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(54) **Curtain roll-up route control assembly**

(57) A curtain roll-up route control assembly including a curtain body, an assembly member, a braking member, a toggle unit and a shaft sleeve is revealed. The curtain body is positioned by the braking member that is an elastic push switch. After being pressed, the braking member is projected or retracted so as to be positioned by or released from the positioning ribs. Thus the movement of the curtain body is more precise and convenient. Moreover, the manufacturing and the assembly of the

curtain control assembly are getting easier. Thus the cost is reduced effectively and the production efficiency is improved dramatically. A plurality of positioning ribs set between the shaft sleeve and the braking member provides multiple mounting and positioning areas. Thus the precision of the positioning is improved and the obvious height difference generated due to retraction of the curtain is reduced. The stability of the curtain body is increased.

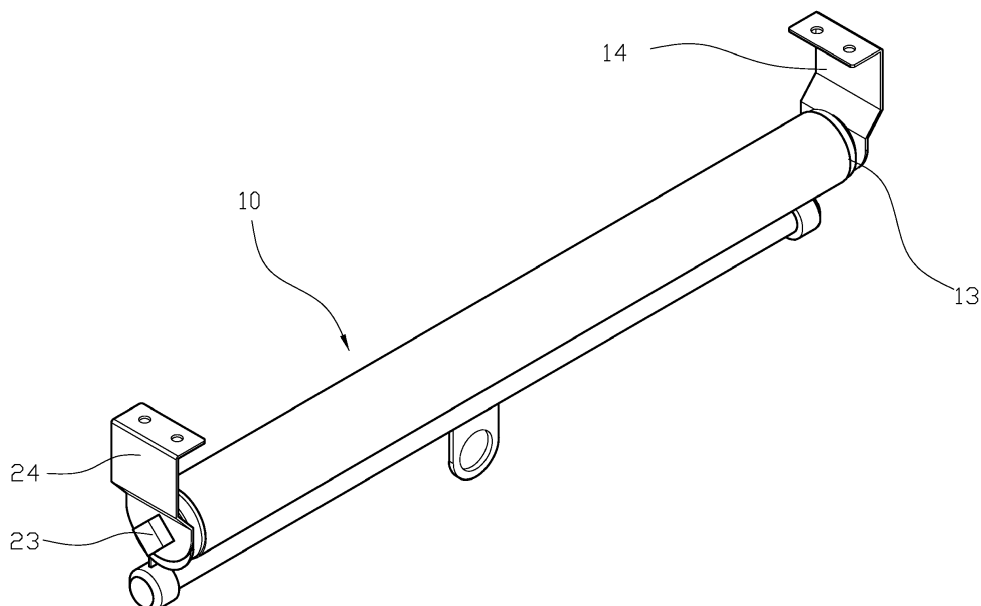


FIG. 1

Description

BACKGROUND OF THE INVENTION

Fields of the invention

[0001] The present invention relates to a curtain assembly, especially to a curtain roll-up route control assembly.

Descriptions of Related Art

[0002] Refer to Fig. 18 and Fig. 19, a conventional curtain roll-up route control assembly is disposed with a bushing 60 having a hollow portion therein. A guiding slot 61 is arranged axially at an inner wall of the bushing 60. A rotating shaft 70 and a rod assembly member 80 are mounted in the hollow portion of the bushing 60. A groove 71 is formed on the circumferential wall of the rotating shaft 70. A locking recess 711 and a curved segment 712 sind respectively formed on proper positions of the groove 71 and. A ball 90 is set between the groove 71 of the rotating shaft 70 and the guiding slot 61 of the bushing 60. Moreover, a spring 81 is arranged between the rotating shaft 70 and the rod assembly member 80. One end of the spring 81 is fixed on and connected to the rotating shaft 70 while the other end thereof is connected to the rod assembly member 80. A center bore 82 is disposed in the center of the rod assembly member 80, so that a rod 83 can be conducted through und fixed with the center bore 82. Thereby the ball 90 is positioned in the locking recess 711 of the groove 71 of the rotating shaft 70 (as shown in Fig. 20) and the guiding slot 61 of the bushing 60. When a user pulls a ball chain to drive the rod 83 and the connected rod assembly member 80 to rotate clockwise, the ball 90 is driven and moved to the curved segment 712. Thus the rotating shaft 70 is stopped and unable to rotate. Also refer to Fig. 21 and Fig. 22, since the rotating direction of the clockwise rotating rod assembly member 80 is opposite to the direction of wind of the spring 81, a sleeved segment of the rod assembly member 80 is able to rotate at an assembly end of the spring 81, so that the curtain fabric can be rolled up continually. When the curtain fabric is pulled to a certain position and the user stops pulling a ball chain, the ball 90 will turn back to the locking recess 711 while the sleeved segment of the rod assembly member 80 pulls the spring 81 to rotate tightly and the inner diameter of the spring 81 is decreased. Thus the spring 81 fastens the rod assembly member 80, whereby the rod 83 and the curtain fabric are stopped. Moreover, when the curtain fabric should be pulled downward, the user pulls the ball chain and releases it then immediately. By this means the ball 90 is released from the locking recess 711 of the rotating shaft 70, and the curtain fabric falls naturally downward due to gravity and drives the rod 83 and the connected rod assembly member 80 in this way. Now the rotation direction of the rod 83 and the connected rod

assembly member 80 is the same as the direction of wind of the spring 81. Thus the spring 81 is pulled, so that the inner diameter thereof is reduced. The spring 81 and the rod assembly member 80 are fastened with and fixed by each other. Driven by the spring 81, the spring 81 and the rod assembly member 80 are rotated synchronously with the rotating shaft 70 connected to the assembly end of the spring 81. Refer to Fig 23, the ball 90 released from the locking recess 711 moves in a cycling segment 713 of the rotating shaft 70 and in the guiding slot 61 of the bushing 60 to and fro. When the curtain fabric drops to the position required, the user pulls and locks off the ball chain. At the moment, the rod 83 and the rod assembly member 80 stop rotating while the ball 90 moving in the cycling segment 713 of the rotating shaft 70 finally turns back to the locking recess 711 of the groove 71 along with the rotating shaft 70. In this way the curtain is positioned. The movement of the curtain is achieved.

[0003] However, the conventional structure mentioned above has following shortcomings:

- (1) the positioning of the conventional curtain roll-up route contral assembly is achieved by means of the ball 90 working together with the groove 71 of the rotating shaft 70 and the guiding slot 61 of the bushing 60, so that the rotating shaft 70 and the curtain fabric rotate synchronously, whereby the ball 90 is brought to be locked or released; however, the volume of the ball 90 is small so that the assembly of the ball 90 requires higher precision; besides, the design of both the groove 71 of the rotating shaft 70 and the guiding slot 61 of the bushing 60 should be more delicate in order to achieve the locking or releasing of the ball 90 precisely; this requires more efforts in manufacturing and assembling und causes accordingly higher production costs; furthermore, the ball 90 gets lost easily during the assembling process, which brings about defect products, moreover, friction occurs when the ball 90 slides between the rotating shaft 70 and the bushing 60, whereby the pulling and locking of the curtain is impeded;
- (2) the movement and positioning of the ball in the groove 71 of the rotating shaft 70 and the guiding slot 61 of the bushing 60 has regularity, so that the positioning of the curtain fabric can only be achieved after a complete rotation of the rotating shaft 70 and the positioning precision of the curtain is poor; while being pulled and positioned, the curtain fabric can be retracted easily, and this causes a height difference; a curtain with such design has low stability in use and poor positioning effect.

SUMMARY OF THE INVENTION

[0004] Therefore it is a primary object of the present invention to provide a curtain roll-up route control assembly in which a curtain member is positioned by a braking member, which is an elastic push switch. After being

pressed, the braking member projects or contracts so as to be positioned by or released from positioning ribs. Thus the movement of the curtain body is more precise and convenient. Moreover, the structure is easy to be assembled. The manufacturing and the assembling of the curtain roll-up route control assembly are getting easier so that the cost is reduced effectively and the production efficiency is improved dramatically.

[0005] It is another object of the present invention to provide a curtain roll-up route control assembly in which a plurality of positioning ribs is set between the shaft sleeve and the braking member for providing multiple mounting and positioning areas. Thus the precision of the positioning is improved effectively and the obvious height difference generated due to retraction of the curtain is reduced. The stability of the curtain body on unrolling and rolling-up is increased.

[0006] In order to achieve the above objects, a curtain control assembly of the present invention includes a curtain body, an assembly member, a braking member, a toggle unit and a shaft sleeve. The curtain body is composed of a shaft tube and a curtain member retracted and mounted in the shaft tube. The assembly member is formed by an assembly portion and a connection bar extending from a center of the assembly portion. The braking member is eccentrically arranged at one side of the connection bar. The braking member is an elastic push switch and has a passive end and a link rib projecting from one side of the passive end. The toggle unit is composed of a central axle hole, a braking piece and a link pad. The connection bar of the assembly member is inserted through the central axle hole while the braking piece is set around the central axle hole. The link pad is arranged at an outer wall of the toggle unit. The shaft sleeve includes a connection portion, an assembly chamber, an axial through hole penetrating the connection portion axially along a center of the assembly chamber, and a central shaft inserted through the axial through hole. The connection portion is arranged at an end part of the shaft sleeve and disposed with an elastic member. A plurality of positioning ribs is arranged at an inner wall of the assembly chamber. The end part of the central shaft is locking with the elastic member. Then the assembly of the elastic member with the central shaft is connected to the toggle unit and the assembly member in turn. The connection bar of the assembly member is passed through the toggle unit to be pressed and fixed by the central shaft. The link rib of the braking member is against and pressed by the braking piece of the toggle unit while the toggle unit is against and moved together with the assembly chamber by the link pad on the outer wall thereof. Then the shaft sleeve is connected tightly to and moved with the shaft tube of the curtain body.

BRIEF DESCRIPTION OF THE DRAWINGS

[0007] The structure and the technical means adopted by the present invention to achieve the above and other

objects can be best understood by referring to the following detailed description of the preferred embodiments and the accompanying drawings, wherein:

Fig. 1 is a perspective view of an embodiment according to the present invention;

Fig. 2 is an explosive view of an embodiment according to the present invention;

Fig. 3 is an explosive view of a braking member of an embodiment according to the present invention;

Fig. 4 is a longitudinal sectional view of an assembled braking member of an embodiment according to the present invention;

Fig. 5 is a longitudinal sectional view of an assembled embodiment according to the present invention;

Fig. 6 is a schematic drawing showing a curtain member being pulled downward according to an embodiment of the present invention;

Fig. 7 is a schematic drawing showing a curtain member being pulled downward viewed from another angle according to of an embodiment of the present invention;

Fig. 8 is a cross sectional view of a curtain member being stopped and positioned according to an embodiment of the present invention after the curtain member is pulled downward;

Fig. 9 is a cross sectional view of a curtain member which is pulled downward, stopped and positioned according to an embodiment of the present invention;

Fig. 10 is a schematic drawing showing a curtain member which is pulled downward, stopped and positioned according to an embodiment of the present invention;

Fig. 11 is a perspective view of another embodiment according to the present invention;

Fig. 12 is an explosive view of another embodiment according to the present invention;

Fig. 13 is a cross sectional view of an assembled embodiment according to the present invention;

Fig. 14 is a schematic drawing showing an embodiment being pulled downward according to the present invention;

Fig. 15 is a schematic drawing showing an embodiment being pulled downward and positioned according to the present invention;

Fig. 16 is an explosive view of a braking member according to another embodiment of the present invention;

Fig. 17 is a longitudinal sectional view of an assembled braking member according to another embodiment of the present invention;

Fig. 18 is an explosive view of a conventional curtain roll-up route control assembly;

Fig. 19 is a cross sectional view of an assembled conventional curtain roll-up route control assembly;

Fig. 20 is a schematic drawing showing a conventional curtain roll-up route control assembly at a static

state;

Fig. 21 is a schematic drawing showing a conventional curtain roll-up route control assembly in use;

Fig. 22 is another schematic drawing showing a conventional curtain roll-up route control assembly in use;

