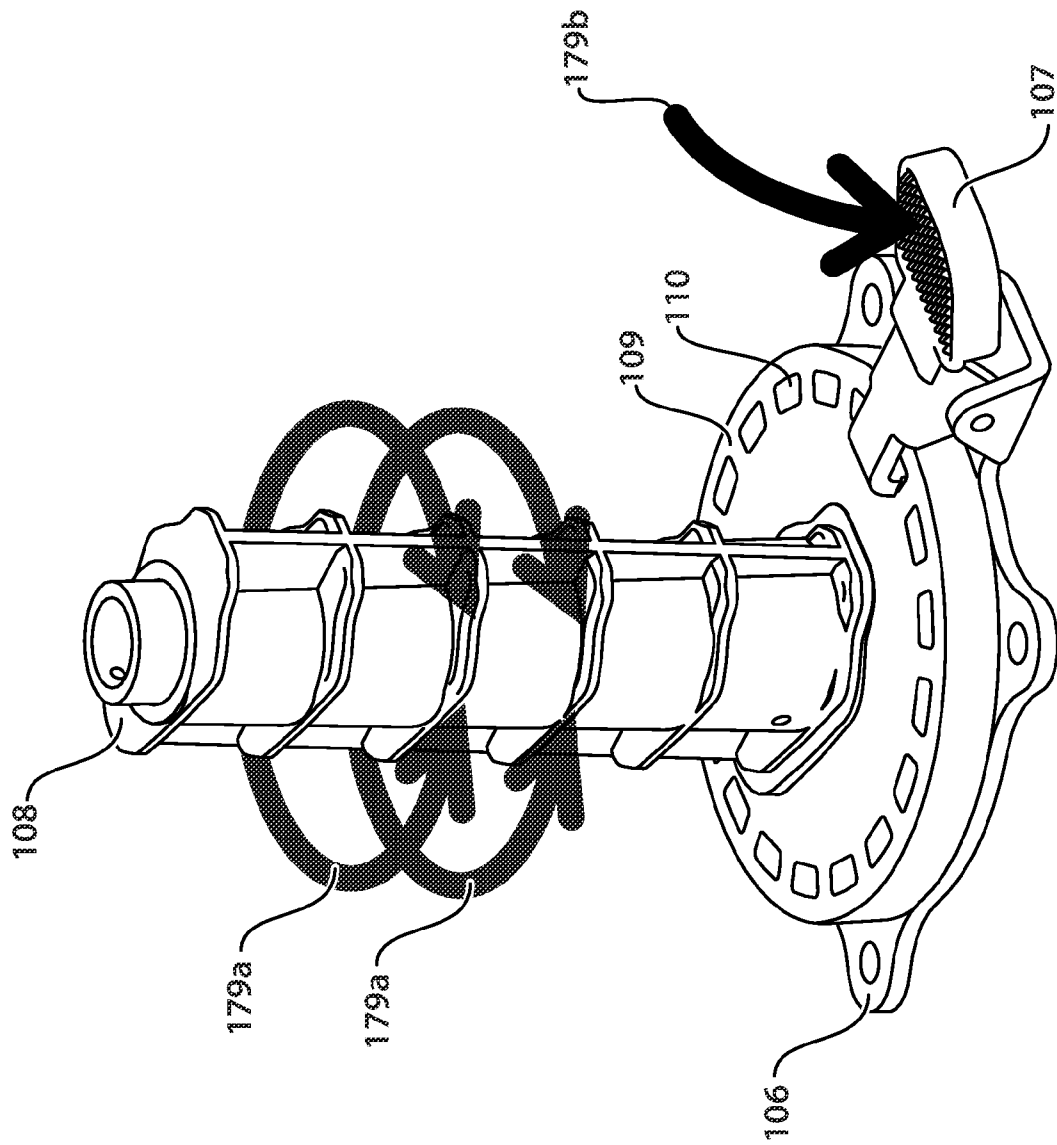
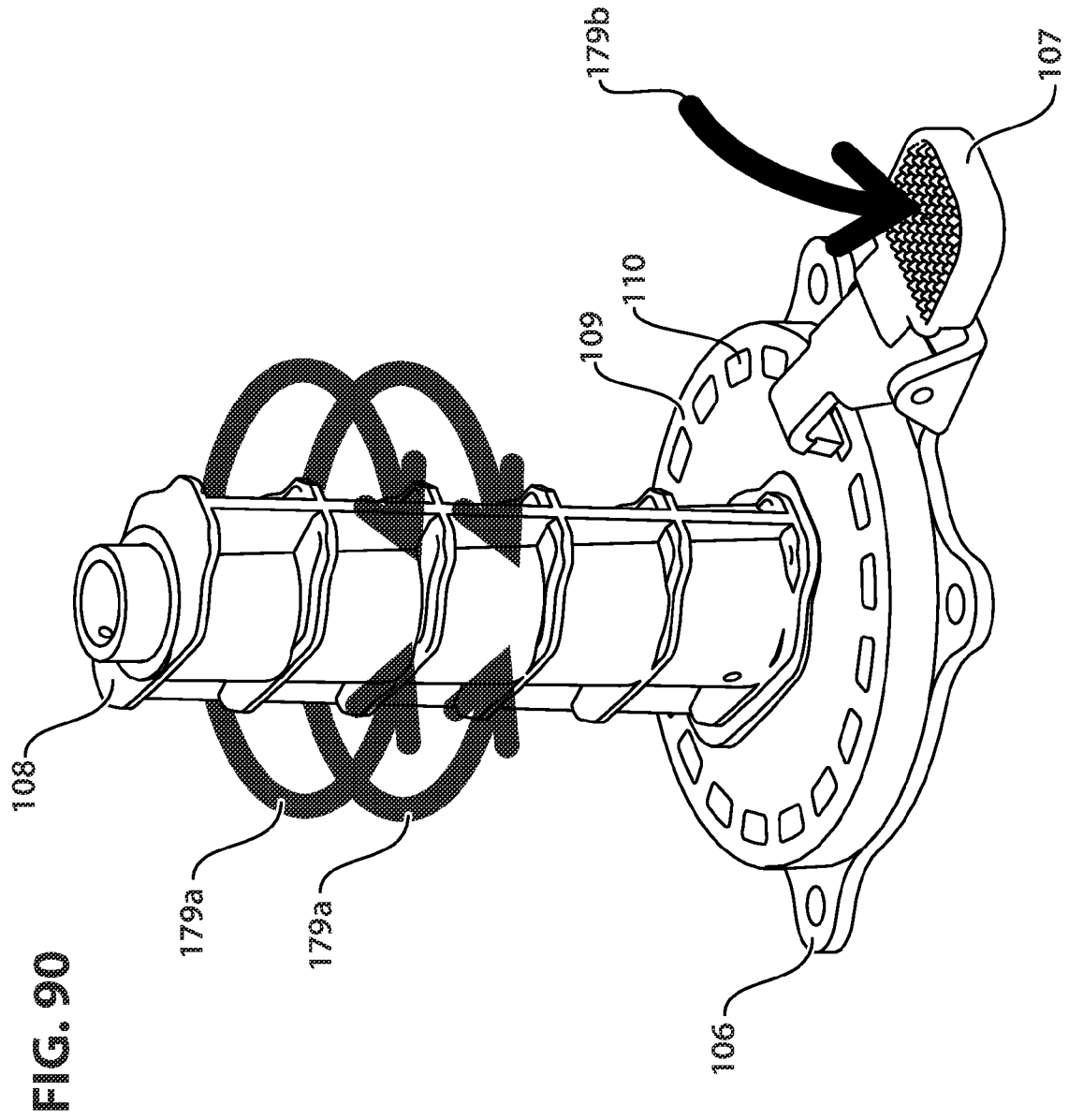
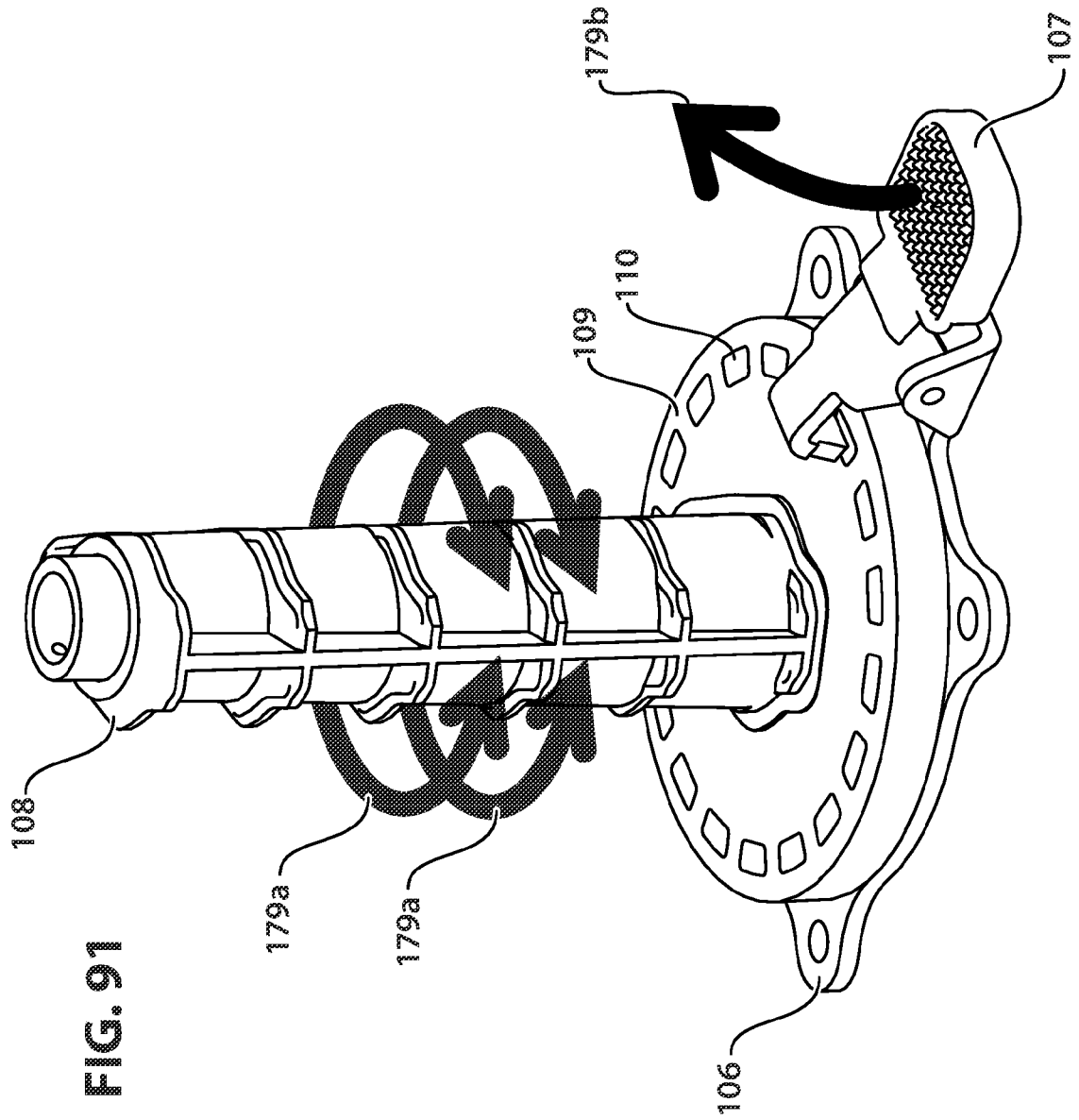
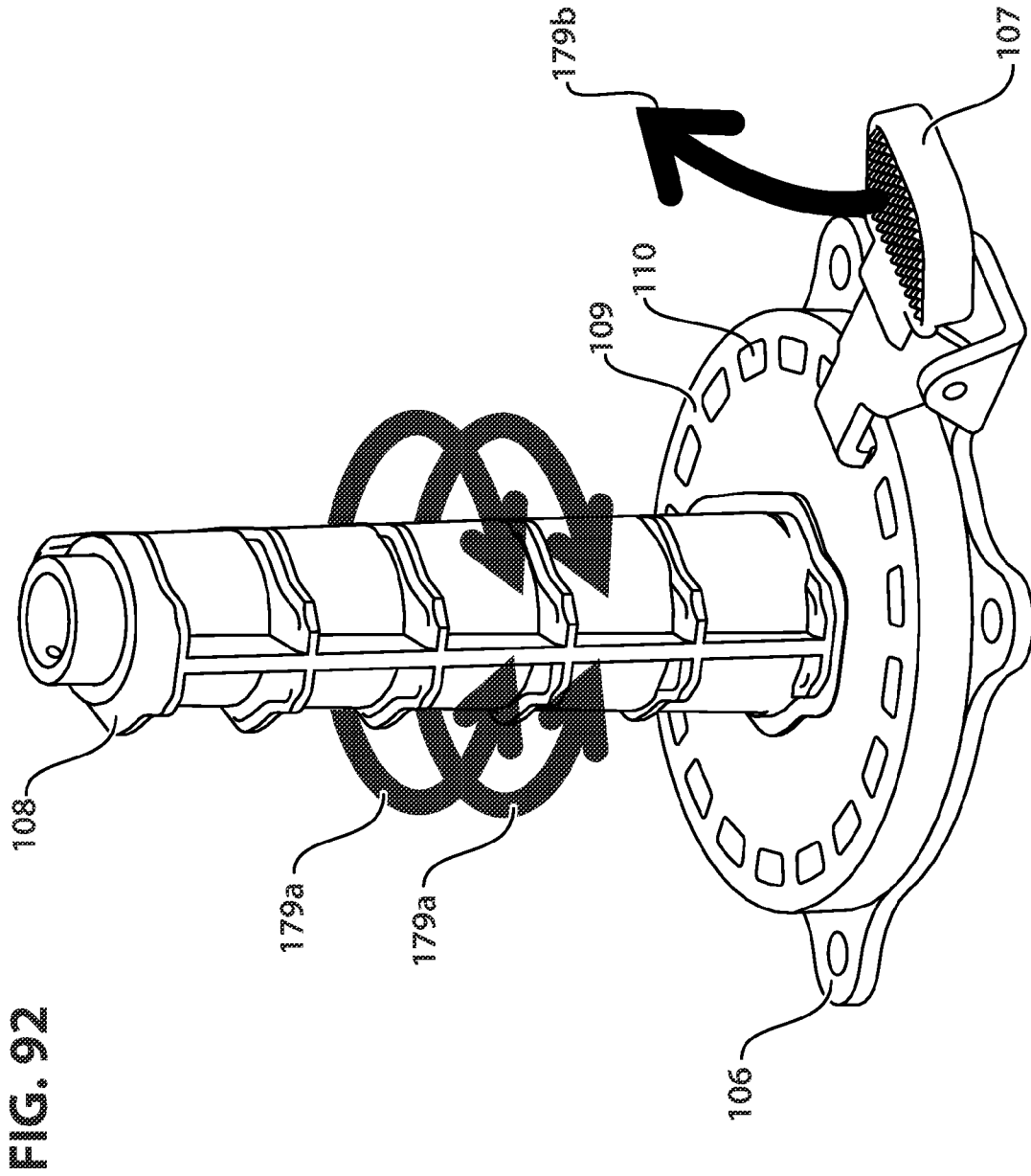


FIG. 89







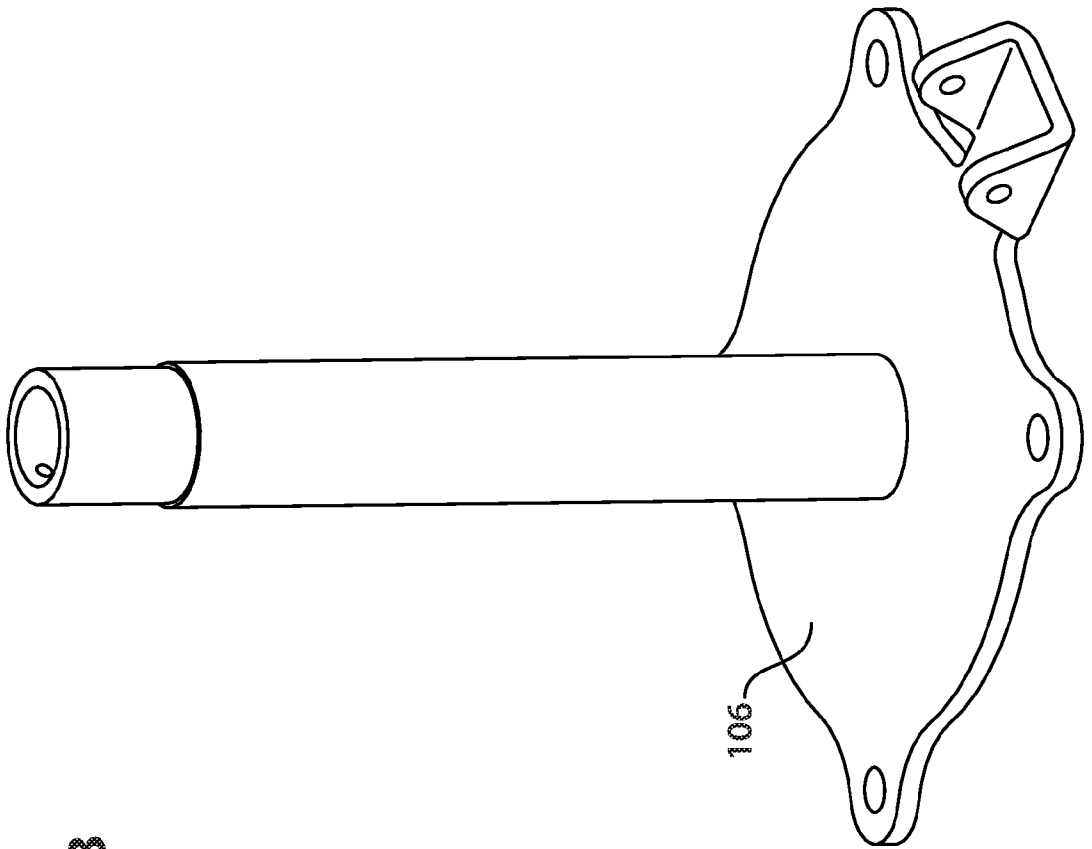
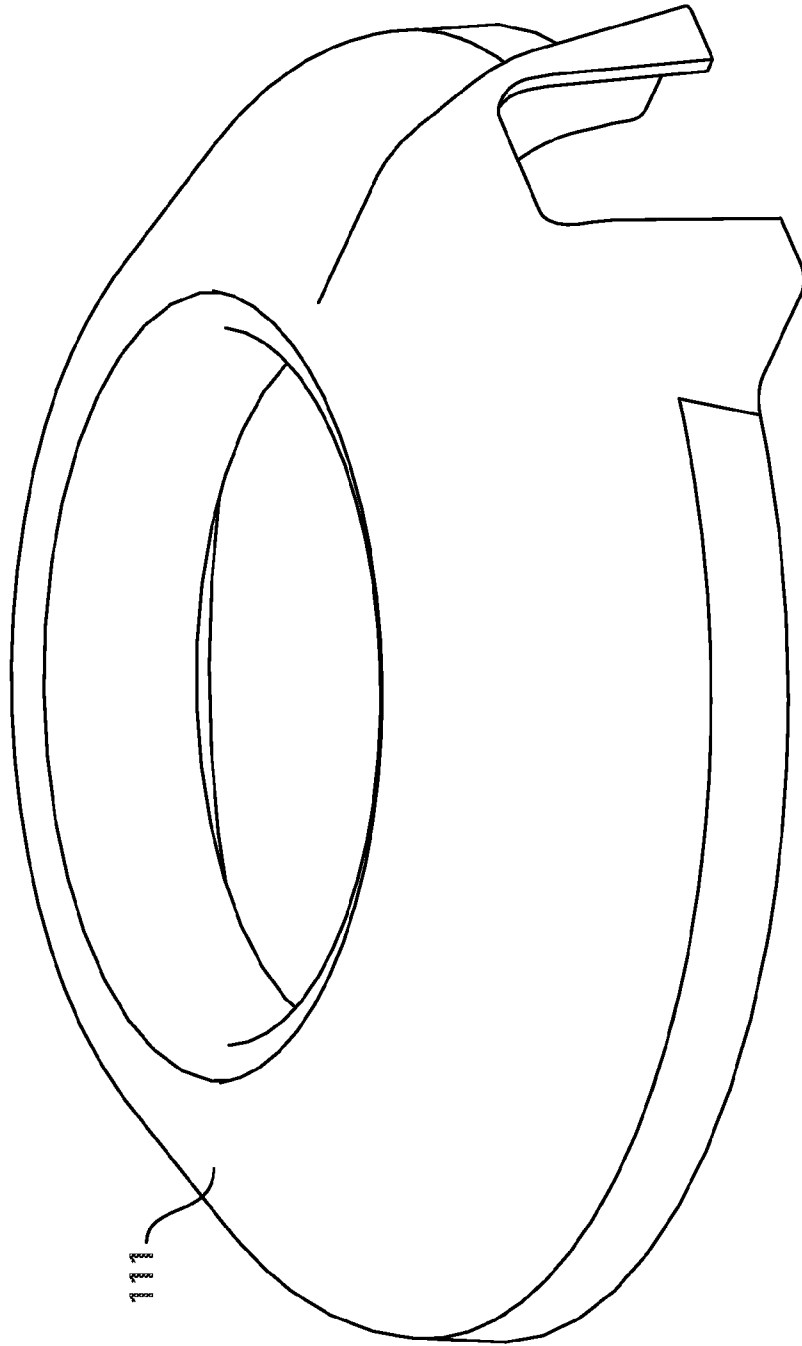


FIG. 93

FIG. 94



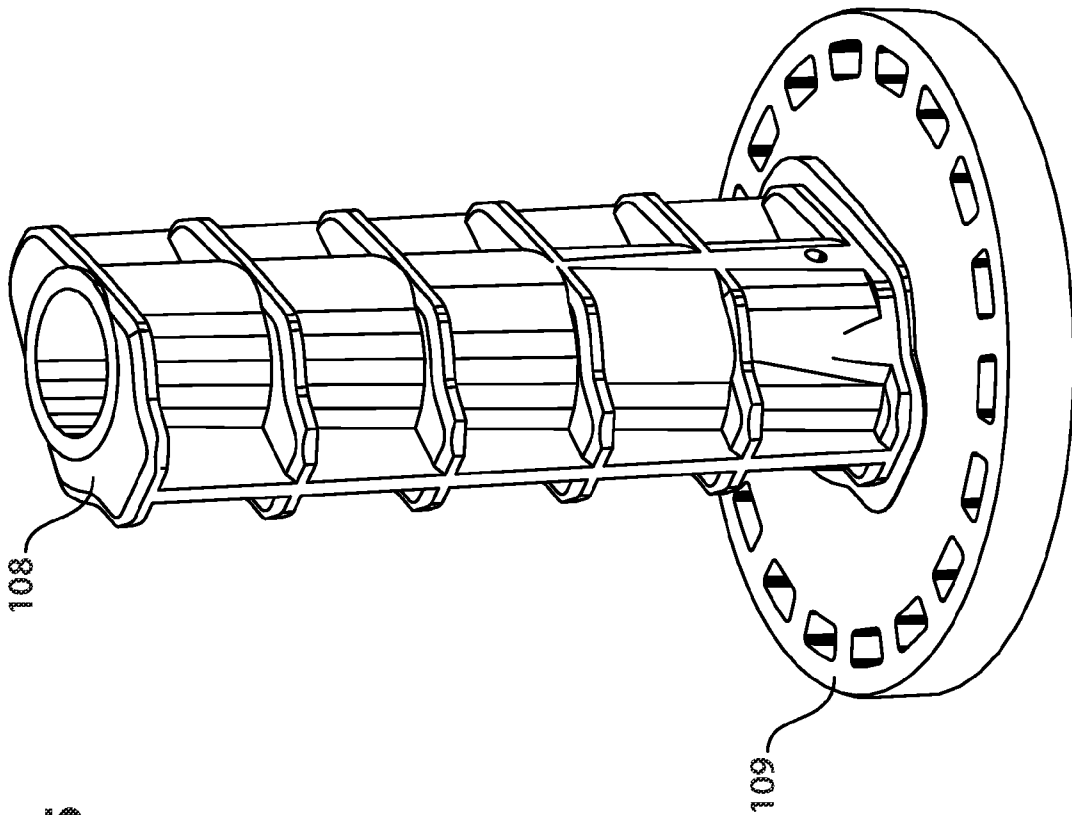


FIG. 95

FIG. 96

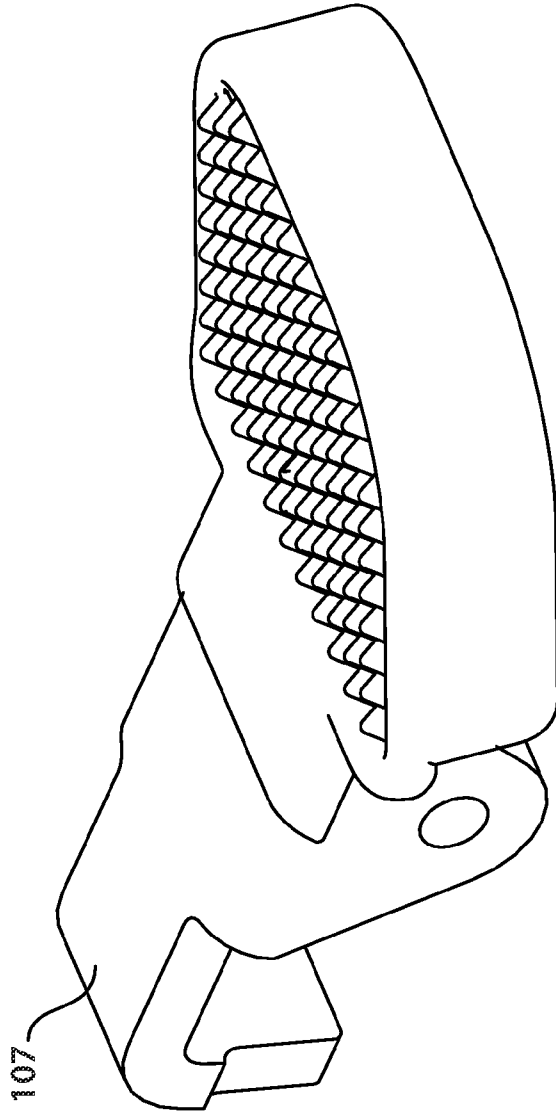


FIG. 97

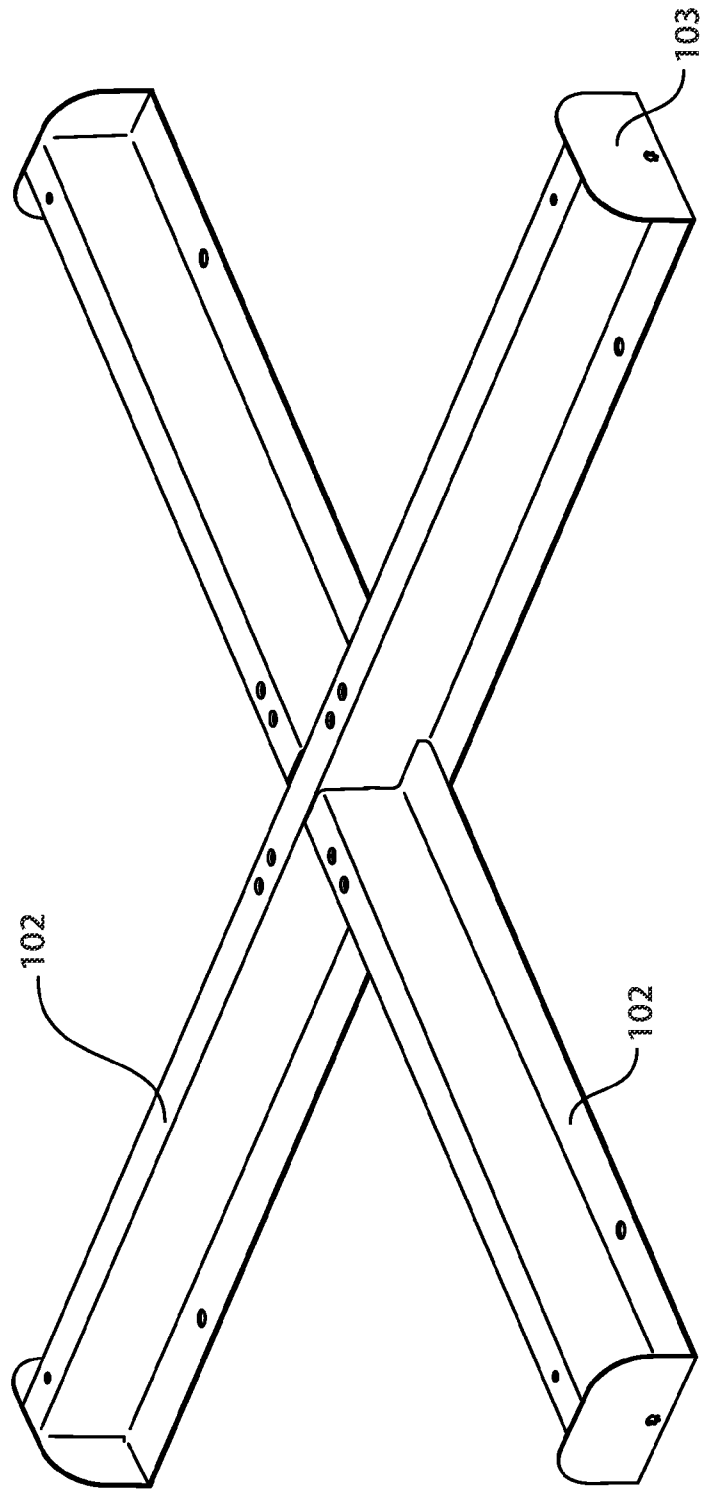


FIG. 98

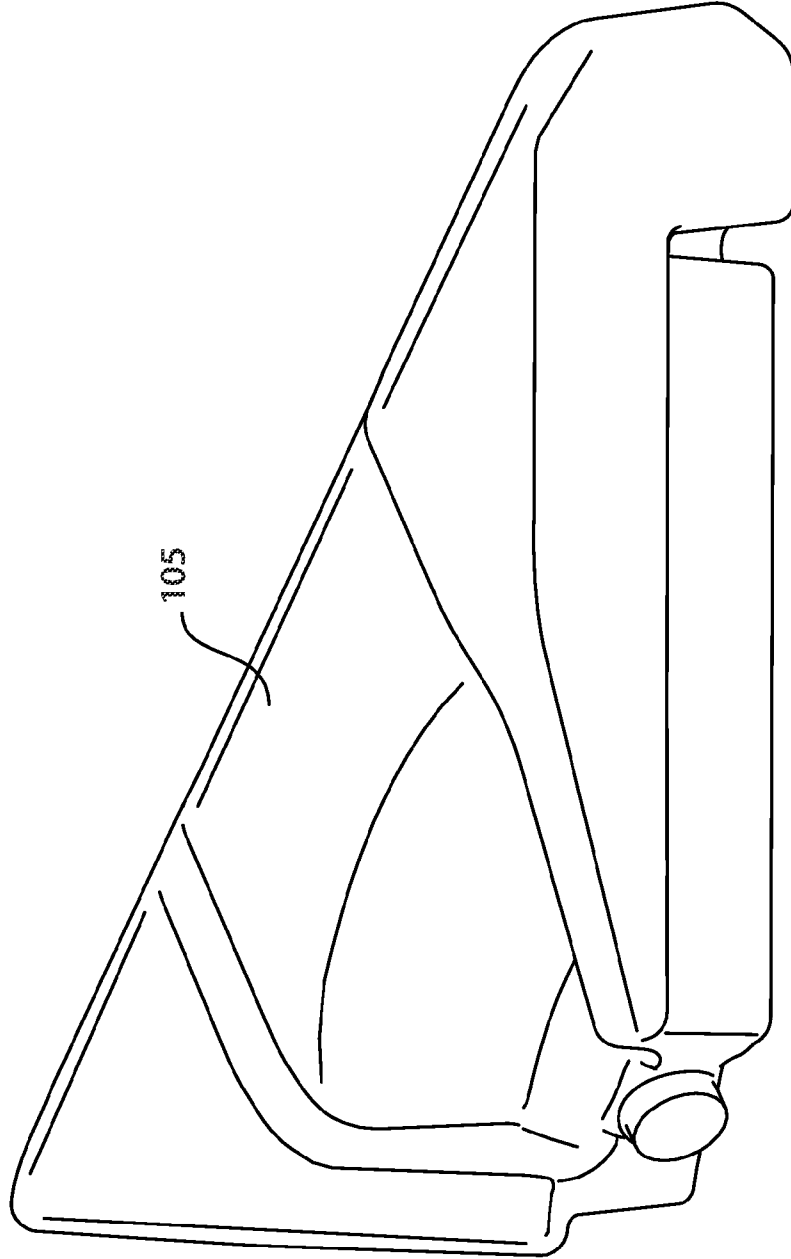


FIG. 99

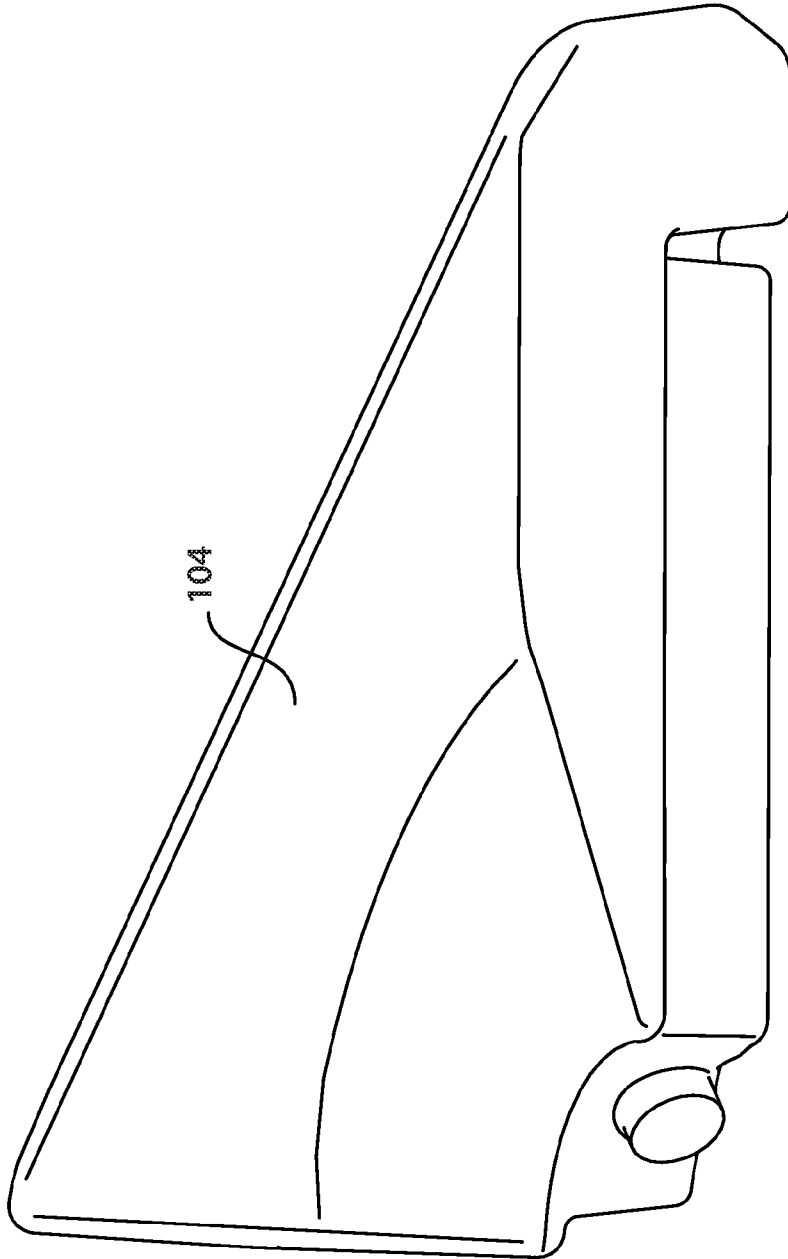
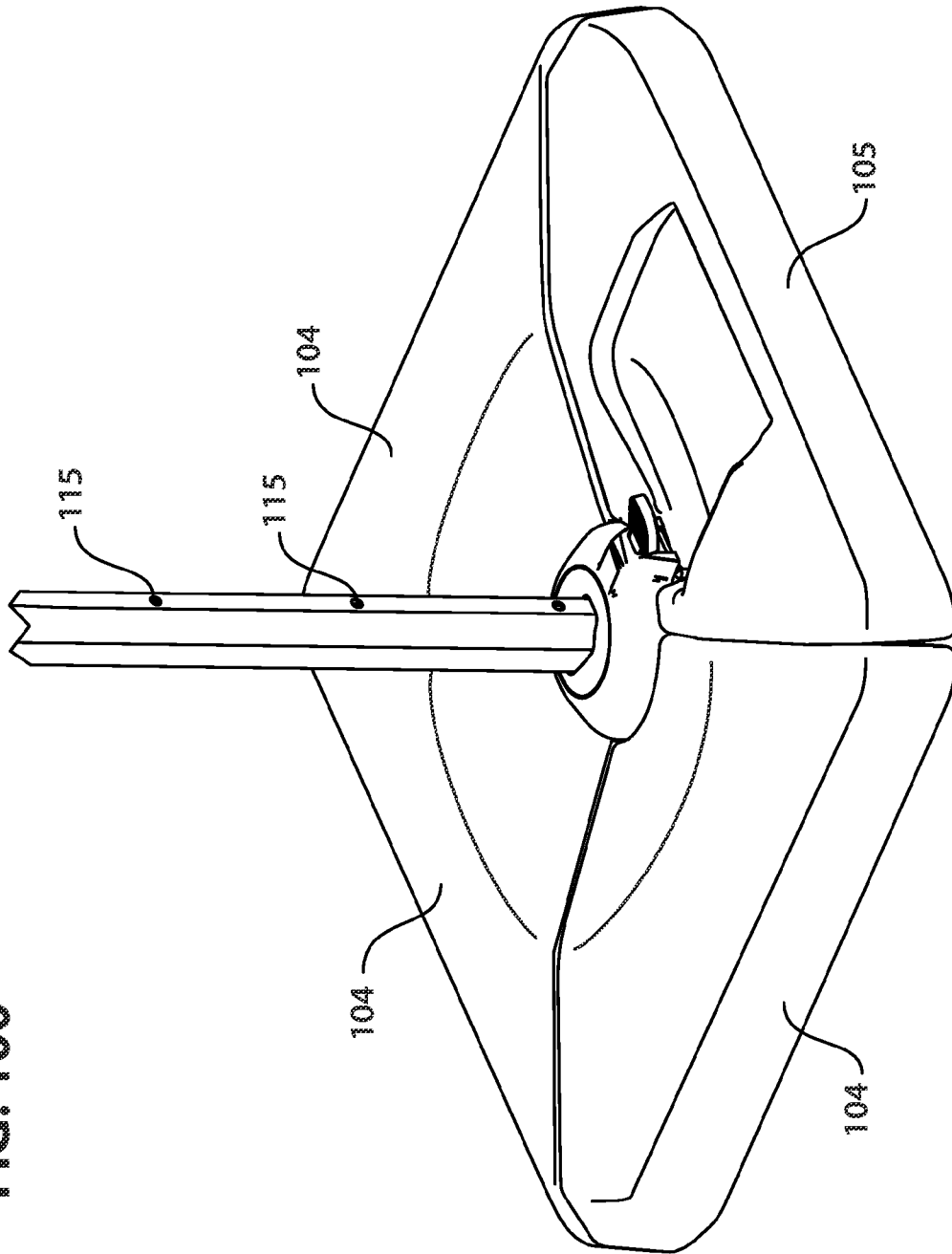


FIG. 100



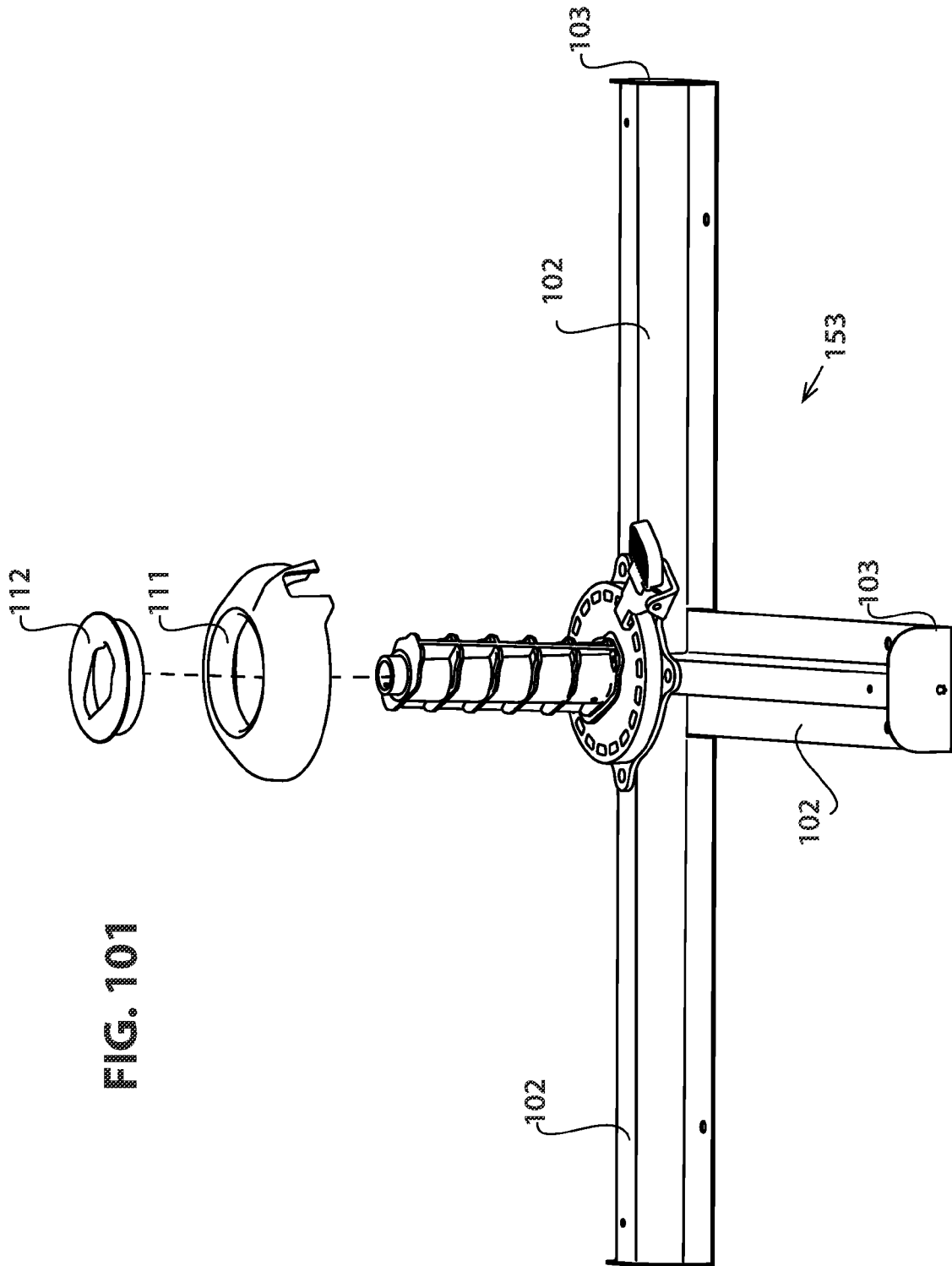


FIG. 101

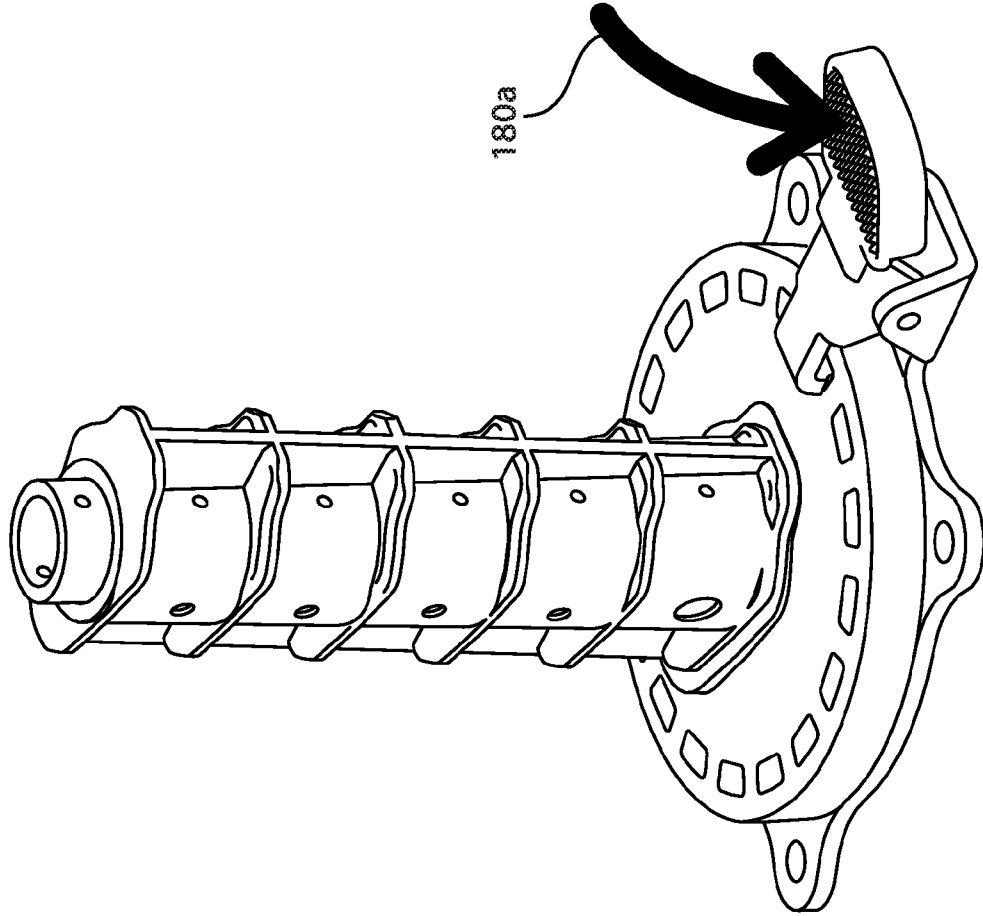


FIG. 102

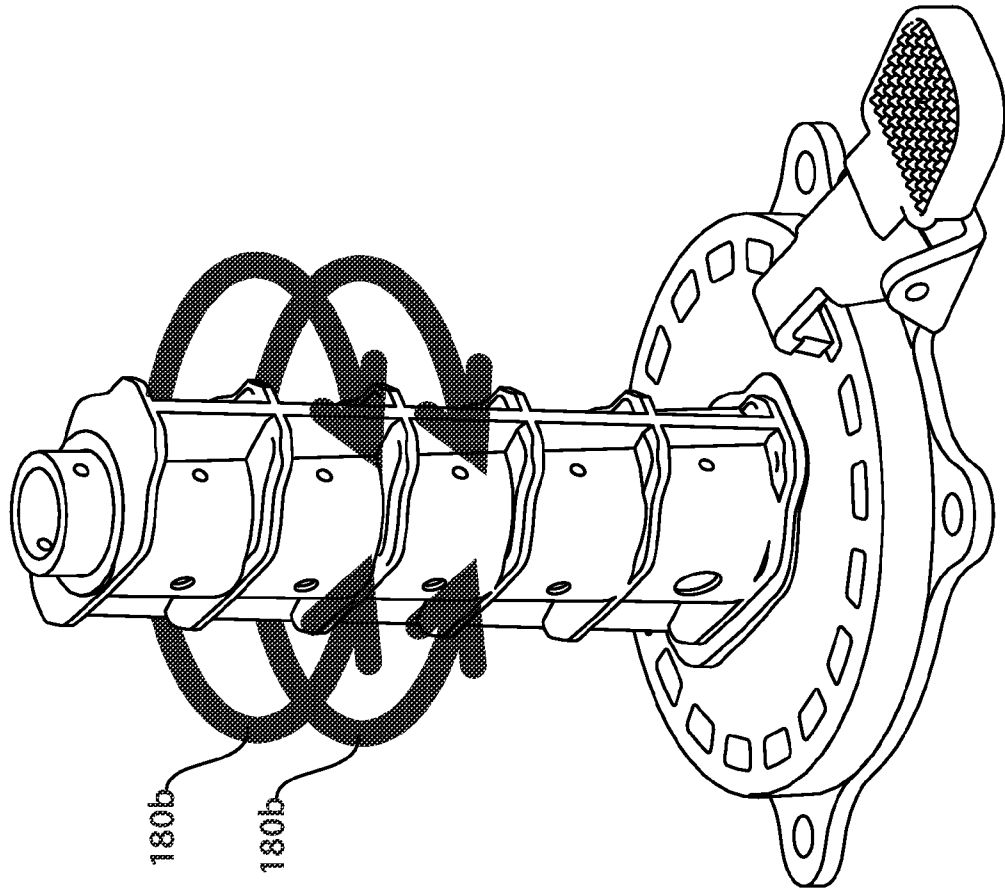


FIG. 103

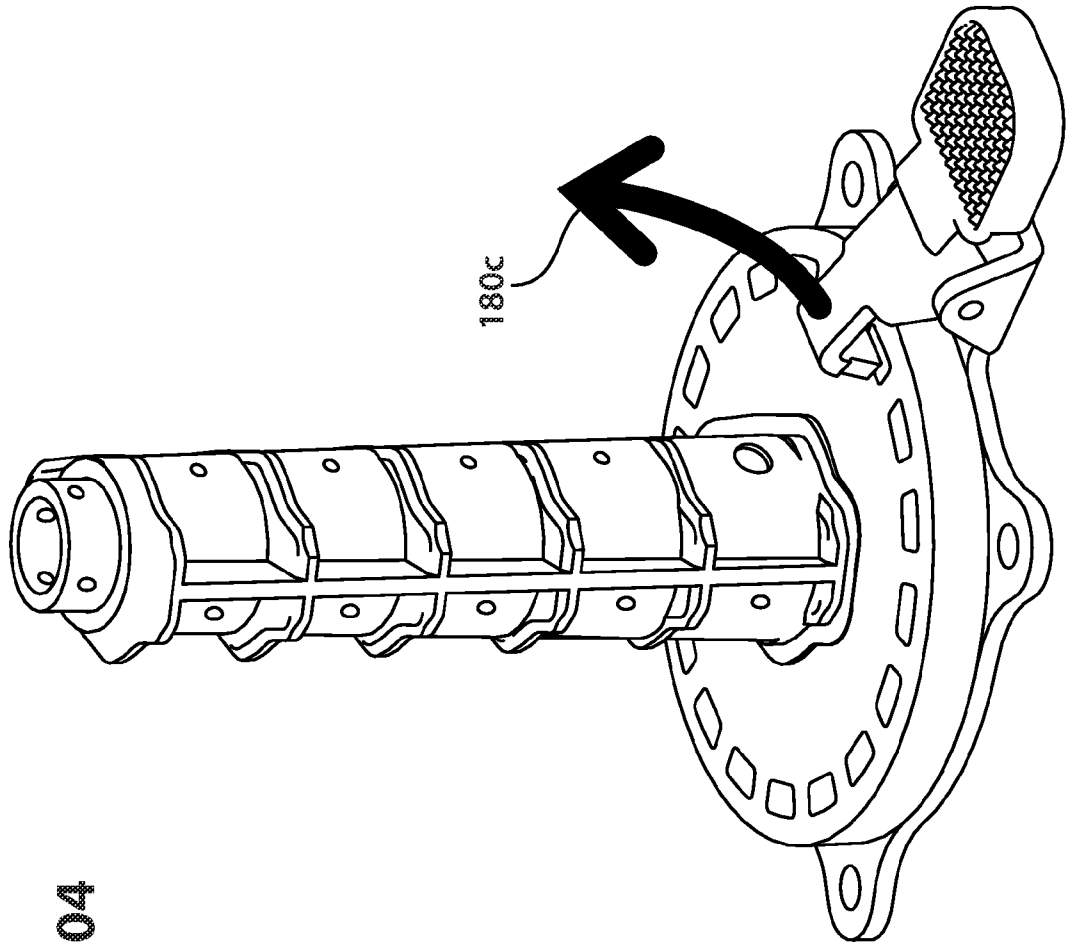


FIG. 104

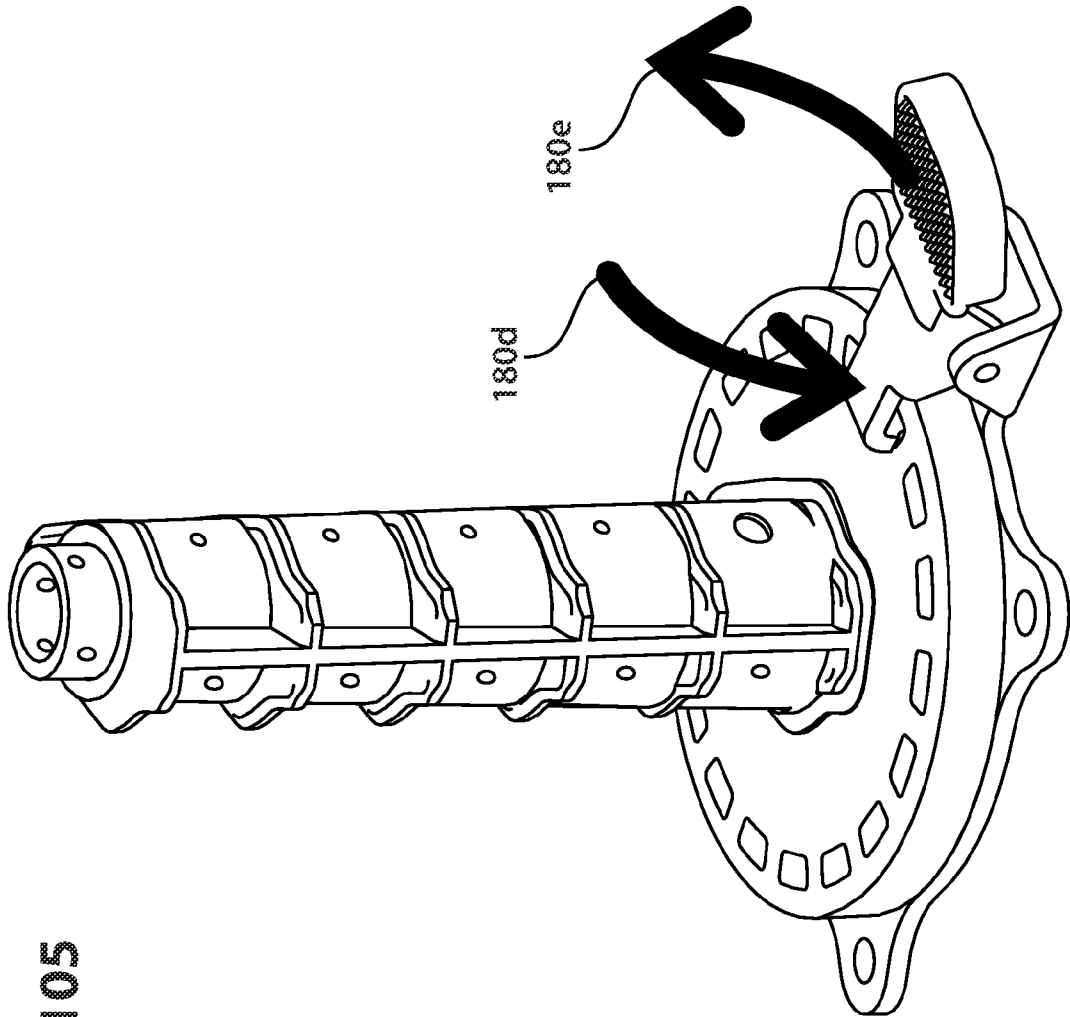
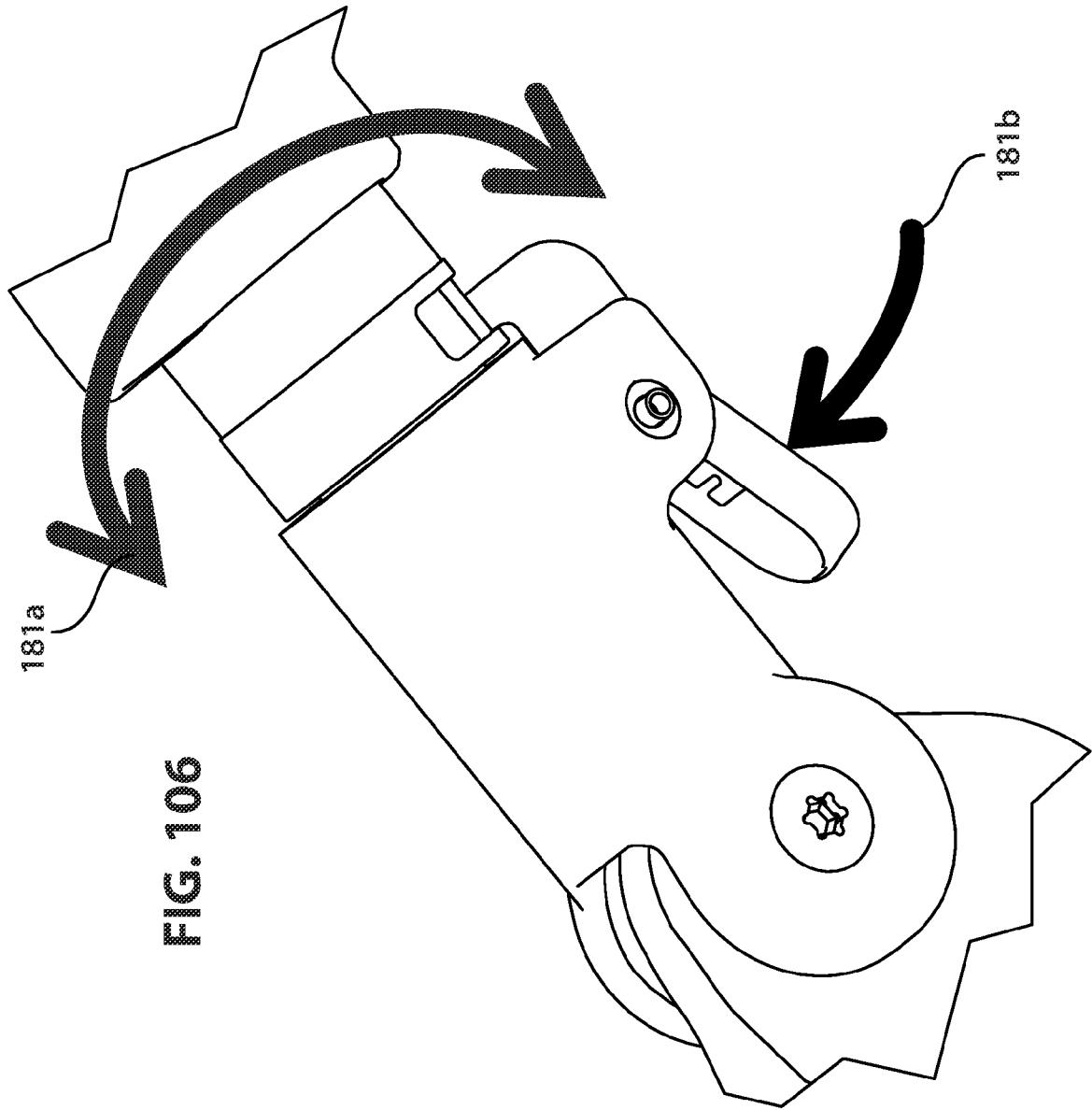


