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(54) HANDLE LOCK

(57) A handle lock comprises an inner base and an outer base, and an inner handle and an outer handle are rotationally arranged on the inner base and the outer base respectively. The inner handle is provided with a back locking driving assembly, and the outer handle is provided with a back locking assembly. The counter lock assembly comprises an outer handle head connected to the outer handle, a lock plate and a linkage plate, the outer handle head is rotationally arranged in a rotating groove of the outer base, the lock plate is arranged in the outer handle head in a sliding mode, a locking part is arranged at one end of the lock plate, and a driving backrest is arranged at the other end of the lock plate; a locking groove matched with the locking part is formed in the side wall of the rotating groove, one end of the linkage plate is connected with the back locking driving assembly, and the other end of the linkage plate is arranged in the lock plate in a penetrating mode.

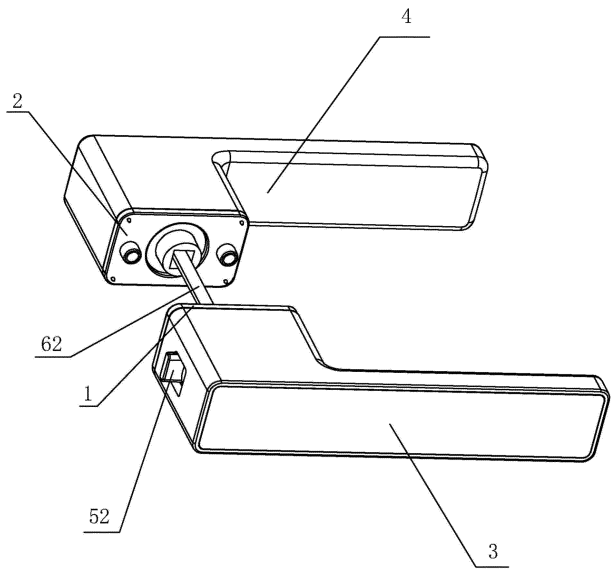

Fig. 1

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Description

[0001] The invention relates to the technical field of door locks, and more specifically, to a handle lock. The door lock is a commonly used door protection device to prevent illegal intrusion. The existing door lock locking method mainly involves setting a locking mechanism in the lock body to push the deadbolt, so that the deadbolt cannot retract from the buckle box into the lock body. To realize the reverse locking of the door lock; and by locking the door handle that drives the lock tongue to telescope on the door lock base, so that people cannot drive the lock tongue to telescope by turning the door handle; for example, the Chinese patent with the announcement number CN216110120U discloses a rack-type anti-locking mechanism of a door lock, which locks the outer door handle to the outer panel through a locking assembly, so that the outer door handle cannot rotate relative to the outer panel, thereby realizing the door lock. Reverse lock, wherein the locking assembly includes a square bushing, a locking cam and a locking ball matching the locking cam. One end of the square bushing is fixedly connected to the door outer handle, and the other end passes through the locking seat of the outer panel and is the square shafts are connected; the locking cam is rotated and set in the square shaft sleeve, and one end of the locking cam is connected to the rotating rod; when the rotating rod drives the locking came to rotate, the locking cam prompts the locking ball to squeeze outwards. Make part of the locking ball pass through the ball hole of the square shaft sleeve and place it in the locking groove of the locking seat; lock the outside door handle on the locking seat, restricting the rotation of the outside door handle on the outer panel; making it impossible for people to turn the outside door handle, and thus cannot the door lock operation is performed; however, due to the locking method in which the ball is squeezed by the cam surface of the locking cam through the ball hole, and a part of the ball is placed in the locking groove of the lock seat, the door lock closing or unlocking operation often suffers from jamming, causing the door lock to not operate smoothly.

[0002] In view of the shortcomings of the existing technology, the purpose of this invention is to provide a handle lock. In order to achieve the above purpose, the invention provides the following technical solutions:

A handle lock includes an inner base and an outer base, and an inner handle and an outer handle are respectively rotatably provided on the inner base and the outer base, and the inner handle and the outer handle are linked through a square shaft; The inner handle is provided with an anti-locking drive assembly, and the outer handle is provided with an anti-locking assembly.