Fig. 23 is a further schematic drawing showing a conventional curtain roll-up route control assembly in use.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0008] Refer to Fig. 1 and Fig. 2 in combination with Fig. 3 and Fig. 4, a curtain roll-up route control assembly of the present invention includes a curtain body 10, an assembly member 20, a braking member 30, a toggle unit 40 and a shaft sleeve 50. The curtain body 10 consists of a shaft tube 11 and a curtain member 12 retracted and mounted in the shaft tube 11. The assembly member 20 is composed of an assembly portion 21, a connection bar 22 and an assembly projection 23. The connection bar 22 extends from a center of the assembly portion 21 and the braking member 30 is disposed eccentrically on one side of the connection bar 22. The assembly portion 21 is cylindrical and an assembly slot 211 is eccentrically arranged at the assembly portion 21 for mounting the braking member 30. A yield curved surface 221 is formed on an face surface of the connection bar 22 facing the assembly slot 211. The assembly projection 23 whose shape is not cylindrical is arranged at an outer side of the assembly member 20 to be mounted firmly on a bracket 24. The braking member 30 is an elastic push switch and consists of an outer tube 31, an inner tube 32, a positioning member 33 and a spring 34. A plurality of limiting guiding bars 311 is disposed on an inner wall of the outer tube 31 and the inner tube 32 is mounted into the outer tube 31 correspondingly. One end of the inner tube 32 extends outside the outer tube 31 and forms a passive end 321 in this way, and a link rib 322 is arranged at the passive end 321 while the other end is disposed with a plurality of driving teeth 323. The positioning member 33 is also mounted into the outer tube 31 and is having a plurality of positioning teeth 331, a plurality of mounting slots 332, and a projecting pin 333. The positioning teeth 331 corresponding to the limiting guiding bars 311 are disposed at an end part of the positioning member 33. Each of the mounting slots 332 is set between the two adjacent positioning teeth 331. The projecting pin 333 extends from the end part of the positioning member 33 and is inserted into the inner tube 32. The spring 34 is lastly mounted into the outer tube 31 and leaning against the rear end of the positioning member 33. After the braking member 30 being mounted into the assembly slot 211, the link rib 322 is facing the connection bar 22. The toggle unit 40 is composed of a central axle hole 41, a braking piece 42 and a link pad 43. The toggle unit 40 is a C-shaped block. The central axle

hole 41 is passed by the connection bar 22 of the assembly member 20 while the braking piece 42 is a curved piece set around the central axle hole 41 and formed by a wall surface of the central axle hole 41. As to the link pad 43, it is a wool felt unit arranged at an outer wall of the toggle unit 40. The shaft sleeve 50 consists of a connection portion 51, an elastic member 52, an assembly chamber 53, an axial through hole 54, a central shaft 55 and an axial mounting plate 56. The connection portion 51 with the elastic member 52 therearound is disposed on an end part of the shaft sleeve 50. A plurality of positioning ribs 531 is arranged at an inner wall of the assembly chamber 53 while the axial through hole 54 is penetrating the connection portion 51 axially along the center of the assembly chamber 53 and the central shaft 55 is inserted through the axial through hole 54. A slot 551 is located at the end part of the central shaft 55 for locking and positioning the elastic member 52. After the elastic member 52 being locked with and positioned by the end part of the central shaft 55, the central shaft 55 is assembled with and connected to the axial mounting plate 56, the toggle unit 40 and the assembly member 20 in turn. The connection bar 22 of the assembly member 20 is passed through the toggle unit 40 to be friction-locked with the central shaft 55, and the toggle unit 40 is also mounted into the assembly chamber 53 of the shaft sleeve 50 at the same time. Now the link rib 322 of the braking member 30 is against and pressed by the braking piece 42 of the toggle unit 40. Moreover, the braking member 30 is mounted in the eccentric assembly slot 211. Thus the passive end 321 of the braking member 30 is aligned with the positioning ribs 531 when the braking member 30 is driven to be moved and mounted into the assembly chamber 53 while the toggle unit 40 is against and moved together with the assembly chamber 53 by the link pad 43 on the outer wall. Then the shaft sleeve 50 is connected tightly to and moved with one end of the shaft tube 11 of the curtain body 10 while the other end of the shaft tube 11 of the curtain body 10 is assembled with a tube plug 13 and fixed on a bracket 14.

[0009] Refer to Fig. 2, Fig. 3 and Fig. 5, the braking member 30 is mounted into the assembly slot 211 of the assembly member 20 and the link rib 322 of the braking member 30 is facing the yield curved surface 221 of the connection bar 22. While the braking member 30 is not acted (at the normal state), the positioning member 33 is leaning against the end part of the limiting guiding bars 311 of the outer tube 31 by the positioning teeth 331. Thus the inner tube 32 is contracted inward and compresses the spring 34 in this way. The assembly member 20 together with the toggle unit 40 is mounted into the shaft sleeve 50. First the connection bar 22 of the assembly member 20 is inserted into the central axle hole 41 of the toggle unit 40. Then the braking piece 42 and the link rib 322 of the braking member 30 are leaning against and pressed by each other. Next the toggle unit 40 and the assembly member 20 are mounted into the assembly chamber 53 of the shaft sleeve 50 in turn. The

toggle unit 40 is against and moved with the assembly chamber 53 by the link pad 43. Moreover, the passive end 321 of the braking member 30 is aligned with the positioning ribs 531 of the assembly chamber 53 due to the braking member 30 mounted in the eccentric assembly slot 211 of the assembly member 20. The central shaft 55 of the shaft sleeve 50 is inserted through the axial through hole 54 to be fixed by the connection bar 22 of the assembly member 20 tightly. The connection portion 51 of the shaft sleeve 50 is fixed with the elastic member 52 and the end part of the elastic member 52 is locked in and positioned by the slot 551 of the central shaft 55. Thus both the central shaft 55 and the elastic member 52 are assembled with and positioned by the assembly member 20. Then the shaft sleeve 50 is mounted into the shaft tube 11 of the curtain body 10 correspondingly. The axial mounting plate 56 arranged in the shaft tube 11 is disposed around the shaft sleeve 50. Due to cylindrical-conical shape of the shaft sleeve 50, the shaft sleeve 50 can be mounted into the shaft tube 11 smoothly and tightly. By the axial mounting plate 56, the shaft sleeve 50 is located at the center of the shaft tube 11. At last, the assembly projection 23 on the outer side of the assembly member 20 is fixed on the bracket 24 while the other end of the shaft tube 11 is arranged with the tube plug 13 and connected to the bracket 14. Thus the curtain control assembly is formed and is disposed on the wall surface by two brackets 14, 24.

[0010] While the curtain body 10 is in use, refer to Fig. 5, Fig. 6 and Fig. 7, the curtain member 12 is directly pulled to move. While the curtain body 10 is not in use, the braking member 30 is at a contracted and unstopped state and the curtain member 12 is rolled up and positioned by elastic compression of the elastic member 52. When a user holds the bottom edge of the curtain member 12 and pulls the curtain downward, the shaft sleeve 50 is driven to move and the toggle unit 40 is moved with the shaft sleeve 50. The central axle hole 41 of the toggle unit 40 is rotated around the connection bar 22 of the assembly member 20 and the braking piece 42 of the toggle unit 40 is leaning against the link rib 322 of the braking member 30. Along with the rotation of the toggle unit 40, the inner tube 32 of the braking member 30 is pushed and pressed inward. Thus the driving teeth 323 of the inner tube 32 are engaged with the positioning teeth 331 of the positioning member 33 and the positioning member 33 is rotated a bit along the driving teeth 323. The mounting slots 332 are corresponding to the limiting guiding bars 311. When the toggle unit 40 has pressed the braking member 30, the curtain member 12 is still pulled downward and the shaft sleeve 50 is also moved to rotate, the braking piece 42 of the toggle unit 40 and the link rib 322 of the braking member 30 are leaning against and stopped by each other. When an external force is larger than the friction of the wool felt, the link pad 43 is released from the attached and linked state. Thus the toggle unit 40 is unable to rotate along with the shaft sleeve 50 while the shaft sleeve 50 around

the toggle unit 40 and the assembly member 20 is at idle rotation along with the shaft tube 11 of the curtain body 10 and the elastic member 52 is compressed at the same time. For fixing the curtain member 12 being pulled downward with a certain length, refer to Fig. 8, Fig. 9 and Fig. 10, the released curtain member 12 is moved upward due to recovery of the elastic member 52. Then the shaft sleeve 50 is driven by reverse rotation of the shaft tube 11 and the toggle unit 40 is also moved to rotate reversely. Thus the braking piece 42 is driven by the reverse rotation of the toggle unit 40 to be moved outward and the braking member 30 is released from the braking piece 42. Next the positioning member 33 is pushed outward by the spring 34 of the braking member 30 and the mounting slots 332 are mounted with the limiting guiding bars 311. Thus the inner tube 32 is projected outward elastically and the passive end 321 is mounted into the positioning ribs 531 on the inner wall of the shaft sleeve 50 to be positioned. Therefore the shaft tube 11 with the curtain member 12 is unable to be moved any more and the length of the curtain member 12 is fixed. The extended and opened curtain member 12 is maintained at a certain length.

[0011] Moreover, when the user intends to turn the pulled curtain member 12 back, the curtain member 12 is pulled downward again so as to make the toggle unit 40 rotate along with the shaft tube 11 and the shaft sleeve 50. The braking piece 42 is moved inward to lean against the link rib 322 of the inner tube 32 and further compress the inner tube 32 to move inward and press the positioning member 33. The positioning member 33 is moved and rotated a bit so that the positioning teeth 331 of the positioning member 33 are corresponding to the end part of the limiting guiding bars 311 of the outer tube 31. Then the curtain member 12 is released so that the toggle unit 40 is rotated reversely to be released from the link rib 322 of the inner tube 32. Thus the positioning member 33 is pushed by the spring 34 to be leaning against the end part of the limiting guiding bars 311. Now the inner tube 32 is retracted inward and the passive end 321 is released from the positioning ribs 531 of the shaft sleeve 50. Therefore the curtain member 12 is retracted and turned back due to elastic recovery of the elastic member 52.

[0012] Refer to Fig. 11 and Fig. 12, another embodiment is revealed. An assembly portion 21 of an assembly member 20 is a cap covered an assembly chamber 53 of a shaft sleeve 50. A horizontal assembly slot 211 used for mounting a braking member 30 is arranged at one side of the connection bar 22 inside the assembly portion 21. Moreover, a braking piece 42 of a toggle unit 40 is a fan-shaped piece extending from an end part of the toggle unit 40. A curved track 421 for limiting is disposed on the braking piece 42. While the assembly member 20 being assembled with the shaft sleeve 50, the braking member 30 is restricted within the assembly chamber 53 and is against, pressed by the curved track 421 of the braking piece 42. The assembly chamber 53 of a shaft sleeve 50

is stepped shaped, extending outward, and a plurality of positioning ribs 531 is arranged on an inner wall of the assembly chamber 53. After springing outward elastically, the passive end 321 of the braking member 30 is just leaning against the inner wall of the assembly chamber 53 of a shaft sleeve 50 and positioned by the positioning ribs 531.

[0013] Refer to Fig. 12 and Fig. 13, the assembly slot 211 of the assembly member 20 is used for mounting the braking member 30. A link rib 322 of the braking member 30 is pointing an outer side of the assembly portion 21. The toggle unit 40 and the assembly member 20 are assembled with the shaft sleeve 50 in turn. The toggle unit 40 is disposed with a link pad 43 on an outer wall thereof and then is mounted into the assembly chamber 53 while the assembly member 20 is put to cover and seal the end part of the shaft sleeve 50 correspondingly. The connection bar 22 is inserted through a central axle hole 41 of the toggle unit 40 to be fixed firmly by a central shaft 55. Thus the braking member 30 is also mounted into the assembly chamber 53 of the shaft sleeve 50 to be against and pressed by the braking piece 42 of the toggle unit 40. An elastic member 52 arranged at a connection portion 51 of the shaft sleeve 50 is locked with and stopped by a slot 551 of the central shaft 55. Then the shaft sleeve 50 is mounted into a shaft tube 11 of a curtain body 10 correspondingly. An axial mounting plate 56 in the shaft tube 11 is disposed around the shaft sleeve 50. The shaft sleeve 50 is cylindrical-conical shape so that the shaft sleeve 50 can be mounted into the shaft tube 11 smoothly to be pressed tightly. The shaft sleeve 50 is located at the center of the shaft tube 11 due to the axial mounting plate 56. At last, an assembly projection 23 on the outer side of the assembly member 20 is fixed on a bracket 24 while the other end of the shaft tube 11 is arranged with the tube plug 13 and connected to the bracket 14. Thus the curtain control assembled is formed and is arranged at the wall surface by two brackets 14, 24.

[0014] Refer to Fig. 13, Fig. 14, and Fig. 15, while in use, the toggle unit 40 is stopped by the fan-shaped braking piece 42 and is able to be pressed by the curved track 421. When the user intends to pull the curtain member 12 downward, the shaft sleeve 50 is driven by the shaft tube 11 and the toggle unit 40 is also moved along with the shaft sleeve 50. Thus the braking piece 42 of the toggle unit 40 is rotated around the central axle hole 41 to gradually lean against and compress the link rib 322 of the braking member 30 due to the curved track 421. An inner tube 32 of the braking member 30 is pressed inward and a positioning member 33 is also moved to be released from limiting guiding bars 311. For fixing the extended curtain member 12 with a certain length, the curtain member 12 is released while the shaft tube 11, the shaft sleeve 50 and the toggle unit 40 are rotated reversely due to the elastic member 52. Thus the inner tube 32 of the braking member 30 is released from the compression of the curved track 421. Moreover, the positioning member 33 and the inner tube 32 are pushed

outward due to elastic recovery of the spring 34. Through the passive end 321 of the braking member 30 leaning against the inner wall of the assembly chamber 53, the reverse rotation of the shaft sleeve 50 and the positioning of the positioning ribs 531, the shaft tube 11 with the curtain member 12 is unable to be moved any more and the length of the curtain member 12 is fixed. The extended and opened curtain member 12 is maintained at a certain length.

[0015] Furthermore, the braking member 30 can be an electronic part. Refer to Fig. 16 and Fig. 17, the braking member 30 includes a main body 35, a housing 36 and a positioning unit 37. A spring 38 is arranged around the main body 35 and one end of the main body 35 extends from the housing 36 to form a passive end 351. A link rib 352 is disposed on one side of the passive end 351 while the other end of the main body 35 is enclosed inside the housing 36 and friction-locked and positioned by the positioning unit 37. In combination with the spring 38 being pressed, the passive end 351 has two use states, i.e. a projecting and a retracting state.

[0016] In summary, the present invention has following benefits:

First of all, the curtain member 12 is positioned by the braking member 30 that is an elastic push switch. After being pressed, the braking member 30 is projected or retracted so as to be positioned by or released from the positioning ribs 531. Thus the movement of the curtain body 10 is more precise and convenient. Moreover, the manufacturing and the assembly of the curtain control assembly are getting easier so that the cost is reduced significantly. The production efficiency is improved dramatically and the economic benefits are provided.

[0017] Furthermore, the positioning ribs 531 set between the shaft sleeve 50 and the braking member 30 provides multiple mounting and positioning areas. Thus the precision of the positioning is increased effectively. And the obvious height difference generated due to retraction of the curtain is reduced. The stability of the curtain body on unrolling and rolling-up is improved.

