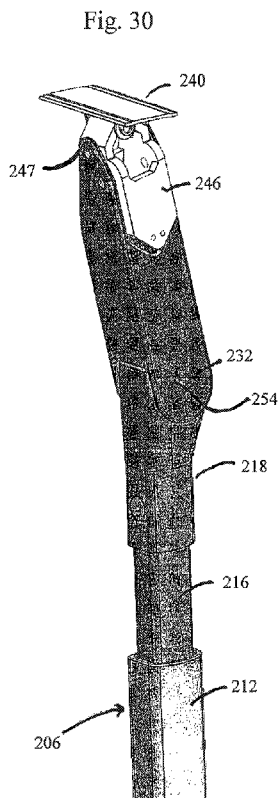




- (51) International Patent Classification: *E06B 9/30* (2006.01)
- (21) International Application Number: PCT/US2012/034990
- (22) International Filing Date: 25 April 2012 (25.04.2012)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data: 13/094,705 26 April 2011 (26.04.2011) 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, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, 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, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK,

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(54) Title: CORDLESS BLIND SYSTEMS HAVING CORD ENCLOSURES WITH A SWIVEL FEATURE AND METHODS OF ASSEMBLING SUCH CORD ENCLOSURES



(57) Abstract: A cord enclosure assembly to encase one or more lift cords extending from the head-rail of an architectural covering, such as a blind or shade system, is disclosed, for the purpose of avoiding exposed cords capable of creating a hazardous loop. The cord disclosure assembly comprises an enclosure having a pivot cup portion and an adaptor. The adaptor is configured to be selectively attached to the pivot cup portion about a pivot point. The adaptor is also configured to connect the enclosure to the headrail about a swivel point. At least one of the pivot point and the swivel point at a top of the enclosure allows the enclosure to swivel, or move in a lateral direction when attached to the headrail. This lateral movement allows the enclosure to be positioned substantially horizontally such that it may be stored under the headrail behind the blind or shade assembly.

WO 2012/149015 A1

SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG). **Published:**

— with international search report (Art. 21(3))

***CORDLESS BLIND SYSTEMS HAVING CORD ENCLOSURES WITH A
SWIVEL FEATURE AND METHODS OF ASSEMBLING SUCH CORD
ENCLOSURES***

5 Related Applications

[0001] This application is a continuation-in-part application of co-pending patent application serial number 13/035,222, filed February 25, 2011, entitled "Cordless Blind System and Retro-Fit Method", which in turn claims the benefit of provisional patent application serial number 61/309,426, entitled "Cordless Blind
10 System and Retro-Fit Method", filed March 02, 2010, provisional patent application serial number 61/325,807, entitled "Cordless Blind System and Retro-Fit Method", filed April 19, 2010, provisional patent application serial number 61/353,653, entitled "Cordless Blind System and Retro-Fit Method", filed June 10, 2010, and provisional patent application serial number 61/411,336, entitled
15 "Cordless Blind System and Retro-Fit Method", filed November 8, 2010, the disclosures of which are hereby incorporated herein by reference in their entireties.

Field of the Disclosure

20 [0002] Embodiments disclosed in the present application relate to cordless window and architectural passage coverings. In one embodiment, an enclosed drive system for use in conjunction with a pull cord extending from a headrail of an architectural cover is disclosed. In another embodiment, a method for retro-fitting an architectural cover pull cord assembly including a pull cord associated
25 with a cord lock and extending from a headrail of the architectural cover is disclosed. More generally, the embodiments described herein provide solutions for blinds, shades and other architectural coverings that would otherwise have an exposed hazardous loop.

30 Background

[0003] In the provision of window and architectural passage coverings, the art has long relied on cords, string or the like to extend and retract the coverings.

Such coverings take many forms, including shades such as curtains, roll-up shades, Venetian blinds, vertical blinds, cellular shades, and the like. A primary problem with such coverings that rely on cords is that small children can become entangled in the cords and experience serious harm, including strangulation and death. On August 26, 2009, the U.S. Consumer Product Safety Commission announced a voluntary recall of all ¼ inch Oval Roll-up Blinds and Woolrich Roman Shades, including some 4.2 million roll-up blinds and 600,000 Roman shades, (<http://www.cpsc.gov/cpsc/pub/prerel/prhtml09/09324.html>). The Commission referenced the hazard that "[s]trangulations can occur if the lifting loops slide off the side of the blind and a child's neck becomes entangled on the free-standing loop or if a child places his/her neck between the lifting loop and the roll-up blind material." Recent cited injuries include a report that "[i]n November 2007, a 1-year-old boy from Norridgewock, Maine became entangled and strangled in the lift cord loop of a roll-up blind that had fallen into his portable crib. In October 2008, a 13-month-old boy from Conway, AR was found with his head between the exposed inner cord and the cloth on the backside of a Roman shade. The cord was not looped around the boy's neck but rather ran from ear to ear and strangled the child." Numerous manufacturers and retailers have followed the recall. Additional information may be found at:

(<http://www.windowcoverings.org>).

[0004] In addition to the internal cords attached to the shade or blinds that can be pulled out and pose a problem, the pull cords, string and beaded cords in mechanical-based blinds and shades that are pulled on to draw up the blinds or shades also pose a risk since they also create a hazardous loop of sufficient diameter (12 inches according to the Consumer Product Safety Commission) for a small child to get their head tangled inside. The retrofit devices currently available (http://www.windowcoverings.org/how_to_retrofit.html) do not eliminate the hazardous loops created by the beaded cords even if they are tied to the wall with a tie-down device such as a Rollease™ product or with separated draw strings and/or cord stops that could still become tangled together to create a hazardous loop.

[0005] U.S. Patent No. 5,472,035 discloses a window blind lift cord operating mechanism incorporated into the twist wand that rotates to control tilting of blind slats, wherein the operating mechanism for raising and lowering the blind and locking the blind in adjusted positions includes a lift member mounted for movement along an outer side of the wand that drives an engaging member inside the wand that engages the lift cords that also extend into a lengthwise cord passage inside the wand. The disclosed operating means also includes a lock means for locking the lift cord engaging member at selected positions along the wand. One problem with this configuration is the obvious entanglement issues that would result with the lift cords internal to a wand that is rotated to control tilting of the blind slats, wherein securing the cord within the rotating wand almost guarantees entanglement. In addition, the weight and force required to lift the bottom rail along with the blind slats would create a significant burden on the rotating gears that open and close the blind slats including the entire attachment of the wand to the headrail.

[0006] In consequence, the art is in need of improvement in coverings for architectural openings that maintains the functionality and aesthetics of previously developed coverings, but avoids their deficiencies, particularly their hazardous character regarding the risk of injury or death associated with the use of cord arrangements. The art also is in need of a new structural "fix" for the lifting mechanism of shades and blinds that avoids creating a hazardous loop.

Summary

[0007] Embodiments disclosed in the present application relate to cordless architectural coverings, and assemblies and subassemblies thereof, as well as to retrofit apparatus, components and methods in which a cord loop enclosure for shades and blinds is employed to replace looped beaded cords, pull cords, and strings that drive rolling mechanisms to draw up the blinds or shades.

[0008] In one embodiment, a cord enclosure assembly to encase one or more pull or lift cords extending from the headrail of an architectural covering, such as a blind or shade system is disclosed, for the purpose of avoiding exposed cords

capable of creating a hazardous loop. The cord enclosure assembly comprises an enclosure having a pivot cup portion and an adaptor. In one embodiment, the adaptor is configured to be selectively attached to the pivot cup portion about a pivot point. The adaptor is also configured in one embodiment to connect the enclosure to the headrail about a swivel point. In one embodiment, at least one of the pivot point and the swivel point at a top of the enclosure allows the enclosure to swivel, or move in a lateral direction when attached to the headrail. In one embodiment, the hinge feature provided by at least one of the swivel point and the pivot point may allow the enclosure to swivel in a lateral direction (right and/or left) up to approximately ninety (90) degrees, which allows the enclosure to be stored substantially horizontally out of sight under a headrail of an architectural covering, such as a blind or shade assembly. In another embodiment, the cord enclosure assembly may also comprise a drive mechanism for raising and lowering the blind or shade assembly.

[0009] Also disclosed herein is a method of assembling a cord enclosure assembly for use in conjunction with one or more lift cords extending from a headrail of an architectural cover. The method comprises providing an enclosure configured to conceal at least a portion of at least one lift cord. A pivot cup portion is provided as part of the enclosure. The method further comprises selectively attaching an adaptor to the pivot cup portion about a pivot point, the adaptor being further configured to attach the enclosure to the headrail about a swivel point. In the manner, the assembled cord enclosure assembly has a swivel point and a pivot point, wherein at least one of the pivot point and the swivel point is configured to allow the enclosure to move in a lateral direction when attached to the headrail.

[0010] In another embodiment, a mechanism for disabling the cord lock found in many blinds and shades that allows a user to draw up and "lock" the blind or shade in an open, closed or in-between position, is disclosed.

[0011] In another embodiment, an enclosed pulley system and method of retro-fitting an existing blind or shade with such enclosed pulley system is disclosed.

[0012] In another embodiment, a loop cord control enclosure is disclosed to encase a looped cord attached to the shade or blind system at a top part thereof to drive the rolling mechanism that raises and lowers the shade or blinds. The cord is encased to protect any hazardous loops from being exposed, and the cord is engaged internally with one or more drive mechanisms, with at least one attached to a handle to allow an operator to draw the cord and shade/blind up and down. The mechanism is adapted to be retrofitted on an existing shade/blind or originally fit on any of the systems described above. In one embodiment, the loop cord enclosure is attached at the headrail, includes a cord lock disablement mechanism to disable the cord lock to allow the cord and shade/blind to freely open and close without locking, and wherein the cord is encased in the enclosure with at least one drive mechanism coupled to a handle to drive the system.

[0013] Another embodiment describes a drive system for use in conjunction with a lift or pull cord extending from a headrail of an architectural cover, such drive system including: an enclosure adapted to conceal at least a portion of the pull cord; a first drive mechanism in the enclosure, adapted to engage the pull cord, and coupled to a handle mechanism for manual operation; a bracket adapted to connect the enclosure to the headrail of the architectural cover; and a cord lock disablement mechanism for disabling a cord lock of the architectural cover.

[0014] In various further embodiments, a drive system is disclosed wherein the first drive mechanism yields a handle to pull cord power ratio of 2:1 by use of at least one pulley or pulley-like apparatus. In an alternative implementation, the cord could instead be attached directly to a handle mechanism directly to effectuate a pull cord power of 1:1. In other implementations, a second drive mechanism adapted to engage the pull cord is disclosed, wherein the second drive mechanism yields a handle to pull cord power ratio of 4:1. In other embodiments, a handle mechanism is disclosed that further includes a drive mechanism that is either a sleeve adapted to slide along the outside of the enclosure or a slider device adapted to traverse the interior of the enclosure. In

yet other implementations, a handle is disclosed that further comprises a tension or stop mechanism adapted to secure the handle in position at one or more points along the enclosure.

5 [0015] In the 1:1 pull cord power system, the handle may include a cord lock to secure the cord and a cam lock slider or tension mechanism to secure the handle at any one position along the shaft to raise and lower the blind or shade and keep it at a desired position anywhere in between. In other implementations, a tension or stop mechanism is disclosed that further comprises at least one release button to allow the handle to be moved along the enclosure, wherein the
10 release button must be pressed to effectuate movement of the handle and corresponding drive mechanism. In still other implementations a locking mechanism is disclosed that is adapted to lock the handle in position at one or more points along the enclosure. In other implementations, a handle is disclosed that further comprises a counter-weight mechanism adapted to lessen the force
15 required to move the handle. In other embodiments, a handle is disclosed that is coupled to a spring and adapted to lessen the force required to move the handle. In other implementations, a cord lock disablement mechanism is disclosed that comprises a clamp adapted to fit within an opening in the headrail proximate to where the pull cord extends from the headrail.

20 [0016] In another embodiment, a method for retro-fitting an architectural cover pull cord assembly is disclosed that includes a pull cord associated with a cord lock and extending from a headrail of the architectural cover, such method comprising: disabling the cord lock; engaging the pull cord extending from the headrail with a drive mechanism coupled to a handle for manual operation; and
25 enclosing the drive mechanism in an enclosure that also conceals at least a portion of the pull cord.

[0017] A still further embodiment relates to a drive system for use in conjunction with one or more lift cords extending from a headrail of an architectural cover, said drive system comprising: an enclosure adapted to
30 conceal at least a portion of at least one lift cord; a first drive mechanism in the enclosure, adapted to engage the at least one lift cord, and coupled to a handle

mechanism for manual operation; and a bracket adapted to connect the enclosure to the headrail of an architectural cover, wherein the bracket includes a locking mechanism adapted to secure the at least one lift cord in place.

5 [0018] A still further embodiment relates to a drive system for use in conjunction with one or more lift cords extending from a headrail of an architectural cover, said drive system comprising: an enclosure adapted to conceal at least a portion of at least one lift cord and arranged to be secured to a headrail of an architectural opening; a first drive mechanism in the enclosure, adapted to engage the at least one lift cord, and coupled to a handle mechanism
10 for manual operation; a handle coupled to the first drive system; and a counterweight mechanism coupled to the first drive mechanism and adapted to secure the handle in position at one or more locations along the enclosure.

[0019] In another embodiment, a drive system is disclosed for use in conjunction with one or more lift cords extending from a headrail of an architectural cover, said drive system comprising: an enclosure adapted to conceal at least a portion of at least one lift cord and arranged to be secured by a hinge to a headrail of an architectural opening; a first drive mechanism in the enclosure, adapted to engage the atleast one lift cord, and coupled to a handle mechanism for manual operation; and wherein the hinge activates a locking
15 mechanism adapted to secure the at least one lift cord in place.

[0020] In various further implementations, a method for retro fitting an architectural cover pull cord assembly is disclosed, comprising securing the pull cord to a fixed position during the engagement with the drive mechanism. In other embodiments, a method is disclosed that further comprises connecting a clamp to the headrail, wherein the clamp is adapted to attach the enclosure to the headrail. In other implementations, the method may further comprise fastening a cap to the top of the enclosure. In yet other embodiments, the the fastening of the cap secures the pull cord to the enclosure. In other implementations, the cap is adapted to connect with the clamp. In still other
25 implementations, the cap is adapted to fit within an opening in the headrail proximate to where the pull cord extends from the headrail. In other
30

embodiments, the cap further includes a cord lock disablement mechanism for disabling the cord lock.

5 [0021] In still further embodiments, a pull strip is disclosed for pulling a loose lift or draw cord from an existing assembly into the enclosure for coupling to or engaging with a drive system, particularly in a retro-fit system. Another implementation comprises a cam apparatus coupled to the handle, wherein rotating the handle also rotates the cam to expand calipers to lock the handle and corresponding shade/blind in place at any desired point. Another aspect includes that the cord lock has an extension to keep the top cap and/or bracket
10 from sliding along the shade/blind headrail, particularly by including a matching gap, hole or space to accommodate the extension of the cord lock.

[0022] In still yet a further embodiment, a cord lock mechanism that pinches the cord, a handle that actuates the cord lock mechanism, and a driving mechanism having a cord guide that engages the cord and a slider that slides
15 along the handle to actuate the cord while the cord is enclosed within an enclosure defined by the handle, is disclosed.

[0023] Other aspects, features and embodiments will be more fully apparent from the ensuing disclosure and appended claims.

20 [0024] Those skilled in the art will appreciate the scope of the present disclosure and realize additional aspects thereof after reading the following detailed description of the preferred embodiments in association with the accompanying drawing figures.

Brief Description of the Drawing Figures

25 [0025] The accompanying drawing figures incorporated in and forming a part of this specification illustrate several aspects of the disclosure, and together with the description serve to explain the principles of the disclosure.

[0026] FIG. 1 is a perspective view of an illustrative prior art common blind system.

30 [0027] FIG. 2 is a close-up view of a prior art cord lock system.

[0028] FIG. 3 is a representative view of the internal workings of an enclosed drive system for use in conjunction with a lift cord extending from a headrail of an architectural cover.

[0029] FIG. 4 is a representative top-down exploded view of an enclosed drive system for use in conjunction with a lift cord extending from a headrail of an architectural cover.

[0030] FIG. 5 is a representative bottom-up exploded view of an enclosed drive system for use in conjunction with a lift cord extending from a headrail of an architectural cover.

[0031] FIG. 6 is a representative view of an enclosed drive system for use in conjunction with a lift cord extending from a headrail of an architectural cover.

[0032] FIG. 7 discloses a representative exploded view of an enclosed drive system for use in conjunction with a lift cord extending from a headrail of an architectural cover.

[0033] FIG. 8 is a representative view of an enclosed drive system for use in conjunction with a lift cord extending from a headrail of an architectural cover with the enclosure secured via a multi-directional attachment to the mounting bracket.

[0034] FIG. 9 is a representative view of an enclosed drive system for use in conjunction with a lift cord extending from a headrail of an architectural cover, wherein the enclosed drive system utilizes a cam lock slider.

[0035] FIG. 10 is a representative view of cam lock slider and cam of the handle as disclosed in various embodiments from a closed or locked position to an open or unlocked position.

[0036] FIG. 11 is a representative view of pull strip for drawing the lift cord through the enclosed drive system.

[0037] FIG. 12 is a representative view of the drive mechanism being engaged with the enclosure.

[0038] FIGS. 13A-D are representative views of the installation of a cord lock disablement device installation.

[0039] FIG. 14 is a representative view of an enclosed drive system being installed on a headrail.

[0040] FIG. 15 and 16 disclose various other embodiment, particularly including a cord lock mechanism 137 located near the headrail to pinch the cord 10 when in a relatively vertical position 143 and unlock the cord 10 when in a predetermined angle 144 from the relatively vertical position.

[0041] Figure 17 illustrates another embodiment of a cord lock mechanism, a handle, and a drive mechanism for actuating a cord in a blind system.

[0042] Figure 18 shows a cross sectional view of the cord lock mechanism.

10 [0043] Figure 19 shows a view of the handle separated from a headrail in the blind system.

[0044] Figure 20 shows a top view of the handle attached to the head rail.

[0045] Figure 21 shows an exploded view of the driving mechanism and the handle.

15 [0046] Figure 22 is a top view of the driving mechanism and the handle.

[0047] Figure 23 is an exploded view of the bottom of the handle.

[0048] Figure 24 is a cross-sectional transparent view of the bottom of the handle.