FIG. 105



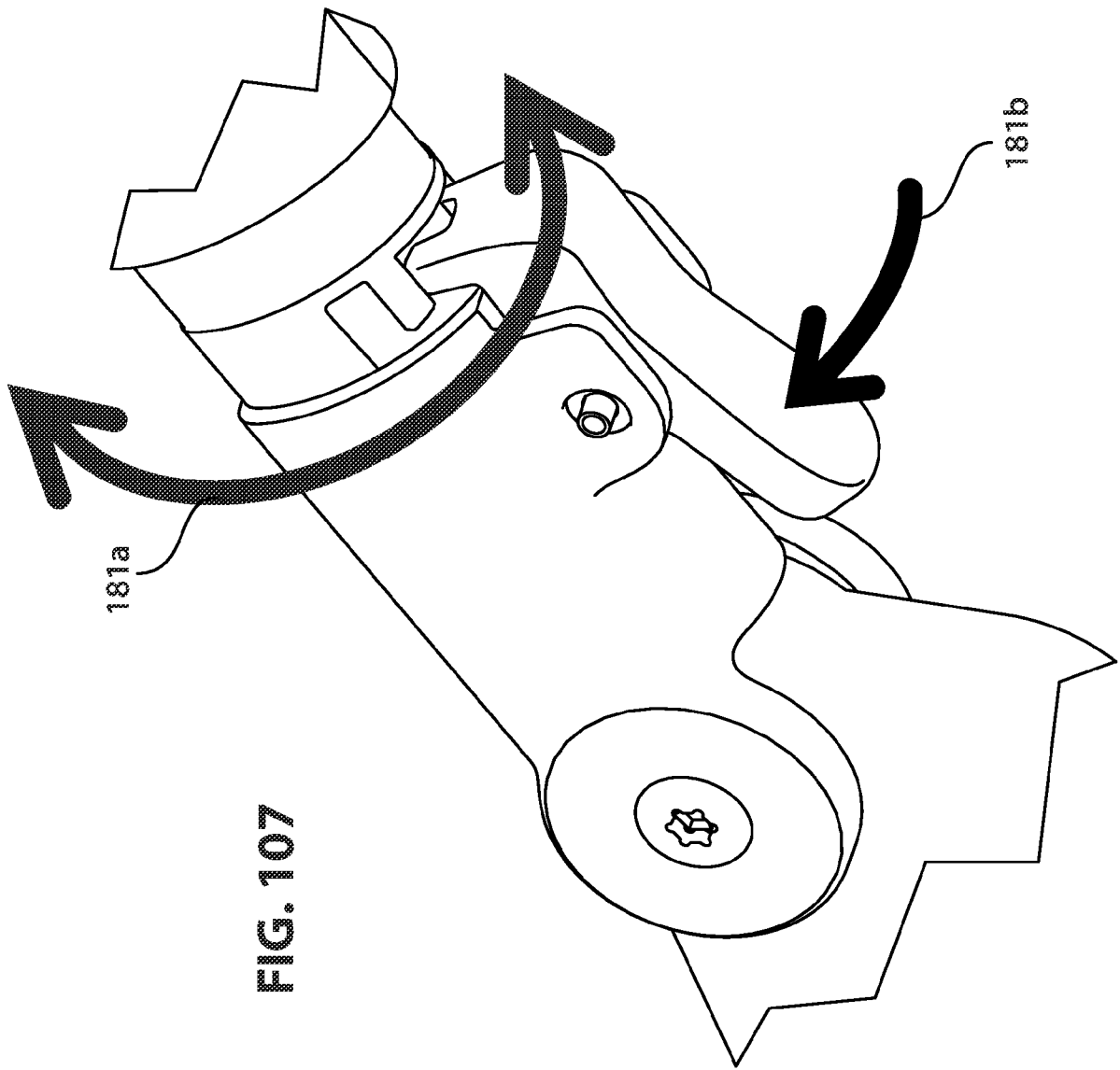
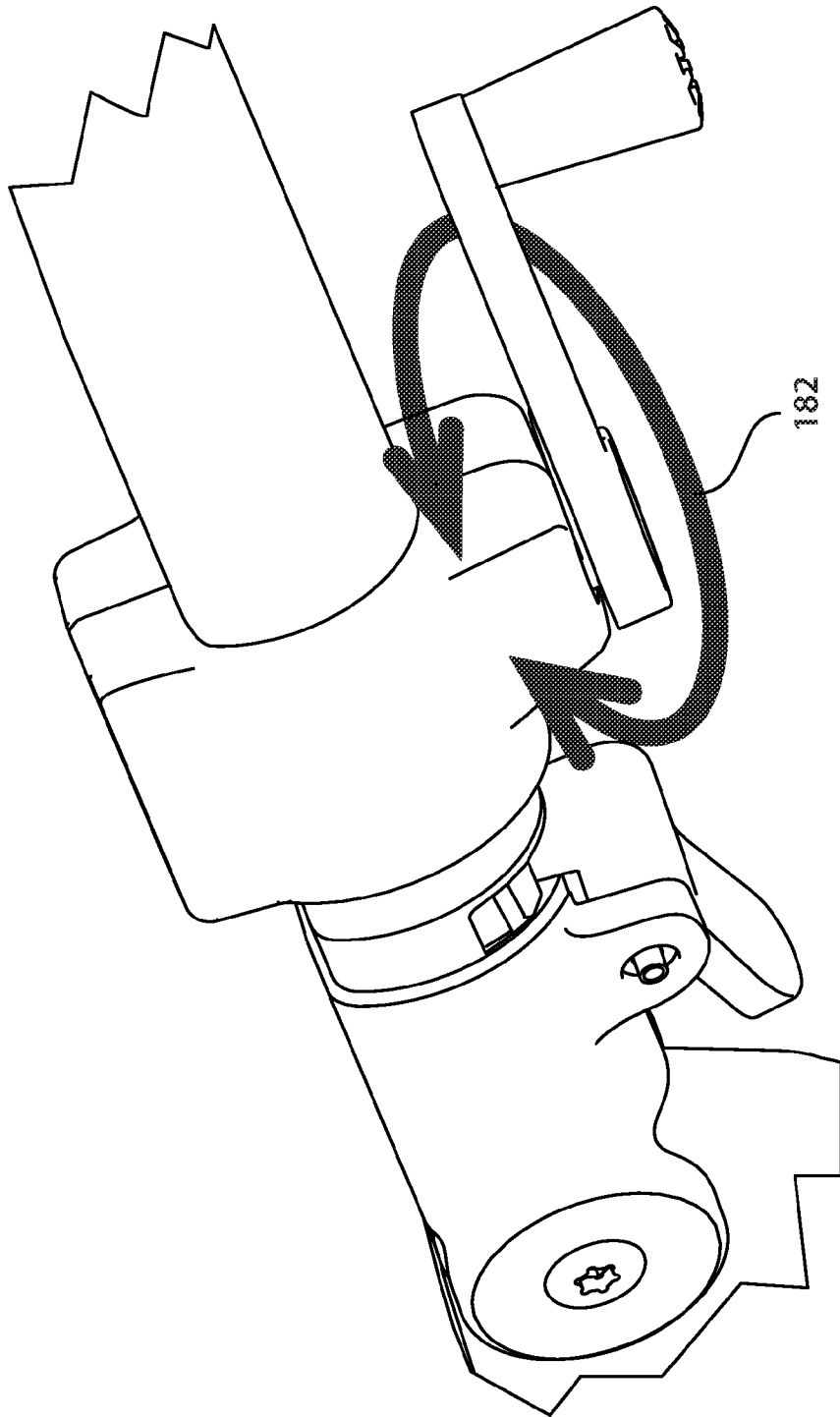


FIG. 107

FIG. 108



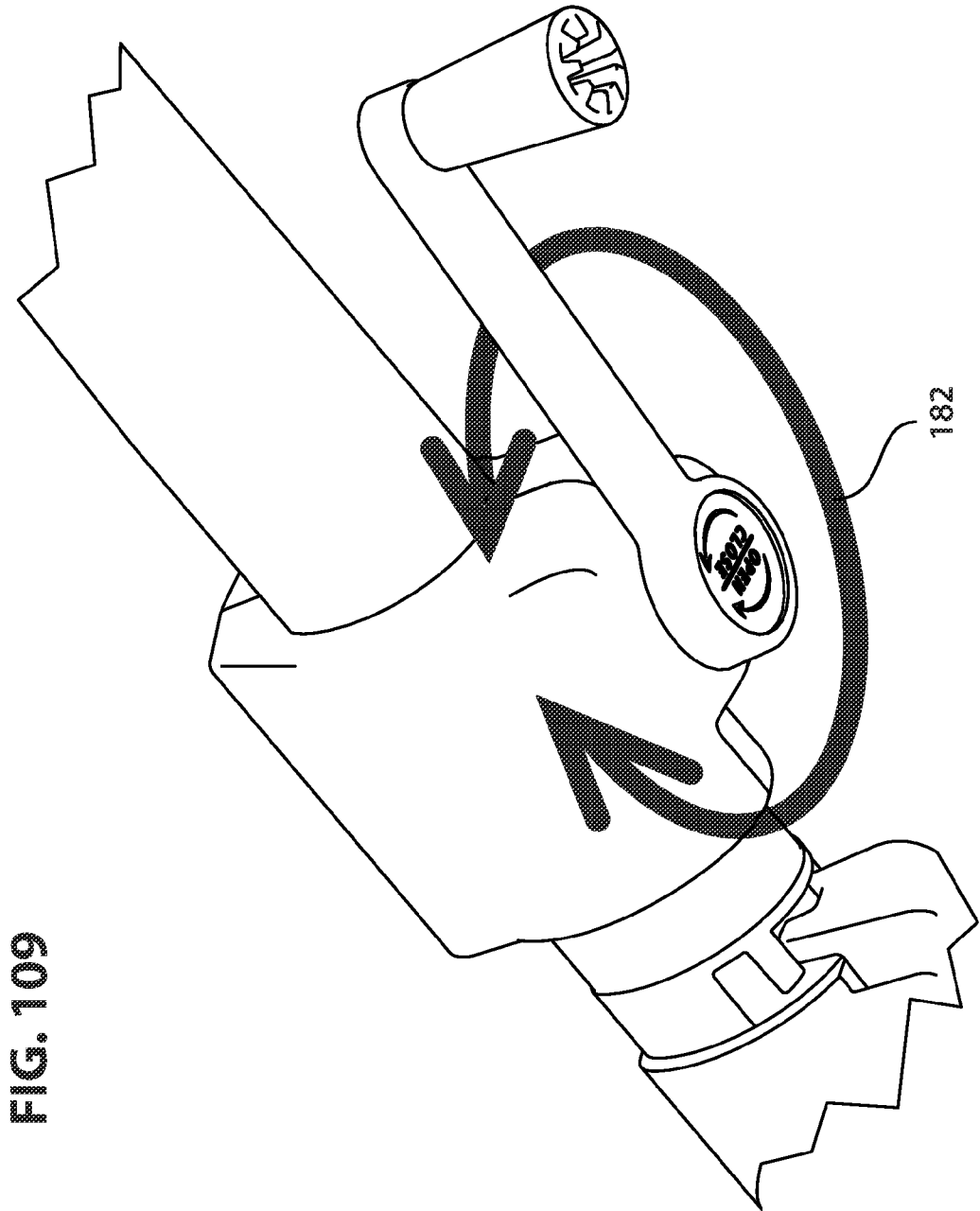


FIG. 109

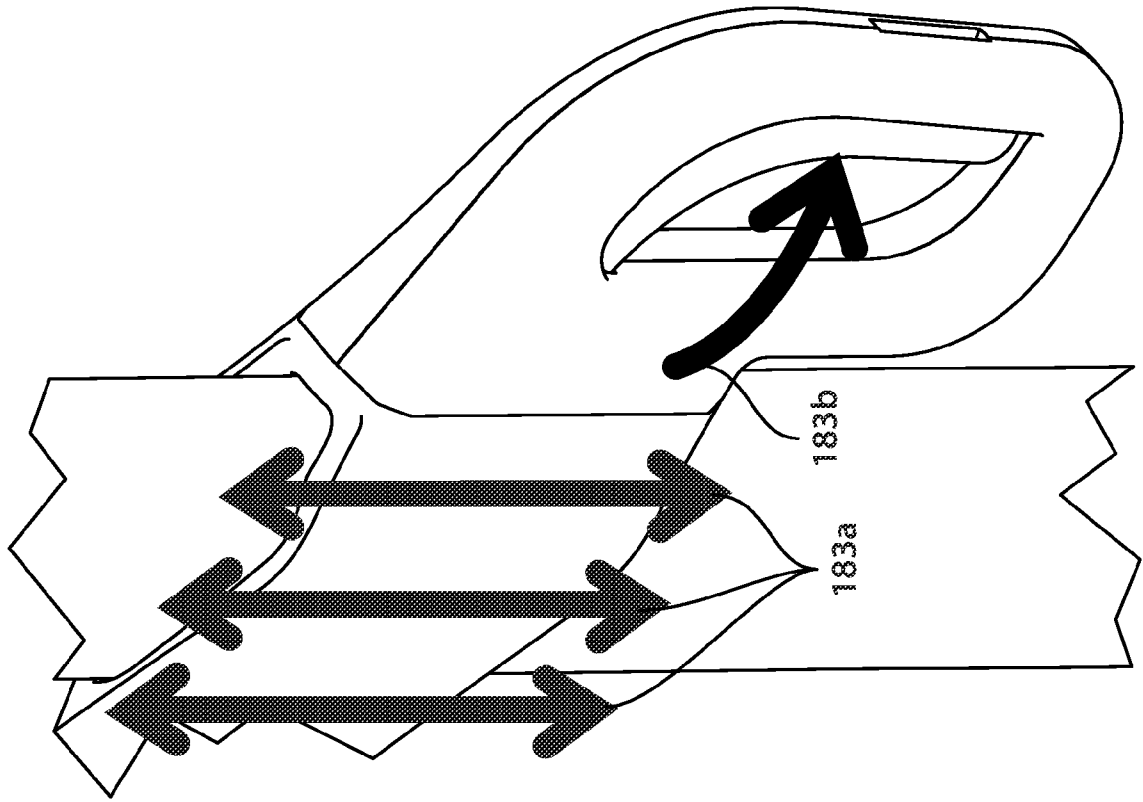


FIG. 110

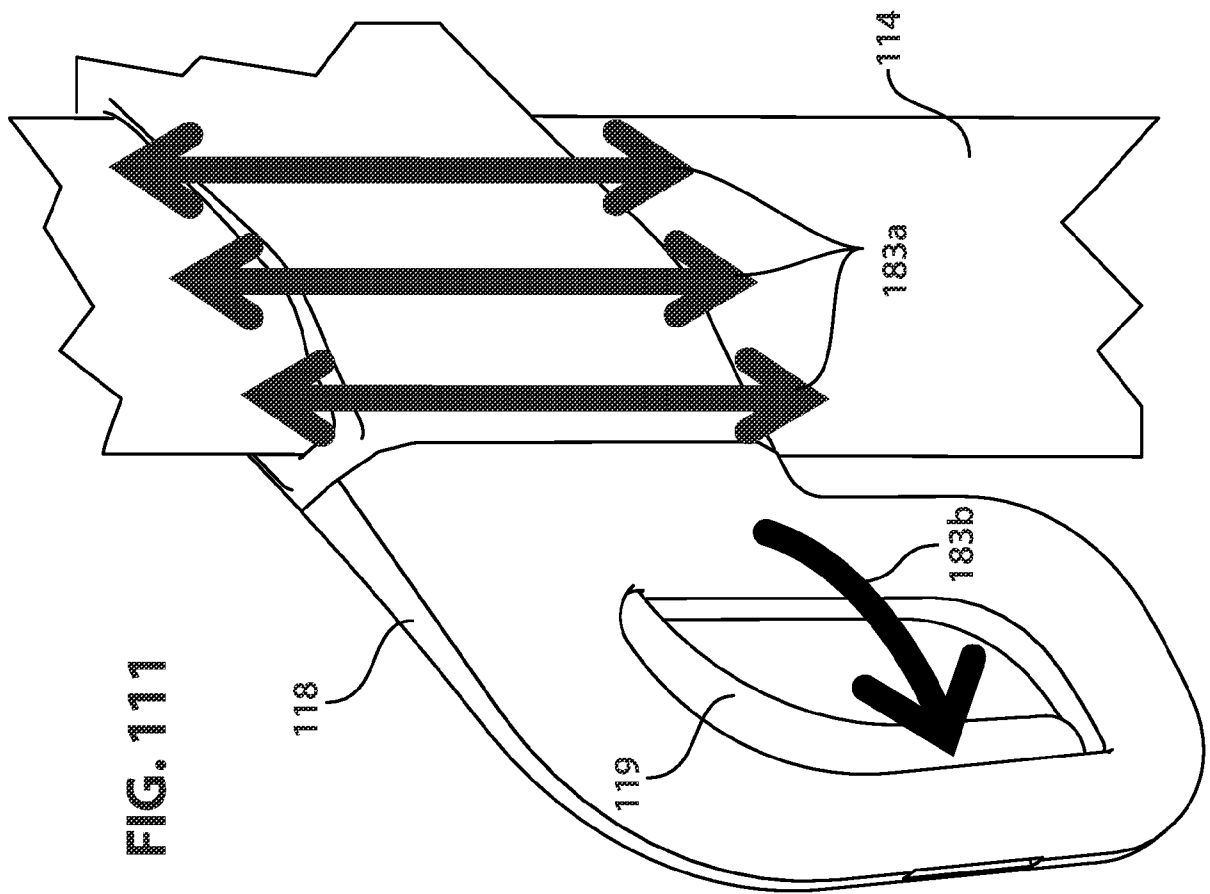


FIG. 112

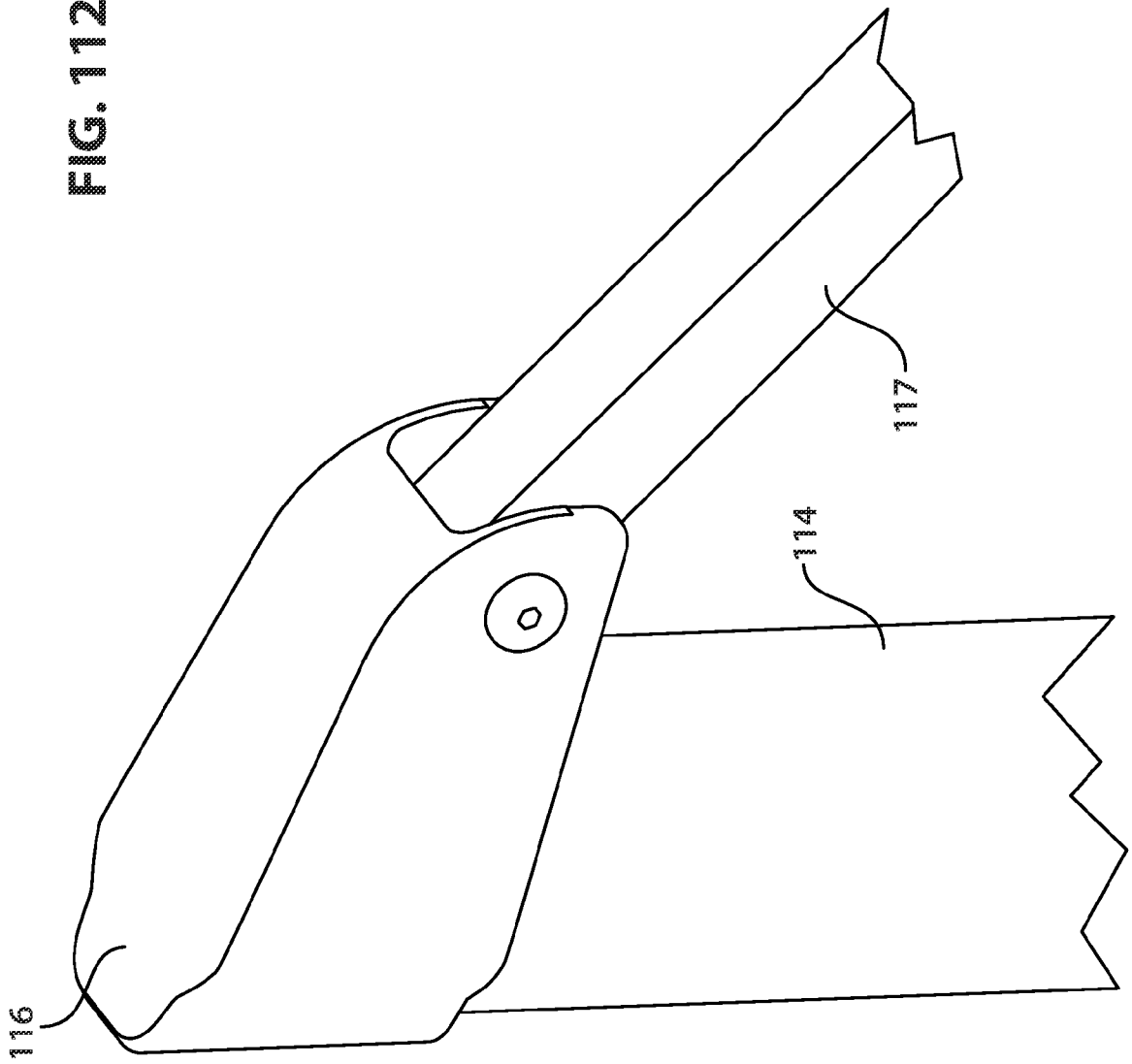


FIG. 113

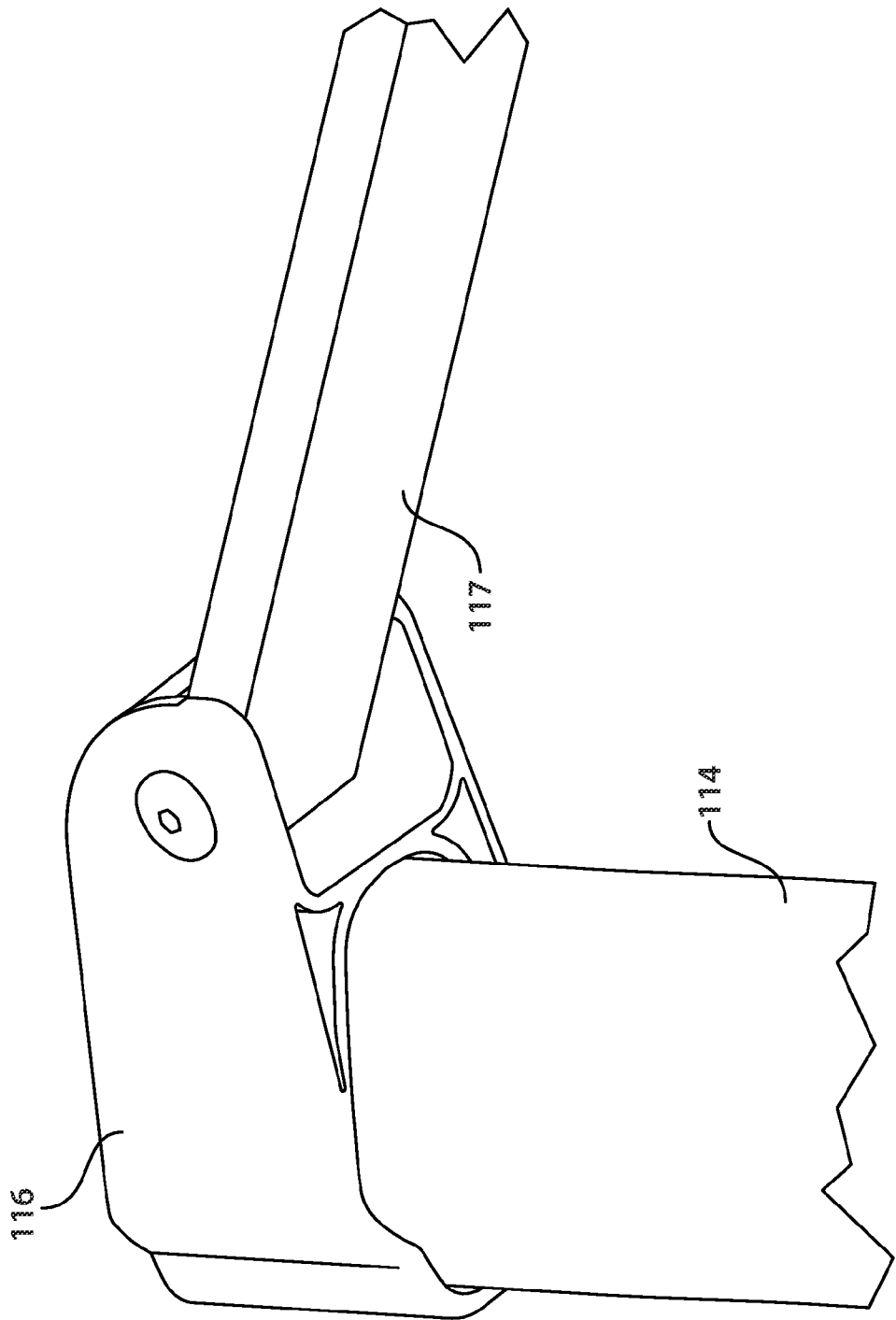


FIG. 114

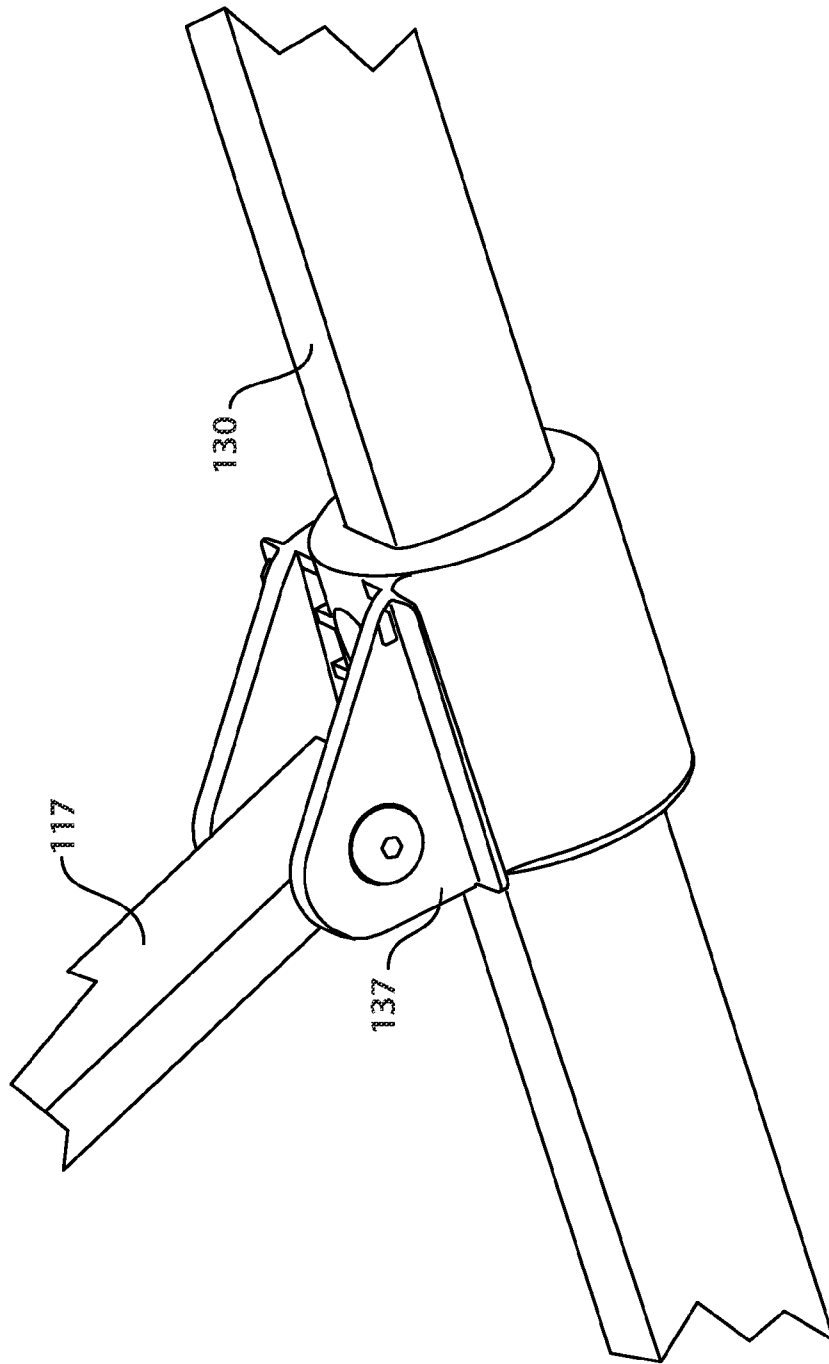
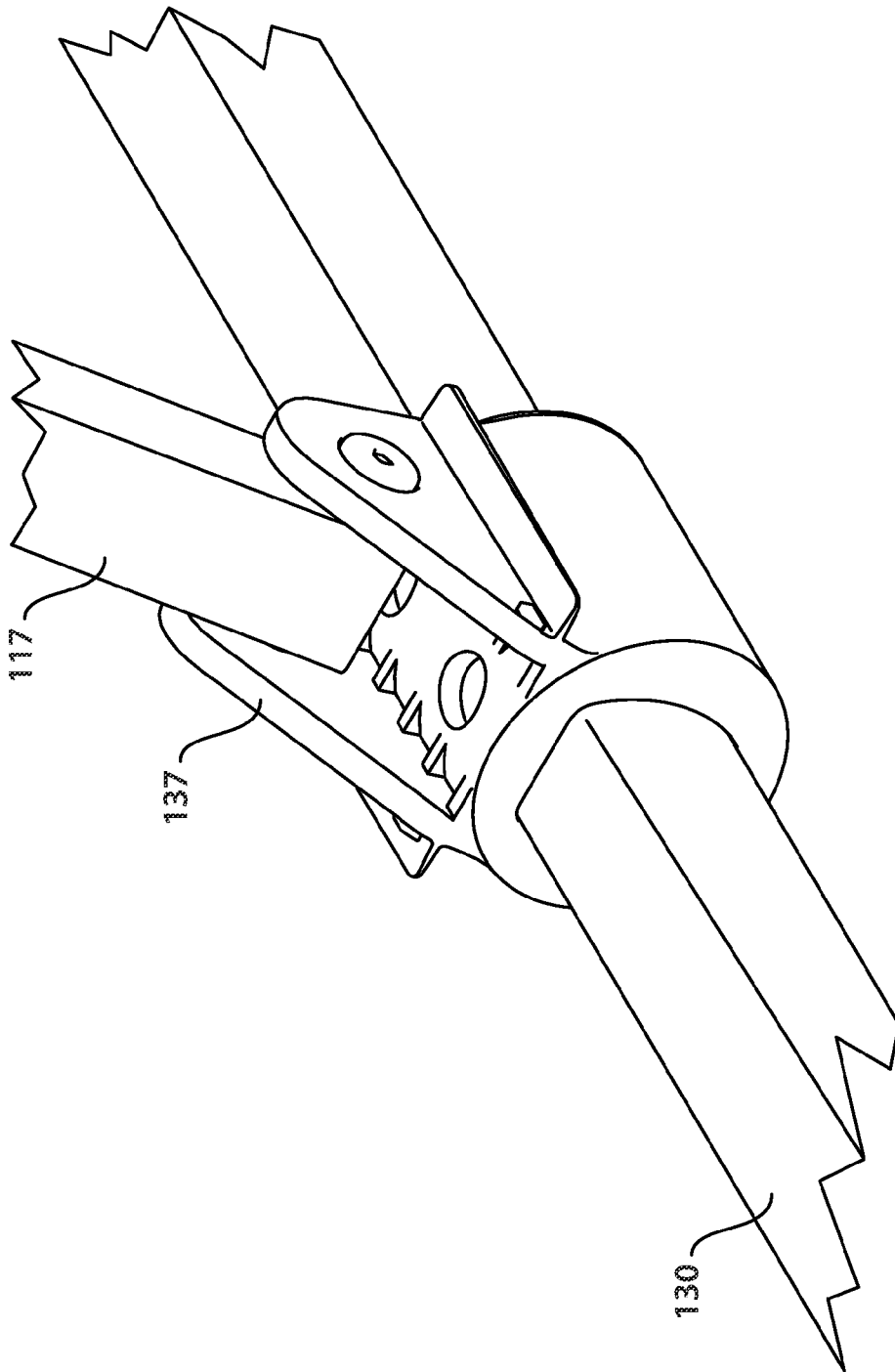


FIG. 115



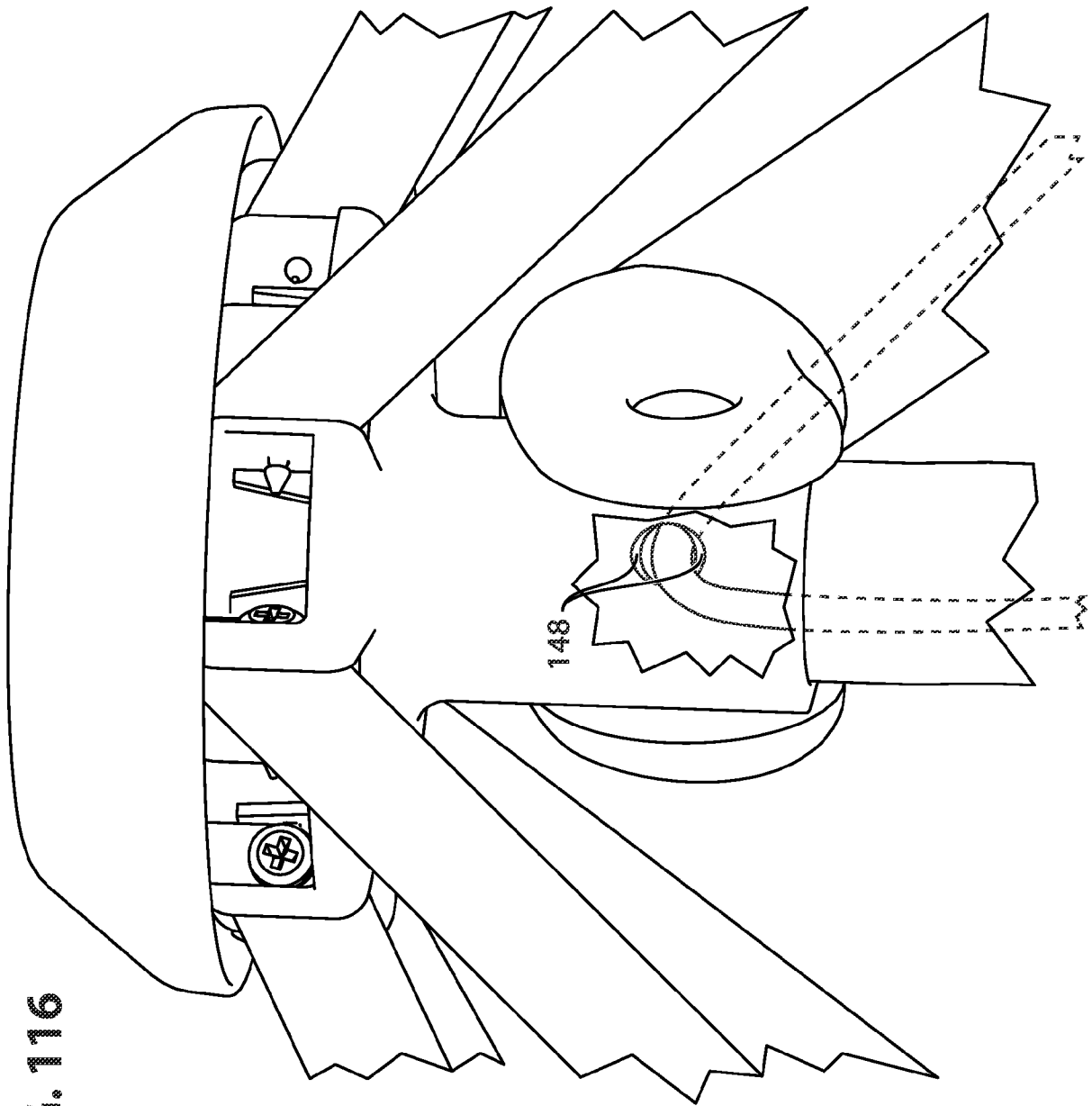


FIG. 117

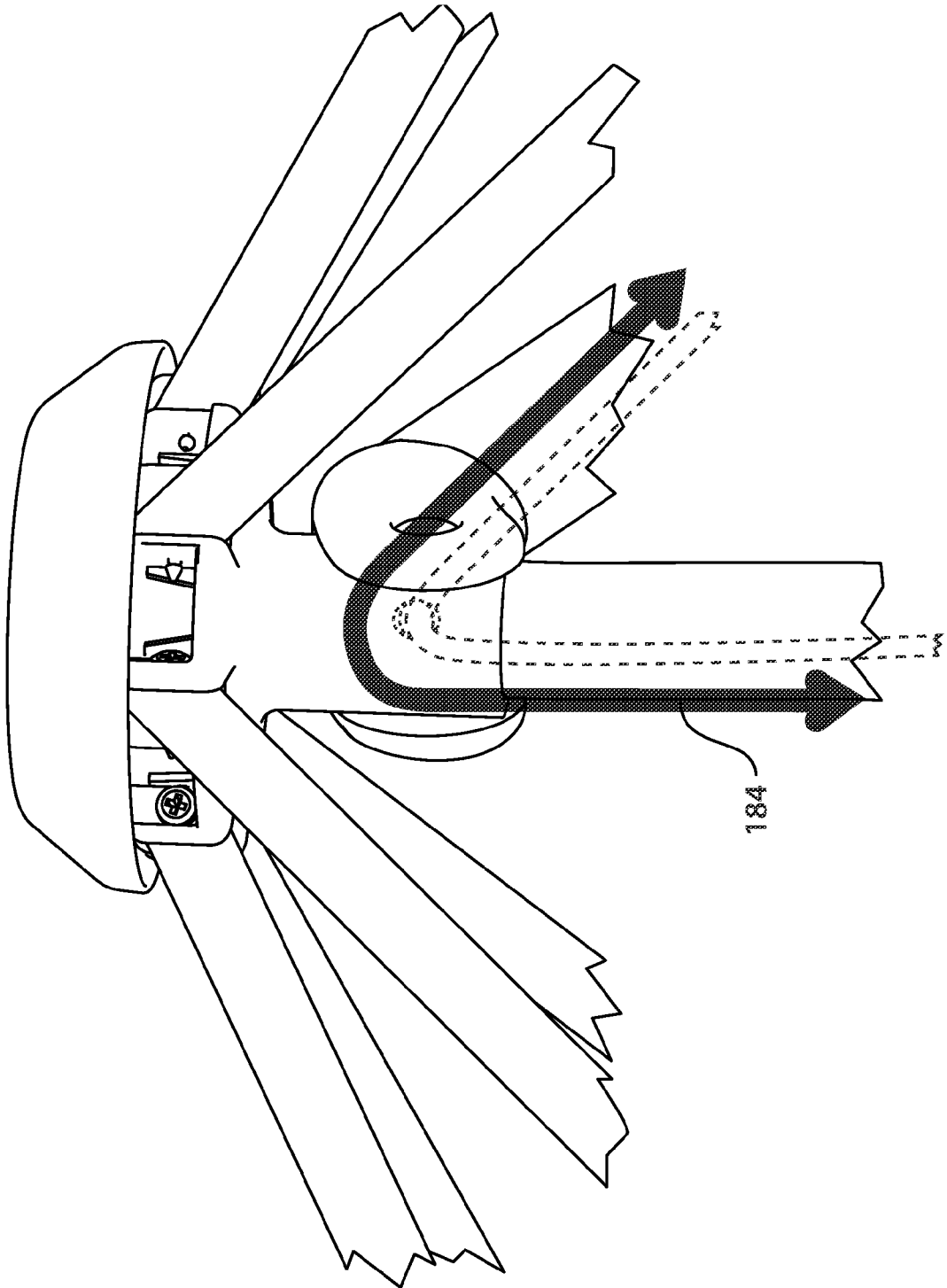
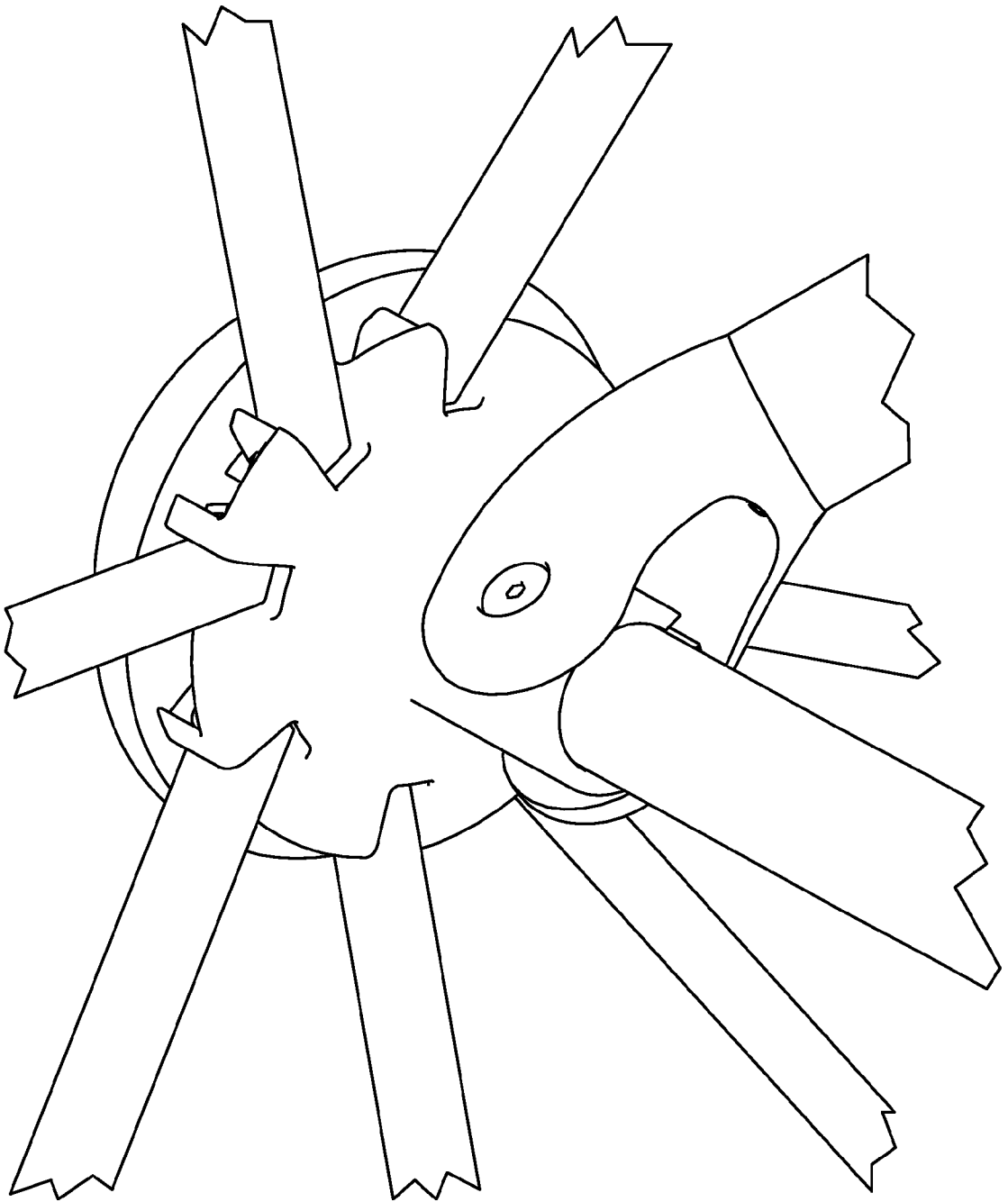


FIG. 118



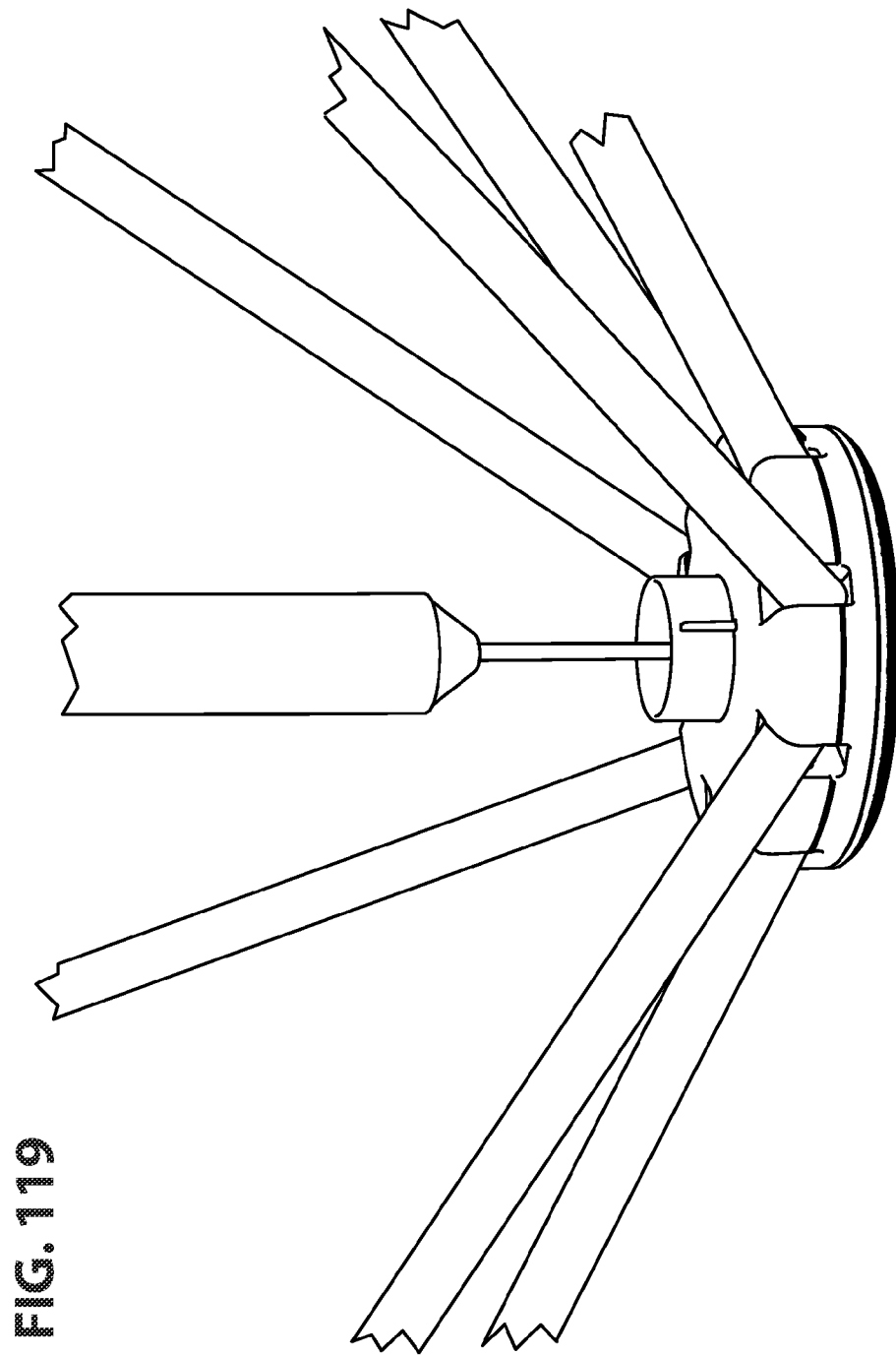


FIG. 120

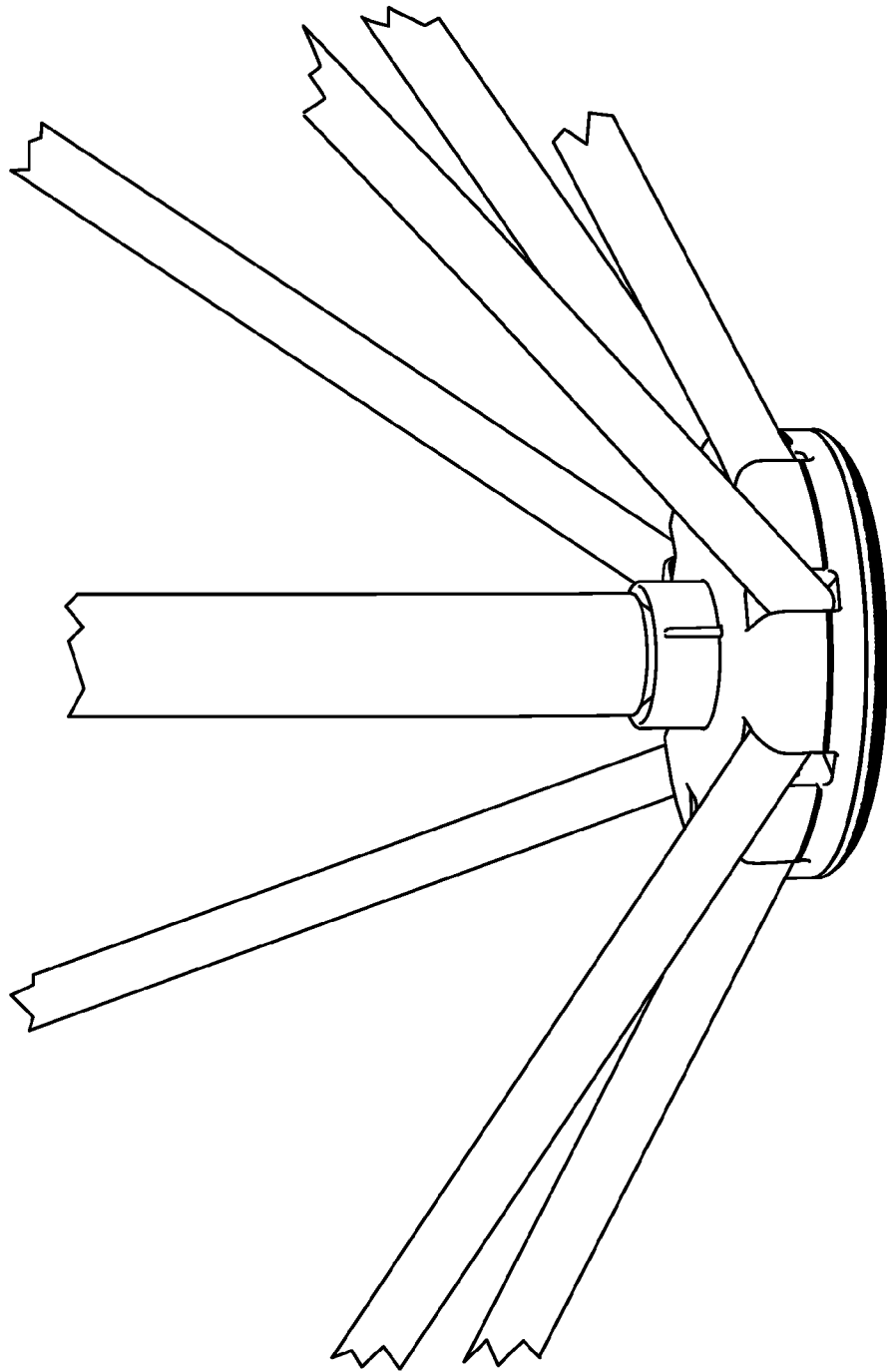


FIG. 121

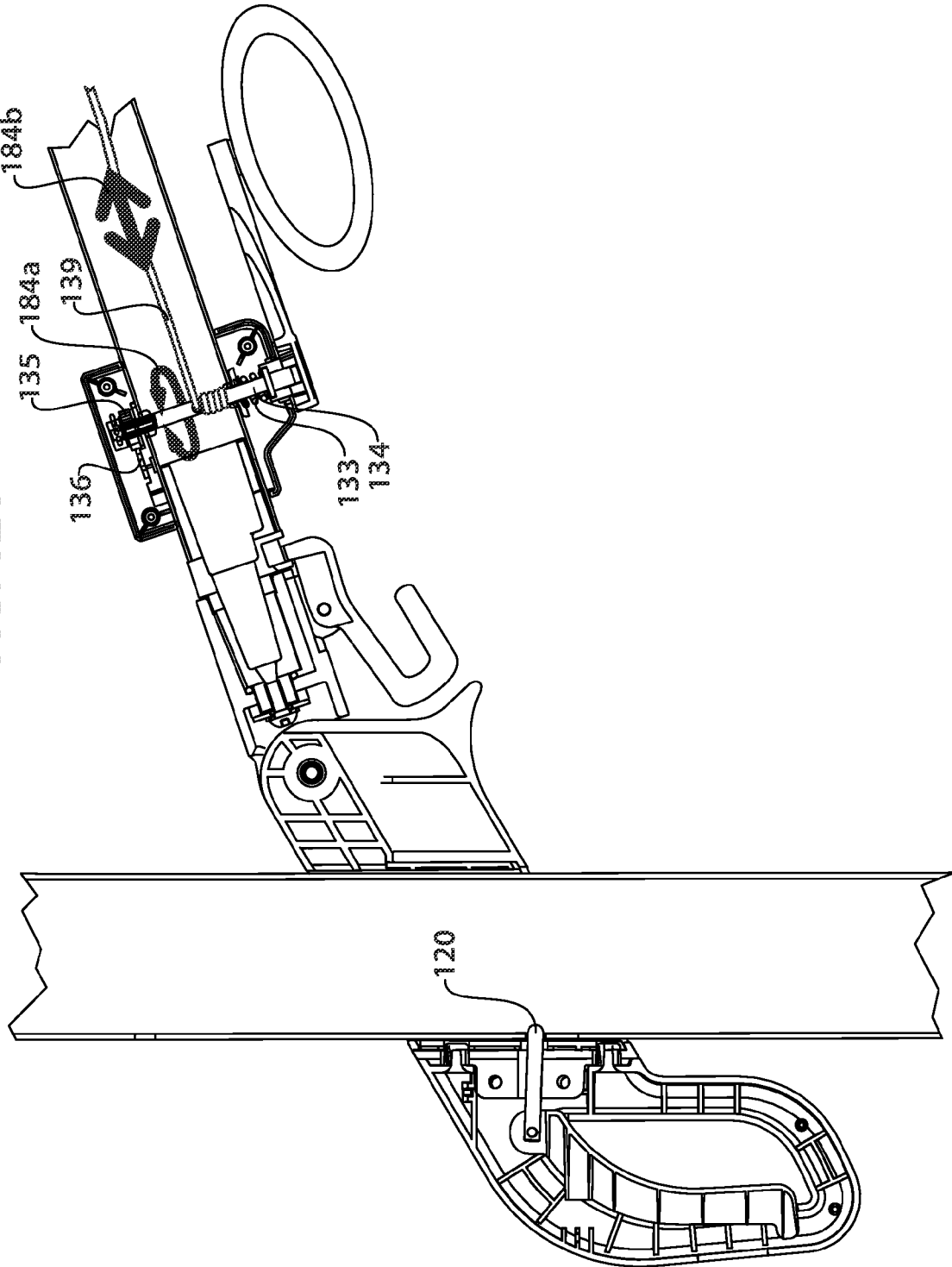
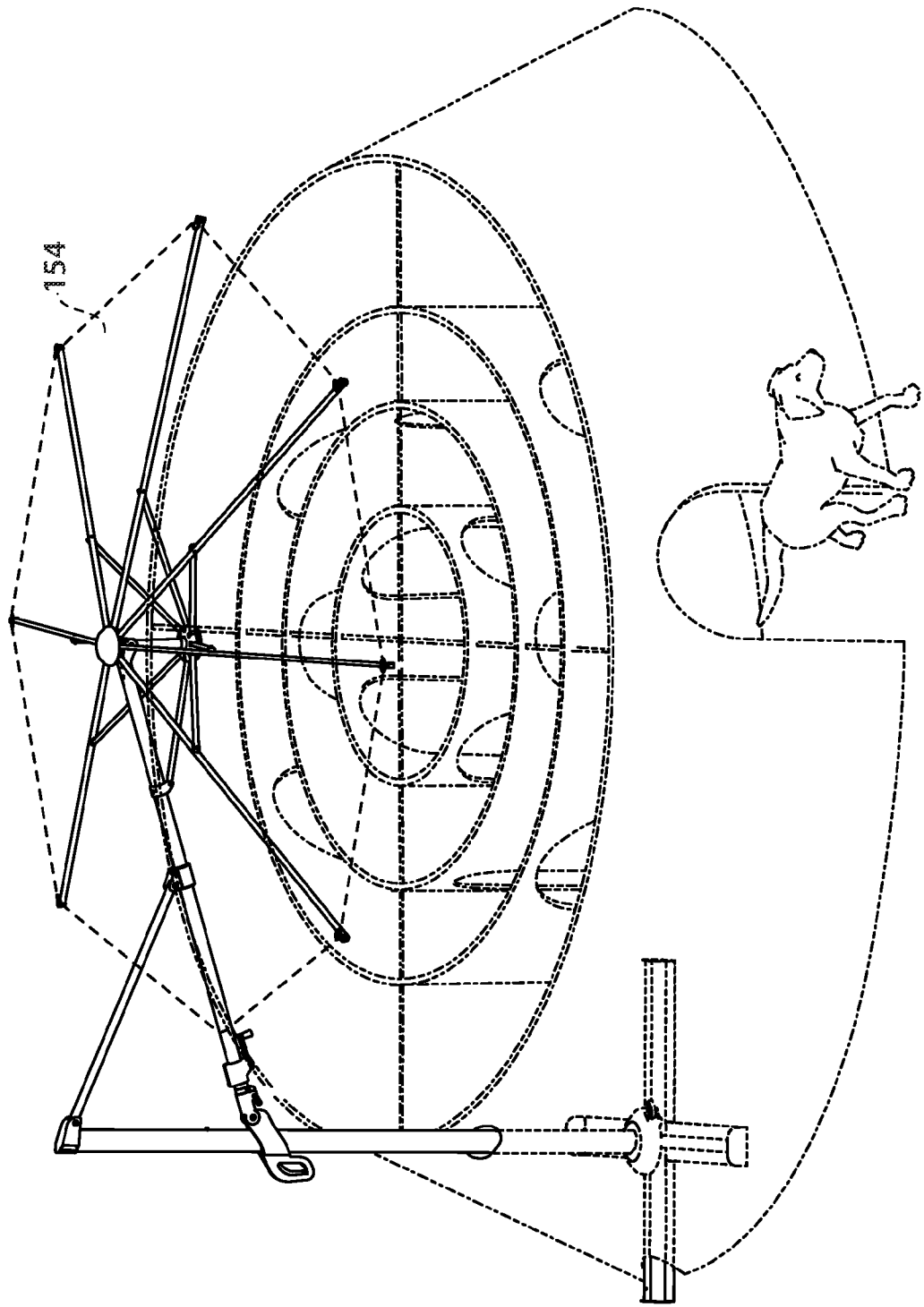
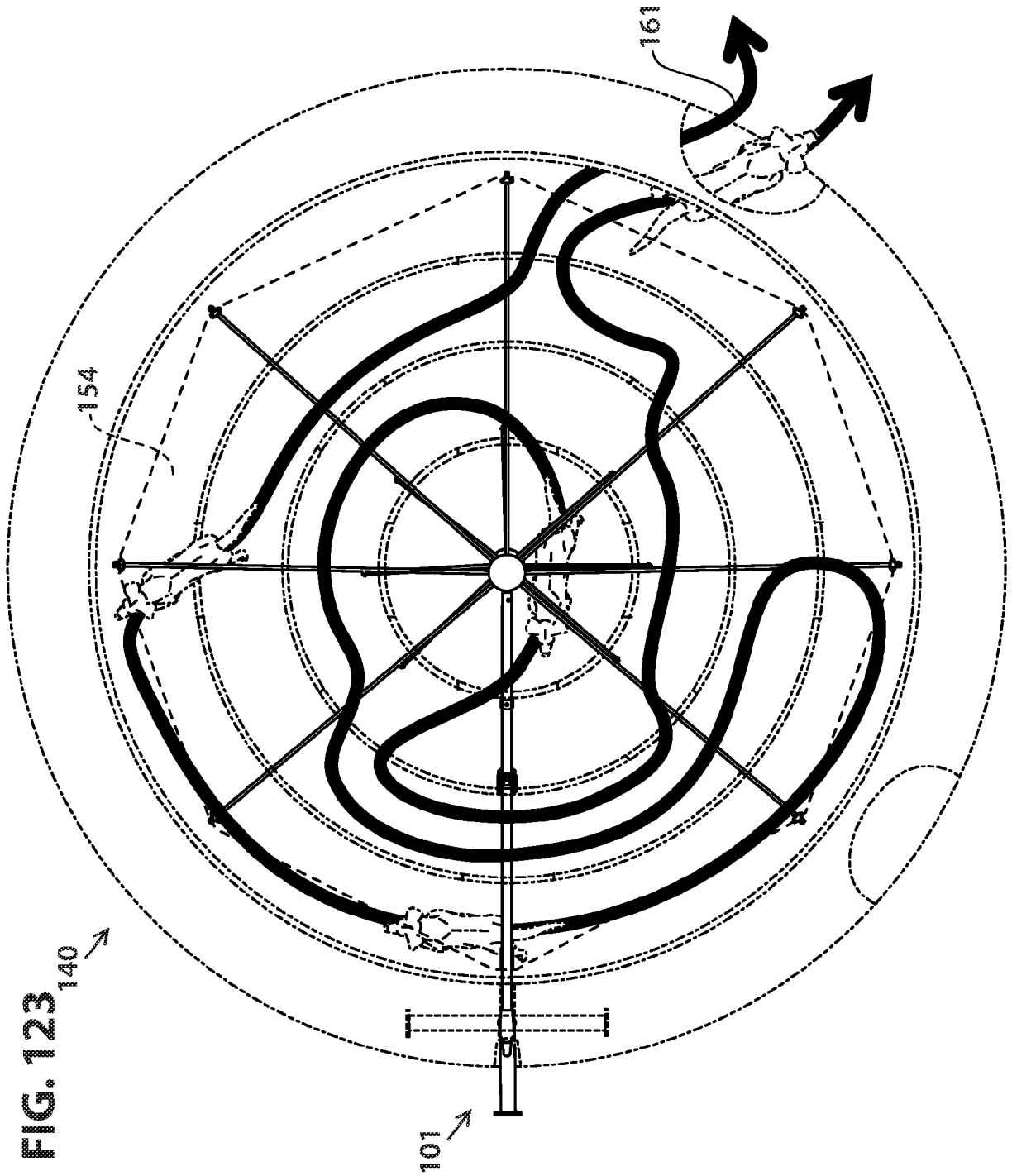