[0018] Additional advantages and modifications will readily occur to those skilled in the art. Therefore, the invention in its broader aspects is not limited to the specific details, and representative devices shown and described herein. Accordingly, various modifications may be made without departing from the spirit or scope of the general inventive concept as defined by the appended claims and their equivalents.

Claims

1. A curtain roll-up route control assembly comprising:
a curtain body having a shaft tube and a curtain

- member retracted in the shaft tube;
 an assembly member having an assembly portion and a connection bar extending from a center of the assembly portion; one side of the connection bar is eccentrically disposed with a braking member;
 the braking member which is an elastic push switch for positioning and having a passive end and a link rib projecting from one side of the passive end;
 a toggle unit having a central axle hole being inserted by the connection bar of the assembly member, a braking piece set around the central axle hole, and a link pad arranged at an outer wall thereof;
 a shaft sleeve that includes a connection portion, an elastic member, an assembly chamber, an axial through hole, and a central shaft; the connection portion is arranged at an end part of the shaft sleeve and is disposed with the elastic member; a plurality of positioning ribs is projecting from an inner wall of the assembly chamber; the axial through hole is penetrating the connection portion axially along a center of the assembly chamber, and the central shaft is inserted through the axial through hole; after the elastic member being locking with and positioned by an end part of the central shaft, the central shaft is assembled with the toggle unit and the assembly member in turn; the connection bar of the assembly member is passed through the toggle unit to be pressed and fixed by the central shaft and the link rib of the braking member is against and pressed by the braking piece of the toggle unit while the toggle unit is against and moved together with the assembly chamber by the link pad on the outer wall thereof; at last the shaft sleeve is connected tightly to and moved with the shaft tube of the curtain body.
2. The assembly as claimed in claim 1, wherein an assembly projection whose shape is not cylindrical is arranged at an outer side of an end of the assembly member and the assembly projection is mounted in and fixed on a bracket.
 3. The assembly as claimed in claim 1, wherein one side of the shaft tube is mounted with a tube plug and the tube plug is fixed on a bracket.
 4. The assembly as claimed in claim 1, wherein an axial mounting plate is set around the central shaft after the elastic member being locking with and positioned by the end part of the central shaft.
 5. The assembly as claimed in claim 1, wherein the link pad of the toggle unit is a wool felt unit.
 6. The assembly as claimed in claim 1, wherein a slot is located at the end part of the central shaft and used for locking and positioning the elastic member.
 7. The assembly as claimed in claim 1 to claim 6, wherein the assembly portion of the assembly member is cylindrical and is mounted into the assembly chamber of the shaft sleeve; an assembly slot used for mounting the braking member is eccentrically arranged at the assembly portion; a yield curved surface is formed on an end surface of the connection bar facing the assembly slot; the link rib is facing the connection bar after the braking member being mounted into the assembly slot; the toggle unit is a C-shaped block and the braking piece is a curved piece formed by a wall surface of the central axle hole; the link rib of the braking member and the braking piece of the toggle unit are against and pressed by each other after the connection bar of the assembly member being passed through the central axle hole of the toggle unit; the braking member is mounted in the eccentric assembly slot so that the passive end of the braking member is aligned with the positioning ribs when the braking member is driven to be mounted into the assembly chamber.
 8. The assembly as claimed in claim 1 to claim 6, wherein the assembly portion of the assembly member is a cap covered the assembly chamber of the shaft sleeve; a horizontal assembly slot for mounting the braking member is arranged at one side of the connection bar inside the assembly portion; the braking piece of the toggle unit is a fan-shaped piece extended from an end part of the toggle unit and a curved track for limiting is disposed on the braking piece; thus the braking member is restricted in the assembly chamber and is against, pressed by the curved track of the braking piece while the assembly member and the shaft sleeve being assembled with each other; the assembly chamber of the shaft sleeve is stepped shaped extended outward and a plurality of positioning ribs is arranged on an inner wall of the assembly chamber; after being projecting outward elastically, the passive end of the braking member is just leaning against the inner wall of the assembly chamber of a shaft sleeve and positioned by the positioning ribs.
 9. The assembly as claimed in claim 1, wherein the braking member includes an outer tube, an inner tube, a positioning member and a spring; a plurality of limiting guiding bars is disposed on an inner wall of the outer tube and the inner tube is mounted into the outer tube correspondingly; one end of the inner tube is extended from the outer tube to form a passive end and a link rib is arranged at the passive end while the other end of the inner tube is disposed with a plurality of driving teeth; the positioning member

is mounted into the outer tube and having a plurality of a plurality of positioning teeth, a plurality of mounting slots, and a projecting pin; the positioning teeth corresponding to the limiting guiding bars are disposed at an end part of the positioning member; each of the mounting slots is set between the positioning teeth; a projecting pin is extended from the end part of the positioning member and is inserted into the inner tube; the spring is lastly mounted into the outer tube and is leaning against a rear end of the positioning member.

10. The assembly as claimed in claim 1, wherein the braking member includes a main body, a housing and a positioning unit; a spring is arranged around the main body and one end of the main body is projecting and extended from the housing to form a passive end while the other end of the main body is enclosed inside the housing 36 and positioned by the positioning unit; thus the passive end has two use states, i.e. a projecting and a retracting state, after the spring being pressed.

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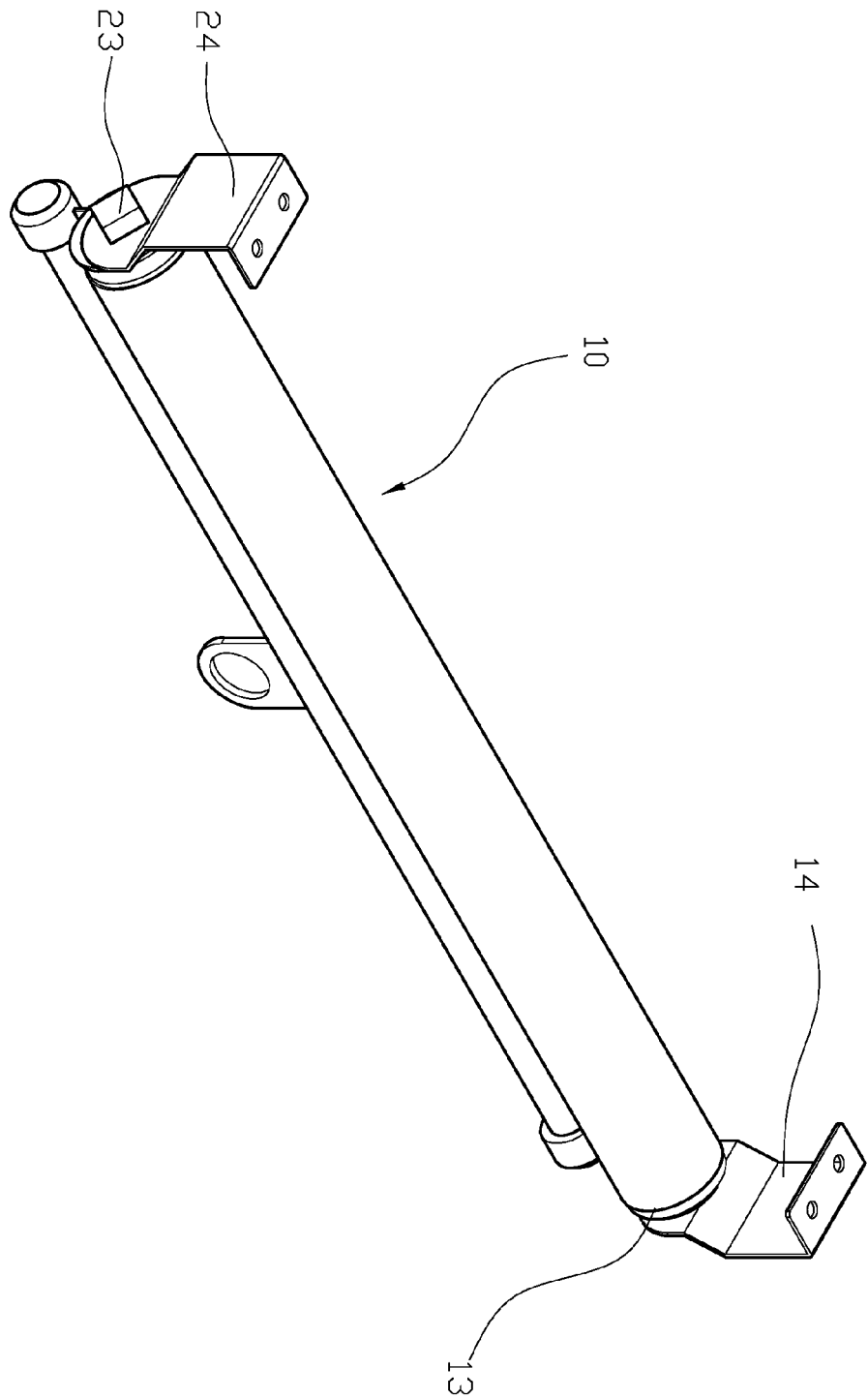