[0003] The anti-lock assembly includes an outer handle head connected to the outer handle, a lock plate and a linkage plate. The outer handle head is rotatably set in the rotation groove of the outer base. The lock plate is slidably set in the outer handle head. One end of the lock plate is provided with a locking part, and the other end is provided with a driving backrest.

[0004] The side wall of the rotation groove is provided with a locking groove that matches the locking part. One end of the linkage plate is connected to the anti-lock driving assembly, and the other end is inserted into the lock plate; the anti-lock driving assembly drives the linkage The plate rotates, and the linkage plate squeezes and drives the backrest to move the lock plate toward the locking groove, and the locking part passes through the insertion groove on the outer handle head and is placed in the locking groove.

[0005] The invention further provides that the driving backrest is in an arc shape.

[0006] The invention further provides that: one end of the linkage plate protrudes outward toward the lock plate and is provided with an extrusion part for extruding and driving the backrest, and the extrusion part is provided with an inclined guide surface.

[0007] The invention further provides that: the anti-locking driving assembly includes a rotating member rotatably arranged in the inner handle and an anti-locking button slidably arranged on the inner handle. One end of the rotating member is connected to the linkage plate, and the other end of the rotating member is connected to the linkage plate provided with threaded groove.

[0008] The anti-lock button is provided with a compression rod that matches the threaded groove, and the compression rod drives the rotating member to drive the linkage plate to rotate by compressing the threaded groove.

[0009] The invention further provides that: the inner handle connected to the inner handle is provided with a mounting bracket for installing the anti-lock button, and the mounting frame is provided with a sliding groove for the anti-lock button to slide.

[0010] The invention further provides that a button window is provided on the inner handle, and the pressing part of the anti-lock button passes through the button window.

[0011] The invention further provides that one end of the linkage plate passes through the lock plate and is connected to the lock core.

[0012] Beneficial effects of the invention: the inner handle of the handle lock is provided with an anti-lock driving assembly, and the outer handle is provided with an anti-lock assembly; wherein the anti-lock assembly includes an outer handle head connected to the outer handle, a lock plate and a linkage plate , the lock plate is slidably arranged inside the outer handle; when the door lock is reverse-locked, the reverse-lock driving assembly drives the linkage plate to rotate, and the linkage plate squeezes and drives the backrest to move the lock plate toward the locking groove, and the locking portion pass through the insertion slot of the outer handle and place it in the locking slot. During this process, the locking part of the lock plate can be accurately inserted into the locking slot under the push of the linkage plate, so that the outer

handle cannot rotate in the rotation slot of the outer base. The outer handle is firmly locked on the outer base, so that people outside the door cannot unlock the door lock by turning the outer handle, thereby realizing the reverse lock of the door lock; the reverse lock driving assembly drives the linkage plate to rotate in the reverse direction, and the linkage plate reverses The lock plate is driven to move, so that the lock part and the lock groove are separated, and the lock of the outer handle is released; the unlocking operation can be performed by turning the outer handle; the locking groove on the outer base of the lock plate cooperates to enable the reverse locking and unlocking operations of the door lock. Smoother and effectively avoids lagging.

Description of the drawings

[0013]

Figure 1 is a schematic structural diagram of a handle lock of the present invention;

Figure 2 is an internal structural diagram of the outer handle of a handle lock of the present invention;

Figure 3 is a schematic structural diagram of an anti-lock assembly of a handle lock according to the present invention;

Figure 4 is a coordination diagram of the lock plate and the linkage plate of a handle lock according to the present invention;

Figure 5 is a matching diagram of the lock plate and the outer base of a handle lock according to the present invention;

Figure 6 is a coordination diagram of the anti-lock driving assembly and the linkage plate of a handle lock according to the present invention;

Figure 7 is an installation diagram of the inner handle head of the anti-lock driving assembly of a handle lock according to the present invention;

Figure 8 - a steel ball is added internally to ensure a smoother switching experience.

