



(12) **EUROPEAN PATENT APPLICATION**  
 published in accordance with Art. 153(4) EPC

(43) Date of publication:  
**04.11.2020 Bulletin 2020/45**

(51) Int Cl.:  
**A47K 13/26 (2006.01)**

(21) Application number: **18884483.1**

(86) International application number:  
**PCT/CN2018/117807**

(22) Date of filing: **28.11.2018**

(87) International publication number:  
**WO 2019/105358 (06.06.2019 Gazette 2019/23)**

(84) Designated Contracting States:  
**AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR**  
 Designated Extension States:  
**BA ME**  
 Designated Validation States:  
**KH MA MD TN**

(72) Inventors:  
 • **GONG, Binhua**  
**Xiamen Fujian 361000 (CN)**  
 • **CHEN, Rongmin**  
**Xiamen Fujian 361000 (CN)**  
 • **GUO, Linhuang**  
**Xiamen Fujian 361000 (CN)**

(30) Priority: **29.11.2017 CN 201711228874**

(74) Representative: **Verscht, Thomas Kurt Albert**  
**Josephsburgstrasse 88 A**  
**81673 München (DE)**

(71) Applicant: **Bestter (Xiamen) Technology Inc.**  
**Xiamen, Fujian 361000 (CN)**

(54) **TOILET COVER**

(57) Disclosed is an easy-to-clean toilet cover, comprising an upper cover (1) and a seat ring (2), wherein two sides of the bottom of the upper cover (1) are respectively provided with upper cover shaft sleeves (1.1), and a sleeve (2.1) is arranged at the center of the bottom of the seat ring; the sleeve (2.1) is internally provided with two quick-detachment units, and each quick-detachment unit comprises a connector (8), a damper (6), a clamping claw (10), a torsion spring frame (11) and a grooved base (14), wherein a mount (15) is inserted into the connector

(8), the clamping claw (10) is inserted into the connector (8) from one end of the connector (8) and the clamping claw and a mount latch (15-1) can be locked or unlocked; the damper (6) is located at the other end of the connector (8) and can be inserted into the upper cover shaft sleeve (1.1) or be detached to retract back into the sleeve (2.1) from the upper cover shaft sleeve (1.1); and the clamping claw (10) is linked to the damper (6). The toilet cover is easy to clean, and the quick detachment of a cover plate assembly can be achieved.

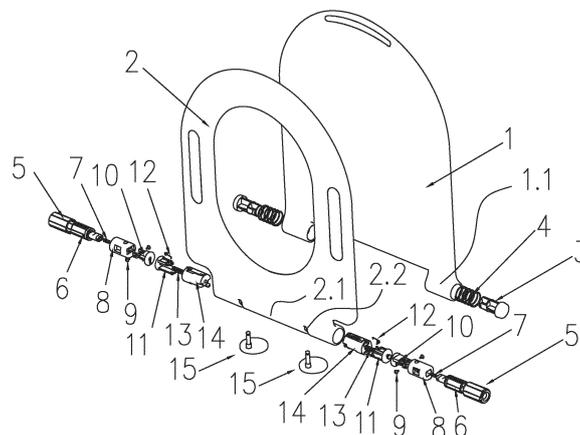


FIG.1

**Description****FIELD OF THE DISCLOSURE**

**[0001]** The present disclosure relates to a toilet cover, particularly to a toilet cover with detachable top cover and toilet seat.

**BACKGROUND OF THE DISCLOSURE**

**[0002]** A toilet comprises a ceramic main body and a cover plate, the cover plate comprises a top cover and a toilet seat, the cover plate is assembled to the ceramic main body by a support base and a rotating shaft. In order to achieve quick assembly and disassembly, there are kinds of quick assembly and disassembly structures of the cover plate of the toilet, and these structures are mainly operated by buttons. The buttons are usually disposed at the rear portion of the cover plate, and are easy to become dirty. In addition, after the top cover and the toilet seat are assembled, the two are uneasily to be disassembled, and are not as easy to clean.

**BRIEF SUMMARY OF THE DISCLOSURE**

**[0003]** A first object of the present disclosure, is to solve the problem that the button is disposed at a rear portion of the cover plate, and is easy to become dirty.

**[0004]** A solution of the present disclosure to solve the technique problems is as follows.

**[0005]** A toilet cover, it comprises a top cover and a toilet seat, two sides of a bottom portion of the top cover are respectively disposed with a top cover shaft sleeve, a middle portion of a bottom portion of the toilet seat is disposed with a sleeve, characterized in that: the sleeve is disposed with two quick disassembly units, each of the two quick disassembly units comprises a connector, a damper, and a clamping claw, wherein, a support base is disposed in the connector, the clamping claw is disposed in the connector through an end of the connector, and is to be locked or unlocked to an insert pin of the support base; the damper is disposed on the other end of the connector, and is configured to be disposed in the top cover shaft sleeve or be separated from the top cover shaft sleeve to retract to the sleeve; the clamping claw is operatively connected the damper. A button is disposed in the top cover shaft sleeve, and the button is configured to move in an axial direction of the top cover shaft sleeve to push the damper to move in the sleeve.

**[0006]** In a preferred embodiment, the damper is disposed in a damper casing, and the button push the damper casing so as to push the damper.

**[0007]** With the aforementioned structure, the buttons are pressed from two sides, the cover plate is disassembled. Moreover, the buttons are disposed in the top cover shaft sleeves, and are on side surfaces, it is difficult to become dirty.

**[0008]** Another object of the present disclosure, is to

solve the problem that the top cover is difficult to be separated from the cover plate.

**[0009]** A technical solution of the present disclosure to solve the technique problems is as follows. a torsion spring mechanism operatively connected to the clamping claw is further provided, the torsion spring mechanism comprises a clamping groove base, a torsion spring rack, and a torsion spring; a top surface of the clamping groove base is disposed with a torsion spring positioning groove, an end of the torsion spring positioning groove away from the torsion spring rack is disposed with a triangle block, a sharp end of the triangle block faces the torsion spring rack, a heart-shaped block is separately disposed from the triangle block, a concaved part of the heart-shaped block faces the sharp end of the triangle block, a V-shaped groove is defined between the two; one side of the heart-shaped block is disposed with an arc groove higher than a bottom surface of the torsion spring positioning groove, and a step is defined between the arc groove and the bottom surface of the torsion spring positioning groove;

**[0010]** The torsion spring, a body of the torsion spring is fixedly connected to the torsion spring rack, and the other end is disposed in the torsion spring positioning groove.

**[0011]** With the aforementioned structure, the buttons are pressed, functions are achieved, an assembly, a disassembly, etc.

**[0012]** In a preferred embodiment, the bottom surface of the positioning groove is further disposed with an oblique block obliquely disposed, and the oblique block is disposed between the heart-shaped block and a receiving hole for the torsion spring.

**[0013]** In a preferred embodiment, the clamping groove base has a cylinder shape. An end portion is disposed with the receiving hole of the torsion spring, a spring fixing hole, and a fastener fixing hole in a downward direction, a top surface of one end of the torsion spring rack is disposed with a fixing column for the torsion spring, and sides surface are disposed with fasteners, the fasteners are configured to be disposed to the fastener fixing hole; the spring fixing hole is disposed with a reset spring for the torsion spring rack.

**[0014]** In a preferred embodiment, the clamping claw and the torsion spring rack are fixedly connected.

**[0015]** In a preferred embodiment, the clamping claw comprises a circular plate, the circular plate is disposed with a column fixing groove extending from an edge to a center; one end of the torsion spring rack is disposed with a column, and the column is configured to be disposed in the column fixing groove.