FIG. 1

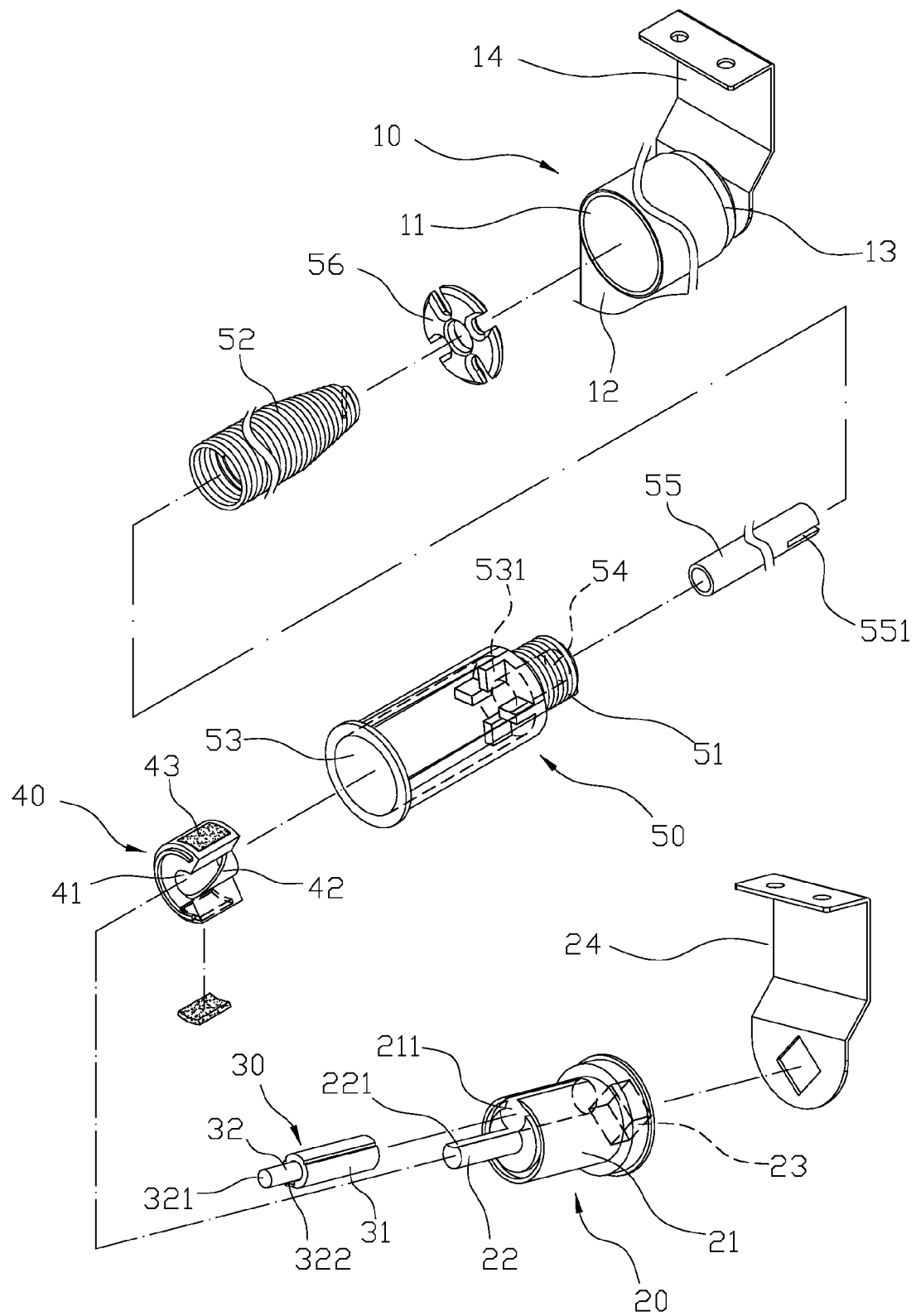


FIG. 2

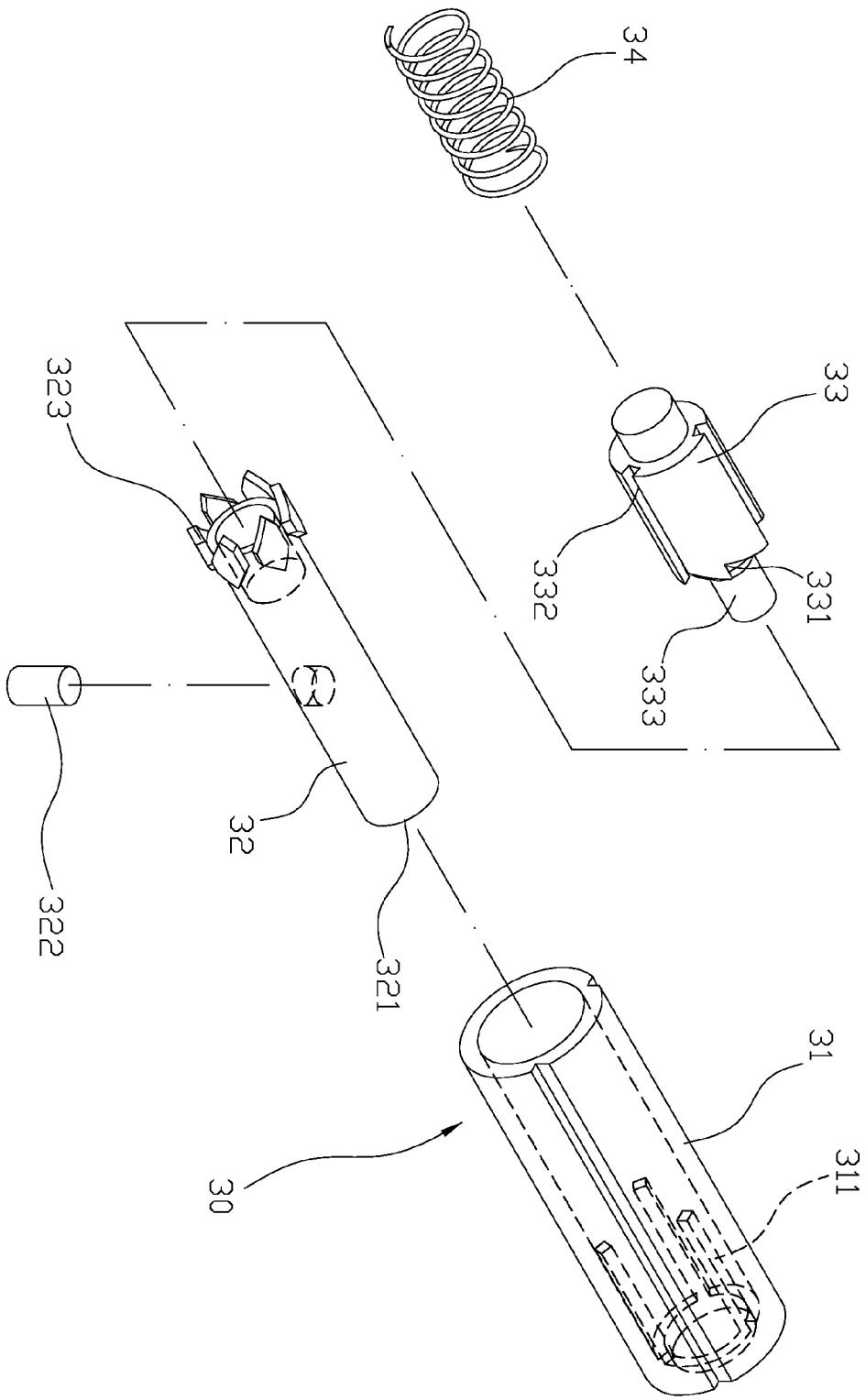


FIG. 3

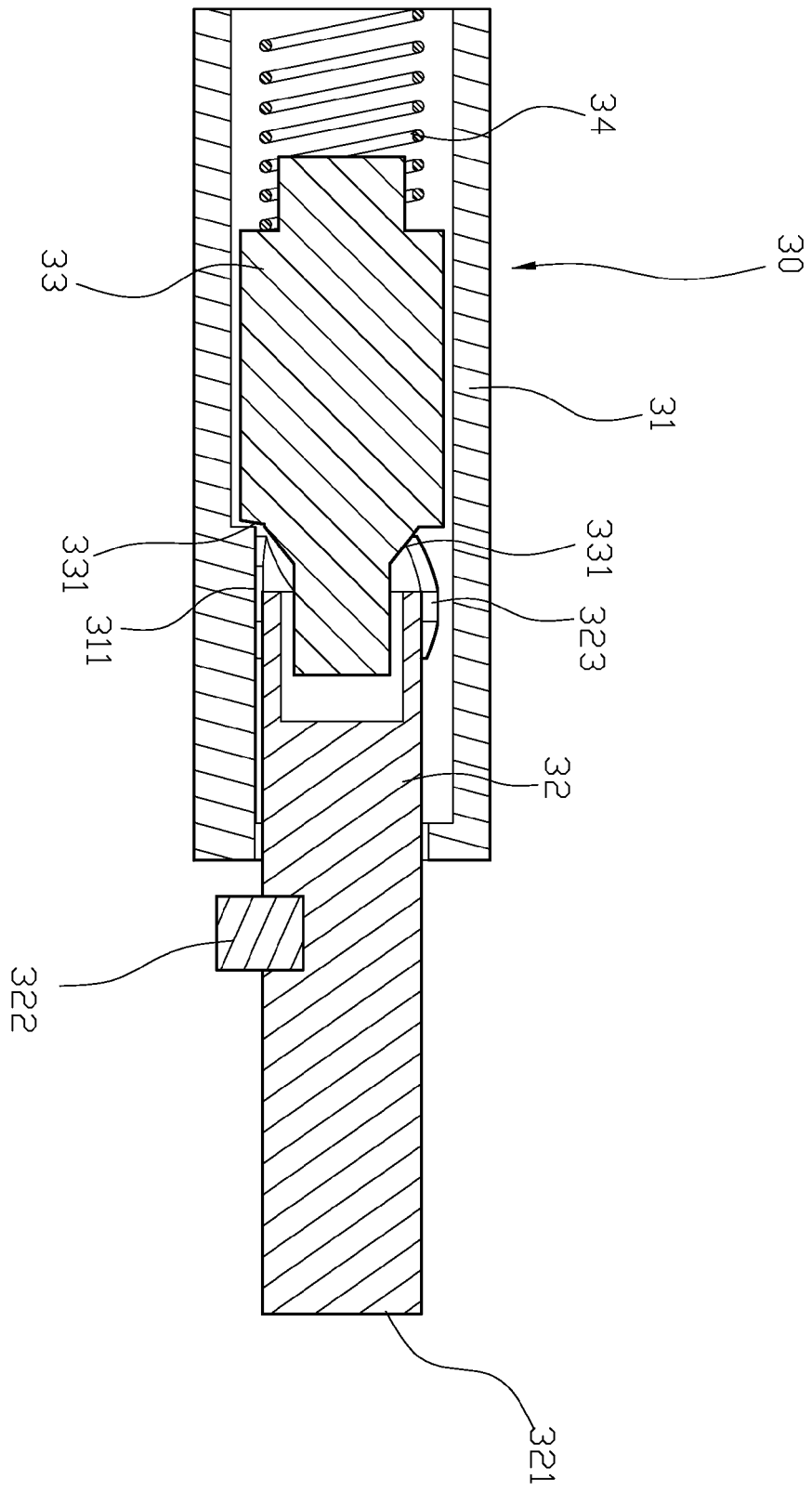


FIG. 4

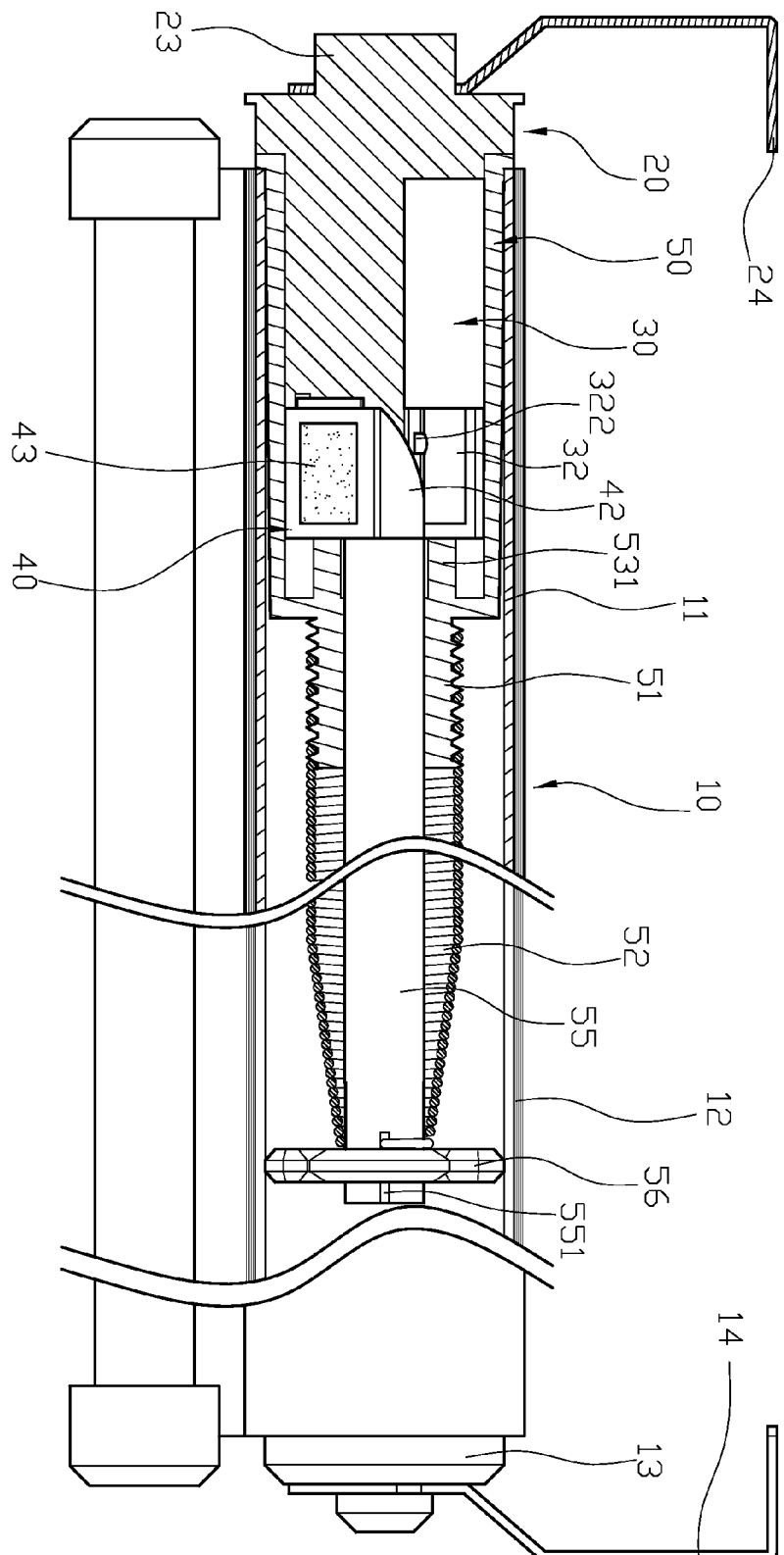


FIG. 5

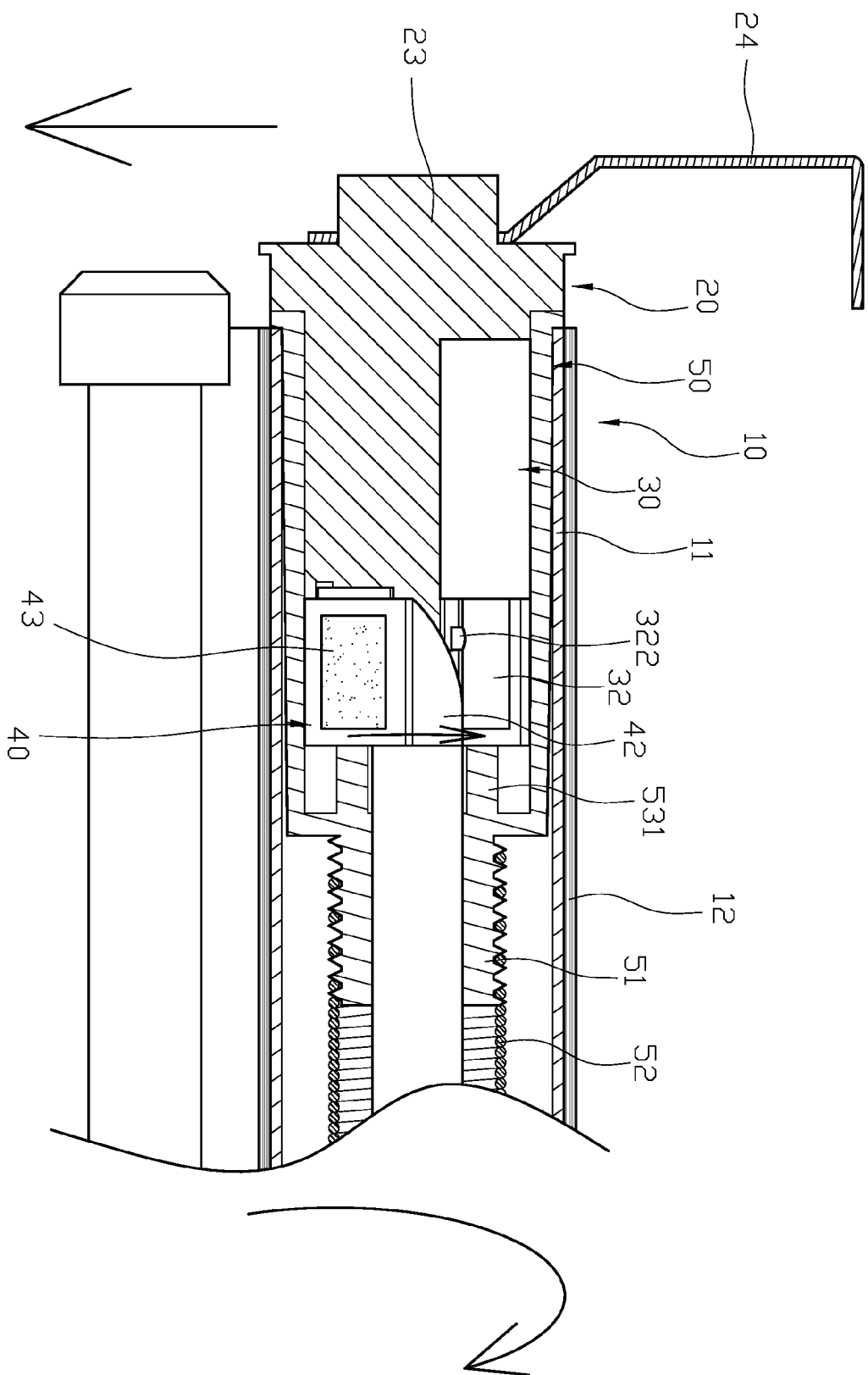


FIG. 6

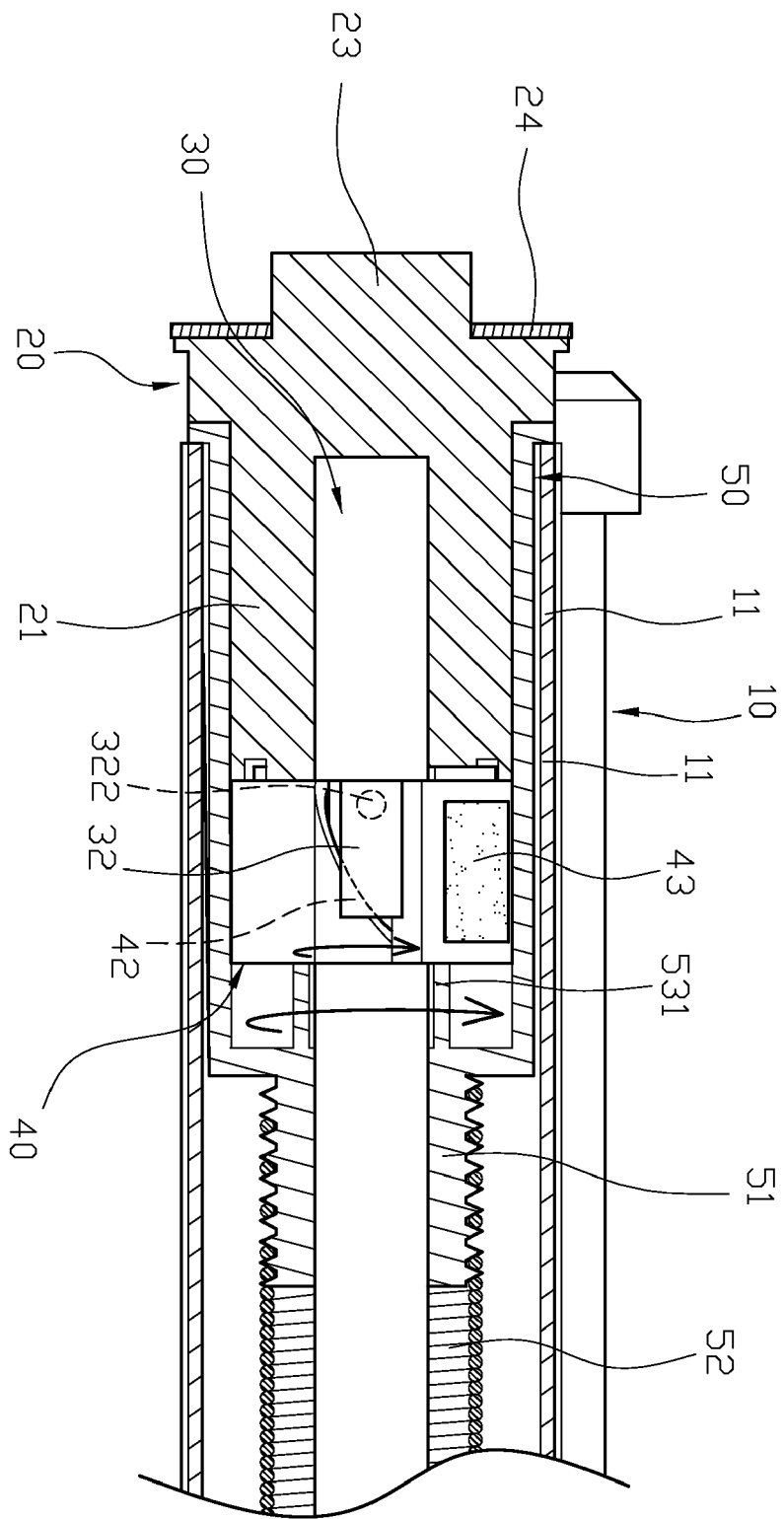


FIG. 7

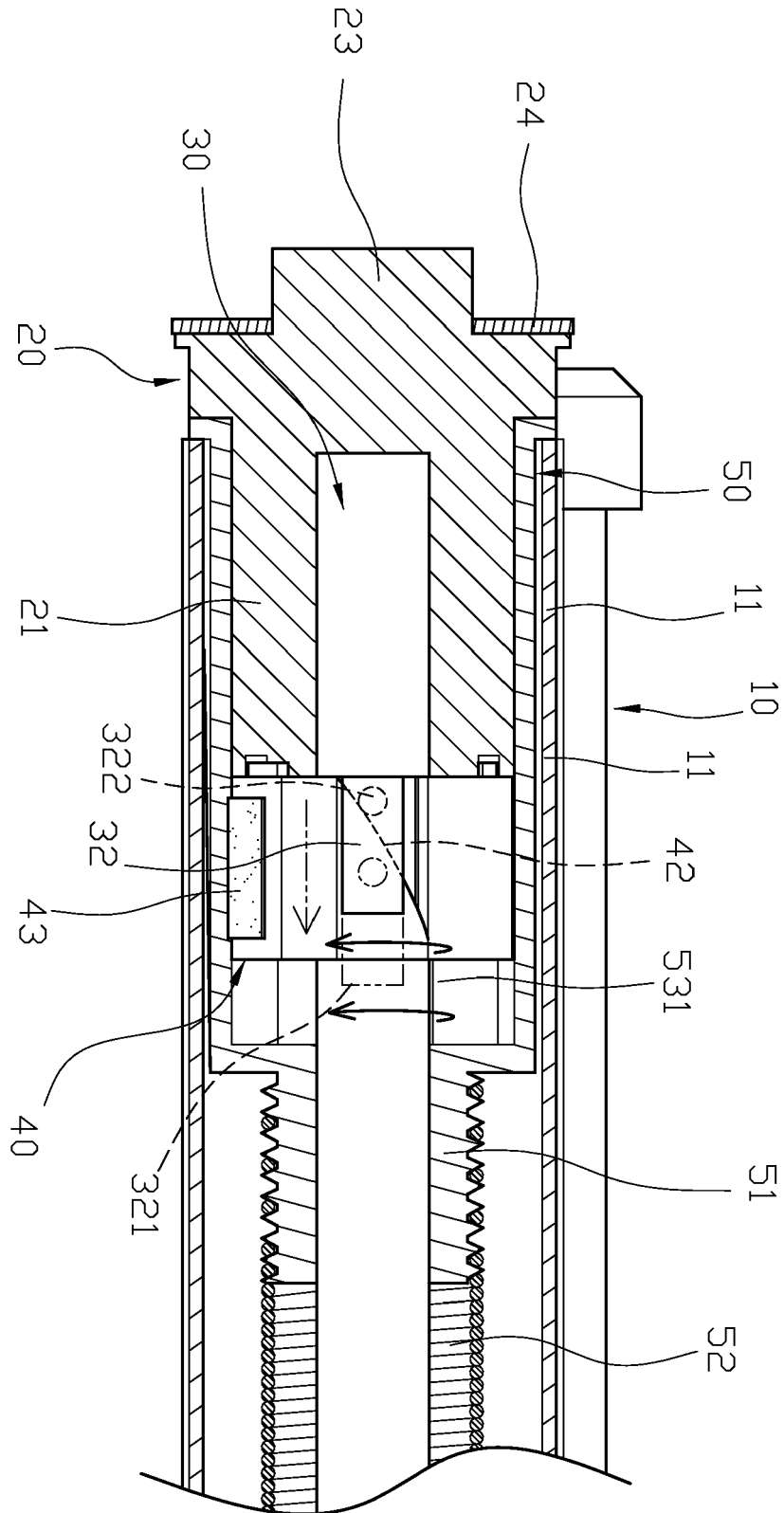