FIG. 122





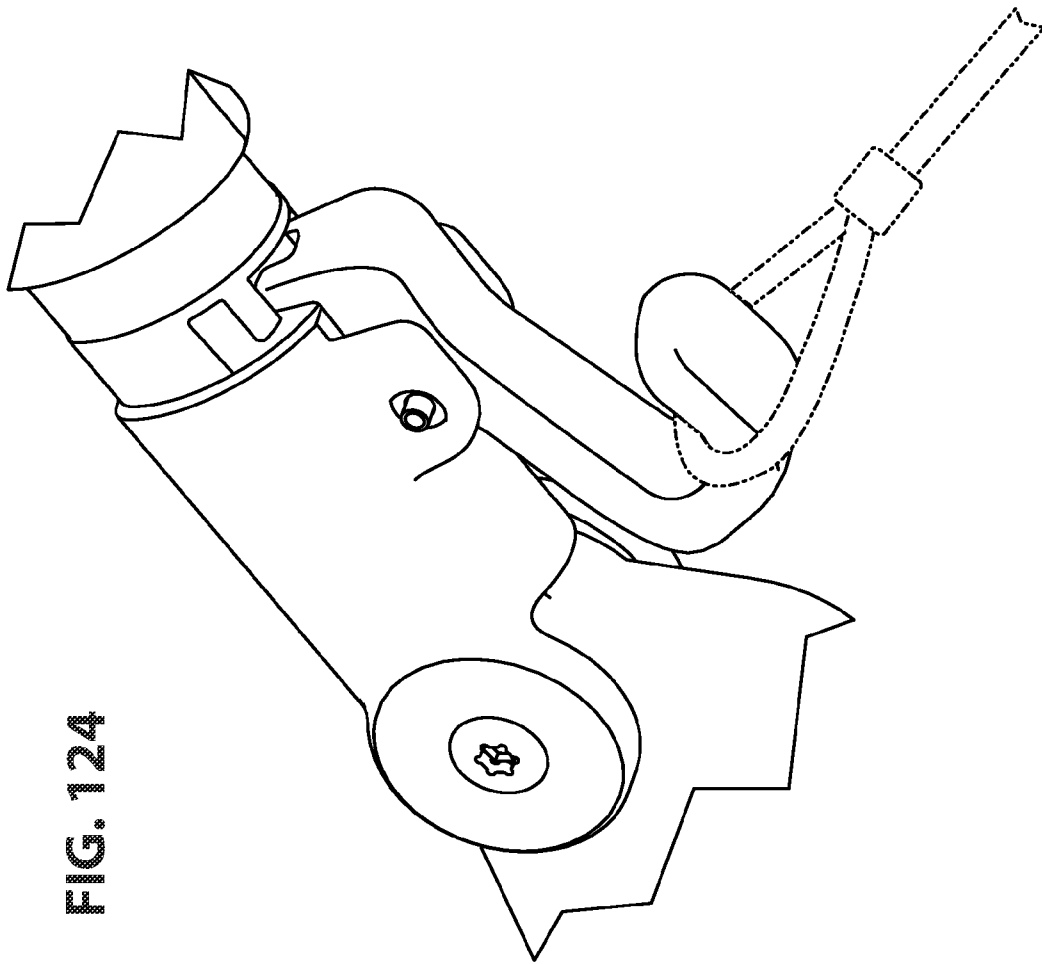


FIG. 124

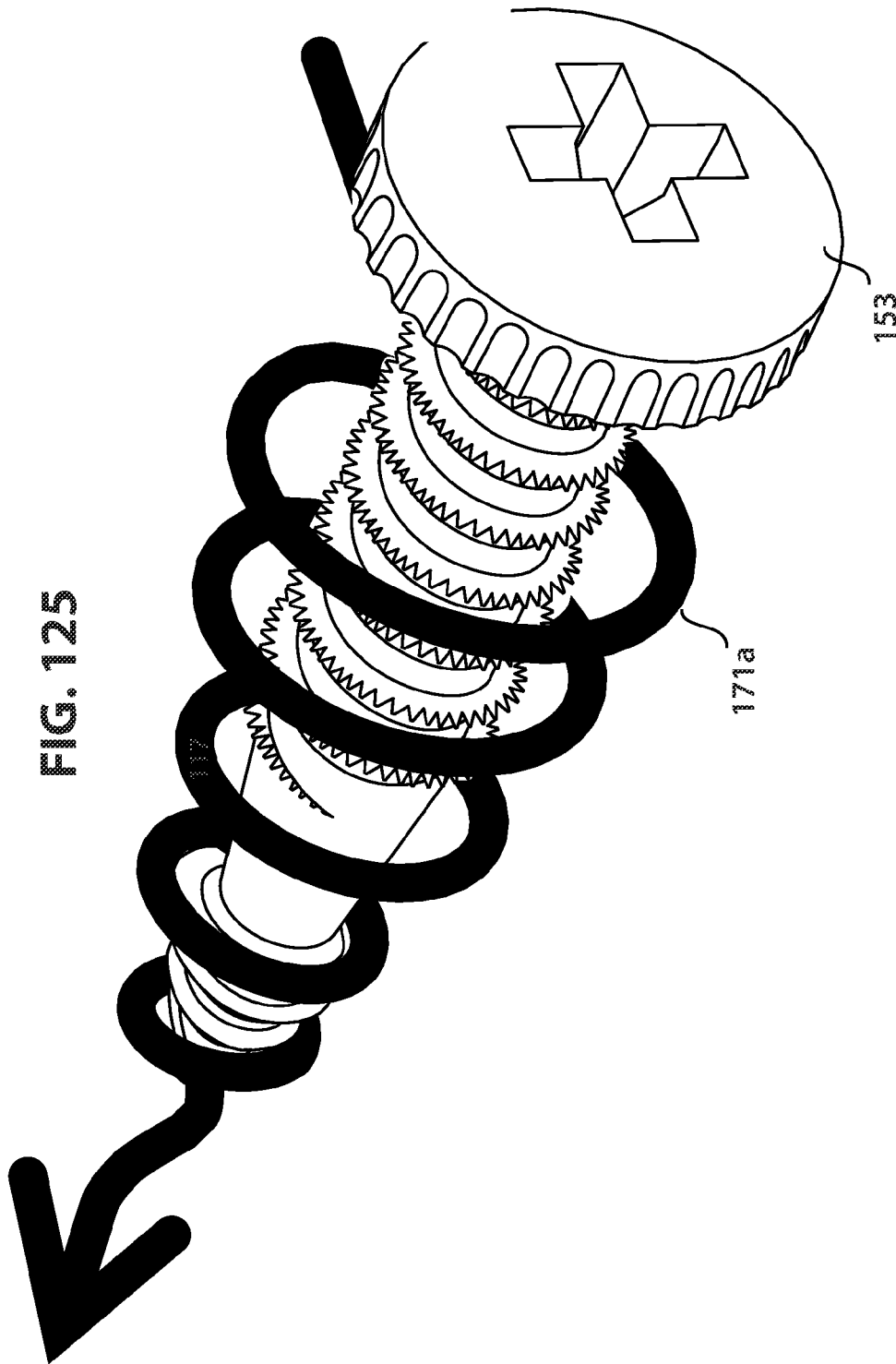


FIG. 125

FIG. 126

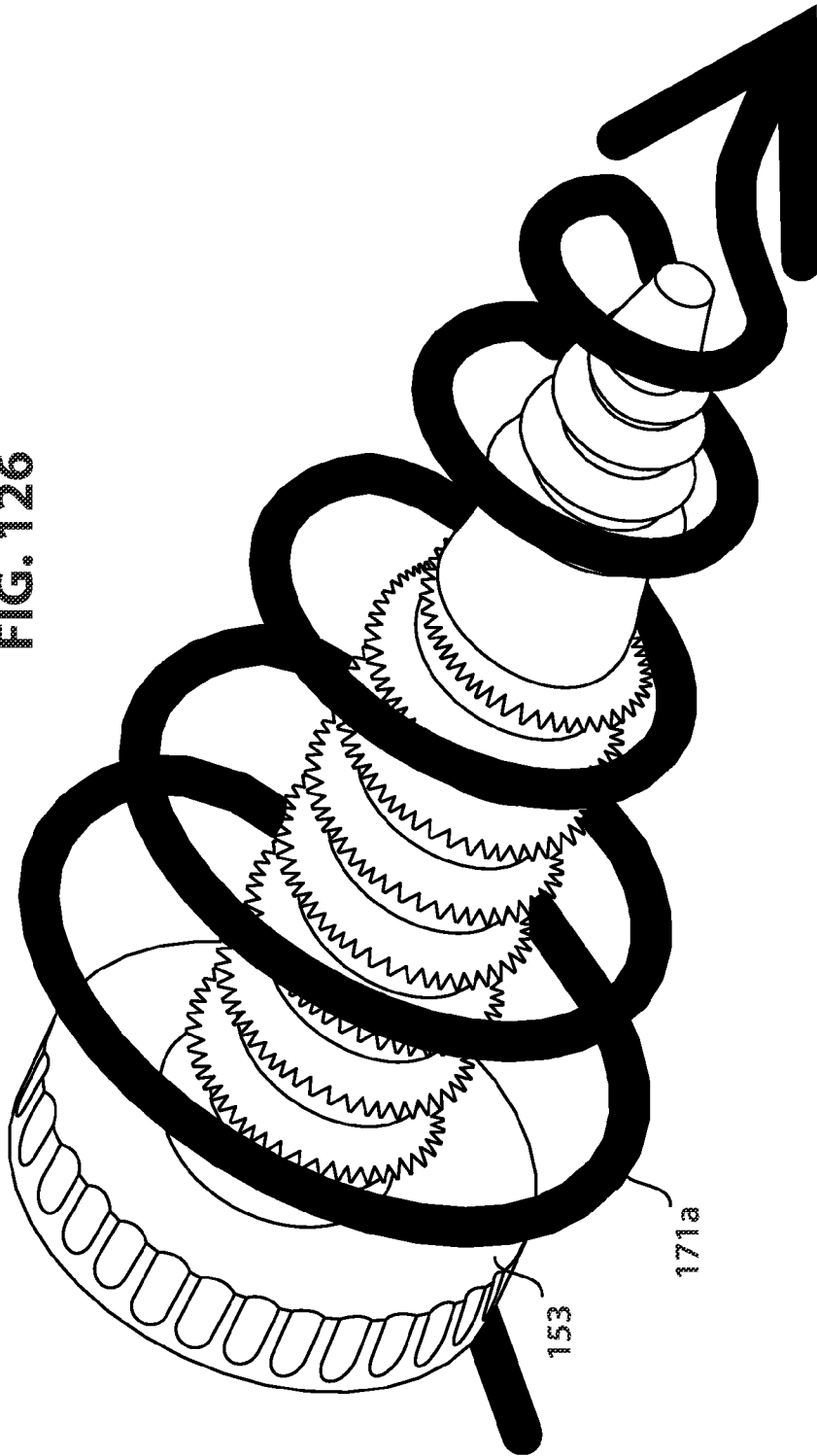


FIG. 127

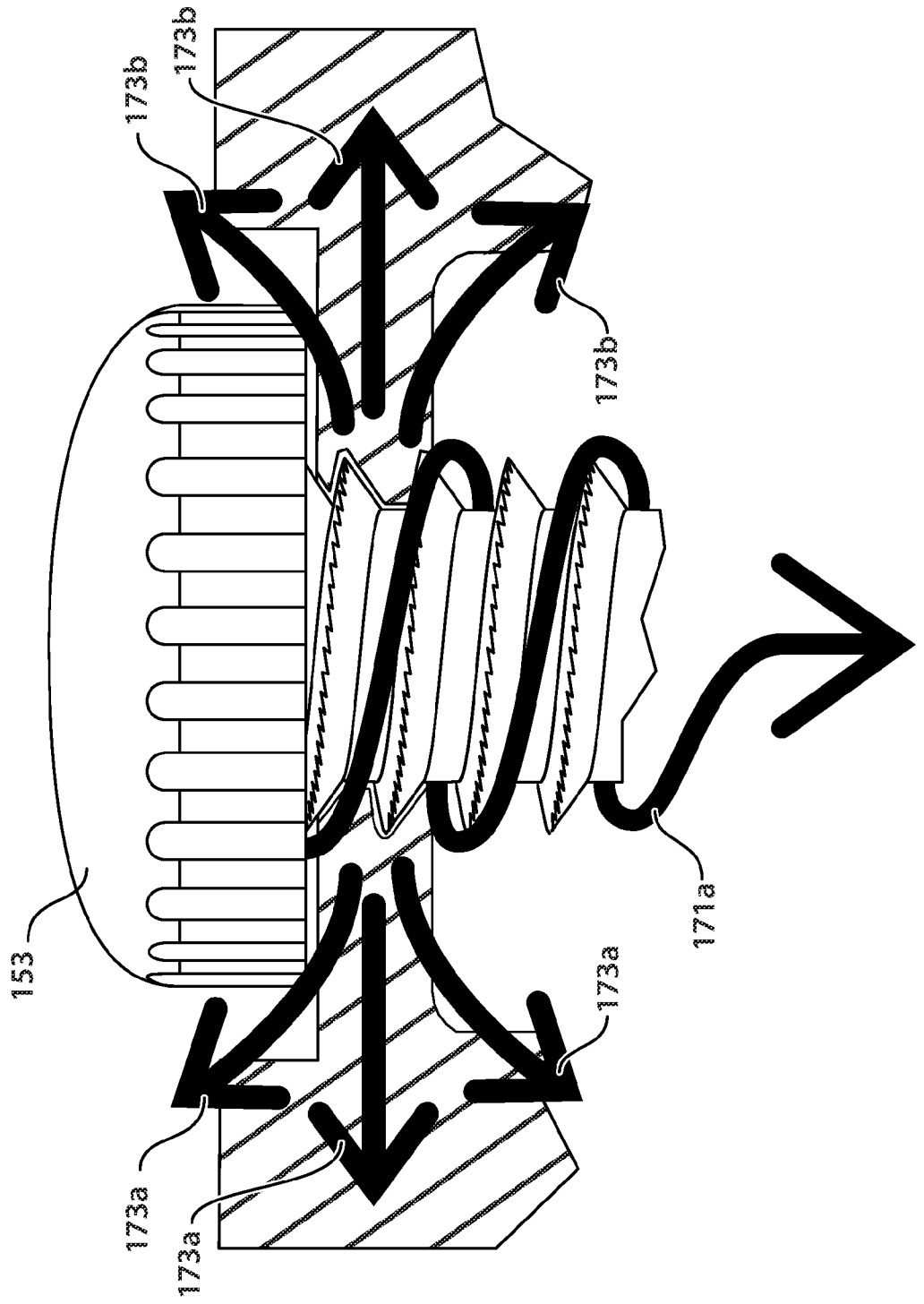


FIG. 128

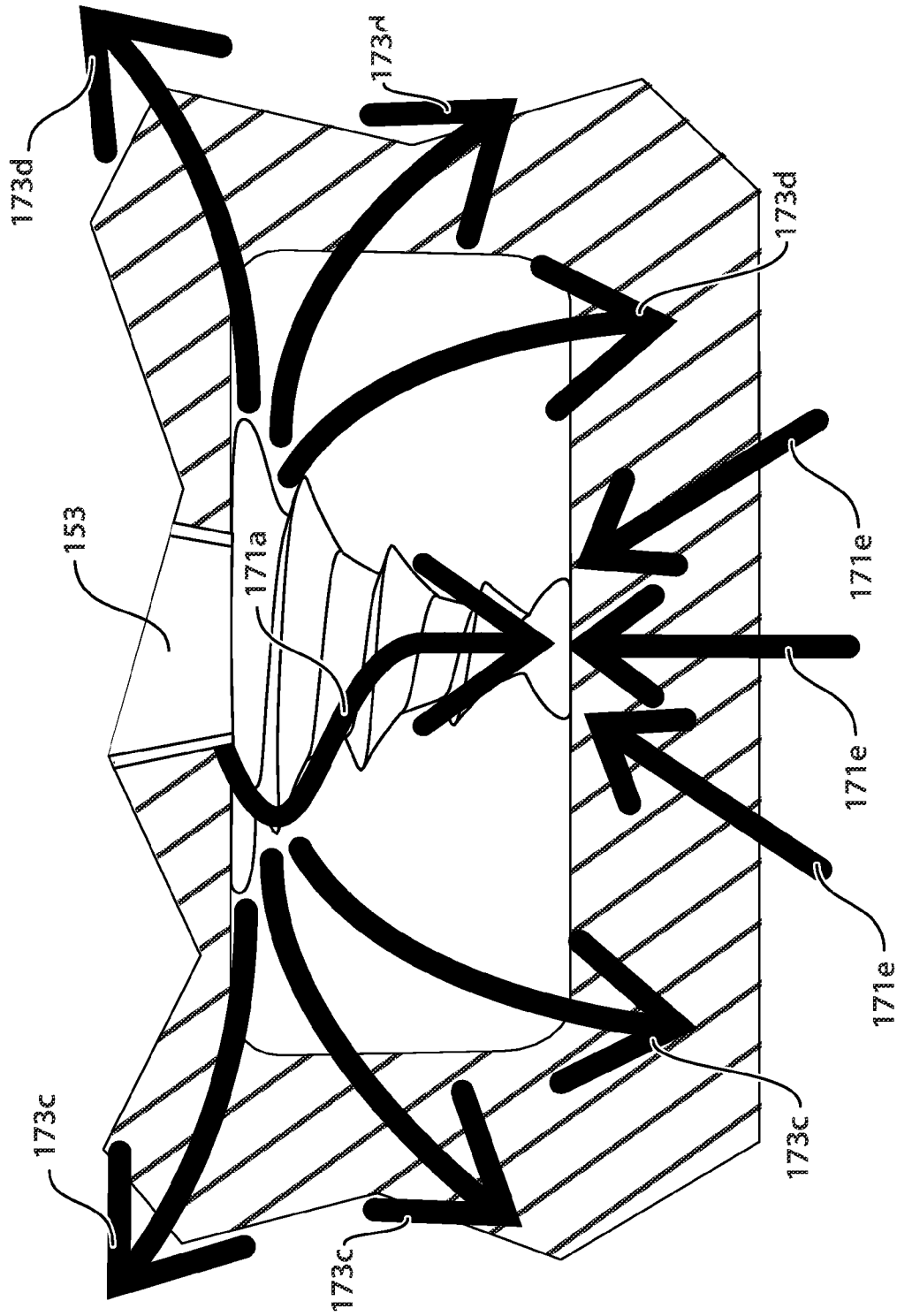


FIG. 129

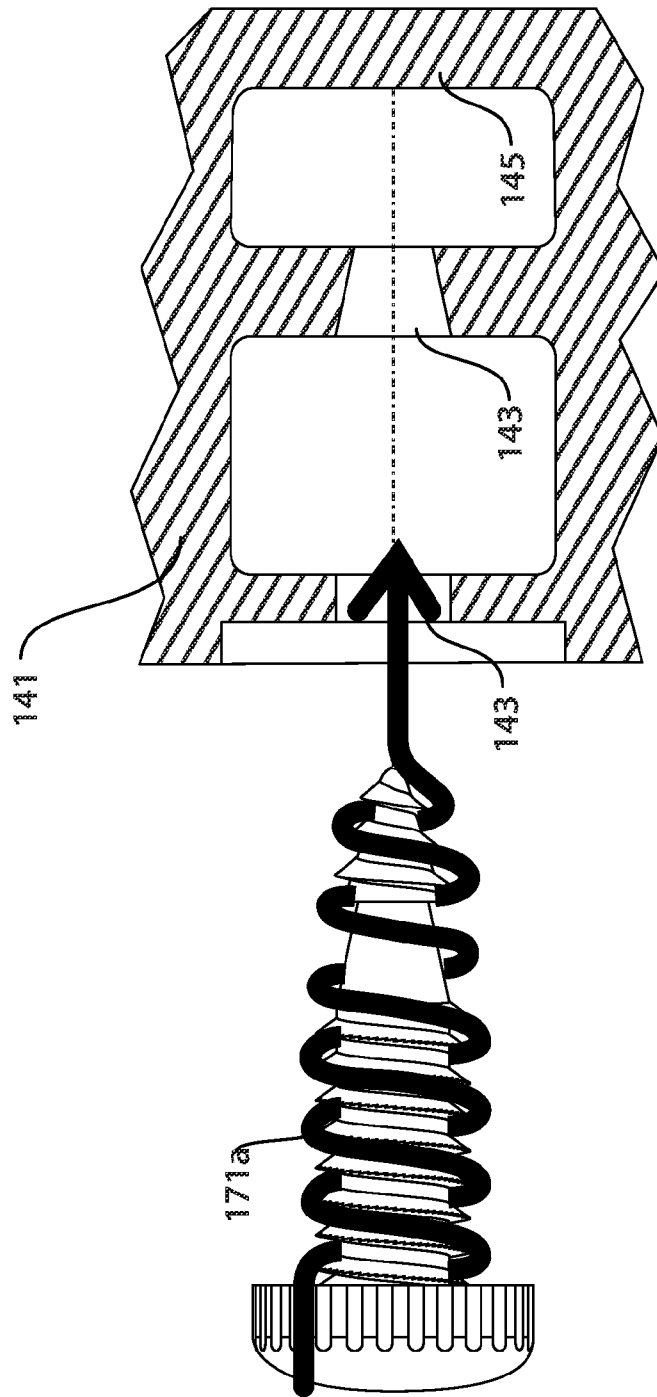


FIG. 130

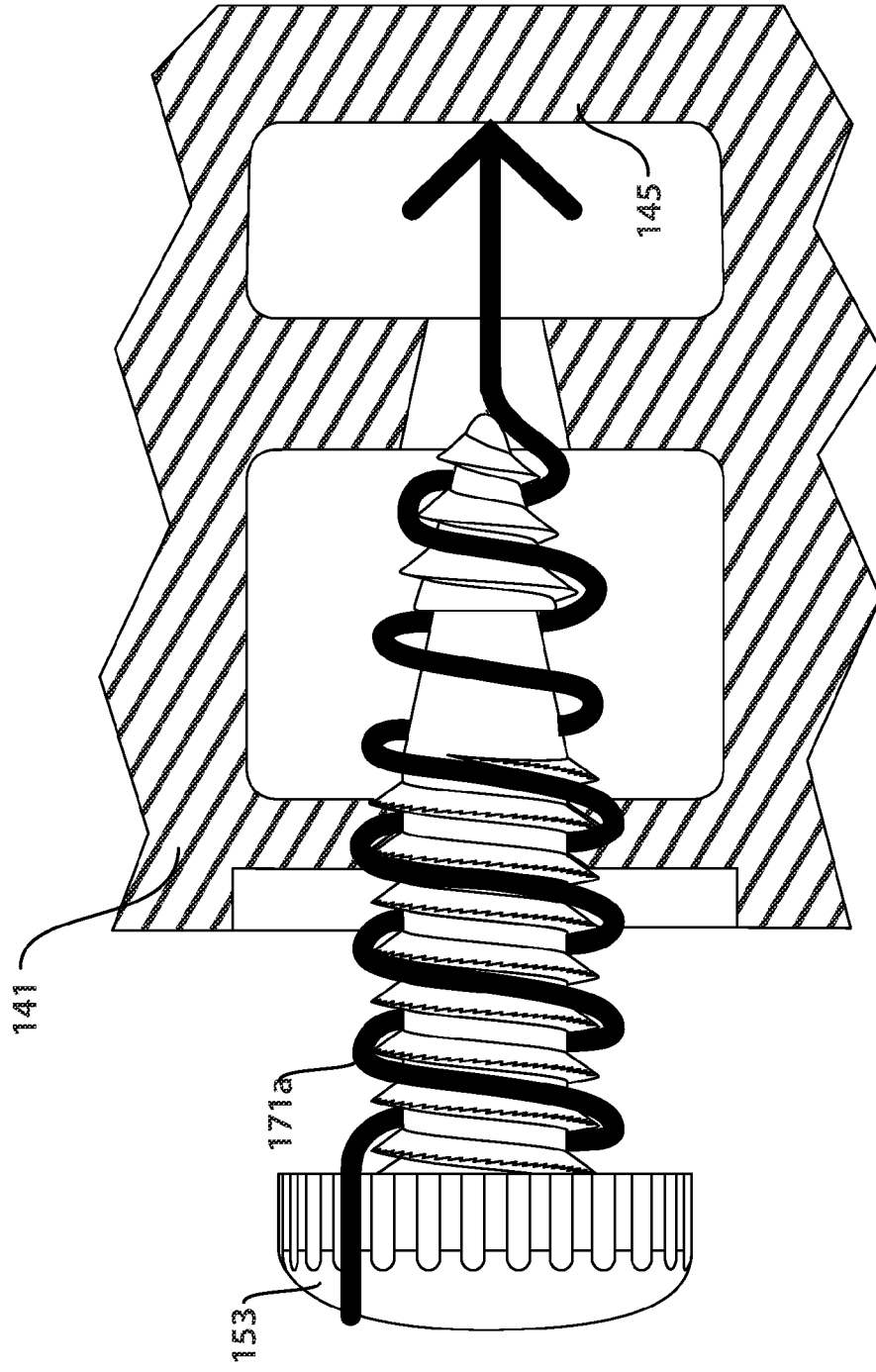
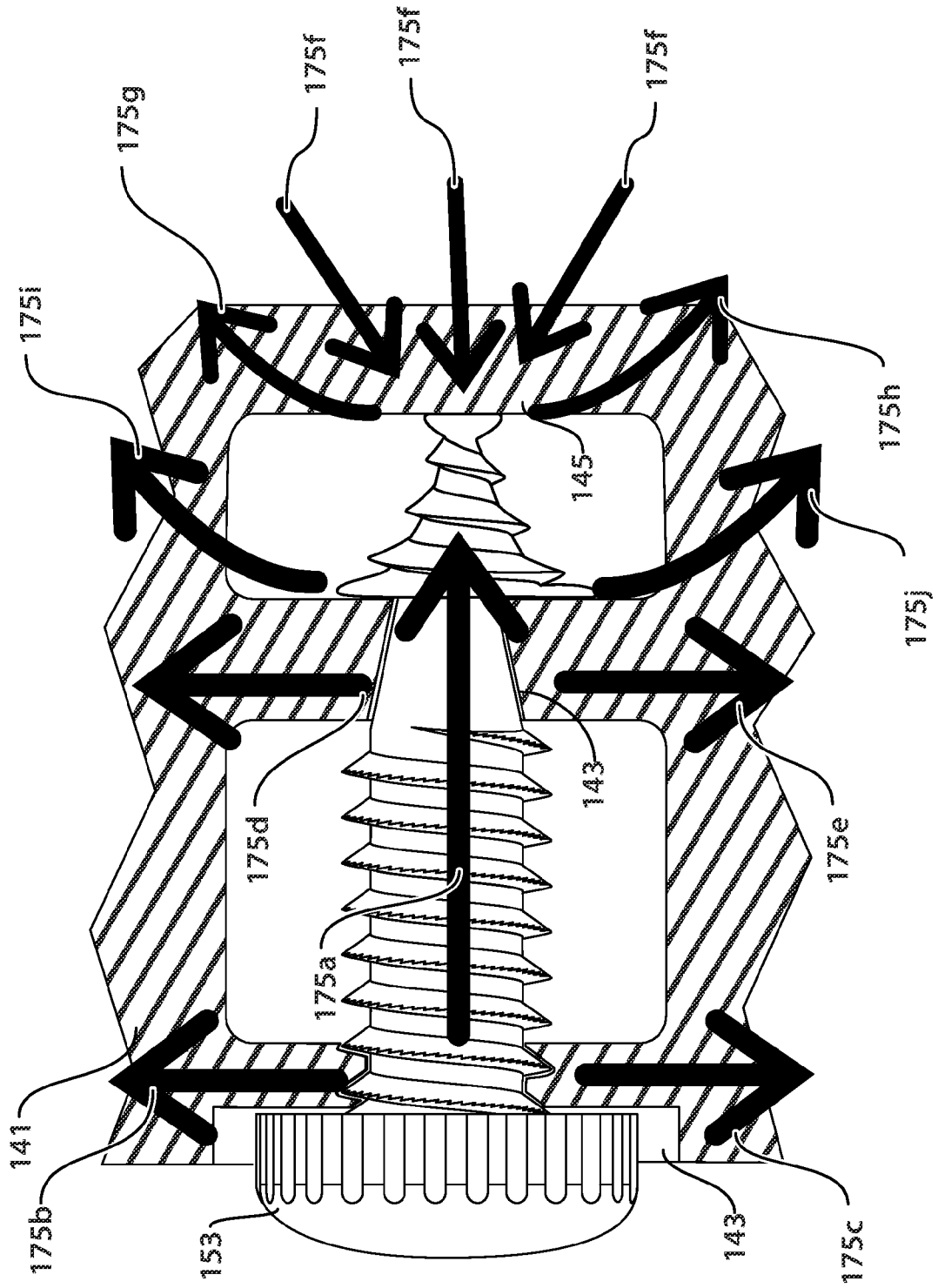


FIG. 131



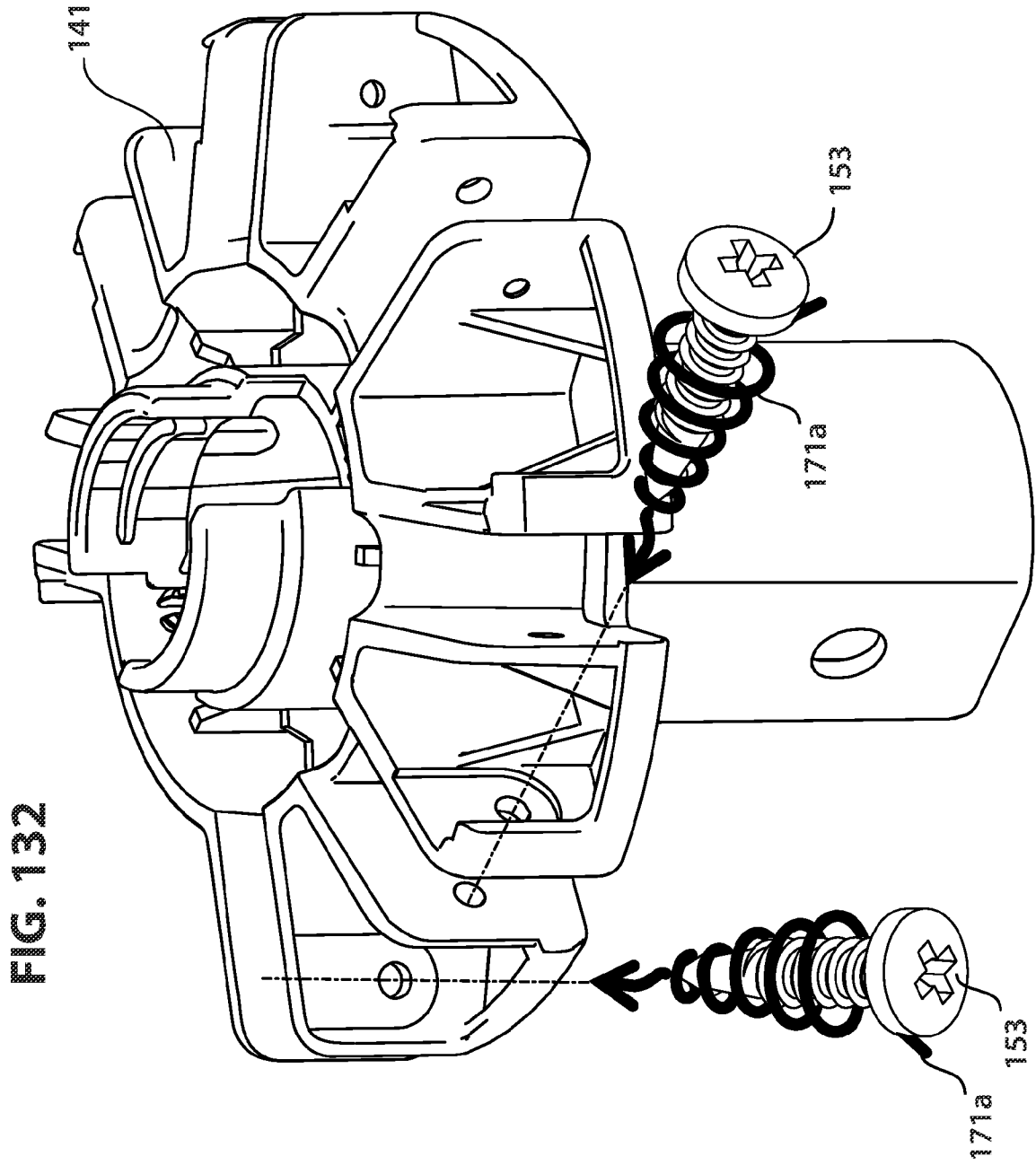
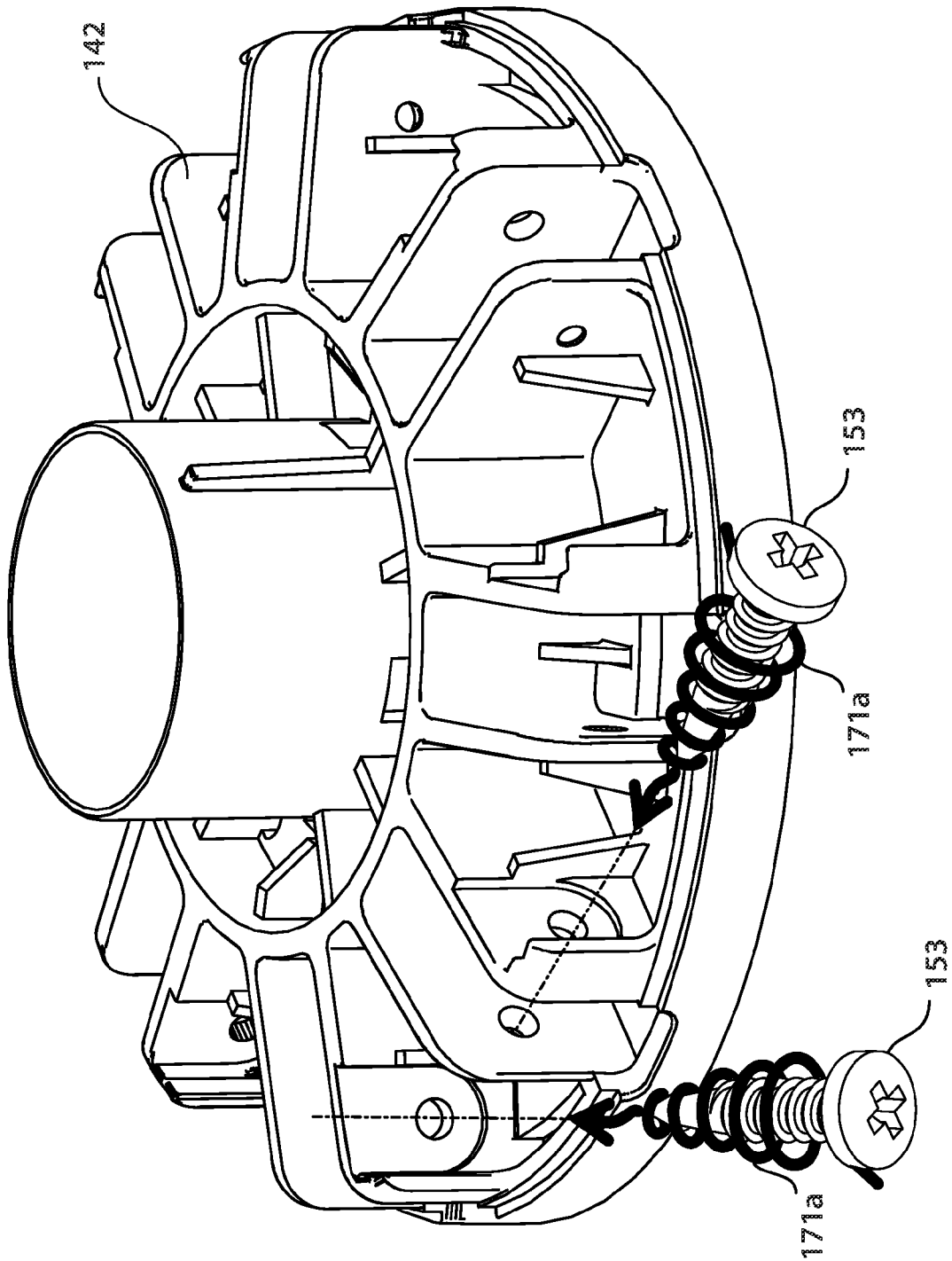
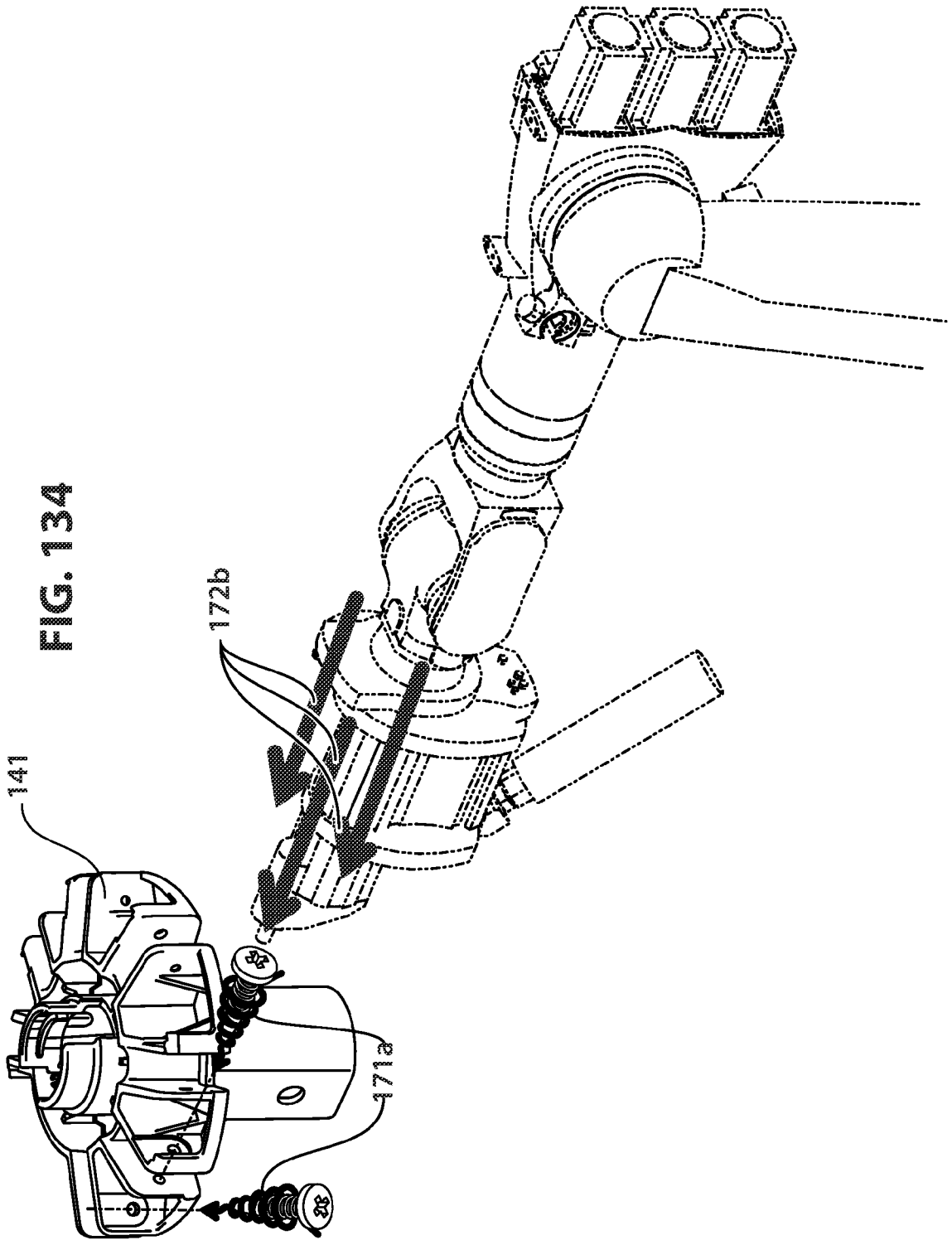
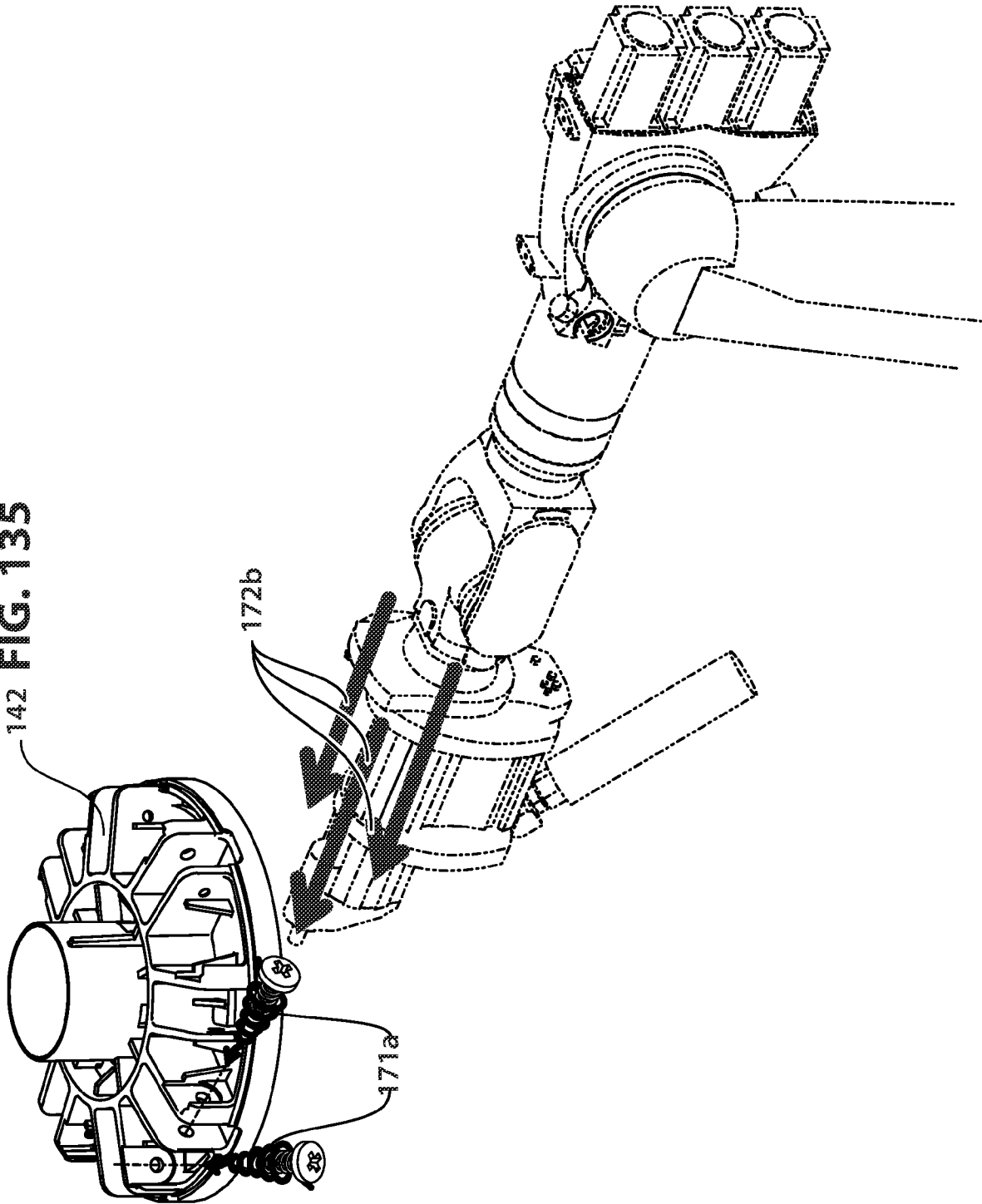


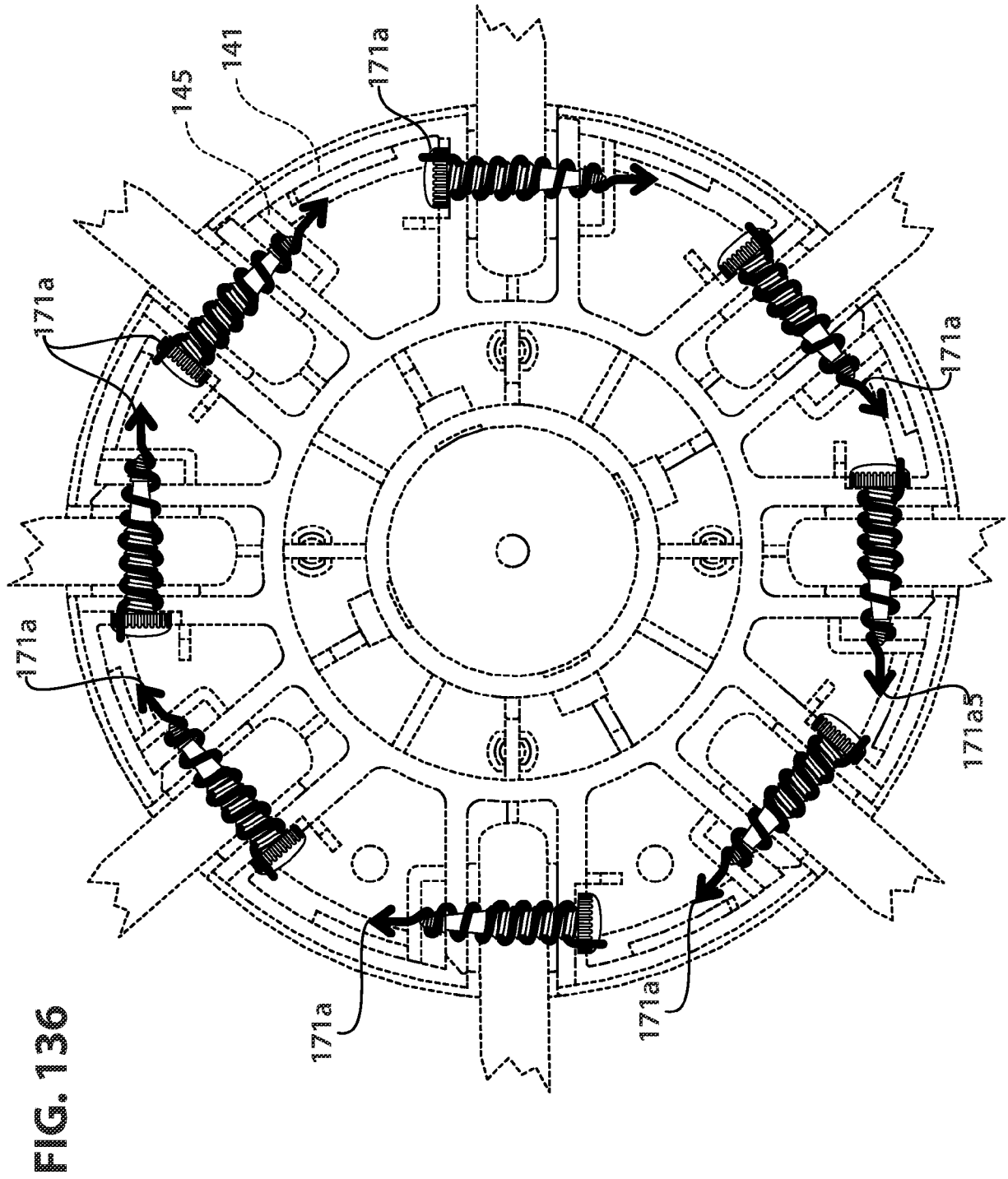
FIG. 133





142 FIG. 135





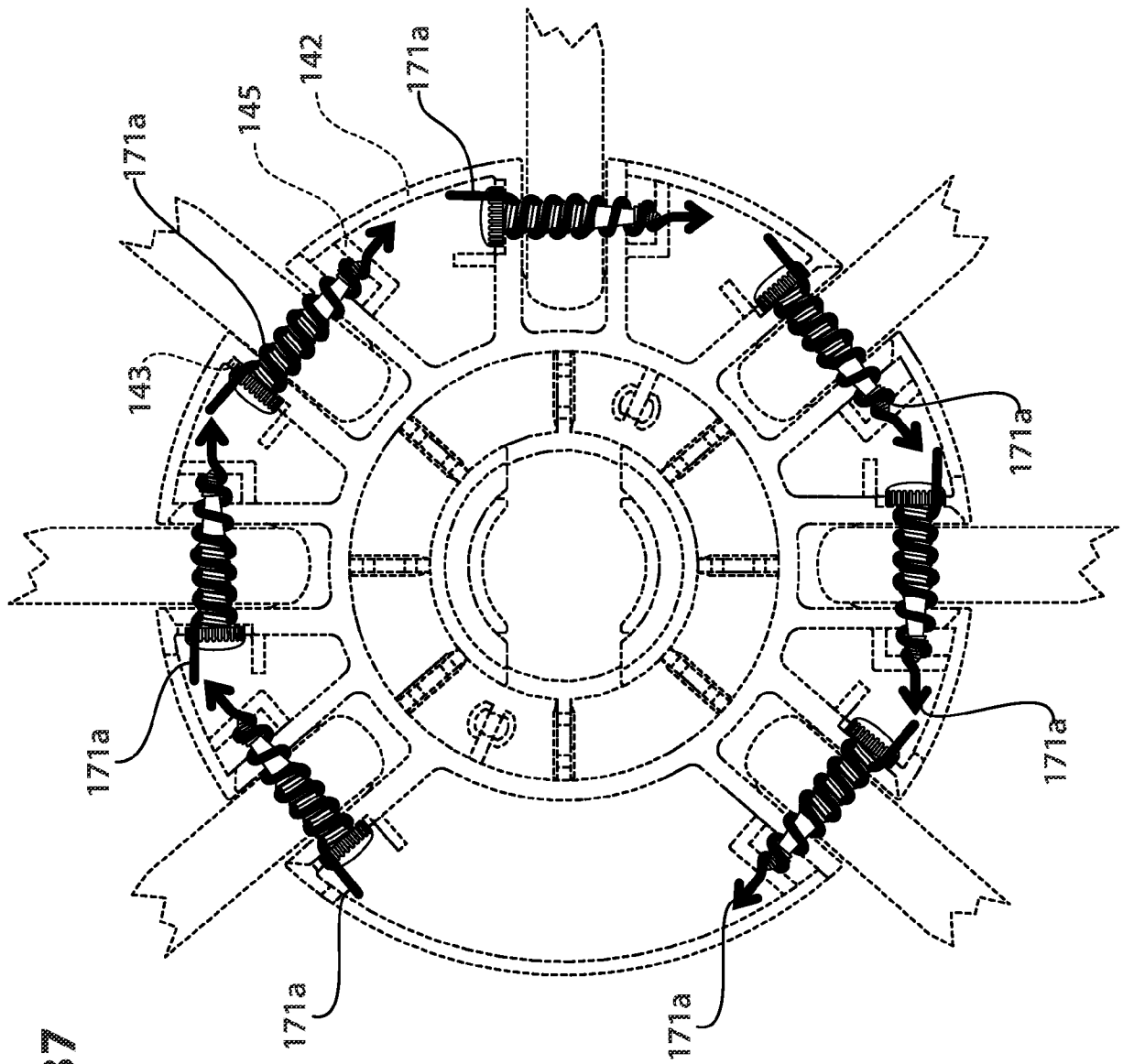


FIG. 137

FIG. 138

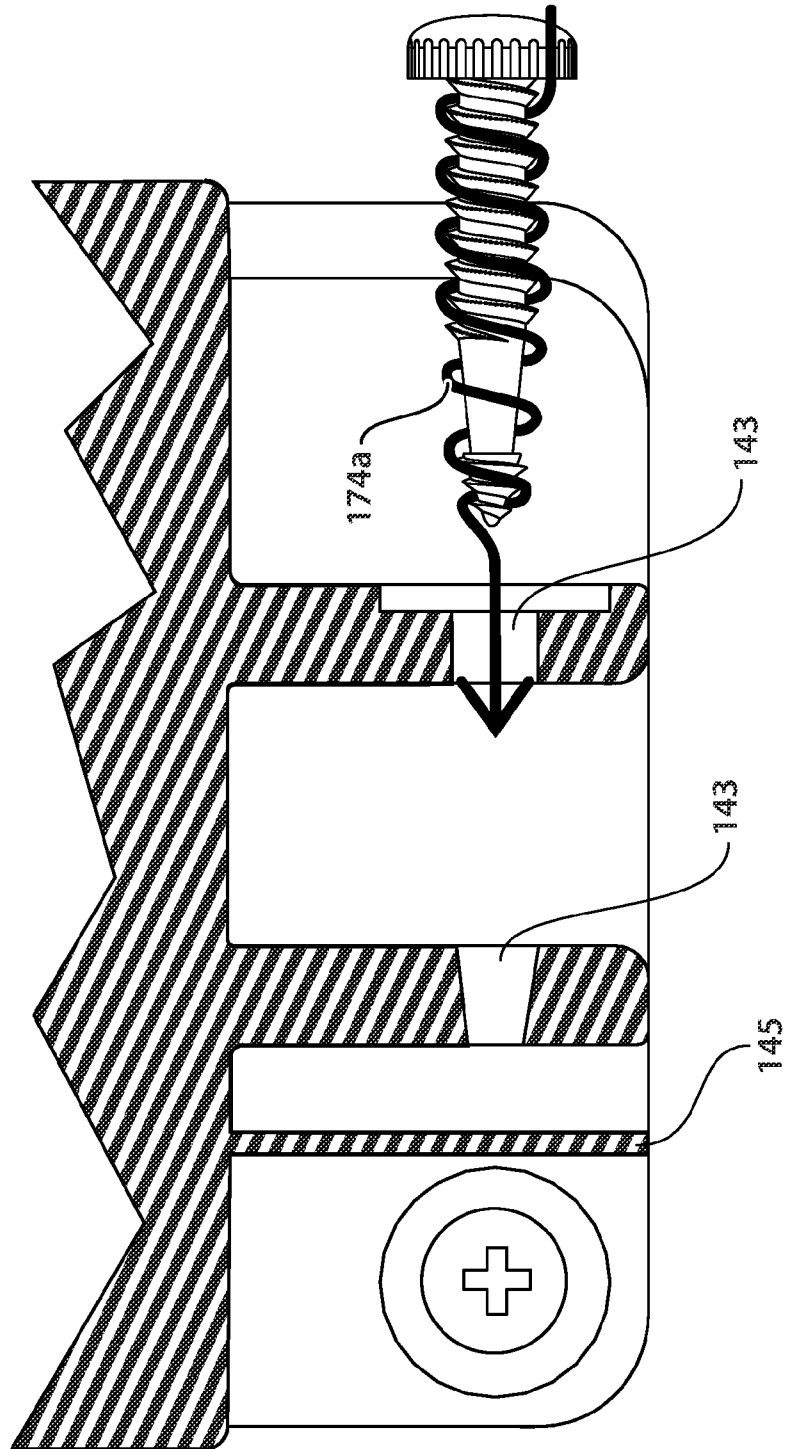
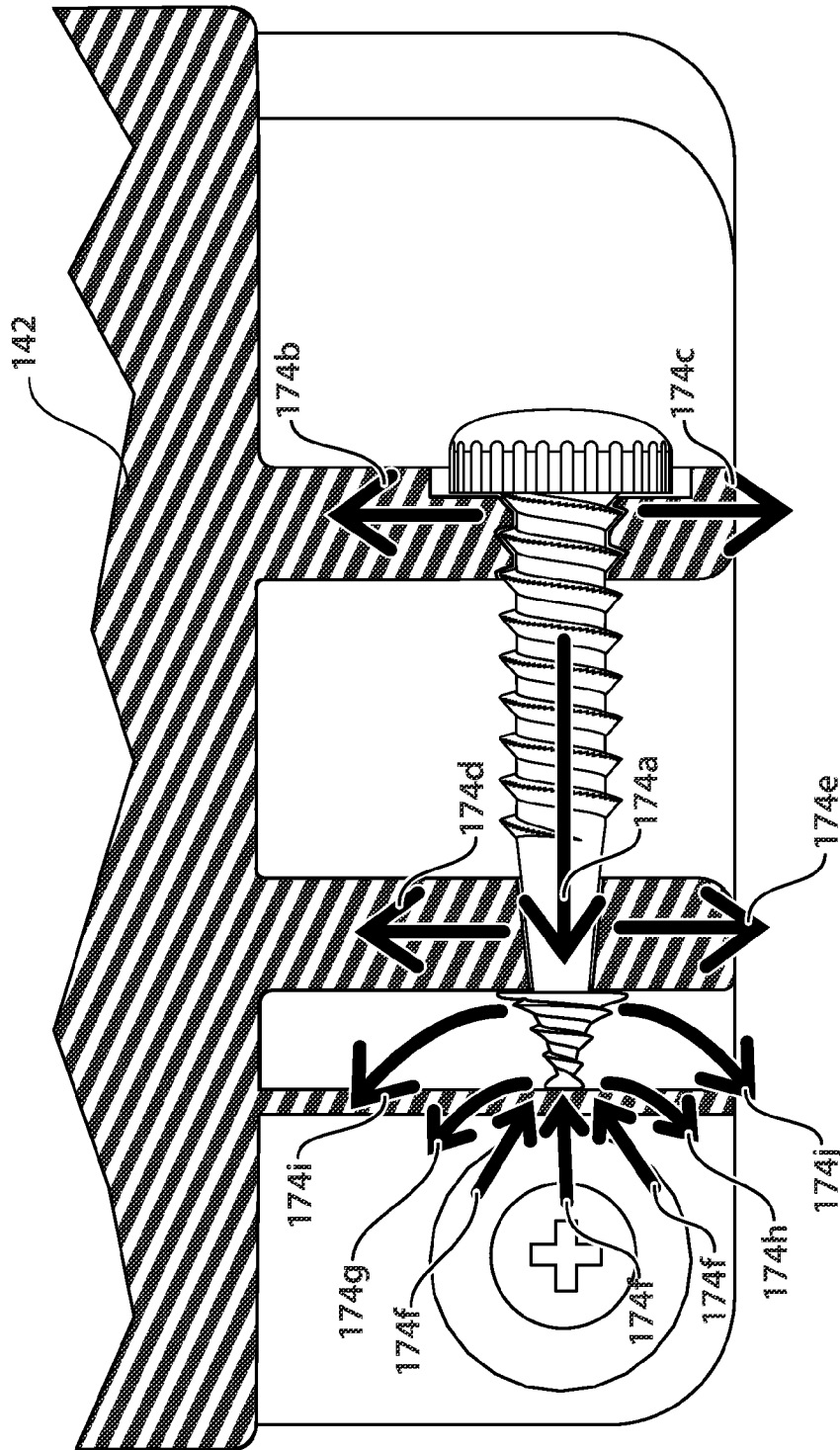
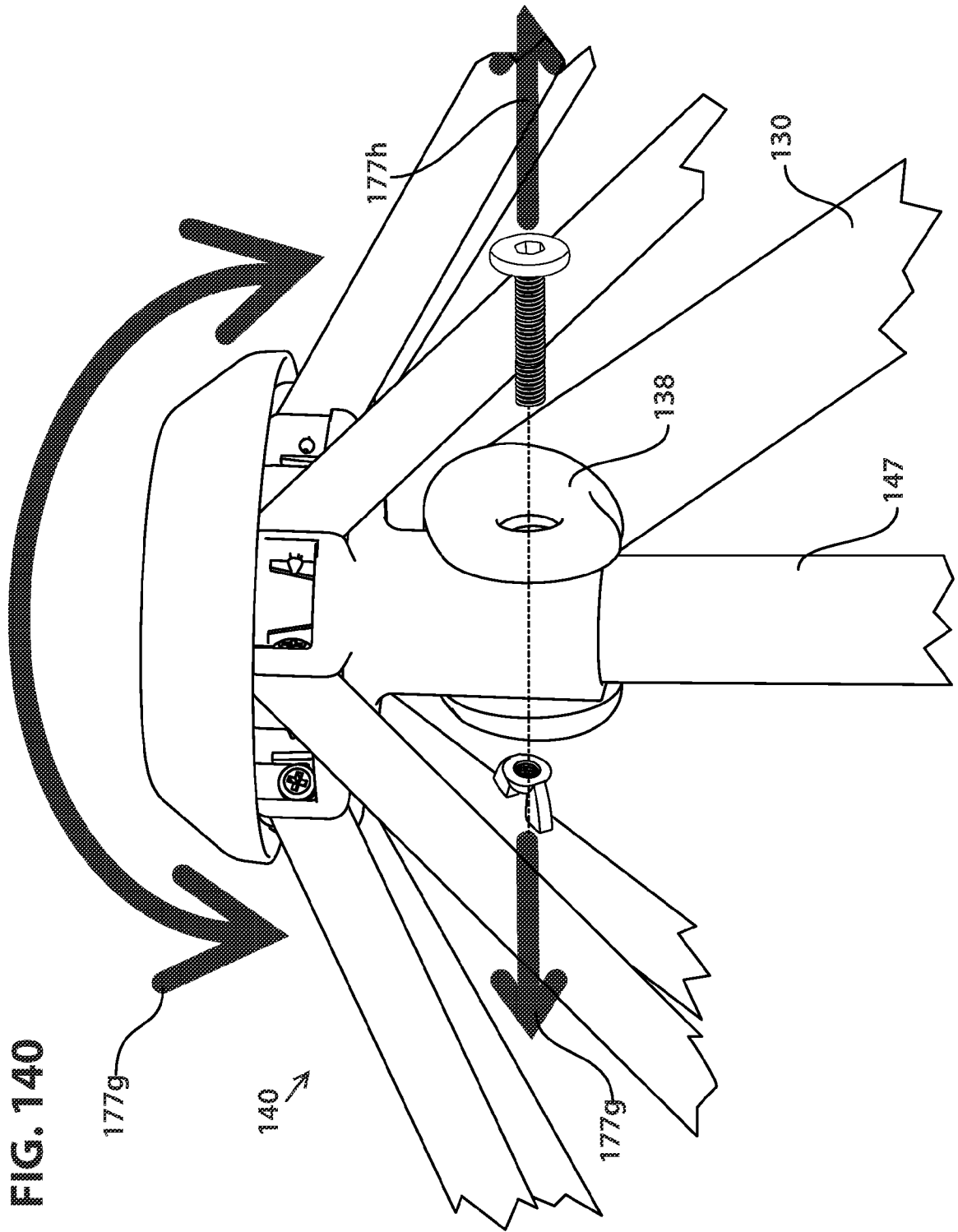
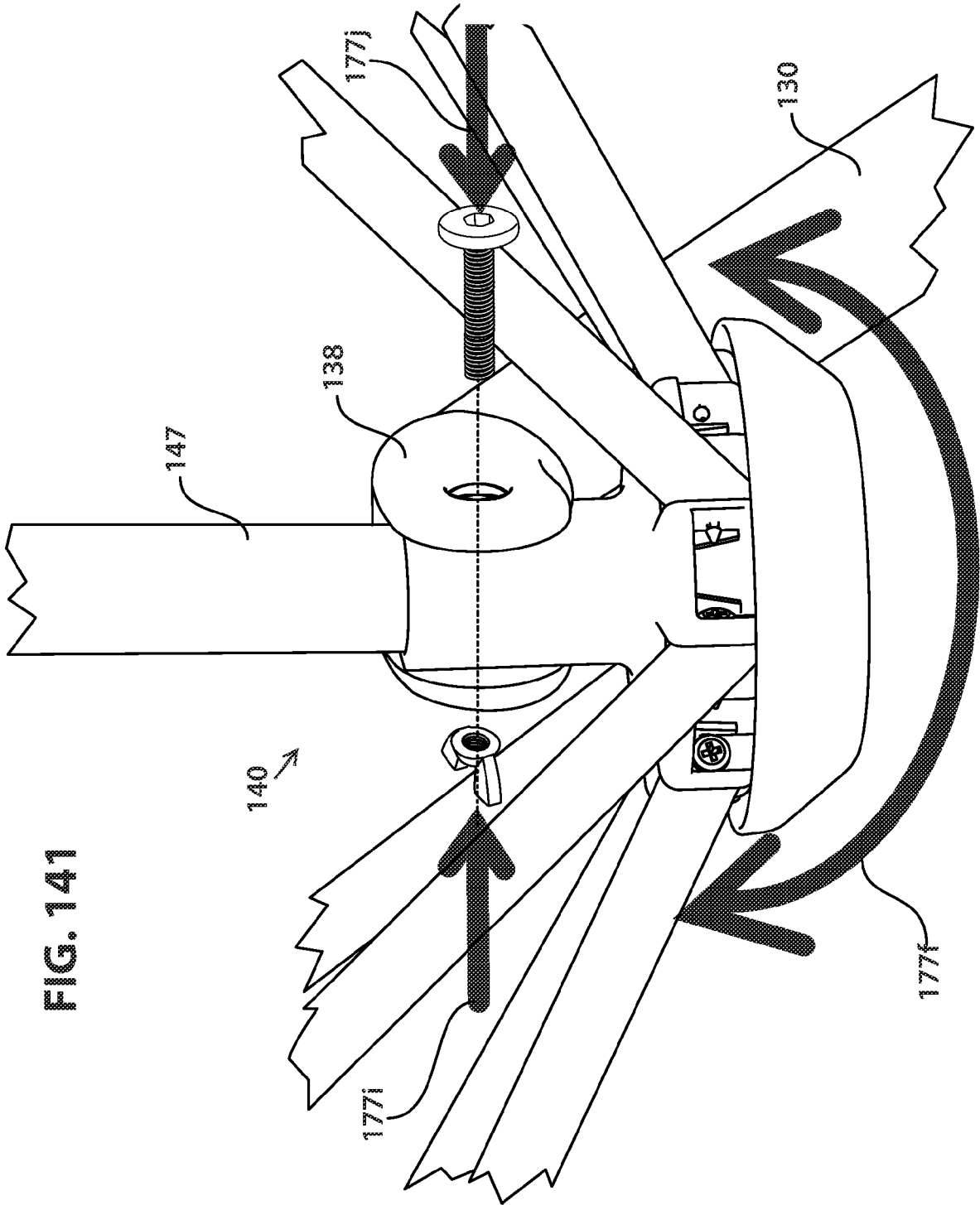