**[0016]** In a preferred embodiment, the clamping claw, comprises a circular plate, one end of the circular plate extends to define a support base fixing plate configured to be locked to a groove of the insert pin of the support base; two connecting boards are disposed below the support base fixing plate, a bottom portion of each of the two connecting boards is disposed with an elastic claw; the

elastic claws extend from a rear end of the connecting boards to the circular plate, a clamping tongue faces outward, and middle portions are disposed with arc portions and are close to each other.

**[0017]** In a preferred embodiment, the damper, an insert end of which is disposed with a screw, the clamping claw, the rear end of each of the two connecting boards is disposed with a screw hole laterally disposed; the insert end of the damper and the rear end of the connecting boards of the clamping claw are respectively disposed in the connector, and are fixedly connected together by screw.

**[0018]** In a preferred embodiment, the two clamping groove bases disposed on a left side and a right side are detachably and fixedly connected together.

**[0019]** A method of disassembling the toilet cover, comprises the following steps.

1) the buttons are pressed, to push the dampers to move inward, so as to push the clamping claws fixedly connected to the dampers to move inward. During movements of the clamping claws, the support base fixing plates are separated from lock grooves of the insert pins of the support bases, and the clamping claws are positioned, at this time, the top cover and the toilet seat are pulled out from the support bases; after being pulled out, the clamping claws are reset.

2) the top cover and the toilet seat are separated: the buttons are pressed again, to push the dampers, the damper casings, the connectors, the clamping claws and the torsion spring racks to move inward, the hooks of the torsion springs move along edges of the heart-shaped blocks, after the pressing force is released, are hooked to the V-shaped grooves of the heart-shaped blocks; at this position, after the buttons are reset, the buttons are separated from the damper casings, therefore, the top cover shaft sleeves are configured to be separated from the sleeve of the toilet seat.

**[0020]** Compared with the existing techniques, the technical solution of the present disclosure has the following advantages.

**[0021]** 1. The present disclosure comprises a connector, a damper and a clamping claw, wherein, the support base is inserted into the connector, the clamping claw is inserted into the connector from one end of the connector, and is configured to be locked to and unlocked to the insert pin of the support base; the damper is disposed at the other end of the connector, and is configured to be inserted into the top cover shaft sleeve and retract to the sleeve from the top cover shaft sleeve; the clamping claw is operatively connected to the damper. Therefore, if the damper is pressed from a side surface, the clamping claw is pushed to move, and the support base is unlocked. 2. The present disclosure, comprises a torsion spring mechanism, when being pressed at a first time, the torsion

spring is locked to the groove, to provide enough given space for the damper to retract to the sleeve, so that the cover plate can be separated; when being pressed at a second time, the torsion spring is unlocked, the damper can be reset, be locked, and be locked to the support base. The top cover and the toilet seat can be quickly assembled and disassembled. The present disclosure only needs two simple pressing, to enable the cover plate to be separated from the ceramic body, and then enable the top cover to be separate from the toilet seat.

## BRIEF DESCRIPTION OF THE DRAWING

**[0022]** The present disclosure will be further described with the combination of the accompanying embodiments and the accompanying drawings.

FIG. 1 illustrates an exploded view of the present disclosure.

FIG. 2 illustrates a perspective view of an assembly of a quick disassembly unit.

FIG. 3 illustrates an exploded view of the quick disassembly unit.

FIG. 4 illustrates a first partial perspective view of a portion of the quick disassembly unit.

FIG. 5 illustrates a second partial perspective view of the quick disassembly unit;

FIG. 6 illustrates a schematic view of a bottom portion of a clamping claw.

FIG. 7 illustrates a perspective view of a connecting member;

FIG. 8 illustrates a first cross-sectional view of an assembly-and-disassembly process of the present disclosure, A and B illustrate from different cross-sectional angles.

FIG. 9 illustrates a second cross-sectional view of the assembly-and-disassembly process of the present disclosure, A and B respectively illustrate from different cross-sectional angles.

FIG. 10 illustrates a second cross-sectional view of the assembly-and-disassembly process of the present disclosure, A and B respectively illustrate from different cross-sectional angles.

FIG. 11 illustrates a sectional view of a disassembly process of the quick disassembly unit, A-D respectively illustrate different positing positions of a torsion spring.

1-top cover 2-toilet seat 3-button 4-button reset spring 5-damper casing 6-damper 7-spring 8-connector 9-screw bolt 10-clamping claw 11-torsion spring rack 12-torsion spring 13-spring 14-clamping groove base 15-support base

## DETAILED DESCRIPTION OF THE EMBODIMENTS

### Embodiment 1

**[0023]** Referring to Fig. 1, an easy cleaning toilet cover of the present disclosure comprises a top cover 1 and a toilet seat 2, wherein, two ends of a bottom portion of the top cover are respectively disposed with a top cover shaft sleeve 1.1, and the top cover shaft sleeves 1.1 comprise left openings and right openings. A middle portion of a bottom portion of the toilet seat 2 is disposed with a sleeve 2.1, the sleeve 2.1 also comprises a left opening and a right opening, and is respectively disposed with two support base insert holes 2.2 adjacent a center.

**[0024]** Button units are disposed in the top cover shaft sleeves 1.1, the button units comprise buttons 3 and button reset springs 4.

**[0025]** An inner side of the sleeve 2.1 is disposed with quick disassembly units, the quick assembly unit comprises a damper casing 5, a damper 6, a spring 7, a connector 8, a screw bolt 9, a clamping claw 10, a torsion spring rack 11, a torsion 12, a spring 13 and a clamping groove base 14.

**[0026]** Referring to FIGS. 2-7, the connecting member 8 is disposed with an insert hole 8-1 of the support base radially disposed, a fixing hole 8-3 axially disposed, and a screw mounting hole 8-2 radially disposed in a direction perpendicular to the support base insert hole.

**[0027]** The clamping claw 10 is disposed in one end of the connector 8, the damper 6 is disposed in the other end.

**[0028]** Referring to FIG. 6: the clamping claw 10, comprises a circular plate 10-1, the circular plate 10-1 comprises a column fixing groove 10-2 extending from an edge to a center. One side of the circular plate 10-1 extends to define a support base fixing plate 10-3, which is configured to be locked to a groove of a support base insert pin. Two connecting boards 10-4 are disposed below the support base fixing plate 10-3, a tail end of each of the two connecting boards 10-4 is disposed with a screw hole 10-5 laterally disposed, a bottom portion of each of the two connecting board 10-4 is disposed with an elastic claw 10-6, the elastic claws 10-6 extend in a direction from the tail end of the connecting board 10-4 to the circular plate 10-1, clamping tongues face outward, and middle portions are disposed with arc portions 10-7 and are close to each other.

**[0029]** The damper, An insertion end of which is disposed with a screw hole 6-1, referring to FIG. 5, when being assembled, the damper is inserted into the connector 8 from the fixing hole 8-3 in a leftward direction, the clamping claw 10 is inserted into the connector 8 from the fixing hole 8-3 in a rightward direction, the insertion end of the damper is inserted between the two connecting boards 10-4, by the screw 9, the insertion end of the damper is fixed to the tail ends of the connecting boards of the clamping claw 10.

**[0030]** In this embodiment, the fixing hole of the con-

connector 8 is further disposed with a spring fixing column 8-4, the spring 7 is disposed between the spring fixing column 8-4 and the insertion end of the damper.

**[0031]** In another embodiment, the damper and the clamping claw adopt other connecting methods, in an example, a fastening method.

**[0032]** The other side of the circular plate 10-1 of the clamping claw 10 is disposed with the torsion spring rack 11, the other side of the torsion spring rack 11 is disposed with the clamping groove base 14.