20 [0049] Figure 25 is an exploded view of an exemplary embodiment of a wand or cord enclosure assembly for use in conjunction with a lift cord extending from a headrail of an architectural cover.

[0050] Figure 26A is a side view of an exemplary handle insert portion of the cord enclosure assembly of Figure 25.

25 [0051] Figure 26B is a side view of the handle insert portion of Figure 26A with an exemplary bridge insert and an exemplary core insert disposed therein.

[0052] Figure 26C is a close up side view of the exemplary bridge insert of Figure 26B.

[0053] Figure 26D is a close up side view of the exemplary core insert of Figure 26B.

[0054] Figure 26E is a side view illustrating how the bridge insert and core insert of Figures 26B-26D are arranged with respect to one another in one embodiment.

5 [0055] Figure 26F is a close up side view of an exemplary pivot cap of the cord enclosure assembly of Figure 25.

[0056] Figure 26G is a close up side view of an exemplary adaptor of the cord enclosure assembly of Figure 25.

[0057] Figure 26H is a close up side view of an exemplary bottom cap of the cord enclosure assembly of Figure 25.

10 [0058] Figure 27 illustrates a front view of the cord enclosure assembly of Figure 25 attached to a headrail of an architectural covering.

[0059] Figures 28A and 28B are a top view and a side view, respectively, of an exemplary pivot cap of the cord enclosure assembly of Figure 25.

15 [0060] Figure 29 is a close up side view of an exemplary adaptor of the cord enclosure assembly of Figure 25.

[0061] Figure 30 illustrates the cord enclosure assembly of Figure 25 as it is attached to an exemplary headrail, wherein an exemplary enclosure of the cord enclosure assembly moves in a lateral direction about at least one of an exemplary swivel point and an exemplary pivot point.

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Detailed Description

[0062] The embodiments set forth below represent the necessary information to enable those skilled in the art to practice the embodiments and illustrate the best mode of practicing the embodiments. Upon reading the following
25 description in light of the accompanying drawing figures, those skilled in the art will understand the concepts of the disclosure and will recognize applications of these concepts not particularly addressed herein. It should be understood that these concepts and applications fall within the scope of the disclosure and the accompanying claims.

[0063] Embodiments disclosed in the present application relate to cordless or encased corded drive systems for architectural covers for architectural openings, such as windows, doors or the like.

[0064] The term "enclosure" or "housing" as used herein refers to any elongated encasement (wand) of one or more lift cords that may be coupled with one or more drive mechanisms to deter or preclude access to the cords by a human, particularly a child. The enclosure or enclosed drive system may include one or more openings to allow for a handle exterior to the encasement to be coupled to or engaged with the drive mechanism internal to the encasement for driving the pull cords along the encasement.

[0065] The term "drive mechanism" as used herein refers to any apparatus capable of engaging one or more lift cords, and optimally adapted to fit within an enclosure or enclosed drive system. In one embodiment, the drive mechanism may allow direct secured attachment of the cord thereto in a 1:1 ratio of drive mechanism to bottom rail of the window covering with which the other end of the pull cords are attached. In a separate embodiment, the drive mechanism may act as a pulley or group of pulleys, wherein the pull cord is secured in the enclosure or enclosed drive system, or within the headrail, to allow a 2:1 or greater ratio of drive mechanism to bottom rail of the window covering. The drive mechanism in various embodiments may be secured to a handle that is exposed exterior to the enclosure or enclosed drive system to allow a user to operate the drive mechanism to raise and lower the window covering.

[0066] The term "cord lock disablement mechanism" as used herein refers to any device capable of keeping the cord lock mechanism from raising upon a retraction of the pull cord back into the headrail once the weight of the blinds pulls upon the cords, or may simply include a removal of the cord lock.

[0067] The term "drive system" as used herein refers to one or more embodiments disclosed herein.

[0068] The term "architectural cover" includes any cover known to one of skill in the art for an architectural opening, including but not limited to Venetian blinds, roman shades and the like.

[0069] The advantages and features of the embodiments disclosed herein are further illustrated with reference to the following disclosure, which is not to be construed as in any way limiting the scope of the claimed invention, but rather as being illustrative of embodiments thereof. Reference may be made herein to shades, blinds, and other types of architectural opening covers, but such references are not intended to be limitingly construed as regards the scope of the claimed invention.

[0070] Window blinds all generally work in a same or similar fashion. The blind is manipulated by pulling a lift cord or by pulling the covering itself. In the case of a lift cord, strings that connect to the bottom of the window covering are pulled by the cord. The bottom of the window covering moves higher as the cord is pulled and moves lower as the cord is released. The window covering often either folds, rolls or collapses. In applications such as Venetian blinds, the blinds must first be aligned so that they can be lifted and nested in a compacted form.

[0071] Venetian blinds contain many individual blinds, called slats, which are generally maintained in an orientation parallel to each other. When the blind is fully lowered, the slats are generally the same distance apart and can all be turned at the same time in the same direction. When the slats are turned so that they are parallel to the window and all touching, most of the light from outside a window is blocked. Turning the slats perpendicular to the window allows light to pass through the open area between adjacent slats.

[0072] Turning the slats is accomplished by turning a rod that rotates the slats up or down. Typically three sets of three strings run through each slat; and each set of strings operates in the same way. The middle string raises and lowers the blinds, while the outer two strings form a ladder with a slat on each rung. Turning the rod tilts the slats. Lifting the blinds lets the most amount of light through the window, since all the slats are moved out of the way. The slats generally must first be turned perpendicular to the window, which allows them to collapse against each other when the bottom of the blinds is lifted. When the lift cord is pulled, the blinds rise.

[0073] To keep the blinds lifted at any given level, a cog often with teeth (cord lock) sits inside the rail into which the lift cord runs. When the lift cord is pulled towards the cog, usually towards the right when facing the blinds, the cog's teeth catch on the cord. When the lift cord is released, gravity causes the blinds to fall and the lift cord to retract. When the cog is caught on the lift cord, which then gets caught between the rail as well, the cog keeps the lift cord from retracting further and holds the blinds in place. Additionally, there must be some method for the lift cord to remain stationary once the window covering has been raised or lowered to the desired position. In some applications, the cord is wrapped around a hook fastened into the wall.

[0074] Traditional blinds have 1-inch slats formed of aluminum, plastic or wood. Shade and blind systems are often supported by a headrail that may include rolled edges at the top, light blocking lip at the lower back side and a curved headrail face similar to the crown of a 1" slat. Headrails are often open at the top similar to the conformation of a storm gutter. Headrails are often phosphate-treated steel and finished with a polyester primer and topcoat of polyester-baked enamel and measures 0.025" in thickness. The bottom rail that lifts the blinds from the bottom is generally tubular-shaped and is often phosphate-treated steel with polyester primer and a top coat of polyester-baked enamel and measures 0.025" in thickness. The slats that form the shaded portion of the blinds are frequently made of cold rolled aluminum alloy. The slats are nominally 1" wide and available in standard 0.006" or optional 0.008" thickness and nominally 1/2" wide by 0.006" thick.

[0075] FIG. 1 (PRIOR ART) of the present disclosure shows a prior art blind system that includes a headrail 1 that supports the blind system and a bottom rail 2 that is attached to the lift or pull cord 10 to draw up the blinds. Further shown is a cord lock 5 that is often a snap-in design with a stainless steel wear guard and a floating locking pin or cog 12. A tilter 4 is shown that allows for tilting of the blind, either in a perpendicular or horizontal orientation, to let in a desired amount of light or to block the light in an architectural opening, wherein the tilter 4 works with a tiltrod 6 that is supported by a tiltrod support 7. Tilting of the blinds may be

effected by the exterior cords or ladders 9 that act on the periphery of the blind slats 3 by way of ladder drums 8 that are often low friction thermoplastic with smooth hole edges to position the ladders 9. The lift cord 10 runs internally (of the 3 cords) through the blinds and up through the headrail, out to where a user can pull open the blinds or release them to a closed condition. Lift cords 10 are often made of braided polyester, measuring 1.4 mm in diameter. The snap-in brackets 11 are used to mount the blind system.

[0076] FIG. 2 (PRIOR ART) shows a close-up view of a cord lock 5 mechanism, with a locking cog 12 that must be disabled in various embodiments disclosed herein, particularly to retro-fit existing blind systems. Further shown is a cord guide 13 including a rotating wheel or other mechanism, to allow smooth traversing of the cord 10.

[0077] FIG. 3 is a representative view of the internal workings of an enclosed drive system for use in conjunction with a lift cord 10 extending from a headrail 1 of an architectural cover. The cog 12 of the cord lock 5 is often first disabled in existing blind systems to allow a free flowing cord 10 to raise and lower the architectural cover, wherein the disablement can be made by any suitable apparatus, such as a shank, hook, clip or other cord lock disablement mechanism 17 that is operative to keep the cog from raising when the weight of the blind/shade draws the cord 10 back into the headrail 1. It should be apparent that the cog 12 and cord lock disablement mechanism 17 would be absent in new blind systems incorporating an enclosed drive system as disclosed herein. The cord lock disablement mechanism 17 can be inserted through the end 19 of the headrail 1 or through an opening 23 (FIG. 5) where the cord 10 exits the headrail 1.

[0078] A bracket 18 may be secured to the headrail 1 to support the enclosure 20 and drive system. The bracket may be attached via a top cap 16, coupler 29, or similar means for securing the enclosure 20 to the headrail. The bracket 18 can either be slid on from one end 19 of the headrail 1 adjacent the cord lock mechanism 5 or alternatively clipped on with the use of a bracket 18 that either has one or more hinges 24 (FIG. 6) and/or is flexible enough to allow manual

snapping of the bracket 18 from its open end over the headrail 1 from the bottom or side where lip extensions 25 would secure the bracket 18 in place once it is secured over the headrail 1. In the illustrative embodiment shown, the top cap 16 secures the cord(s) 10 at an end opposite the end(s) attached to the bottom rail 2 to draw up the blinds/shades, wherein the cord(s) 10 is engaged with a drive mechanism 15 coupled to the handle 14, wherein the drive mechanism 15 can be comprised of a pulley wheel or semi-circular member sufficient to draw the cord 10. As an alternative, the cord 10 can be locked, fastened or secured directly to the mechanism 15 coupled to the handle 14 so that a 1:1 ratio of handle pull to blind or shade draw is effectuated.

[0079] The handle 14 is attached to the drive mechanism 15 to allow a user to manually operate the opening and closing of the blinds/shades. The handle 14 may include an assembly or mechanism for locking it in place, e.g., locking bars, cams, pegs, etc., together with tension mechanisms for tightening the handle 14 around the enclosure 20 at any specific location along its length. There may be more than one pulley to allow for greater force and less distance being required in the handle 14 to draw up the shades/blinds, where a single pulley allows for a 2:1 ratio of handle to blind distance and force; a two pulley system allows for a 4:1 ratio of handle to blind distance and force; and so on. The drive mechanism 15 may optionally run on inner rails 21 of the enclosure 20.

[0080] FIG. 4 is a representative top-down exploded view of an enclosed drive system for use in conjunction with a lift cord 10 extending from a headrail 1 of an architectural cover. The same representative elements of FIG. 3 are shown here. The cord lock disabling mechanism 17 slides in from the side in this embodiment.

[0081] FIG. 5 is a representative bottom-up exploded view of an enclosed drive system for use in conjunction with a lift cord 10 extending from a headrail 1 of an architectural cover. The same representative elements of FIG. 3 are shown here. The cord lock disabling mechanism 17 can enter in from the opening 23 in the headrail 1 in this embodiment. Also shown is the bottom cap 22 of the enclosure 20.

[0082] FIG. 6 is a representative view of an enclosed drive system for use in conjunction with a lift cord 10 extending from a headrail 1 of an architectural cover. In this embodiment, a pull strip 30 is shown for engaging the end of the lift cord 10 during retro-fit of an existing blind system. During a retro-fit, an existing blind system's lift cord 10 would be cut near the headrail 1, but with sufficient slack or length to allow the cord to be drawn into the enclosure 20 and likely back out near the top proximate to the top cap, where it may be secured with a cord lock mechanism 26. The cord is then either pulled down and attached to the drive mechanism 27 for a 1:1 pull cord power system, or pulled down around a pulley based drive mechanism 27 and out the other side of the top of the enclosure 20 where it is secured in place for a greater than 1:1 system. For individuals who are shorter or for any other reason have difficulty reaching the handle 14 at a certain height, a greater amount of slack lift cord 10 can be drawn into the enclosure 20 to allow the drive mechanism 15 and handle 14 to begin drawing up the blind or shade at a much lower point along the shaft of the enclosure 20, wherein the enclosure 20 can be extended to any necessary length.

[0083] The pull strip 30 includes some means for engaging the cord 10, whether it is an adhesive, separate cord, or similar apparatus so that it can be pulled into the enclosure 20, around the drive mechanism 27 and out the other side and then detached once the cord 10 is secured to the enclosure. In the 1:1 drive system, the lift or pull cord 10 attached to the pull strip 30 is pulled out at a point adjacent or through the handle 14 and secured therein, either with a cap, clamp, or similar device such as a cord lock mechanism 26 that locks into a top cap 16 after the cord is pulled through. The top cap 16 is attached to the bracket 18 by any one of a number of means or coupler 29, including via a D-ring as shown 29 in FIG. 6, a hinge, a ball and socket joint, a rivet, a toggle, a hook and eye, a clasp, a tie, or the like. A hinge (FIG. 7) would necessarily allow a bi-directional movement of the shaft of the enclosure 20 towards and away from the blinds or shade, and a D-ring 29 would allow multi-directional movement.

[0084] Additionally disclosed is a close pin shaped drive mechanism 27 that has a channel for the lift cord 10 to be pulled through by the pull strip 30, and two semi-flexible extended caliper members 31 that partially encircle an oblong shaped cam type shaft 28 that is attached to the handle 14 so that when the handle 14 is rotated, the cam shaft 28 expands the caliper members 31 lock the drive mechanism 27 in place within the enclosure 20. Such an enclosure 20 could additionally include the inner rails 21 as in the other enclosed embodiments, but are not necessary so long as interior of the enclosure can sufficiently permit the drive mechanism 27 to traverse the length of the enclosure and yet accommodate the pressure of the caliper members 31 as a result of the cam shaft 28 when in a locked position.

[0085] FIG. 7 discloses an exploded view of an enclosed drive system attached to the headrail 1 of an architectural cover via a hinged bracket system. The unique cord lock disablement mechanism 17 in this embodiment is a hook that may be inserted through the opening 23 in the bracket where the lift cord 10 is exposed. The top cap 16 is attached to the bracket 18 via a second pin 34 that allows for bi-directional hinge movement. The bracket 18 is secured to the headrail 1 via the hinged wall portion 32 that is attached to the bracket via a first hinge pin 33. A cord fastening mechanism 26 is provided after the lift cord 10 is run through the enclosure 20 and around or engaged with the drive mechanism 27 that may be locked in place with the cam shaft 28 of the handle 14. The drive mechanism 27 may run the length of the internal rod enclosure 20 from the top cap 16 to the bottom cap 22.

[0086] A further example of the embodiment in FIG. 7 along with the pull strip 30 as in FIG. 6 is shown in FIG. 8. The embodiment of FIG. 8 exemplifies one exemplary retro-fit system as represented prior to installation.

[0087] In FIG. 9, a particular embodiment of a drive mechanism 15 represented by the slide rail incorporating a pulley mechanism 27 which may also be described as a cam lock slider. The cam lock slider 27 includes two semi-flexible extended caliper members 31 for expansion when the cam 28 spreads them apart, forcing the calipers 31 to create pressure and friction within the

enclosure 20 to stop the cam lock slider. Also enclosed is a spring steel string guide 35 that reduces friction as the lift cord passes around the cam lock slider 27.

5 [0088] FIG. 10 is a representative view of the handle 14 and the cam 28 in various positions, including locked where the calipers 31 are expanded, and unlocked where the calipers return to their normal position so that the cam lock slider 27 can freely move up and down the enclosure 20.

[0089] FIG. 11 is a representative view of a pull strip 30, preferably made of mylar tape, for drawing the lift cord through the enclosed drive system.

10 [0090] FIG. 12 is a representative view of the drive mechanism 27 being engaged with the enclosure 20. wherein a fastener 36 is utilized to secure the two in place.

[0091] FIGS. 13A-D are representative views of the installation of a cord lock disablement device 17 installation. Also shown opposite the hook is an L shaped extension that engages the bracket 18 to keep it from sliding along the headrail 1 when installed.

[0092] FIG. 14 is a representative view of the hinged embodiment of an enclosed drive system being installed on a headrail 1.

20 [0093] FIGS. 15 and 16 disclose various other embodiments, particularly including a cord lock mechanism 137 located near the headrail to pinch the cord 10 when in a relatively vertical position 143 and unlock the cord 10 when in a predetermined angle 144 from the relatively vertical position.

[0094] Figure 17 illustrates yet another embodiment of a cord lock mechanism 146, a handle 148, and drive mechanism 150 for actuating a cord (shown in Figure 15) in a blind system 152. Figure 18 shows a cross sectional view of the cord lock mechanism 146. In this embodiment, a housing 154 of the cord lock mechanism 146 may define three vertically stacked channels 156, 158, 160. The top channel 156 and the middle channel 158 each include cord guides 162, 164. A cord locking member 166 is movably received within the bottom channel 160.

25

30 The cord locking member 166 may be a part of the handle 148. When the

handle 148 is relatively vertical, the cord locking member 166 is in a cord locking position which pinches the cord and prevents the cord from being actuated.

[0095] Next, a hinge 168 may couple the handle 148 to the housing 154 which allows the handle 148 to be moved about the hinge 168. Moving the handle 148 about the hinge 168 causes the cord locking member 166 to move within the bottom channel 160 or rotate outside of the bottom channel 160 into a cord release position that allows the cord to be moved. In this embodiment, the cord locking member 166 is moved to a cord release position when the handle 148 is moved about the handle 148 to an angle of approximately 15° or greater. This angle however may vary in other embodiments depending on factors such as the particular dimensions of the cord locking mechanism 146 or regulatory and standardization requirements. As in previous embodiments, the cord is guided within an enclosure 170 defined within the handle 148.

[0096] Figures 19 and 20 illustrate one method of attaching the cord lock mechanism 146 to the blind system 152. To do this, a channel 172 is provided at the bottom of a cord control apparatus 174 in the cord lock mechanism 146. The cord control apparatus 174 may be inserted through an aperture 176 defined in a headrail 178 of the blind system 152. A bracket 180 defines an opening 182 which allows the bracket 180 to be slid into the channel 172 on the cord control apparatus 174 and thereby secure the cord lock mechanism 146 in the headrail 178. Apertures 184, 186 in the cord control apparatus 174 allow the cord to pass through the cord locking mechanism 146.