FIG. 139







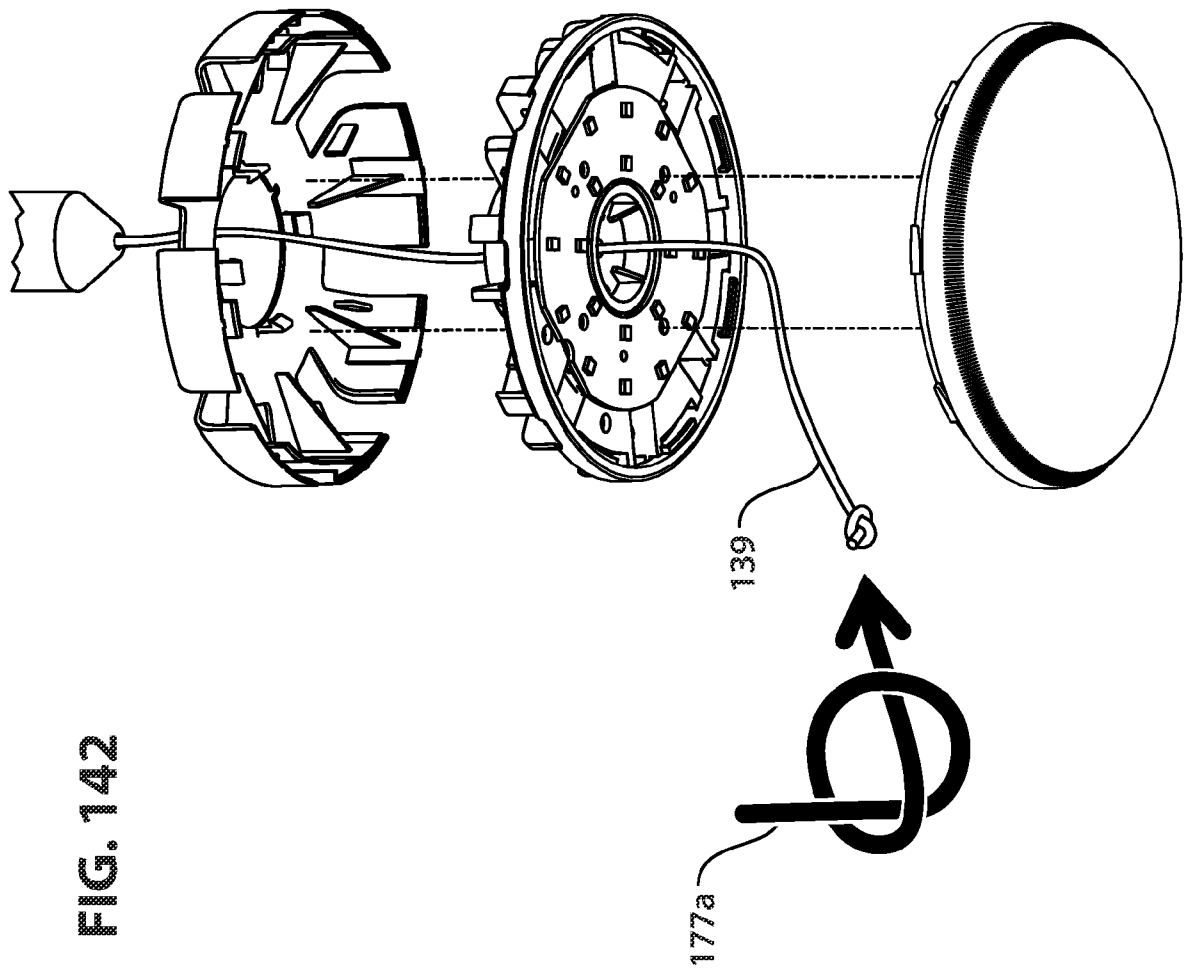


FIG. 142

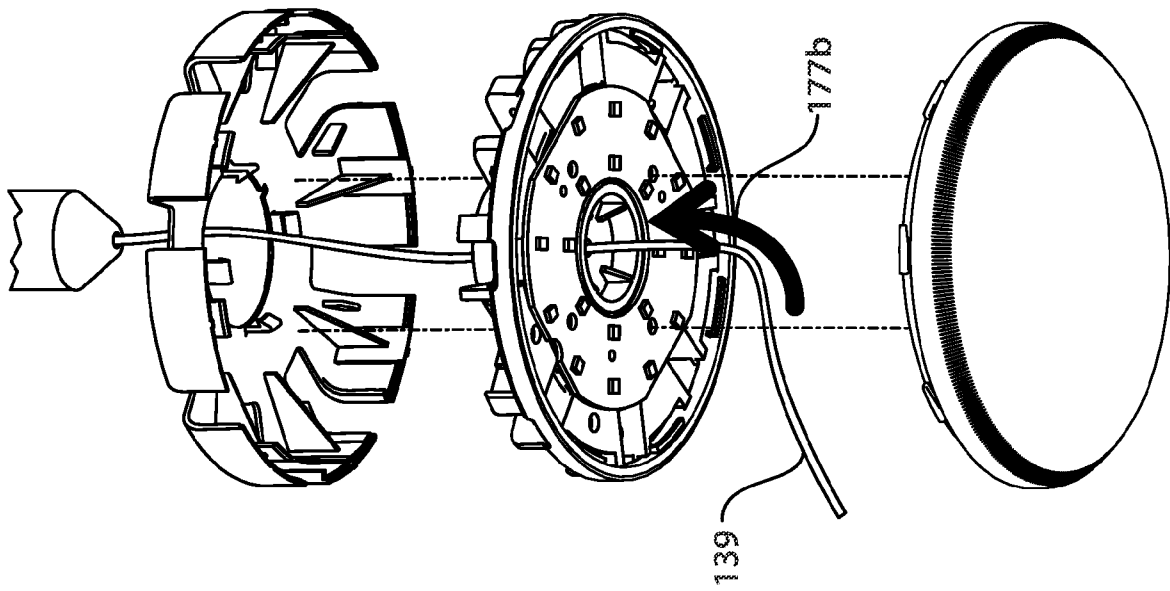
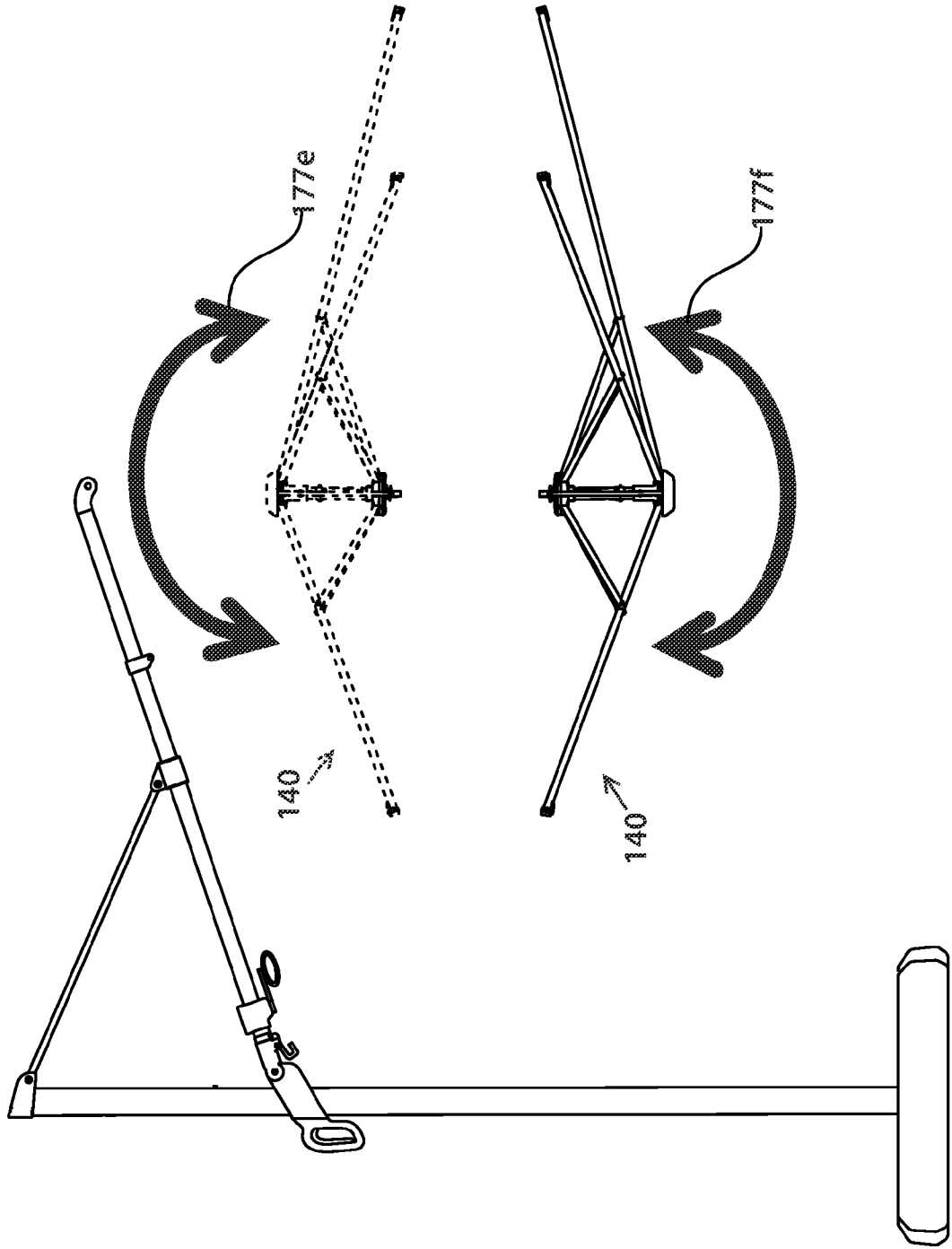


FIG. 143

FIG. 144



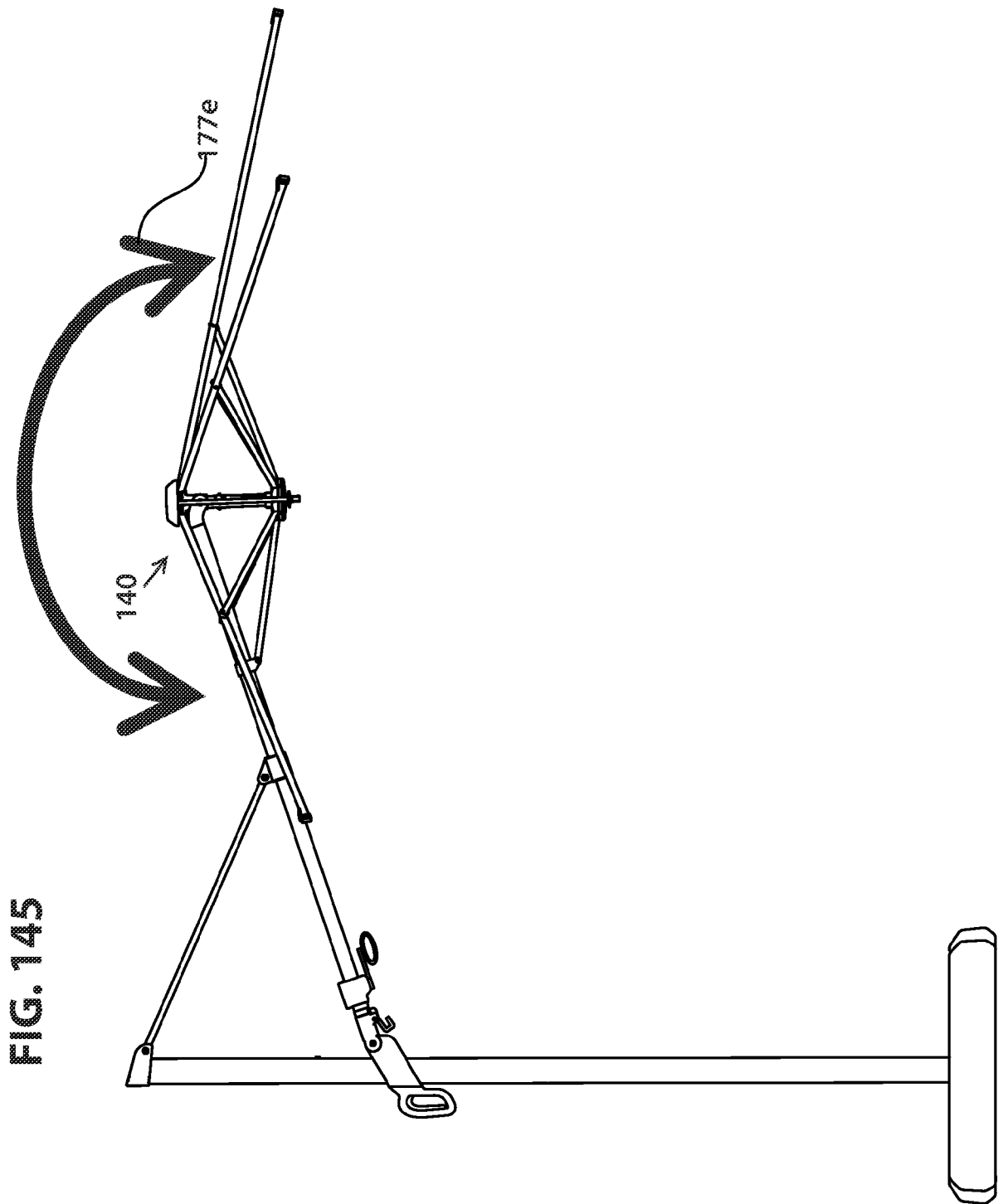
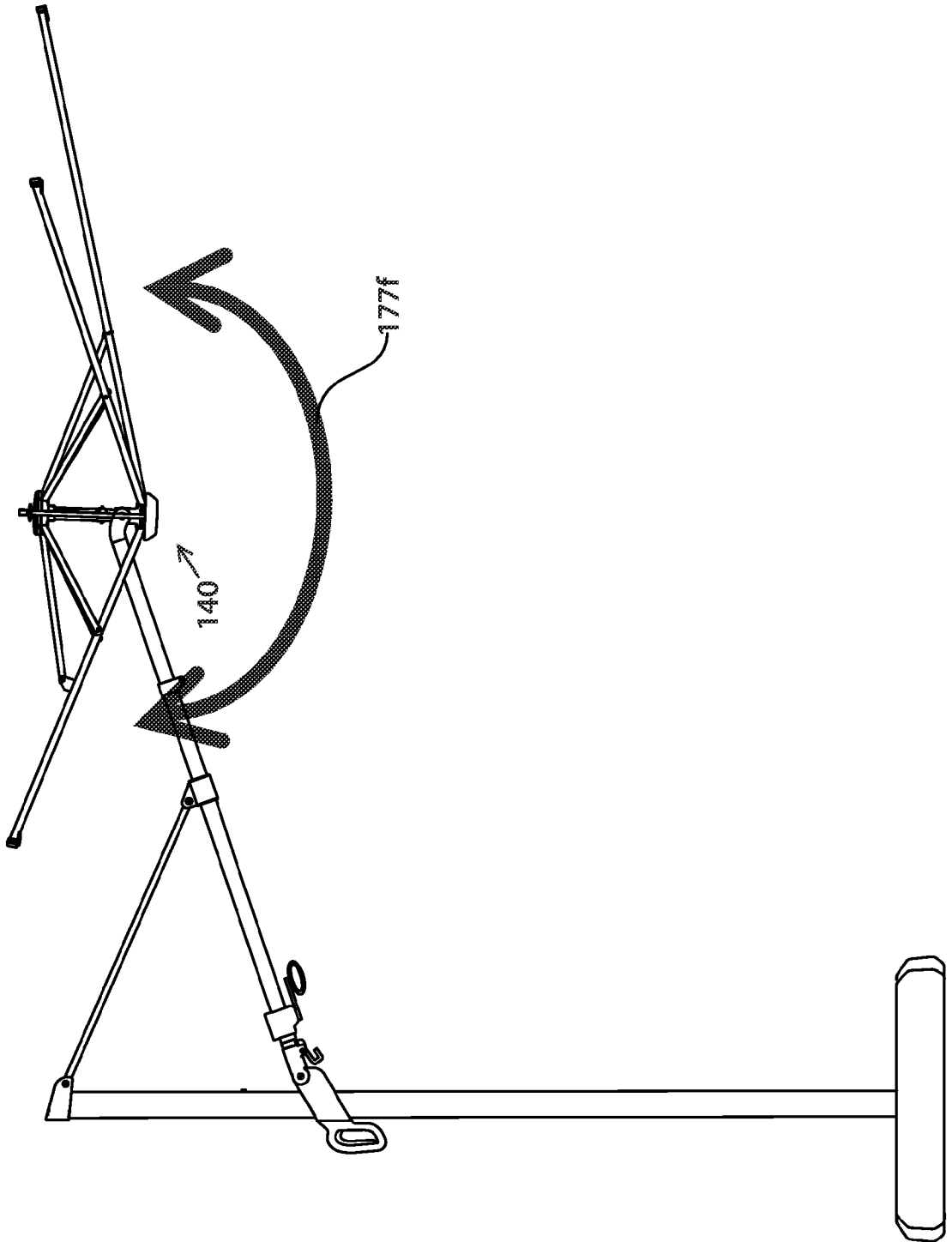


FIG. 146



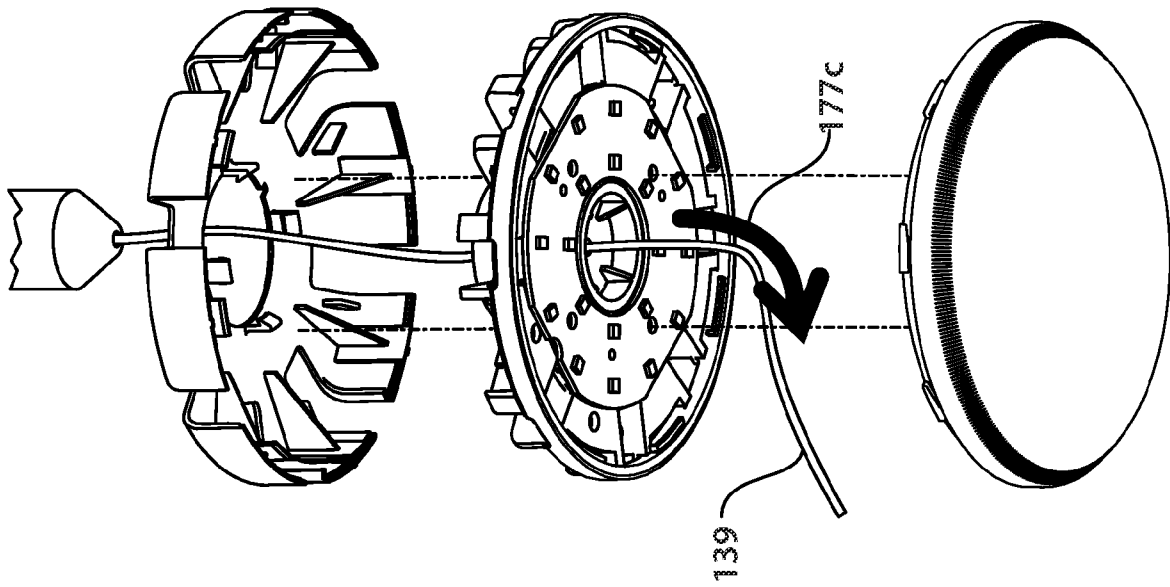


FIG. 147

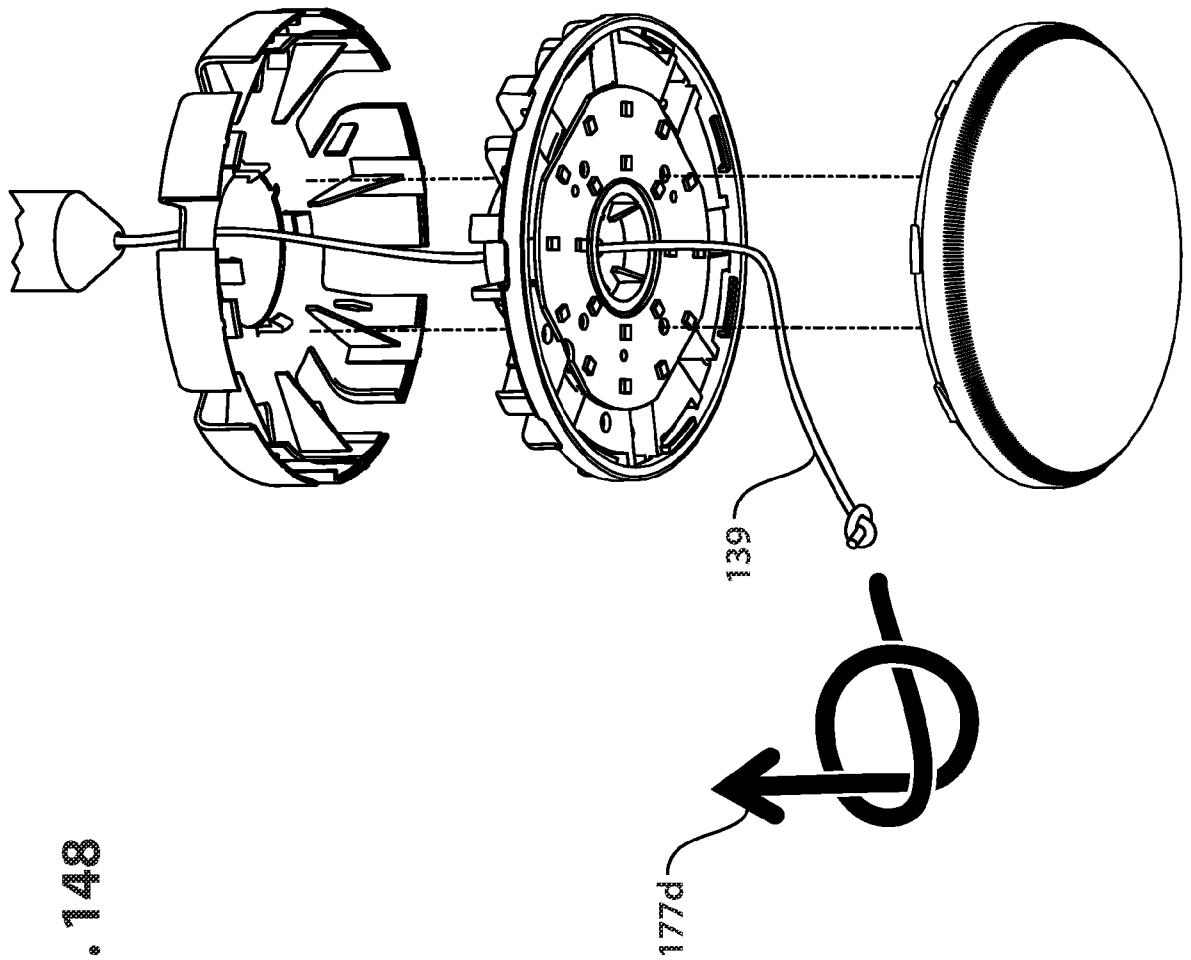


FIG. 148

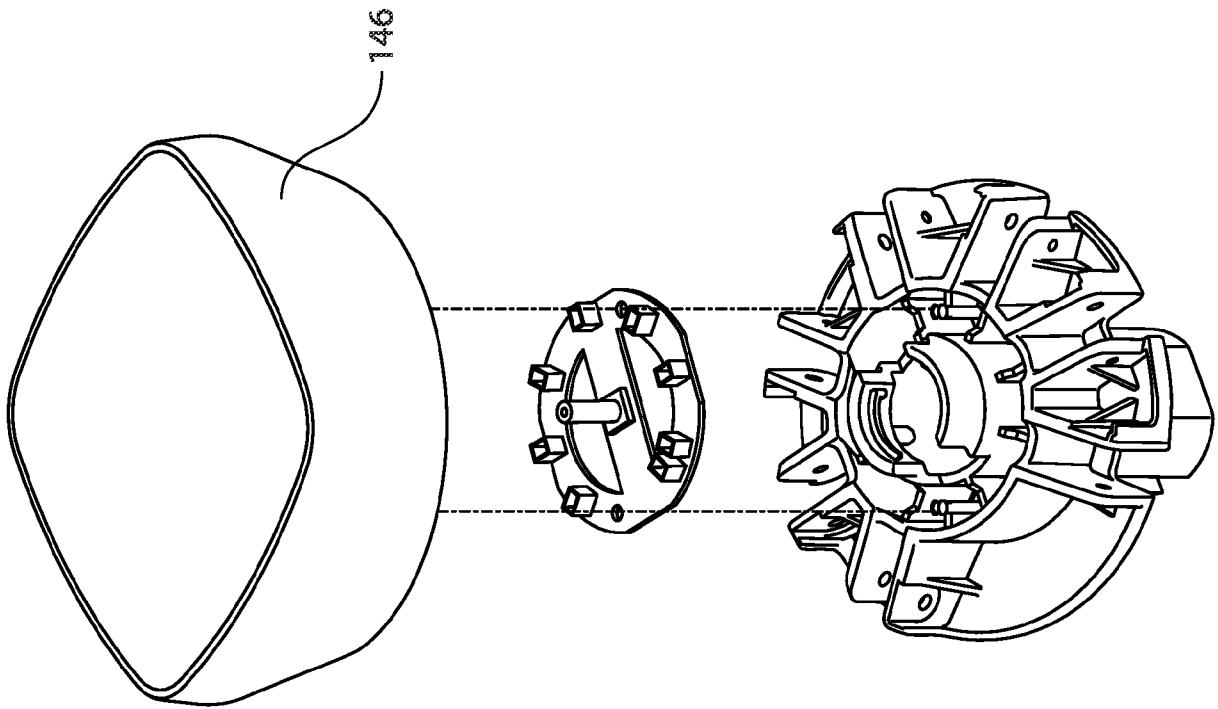
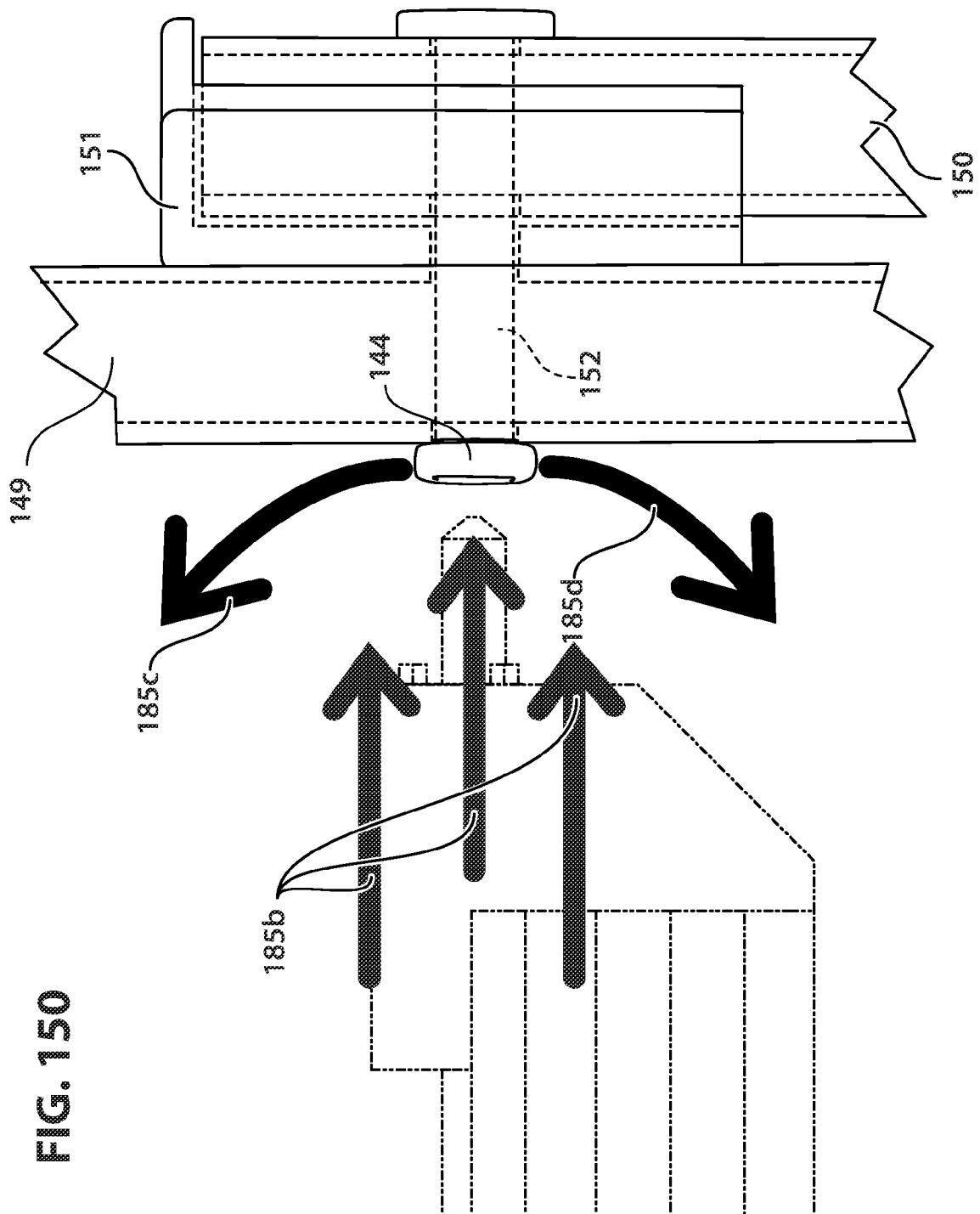


FIG. 149



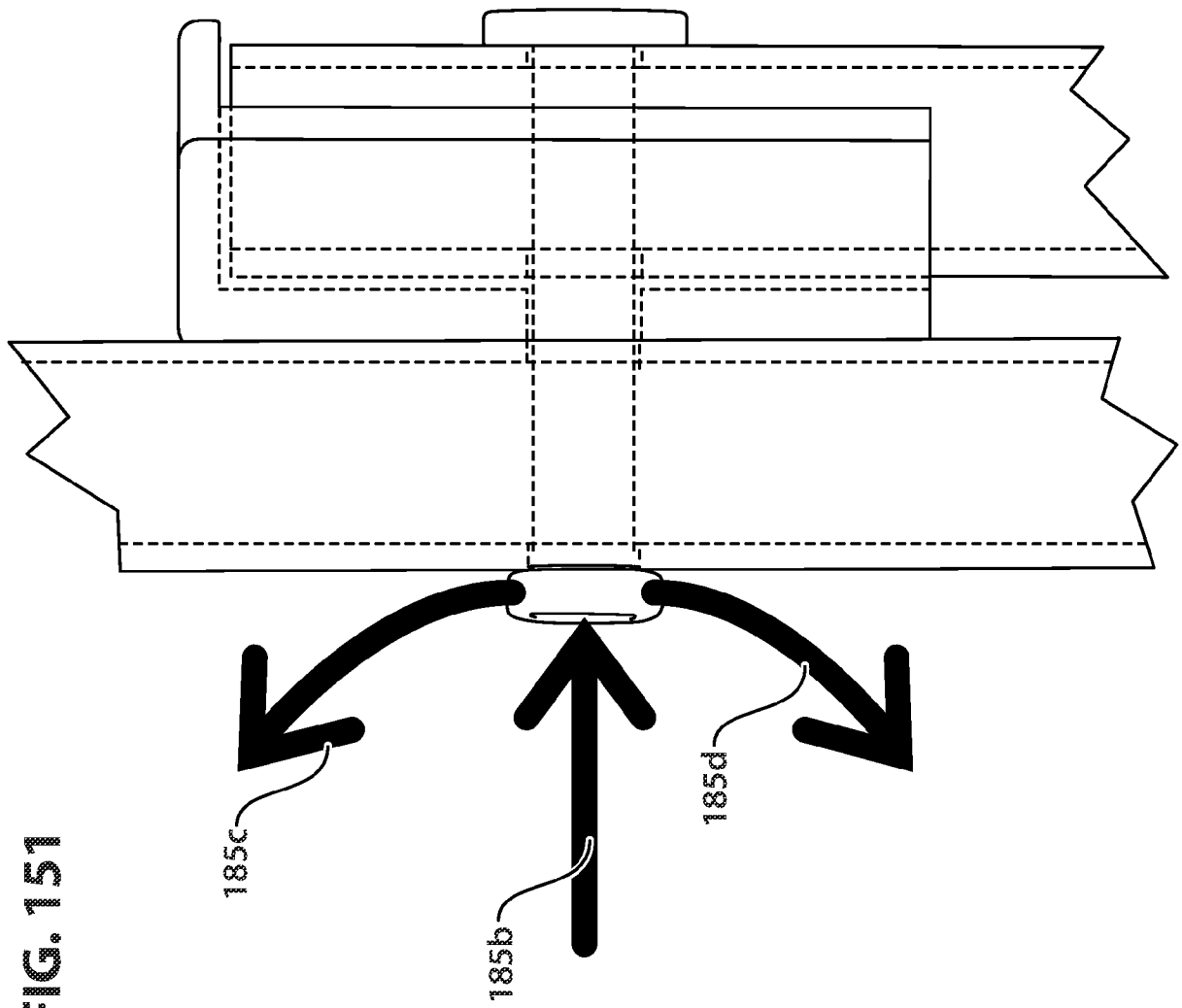


FIG. 152

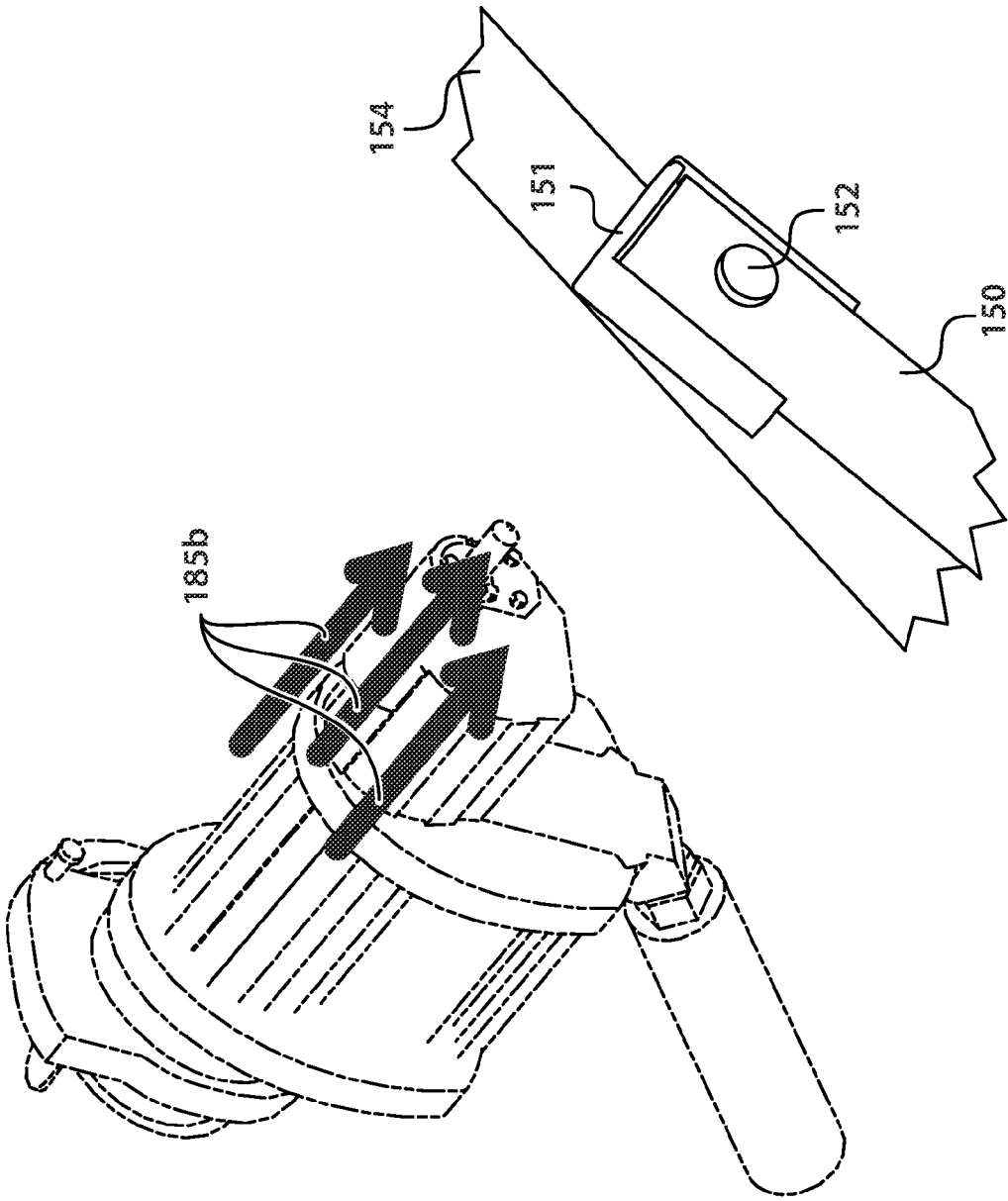


FIG. 153

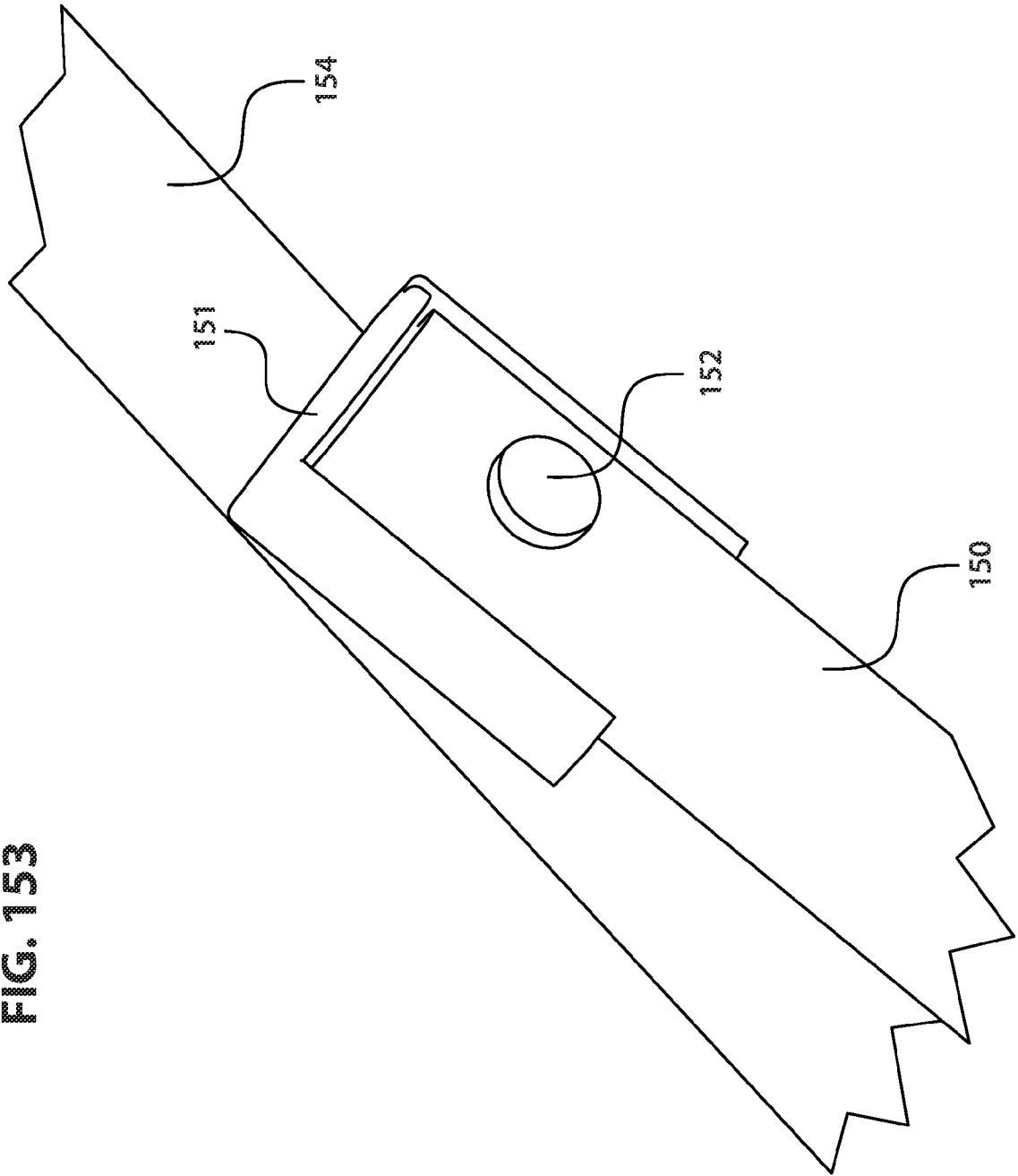


FIG. 154

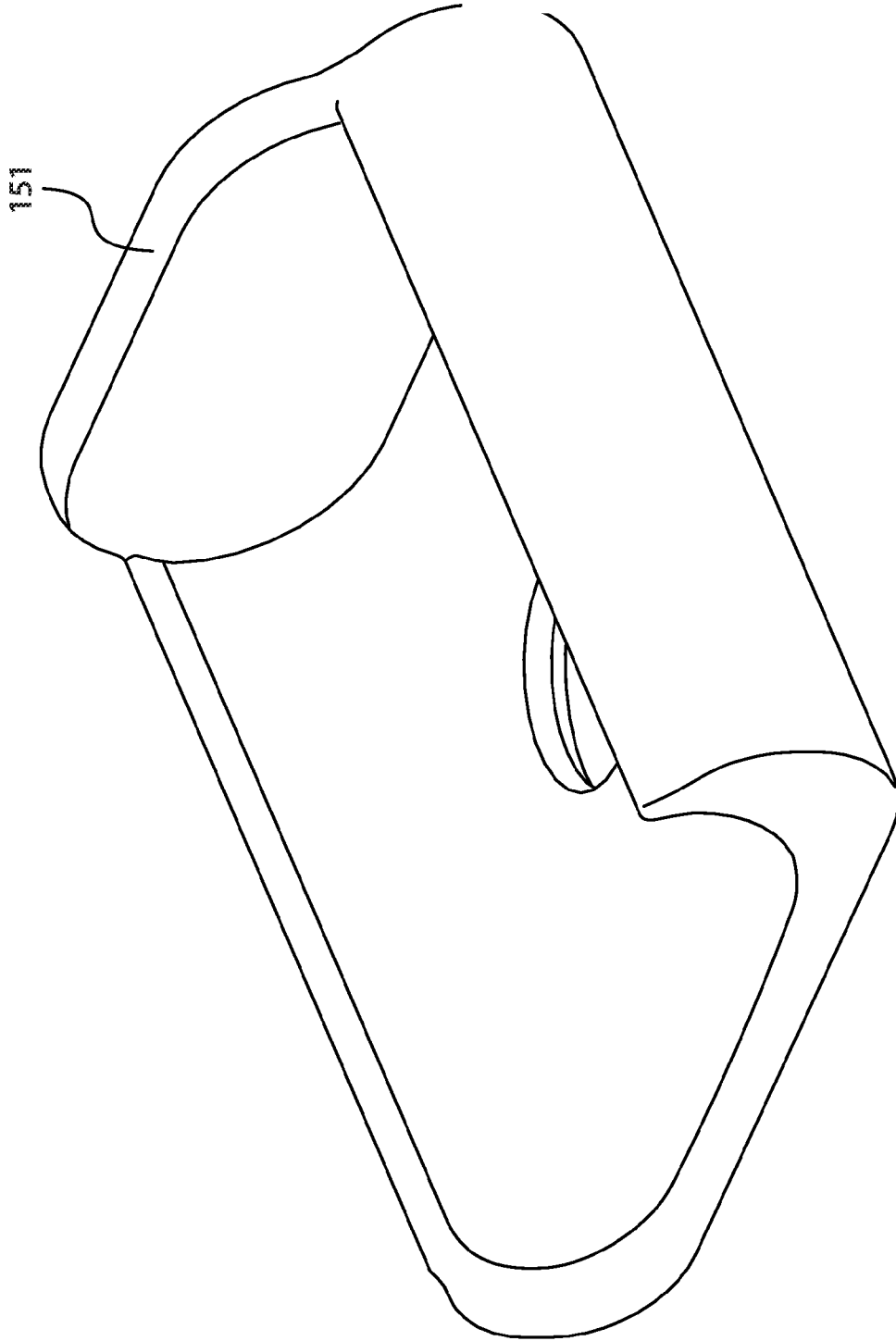
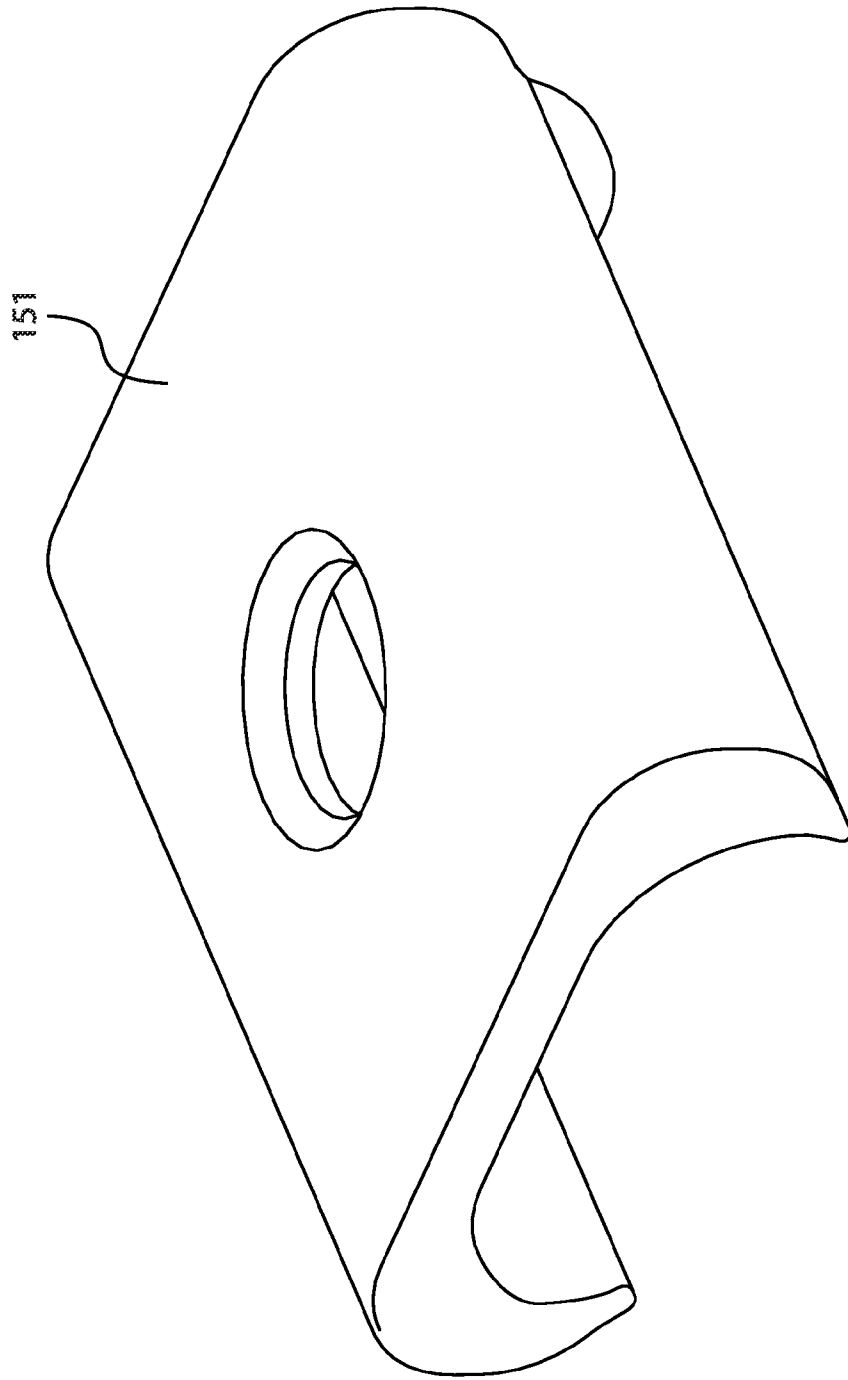


FIG. 155



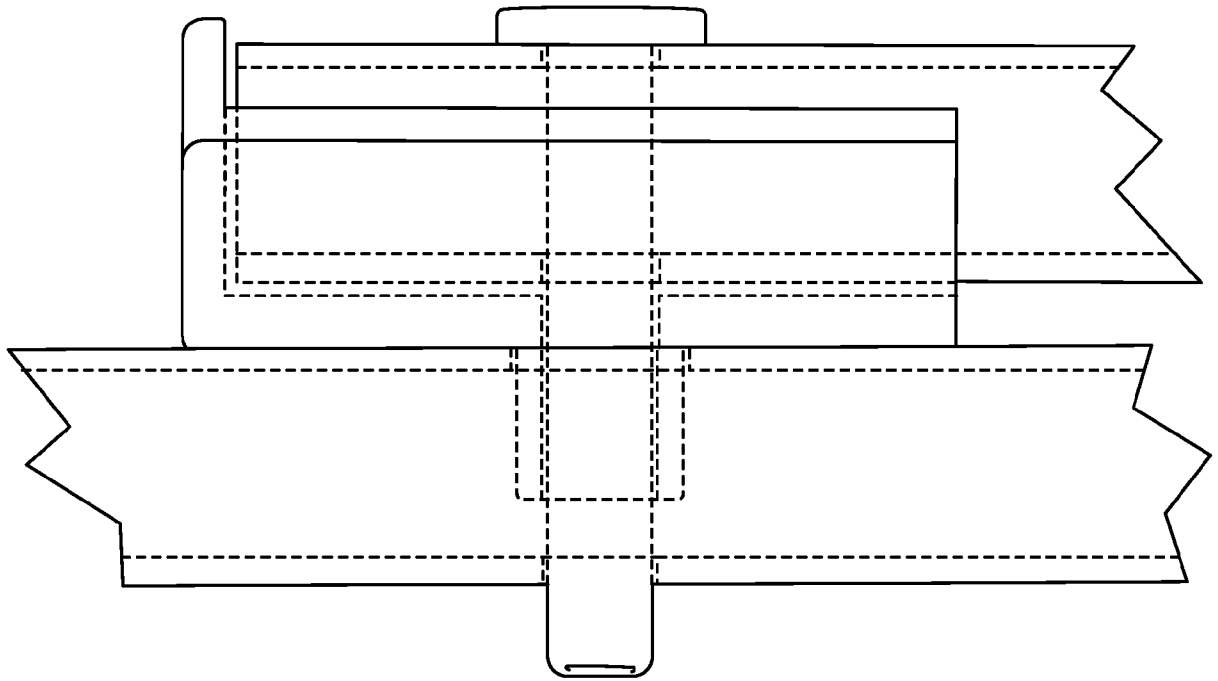


FIG. 156

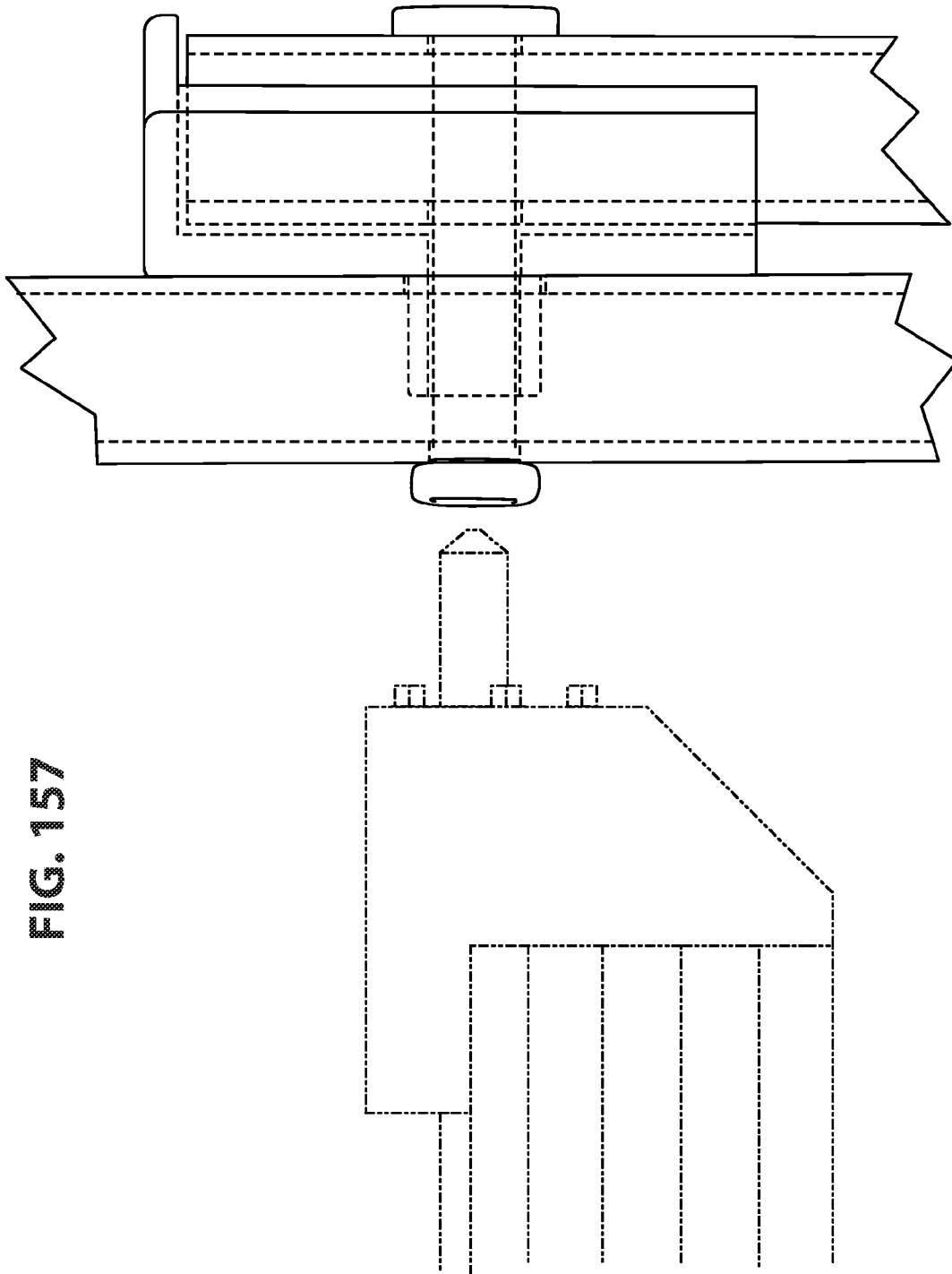
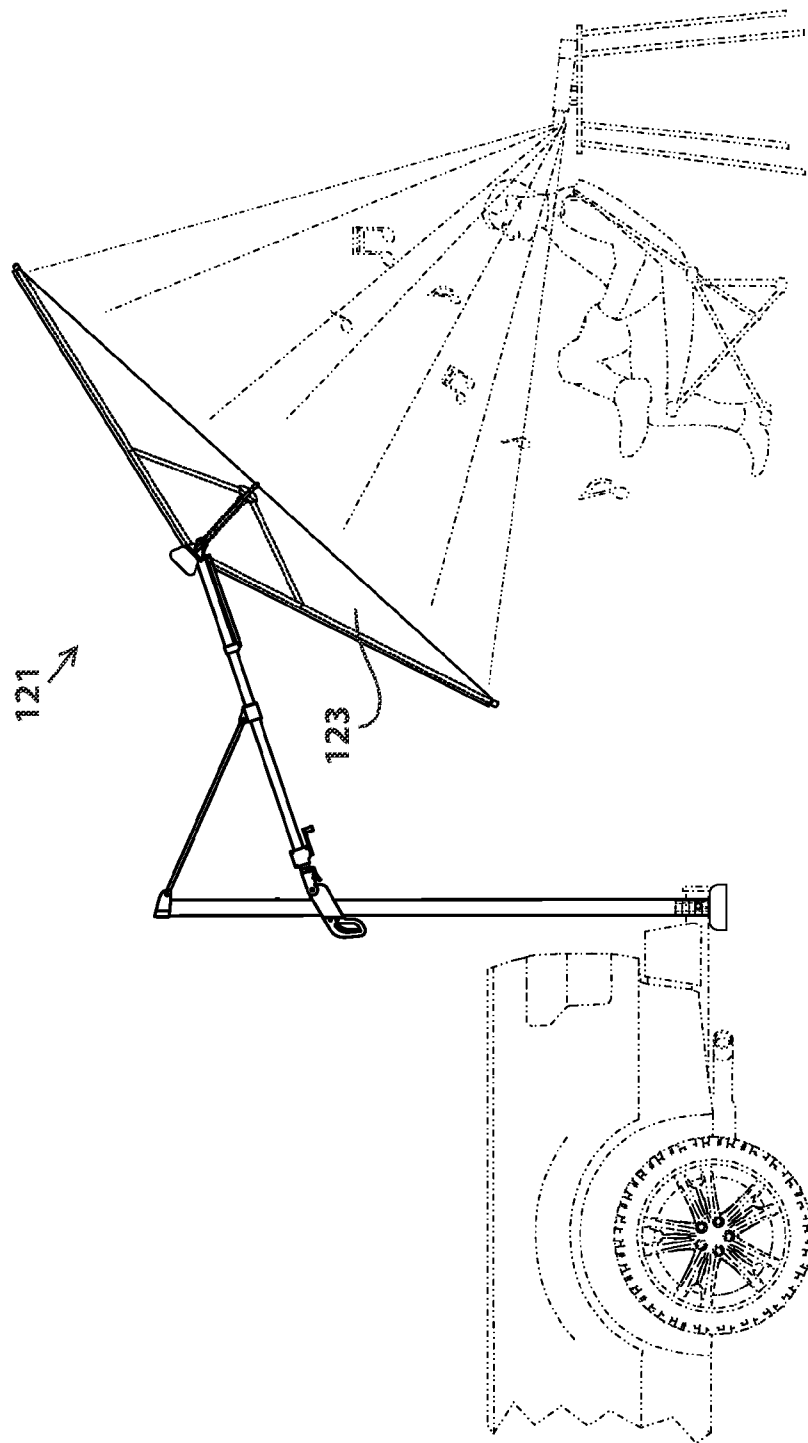