**[0033]** Referring to Fig. 4, one end of the torsion spring rack 11 is disposed with a column 11-1, a top surface of the other end is disposed with a fixing column 11-2 for the torsion spring, side surfaces are disposed with fasteners 11-3.

**[0034]** The clamping groove base 14 has a cylinder shape, an end portion is disposed with a torsion receiving hole 14-3, a spring fixing hole 14-1 and a fastener fixing hole 14-2 in a downward direction. A top surface is disposed with a torsion spring positioning groove 14-4, the torsion spring receiving hole 14-3 is in communication with the torsion spring positioning groove 14-4. One end of the torsion spring positioning groove 14-4 away from the torsion spring rack is disposed with a triangle block 14-4, a sharp end of the triangle block 14-4 faces the torsion spring rack 11, a heart-shaped block 14-6 is separately disposed from the triangle block 14-4, a concave part of the heart-shaped faces the sharp end of the triangle block 14-4, the two define a hook position, that is, a V-shaped groove 14-5. In another embodiment, the V-shaped groove can also be an arc groove. One side of the heart-shaped block 14-6 is disposed with an arc groove 14-6 higher than a bottom surface of the torsion spring positioning groove 14-4, and the arc groove 14-6 and the bottom surface of the torsion spring positioning groove 14-5 define a step 14-7. In this embodiment, an oblique block 14-8 obliquely disposed is disposed among the bottom surface of the positioning groove 14-4, the heart-shaped block, and the torsion spring receiving hole 14-3.

**[0035]** The left and right clamping groove bases 14 are disposed in a center portion of the sleeve. In this embodiment, one of the clamping groove bases is disposed with a clamber 14-9, the other of the clamping groove bases is correspondingly disposed with a clamping portion, the two are automatically locked together after the two move close to each other in the sleeve. In another embodiment, the sleeve is disposed with a clamping portion, and the two clamping groove bases are respectively locked in the sleeve.

**[0036]** The torsion spring 12 comprises a body 12-1, one end is disposed with a hook 12-2.

**[0037]** An assembly of the present disclosure is as follows.

**[0038]** First, the two quick disassembly units are assembled. The damper 6 (in another embodiment, it can be not a damper) and the clamping claw 10 are inserted into the connector 8 from the two ends of the fixing hole

8-3, and are fixed by the screw 9. The damper casing 5 surrounds the damper 6. The torsion spring rack 11, the torsion spring 12, the spring 13 and the clamping groove base 14 are assembled together, and the hook 12-2 of the torsion spring is hooked to the bottom portion of the V-shaped groove 14-5. Then the hook 12-2 of the torsion spring 12 is placed in the torsion spring positioning groove 14-5, the assembly referring to FIG. 11A, at this time, the hook 12-2 of the torsion spring rack 12 is not placed in the column fixing groove 10-2 of the clamping claw 10, but separated from the fixing groove.

**[0039]** After that, the top cover shaft sleeves 1.1 are aligned with the sleeve 2.1 of the toilet seat, two quick disassembly units are then respectively inserted into the sleeve 2.1 through the top cover shaft sleeves 1.1, until the two quick disassembly units are automatically locked. Then the buttons 3 and the button reset springs 4 are assembled. The buttons 3 are locked to an inner side of the top cover shaft sleeve 1.1, this lock method and a locking method of support bases are existing technologies, and will not be further described. At this time, parts of the damper casings 5 are disposed in the sleeve, the other parts are disposed in the top cover shaft sleeves, therefore, an assembly between the top cover and the toilet seat is achieved.

**[0040]** The support base insert holes 2.2 of the sleeve is then aligned with and inserted into the support bases 15, top ends of the support base insert pins 15-1 push the support base fixing plates 10-3 of the clamping claws 10 to move away, until reaching grooves of the support base insert pins, the support base fixing plates 10-3 are locked to the grooves due to the springs, therefore, an assembly between of the toilet cover plate and a main body is achieved.

**[0041]** The present disclosure is used as follows.

#### 1. The cover plate is separated from the toilet

**[0042]** Referring to FIG.8, the buttons 3 are pressed, to push the dampers 6 to move towards middle, and then to push the clamping claws 10 connected to the dampers 6 to move towards the middle. When the clamping claws 10 move, the support base fixing plates 10-3 separate from the lock grooves of the support base insert pins 15-1, and the arc portions 10-7 of the elastic claws 10-6 are pushed to two sides of the support base insert pins 15-1, the elastic claws 10-6 spread towards two sides, and move until being clamped to side walls 8-5 of end portions of the connectors 8.

**[0043]** At this time, the top cover and the toilet seat can be pulled out from the support bases. After that, due to force of the support base insert pins disappearing, the elastic claws reset towards the middle; as the torsion springs and the fixing grooves are separated, the clamping claws reset due to the spring 13.

2. the top cover is separated from the toilet seat

**[0044]** Referring to FIG. 9, a disassembly of the present disclosure is as follows.

**[0045]** The buttons 3 are pressed to push the dampers 6, the damper casings 5, the connectors 8, the clamping claws 10 and the torsion springs to move towards the middle, as the clamping groove bases 14 remain fixed, therefore, the hooks of the torsion springs 12 move along edges of the heart-shaped blocks 14-6, after the pressing force disappears, the hooks are hooked to the V-shaped grooves 14-5 of the heart-shaped blocks 14-6 (referring to FIGS. 11B or 2). At this position, after the buttons are reset, the buttons are separated from the damper casings 5, therefore, the top cover shaft sleeves can be separated from the sleeves of the toilet seat. That is, the top cover can be separated from the toilet seat.

#### 3. Re-assembly

**[0046]** After the top cover and the toilet seat are cleaned, the top cover shaft sleeves are aligned with the sleeve of the toilet seat, the buttons 3 are pressed, referring to Fig. 11C, at this time, due to torsion force of the torsion springs, the hooks of the torsion springs move along the heart-shaped blocks, and move back to front ends of the heart-shaped blocks through the arc groove 14-6, at this time, the torsion springs and the heart-shaped blocks are unlocked. Under the action of the spring:

The parts of the damper casings 5 are disposed in the sleeve, the other parts are disposed in the top cover shaft sleeves, therefore, the assembly of the top cover and the toilet seat is achieved.

**[0047]** The support base 15 are then aligned with and inserted into the support base insert holes 2.2 of the sleeve, the top ends of the support base insert pins 15-1 push the support base fixing plates 10-3 of the clamping claws 10, to move until reaching the grooves of the support base insert pins, the support base fixing plates 10-3 are locked to the grooves due to the springs, therefore, the assembly of the toilet cover and the main body are achieved.

**[0048]** The aforementioned embodiments are merely some embodiments of the present disclosure, and the scope of the disclosure of is not limited thereto. Thus, it is intended that the present disclosure cover any modifications and variations of the presently presented embodiments provided they are made without departing from the appended claims and the specification of the present disclosure.