[0097] Figure 21 illustrates the handle 148 and the drive mechanism 150 for actuating the cord. The drive mechanism 150 may include a slider 188, a cord guide 190, and a counterweight 192. A cord guide shaft 194 may be utilized to attach the cord guide 190 to the slider 188. A bracket 196 on the bottom of the slider 188 may be utilized to attach the counterweight 192 to the bottom of the slider 188.

[0098] Figure 22 illustrates a top view of the handle 148 and the drive mechanism 150. The handle 148 defines the enclosure 170 and a slit 198. The slider 188 has an enclosure 200 and a sliding member 202 that may be attached

to the enclosure 200. The enclosure 200 may receive the handle 148 so that a portion of the handle 148 is enclosed by the slider 188 and the sliding member 202 is received within the slit 198. In this manner, the slider 188 can slide along the length of the handle 148 while the cord guide 190 and the counterweight 192 are each enclosed within the enclosure 170 provided in the handle 148. The cord may loop around the cord guide 190 so that the cord may be actuated to raise and lower the blind system 152 (shown in Figure 17) as the slider 188 is slid up and down the handle 148. In this embodiment, the counterweight 192 may provide a gravitational counter force that counters the weight of the blind system 152 when the cord locking member 166 (shown in Figure 17) is placed in the cord release position. Other mechanisms, such as damping structures designed to provide the appropriate amount of friction, may also be utilized to counter the weight of the blind system 152.

[0099] Figure 23 illustrates a bottom cap 204 for the handle 148. Figure 24 illustrates a cross sectional transparent view of the bottom cap 204 inserted into a bottom end of the handle 148.

[00100] In one embodiment, an enclosure or sheathed apparatus (also referred to as a "wand") coupled with a drive mechanism to encase a pull cord on a blind or shade system is disclosed, for the purpose of avoiding exposed cords capable of creating a hazardous loop. The enclosure may comprise a hinge, or swivel point, at a top of the enclosure that allows the enclosure to swivel, or move in a lateral direction. In one embodiment, the hinge may allow the enclosure to swivel in a lateral direction (right and/or left) up to approximately ninety (90) degrees, which allows the enclosure to be stored substantially horizontally out of sight under a headrail of a blind assembly.

[00101] Figure 25 is an exploded view of an exemplary embodiment of a wand or cord enclosure assembly for use in conjunction with a lift cord extending from a headrail of an architectural cover, such as lift cord 10 extending from headrail 1, as seen in Figures 3 and 6. The cord enclosure assembly comprises an enclosure, as shown in Figure 25. In one embodiment, the enclosure may be hinged about a swivel point and/or a pivot point to allow the wand or enclosure to

swivel in a lateral direction. In one embodiment, the cord enclosure assembly comprises an enclosure having a pivot cup portion and also comprises an adaptor. In one embodiment, the adaptor is configured to be selectively attached to the pivot cup portion about a pivot point. The adaptor is also configured in one
5 embodiment to connect the enclosure to the headrail about a swivel point. At least one of the pivot point and the swivel point at a top of the enclosure allows the enclosure to swivel, or move in a lateral direction when attached to the headrail. In one embodiment, the hinge feature provided by at least one of the swivel point and the pivot point may allow the enclosure to swivel in a lateral
10 direction (right and/or left) up to approximately ninety (90) degrees, which allows the enclosure to be stored substantially horizontally out of sight under a headrail of an architectural covering, such as a blind or shade assembly. In another embodiment, the cord enclosure assembly may also comprise a drive mechanism for raising and lowering the blind or shade assembly.

15 **[00102]** Referring to Figure 25, an enclosure 206 is disclosed for actuating a cord, such as the lift cord 10 shown in Figure 15, in an exemplary blind system, such as blind system 152 in Figure 17. The enclosure 206 comprises a wand portion 208 and a handle portion 210 in one embodiment. In one embodiment, the handle portion 210 is configured to be inserted into the wand portion 208.
20 The handle portion 210 comprises a handle insert 212, a bridge insert 214, and a core insert 216 in one embodiment. The enclosure 206 also may comprise a pivot cap 218 and an adaptor 220 in one embodiment. In one embodiment, the enclosure 206 may also have a bottom cap 222 that is configured to be inserted into a bottom end of the enclosure 206.

25 **[00103]** In one embodiment, the handle portion 210 may operate in a manner similar to the handle 148 and drive mechanism 150 disclosed and described above in Figures 17-22.

[00104] Referring now to Figure 26A, the handle insert 212 may be configured to have an internal chamber 224. The internal chamber 224 may have
30 dimensions such that it is configured to receive the bridge insert 214 and the core insert 216, as shown in Figure 26B.

[00105] Figures 26C and 26D are a close up view of the bridge insert 214 and the core insert 216, respectively. The bridge insert 214 may have a series of openings 226 disposed on a surface of the bridge insert in one embodiment, as seen in Figure 26C. The core insert 216 comprises a hollow portion 228 in one embodiment, as shown in Figure 26D. The hollow portion 228 is configured to receive a lift cord, such as lift cord 10 in Figure 15, in one embodiment. The openings 226 may be used for selectively attaching the bridge insert 214 to the core insert 216 in one embodiment, as seen in Figure 26E. The handle insert 212, bridge insert 214, and the core insert 216 may be made of any suitable material, including but not limited to plastics, including nylon, polypropylene, and molded polycarbonate, and metals, such as steel and aluminum.

[00106] Figure 26F is a close up view of the pivot cap 218. In one embodiment, the pivot cap 218 has at least one pivot hole 229 and an internal chamber 230. The internal chamber 230 is configured to fit over the core insert 216 of the handle portion 210 of the enclosure 206, as seen in Figure 25. The pivot hole 229 is for securing the adaptor 220 to the pivot cap 218, as will be discussed in more detail below. The pivot cap 218 may be made of any suitable material, including but not limited to plastics, including nylon, polypropylene, and molded polycarbonate, and metals, such as steel and aluminum.

[00107] Figure 26G is a close up side view of the adaptor 220. The adaptor 220 has lower flanges 232 in one embodiment. The lower flanges 232 may have a tab 233 disposed thereon. The adaptor 220 may also have openings 234 disposed on upper flanges 236. The adaptor 220 also has an internal chamber 237 for receiving a lift cord, such as lift cord 10 in Figure 15, and allowing the lift cord to pass through the adaptor 220 while being enclosed within the adaptor 220. The tab 233 is configured to be selectably engaged with the pivot hole 229 on the pivot cap 218 to attach the adaptor 220 to the pivot cap 218. Although the adaptor 220 on Figure 26G has a tab 233 that is configured to be selectably engaged with the pivot hole 229 on the pivot cap 218, in other embodiments, the adaptor 220 may have openings in lieu of the tab 233, wherein the openings are configured to allow a pin, screw, fastener, or other securing means to be inserted

through the openings of the adaptor 220 and the pivot hole 229 of the pivot cap 218 to secure the adaptor 220 to the pivot cap 218. When the adaptor 220 is attached to the pivot cap 218, the adaptor 220 may pivot or swivel about the tab 233, as discussed more fully below in conjunction with Figure 29 below. The
5 adaptor 220 may be made of any suitable material, including but not limited to plastics, including nylon, polypropylene, and molded polycarbonate, and metals, such as steel and aluminum.

[00108] Figure 26H is a close up side view of the bottom cap 222. The bottom cap 222 has an internal chamber 238 configured to receive a bottom end of the
10 enclosure 206.

[00109] Figure 27 illustrates a front view of the enclosure 206 of Figure 25 attached to a headrail 240 of an architectural cover. The headrail 240 has brackets 242 with openings 244. A locking mechanism 246 is configured to be selectively attached to the openings 244 of the brackets 242 of the headrail 240.

15 The locking mechanism 246 may take any form. In one embodiment, the locking mechanism 246 may be a hook that may be inserted through the openings 244 of the brackets 242. The locking mechanism 246 is attached to the brackets 242 by any one of a number of means, including via a D-ring 29 as shown in FIG. 6, a hinge, a ball and socket joint, a rivet, a toggle, a hook and eye, a clasp, a tie, or
20 the like. In this manner, when the adaptor 220 is attached to the locking mechanism 246, the enclosure 206 is connected to the headrail 240. The attachment of the adaptor 220 to the locking mechanism 246 would allow a bidirectional movement of the shaft of the enclosure 206 towards and away from the blinds or shade. The adaptor 220 of the enclosure 206 may also be attached
25 to the locking mechanism 246 via a screw, pin, fastener, or other attaching means at a swivel point 247, which allows for lateral bi-directional hinge movement. This swivel point 247 helps the enclosure 206 be able to swivel laterally so that it can be moved up to approximately ninety (90) degrees from substantially vertical to the right or left. In this manner, the enclosure 206 can be
30 disposed in a substantially horizontal orientation that is parallel to the headrail 240. This would allow the enclosure 206 to be stored out of sight behind the

blinds or architectural covering, such as by being attached to a clip or mounted on a hook mounted under the headrail 240 or as part of the headrail 240.

[00110] A cord fastening mechanism, such as cord fastening mechanism 26 in Figure 7, may be provided after the lift cord 10 is run through the enclosure 206.

5 A drive mechanism may run the length of the enclosure 206. The enclosure 206 may comprise a drive mechanism similar to drive mechanism 27 disclosed herein, or drive mechanism 150 (see Figures 17-22).

[00111] The lift cord 10 may be cut and fed into the enclosure 206 and tied off. In one embodiment, the lift cord 10 runs through the internal chamber 237 of the
10 adaptor 220, and then through the internal chamber 230 of the pivot cap 218 and into the hollow portion 228 of the core insert 216.

[00112] Figures 28A and 28B are a top view and a side view, respectively, of the pivot cap 218. Referring to Figures 28A and 28B, the pivot cap 218 is divided into two sections, a first section 248A and a second section 248B. The first and
15 second sections 248A and 248B allow the lift cord 10 to be separated going down and coming back up the enclosure 206. The first section 248A has two holes 250A and 250B in one embodiment. The holes 250A and 250B allow half of the lift cord 10 to be brought through one of the holes 250A and 250B and the other half of the lift cord 10 to be brought through the other hole of the holes
20 250A and 250B to tie one knot. The second section 248B has an opening 252 to allow the lift cord 10 to pass through and to hold the knot.

[00113] Figure 29 is a close up of the bottom flanges 232 of the adaptor 220. The adaptor 220 has a tab 233 which allows the adaptor 220 to be selectively engaged with the opening 229 of the pivot cap 218, as shown in Figure 30.
25 Figure 30 shows the enclosure 206 as it is attached to the headrail 240. The adaptor 220 of the enclosure 206 is attached to the locking mechanism 246 via a screw, pin, fastener, or other attaching means at a swivel point 247, which allows for lateral bi-directional hinge movement. Likewise, the bottom flanges 232 of the adaptor are selectively attached to the pivot cap 218 by means of the tab 233 of
30 the adaptor 220 selectively engaging with the opening 229 of the pivot cap 218 such that the adaptor 228 may also pivot about the tab 233 at a pivot point 254.

In this manner, the enclosure 206 may pivot in a lateral direction about either swivel point 247 or pivot point 254. This allows the enclosure 206 to swivel in a lateral direction right or left up to at least approximately ninety (90) degrees from a substantially vertical position. This lateral movement enables the enclosure
5 206 to be rotated into a substantially horizontal orientation parallel to the head rail such that it can be positioned out of sight behind the blind or architectural covering by placing it on a hook or fitting it into a clip.

[00114] While the embodiments disclosed herein have been described in reference to specific aspects, features and illustrative embodiments, it will be
10 appreciated that the utility of the invention as claimed is not thus limited, but rather extends to and encompasses numerous other variations, modifications and alternative embodiments, as will suggest themselves to those of ordinary skill in the field of the claimed invention, based on the disclosure herein. Any of
15 various elements or features recited herein is contemplated for use with other features or elements disclosed herein, unless specified to the contrary. Correspondingly, the invention as hereinafter claimed is intended to be broadly construed and interpreted, as including all such variations, modifications and alternative embodiments, within its spirit and scope.

[00115] Those skilled in the art will recognize improvements and modifications
20 to the preferred embodiments of the present disclosure. All such improvements and modifications are considered within the scope of the concepts disclosed herein and the claims that follow.

Claims

What is claimed is:

- 5 1. A cord enclosure assembly for use in conjunction with one or more lift cords extending from a headrail of an architectural cover, said cord enclosure assembly comprising:
 - an enclosure having a pivot cup portion, the enclosure configured to conceal at least a portion of at least one lift cord; and
 - 10 an adaptor configured to be selectively attached to the pivot cup portion about a pivot point and also configured to attach the enclosure to the headrail about a swivel point;
 - wherein at least one of the pivot point and the swivel point allow the enclosure to move in a lateral direction when attached to the headrail.
- 15 2. The cord enclosure assembly of claim 1 wherein the adaptor is further configured to attach the enclosure to a bracket connected to the headrail of an architectural cover.
- 20 3. The cord enclosure assembly of claim 1 further comprising a first drive mechanism in the enclosure, the first drive mechanism adapted to engage the at least one lift cord.
4. The cord enclosure assembly of claim 3 wherein the first drive mechanism is coupled to a handle portion for manual operation.
- 25 5. The cord enclosure assembly of claim 4, further comprising a second drive mechanism adapted to engage the lift cord.
- 30 6. The cord enclosure assembly of claim 1 wherein the adaptor is further configured to attach the enclosure to a locking mechanism connected to the headrail of an architectural cover.

7. The cord enclosure assembly of claim 1, wherein the pivot cup further comprises a pivot hole and the adapter further comprises a flange having a tab, and wherein the tab is configured to selectively engage with the pivot hole of the pivot cap to secure the adaptor to the pivot cap such that the adaptor may pivot
5 about the tab at the pivot point.
8. The cord enclosure assembly of claim 1, wherein the adapter has an internal chamber configured to receive at least a portion of at least one lift cord and to allow the portion of the at least one lift cord to pass through the adaptor while
10 being enclosed by the adaptor.
9. The cord enclosure assembly of claim 1, wherein the pivot cap has an internal chamber configured to receive at least a portion of at least one lift cord and to allow the portion of the at least one lift cord to pass through the pivot cap while
15 being enclosed by the pivot cap.
10. The cord enclosure assembly of claim 1, wherein the pivot cap is divided into a first section and a second section, the first section having a plurality of holes configured to allow a first portion of the at least one lift cord to be passed through
20 a first one of the plurality of holes and a second portion of the at least one lift cord to be passed through a second one of the plurality of holes such that the first portion and the second portion can be tied together into a knot, and the second section having at least one opening to hold the knot.
- 25 11. The cord enclosure assembly of claim 1, wherein the enclosure is further adapted to swivel in a lateral direction right or left up to approximately ninety (90) degrees from a substantially vertical position.
- 30 12. The cord enclosure assembly of claim 11, wherein the enclosure is further adapted to be rotated into a substantially horizontal position and is further adapted to be stored in the substantially horizontal position.

13. The cord enclosure assembly of claim 4, wherein the handle portion is configured to be actuated to move the enclosure in a lateral direction

5 14. A method of assembling a cord enclosure assembly for use in conjunction with one or more lift cords extending from a headrail of an architectural cover, said method comprising:

providing an enclosure having a pivot cup portion, the enclosure configured to conceal at least a portion of at least one lift cord; and

10 selectively attaching an adaptor to the pivot cup portion about a pivot point, the adaptor being further configured to attach the enclosure to the headrail about a swivel point, wherein at least one of the pivot point and the swivel point is configured to allow the enclosure to move in a lateral direction when attached to the headrail.

15

15. The method of claim 14, further comprising attaching the adaptor to the headrail about the swivel point such that the enclosure is allowed to move in a lateral direction when attached to the headrail.

20

16. The method of claim 15 further comprising attaching the adaptor to a bracket connected to the headrail of an architectural cover.

25 17. The method of claim 15, further comprising attaching the enclosure to a locking mechanism connected to the headrail of an architectural cover.

18. The method of claim 15 further comprising providing in the enclosure a first drive mechanism adapted to engage the at least one lift cord.

30 19. The method of claim 15, wherein the pivot cup further comprises a pivot hole and the adapter further comprises a flange having a tab, and wherein the

selectively attaching an adaptor to the pivot cup portion further comprises selectively engaging the tab with the pivot hole of the pivot cap to secure the adaptor to the pivot cap such that the adaptor may pivot about the tab at the pivot point.

5

20. The method of claim 15, wherein the enclosure is further adapted to swivel in a lateral direction right or left up to approximately ninety (90) degrees from a substantially vertical position.

10

21. The method of claim 15, wherein the enclosure is further adapted to be rotated into a substantially horizontal position and is further adapted to be stored in the substantially horizontal position.