FIG. 8

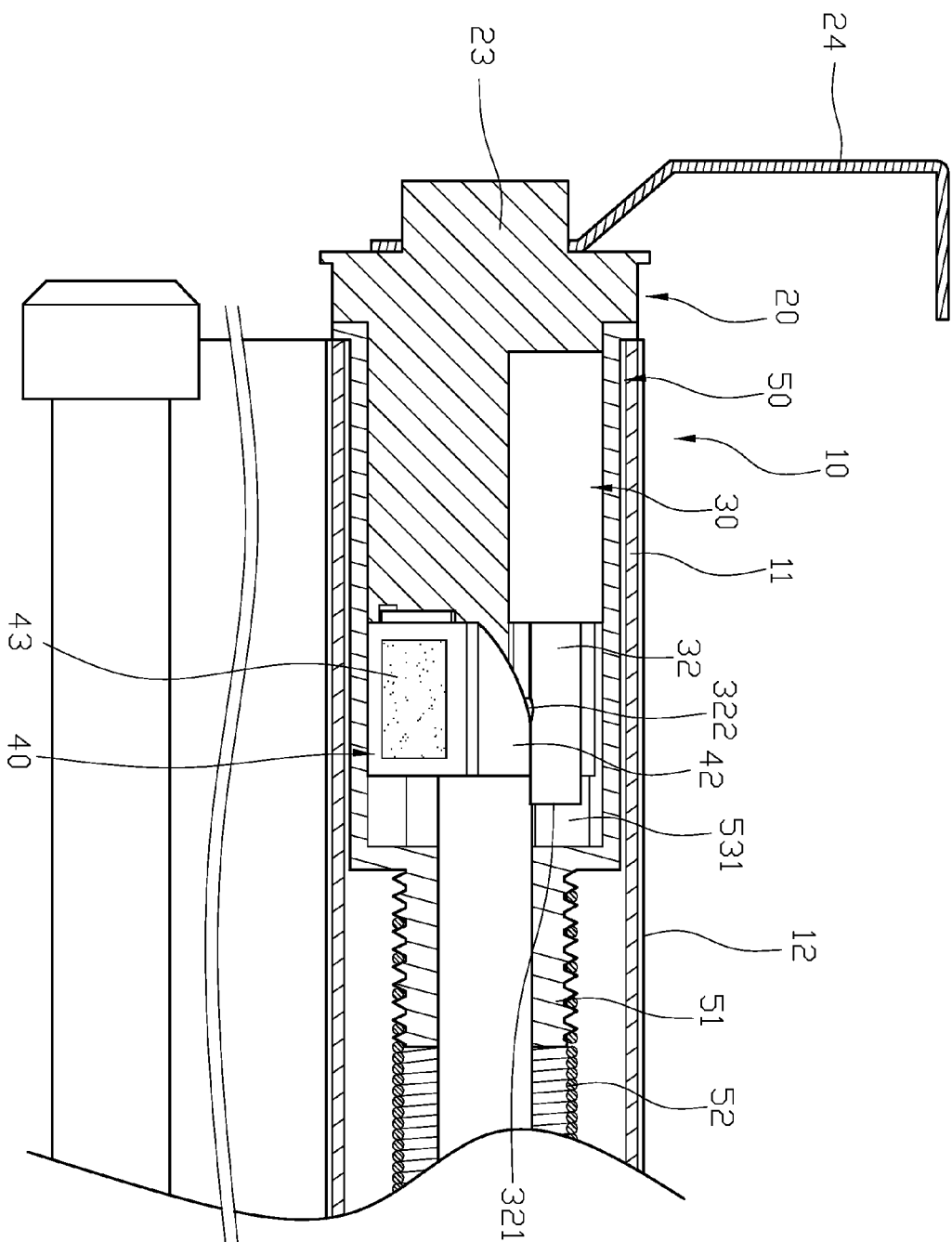


FIG. 9

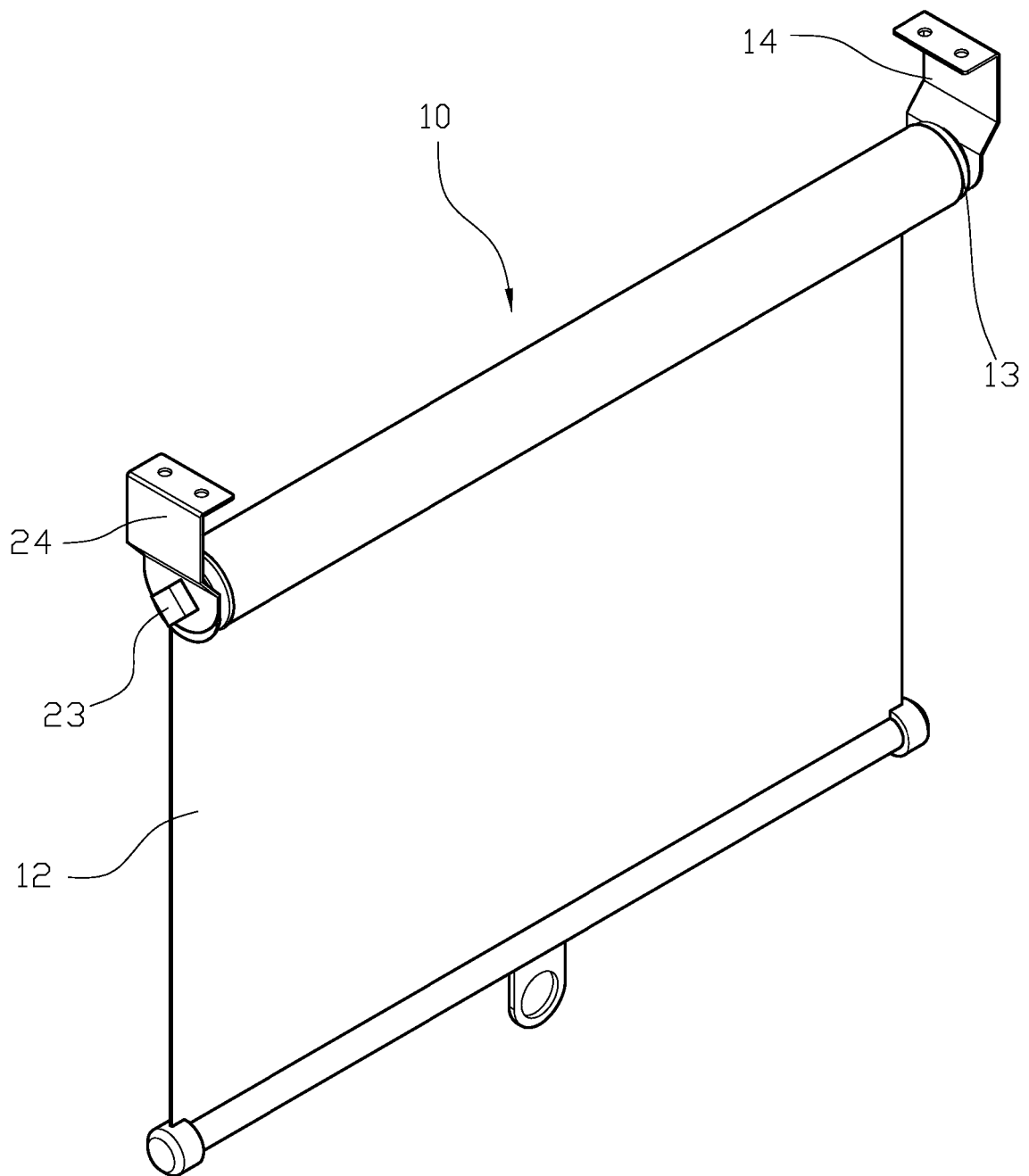


FIG. 10

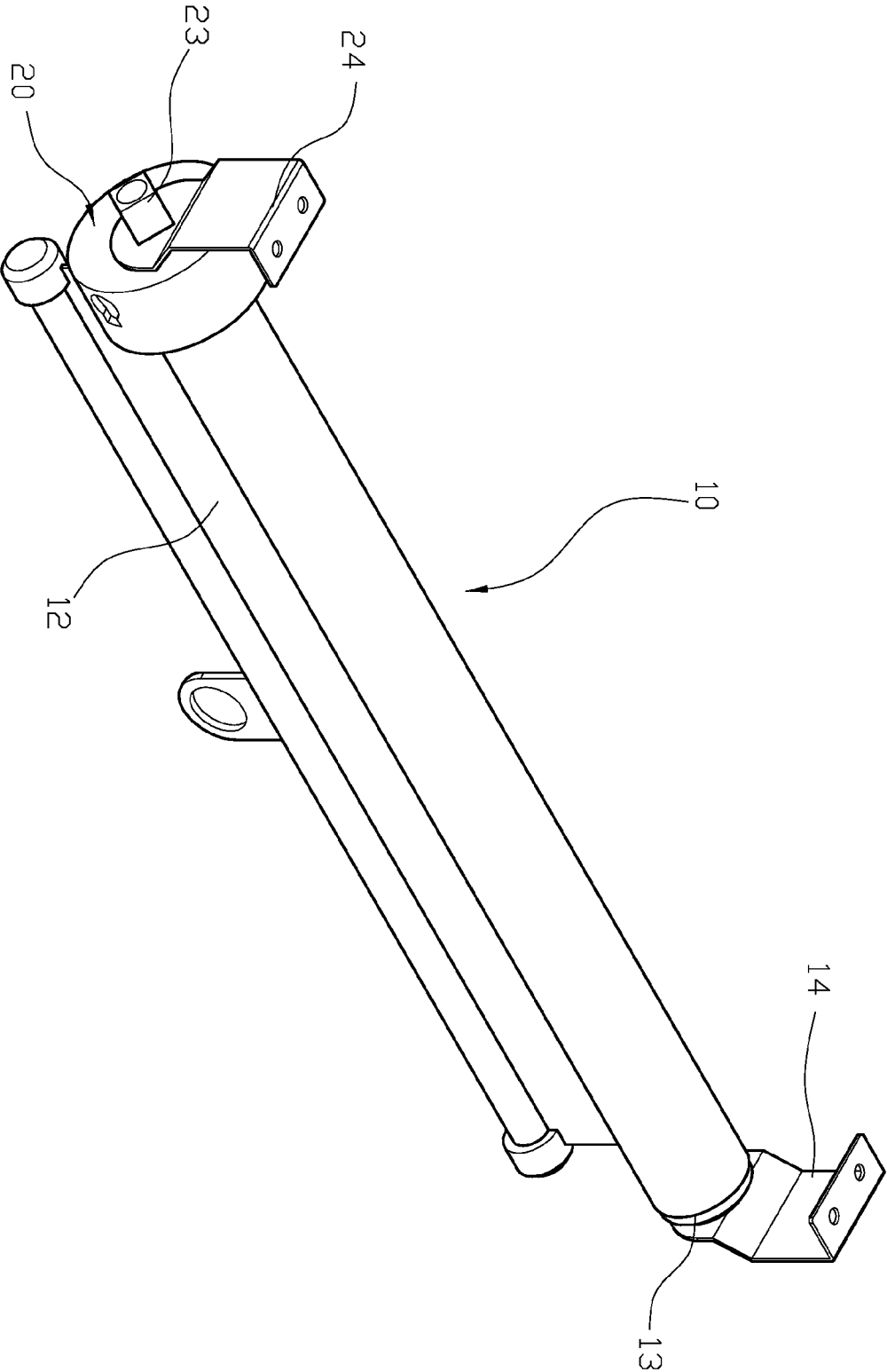


FIG. 11

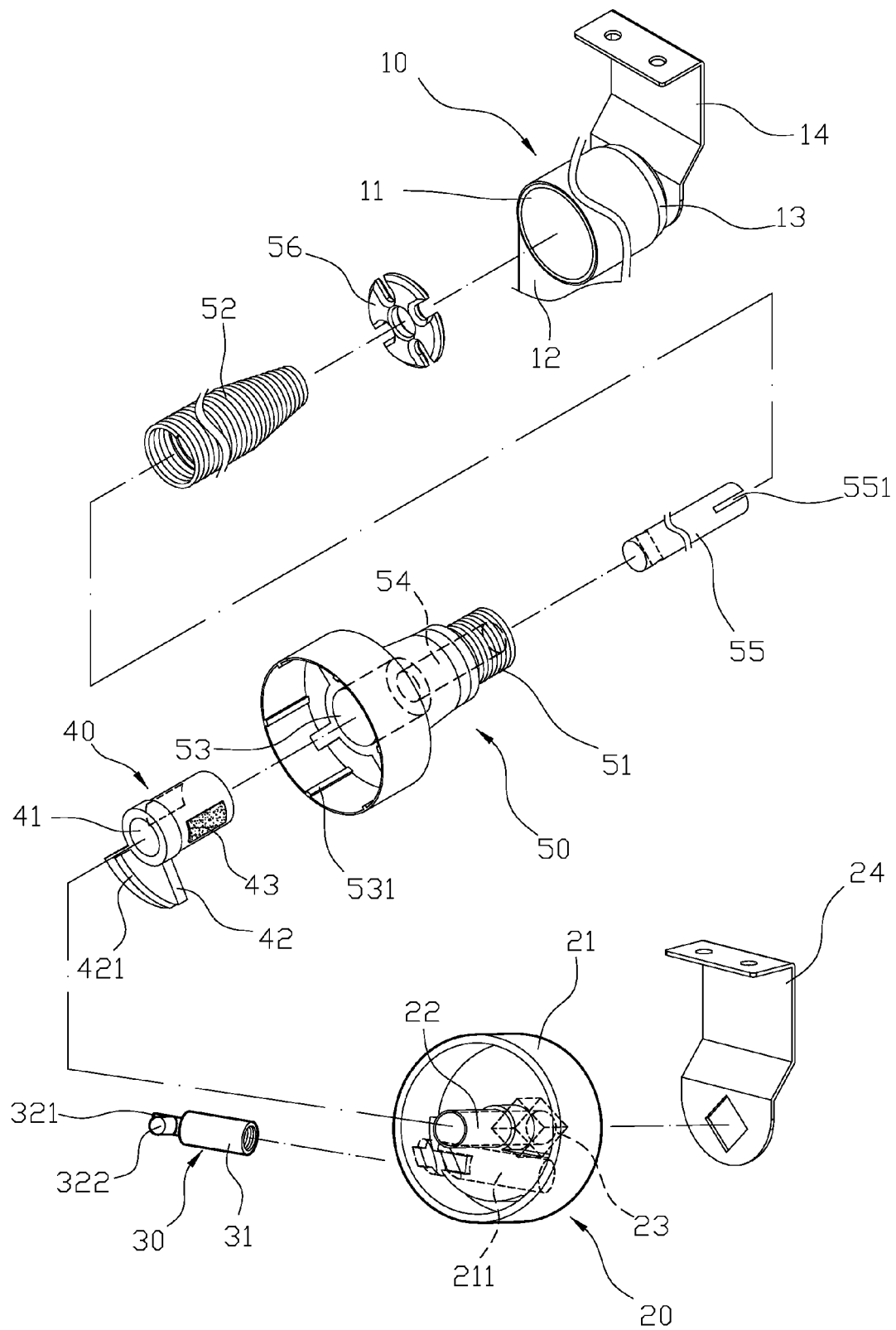


FIG. 12

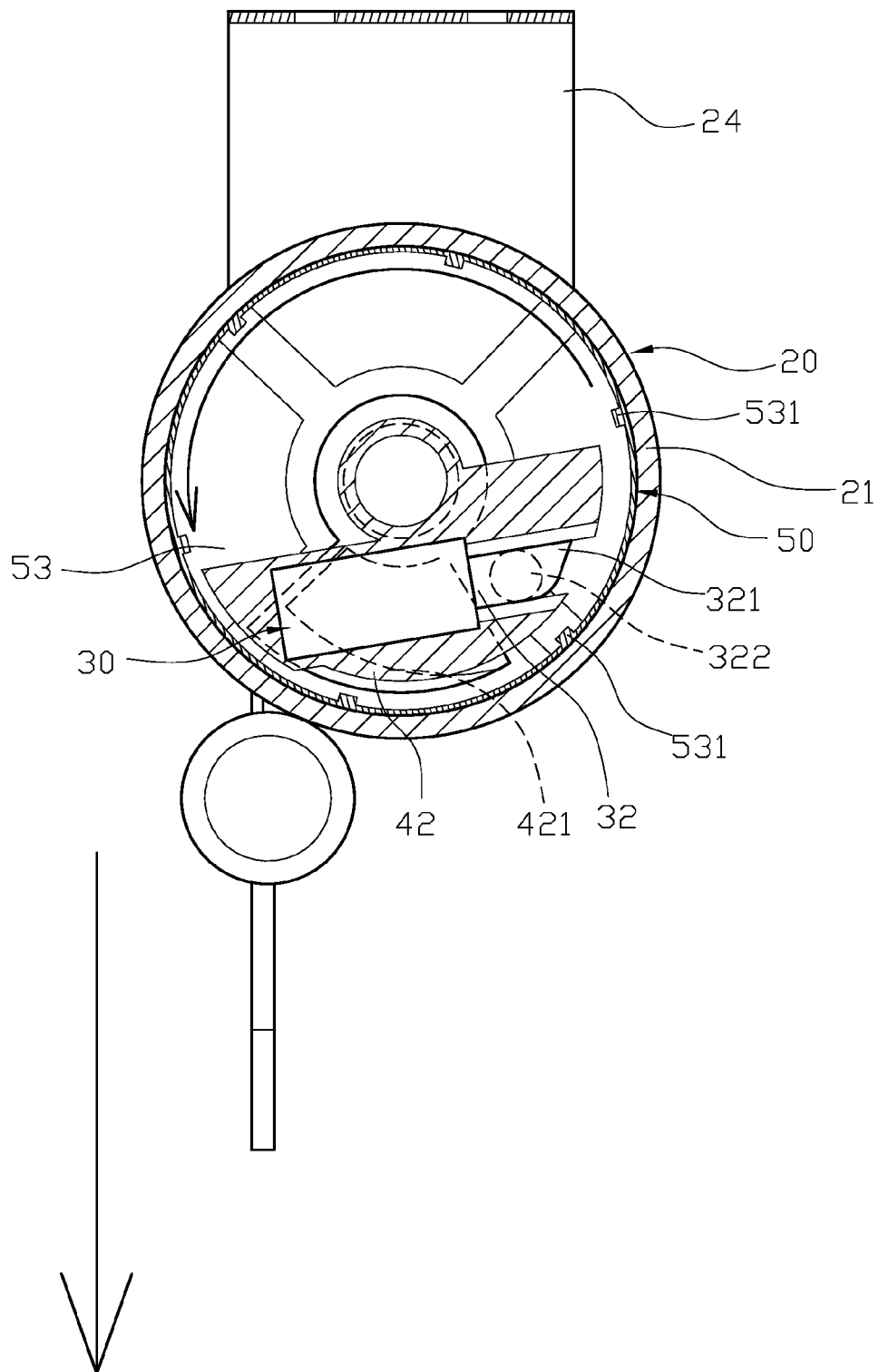


FIG. 13

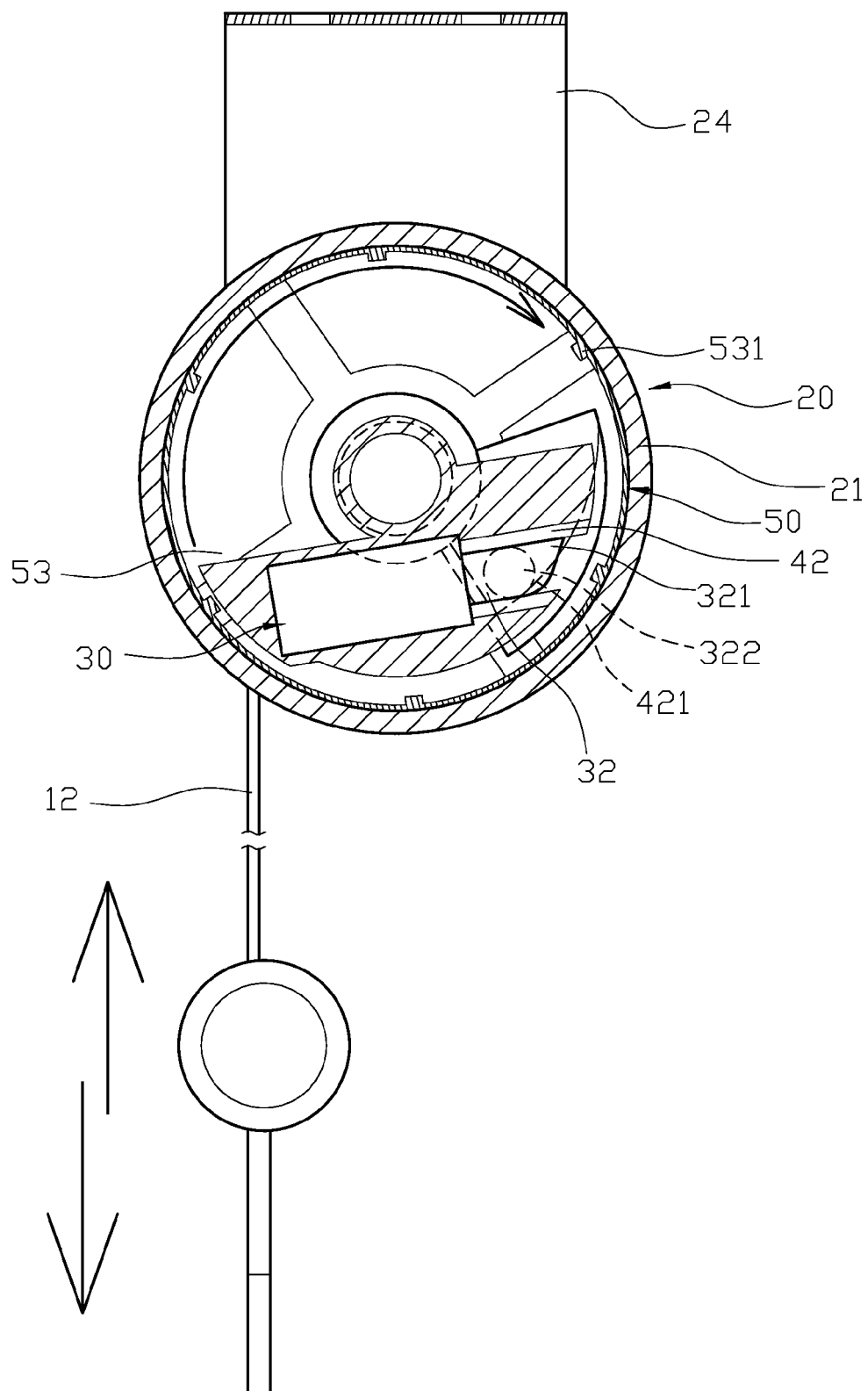


FIG. 14