#### Claims

1. A toilet cover, which comprises a top cover (1) and a toilet seat (2), two sides of a bottom portion of the top cover (1) are respectively disposed with a top

- cover shaft sleeve (1.1), a middle portion of a bottom portion of the toilet seat (2) is disposed with a sleeve (2.1), **characterized in that:** the sleeve (2.1) is disposed with two quick disassembly units, each of the two quick disassembly units comprises a connector (8), a damper (6) and a clamping claw (10), wherein a support base (15) is disposed in the connector (8), the clamping claw (10) is disposed in the connector (8) through an end of the connector (8) to be locked or unlocked to an insert pin (15-1) of the support base (15); the damper (6) is disposed on the other end of the connector (8), and is configured to be disposed in the top cover shaft sleeve (1.1) or be separated from the top cover shaft sleeve (1.1) to retract to the sleeve (2.1), the clamping claw (10) is operatively connected the damper (6); a button (3) is disposed in the top cover shaft sleeve (1.1), and the button (3) is configured to move in an axial direction of the top cover shaft sleeve (1.1) to push the damper (6) to move in the sleeve (2.1).
2. The toilet cover according to the claim 1, **characterized in that:** the damper (6) is disposed in a damper casing (5), and the button (3) push the damper casing (5) so as to push the damper (6).
  3. The toilet cover according to claim 1 or 2, **characterized in that:** the other end of the clamping claw (10) is operatively connected to a torsion spring mechanism, the torsion spring mechanism comprises a clamping groove base (14), a torsion spring rack (11) and a torsion spring (12); a top surface of the clamping groove base (14) is disposed with a torsion spring positioning groove (14-4), an end of the torsion spring positioning groove (14-4) away from the torsion spring rack (11) is disposed with a triangle block (14-4), a sharp end of the triangle block (14-4) faces the torsion spring rack (11), a heart-shaped block (14-6) is separately disposed from the triangle block (14-4), a concaved part of the heart-shaped block (14-6) faces the sharp end of the triangle block (14-4), a V-shaped groove (14-5) is defined between the two; one side of the heart-shaped block (14-6) is disposed with an arc groove (14-6) higher than a bottom surface of the torsion spring positioning groove (14-4), a step (14-7) is defined between the arc groove (14-6) and the bottom surface of the torsion spring positioning groove (14-4); the torsion spring (12), a body (12-1) of which is fixedly connected to the torsion spring rack (11), and the other end is disposed in the torsion spring positioning groove (14-4).
  4. The toilet cover according to claim 3, **characterized in that:** the bottom surface of the positioning groove (14-4) is further disposed with an oblique block (14-8) obliquely disposed, and the oblique block (14-8) is disposed between the heart-shaped block (14-6) and a receiving hole (14-3) for the torsion spring (12).
  5. The toilet cover according to claim 4, **characterized in that:** the clamping groove base (14) has a cylinder shape, an end portion is disposed with the receiving hole (14-3) of the torsion spring (12), a spring fixing hole (14-1) and a fastener fixing hole (14-2) in a downward direction, a top surface of one end of the torsion spring rack (11) is disposed with a fixing column (11-2) for the torsion spring (12), sides surface are disposed with fasteners (11-3), the fasteners (11-3) are configured to be disposed to the fastener fixing hole (14-2); the spring fixing hole (14-1) is disposed with a reset spring (13) for the torsion spring rack (11).
  6. The toilet cover according to claim 5, **characterized in that:** the clamping claw (10) and the torsion spring rack (11) are fixedly connected.
  7. The toilet cover according to claim 6, **characterized in that:** the clamping claw (10), which comprises a circular plate (10-1), the circular plate (10-1) is disposed with a column fixing groove (10-2) extending from an edge to a center; one end of the torsion spring rack (11) is disposed with a column (11-1), and the column (11-1) is configured to be disposed in the column fixing groove (10-2).
  8. The toilet cover according to claim 1, **characterized in that:** the clamping claw (10), which comprises a circular plate (10-1), one end of the circular plate (10-1) extends to define a support base fixing plate (10-3) configured to be locked to a groove of the insert pin (15-1) of the support base (15); two connecting boards (10-4) are disposed below the support base fixing plate (10-3), a bottom portion of each of the two connecting boards (10-4) is disposed with an elastic claw (10-6), the elastic claws (10-6) extend from a rear end of the connecting boards (10-4) to the circular plate (10-1), a clamping tongue faces outward, and middle portions are disposed with arc portions (10-7) and are close to each other.
  9. The toilet cover according to claim 8, **characterized in that:** the damper (6), an insert end of which is disposed with a screw (9), the clamping claw (10), the rear end of each of the two connecting boards (10-4) is disposed with a screw hole (10-5) laterally disposed; the insert end of the damper (6) and the rear end of the connecting boards (10-4) of the clamping claw (10) are respectively disposed in the connector (8), and are fixedly connected together by screw (9).
  10. A method of disassembling the toilet cover according to claim 3, **characterized in that,** comprising:

1) the buttons (3) are pressed to push the dampers (6) to move inward, so as to push the clamping claws (10) fixedly connected to the dampers (6) to move inward. During movements of the clamping claws (10), the support base fixing plates (10-3) are separated from lock grooves of the insert pins (15-1) of the support bases (15), the clamping claws (10) are positioned, the top cover (1) and the toilet seat (2) are pulled out from the support bases (15); after being pulled out, the clamping claws (10) are reset, 2) the top cover (1) and the toilet seat (2) are separated, the buttons (3) are pressed again, to push the dampers (6), the damper casings (5), the connectors (8), the clamping claws (10) and the torsion spring racks (11) to move inward, the hooks (12-2) of the torsion springs (12) move along edges of the heart-shaped blocks (14-6), after the pressing force is released, the hooks (12-2) of the torsion springs (12) are hooked to the V-shaped grooves (14-5) of the heart-shaped blocks (14-6); at this position, after the buttons (3) are reset, the buttons (3) are separated from the damper casings (5), the top cover shaft sleeves (1.1) are configured to be separated from the sleeve (2.1) of the toilet seat (2).

11. A toilet cover, comprises a top cover (1) and a toilet seat (2), two sides of a bottom portion of the top cover (1) are respectively disposed with a top cover shaft sleeve (1.1), a middle portion of a bottom portion of the toilet seat (2) is disposed with a sleeve (2.1), **characterized in that:** two ends of the sleeve (2.1) are respectively disposed with a quick disassembly unit, the quick disassembly unit comprises a connector (8), a damper (6) and a clamping claw (10), wherein, a support base (15) is disposed in the connector (8), the clamping claw (10) is disposed in the connector (8) through an end of the connector (8), and is configured to be locked or unlocked to the support base (15); the damper (6) is disposed on the other end of the connector (8); the clamping claw (10) is operatively connected the damper (6); a button (3) are disposed in the top cover shaft sleeve (1.1), the button (3) is configured to move in an axial direction of the top cover shaft sleeve (1.1) to push the damper (6) to move in the sleeve (2.1); the other ends of the quick disassembly units are correspondingly disposed with torsion spring mechanisms, the torsion spring mechanism comprises a torsion spring rack (11) and a clamping groove base (14), the torsion spring rack (11) is disposed with a torsion spring (12), the clamping groove base (14) is disposed with a hook position and a non-hook position for a hook (12-2) of the torsion spring (12), a spring (13) is disposed between and abuts the torsion spring rack (11) and the clamping groove base (14), when the torsion spring (12) is hooked to the hook position, the damp-

er (6) retracts to the sleeve (2.1) from the top cover shaft sleeve (1.1).

12. The toilet cover according to claim 11, **characterized in that:** the toilet cover further comprises a button reset spring (4), the button (3) is locked to an inner side of the top cover shaft sleeve (1.1), and resets after external force is released.
13. The toilet cover according to claim 11 or 12, **characterized in that:** a top surface of the clamping groove base (14) is disposed with a torsion spring positioning groove (14-4), an end of the torsion spring positioning groove (14-4) away from the torsion spring rack (11) is disposed with a triangle block (14-4), a sharp end of the triangle block (14-4) faces the torsion spring rack (11), a heart-shaped block (14-6) is separately disposed from the triangle block (14-4), a concaved part of the heart-shaped block (14-6) faces the sharp end of the triangle block (14-4), a V-shaped groove (14-5) is defined between the two; one side of the heart-shaped block (14-6) is disposed with an arc groove (14-6) higher than a bottom surface of the torsion spring positioning groove (14-4), and a step (14-7) is defined between the arc groove (14-6) and the bottom surface of the torsion spring positioning groove (14-4).