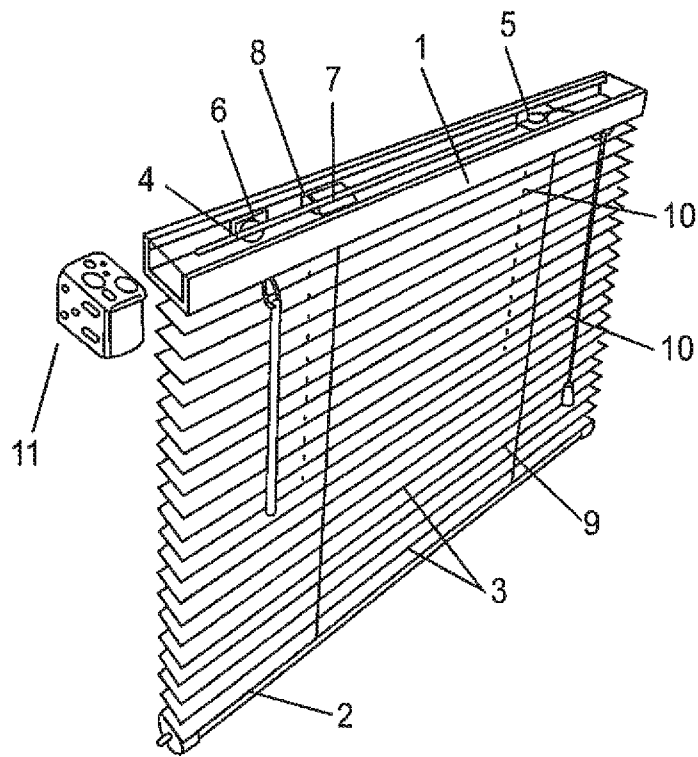


FIG. 1
PRIOR ART

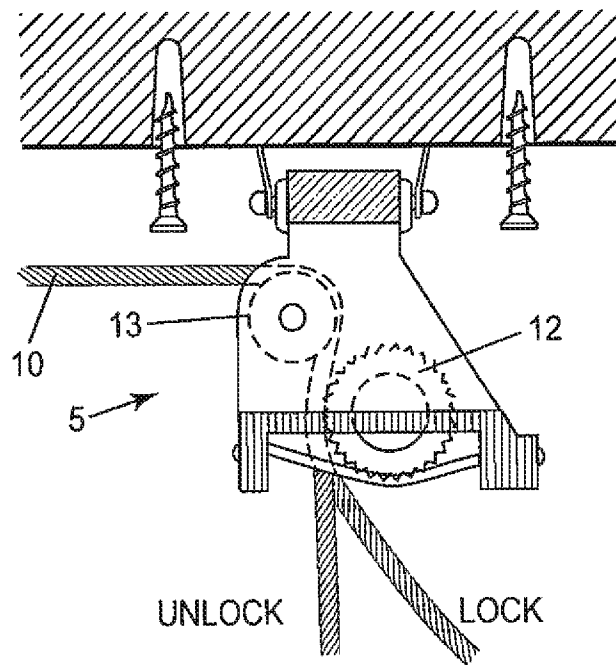


FIG. 2
PRIOR ART

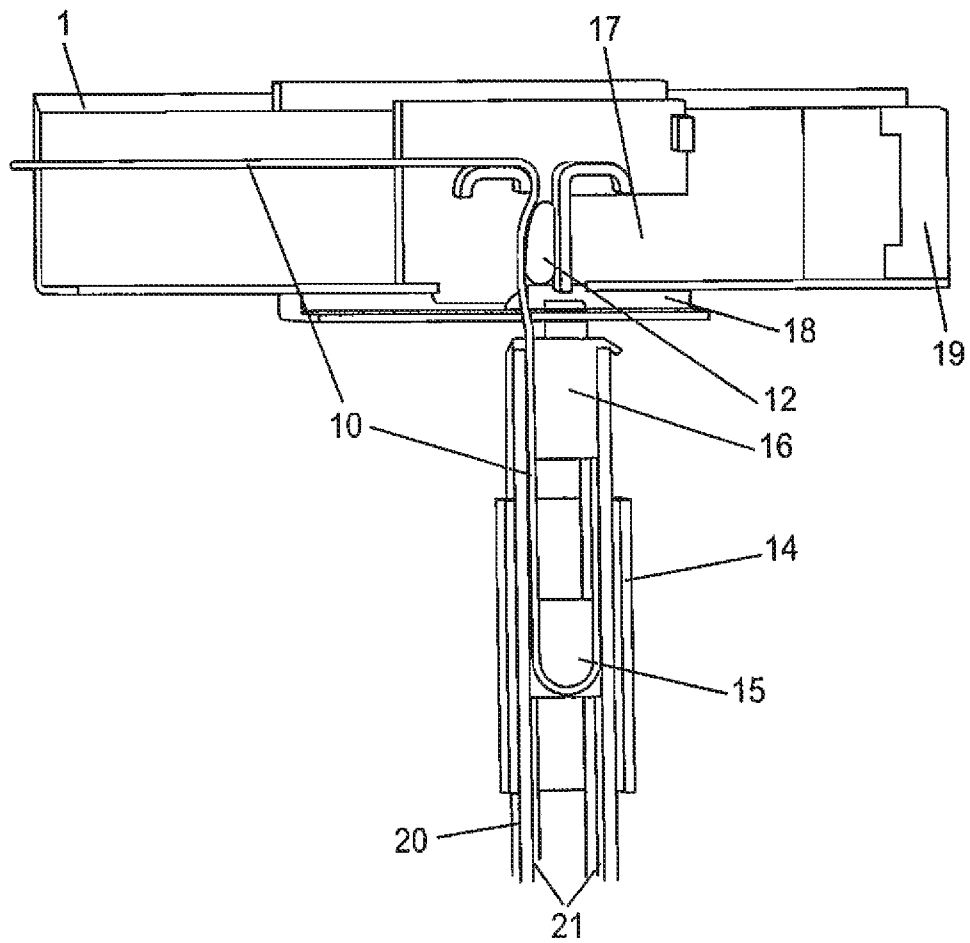


FIG. 3

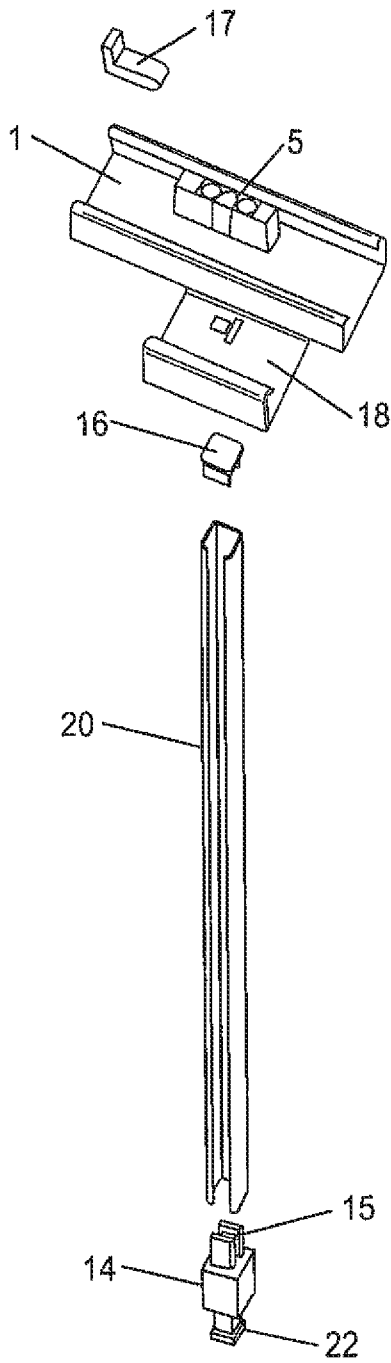


FIG. 4

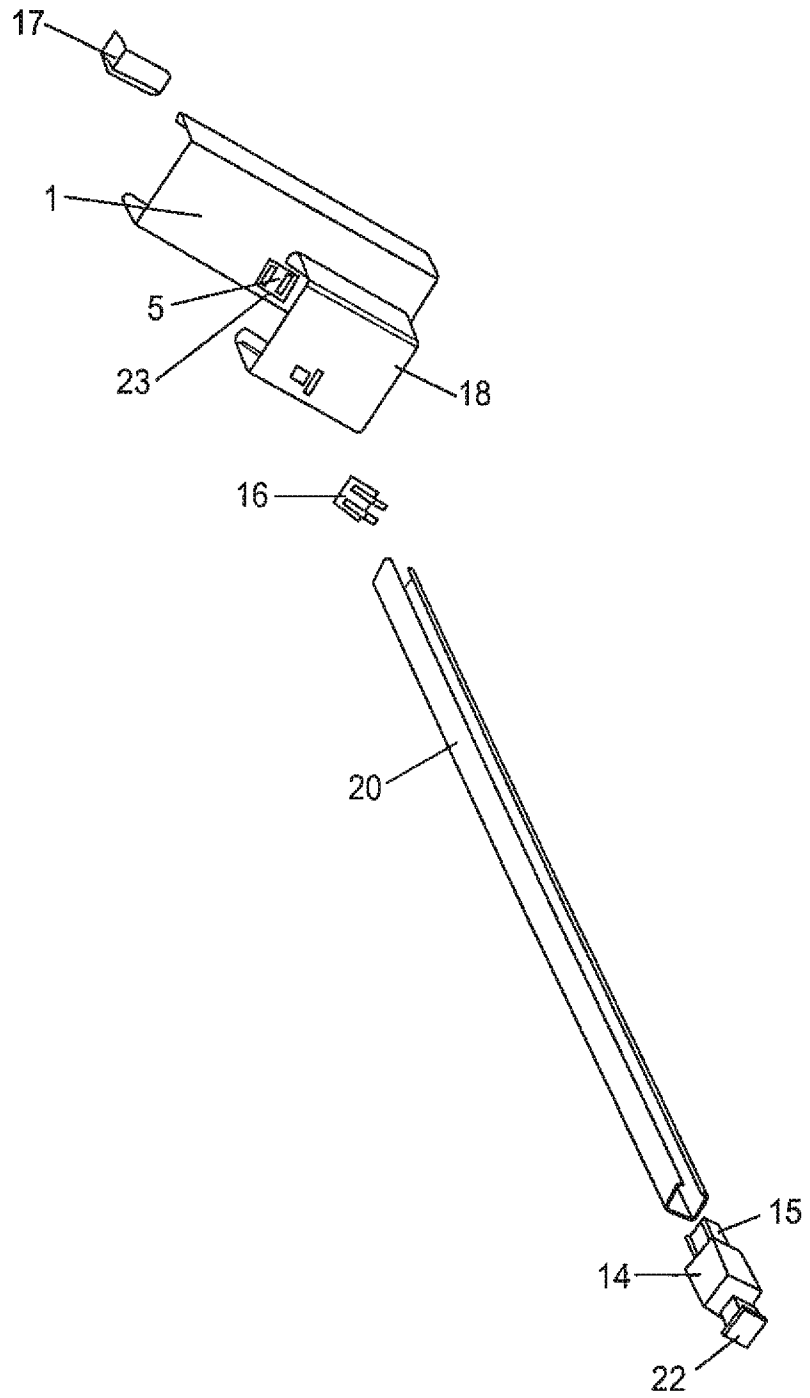


FIG. 5

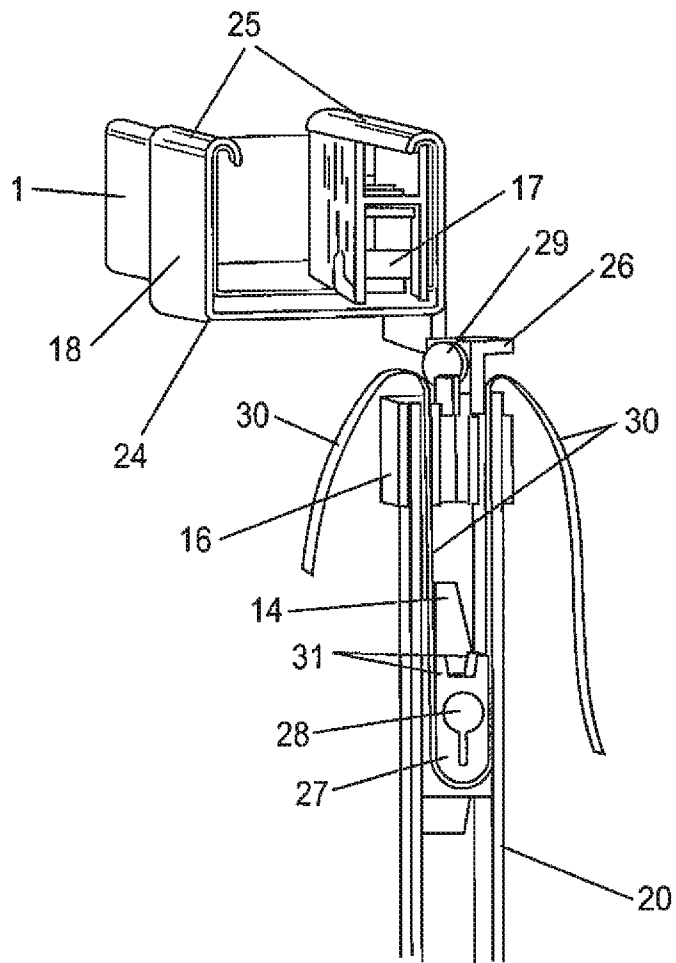


FIG. 6