FIG. 157

FIG. 158



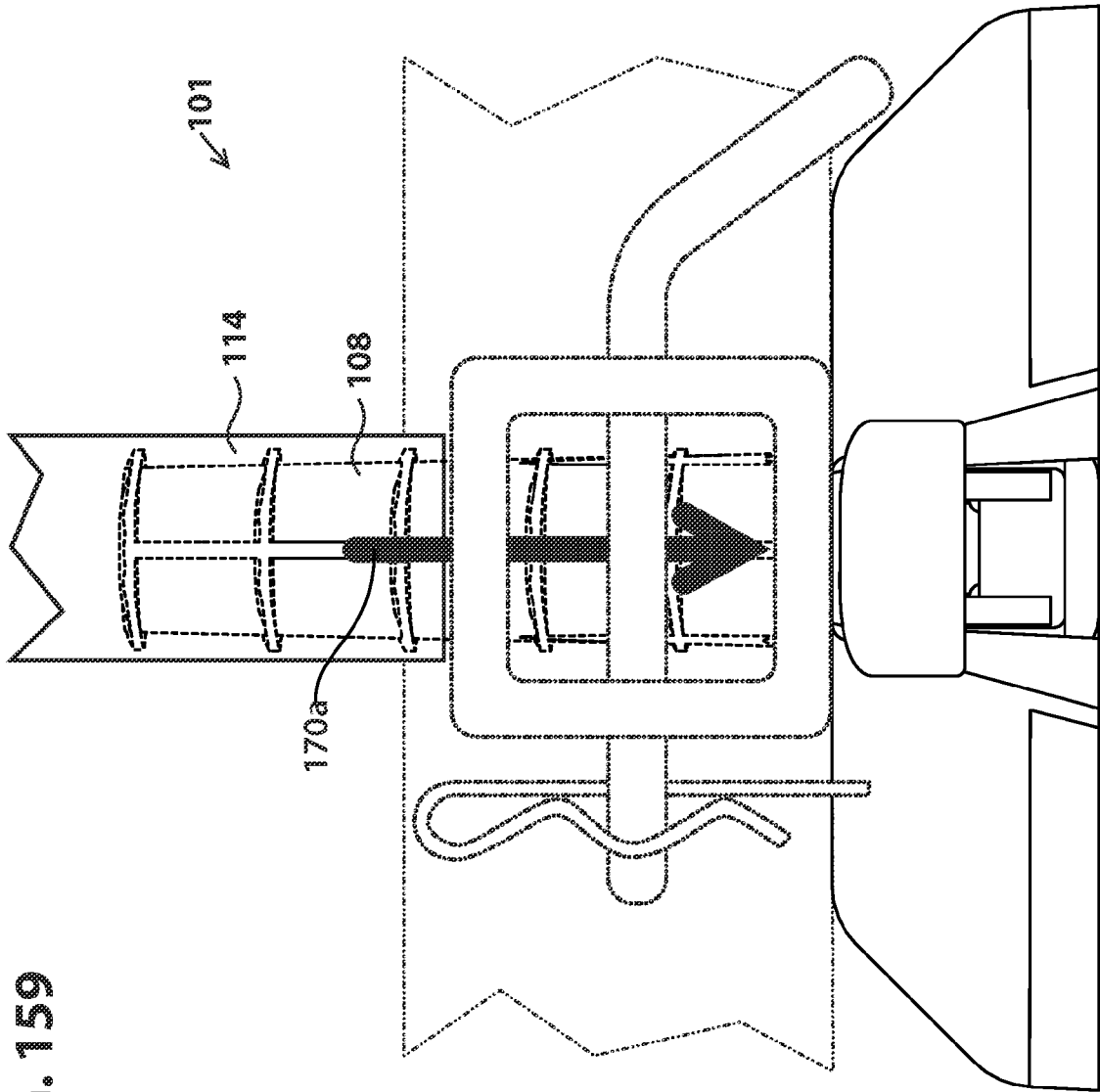


FIG. 159

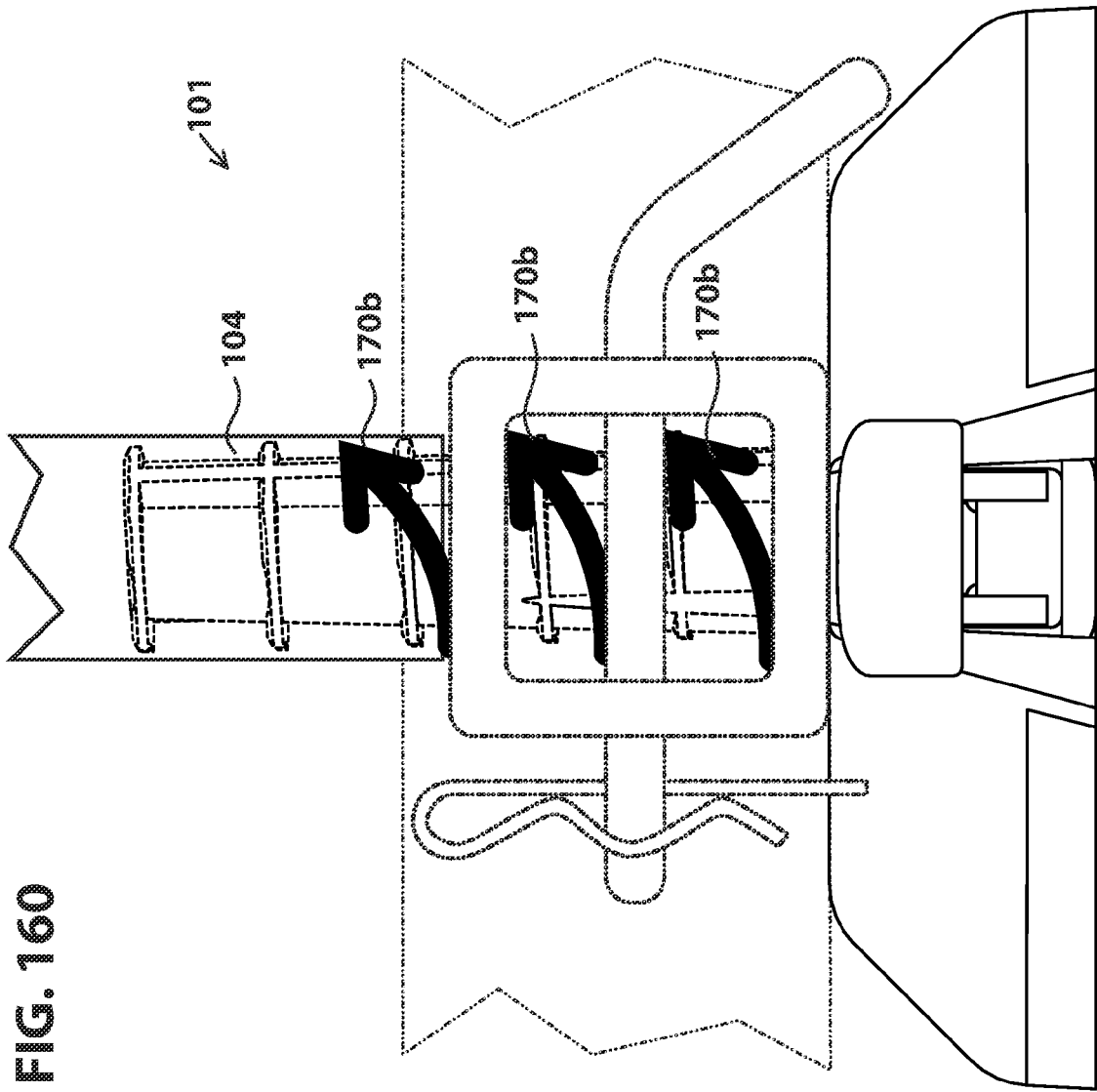


FIG. 160

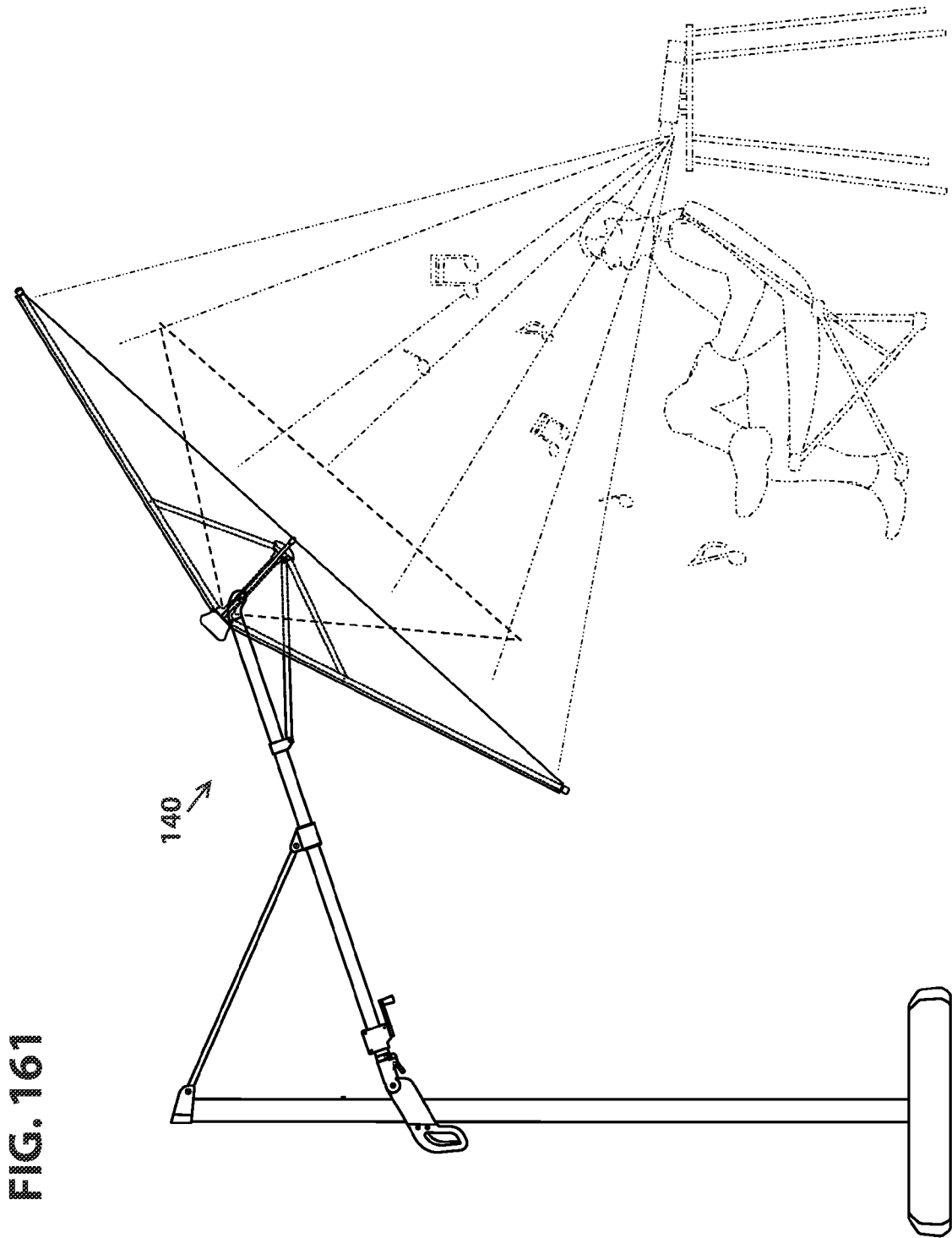


FIG. 162

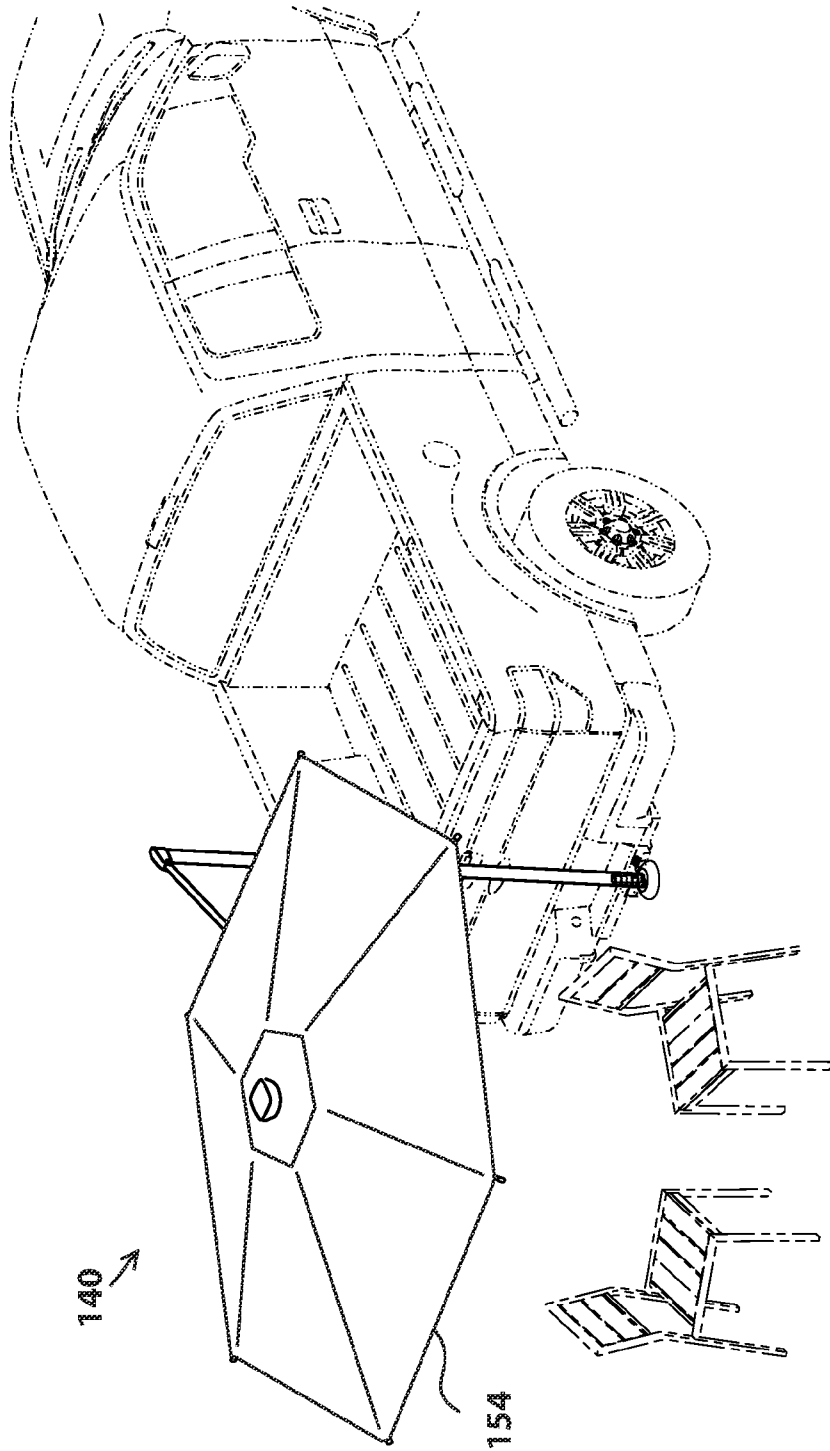
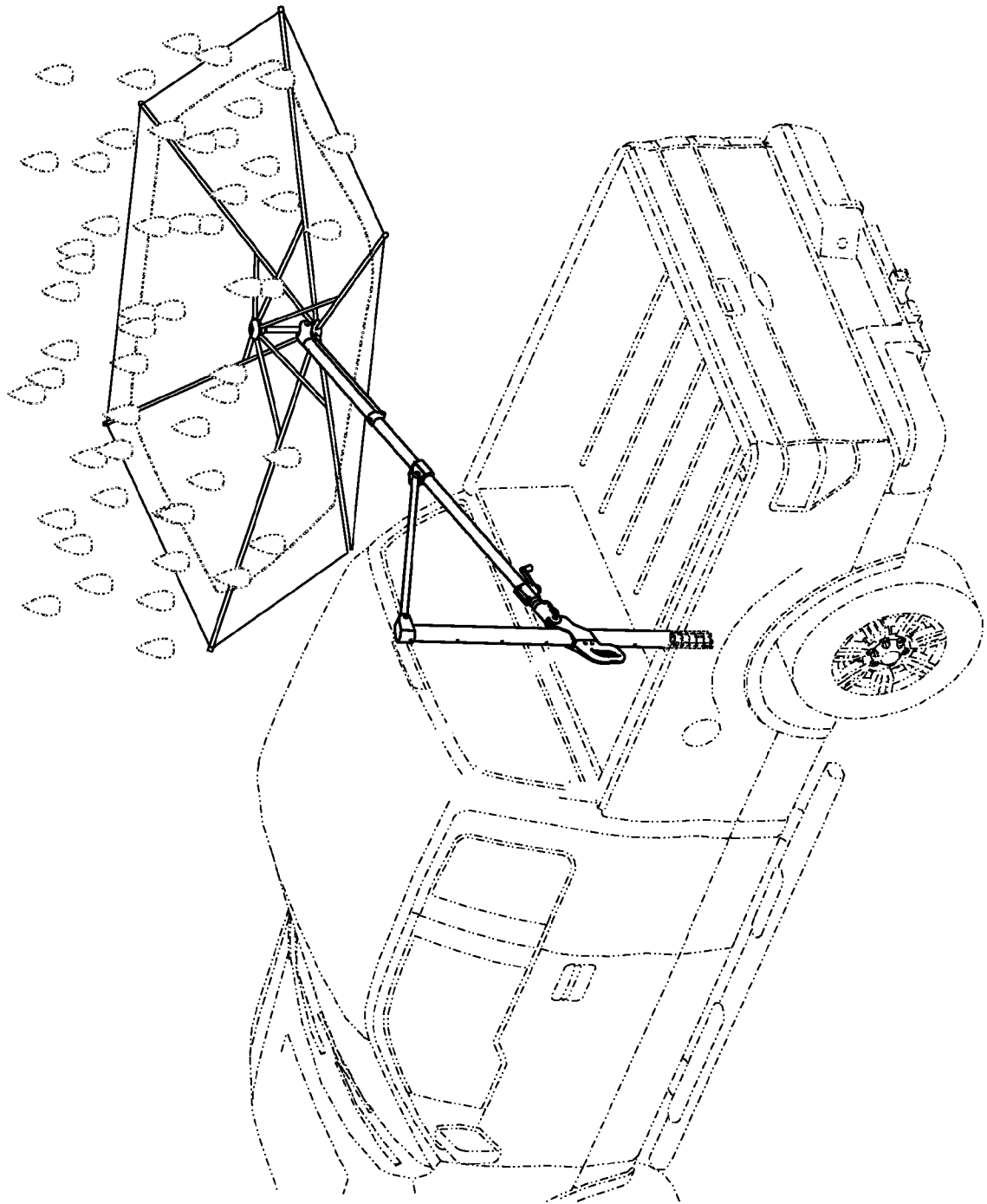
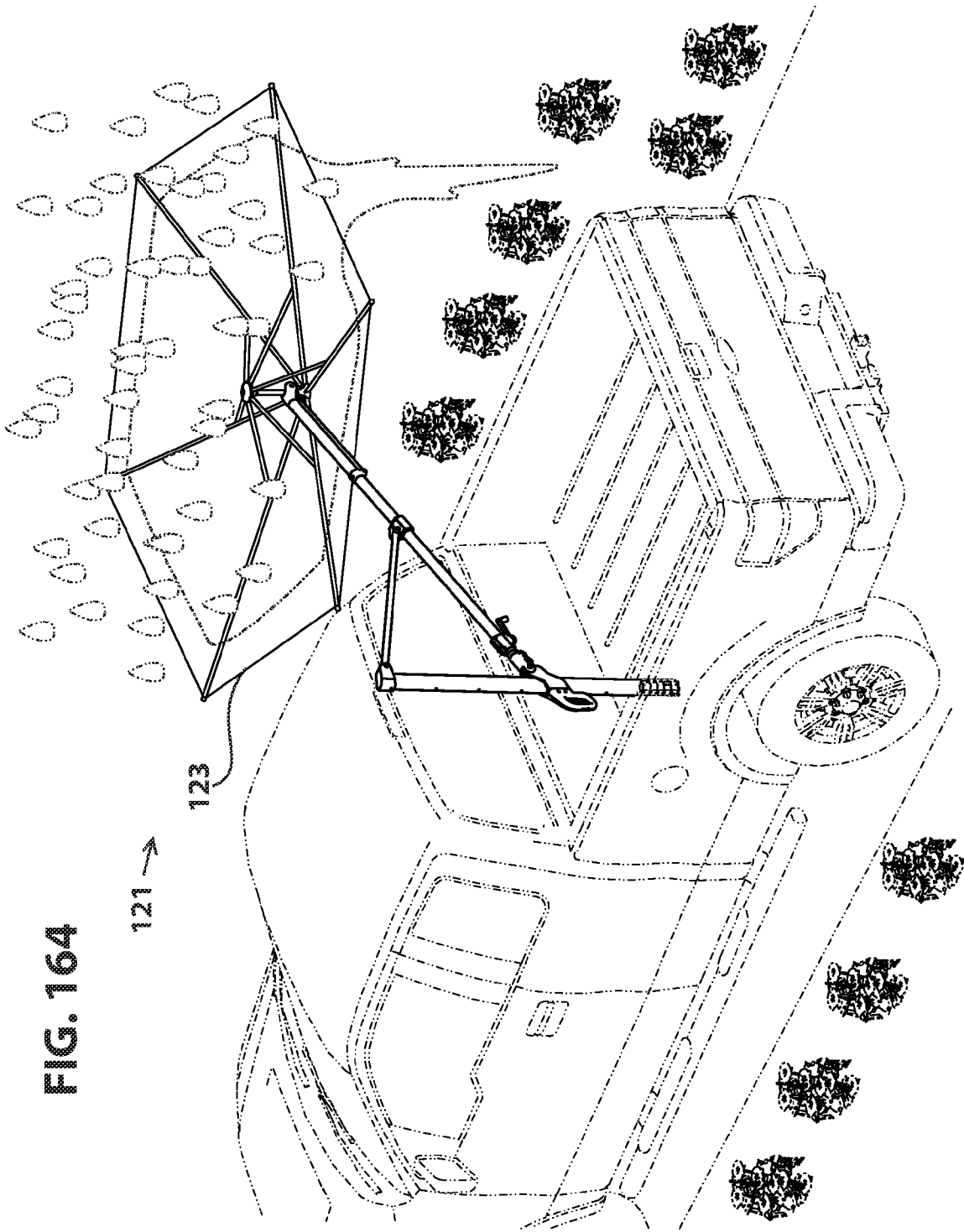
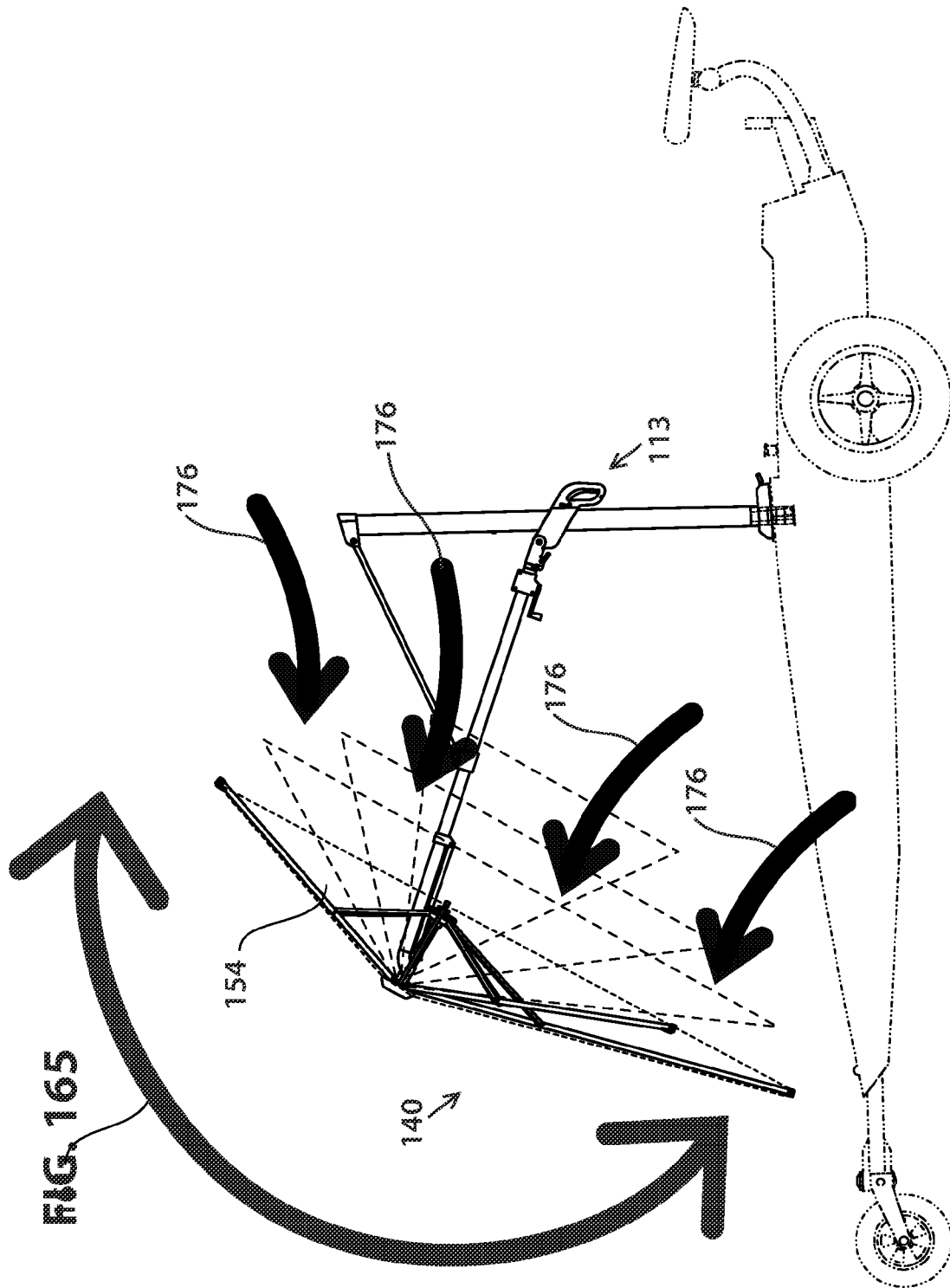
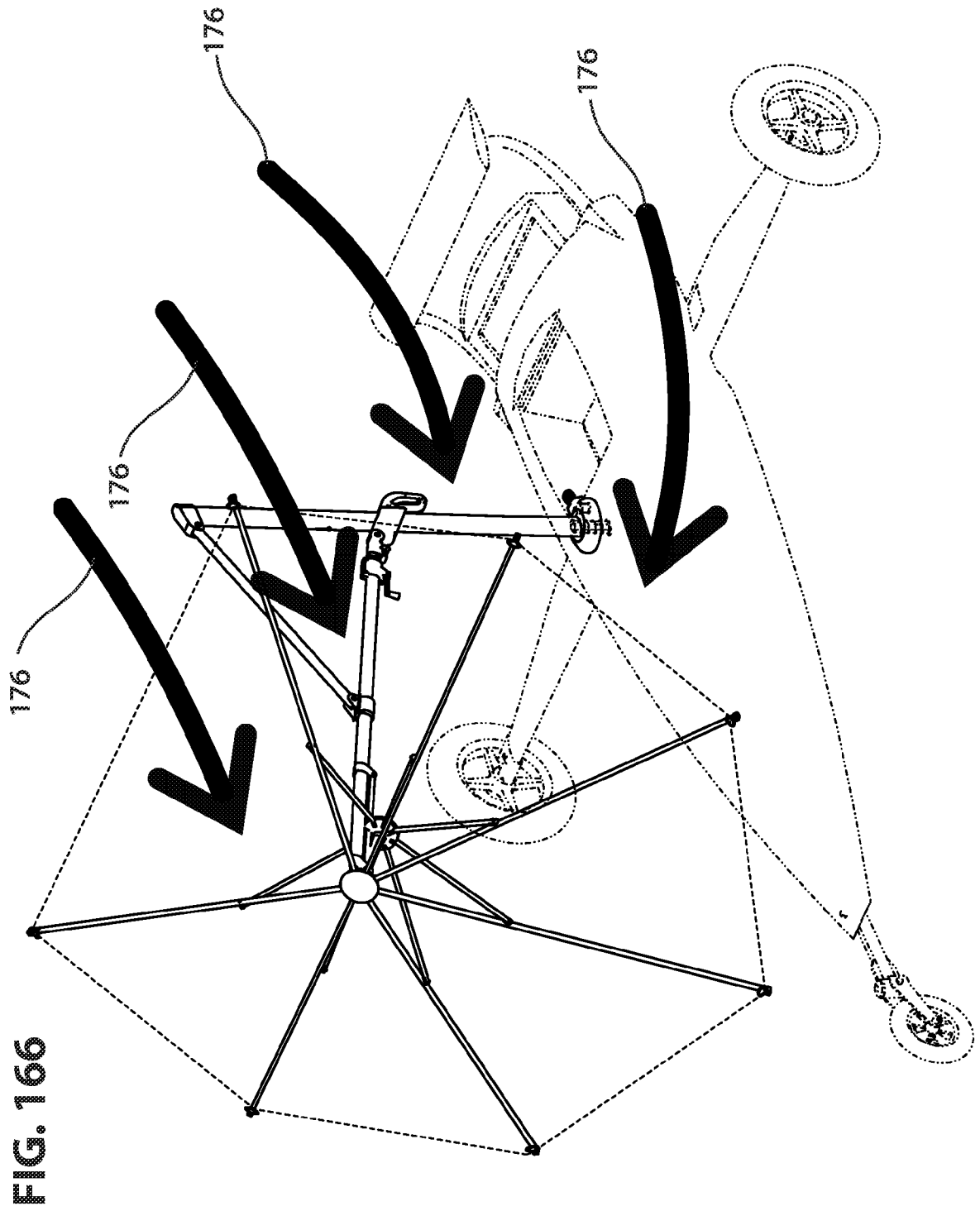


FIG. 163









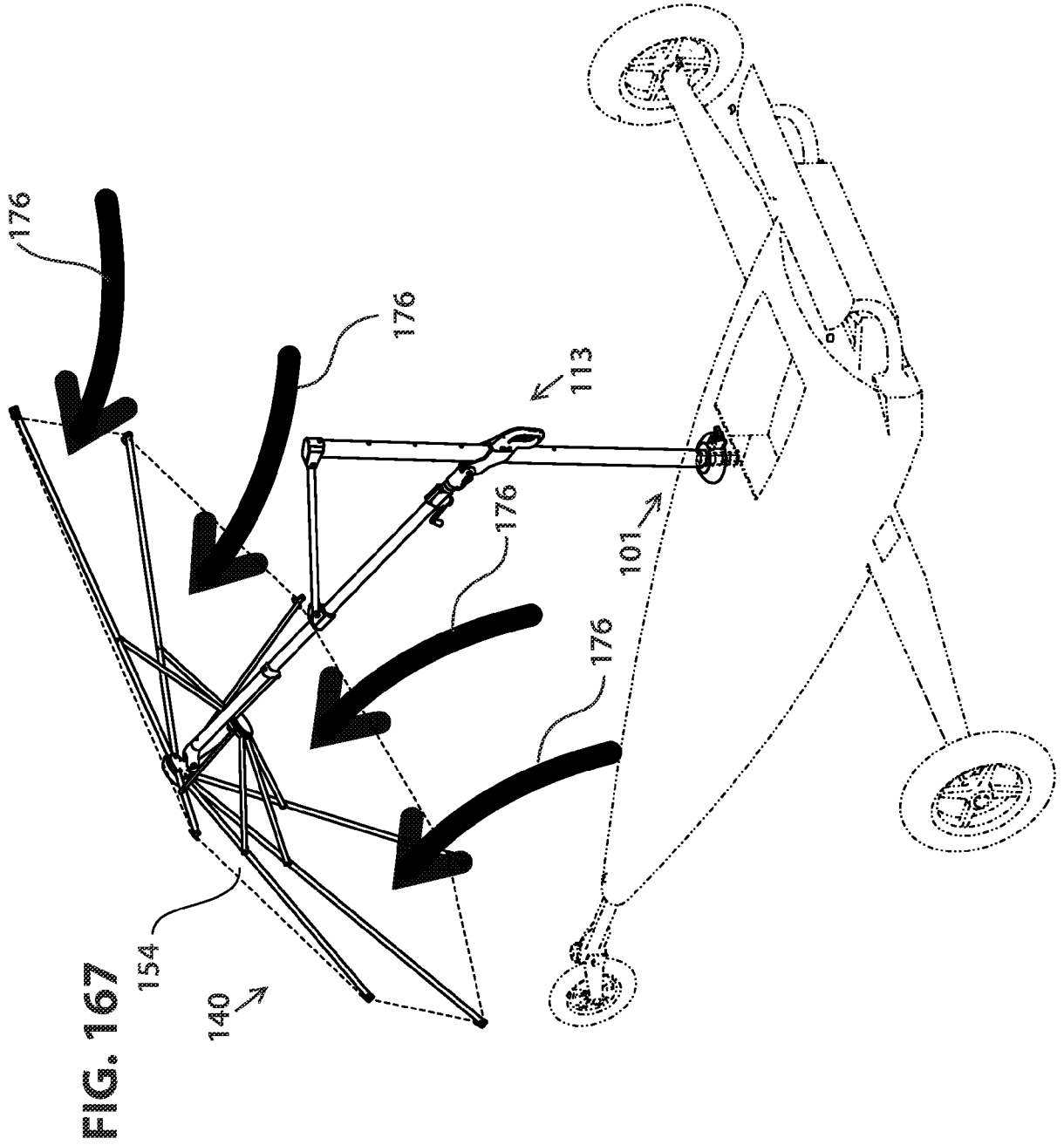
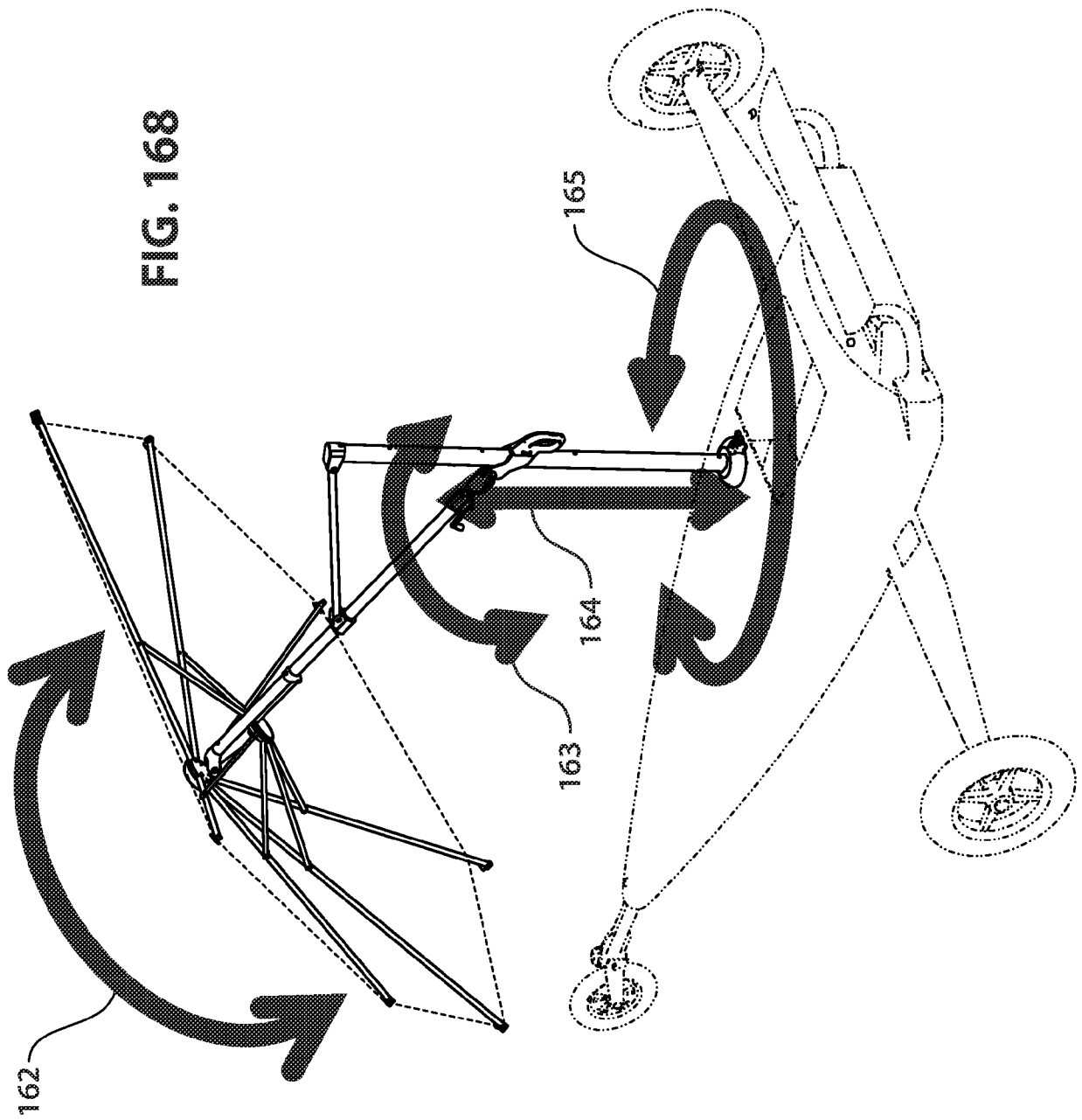


FIG. 168



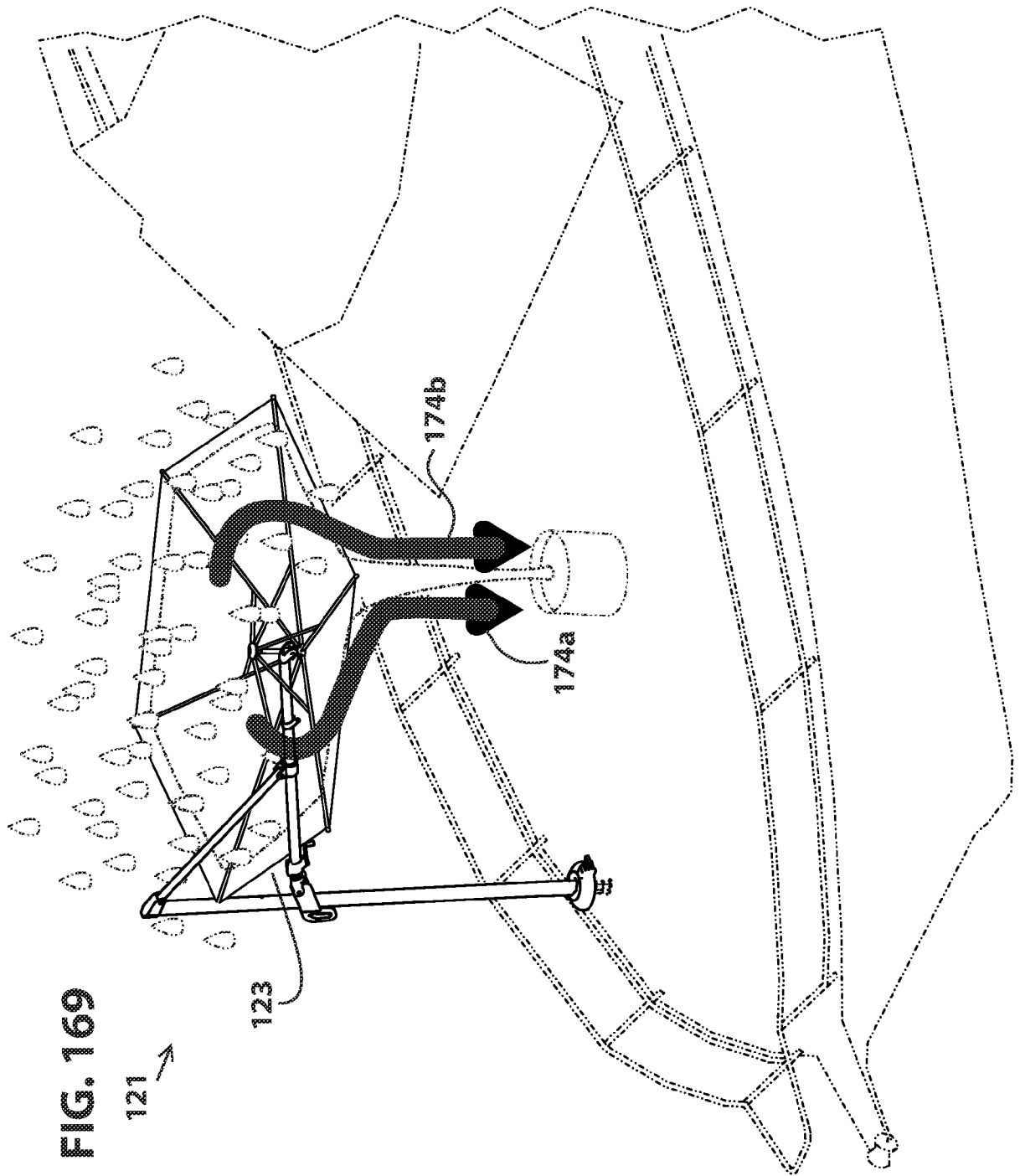


FIG. 169

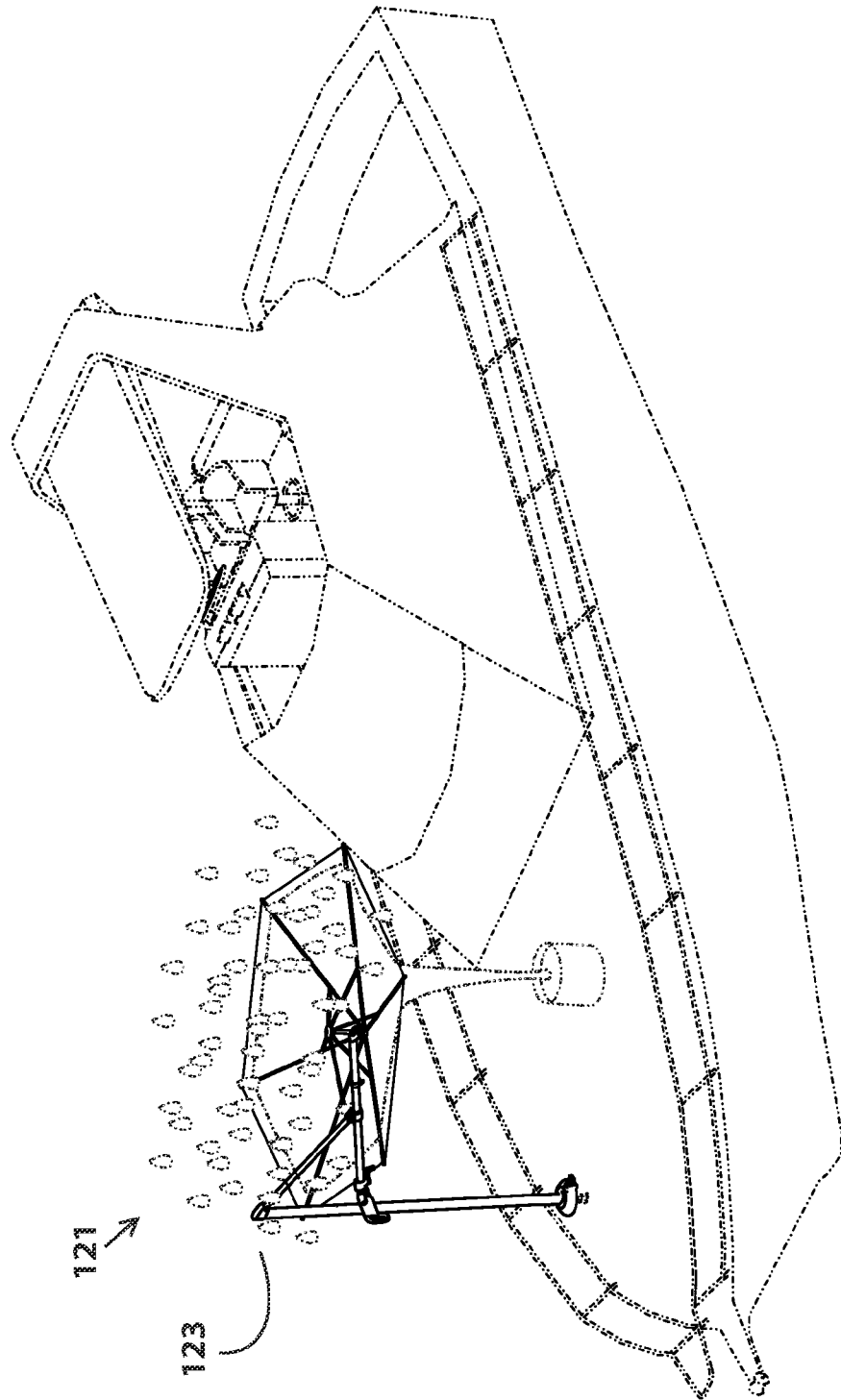
121 →

123

174b

174a

FIG. 170



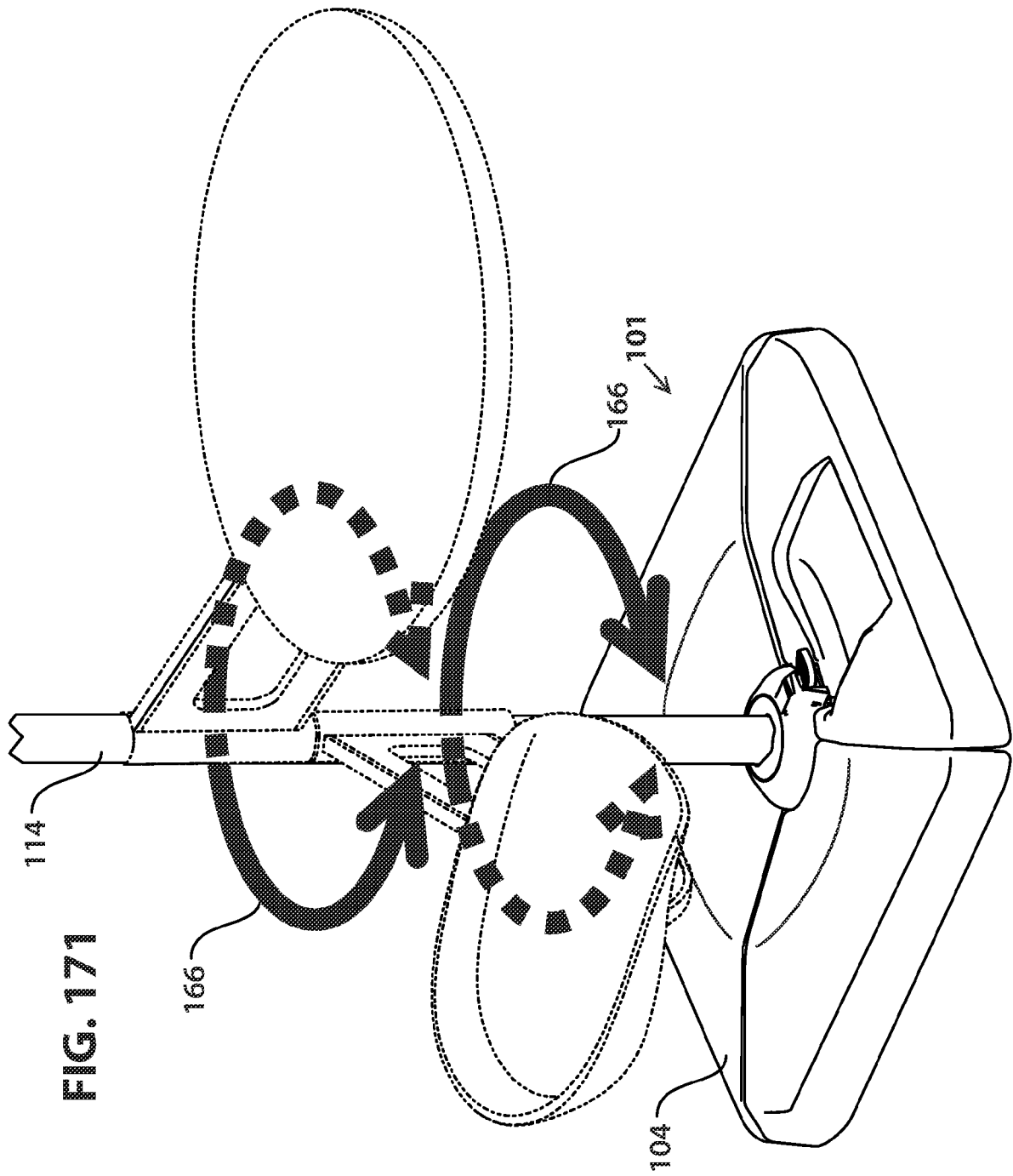


FIG. 171

FIG. 172

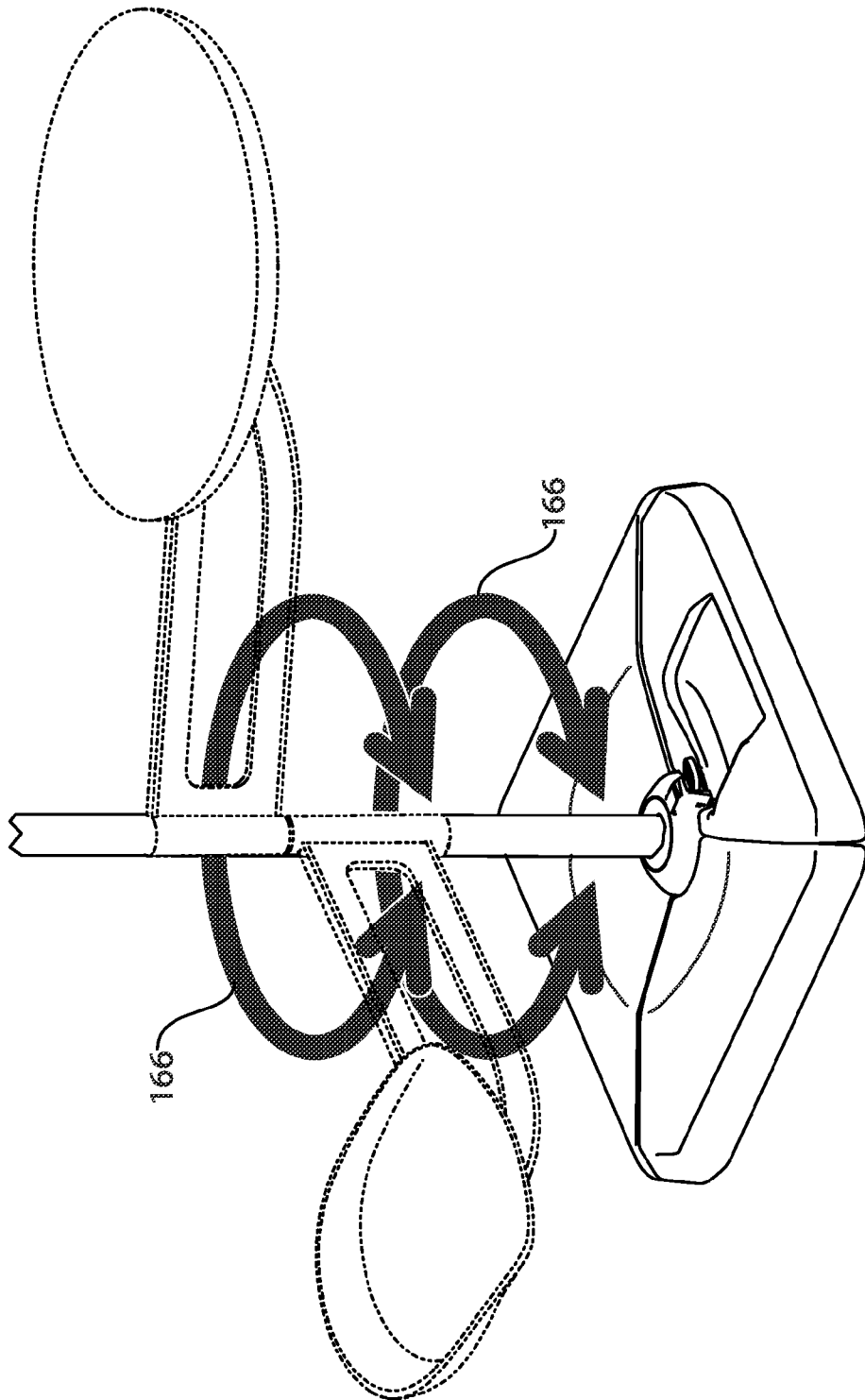
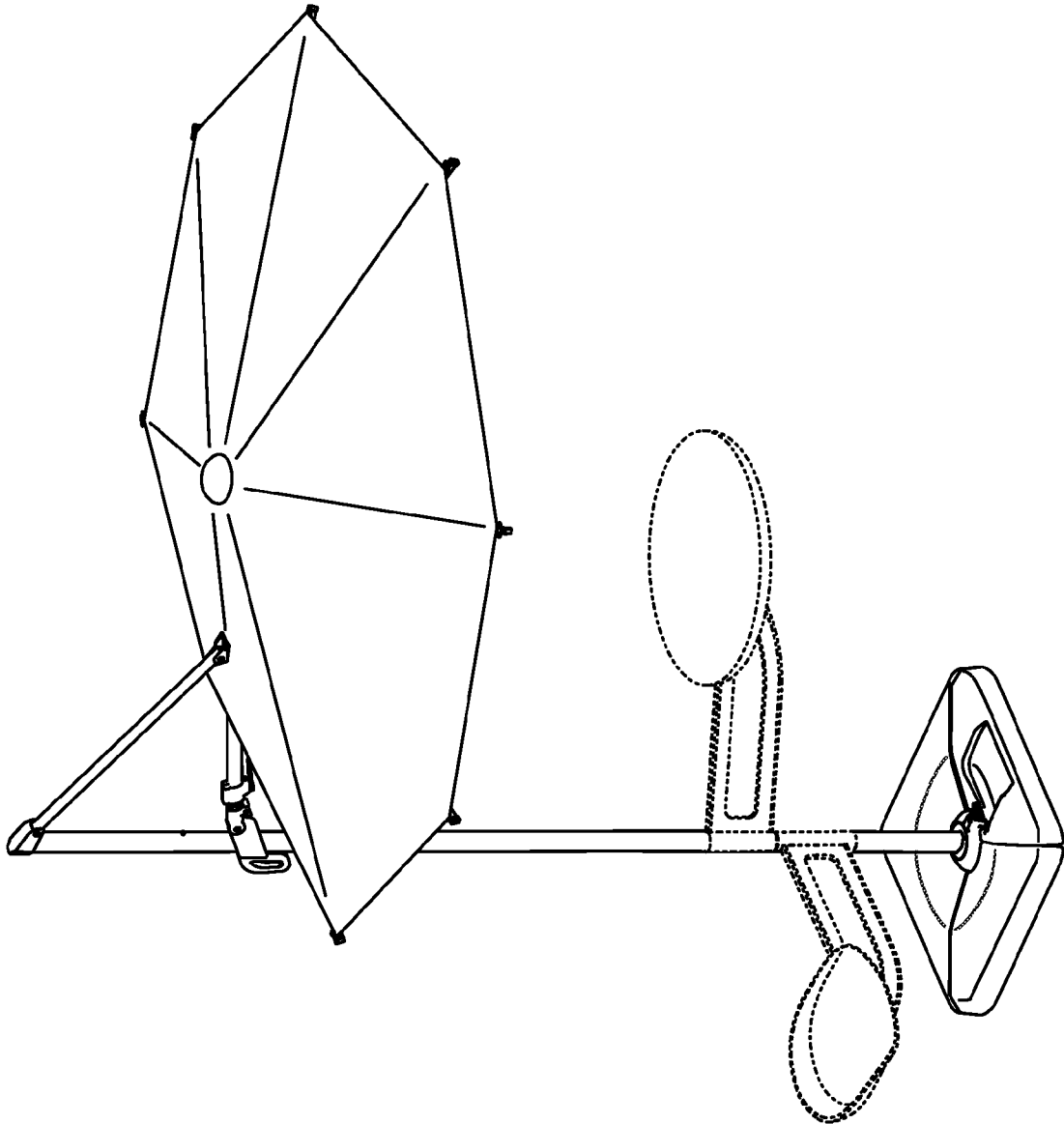