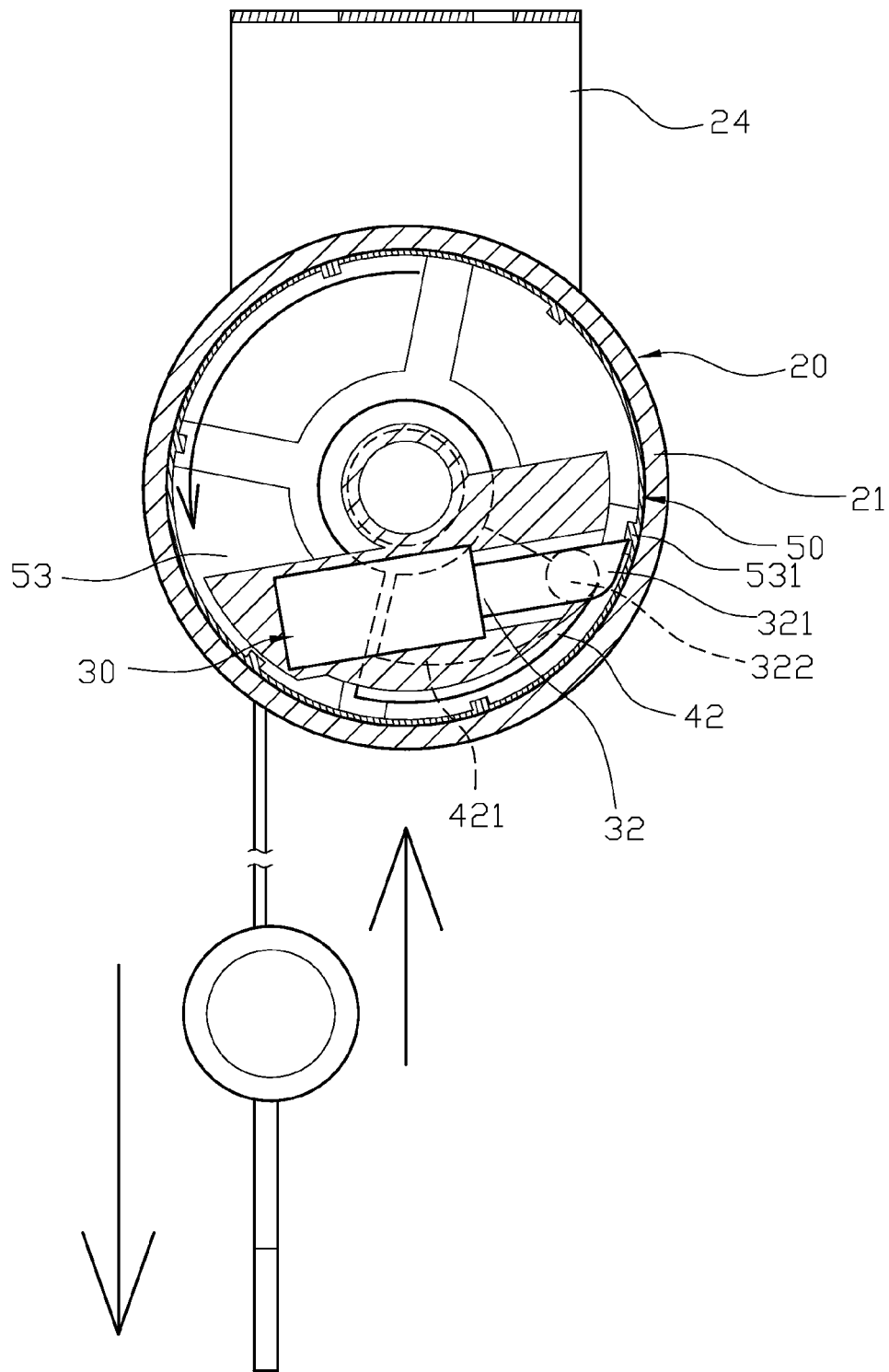


FIG. 15

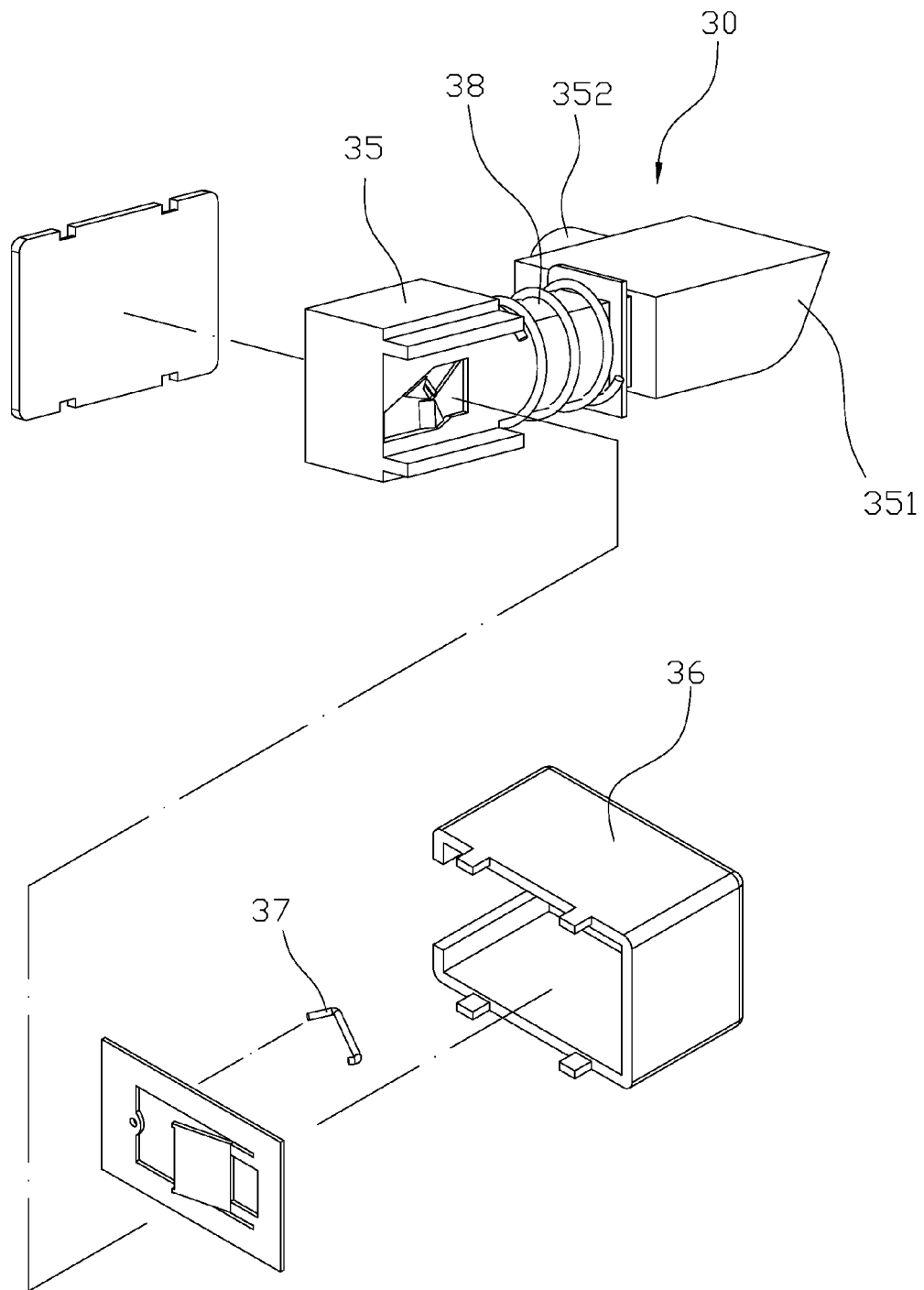


FIG. 16

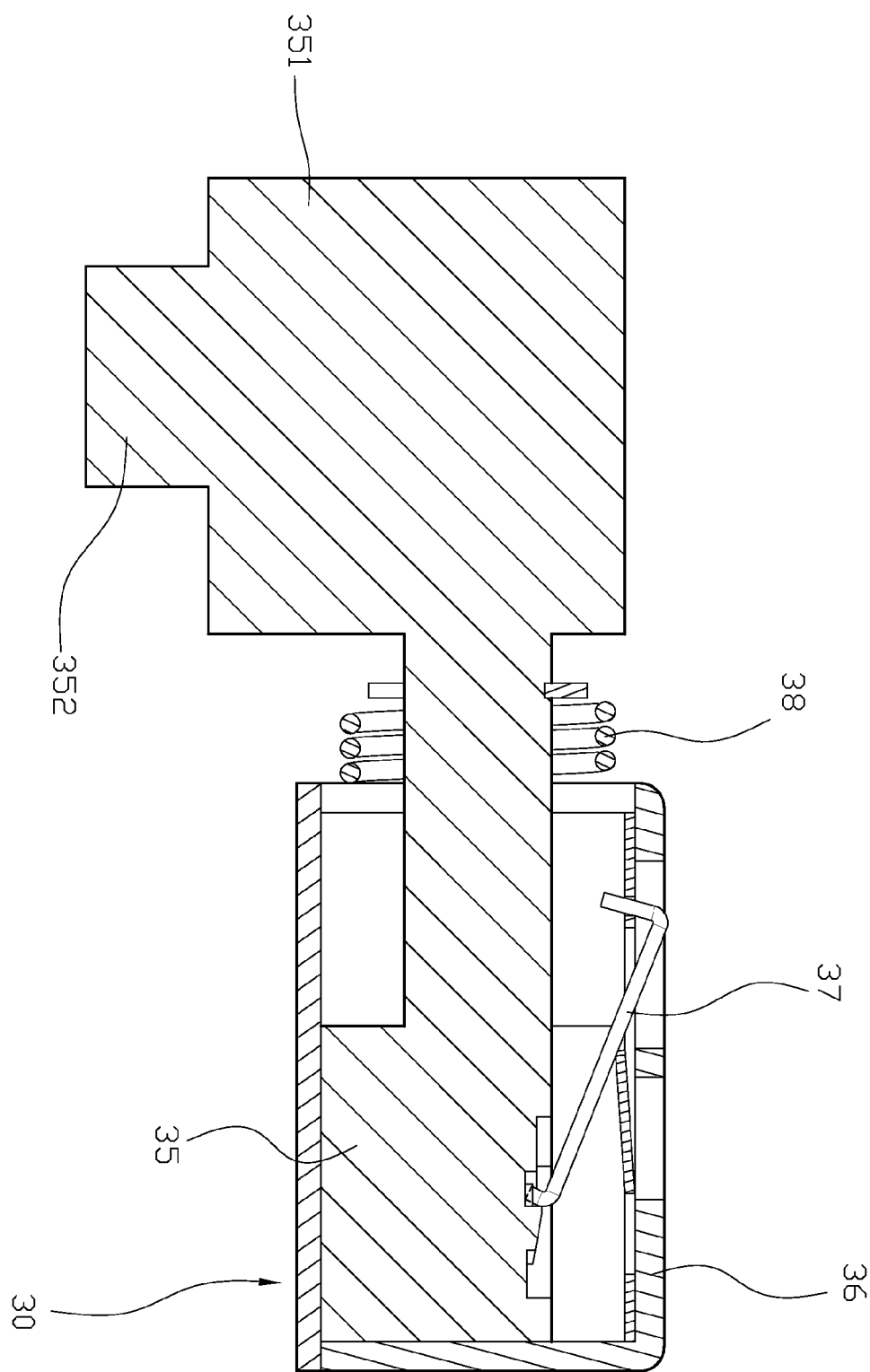


FIG. 17

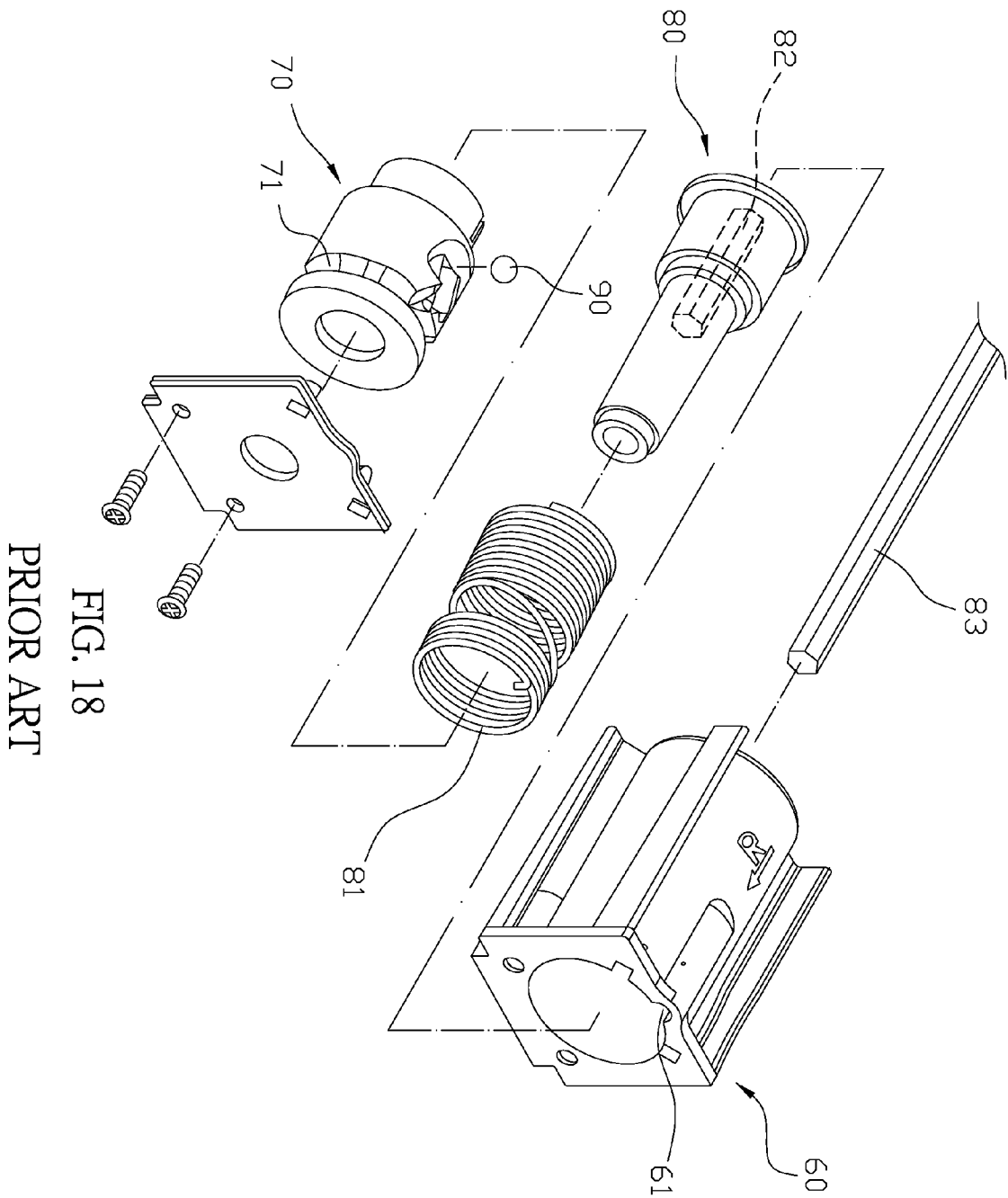


FIG. 18
PRIOR ART

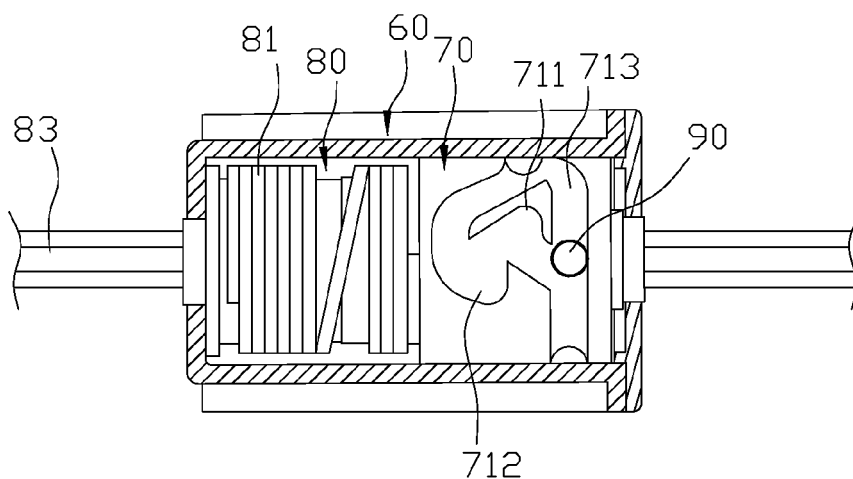


FIG. 19 PRIOR ART

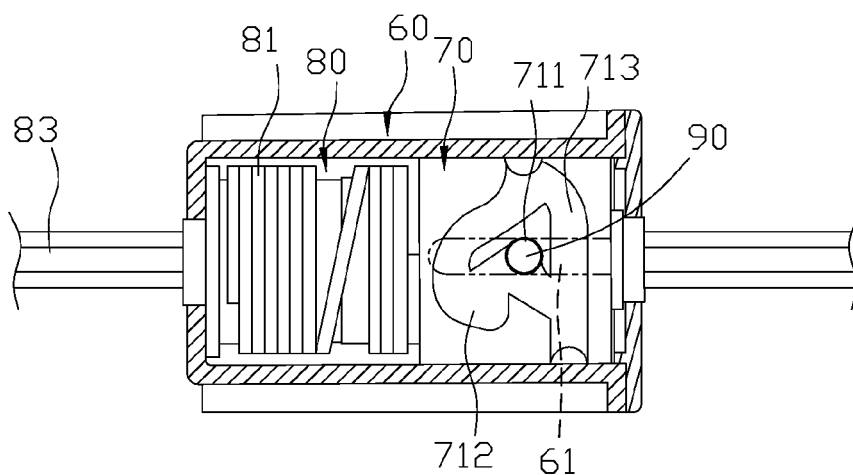


FIG. 20 PRIOR ART