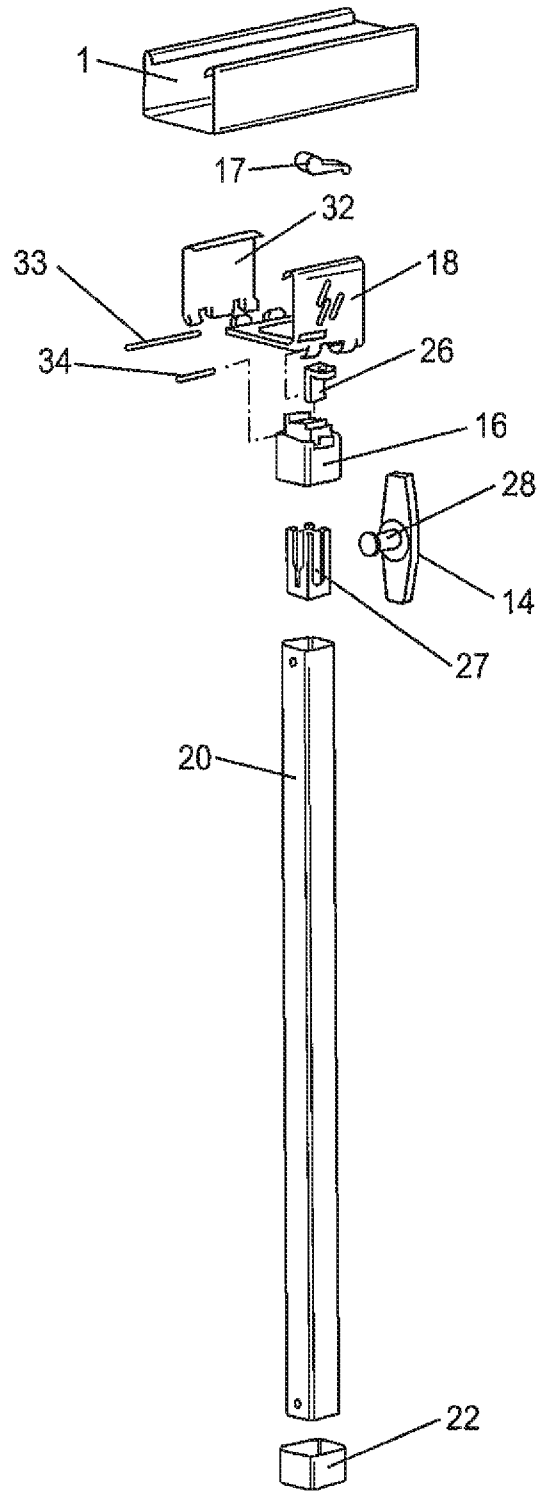


FIG. 7

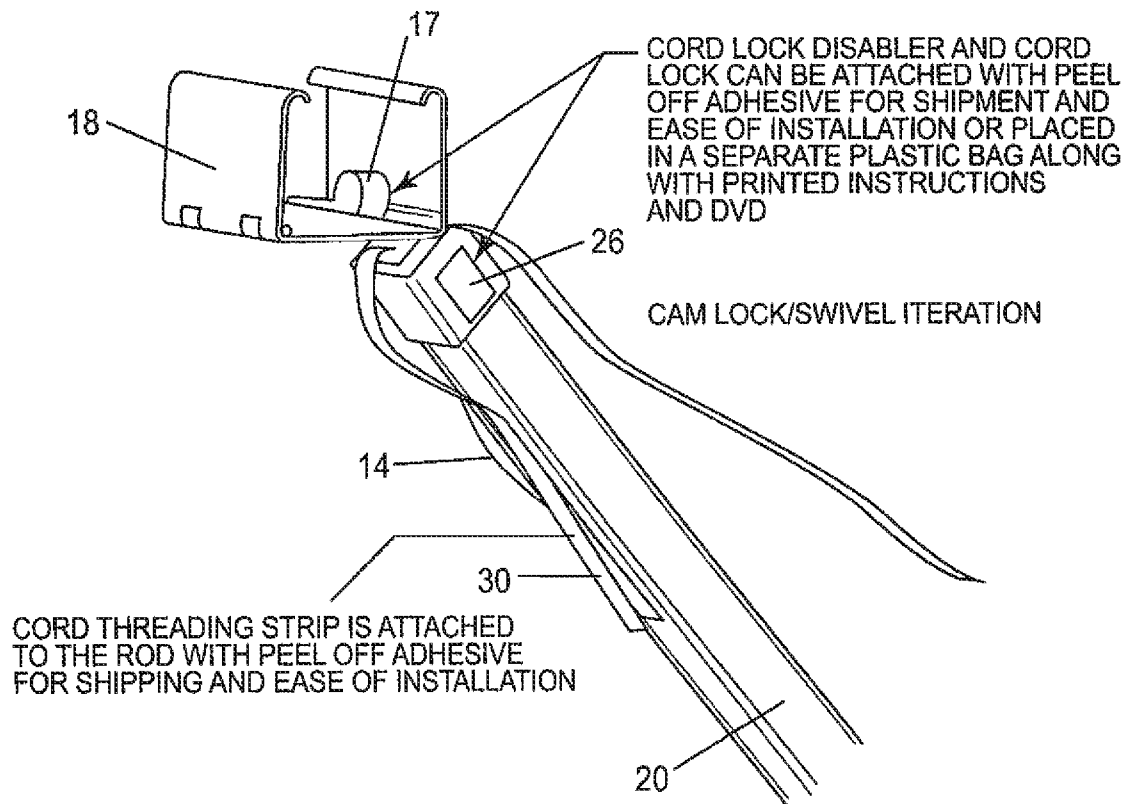


FIG. 8

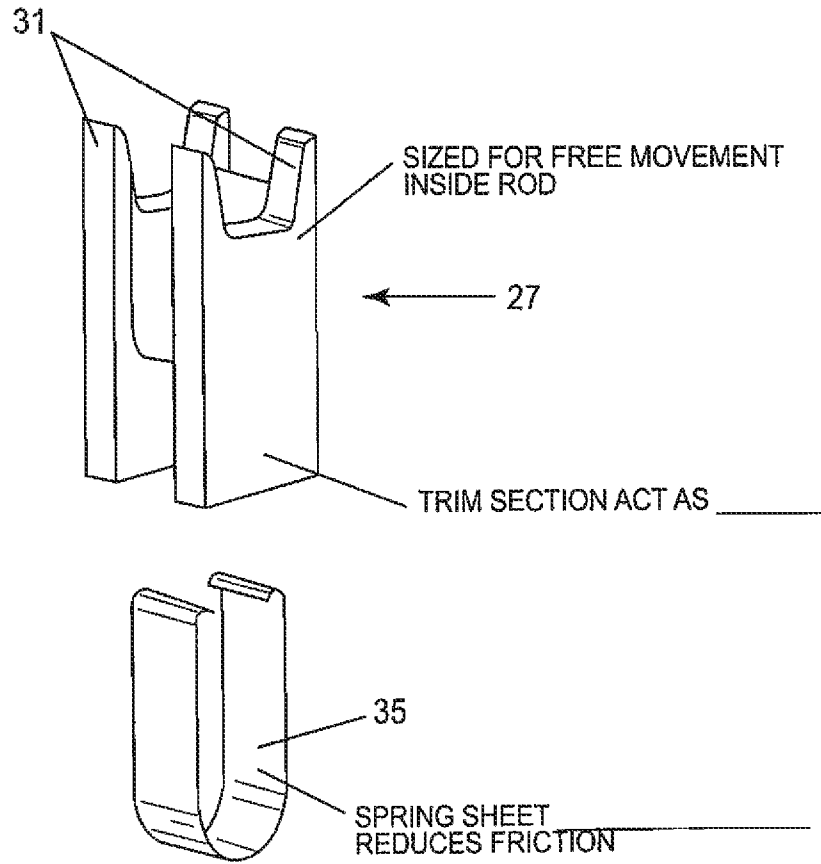


FIG. 9

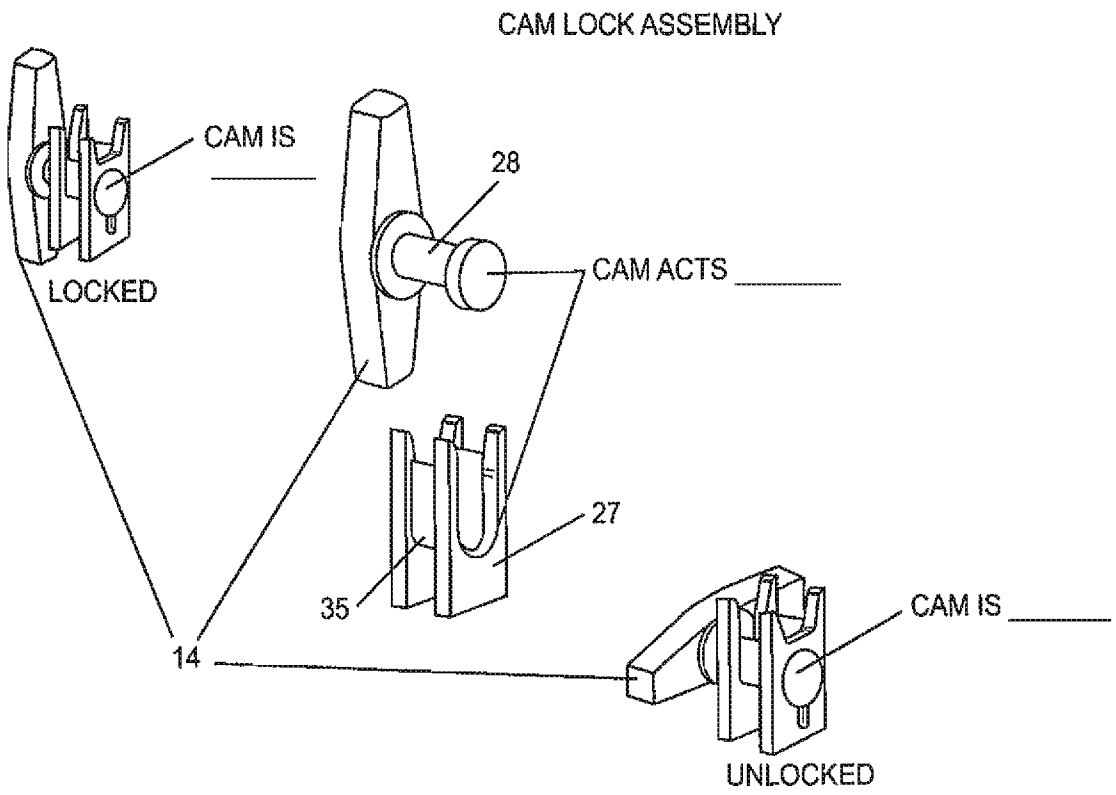


FIG. 10

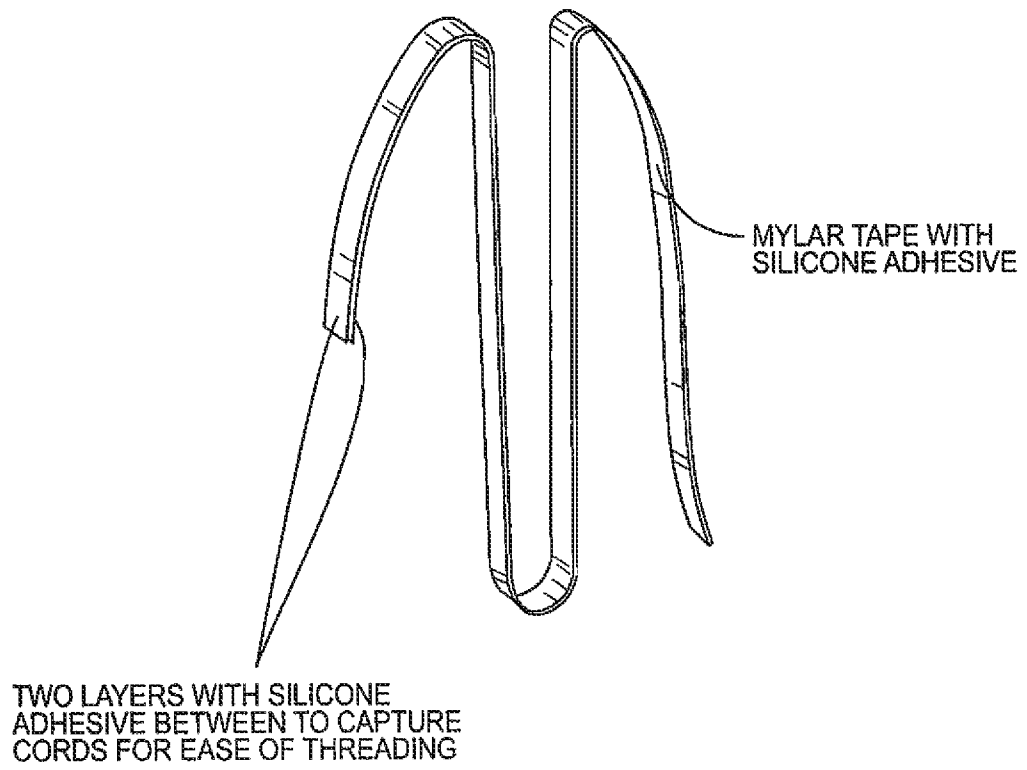


FIG. 11

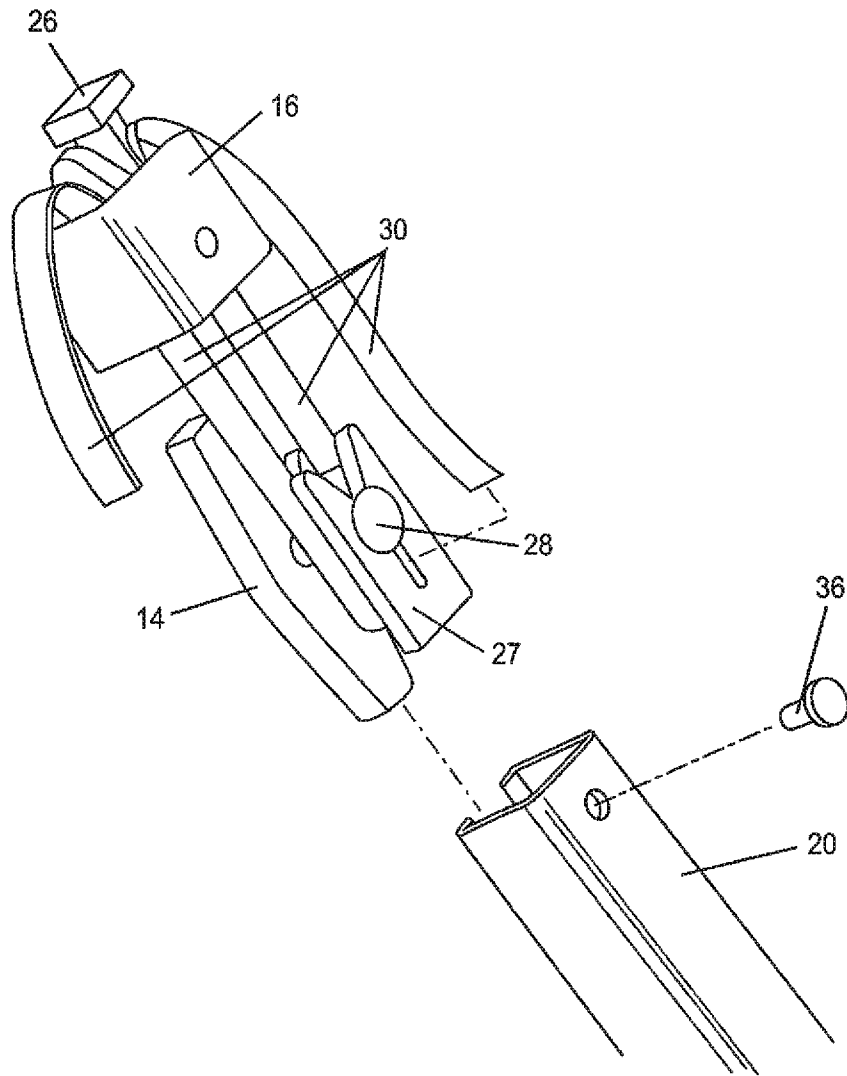
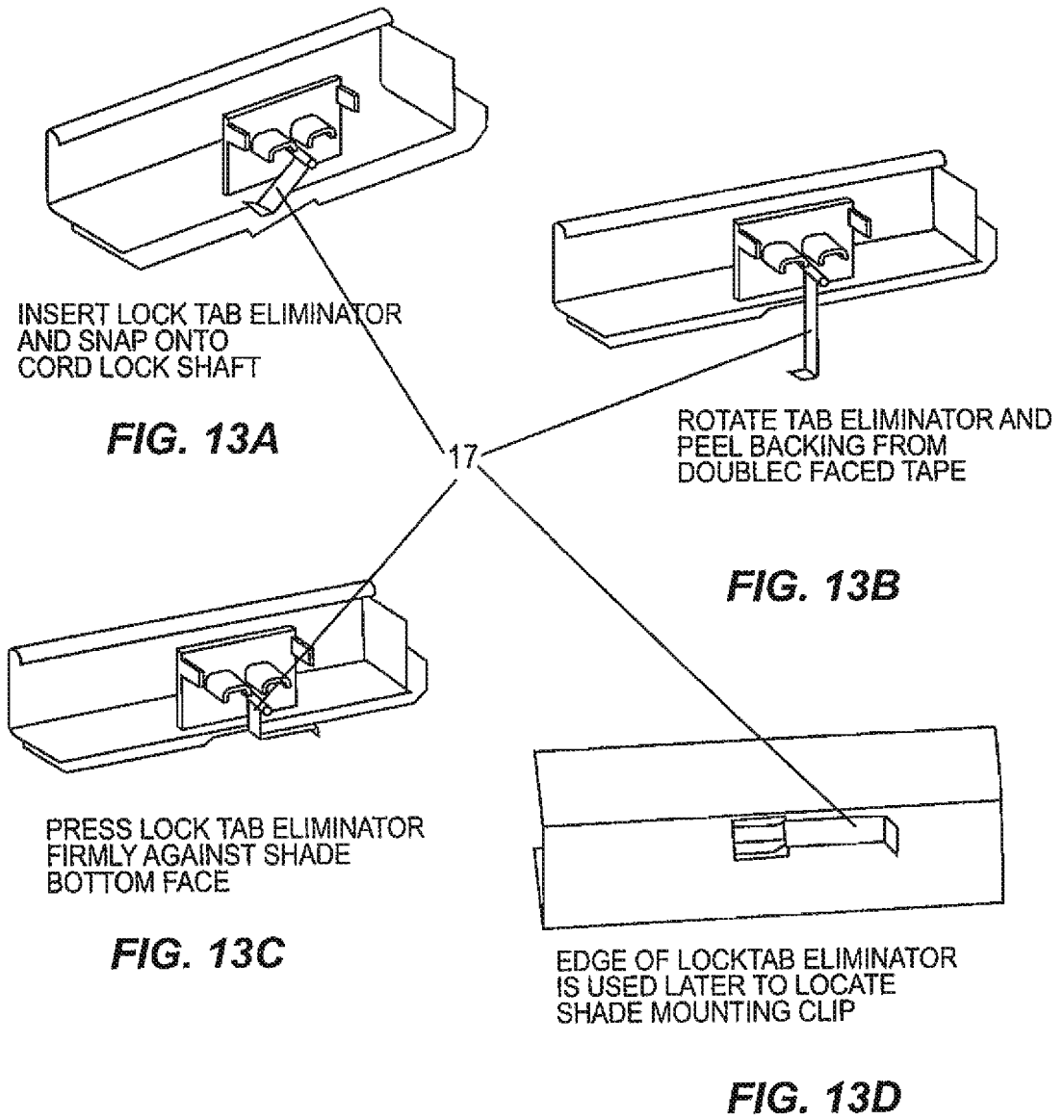