FIG. 173



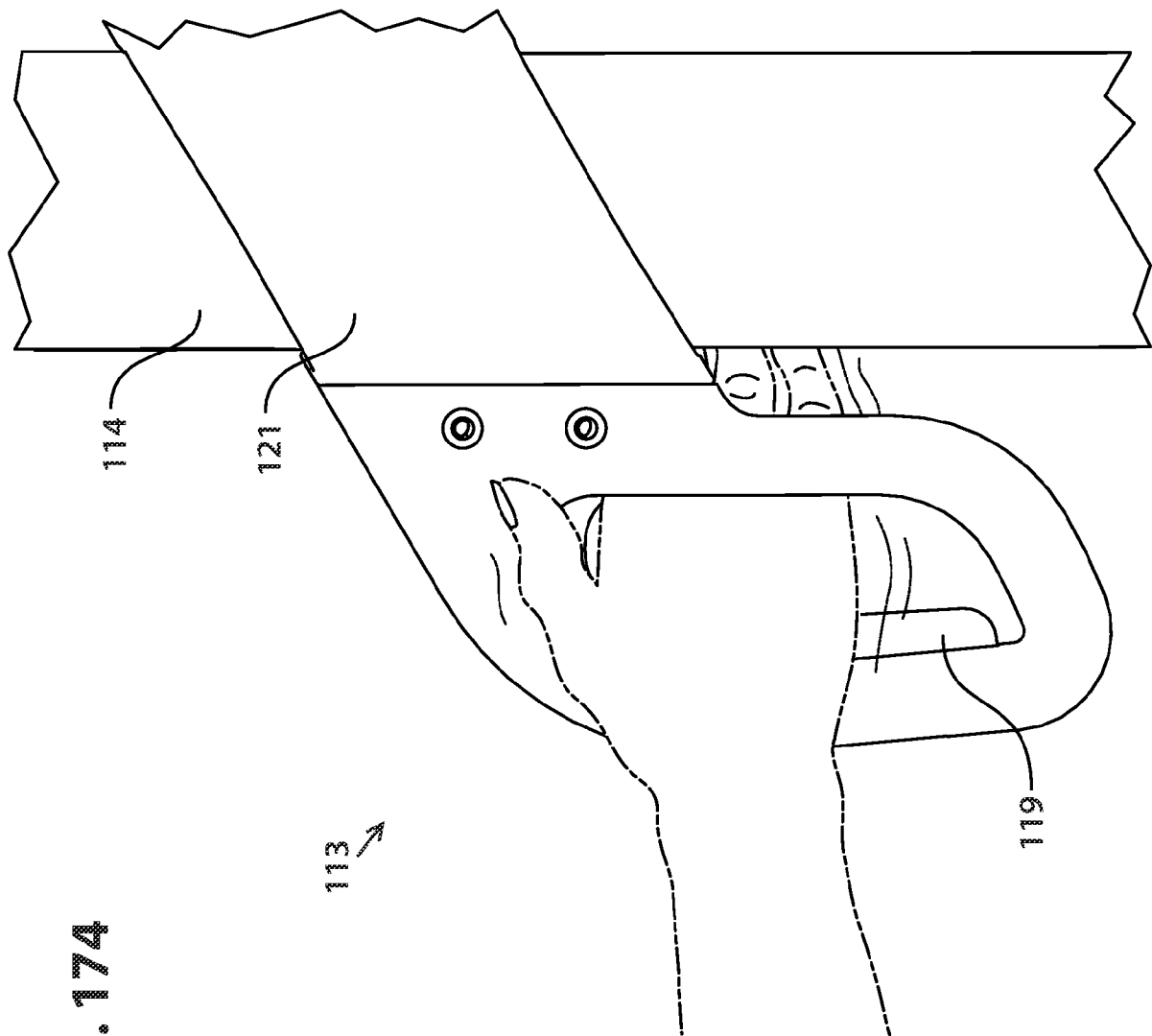


FIG. 174

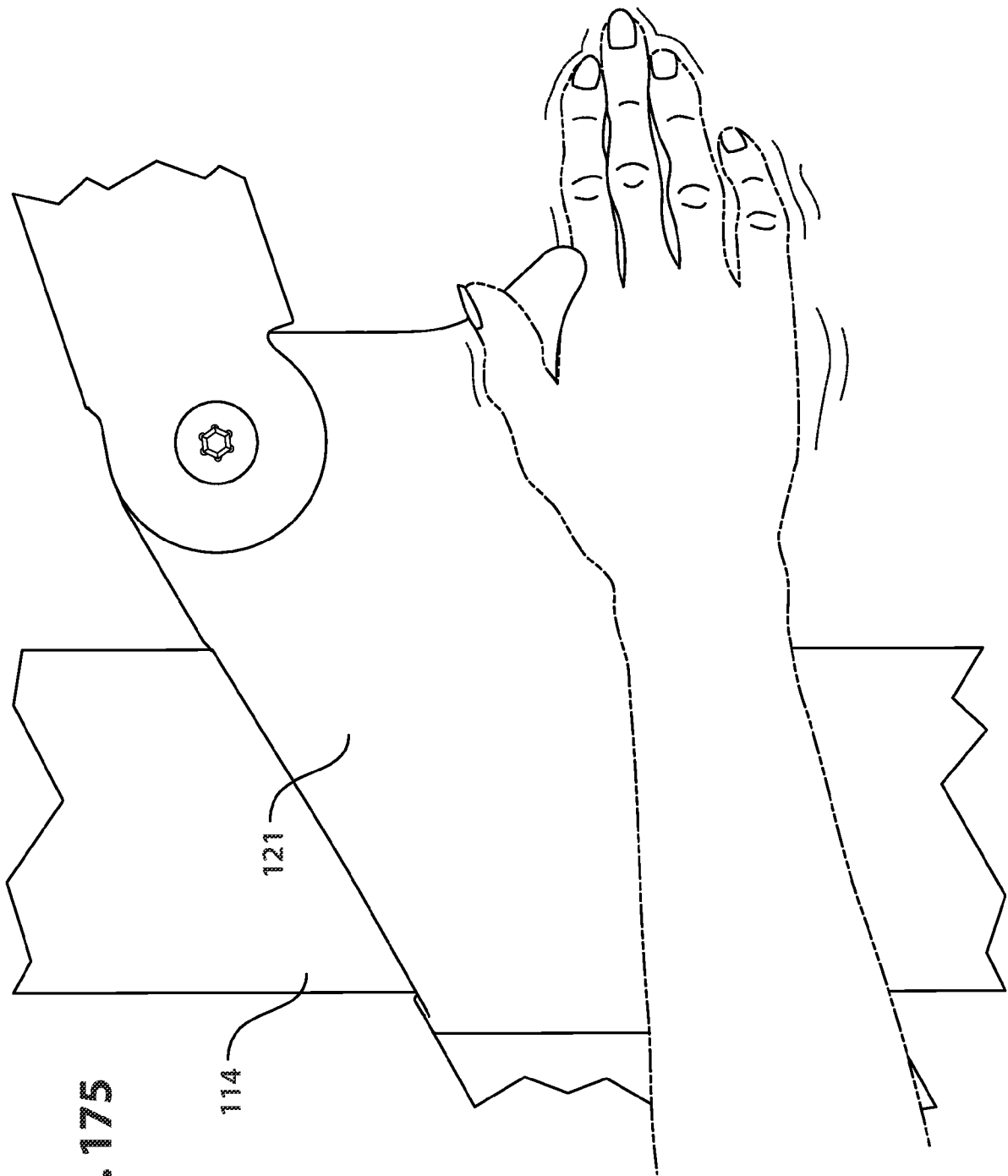


FIG. 175

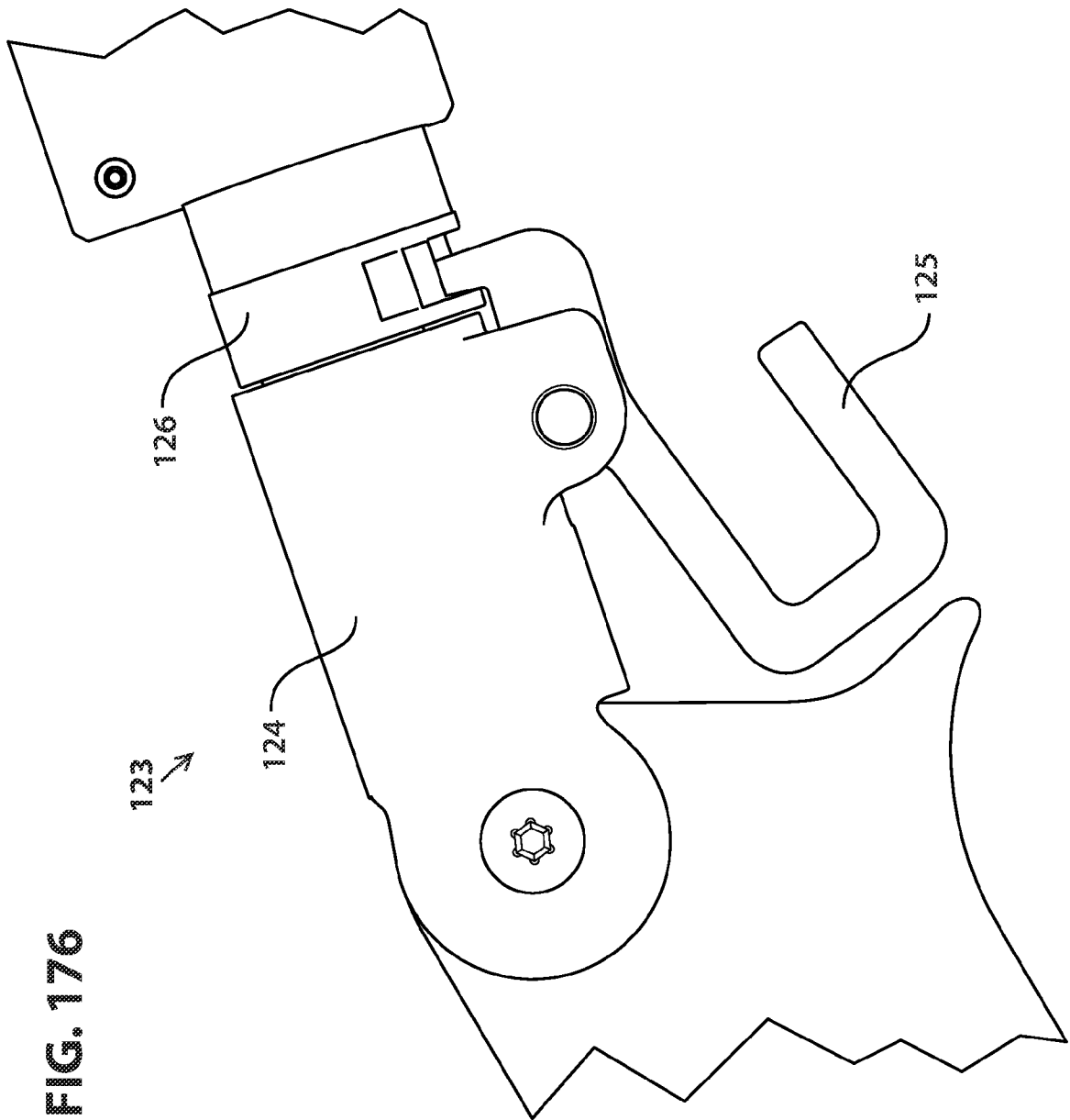


FIG. 176

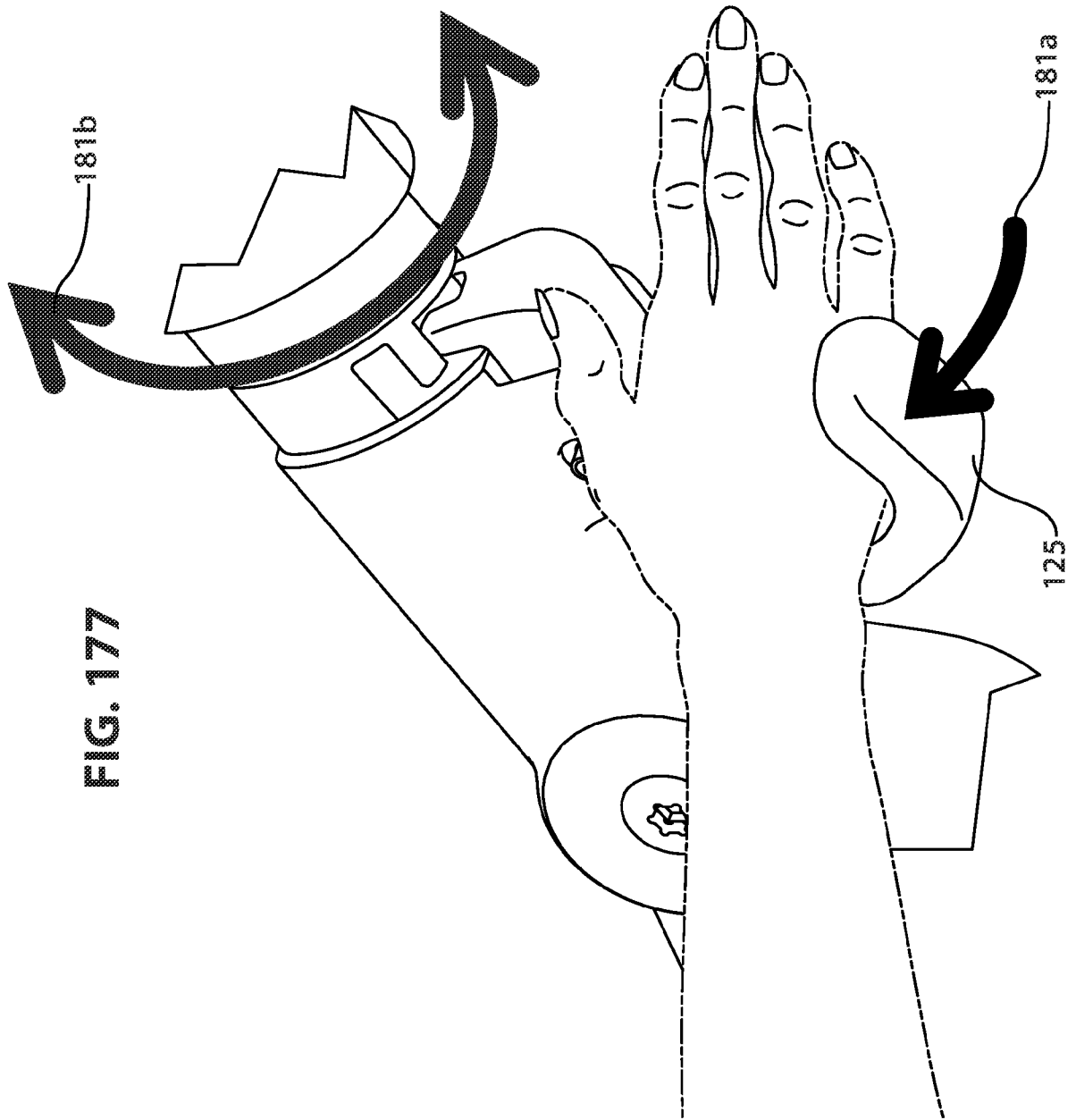


FIG. 177

FIG. 178

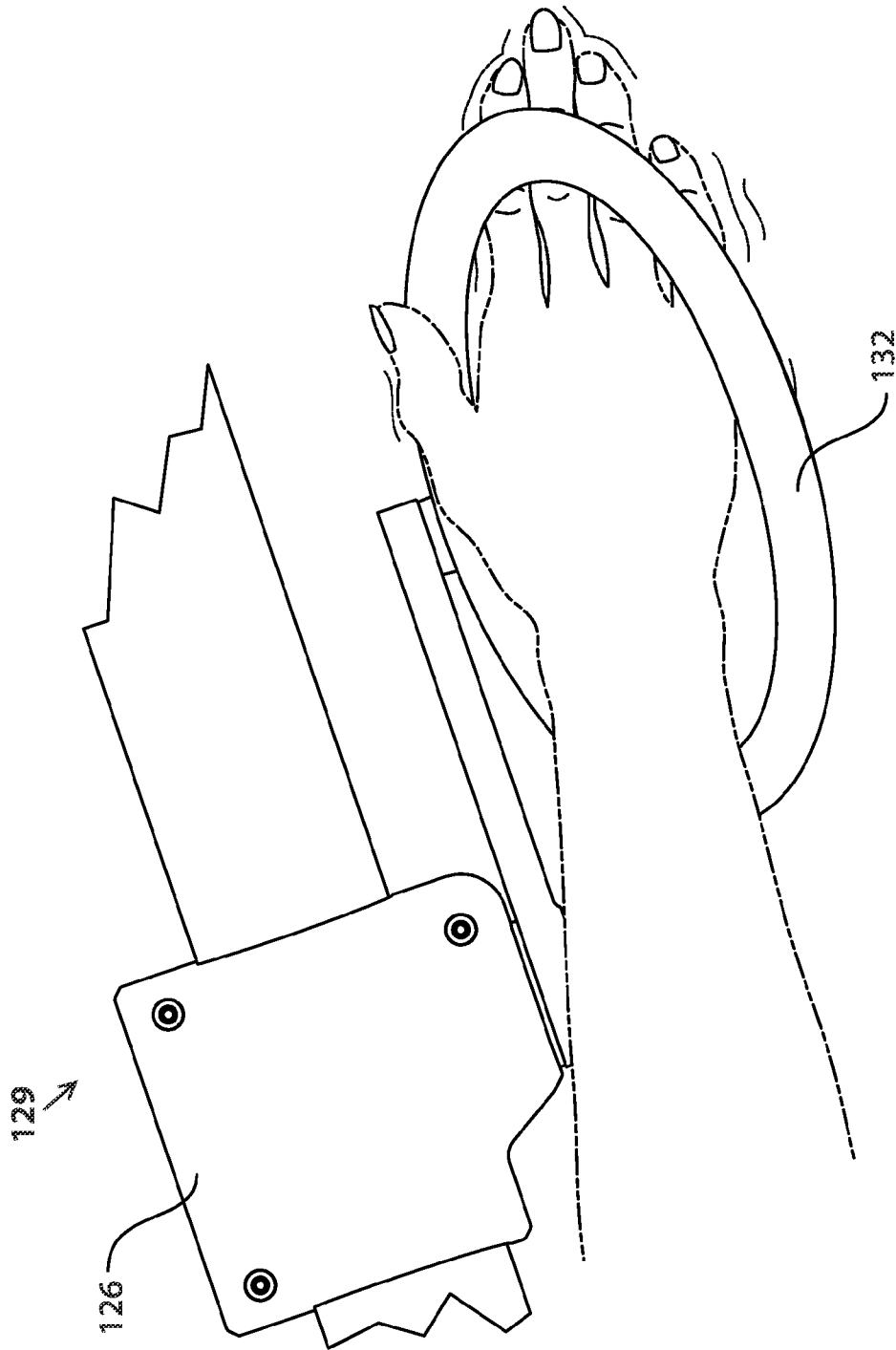


FIG. 179

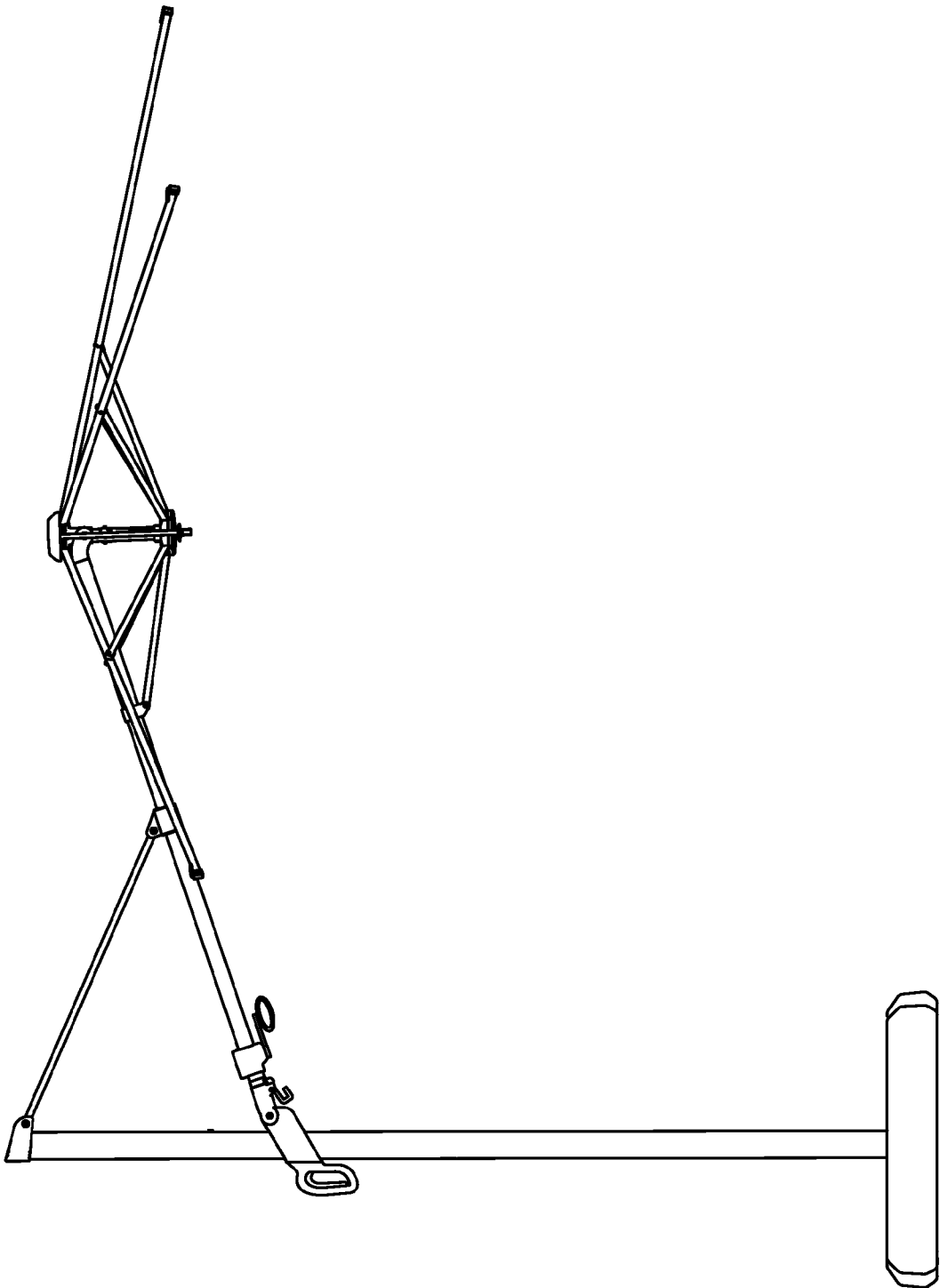
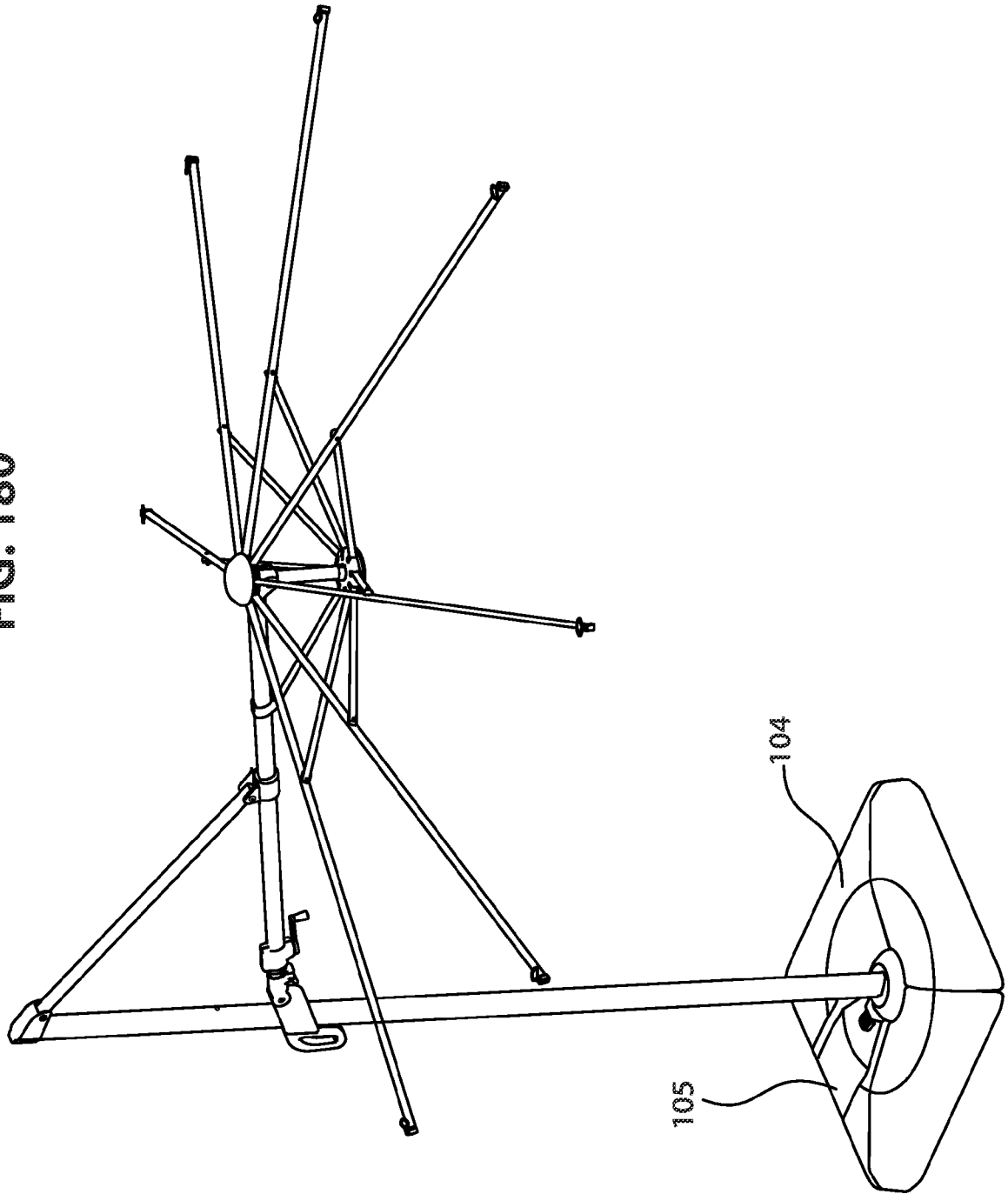


FIG. 180



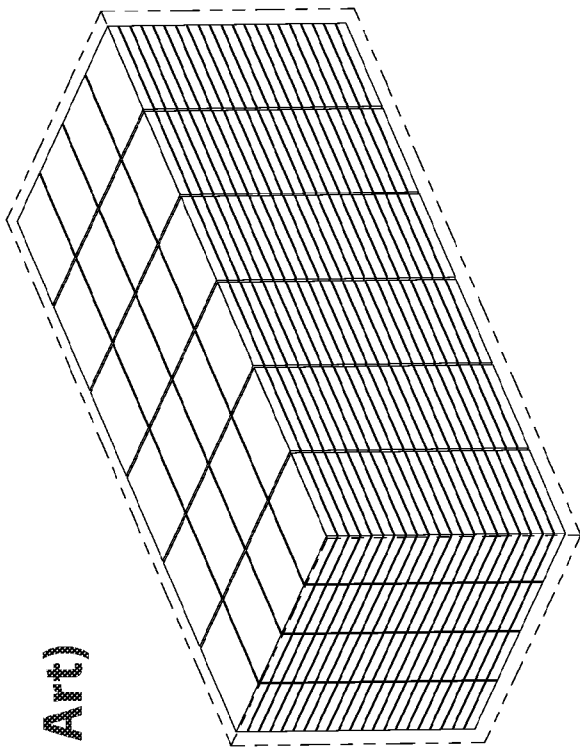


FIG. 181A (Prior Art)

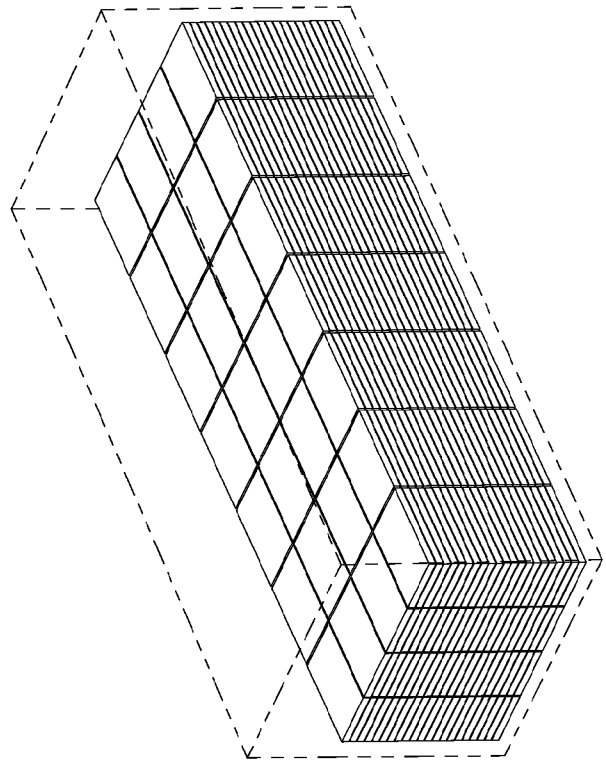
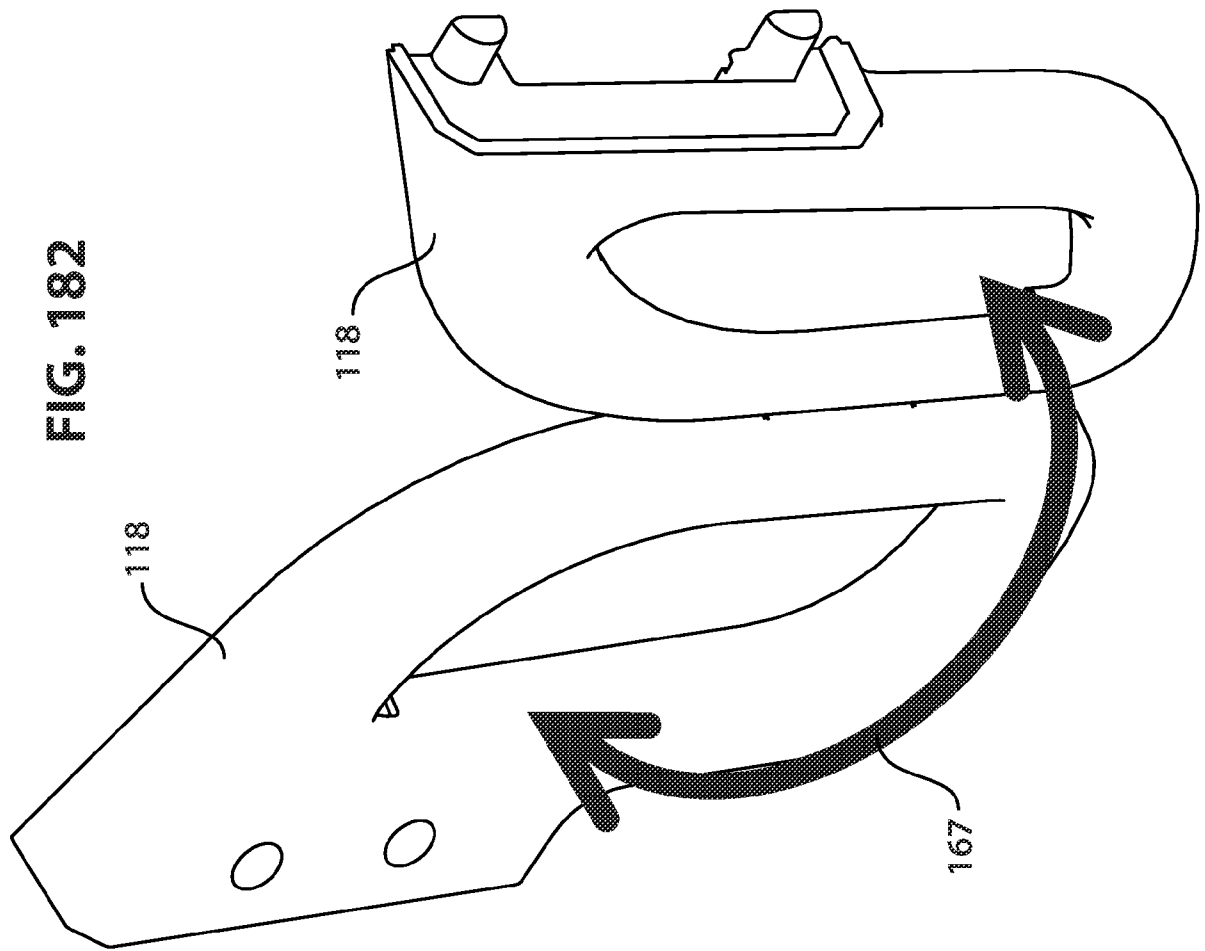


FIG. 181B



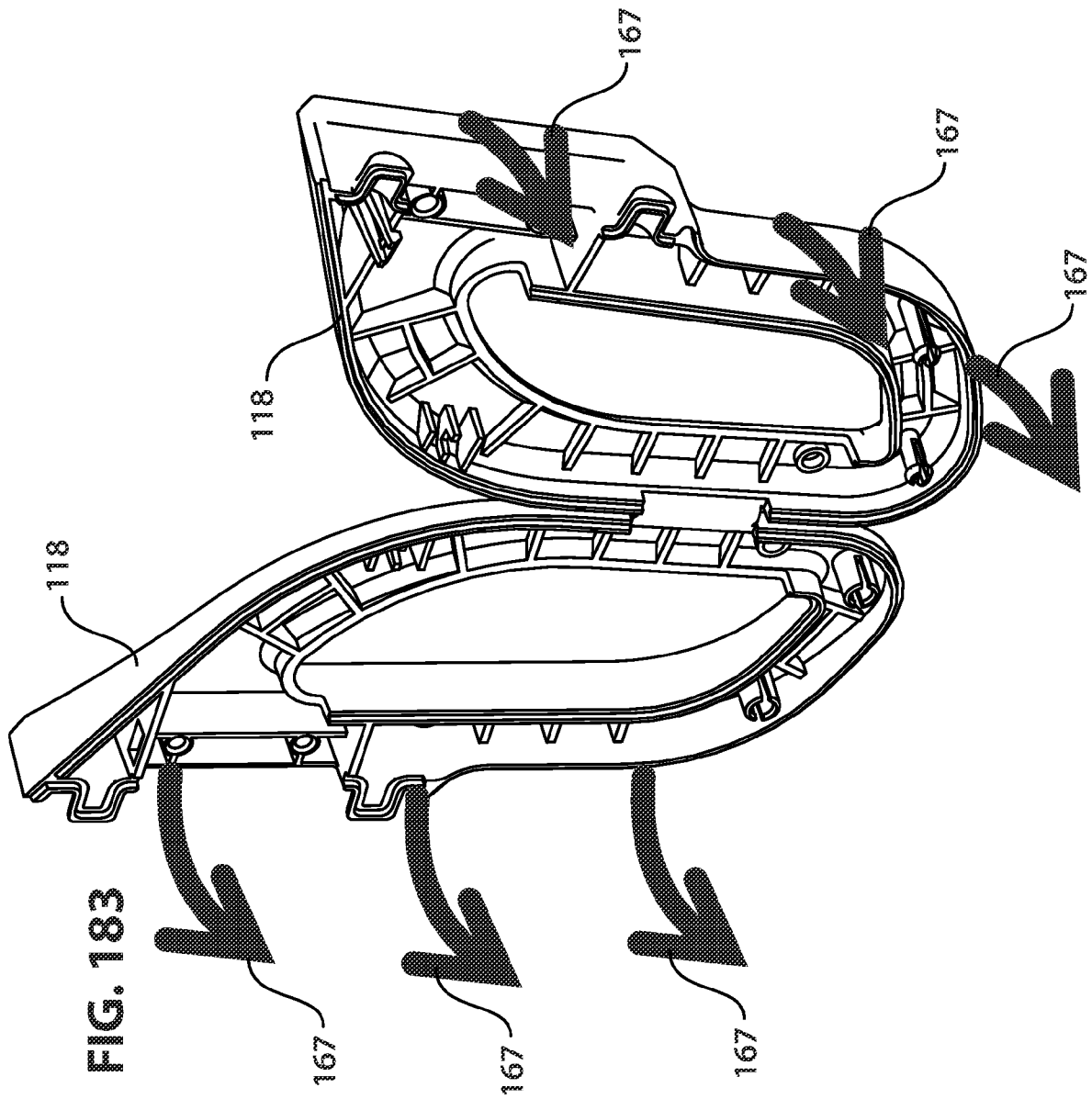


FIG. 183

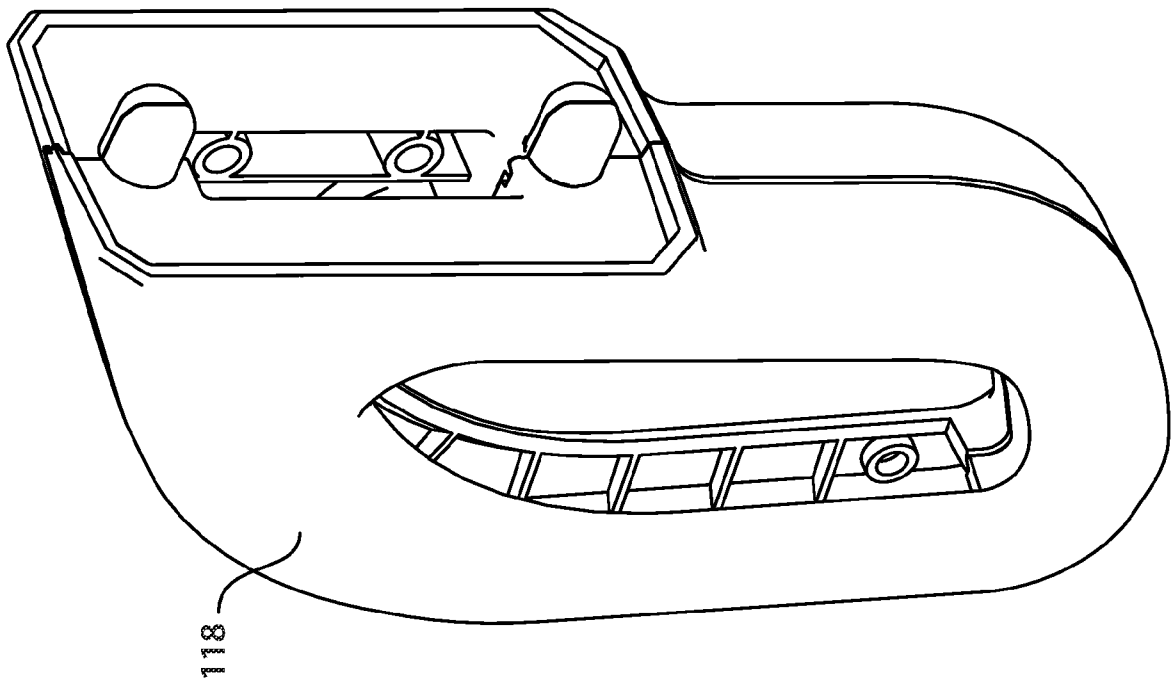


FIG. 184

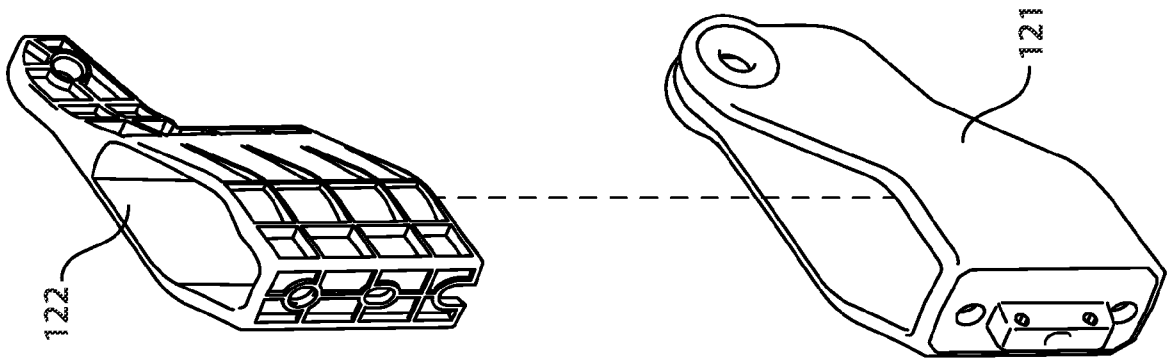


FIG. 185

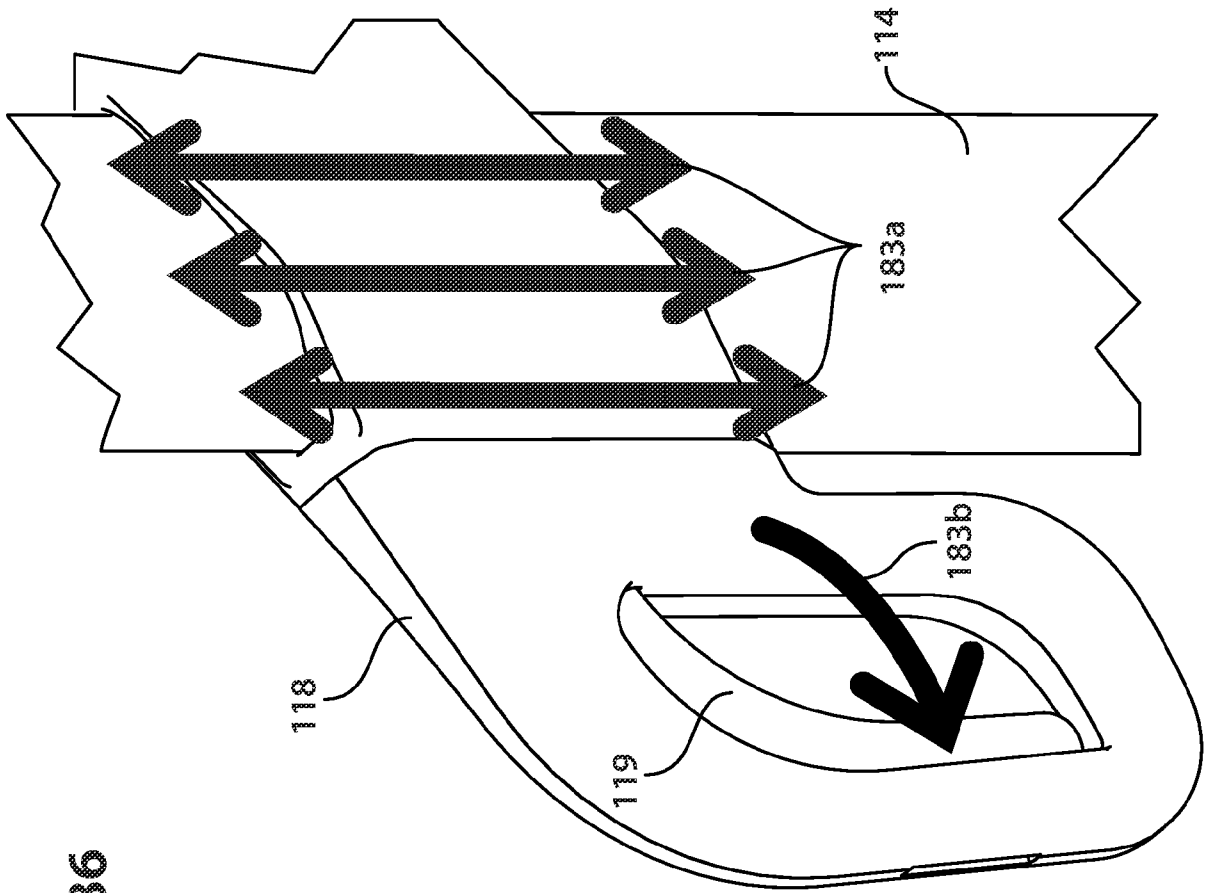


FIG. 186

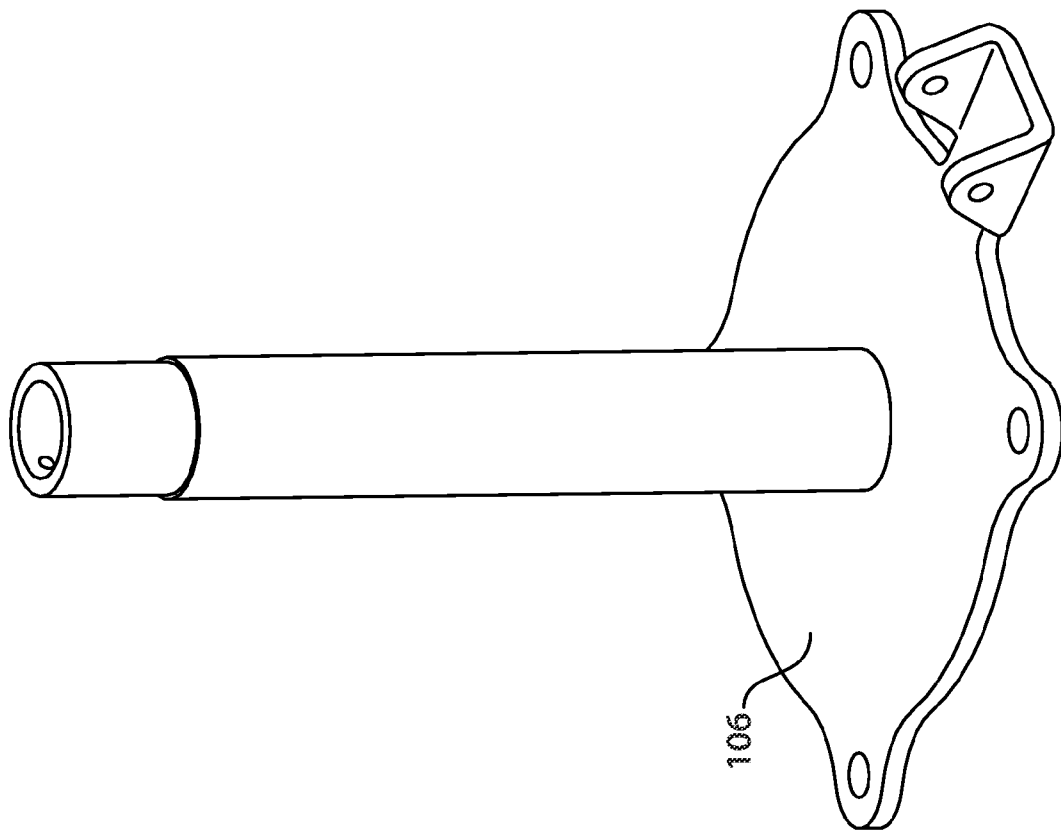


FIG. 187

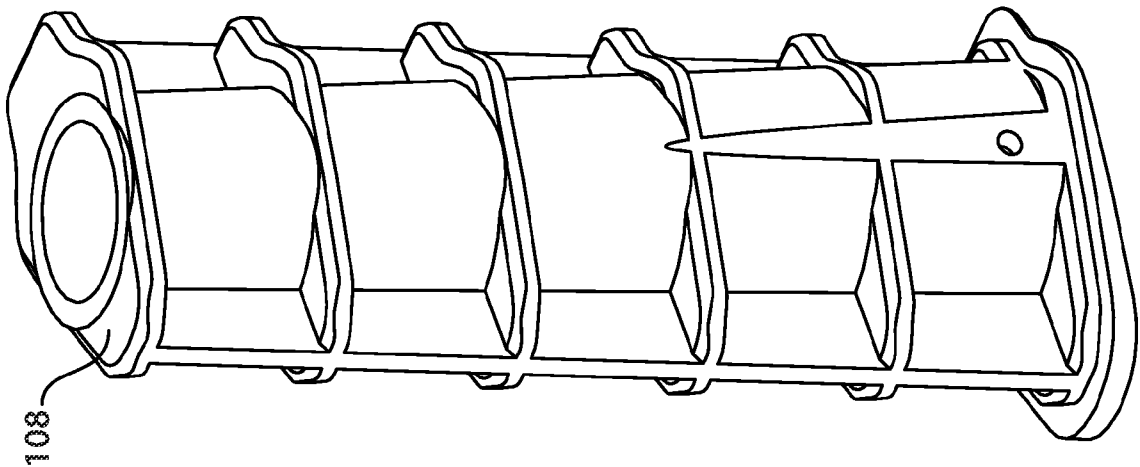


FIG. 188

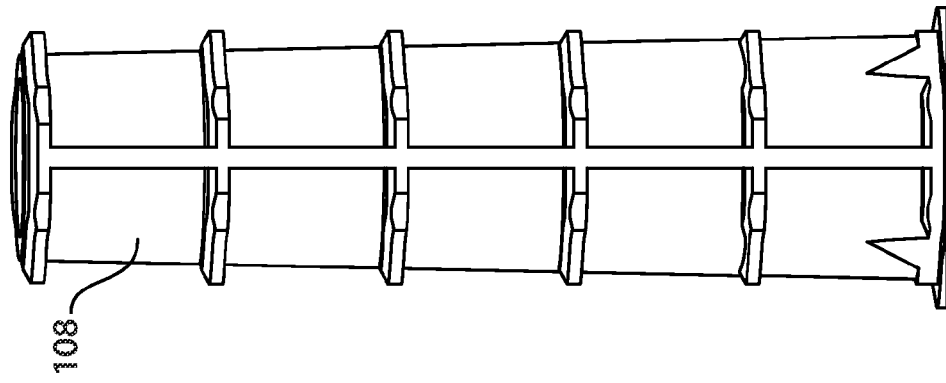


FIG. 189

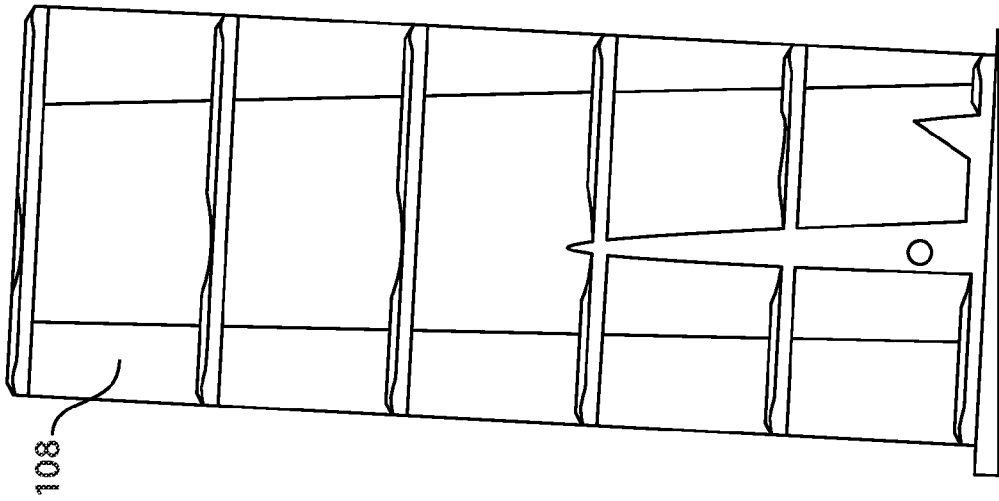
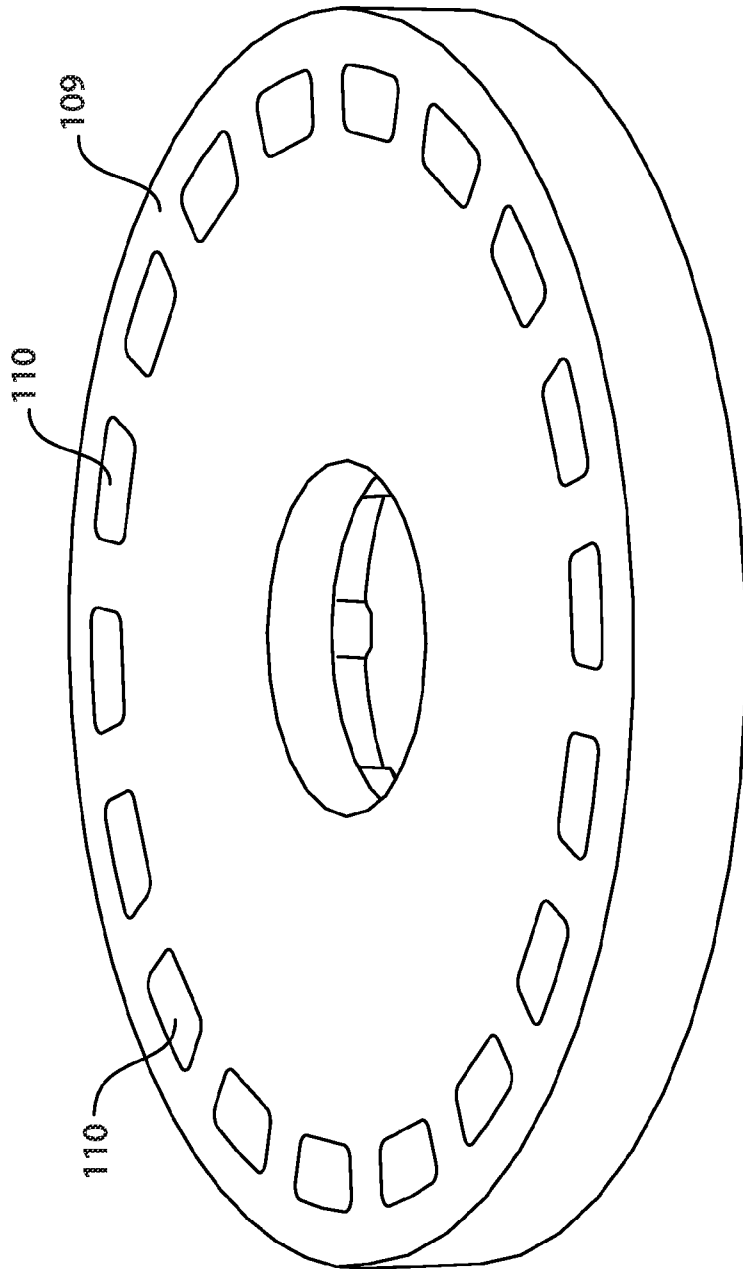


FIG. 190

FIG. 191



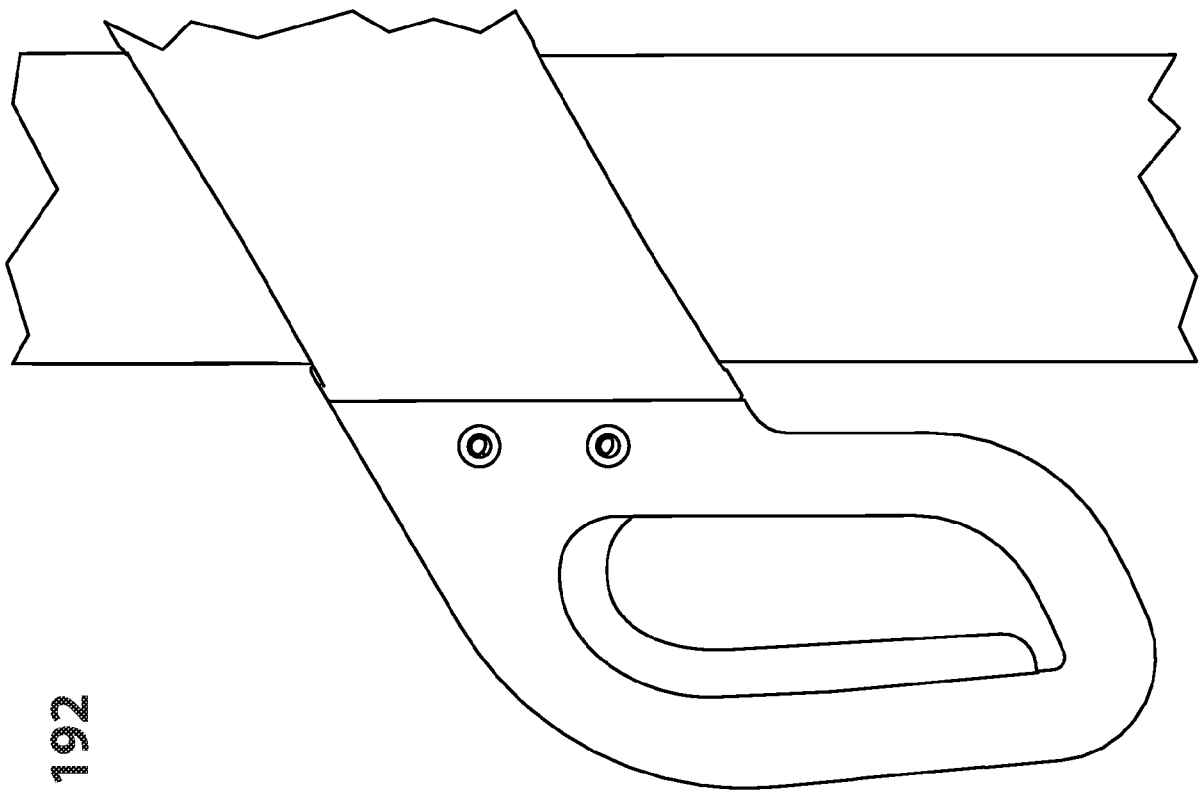


FIG. 192

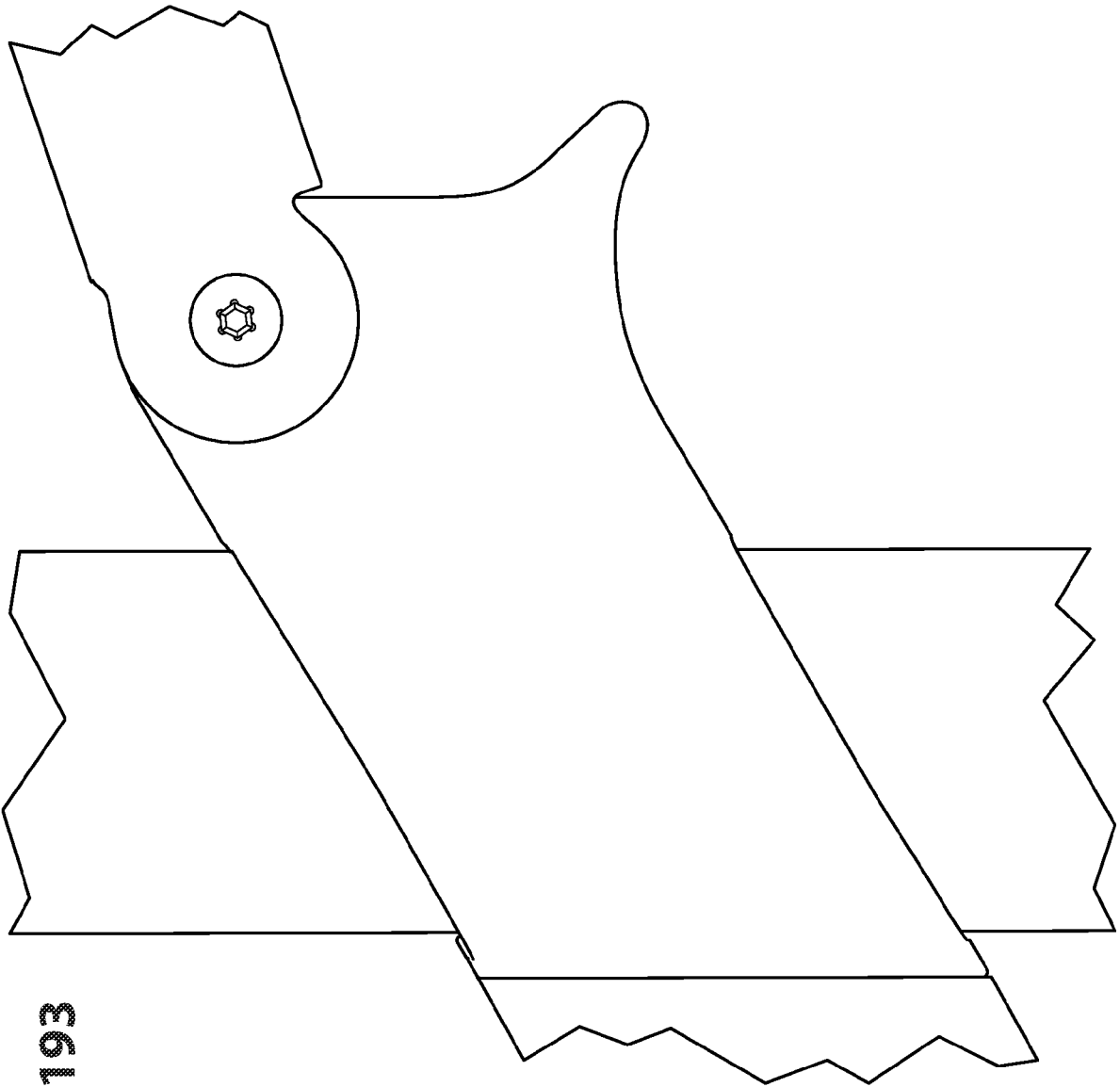


FIG. 193

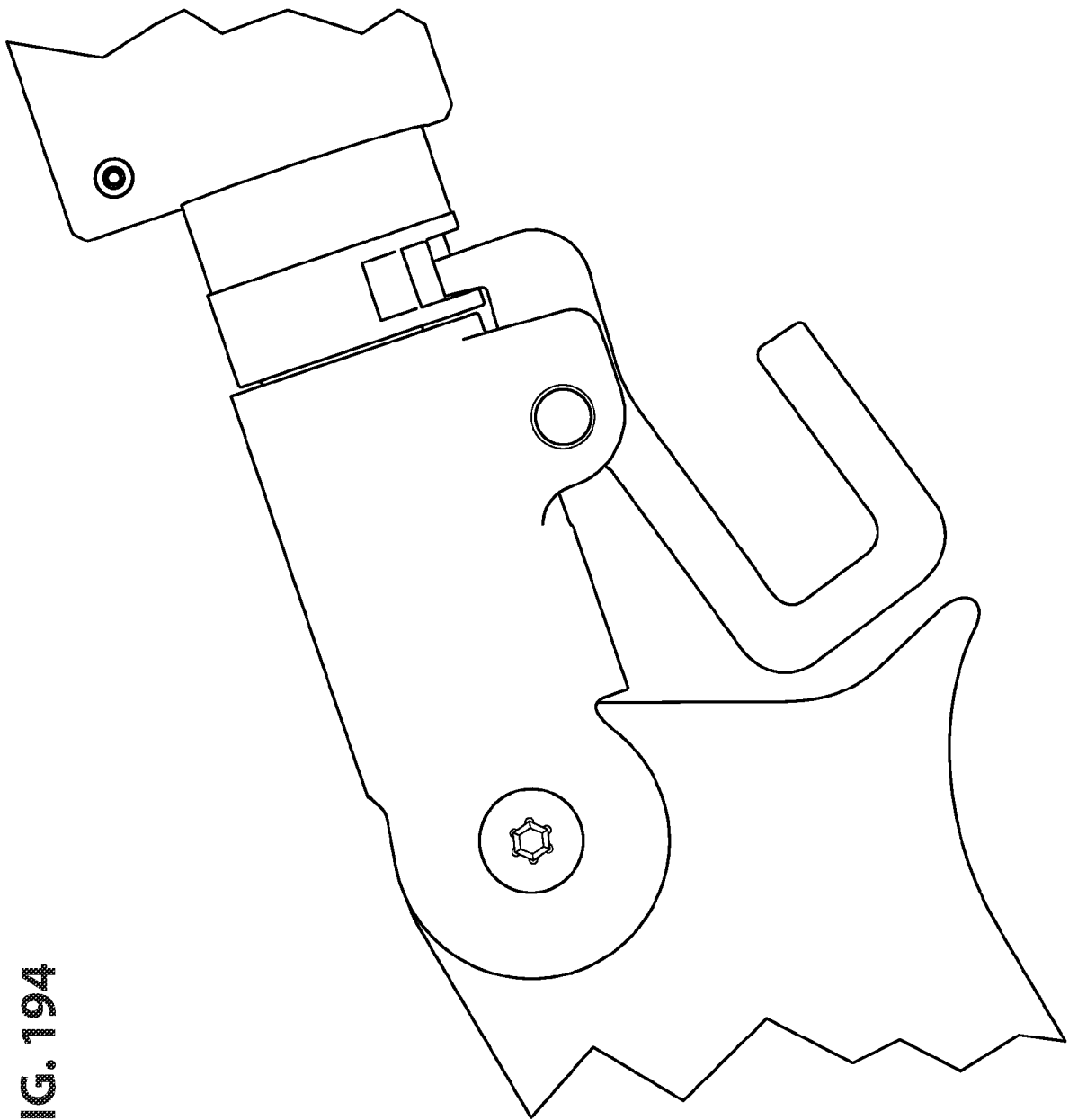


FIG. 194

FIG. 195

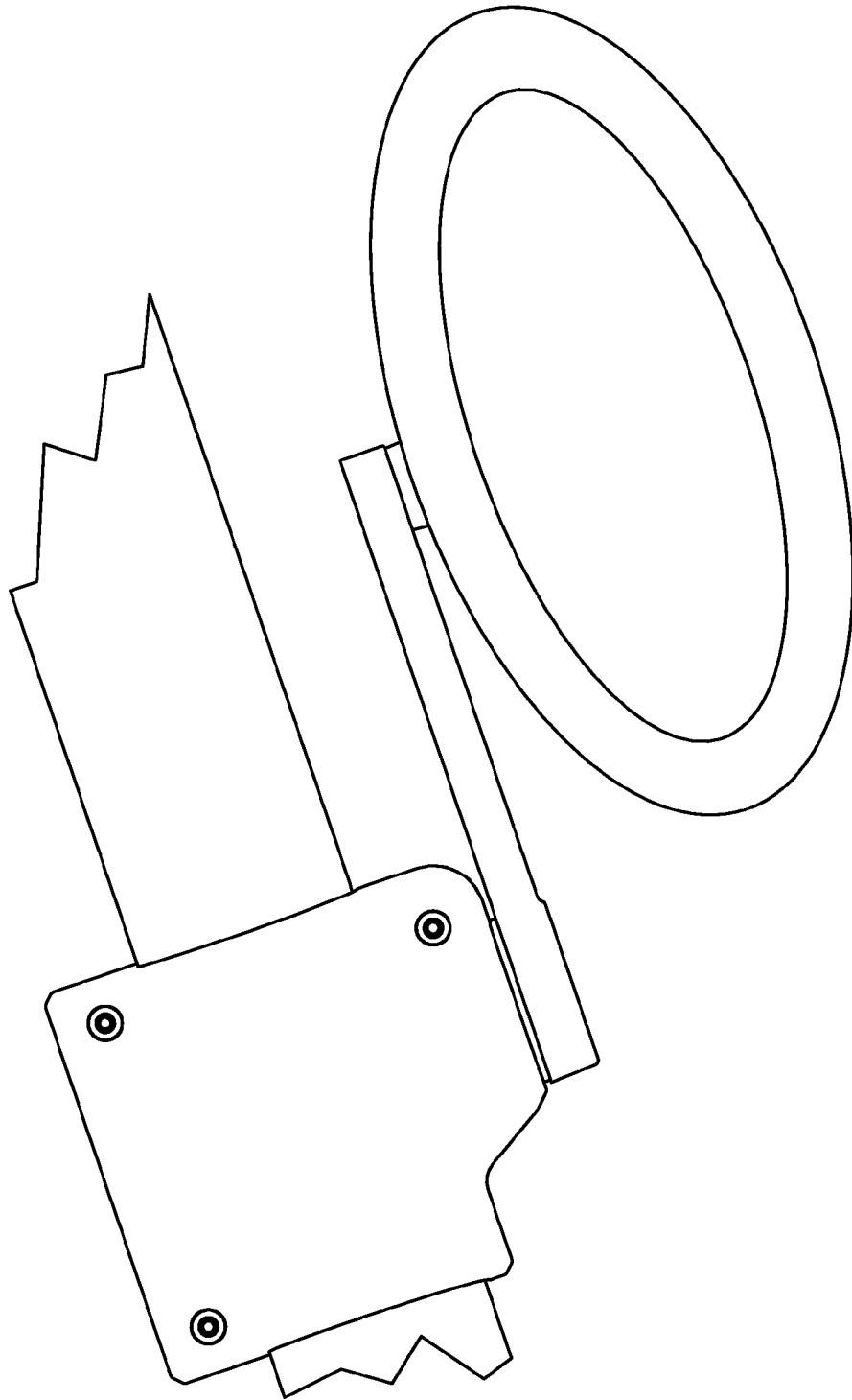
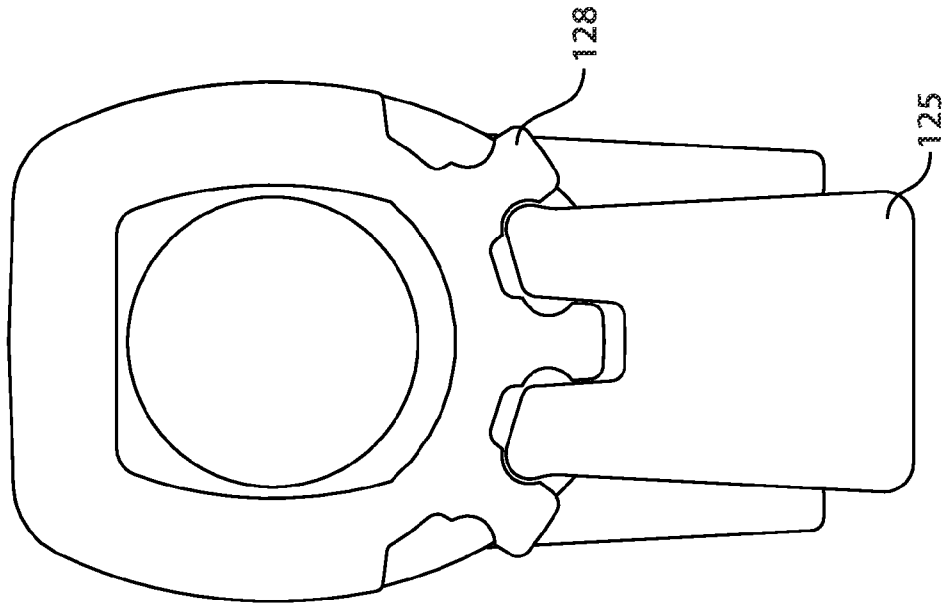