[0014] Explanation of reference signs: 1. Inner base; 2. Outer base; 21. Rotating groove; 211. Locking groove; 3. Inner handle; 31. Inner handle head; 311. Mounting frame; 3111. Sliding groove; 32. Button Window; 4. External handle; 41. External handle head; 411. Through slot; 5. Anti-lock drive component; 51. Rotating part; 511. Threaded groove; 52. Anti-lock button; 521. Pressure lever; 522. Press 6. Anti-locking component; 61. Lock plate; 611. Locking part; 612. Drive backrest; 62. Linkage plate; 621. Extrusion part; 6211. Guide surface; 7. Lock cylinder. 8. steel ball

Description of the examples

[0015] A handle lock of the present invention will be further described in detail with reference to the accompanying drawings 1 to 7.

[0016] A handle lock, including an inner base 1 and an outer base 2. The inner base 1 and the outer base 2 are respectively provided with an inner handle 3 and an outer handle 4. The inner handle 3 and the outer handle 4 are rotated. Linkage is performed through a square shaft; the inner handle 3 is provided with an anti-lock driving assembly 5, and the outer handle 4 is provided with an anti-lock assembly 6; the anti-lock assembly 6 includes an outer handle head connected to the outer handle 4 41. Lock plate 61 and linkage plate 62. The outer handle head 41 is rotatably disposed in the rotation groove 21 of the outer base 2. The lock plate 61 is slidably disposed in the outer handle head 41. One end of the lock plate 61 is provided with The other end of the locking part 611 is provided with a driving backrest 612; the side wall of the rotation groove 21 is provided with a locking groove 211 that matches the locking part 611, and one end of the linkage plate 62 is connected to the anti-lock driving assembly 5 , the other end is inserted into the lock plate 61; when the door lock is reverse-locked, the anti-lock driving assembly 5 drives the linkage plate 62 to rotate, and the linkage plate 62 squeezes and drives the backrest 612 to move the lock plate 61 toward the locking groove 211 , the locking portion 611 passes through the insertion slot 411 of the outer handle head 41 and is placed in the locking slot 211. During this process, the locking portion 611 of the locking plate 61 can be accurately inserted into the locking slot 211 under the push of the linkage plate 62. , so that the outer handle cannot rotate in the rotation groove 21 of the outer base 2, and the outer handle is firmly locked on the outer base 2, so that people outside the door cannot unlock the door lock by turning the outer handle, and realize the reverse locking of the door lock; The anti-lock driving assembly 5 drives the linkage plate 62 to rotate in the opposite direction, and the linkage plate 62 drives the lock plate 61 to move in the opposite direction, so that the locking portion 611 is separated from the locking groove 211, and the outer handle is unlocked; the outer handle can be unlocked by rotating the outer handle. Operation; through the cooperation of the locking groove 211 on the outer base 2 of the lock plate 61, the locking and unlocking operations of the door lock are smoother, effectively avoiding jamming.

[0017] The driving backrest 612 is in an arc shape. One end of the linkage plate 62 protrudes outward toward the lock plate 61 and is provided with an extrusion part 621 for extruding the driving backrest 612. The extrusion part 621 is provided with an inclined Guide surface 6211; when the linkage plate 62 is rotated, the extrusion part 621 will squeeze the arc-shaped driving backrest 612

under the guidance of the guide surface 6211, so that the linkage plate 62 can better drive the lock plate 61, thereby the anti-lock driving assembly 5 can be operated more effortlessly to anti-lock and unlock the door lock.

[0018] The anti-lock driving assembly 5 includes a rotating member 51 that is rotatably installed in the inner handle 3 and an anti-lock button 52 that is slidably installed on the inner handle 3. One end of the rotating member 51 is connected to the linkage plate 62, and the other end is connected to the linkage plate 62. A threaded groove 511 is provided at one end; the anti-lock button 52 is provided with a pressing rod 521 that matches the threaded groove 511. The pressing rod 521 drives the rotating member 51 to drive the linkage plate 62 to rotate by pressing the threaded groove 511; through the precise cooperation of the pressing rod 521 and the threaded groove 511, the linkage plate 62 is driven, making the operation of the anti-lock button 52 more labour-saving and convenient.