FIG. 12



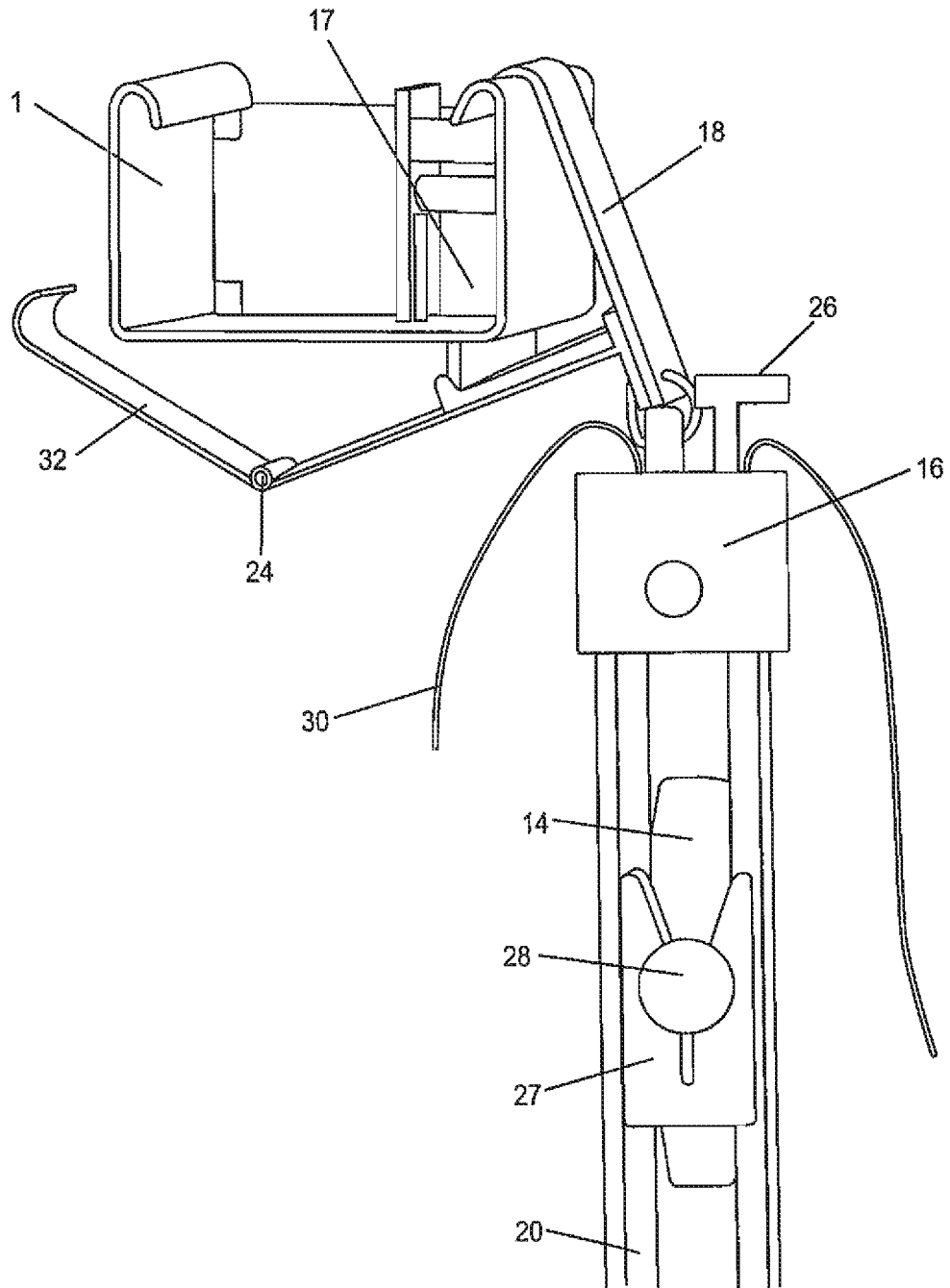


FIG. 14

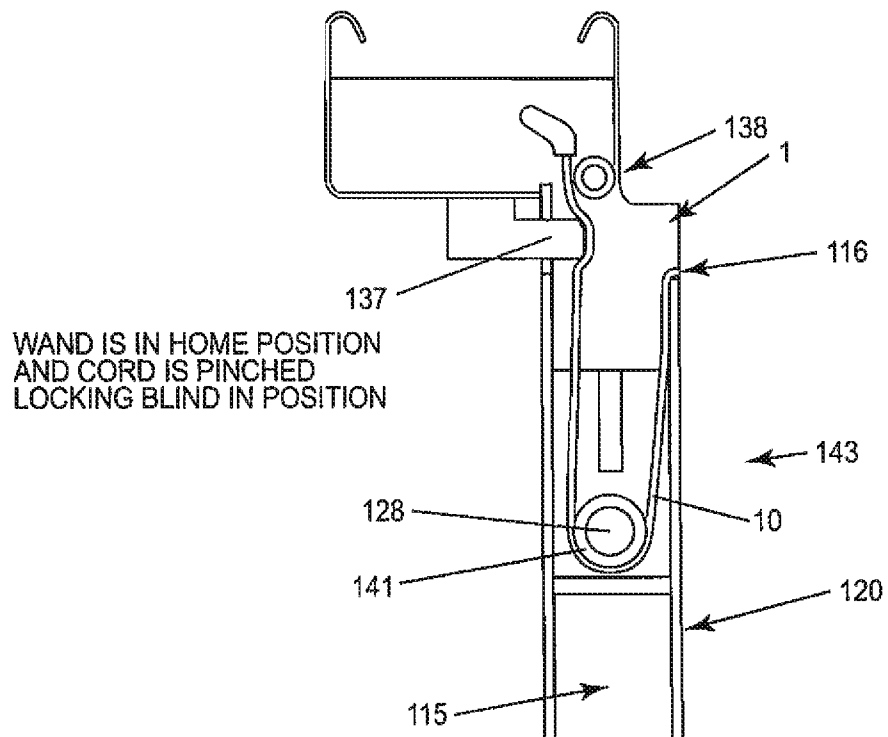


FIG. 15

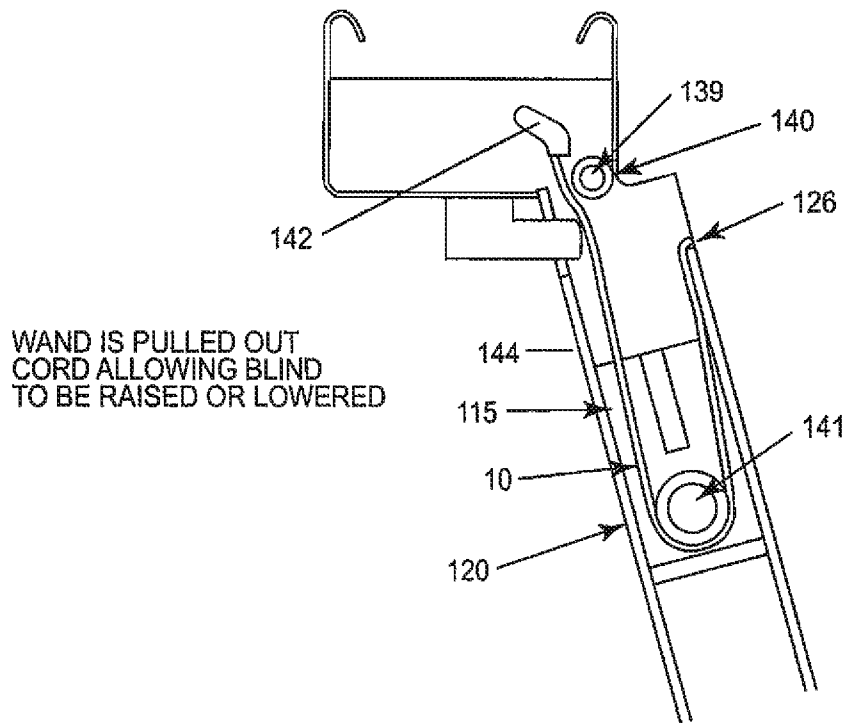


FIG. 16

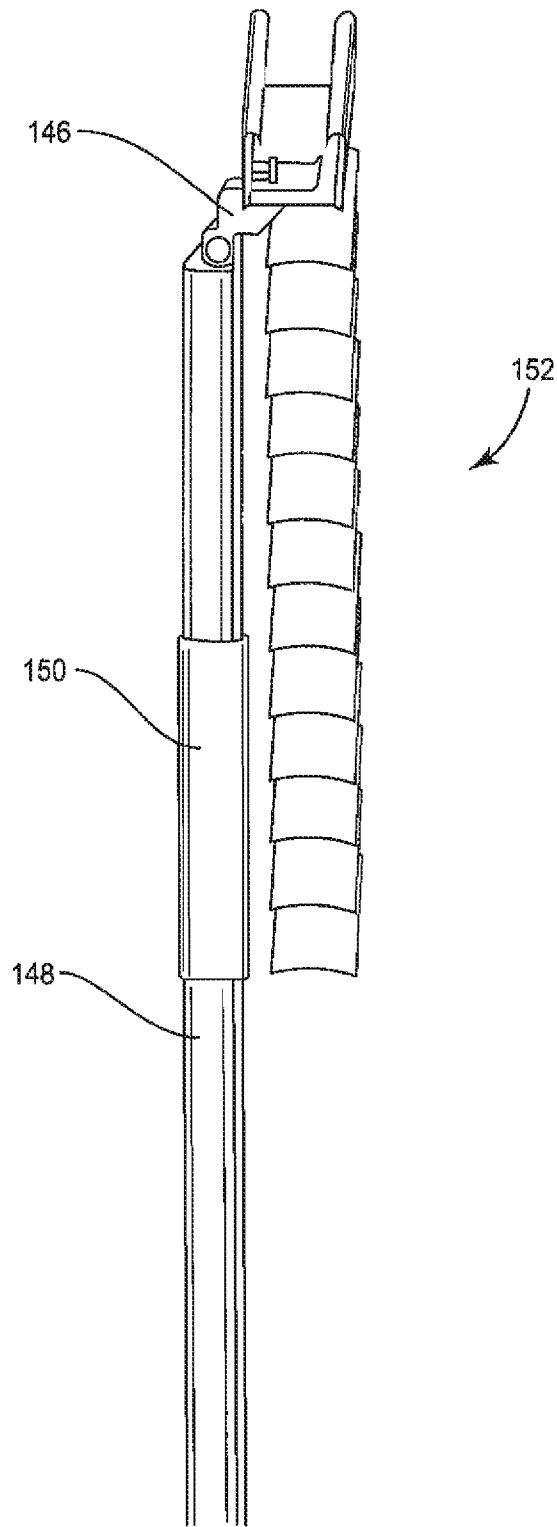


FIG. 17

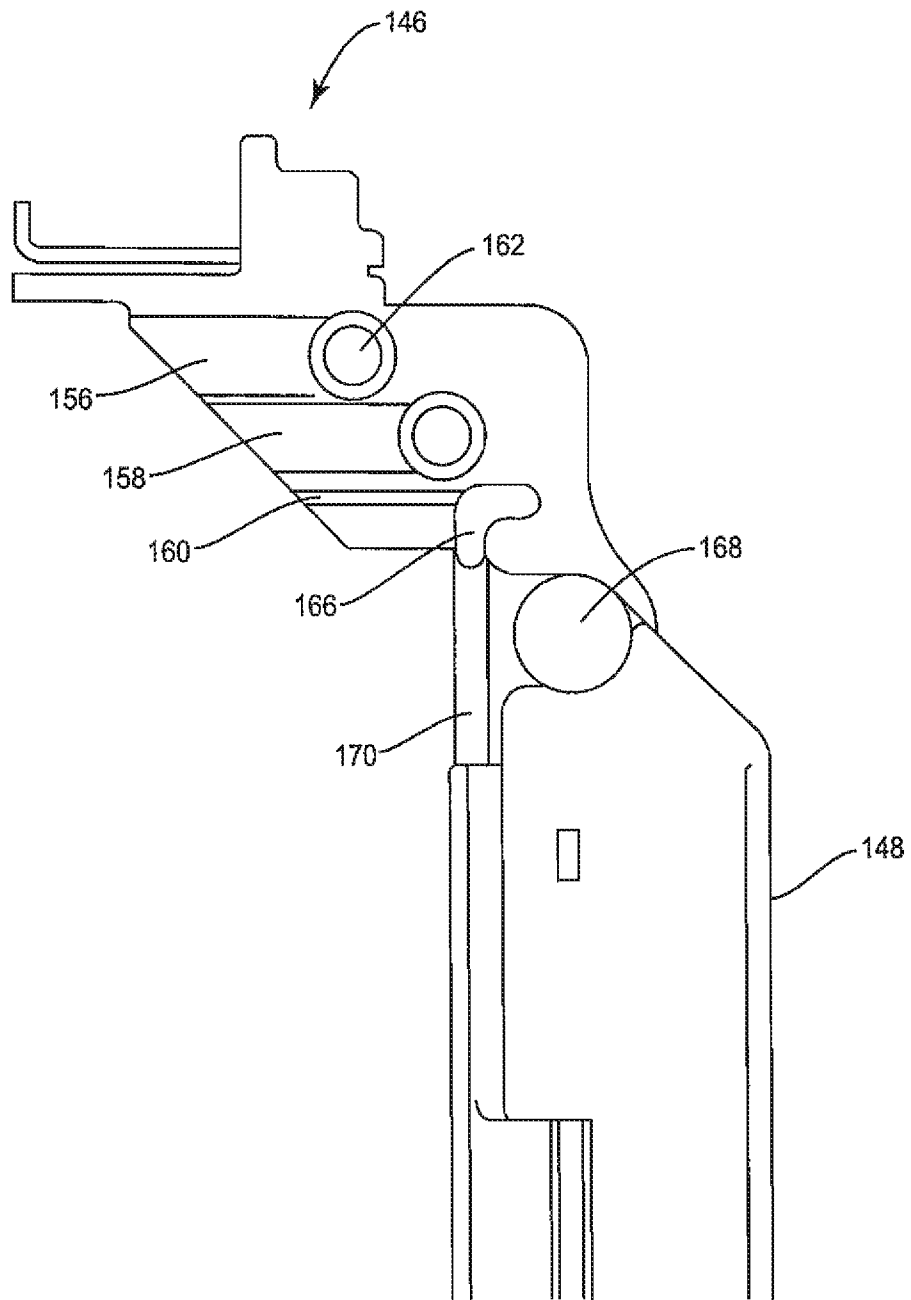


FIG. 18

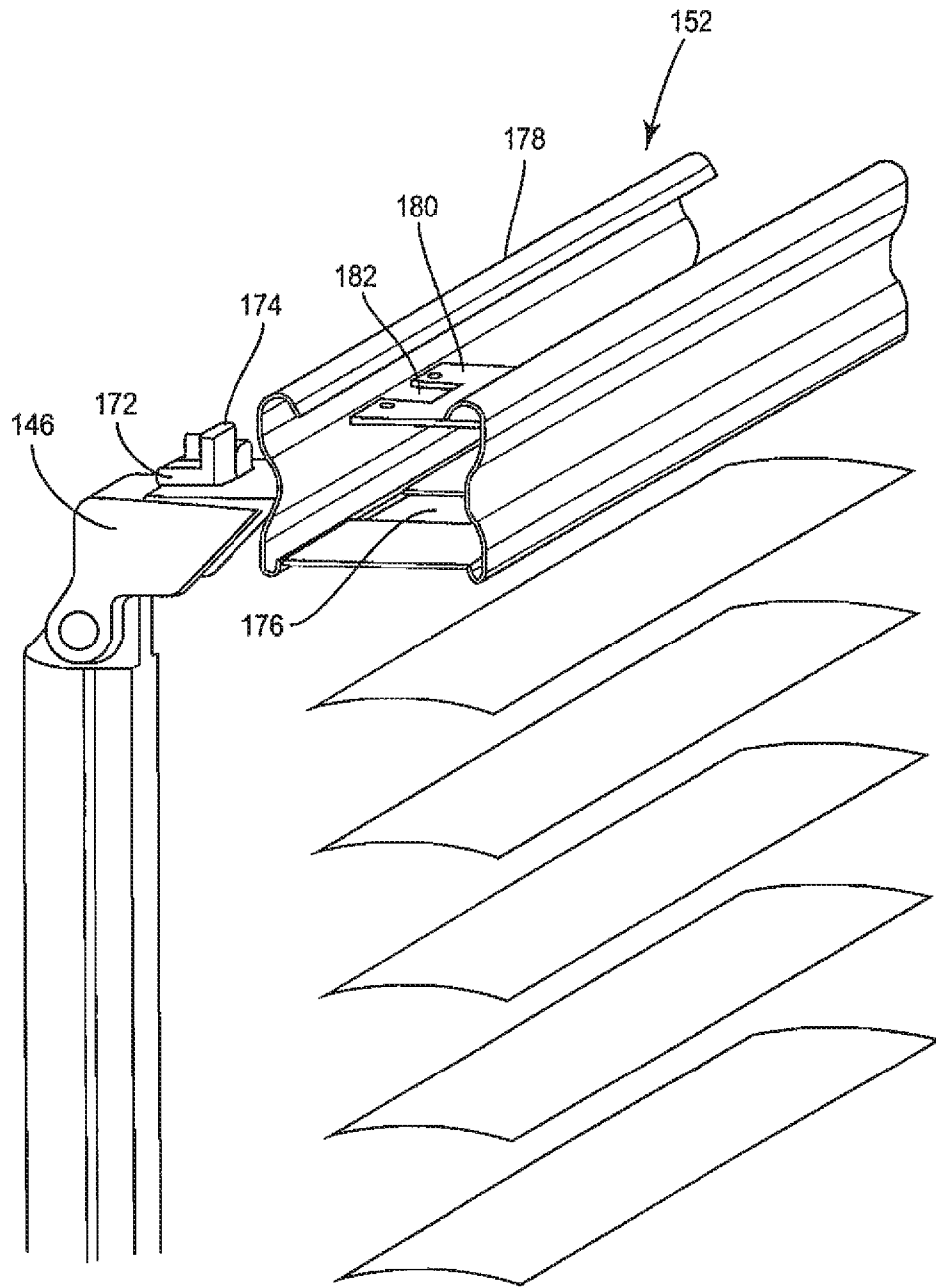


FIG. 19

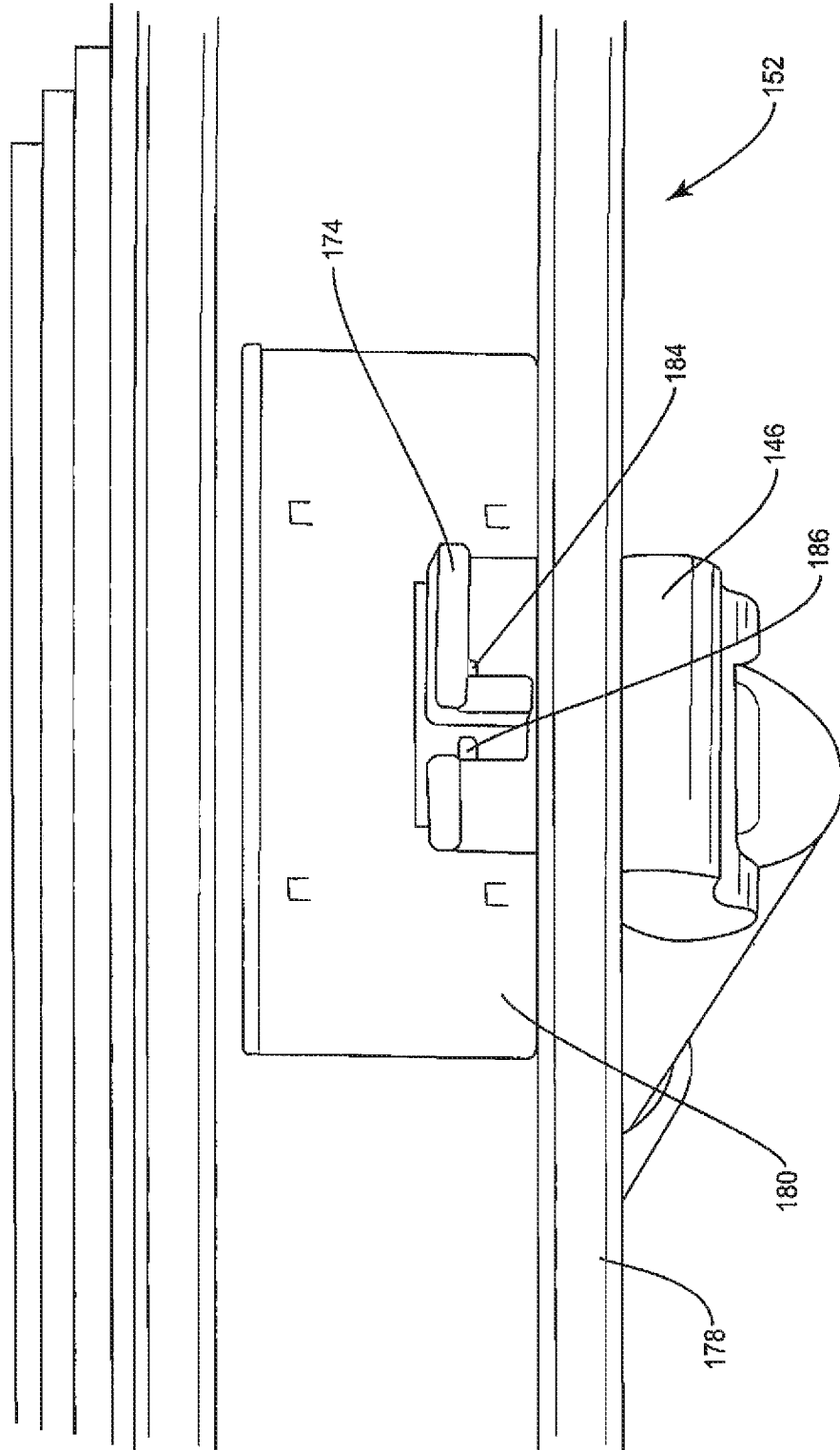


FIG. 20

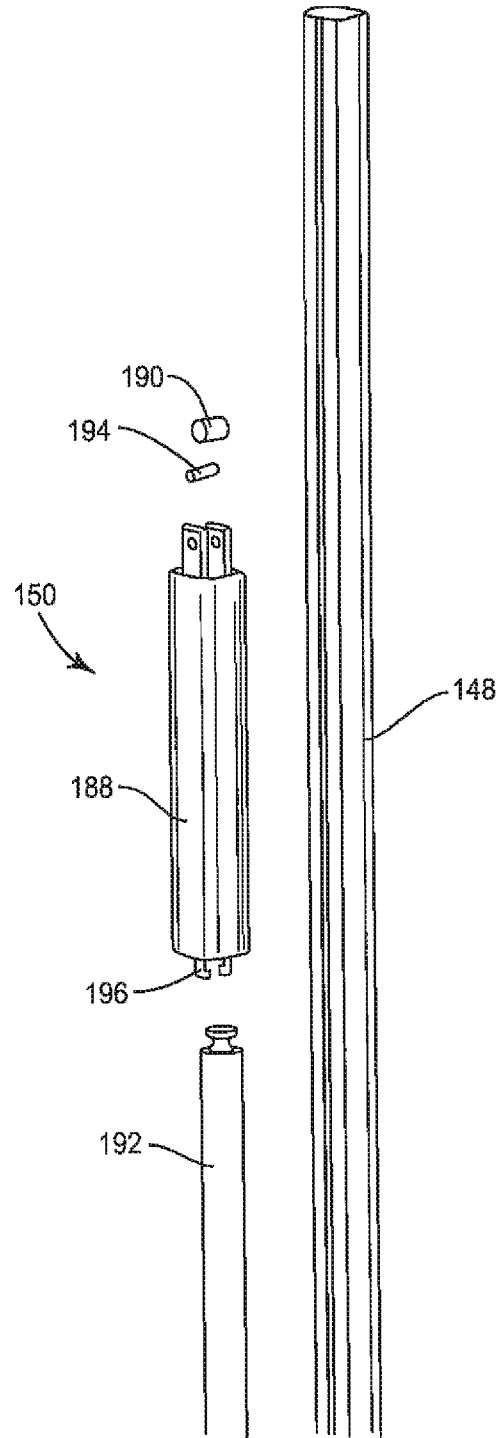


FIG. 21

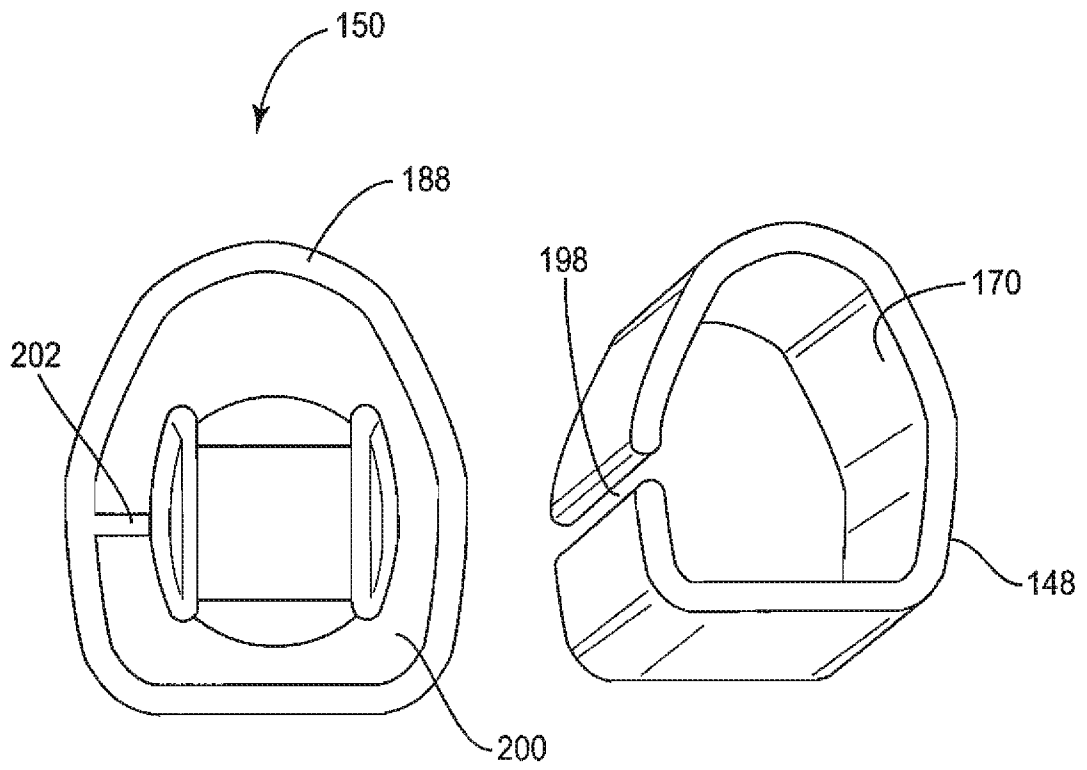


FIG. 22

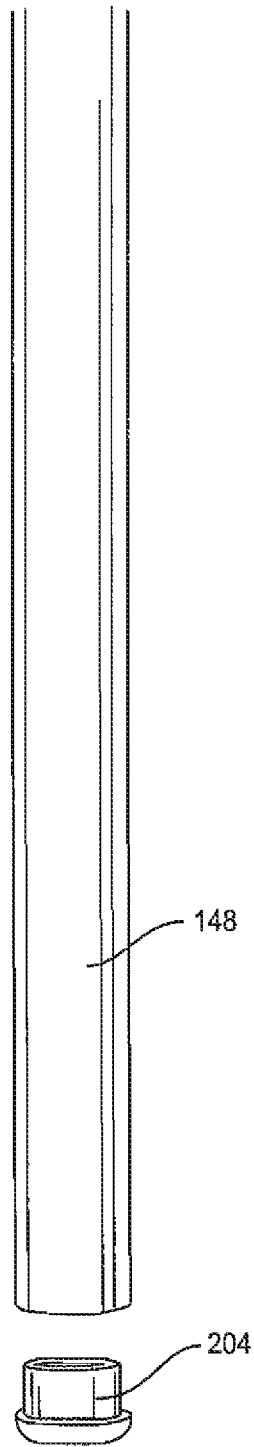


FIG. 23

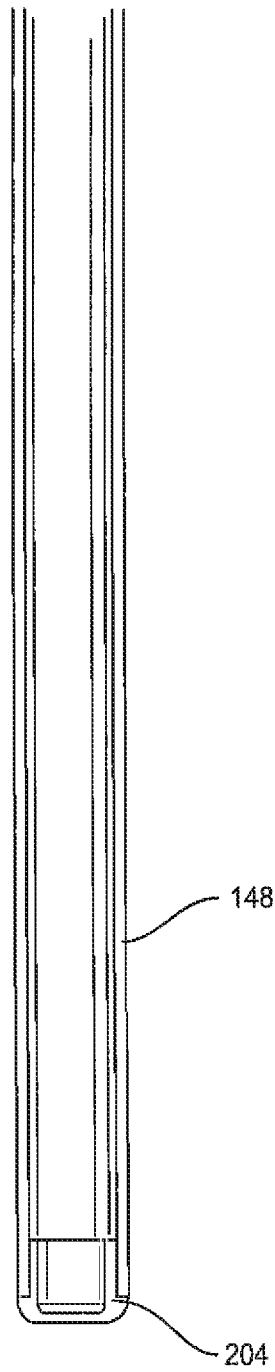


FIG. 24

Fig. 25

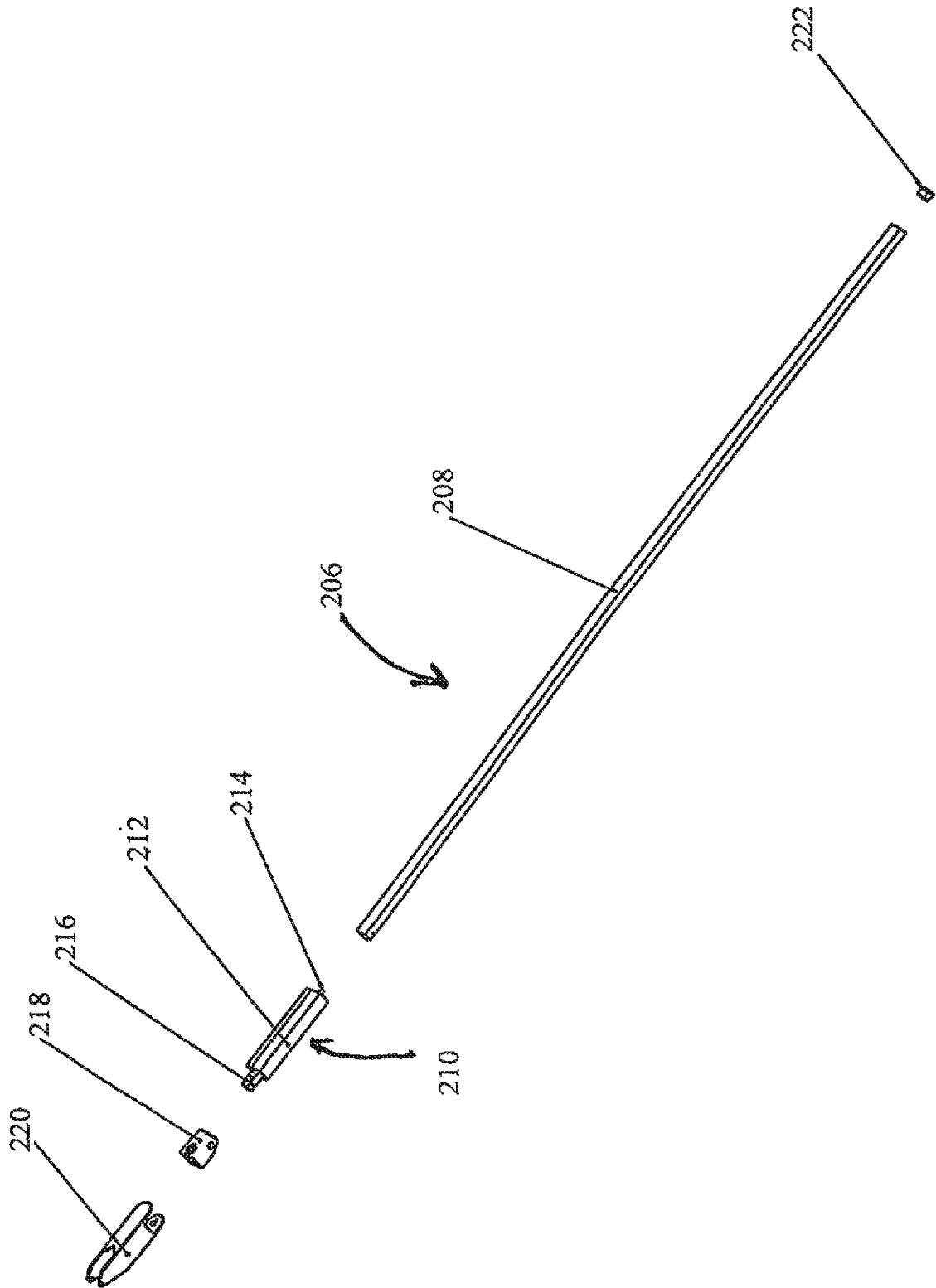


Fig. 26A

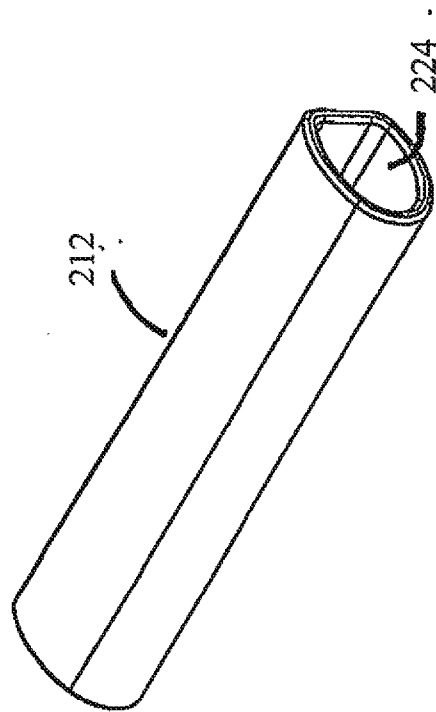


Fig. 26B

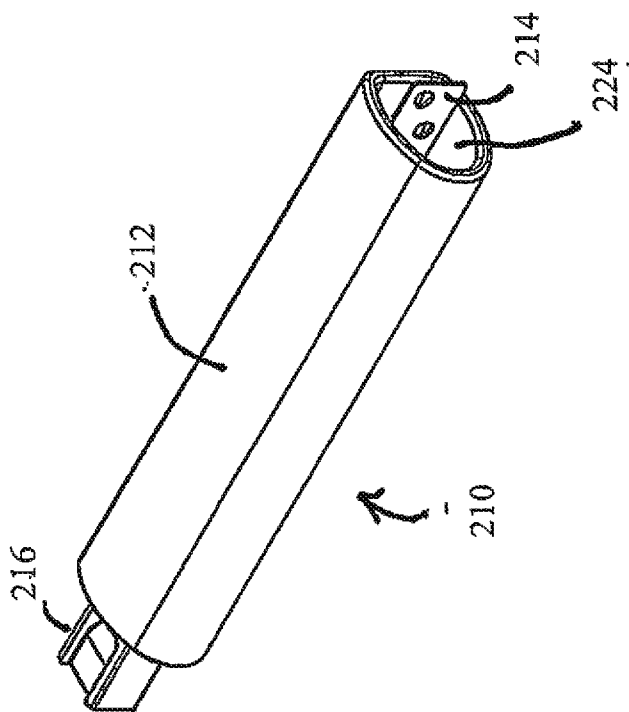


Fig. 26C

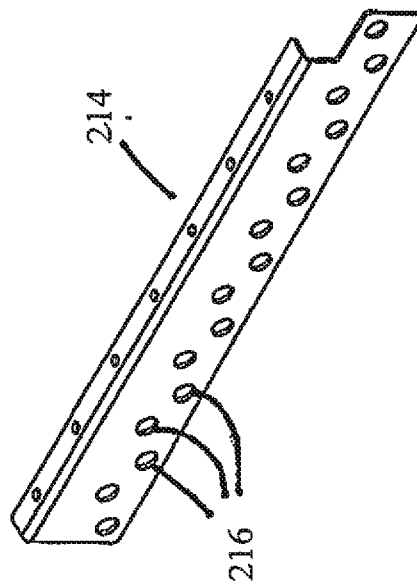


Fig. 26D

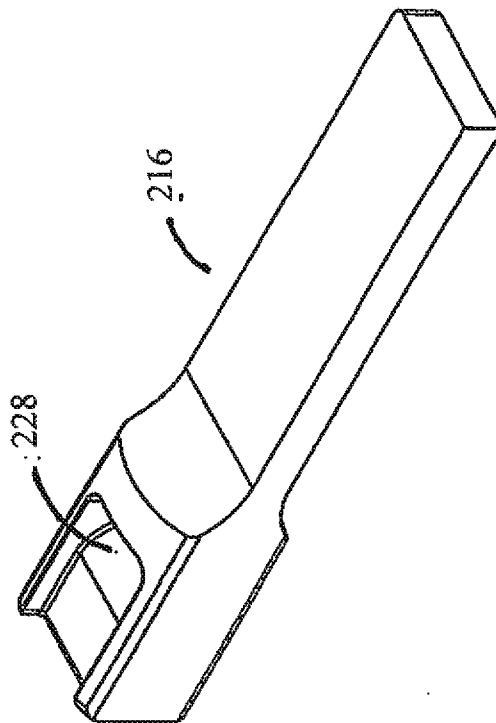


Fig. 26E

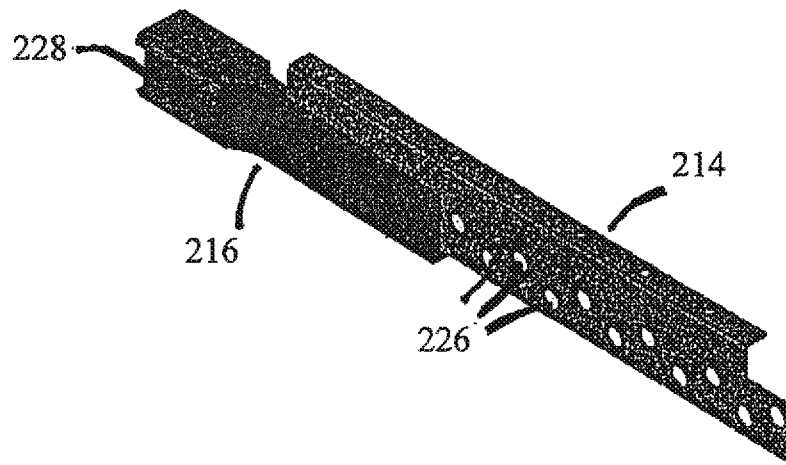


Fig. 26F

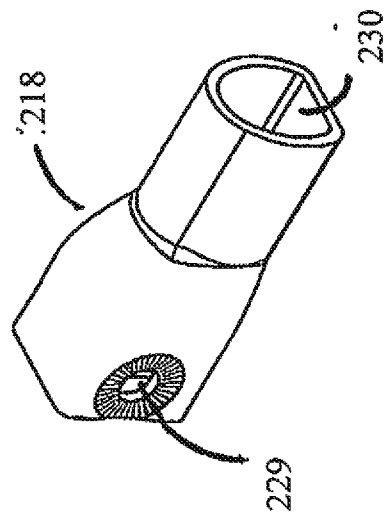