FIG. 196



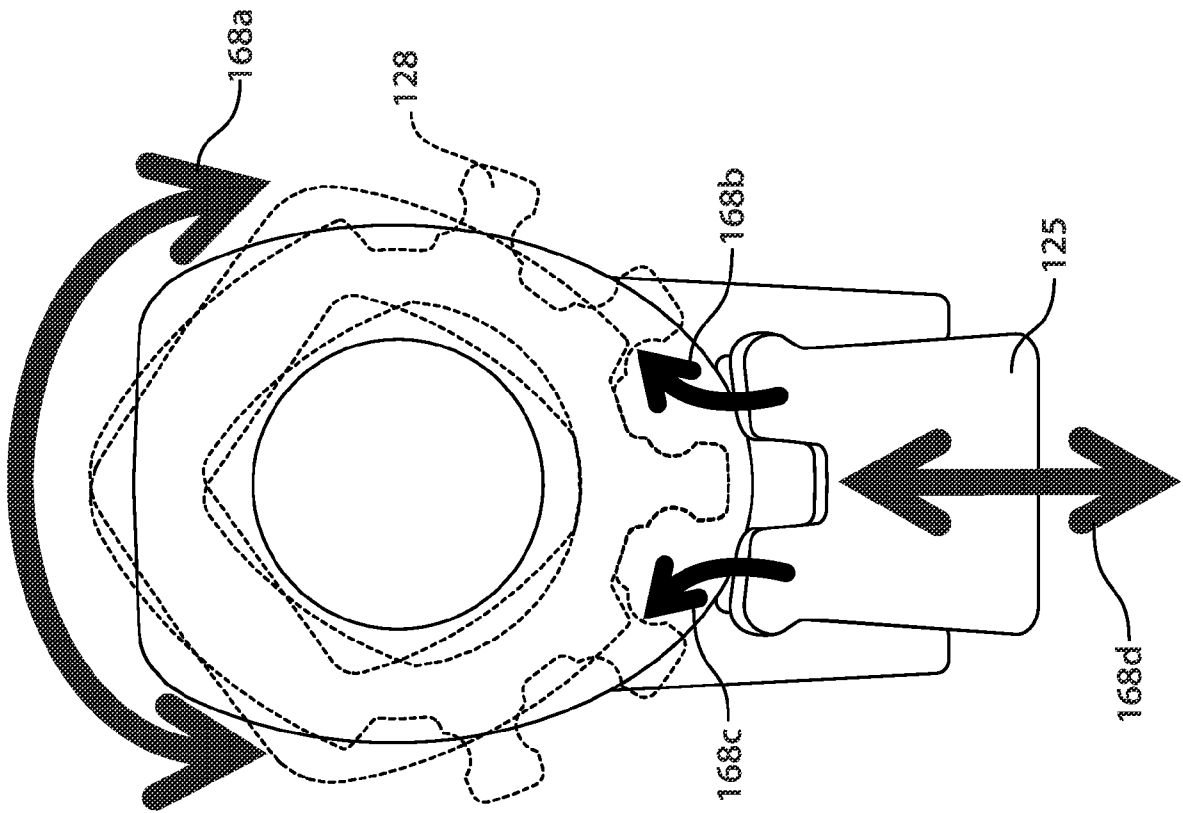
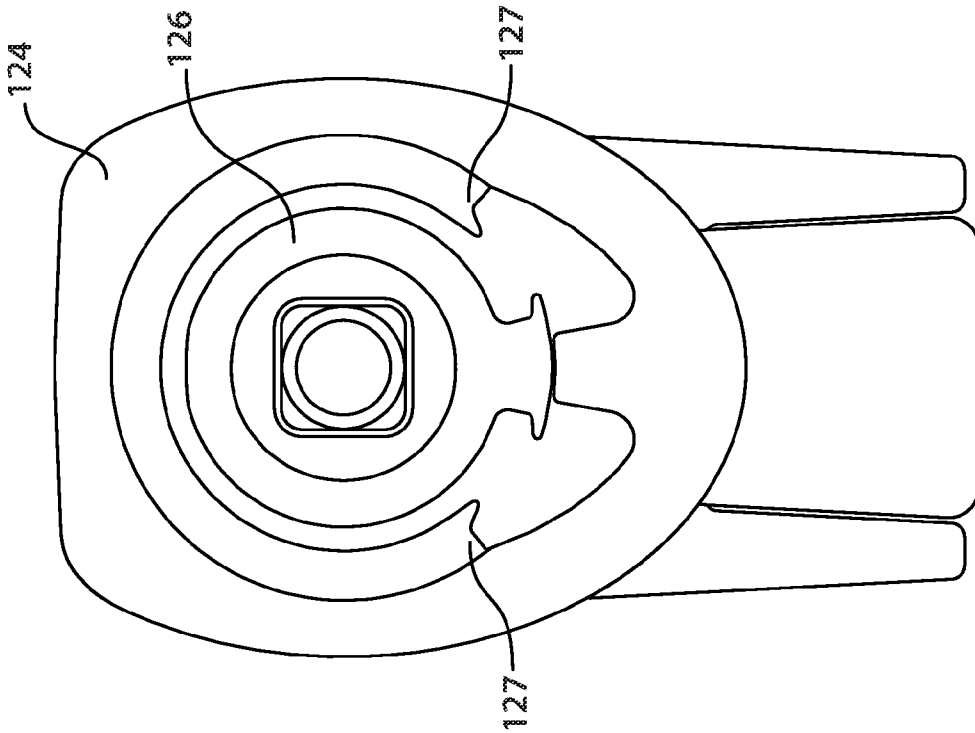
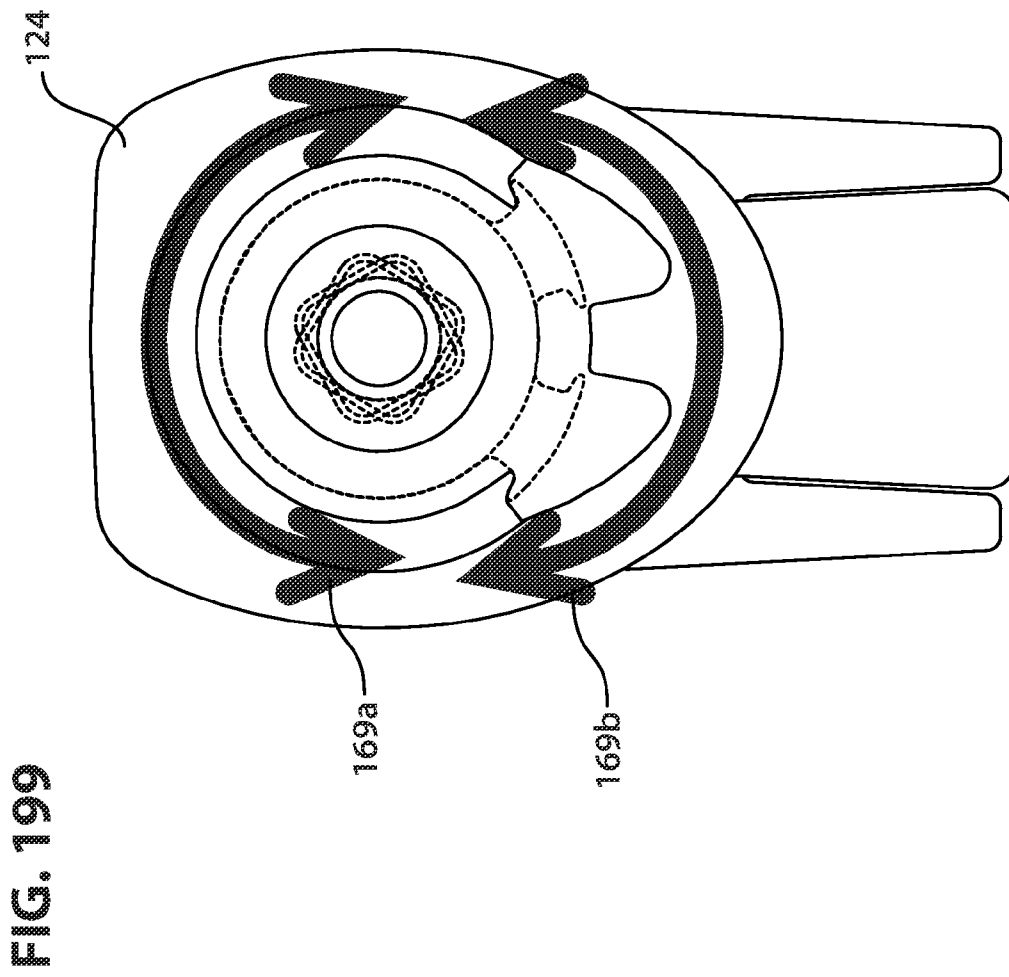


FIG. 197

FIG. 198





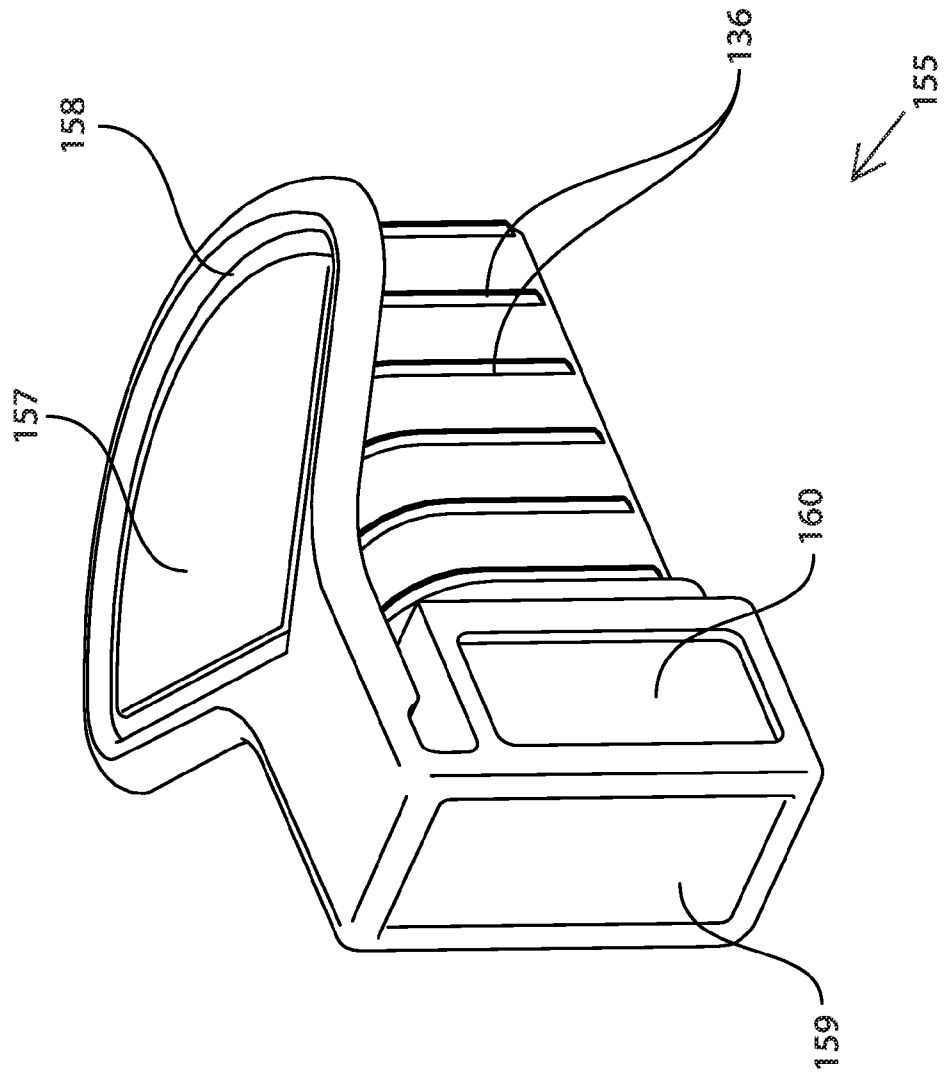
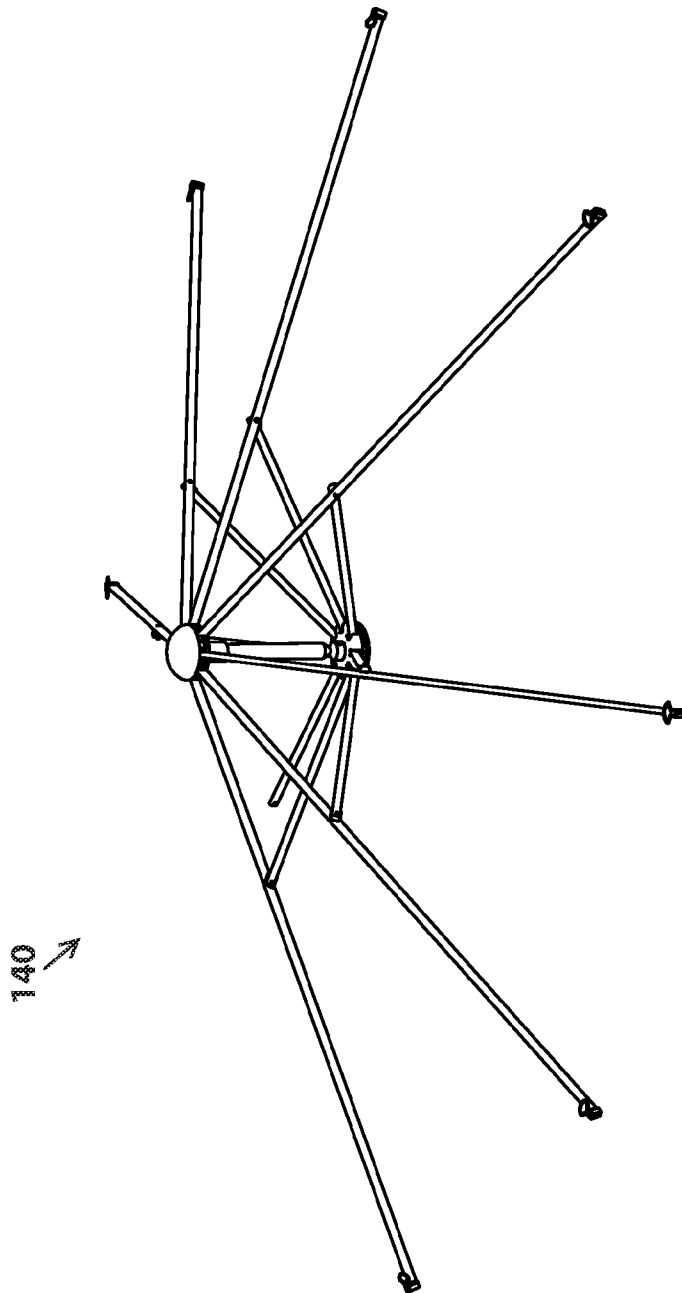


FIG. 200

FIG. 201



140 ↗

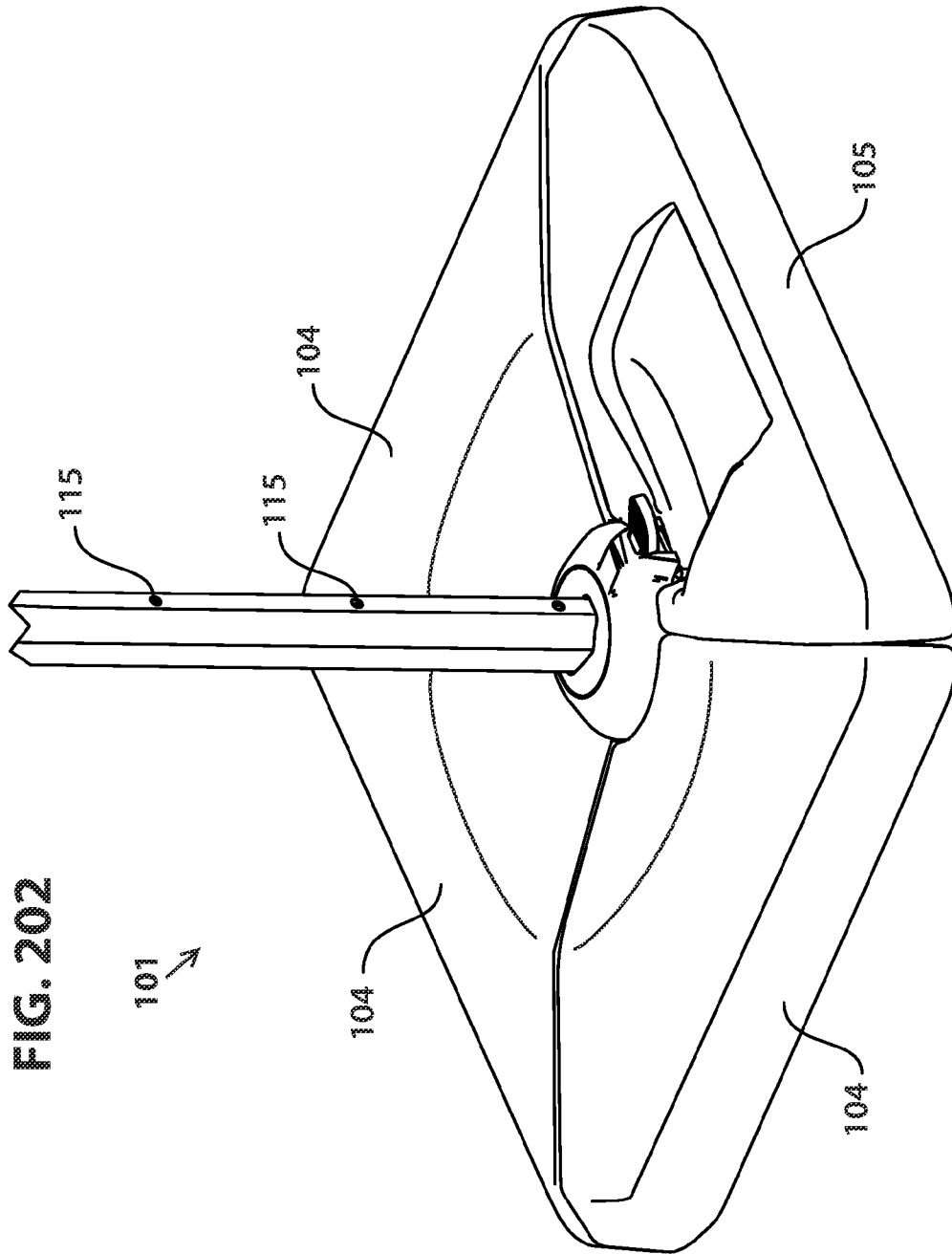
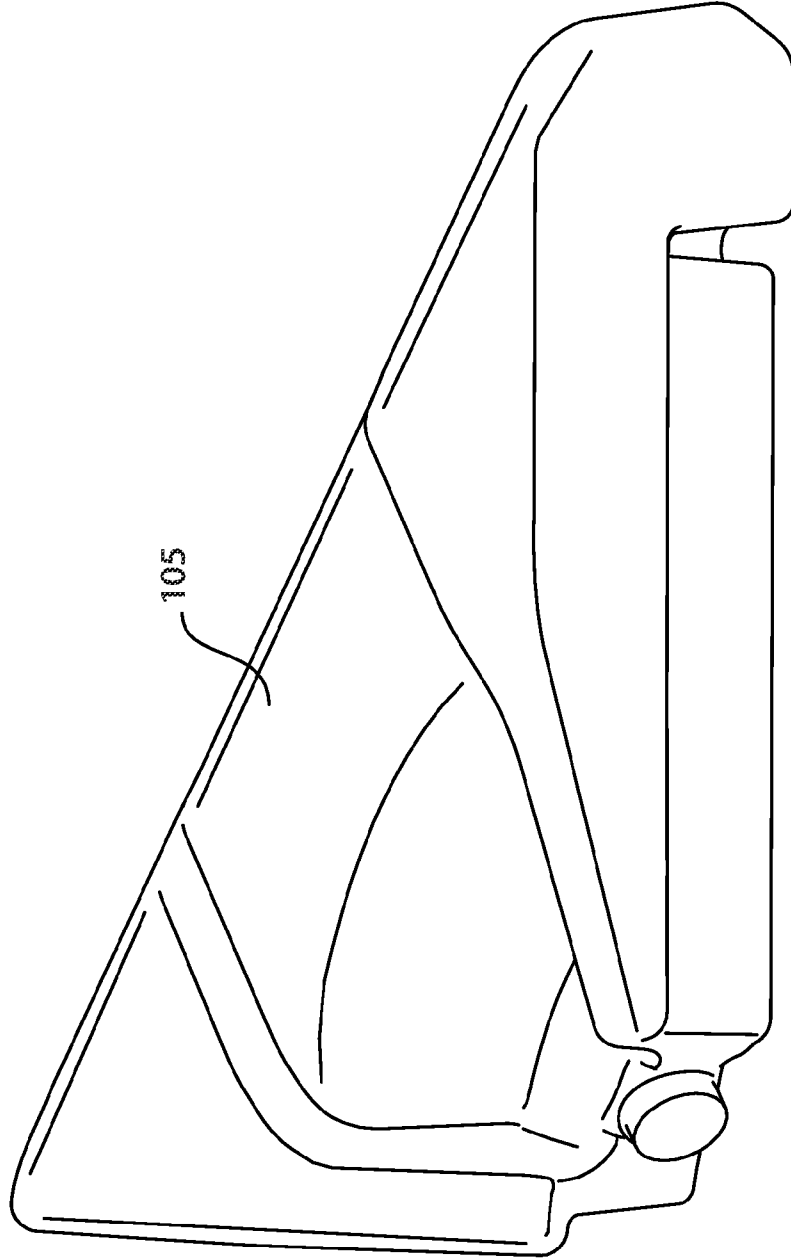


FIG. 202

FIG. 203



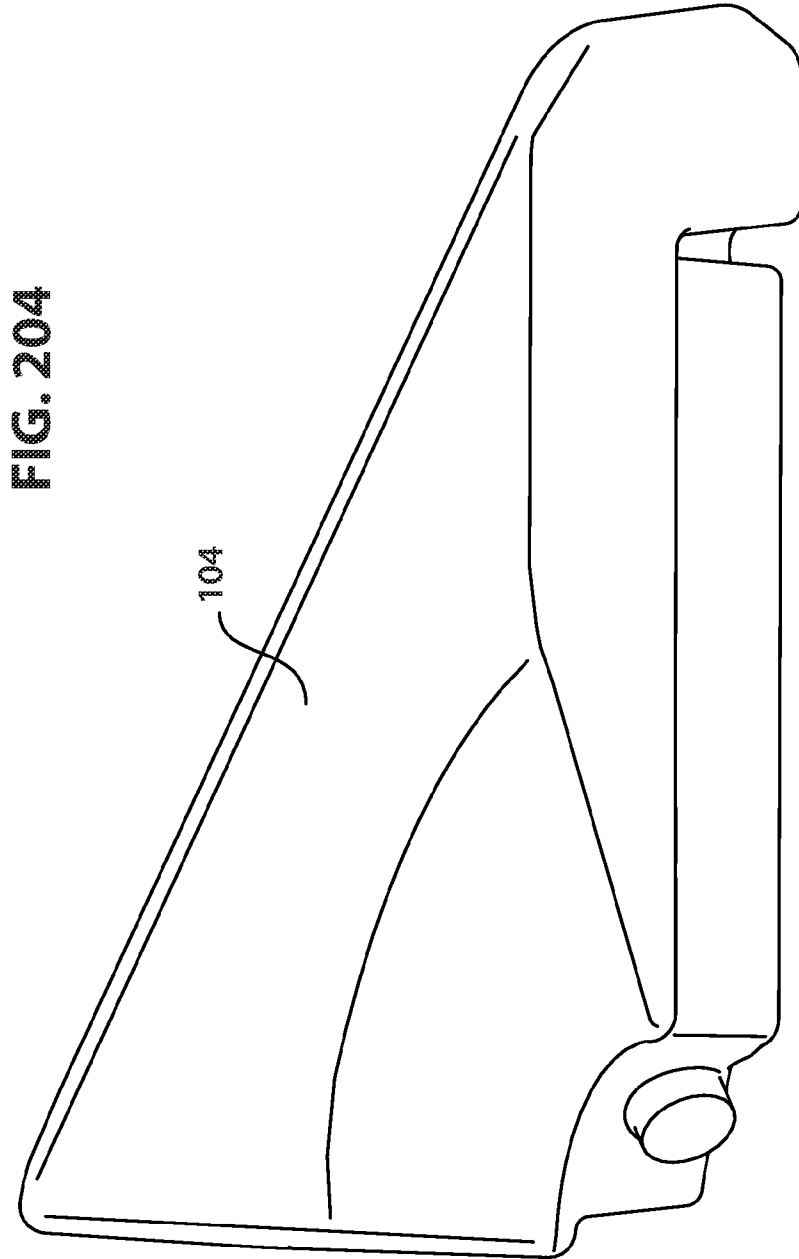
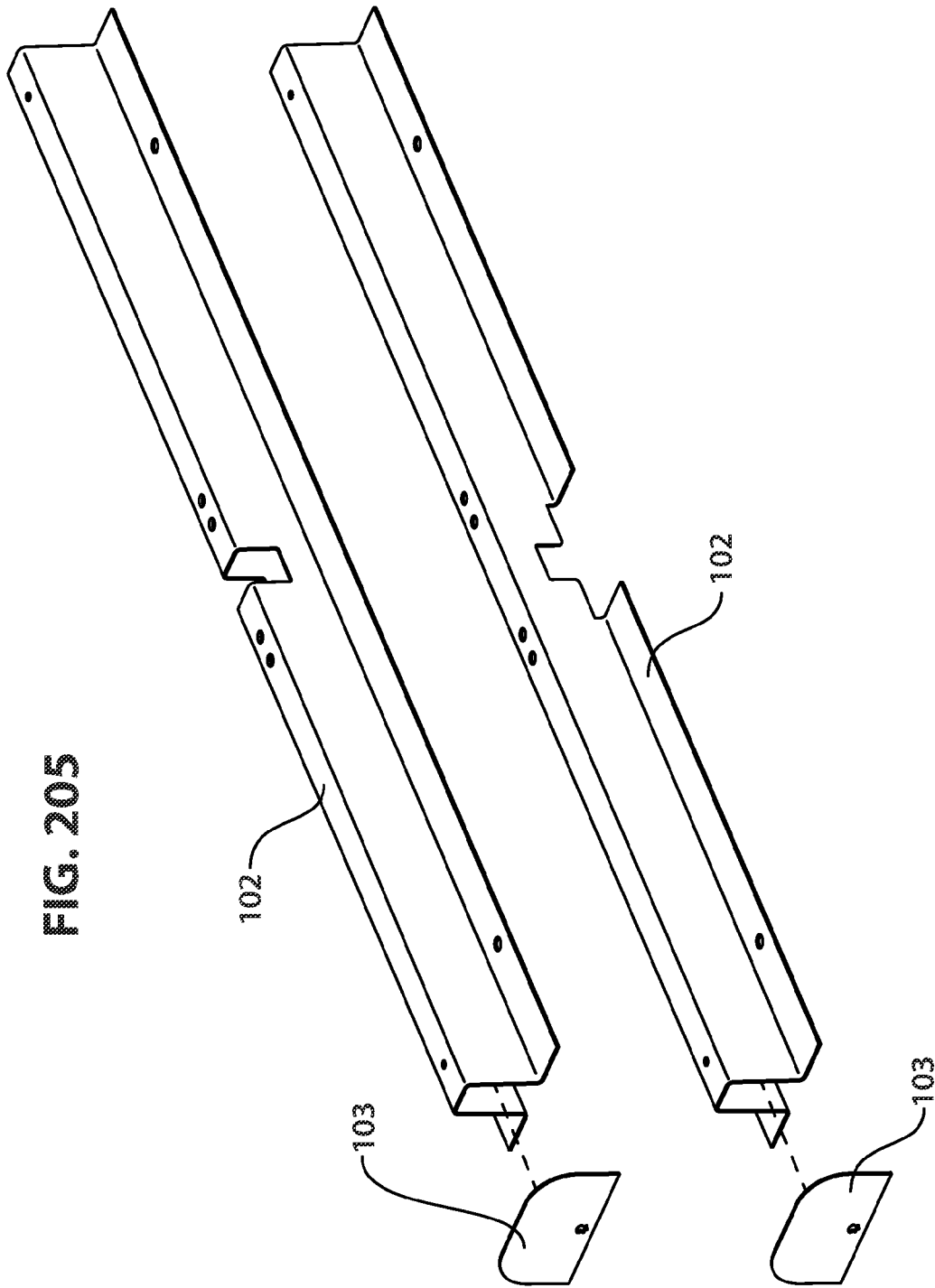


FIG. 204



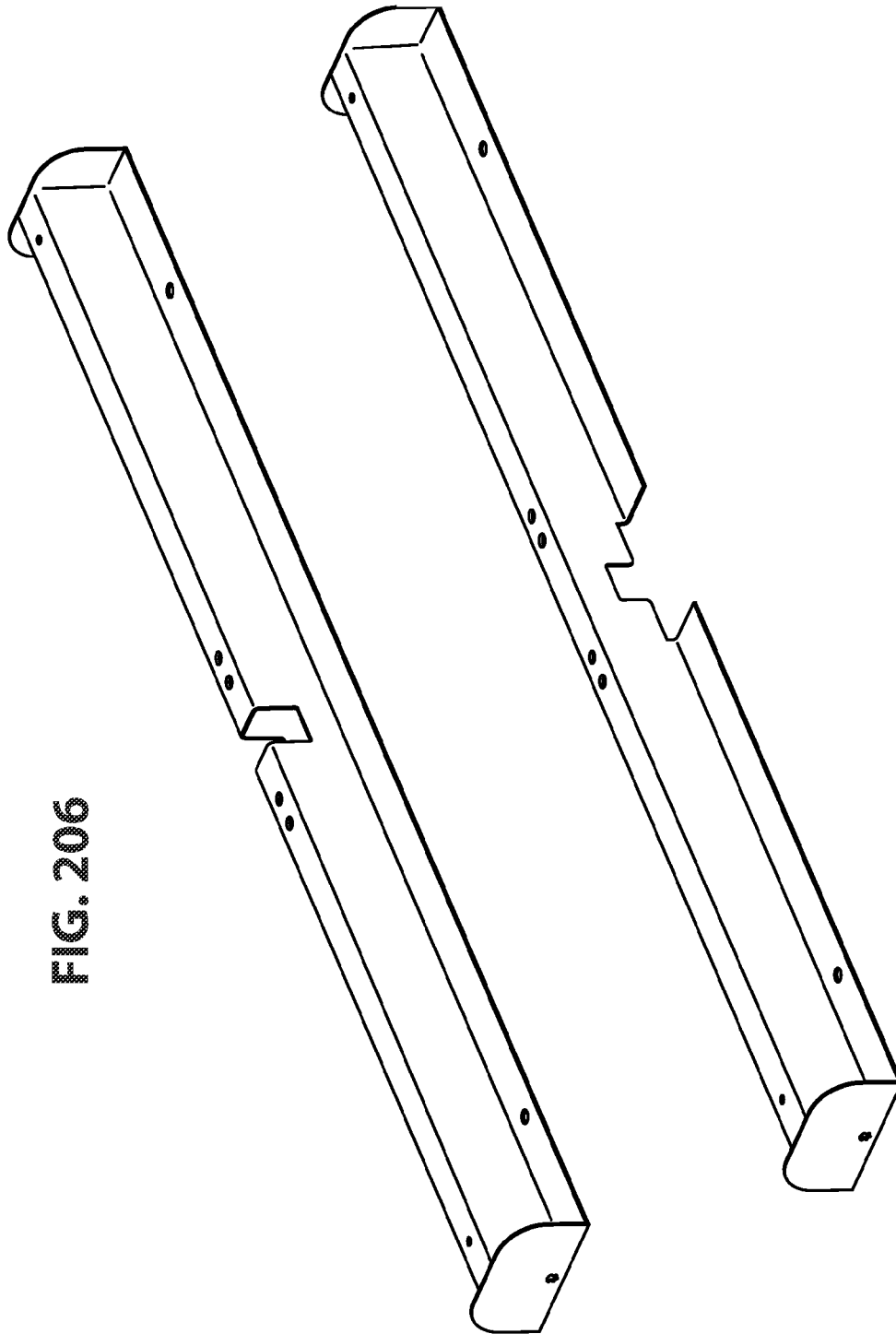


FIG. 206

FIG. 207

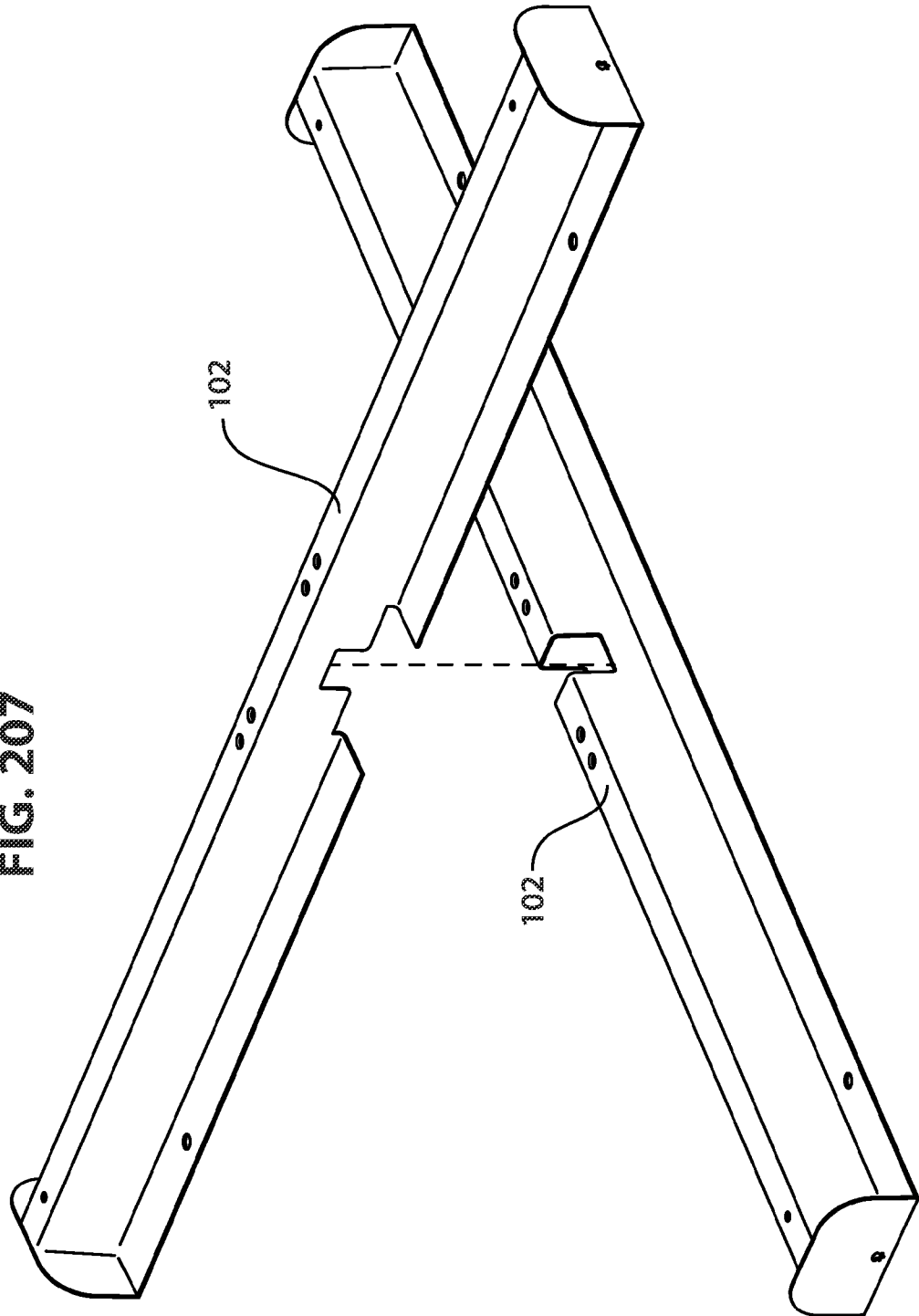
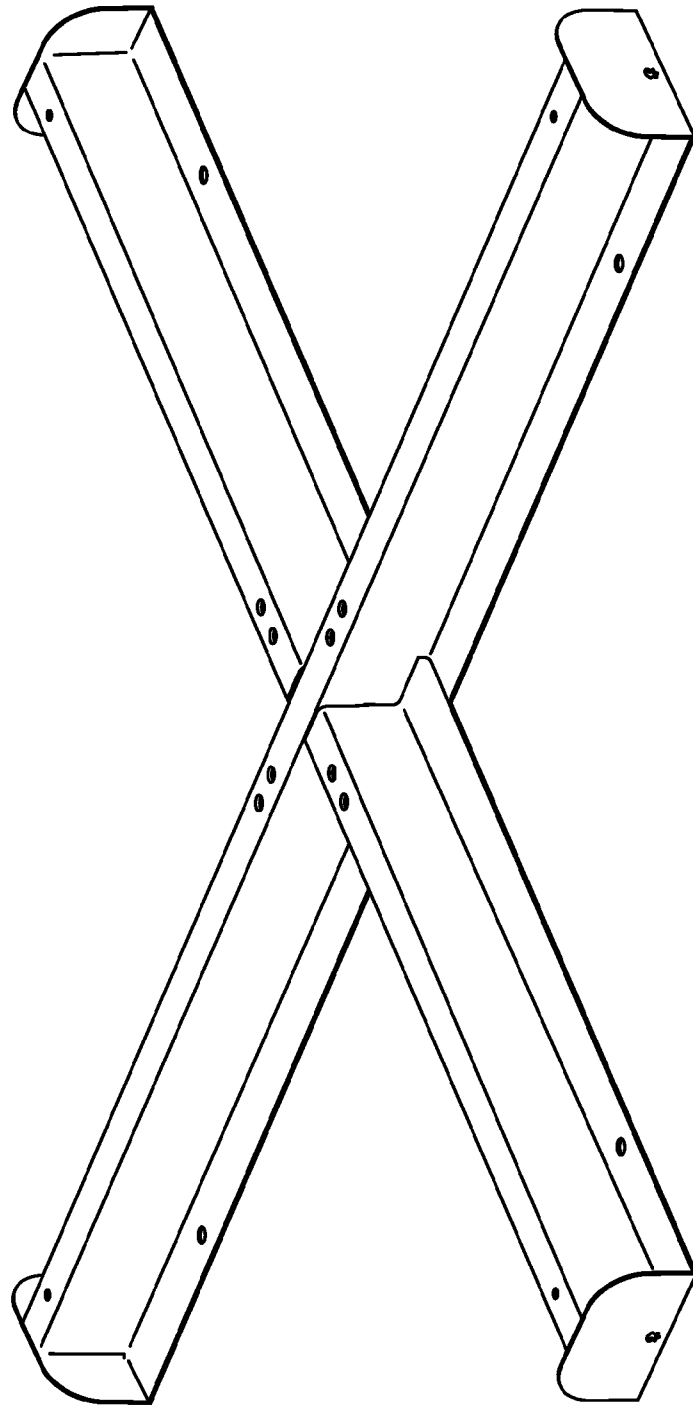


FIG. 208



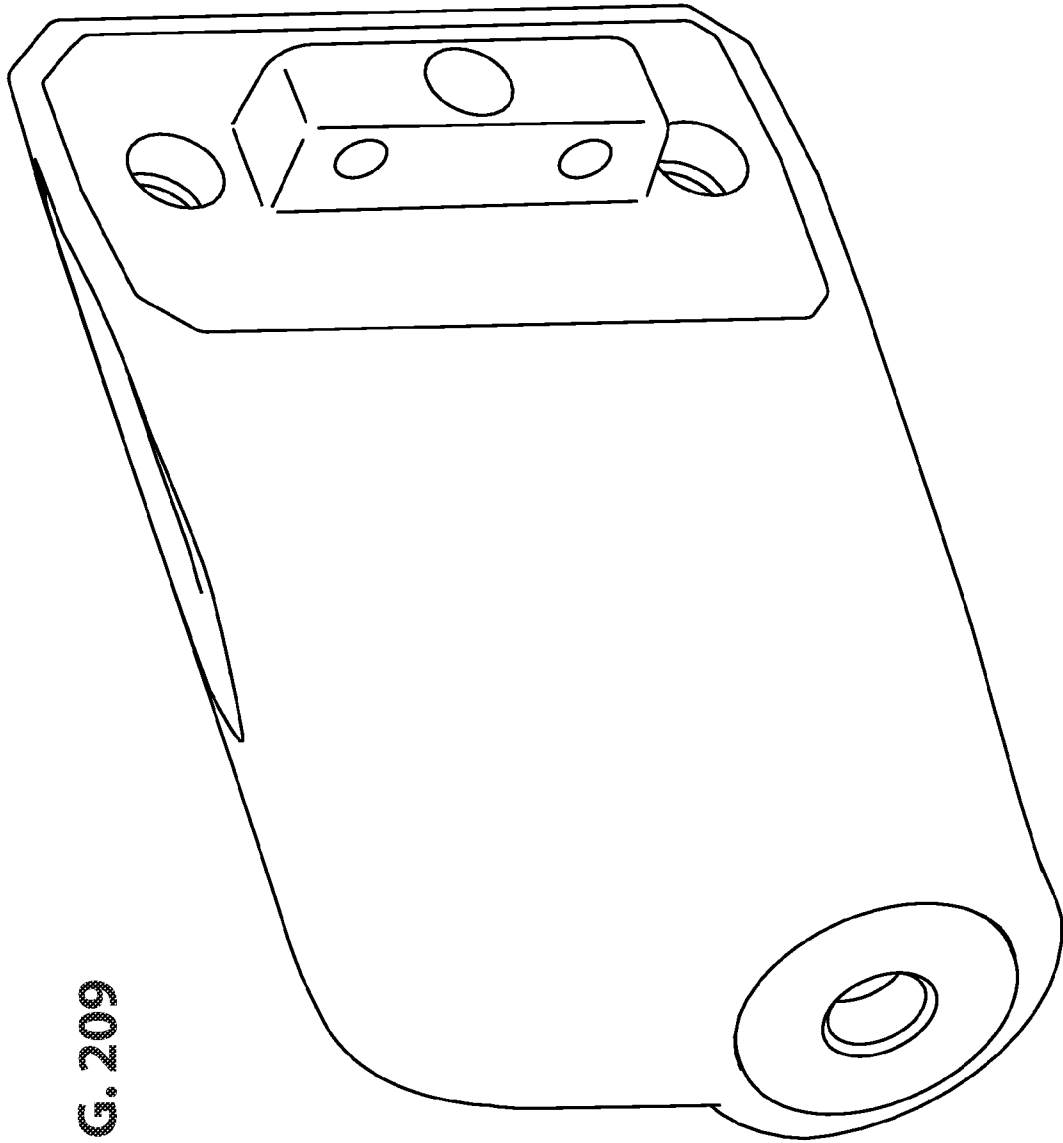


FIG. 209

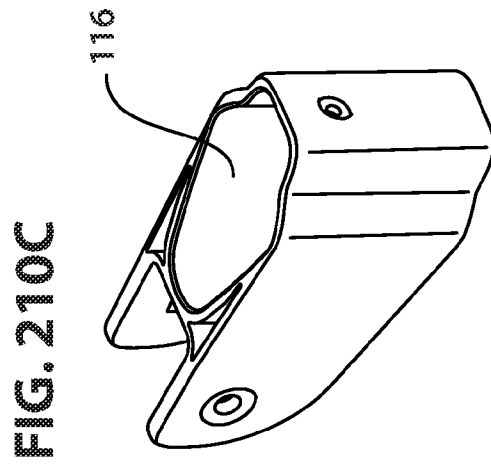
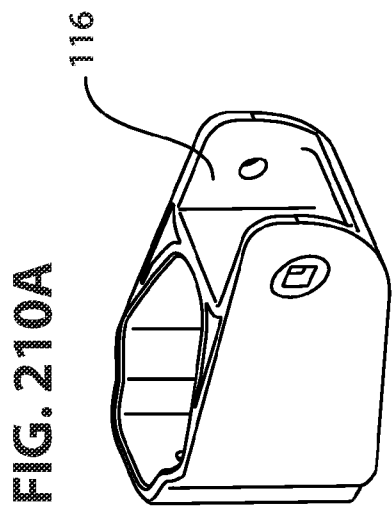
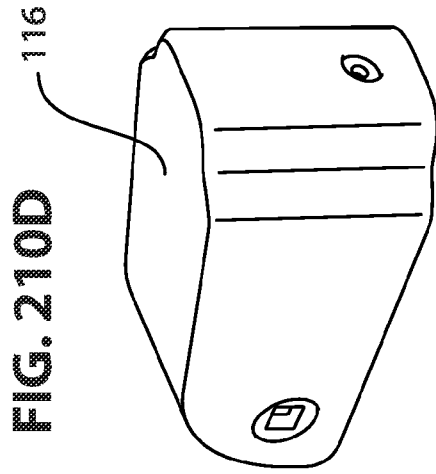
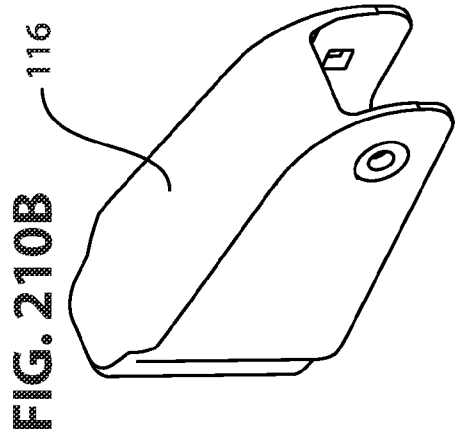


FIG. 211A

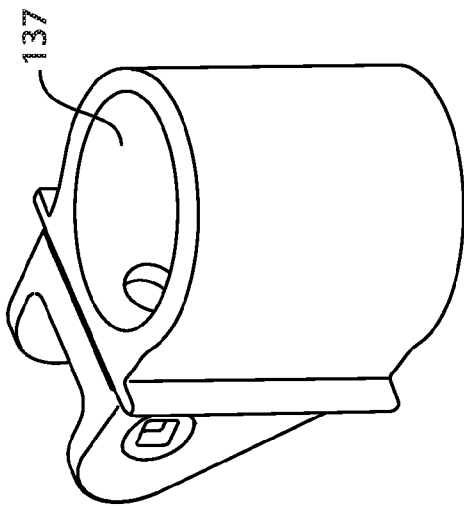


FIG. 211B

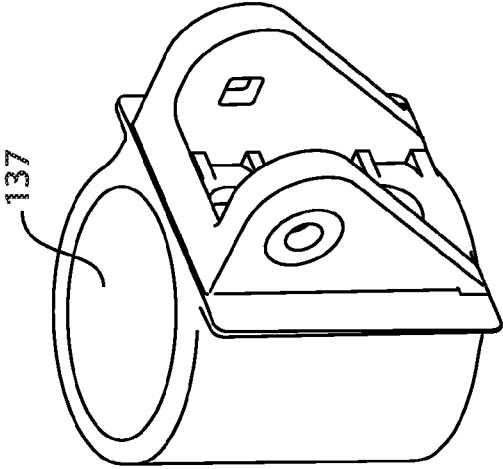


FIG. 211C

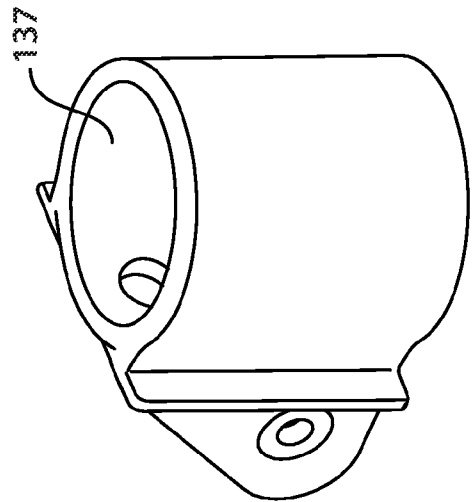


FIG. 211D

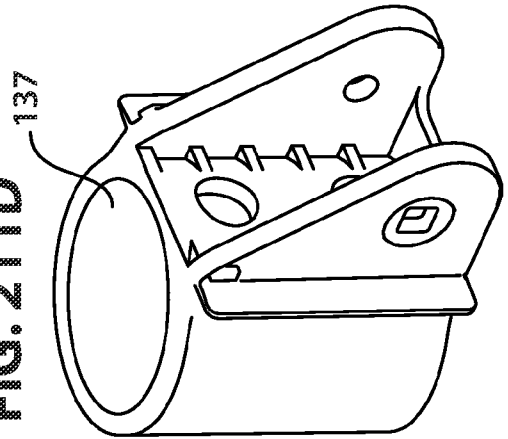


FIG. 212B

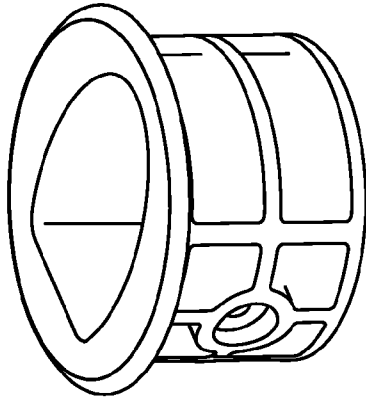


FIG. 212D

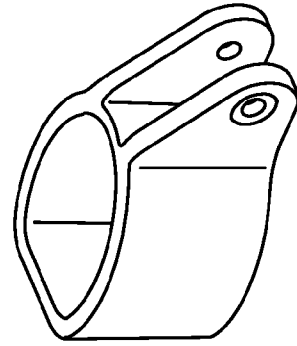


FIG. 212A

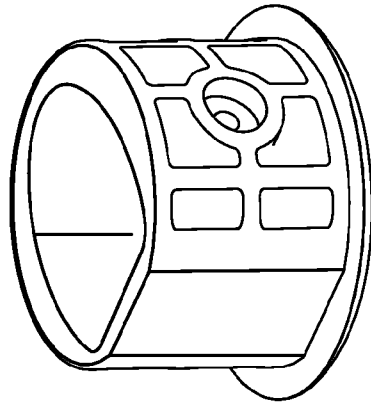


FIG. 212C

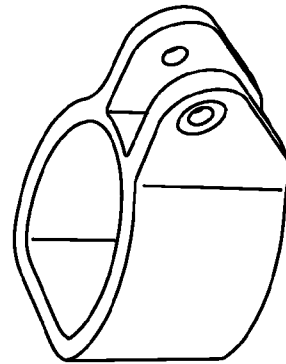


FIG. 213

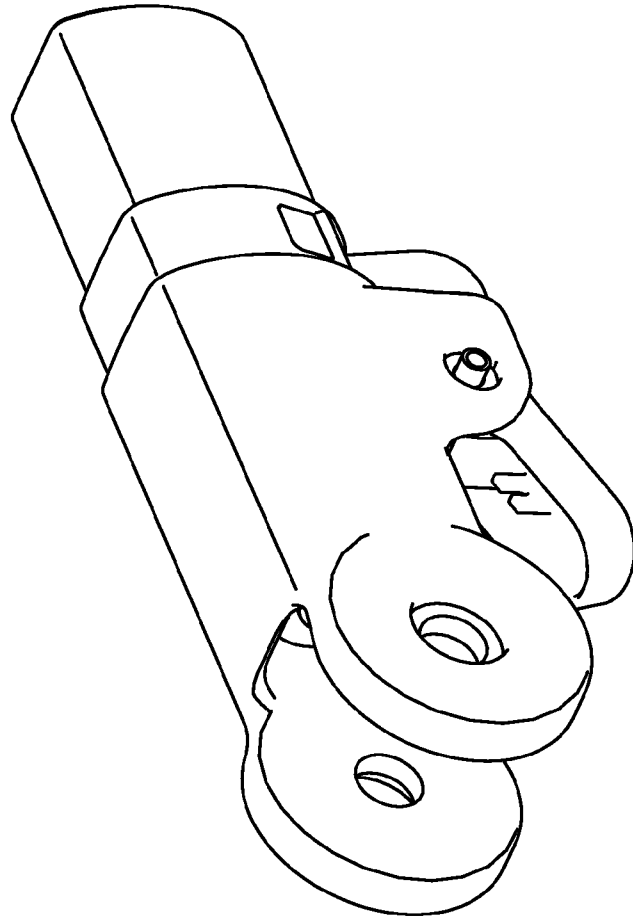


FIG. 214A

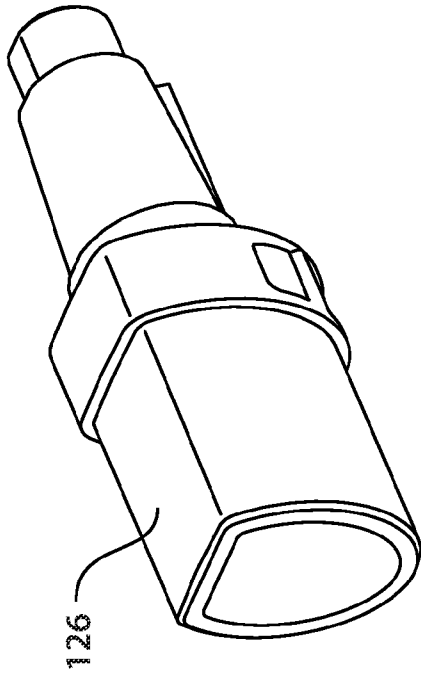


FIG. 214B

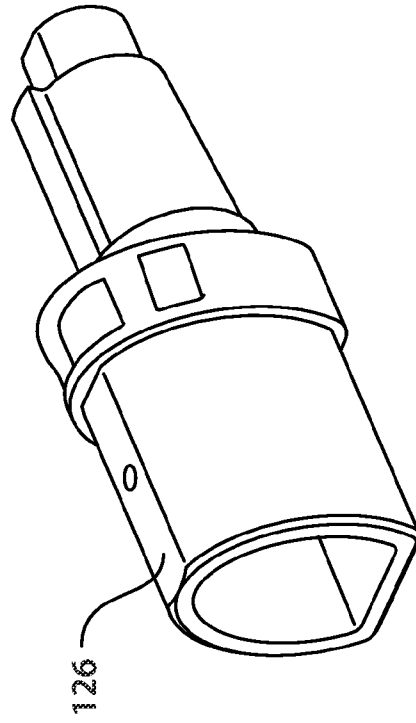


FIG. 215A

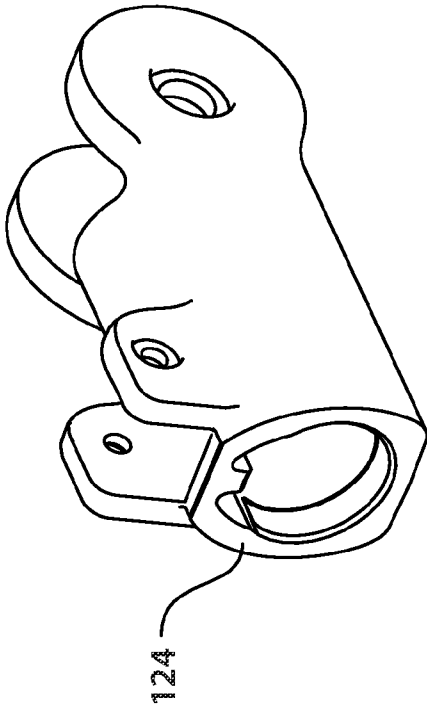


FIG. 215B

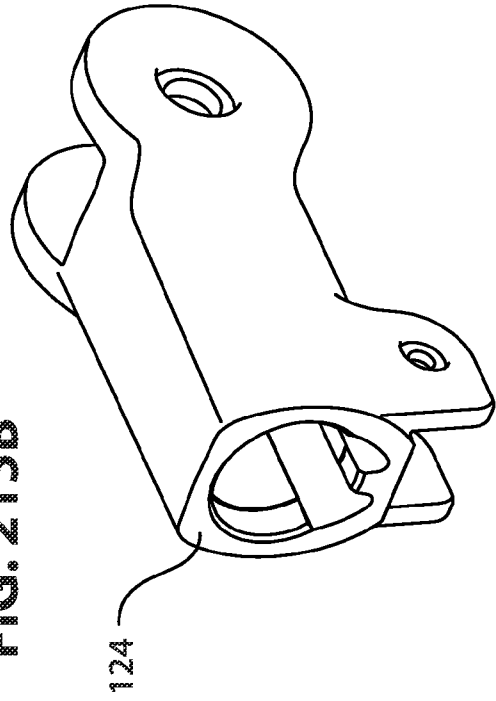


FIG. 216A

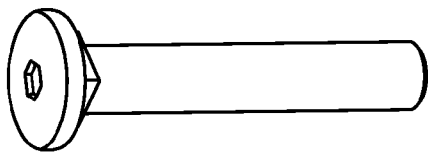


FIG. 216B

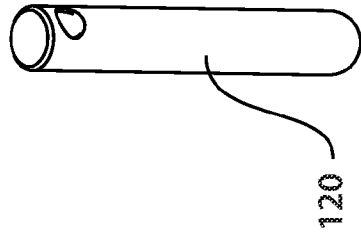


FIG. 216C

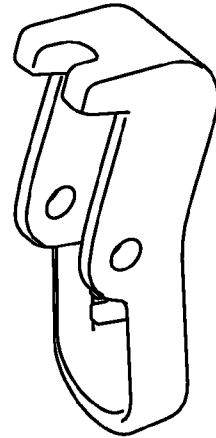


FIG. 216D

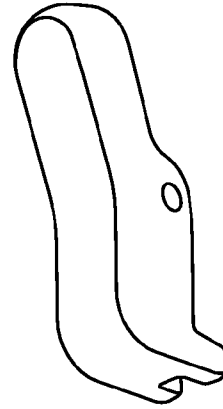


FIG. 217A

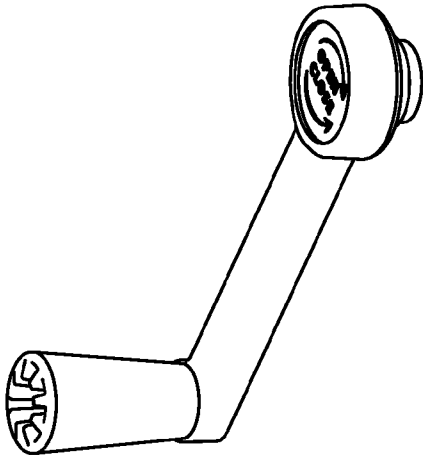


FIG. 217B

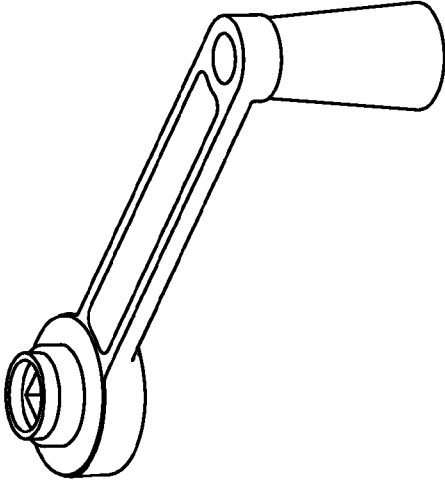


FIG. 217C

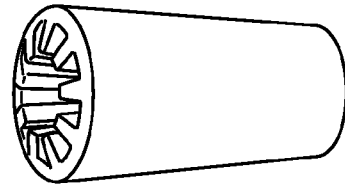


FIG. 217D

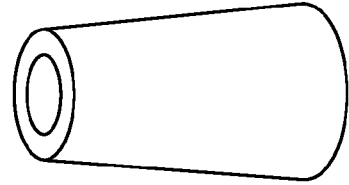


FIG. 218

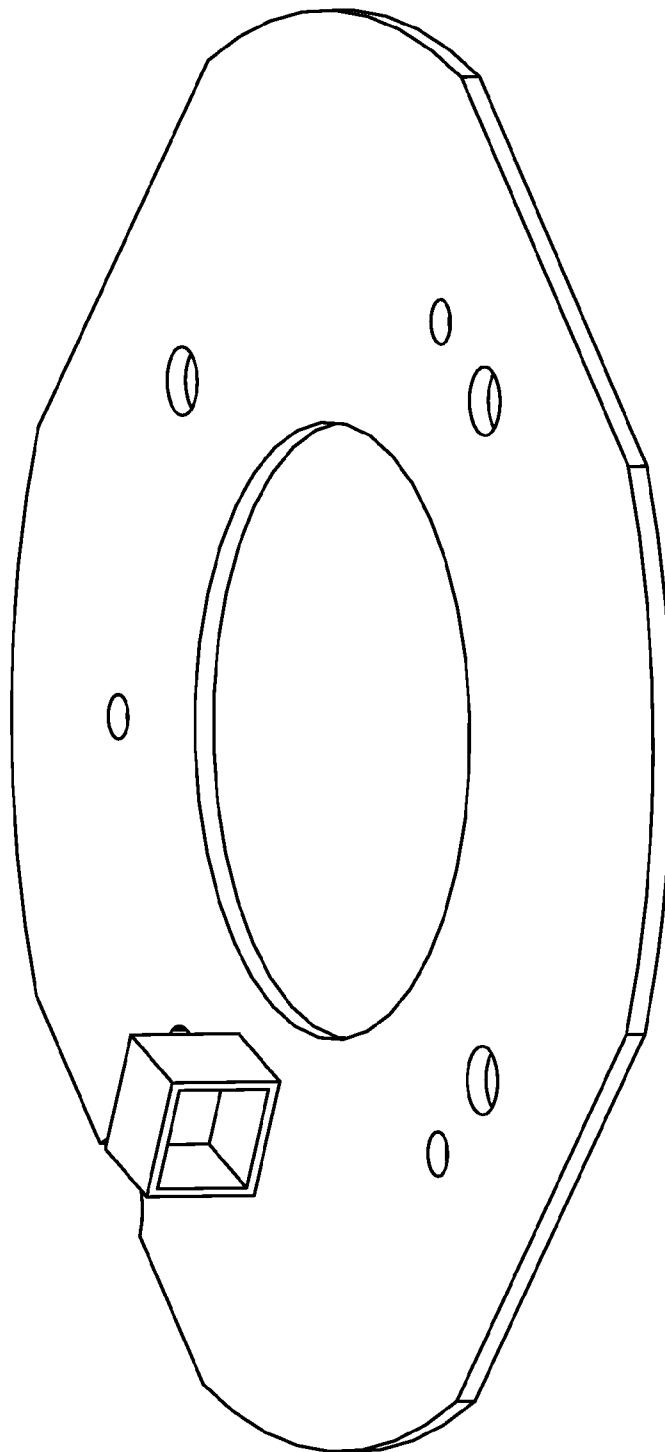


FIG. 219

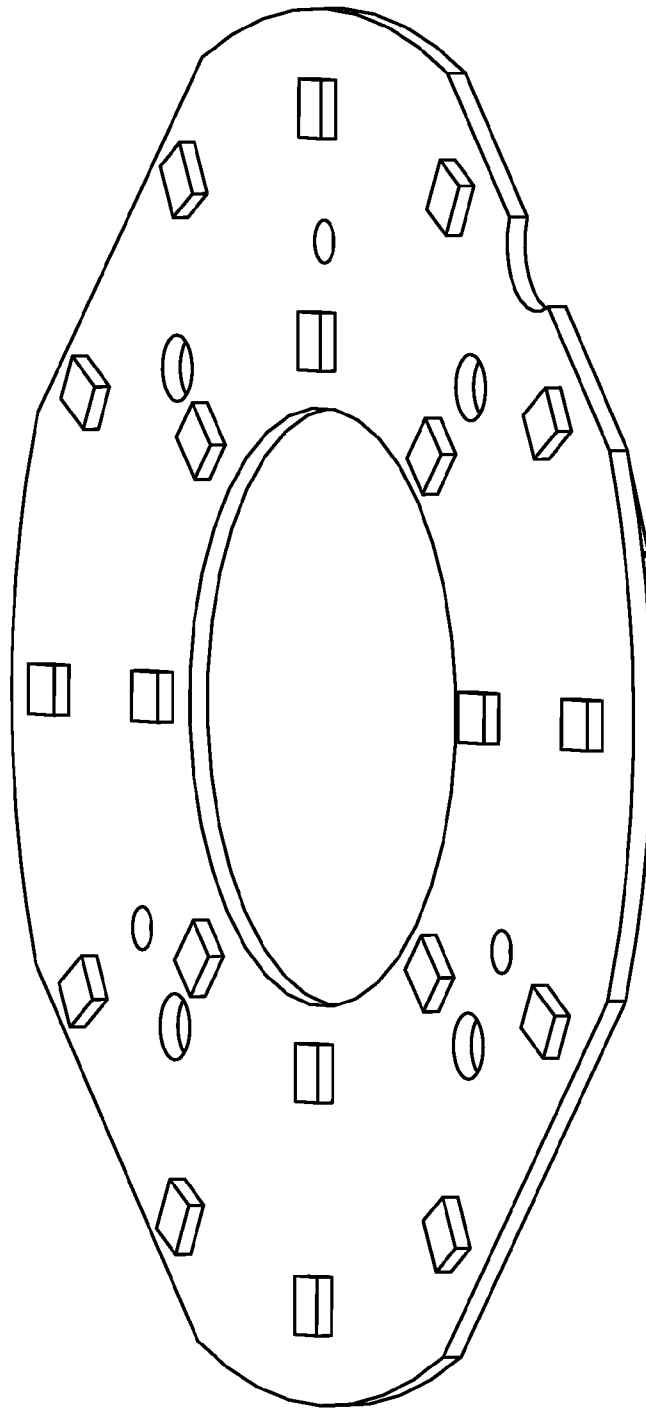


FIG. 220

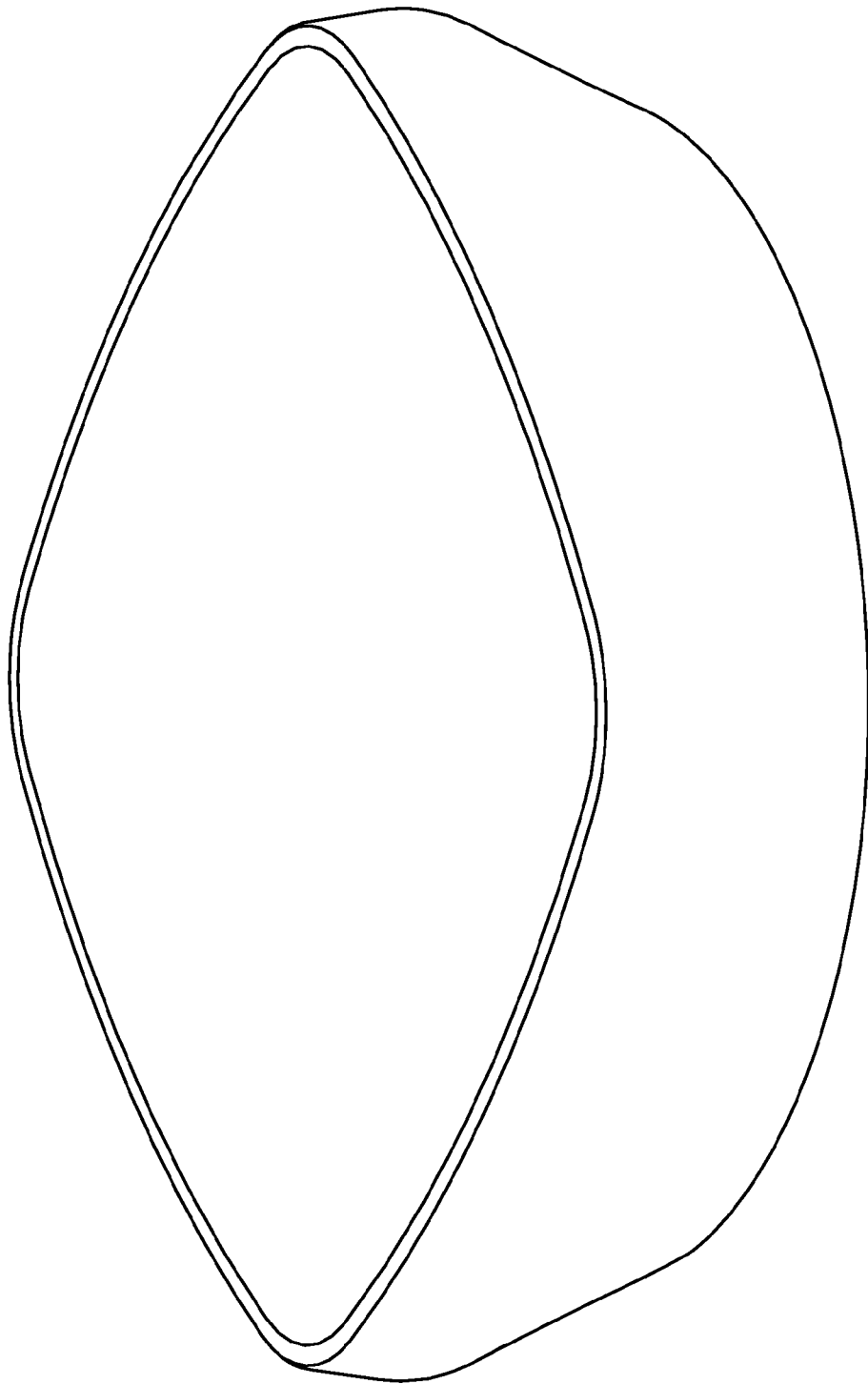
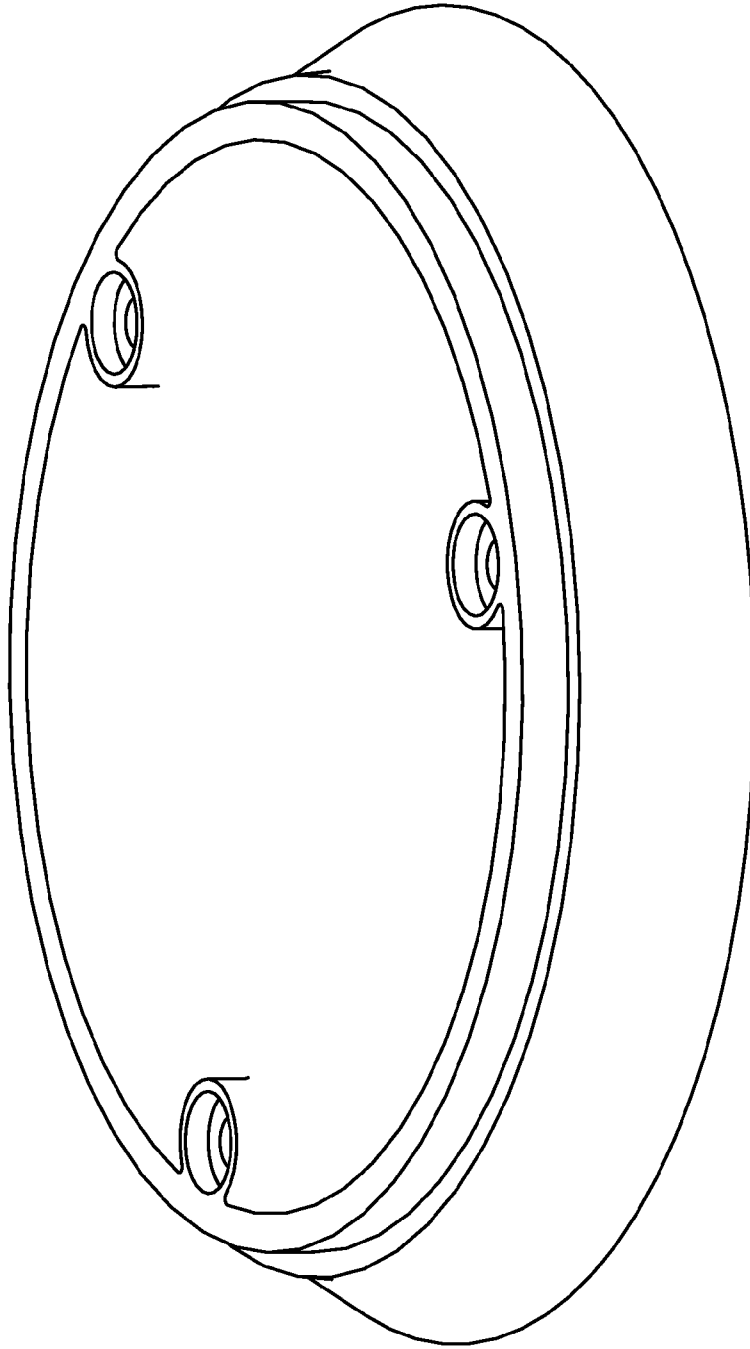