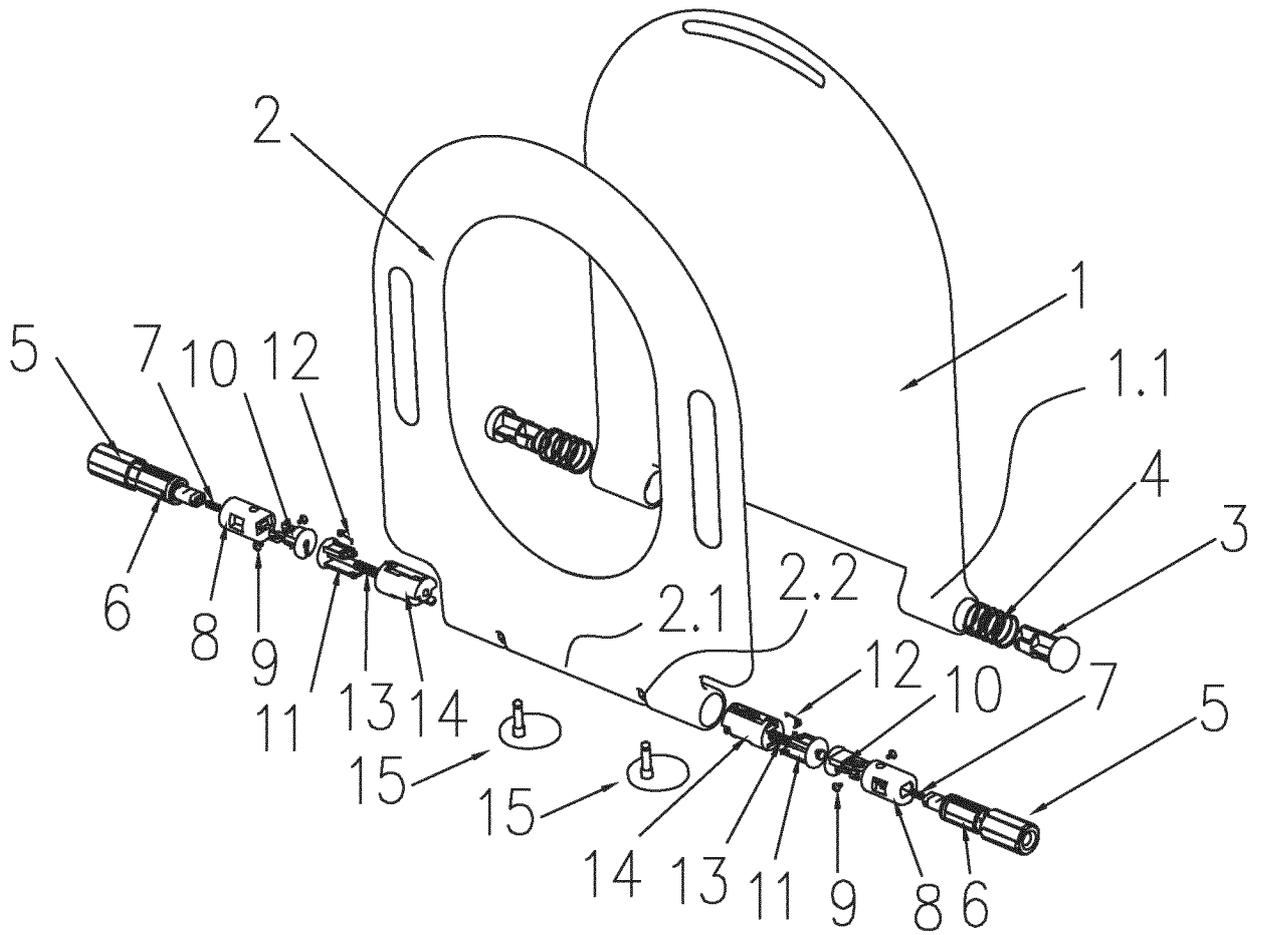


FIG.1

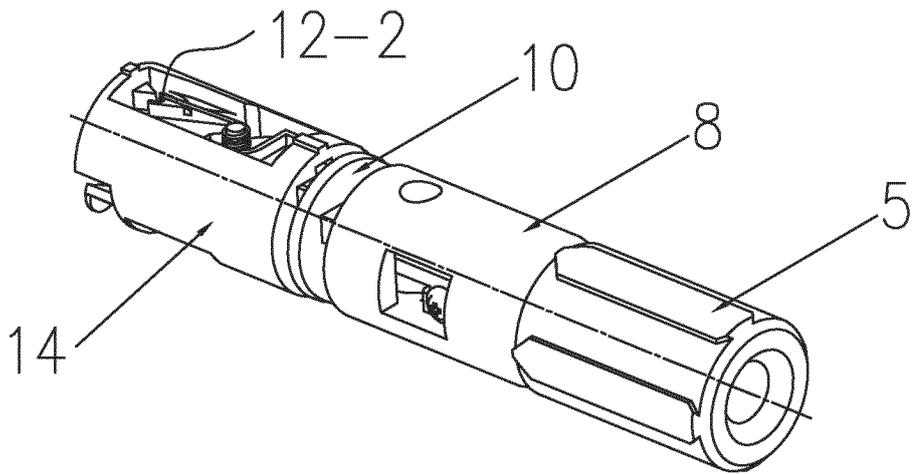


FIG.2

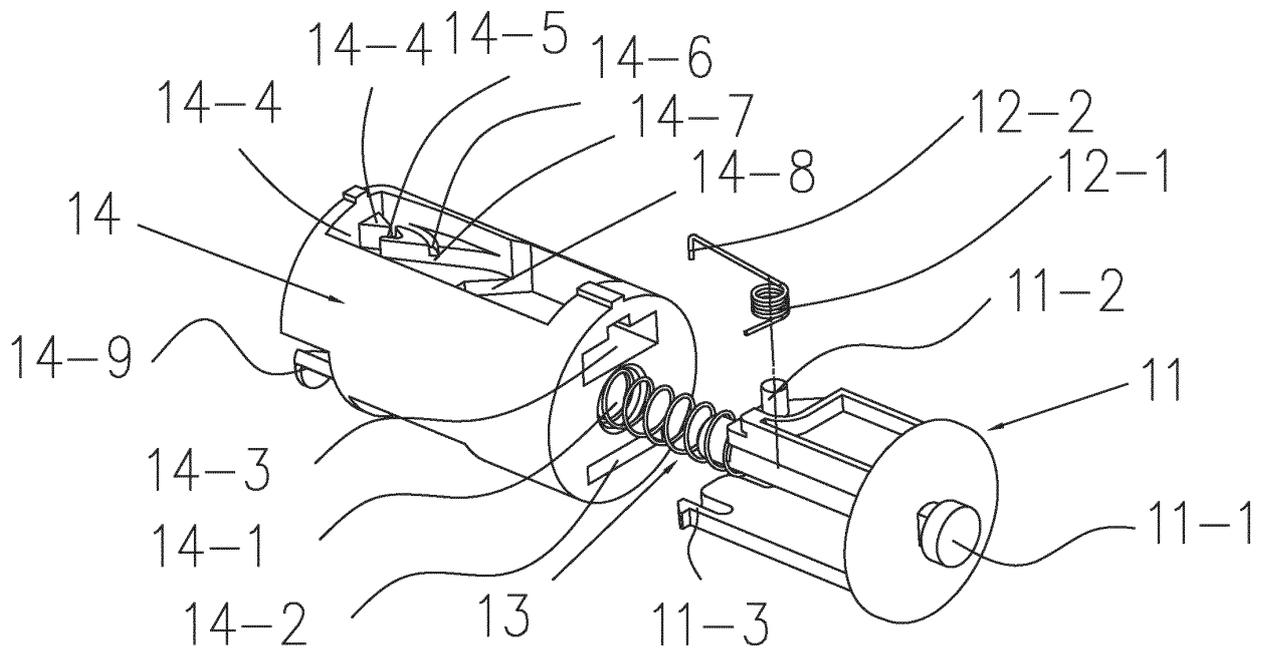
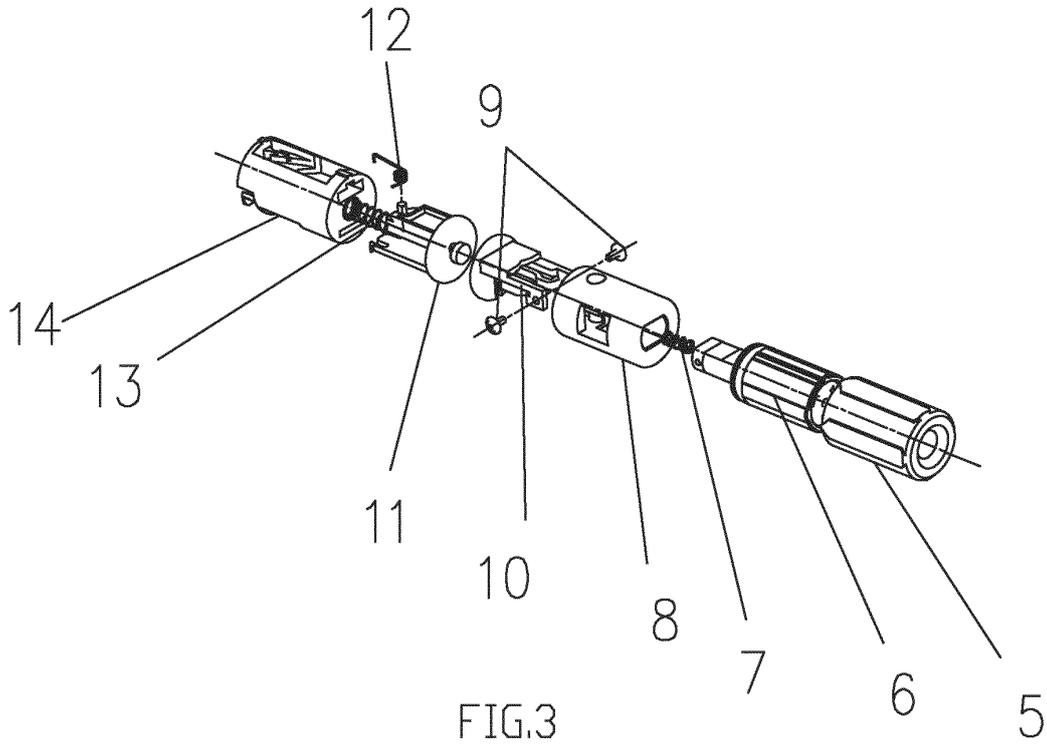