Fig. 26G

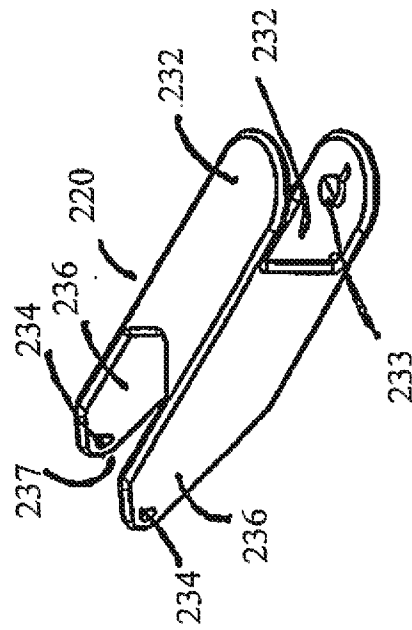


Fig. 26H

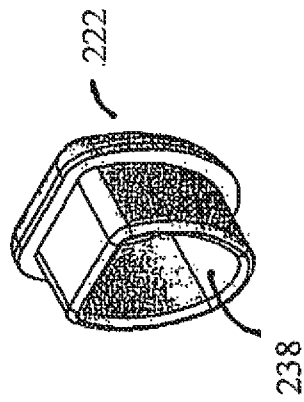


Fig. 27

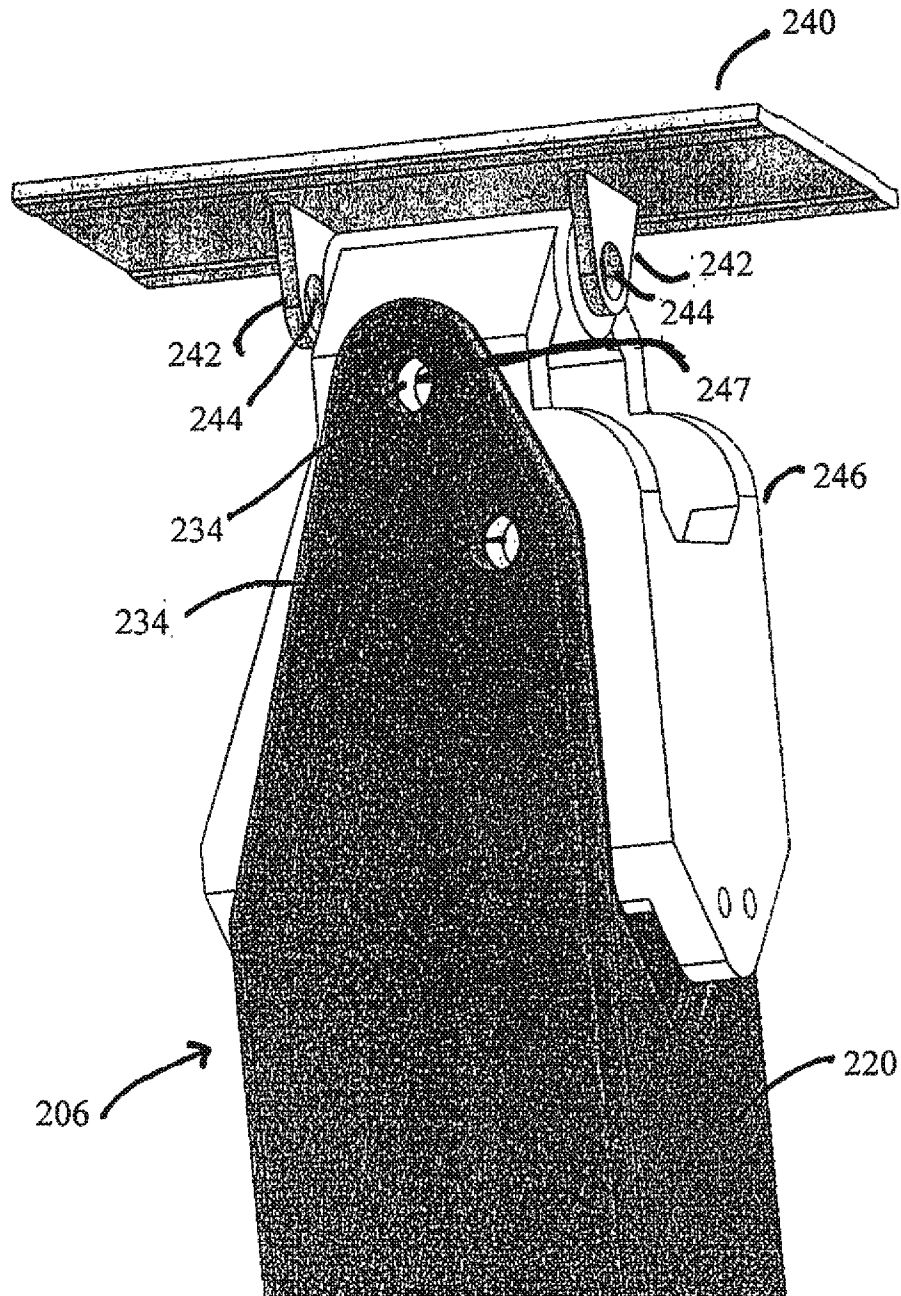


Fig. 28A

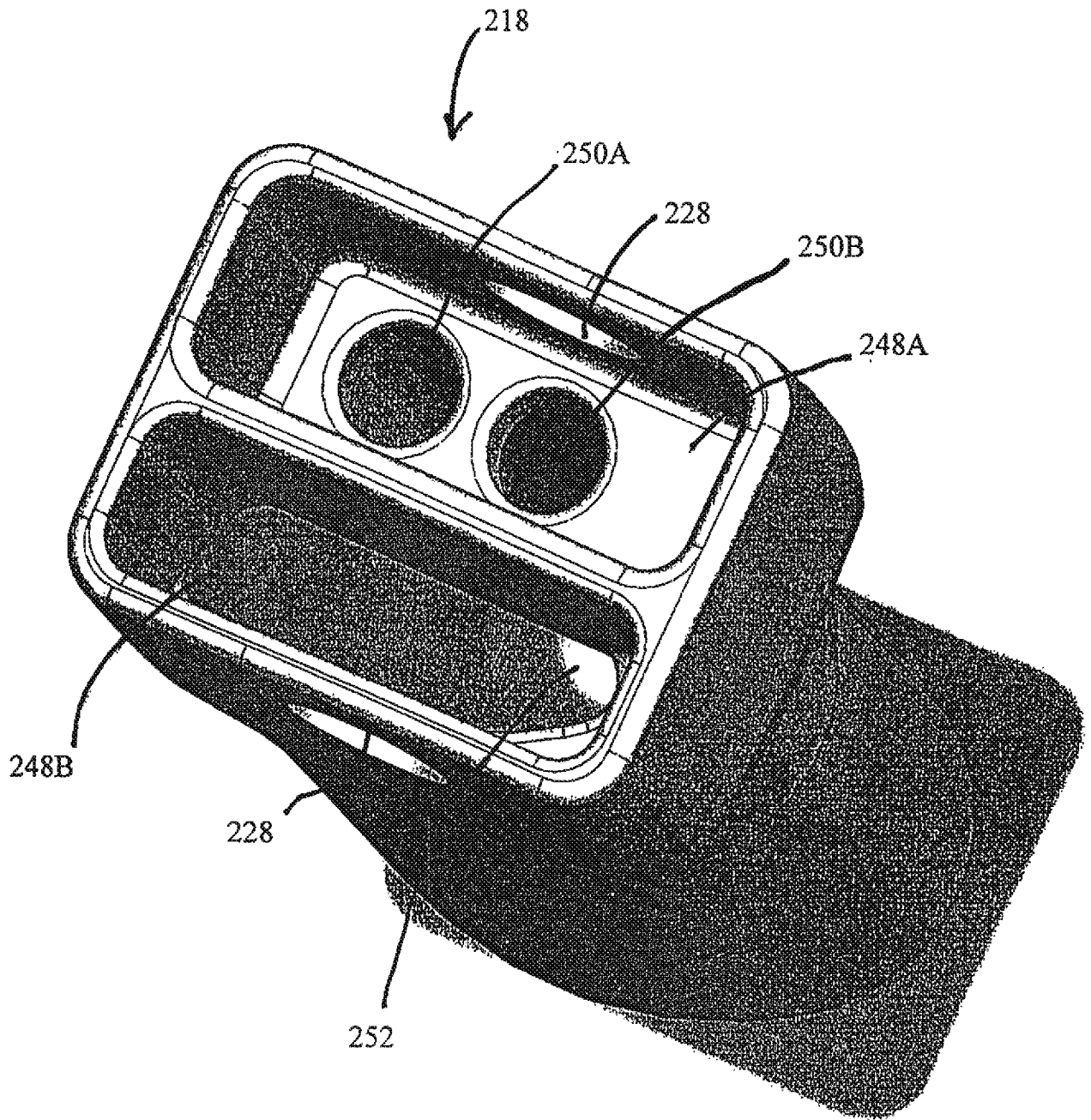
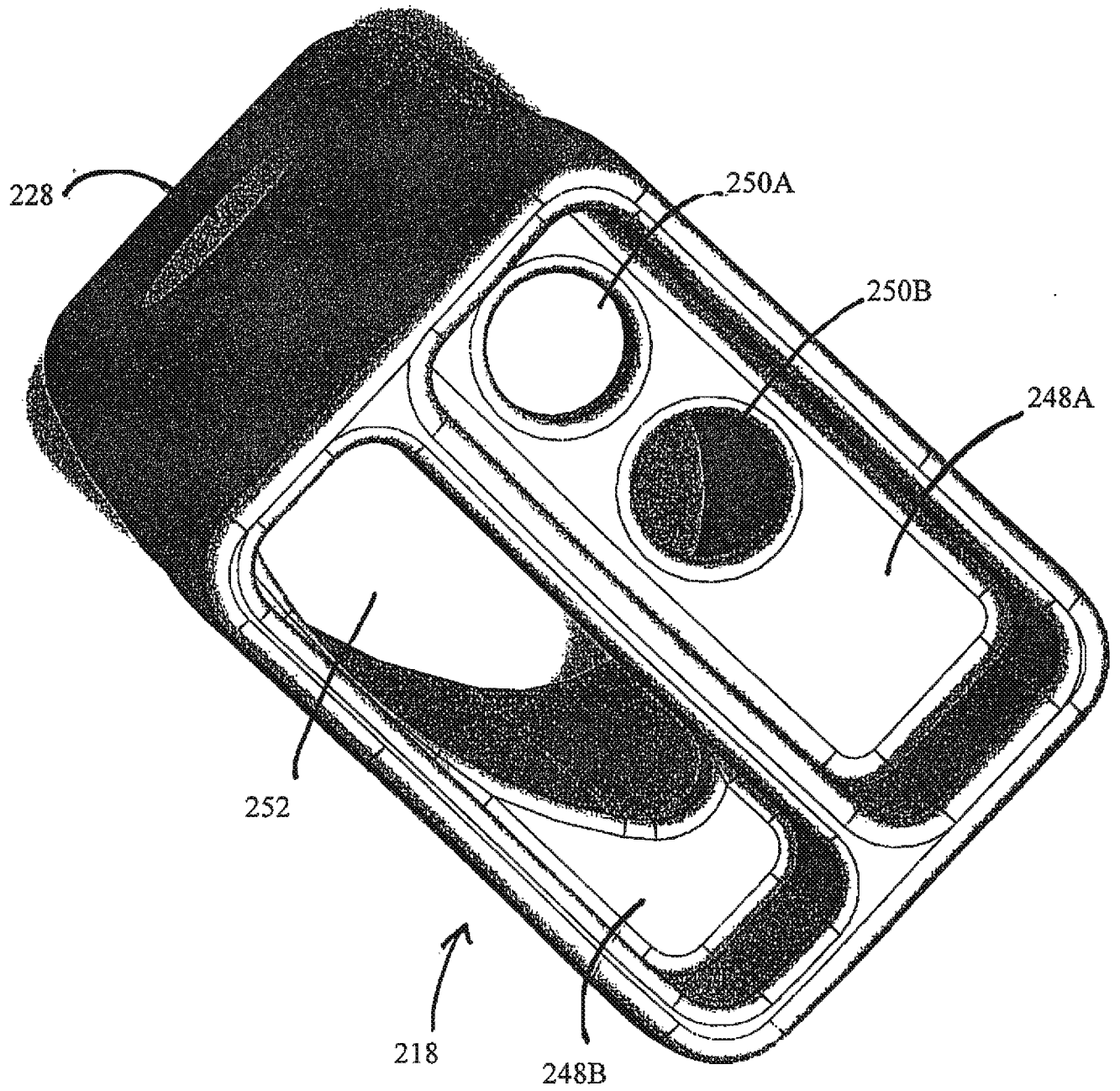


Fig. 28B



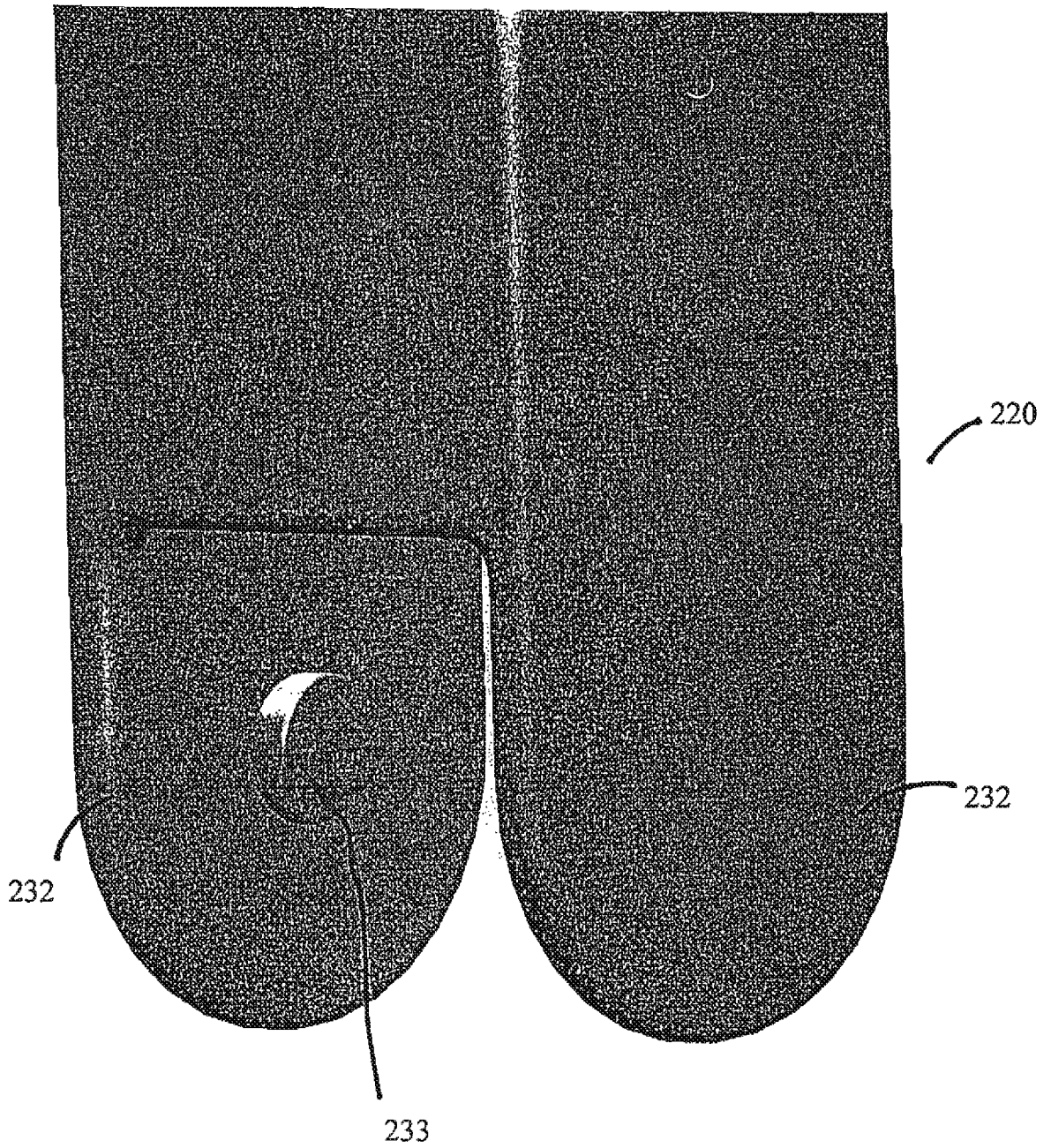
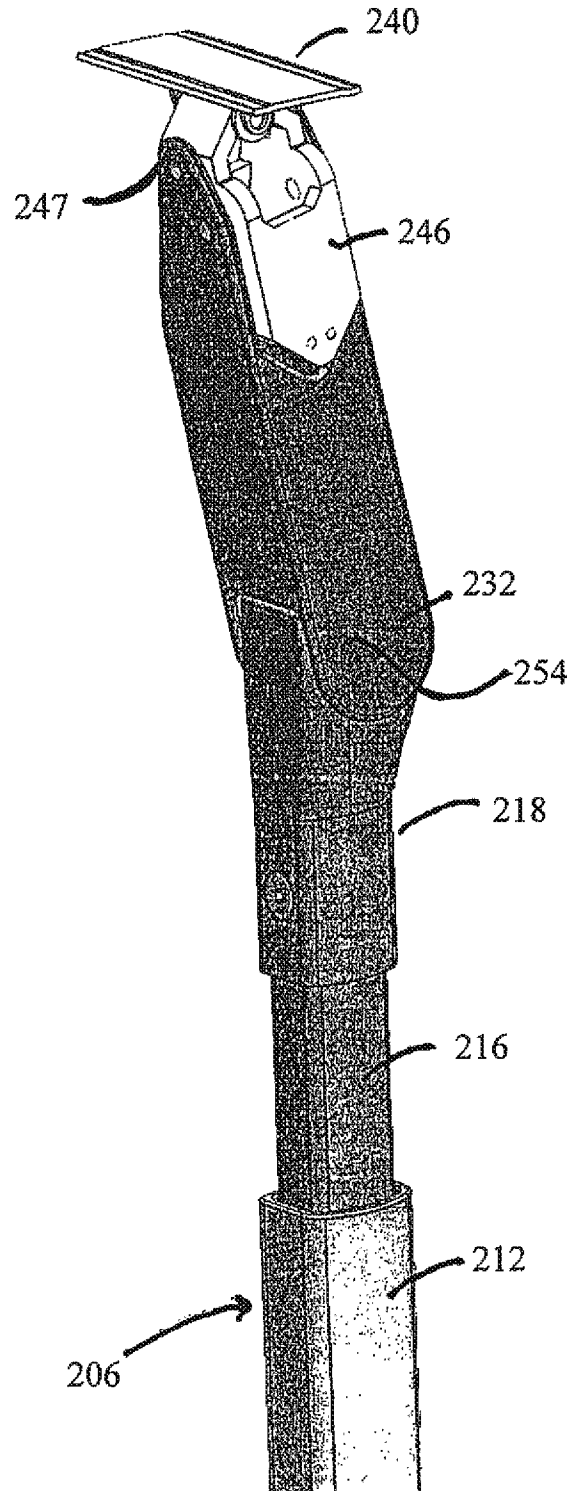


Fig. 29

Fig. 30



INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2012/034990

A. CLASSIFICATION OF SUBJECT MATTER
 IPC(8) - E06B 9/30 (2012.01)
 USPC - 160/168.1R
 According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED
 Minimum documentation searched (classification system followed by classification symbols)
 IPC(8) - E06B 9/30, 9/32, 9/326 (2012.01)
 USPC - 160/168.1, 168.1R

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)
 PatBase, Google Patents

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X ---	US 5,465,775 A (BIBA et al) 14 November 1995 (14.11.1995) entire document	1-7, 9, 11, 13-20
Y		8, 10, 12, 21
Y	US 3,795,267 A (DEBS) 05 March 1974 (05.03.1974) entire document	8, 10
Y	US 6,062,292 A (BRYANT) 16 May 2000 (16.05.2000) entire document	12, 21

Further documents are listed in the continuation of Box C.

* Special categories of cited documents:	"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
"A" document defining the general state of the art which is not considered to be of particular relevance	"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
"E" earlier application or patent but published on or after the international filing date	"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
"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)	"&" document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search 06 July 2012	Date of mailing of the international search report 20 JUL 2012
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