FIG. 221



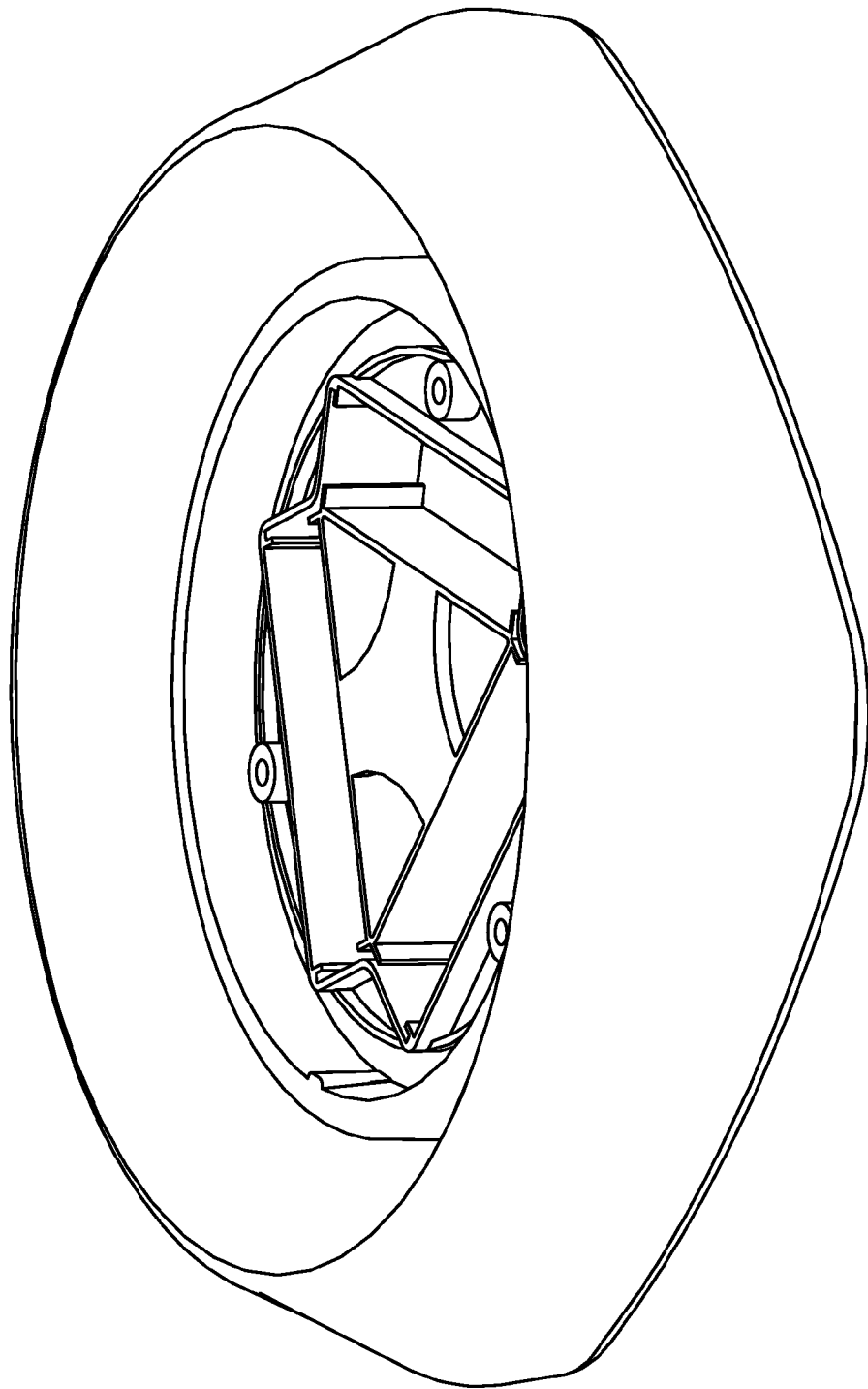


FIG. 222

FIG. 223

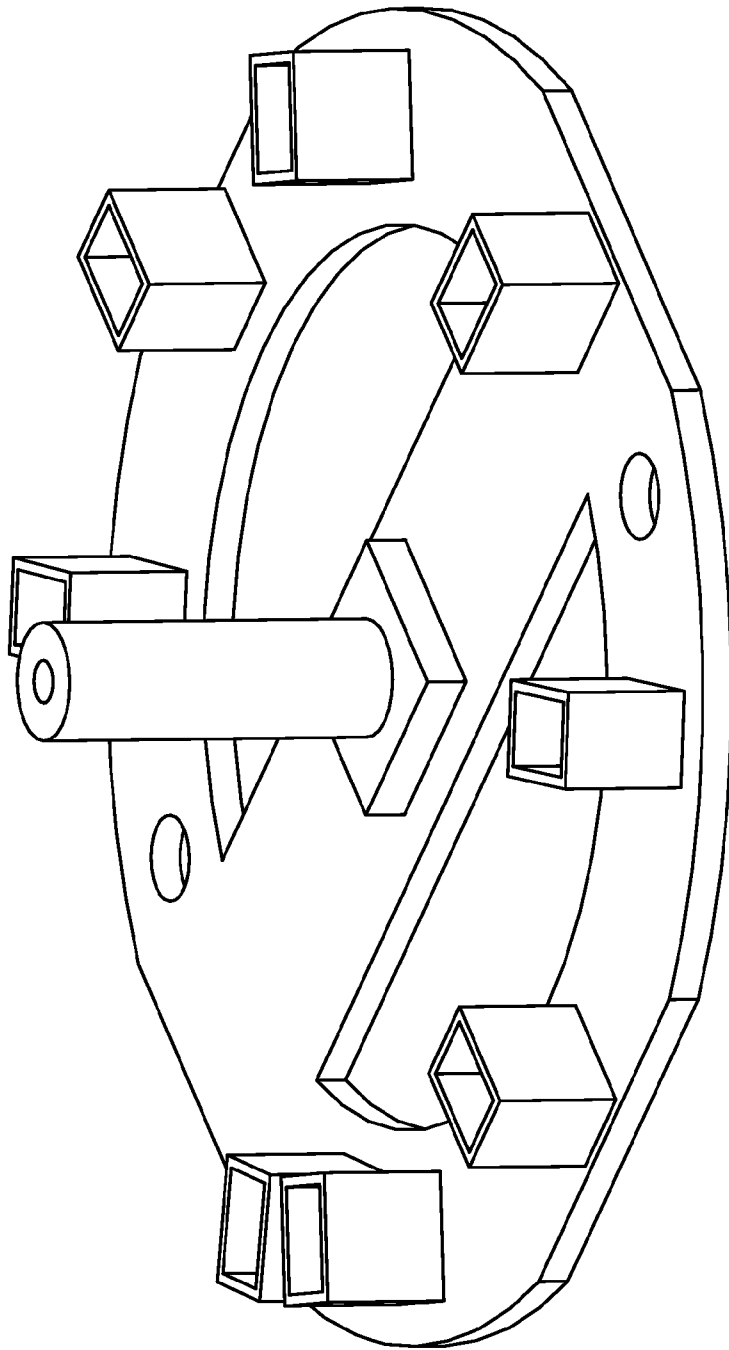


FIG. 224

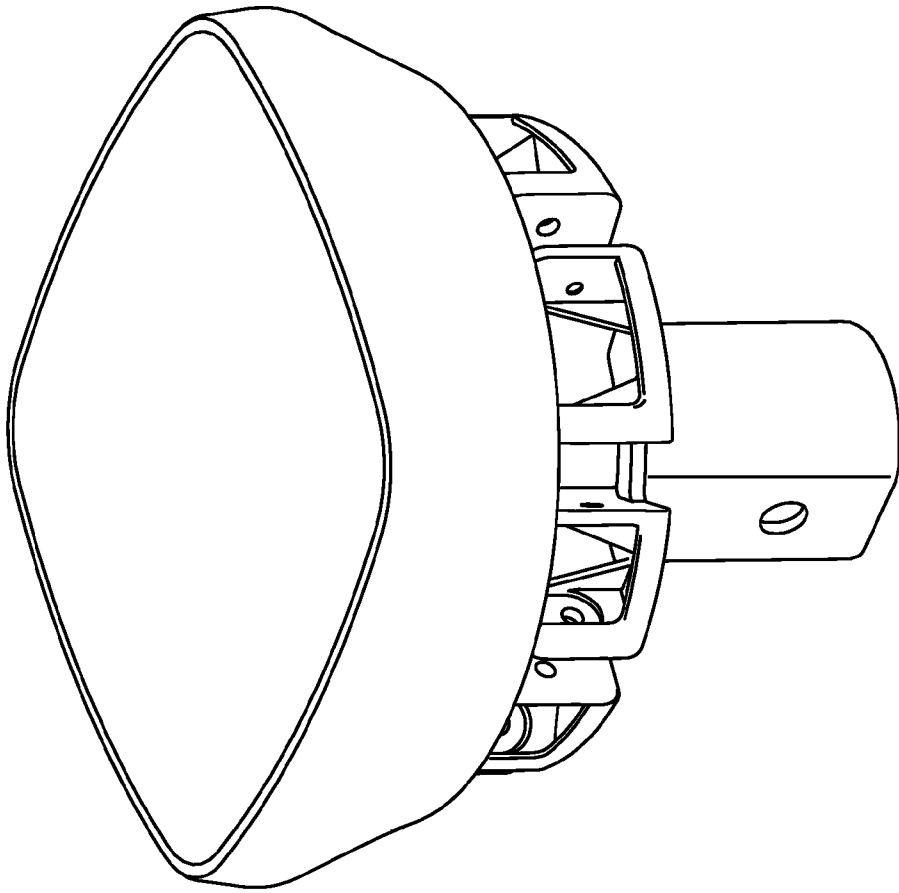


FIG. 225

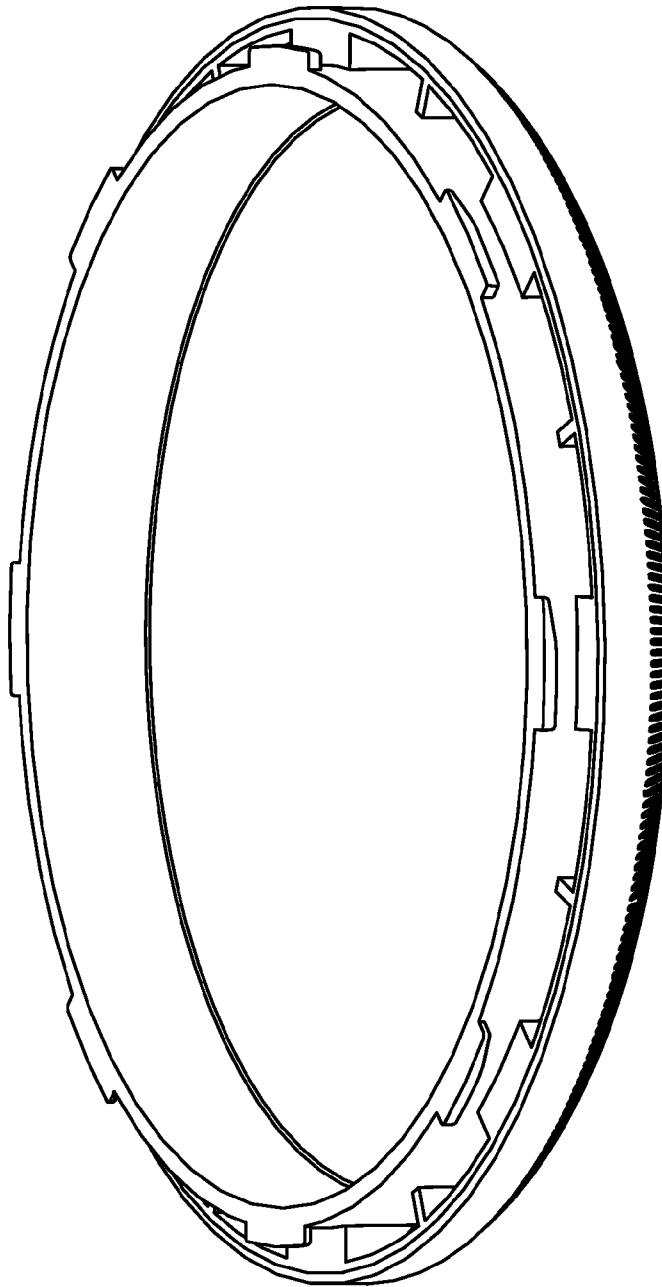
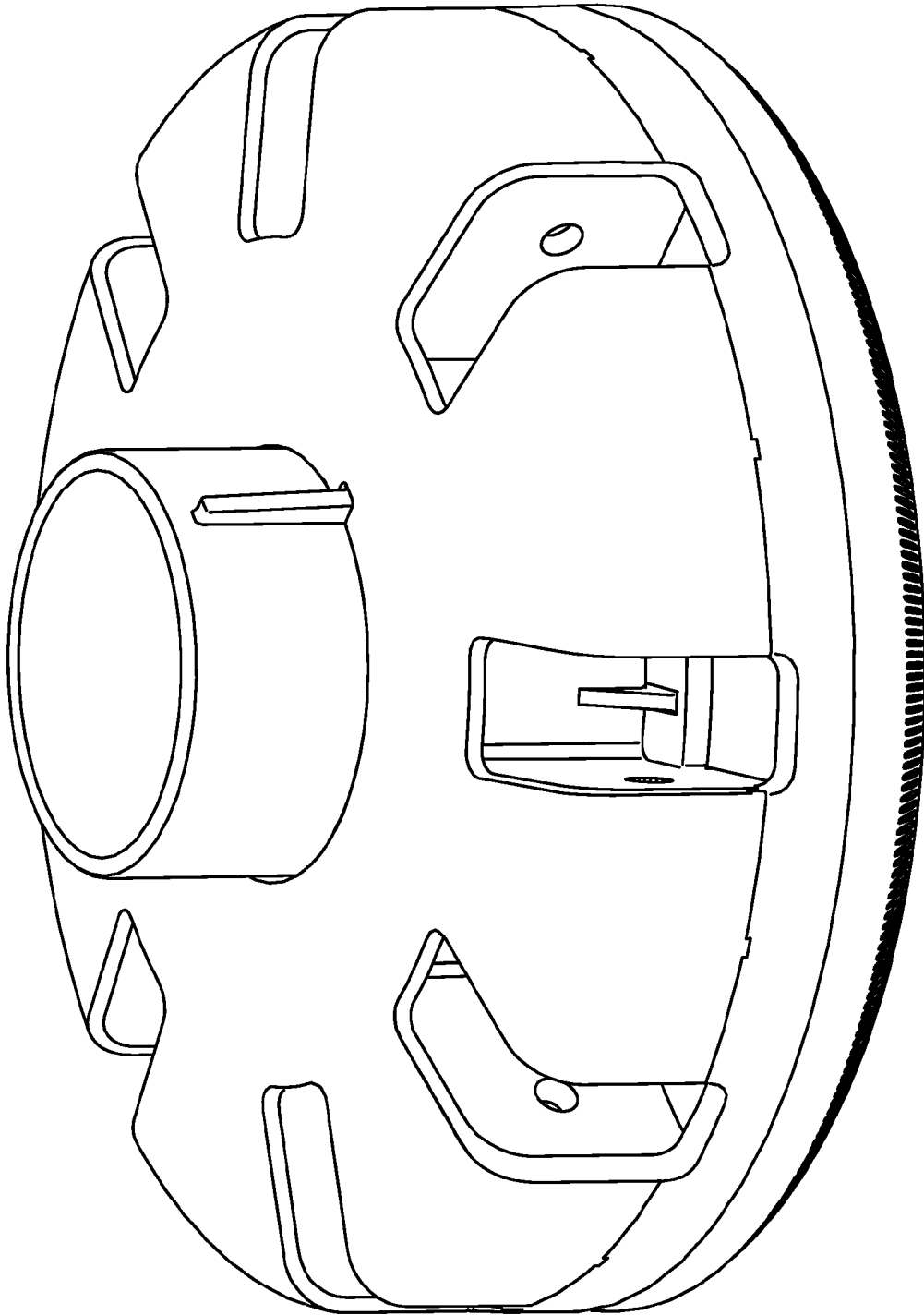


FIG. 226



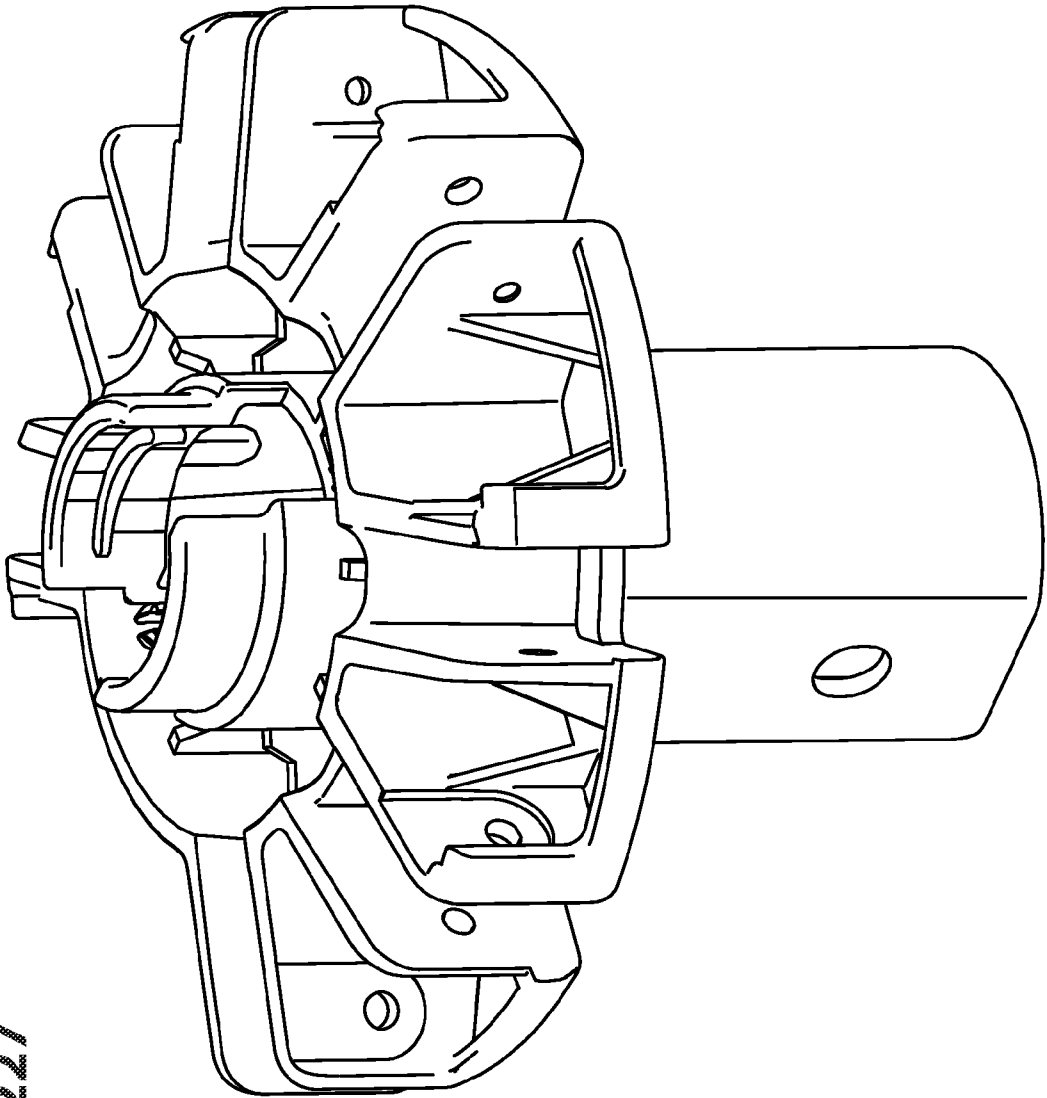


FIG. 227

FIG. 228

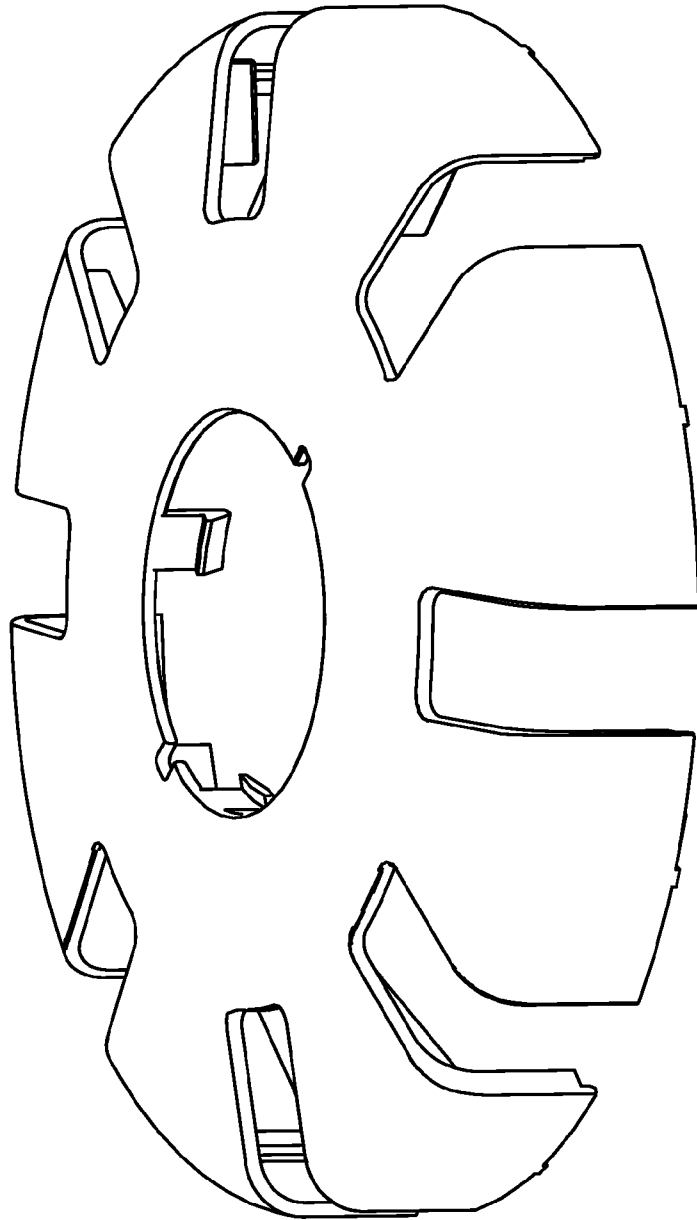


FIG. 229

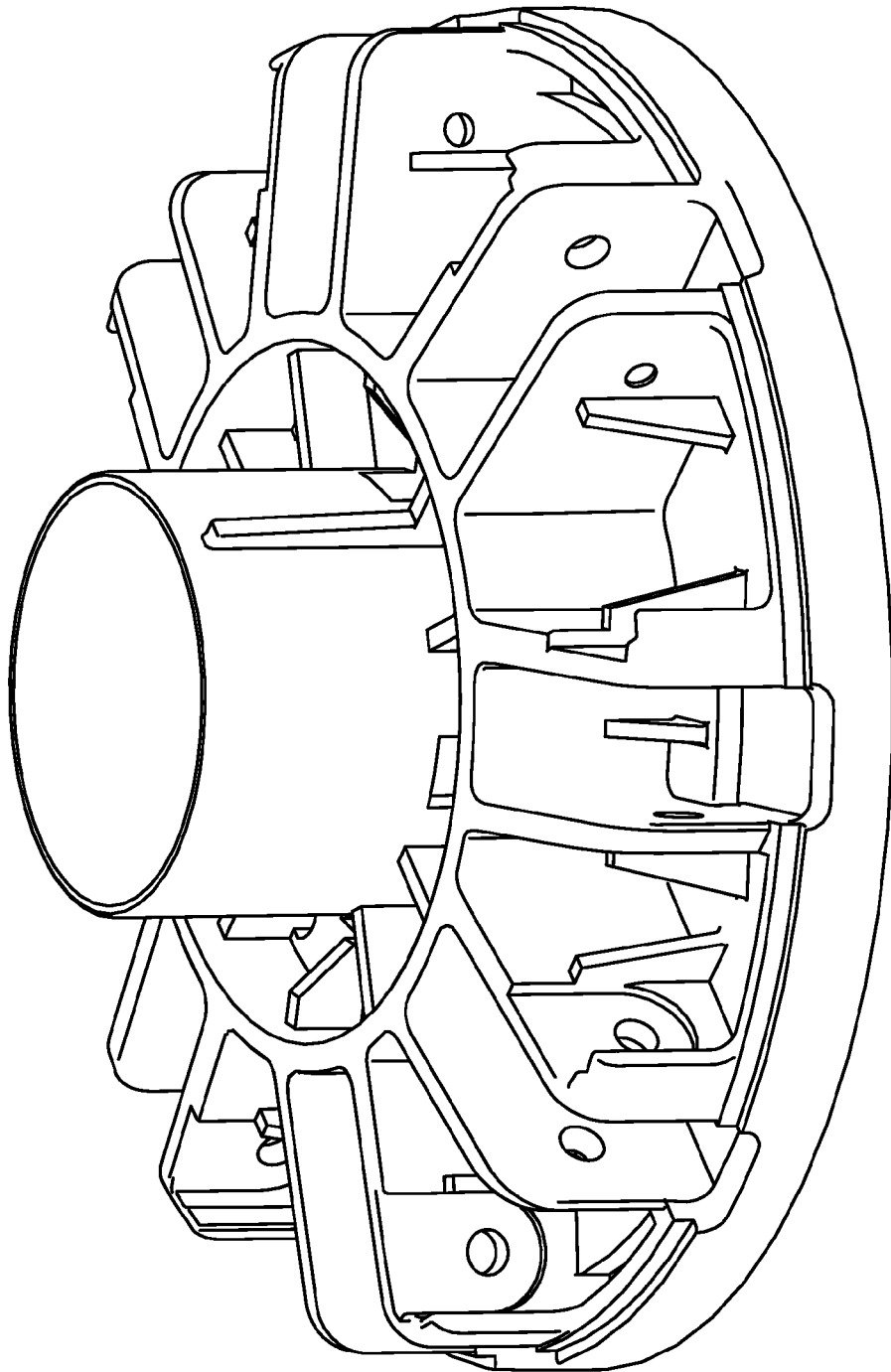


FIG. 230A



FIG. 230B



FIG. 230C



FIG. 231A

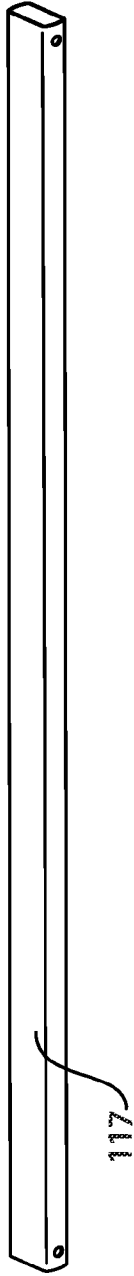


FIG. 231B

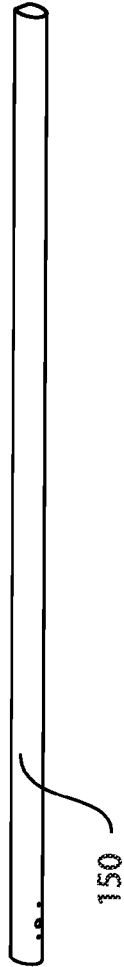


FIG. 231C



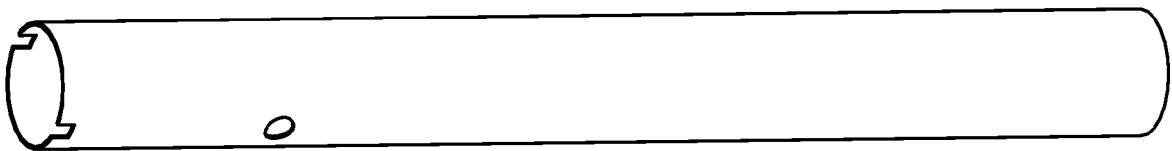


FIG. 232A

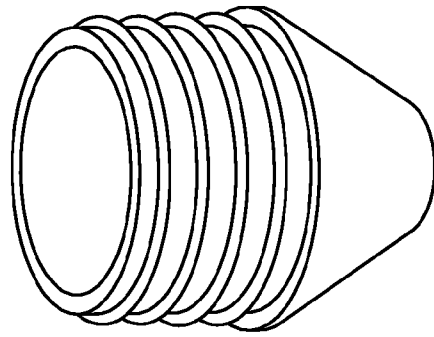


FIG. 232B

FIG. 233A

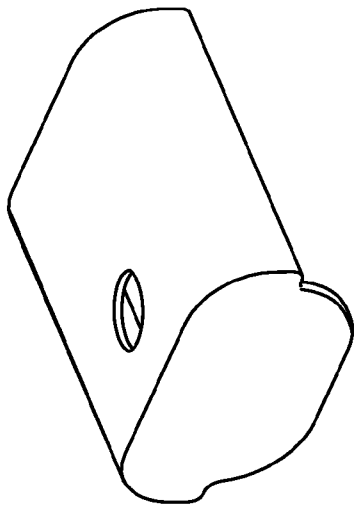


FIG. 233B

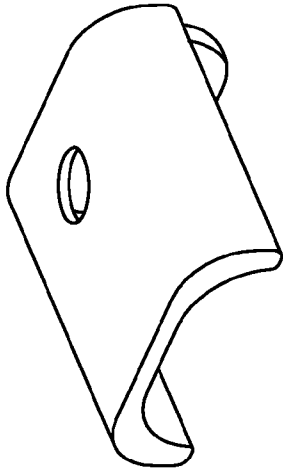


FIG. 233C

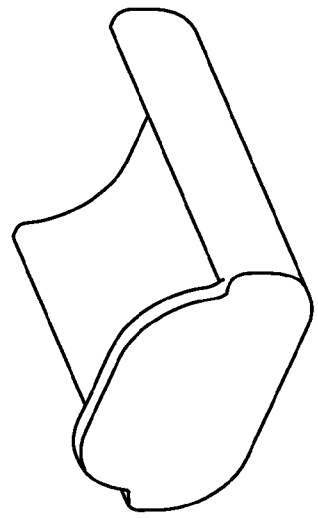


FIG. 233D

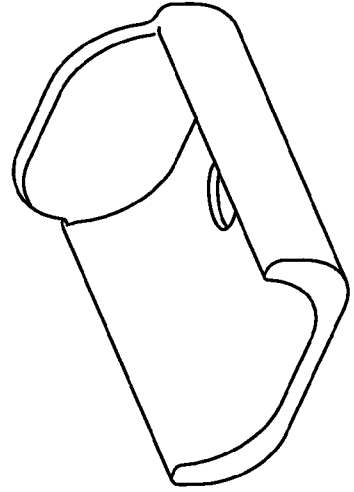


FIG. 234A

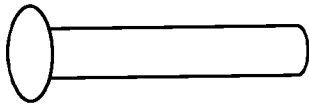


FIG. 234B

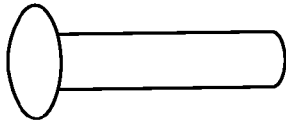


FIG. 234C

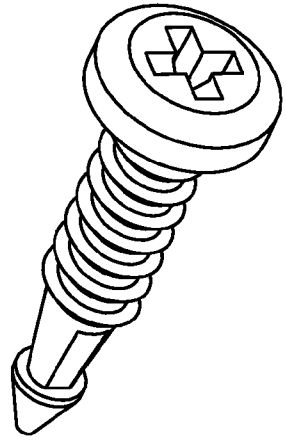


FIG. 234D

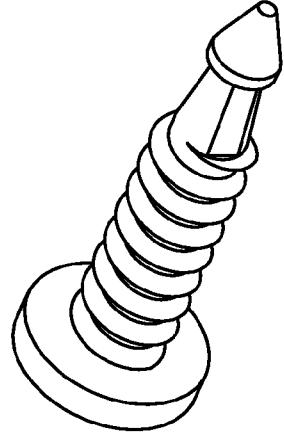


FIG. 235

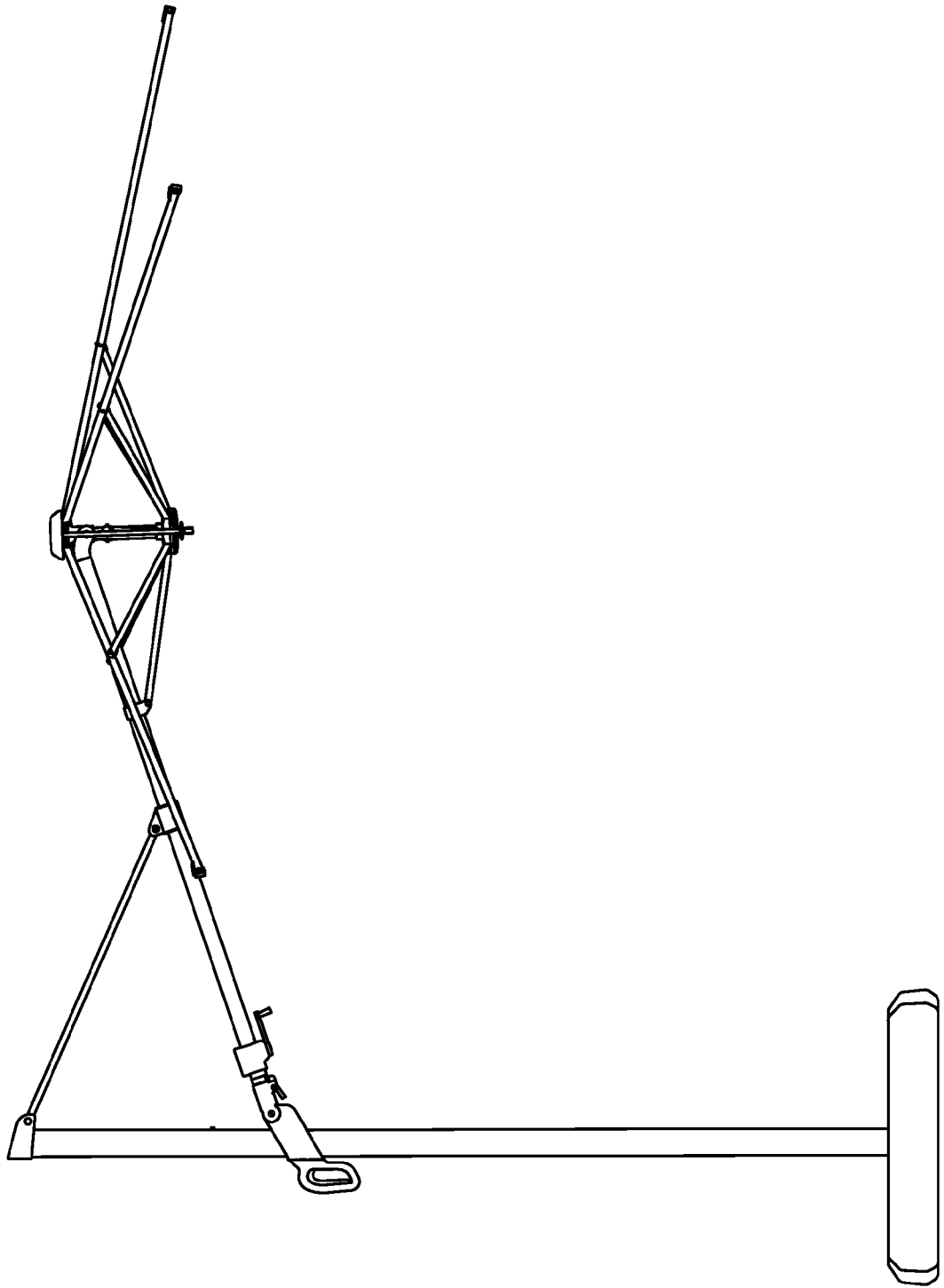
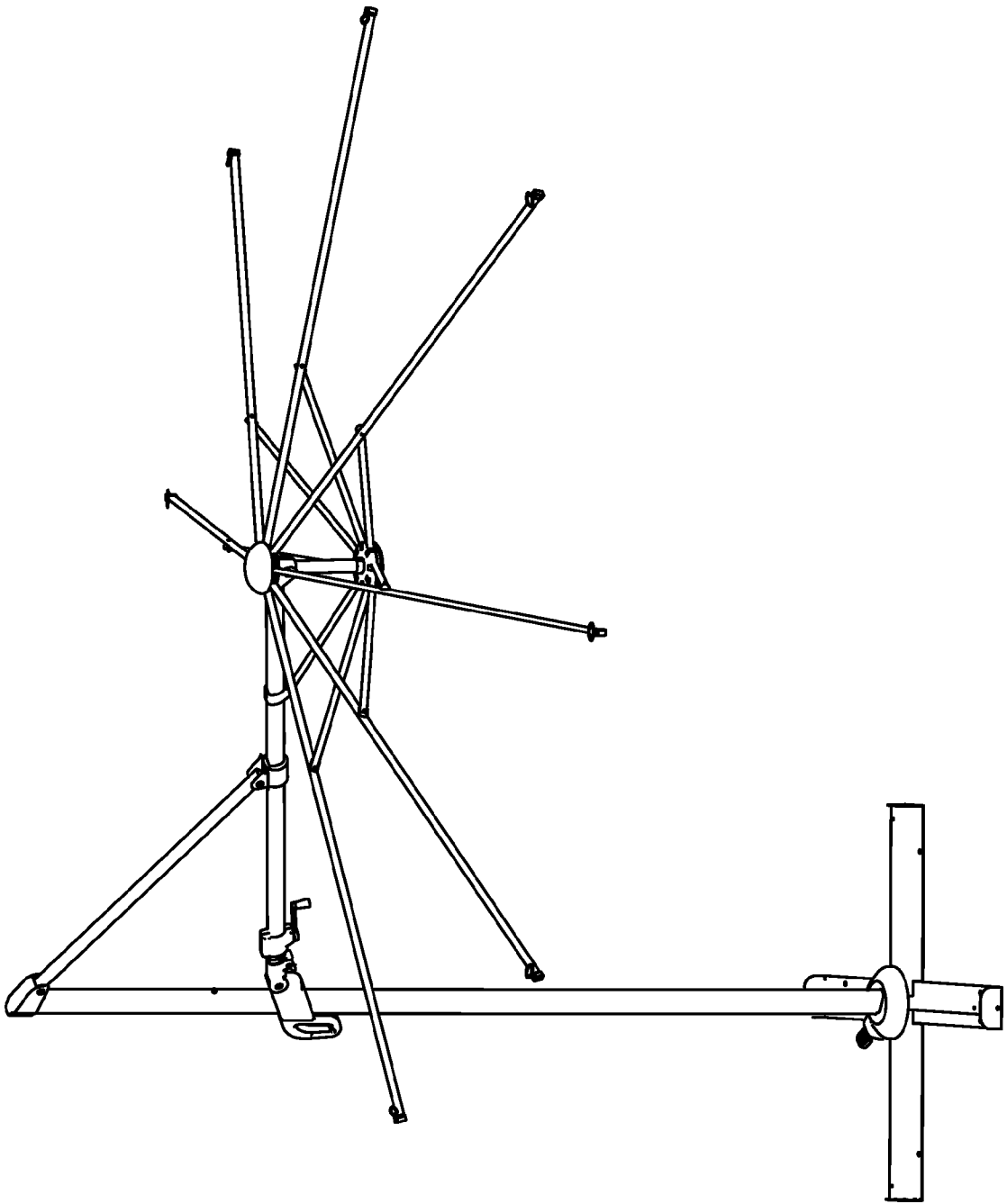


FIG. 236



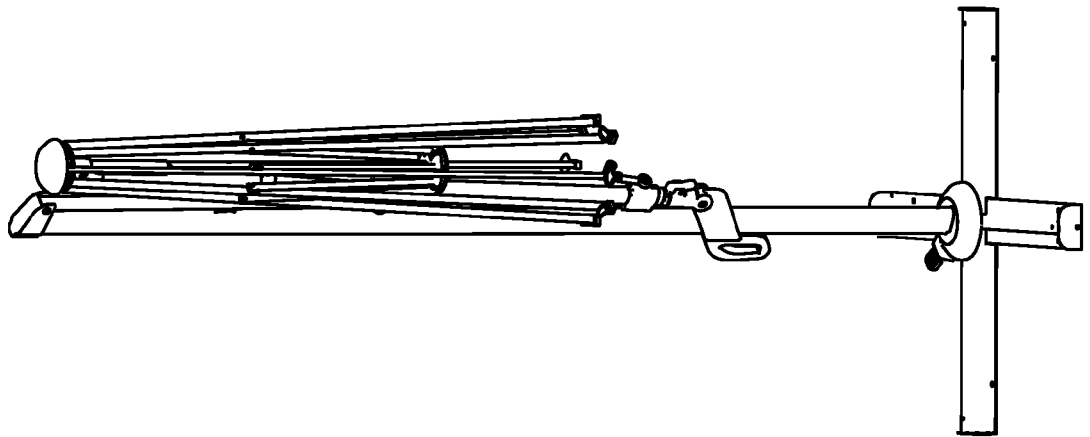


FIG. 237

FIG. 238

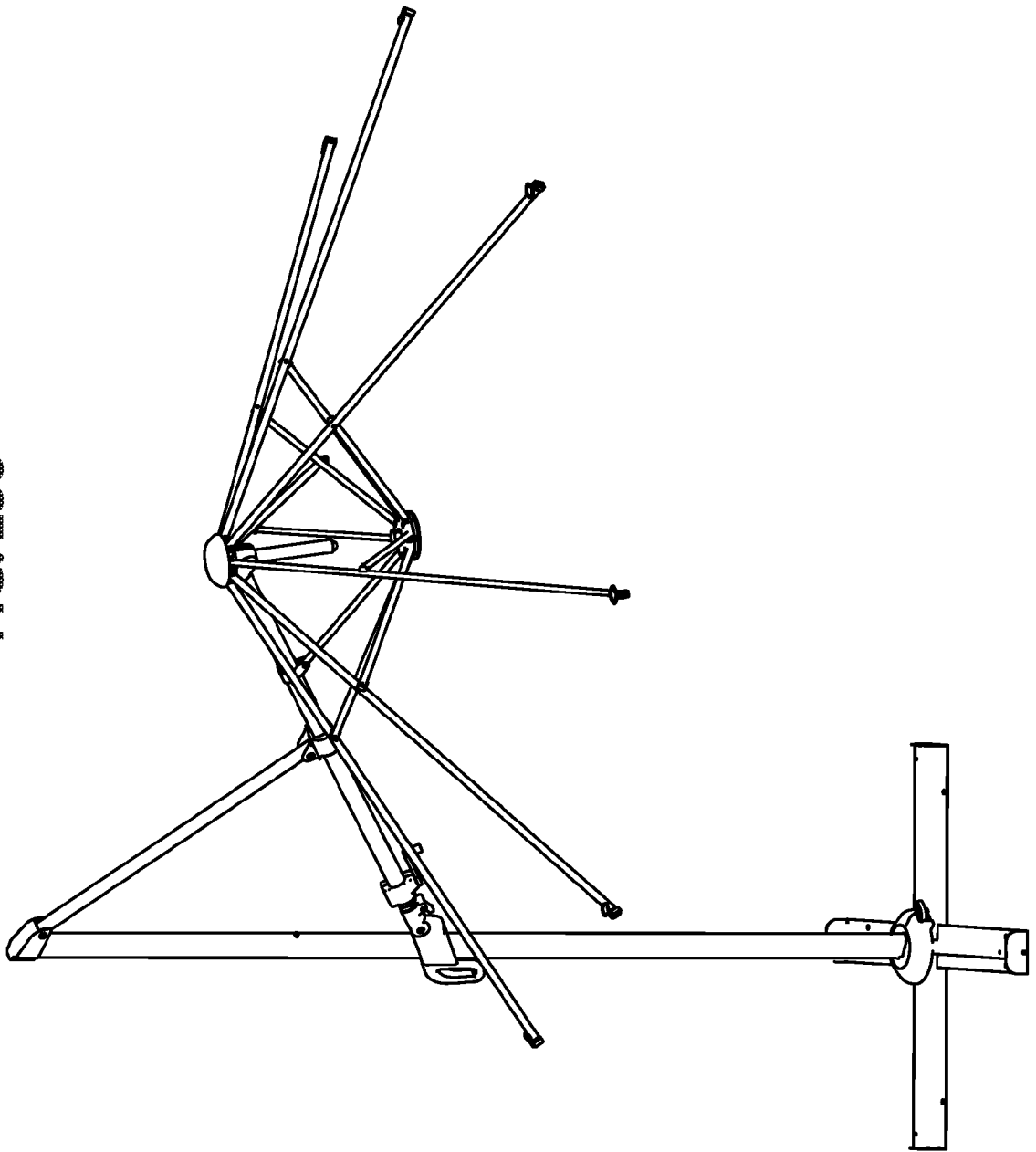


FIG. 239

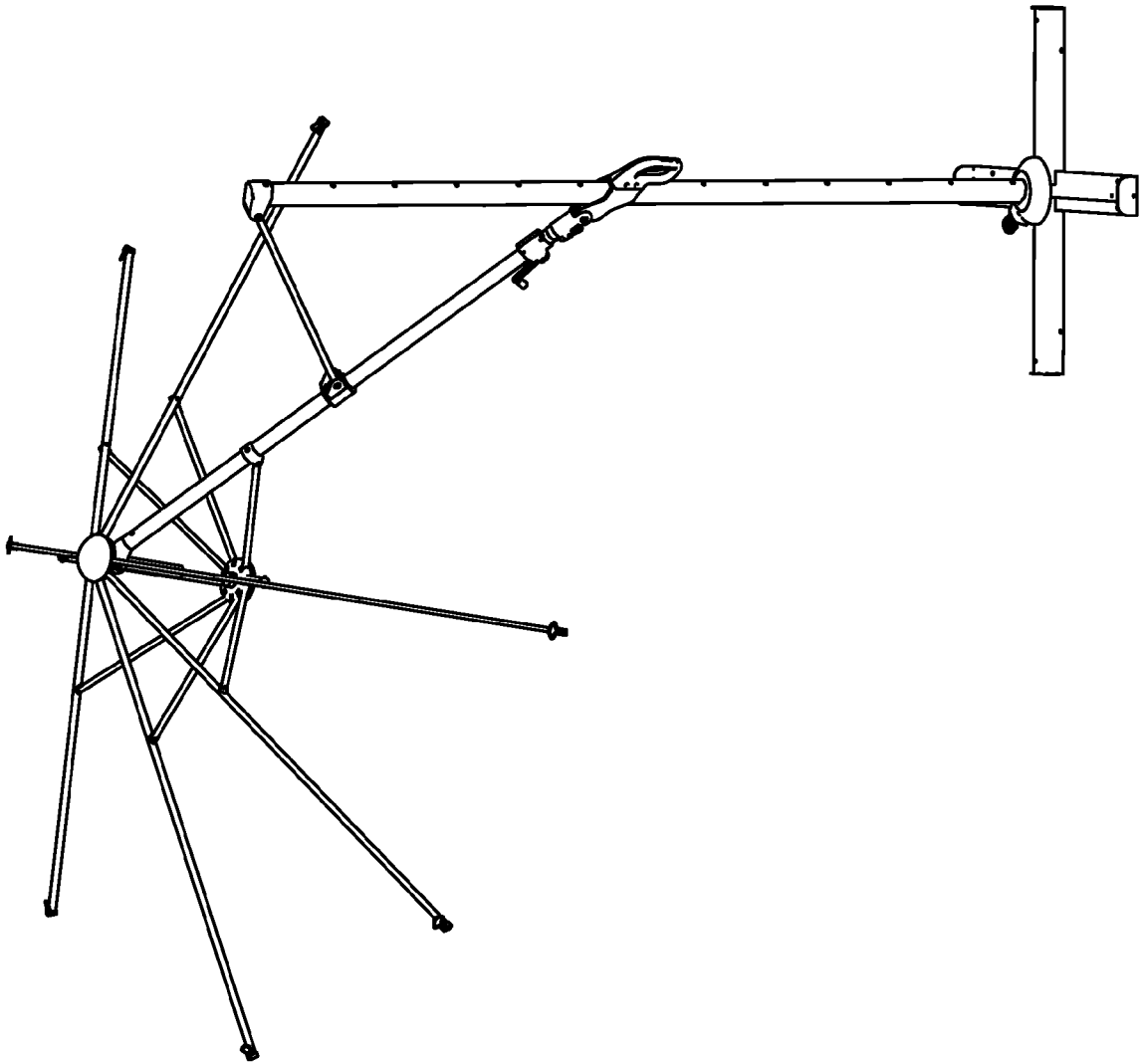
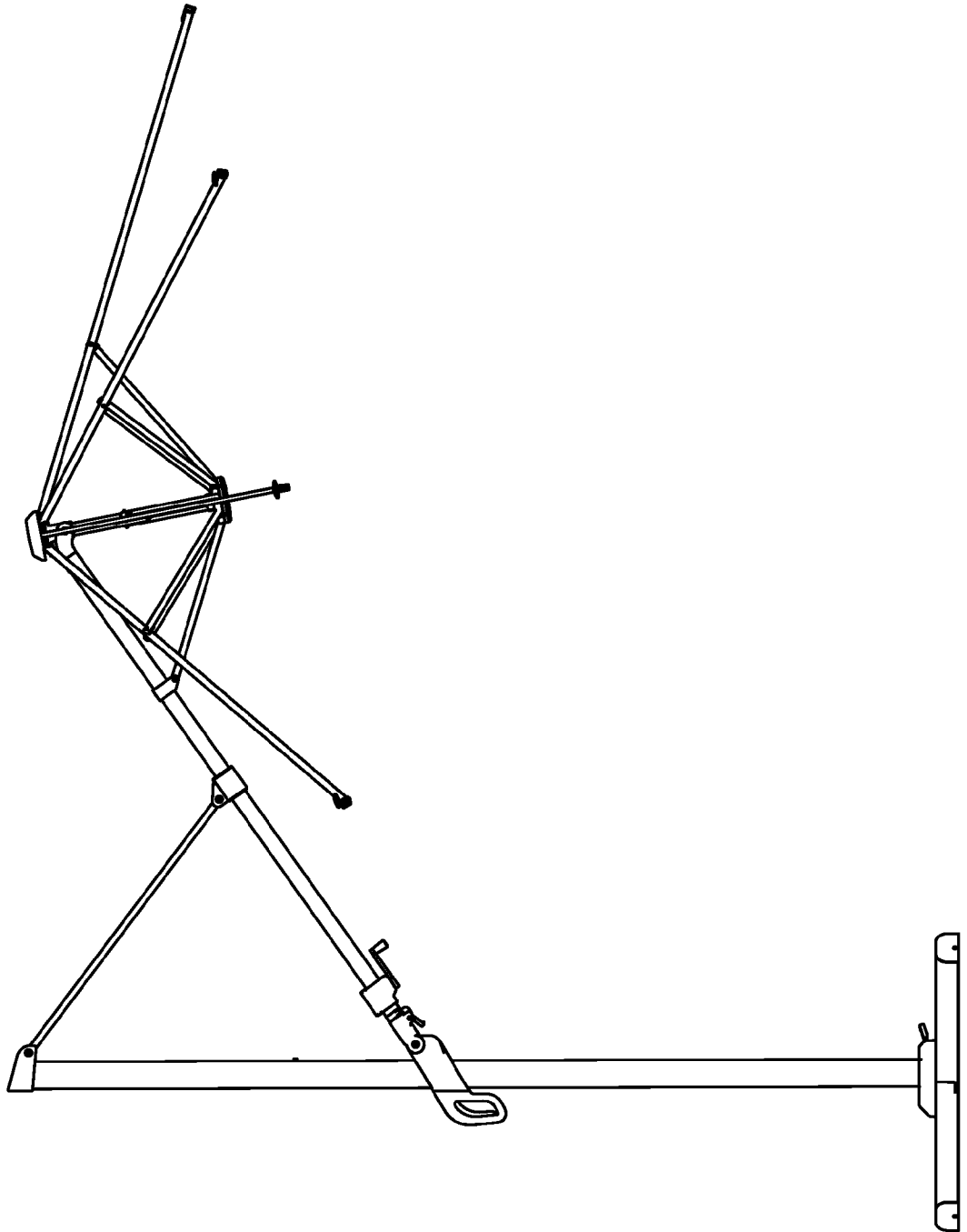


FIG. 240



INTERNATIONAL SEARCH REPORT

International application No PCT/IB2023/000186

A. CLASSIFICATION OF SUBJECT MATTER
INV. A45B25/02 A45B25/00 A45B23/00 A45B25/14
ADD.

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

B. FIELDS SEARCHED
 Minimum documentation searched (classification system followed by classification symbols)
A45B

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

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	FR 2 992 834 A1 (AULIAN MFG LTD [CN]) 10 January 2014 (2014-01-10) page 5, line 32 - page 11, line 30 figures 1-3	1-20
A	----- CN 106 388 174 A (LINHAI LIFA ARTS & CRAFTS CO LTD) 15 February 2017 (2017-02-15) figures 1, 5, 6 -----	1-20

Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents :

<p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier application or patent but published on or after the international filing date</p> <p>"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)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p>	<p>"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</p> <p>"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</p> <p>"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</p> <p>"&" document member of the same patent family</p>
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Date of the actual completion of the international search 7 September 2023	Date of mailing of the international search report 18/09/2023
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Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer Witkowska-Piela, A
----------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/IB2023/000186

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
FR 2992834	A1	10-01-2014	NONE

CN 106388174	A	15-02-2017	NONE