FIG.4

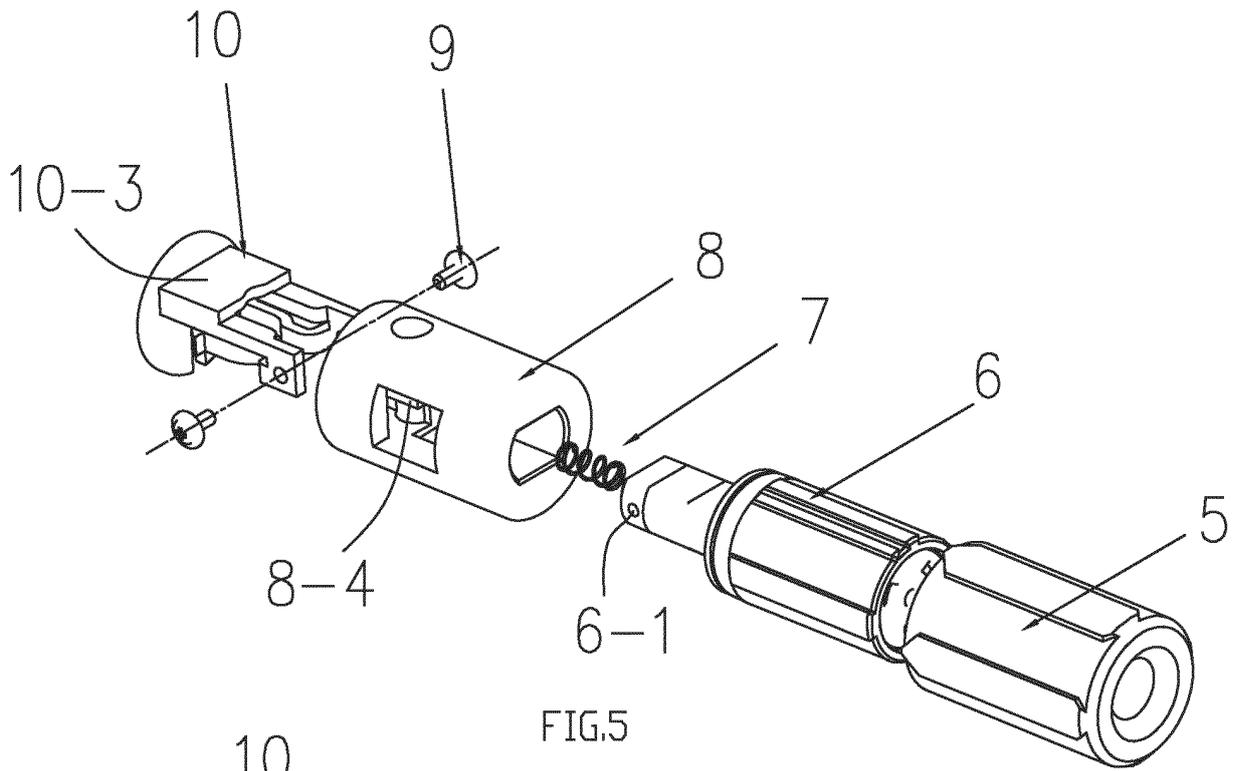


FIG.5

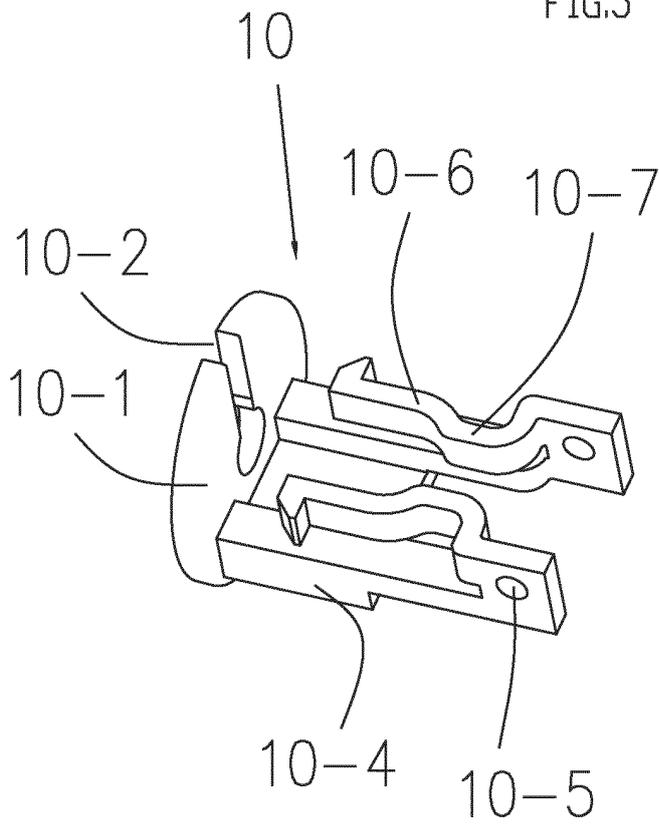


FIG.6

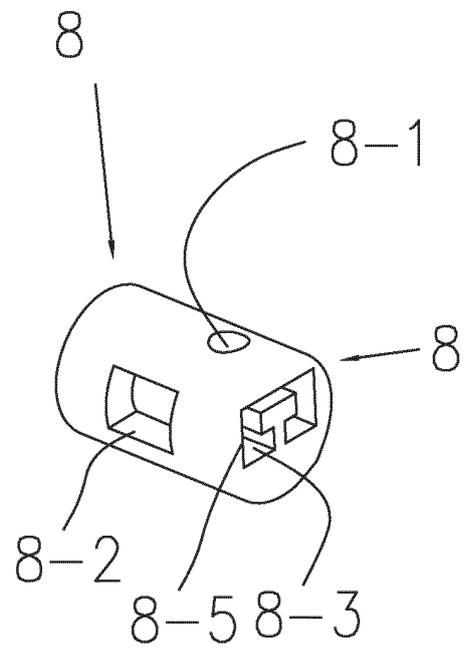


FIG.7