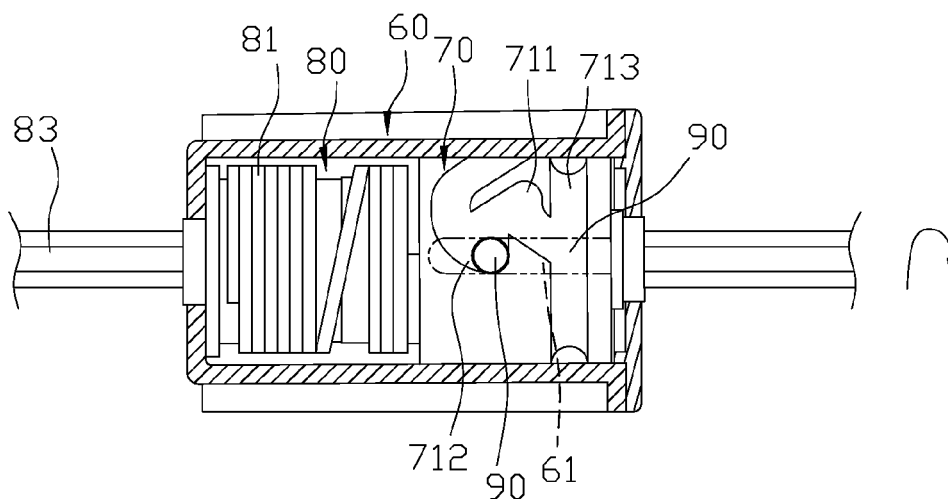


FIG. 21 PRIOR ART

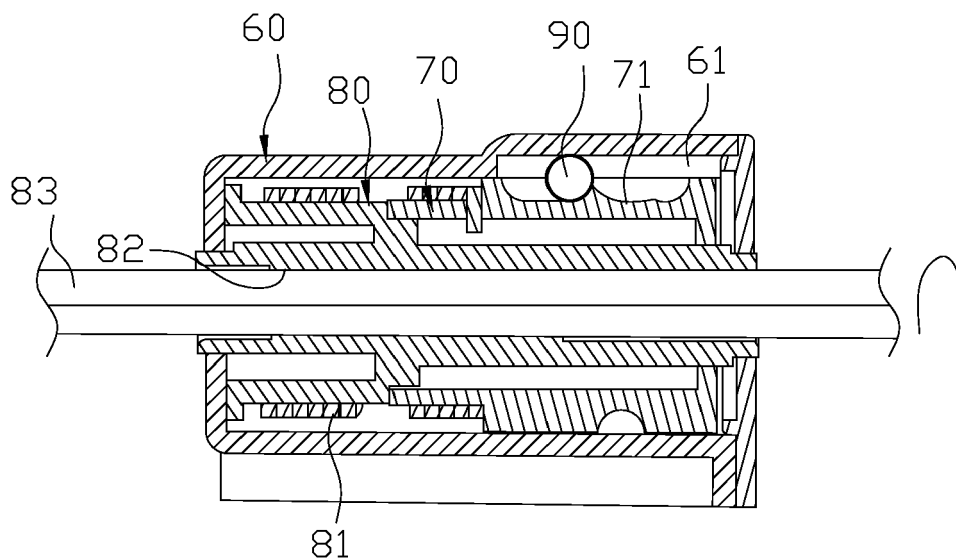


FIG. 22

PRIOR ART

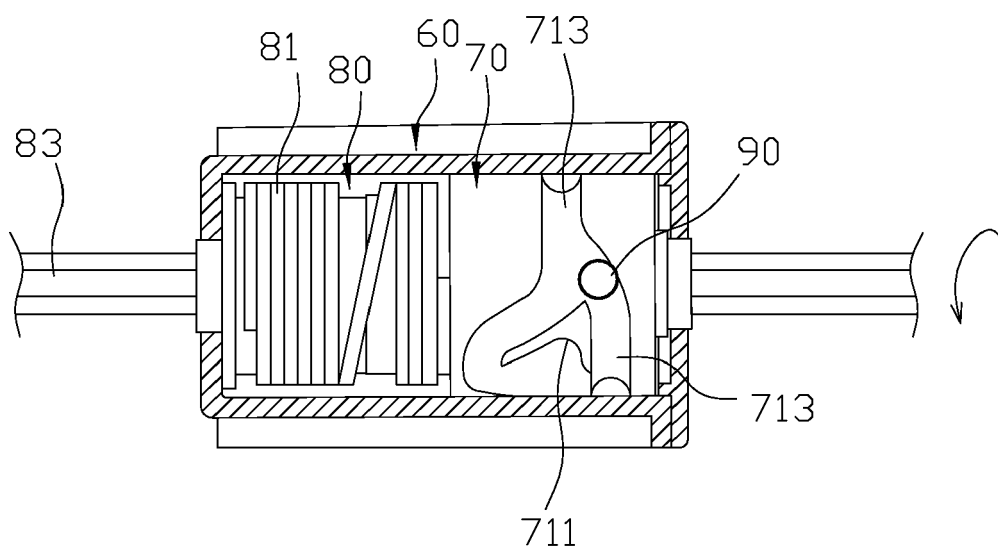


FIG. 23

PRIOR ART



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A	EP 2 458 129 A1 (MOTTURA SPA [IT]) 30 May 2012 (2012-05-30) * paragraphs [0011] - [0020], [0024] - [0028], [0032] - [0036]; figures 2-7 * -----	1-10	
A	US 2010/122780 A1 (CHENG LI-MING [TW]) 20 May 2010 (2010-05-20) * abstract; figure 5 * -----	1-10	
			TECHNICAL FIELDS SEARCHED (IPC)
			E06B
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 6 February 2015	Examiner Weißbach, Mark
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