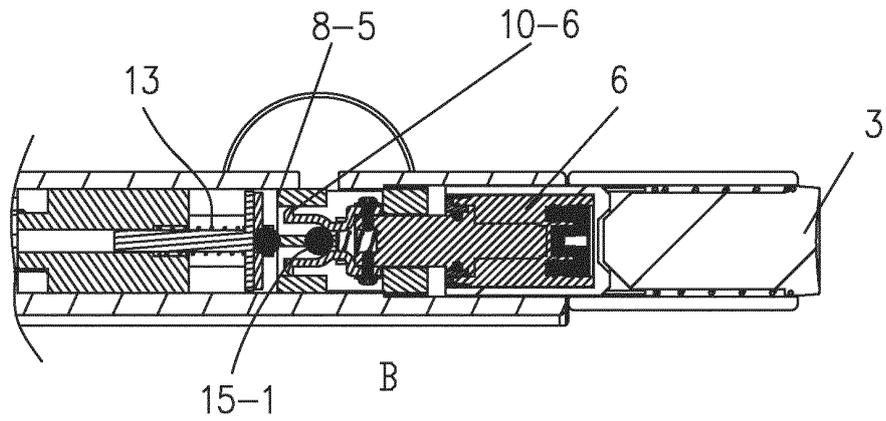
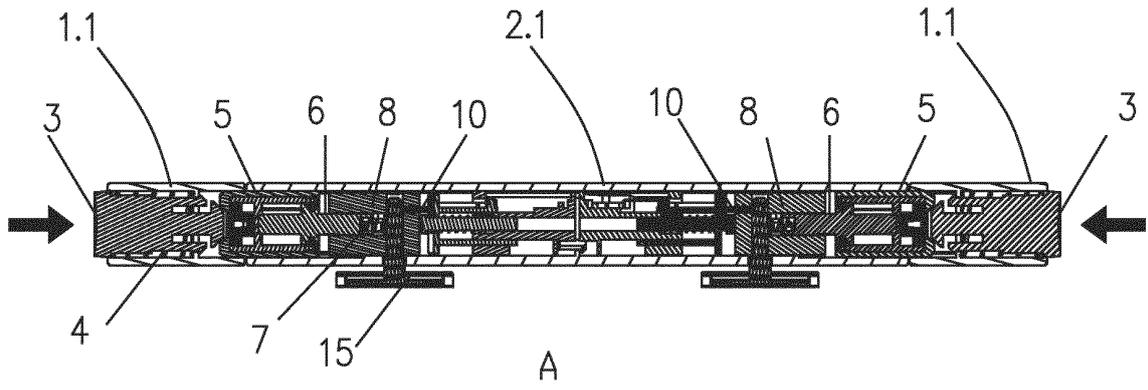


FIG.8

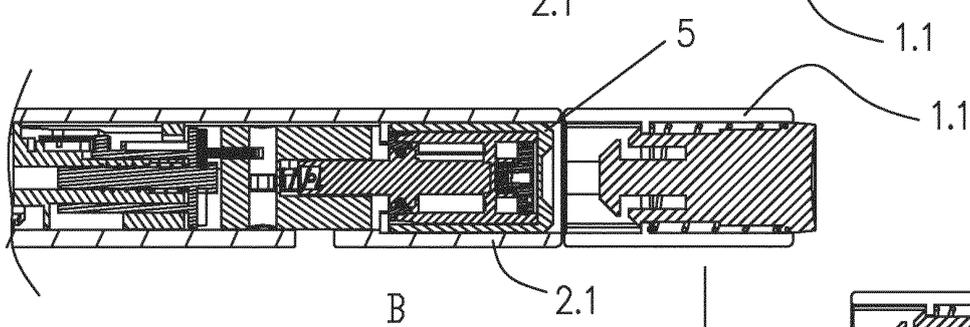
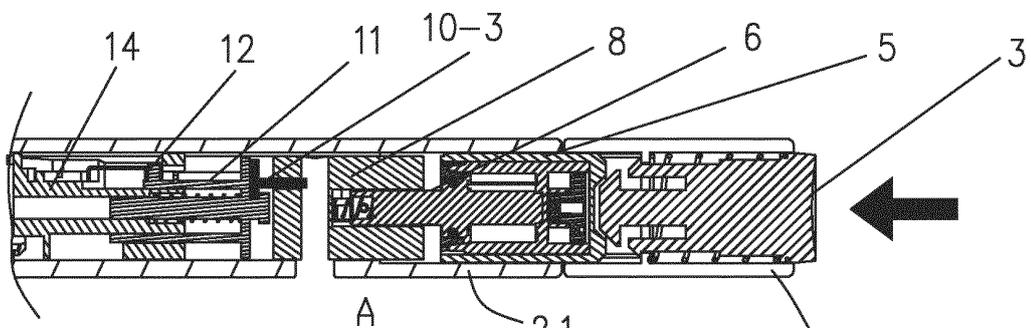


FIG.9

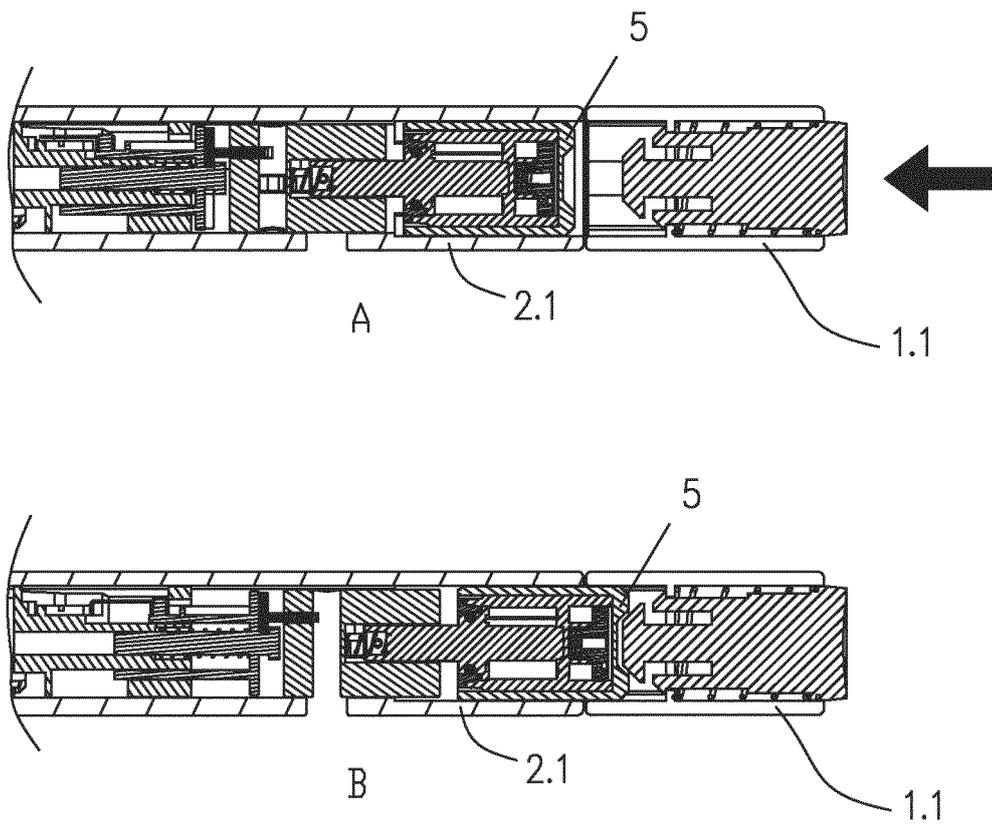
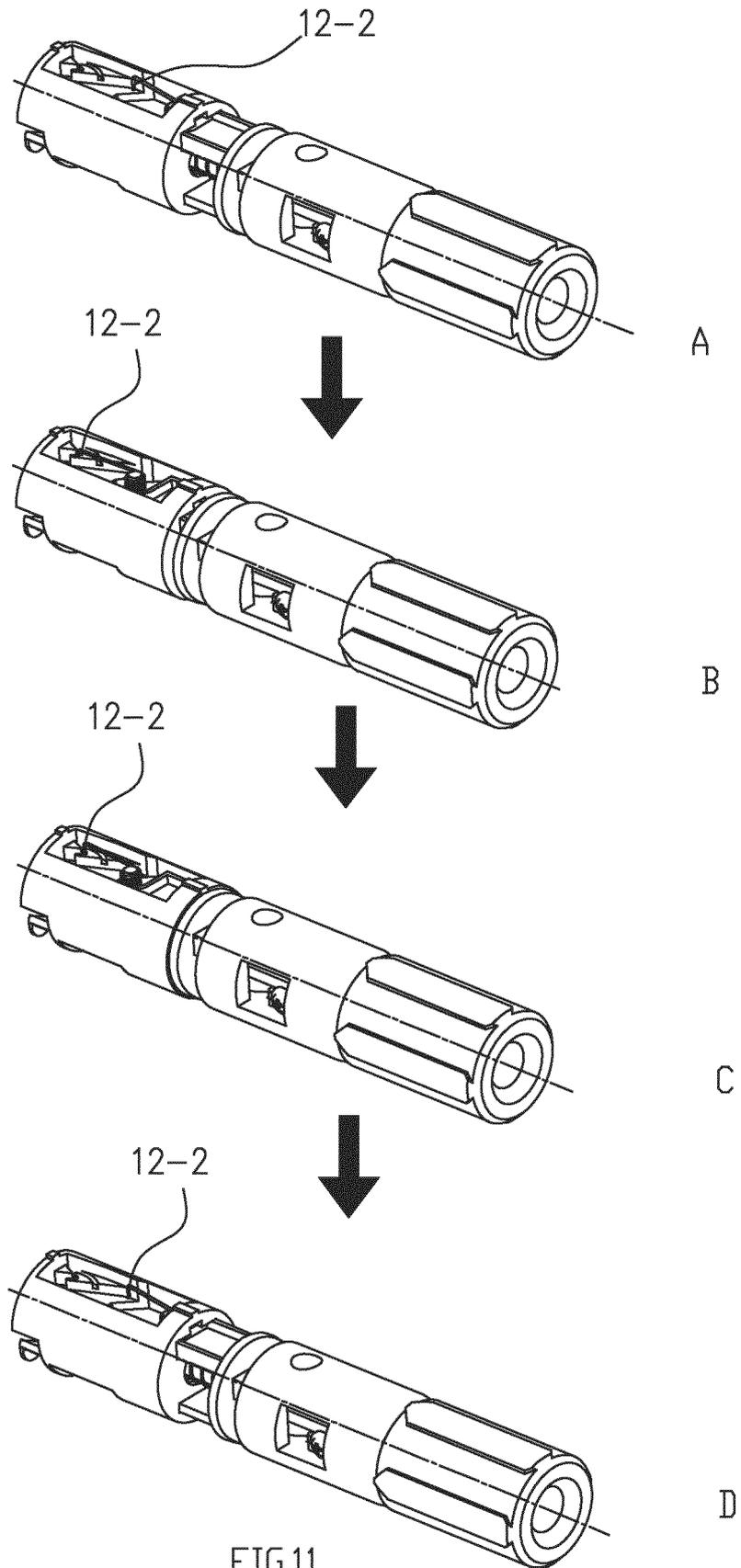


FIG.10



## INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2018/117807

5

<b>A. CLASSIFICATION OF SUBJECT MATTER</b> A47K 13/26(2006.01)i According to International Patent Classification (IPC) or to both national classification and IPC
---

10

<b>B. FIELDS SEARCHED</b> Minimum documentation searched (classification system followed by classification symbols) A47K13/-:E03D/- Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
--

15

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) VEN; CNABS; CNTXT: 按钮, 按键, 横向, 轴向, button, key, press+
--

20

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

25

30

35

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
PX	CN 107928531 A (BESTTER (XIAMEN) TECHNOLOGY INC.) 20 April 2018 (2018-04-20) description, paragraphs [0042]-[0070], and figures 1-11	1-13
A	CN 202723749 U (LI, FEIYU) 13 February 2013 (2013-02-13) description, pages 2-4, and figures 1-8	1-13
A	CN 203647246 U (BESTTER (XIAMEN) TECHNOLOGY INC.) 18 June 2014 (2014-06-18) entire document	1-13
A	CN 107233038 A (BESTTER (XIAMEN) TECHNOLOGY INC.) 10 October 2017 (2017-10-10) entire document	1-13
A	CN 102366318 A (BESTTER (XIAMEN) TECHNOLOGY INC.) 07 March 2012 (2012-03-07) entire document	1-13
A	WO 2008031254 A1 (GONG, BINHUA) 20 March 2008 (2008-03-20) entire document	1-13
A	WO 2013053132 A1 (BESTTER XIAMEN TECHNOLOGY INC. ET AL.) 18 April 2013 (2013-04-18) entire document	1-13



Further documents are listed in the continuation of Box C.



See patent family annex.

40

45

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

50

55

Date of the actual completion of the international search <b>28 February 2019</b>	Date of mailing of the international search report <b>06 March 2019</b>
Name and mailing address of the ISA/CN <b>National Intellectual Property Administration, PRC (ISA/ CN) No. 6, Xitucheng Road, Jimenqiao Haidian District, Beijing 100088 China</b>	Authorized officer
Facsimile No. (86-10)62019451	Telephone No.