[0019] The inner handle head 31 connected to the inner handle 3 is provided with a mounting bracket 311 for installing the anti-lock button 52. The mounting frame 311 is provided with a sliding groove 3111 for the anti-lock button 52 to slide; A button window 32 is provided, and the pressing part 522 of the anti-locking button 52 passes through the button window 32; when operating the anti-locking button 52, you only need to press or push up the pressing part 522 with your fingers, so that the anti-locking button 52 can be placed in the sliding groove 3111 It slides smoothly inside; the locking or unlocking operation of the door lock is simpler and labour-saving.

[0020] One end of the linkage plate 62 passes through the lock plate 61 and is connected to the lock cylinder 7, so that a person outside the door can insert a key into the lock cylinder 7 and drive the lock cylinder 7 to rotate, thereby driving the linkage plate 62 to rotate to achieve unlocking.

[0021] The above are only the preferred embodiments of the present invention. The protection scope of the present invention is not limited to the above-mentioned embodiments. All technical solutions falling under the idea of the present invention belong to the protection scope of the present invention. It should be pointed out that for those of ordinary skill in the art, several improvements and modifications may be made without departing from the principles of the present invention, and these improvements and modifications should also be regarded as the protection scope of the present invention.

[0022] The lock button 52 shown in Attachment Image 1 is located on the outside of the handle. If the lock button 52 is installed on the inside of the handle, it also falls within the scope of protection of this utility model.

Claims

1. A handle lock, including an inner base and an outer base, the inner base and the outer base are respectively provided with inner handles and outer handles for rotation, and the inner handles and the outer handles are linked through a square shaft;
   it is **characterized by**:

   the inner handle is provided with an anti-locking driving component, and the outer handle is provided with an anti-locking component; the anti-lock assembly includes an outer handle head connected to the outer handle, a lock plate and a linkage plate,
   the outer handle head is rotatably set in the rotation groove of the outer base, the lock plate is slidably set in the outer handle head,
   one end of the lock plate is provided with a locking part, and the other end is provided with a driving backrest; the side wall of the rotation groove is provided with a locking groove that matches the locking part,
   one end of the linkage plate is connected to the anti-lock driving assembly, and the other end is inserted into the lock plate; the anti-lock driving assembly drives the linkage the plate rotates, and the linkage plate squeezes and drives the backrest to move the lock plate toward the locking groove, and the locking part passes through the insertion groove on the outer handle head and is placed in the locking groove.

2. The handle lock according to the previous claim, **characterized in that** the driving backrest is in an arc shape.

3. The handle lock according to the previous claims, **characterized in that**: one end of the linkage plate protrudes outward toward the lock plate and is provided with an extrusion portion for extruding and driving the backrest, the upper part is provided with a guide surface inclined.

4. The handle lock according to the previous claims, **characterized in that**: the anti-lock driving assembly includes a rotating member rotatably provided in the inner handle and an anti-lock button slidably disposed in the inner handle, so one end of the rotating member is connected to the linkage plate, and the other end is provided with a threaded groove; the anti-lock button is provided with a compression rod that matches the threaded groove, and the compression rod drives the rotating member to drive the linkage plate to rotate by compressing the threaded groove.

5. The handle lock according to the previous claims, **characterized in that**: the inner handle is provided with a mounting frame for installing the anti-lock button, and the mounting frame is provided with a sliding mechanism for the anti-lock button with slid-

ing groove.

6. The handle lock according to the previous claims, **characterized in that**: a button window is provided on the inner handle, and the pressing part of the anti-locking button passes through the button window.

7. The handle lock according to the previous claims, **characterized in that** one end of the linkage plate passes through the lock plate and is connected to the lock core.

8. The handle lock according to the previous claims, **characterized in that** the 3 mm thick base with a step is added to ensure the handle fits securely onto the tightly screwed area of the base and to increase the load-bearing capacity of the two legs at the connection point between the base and the handle.

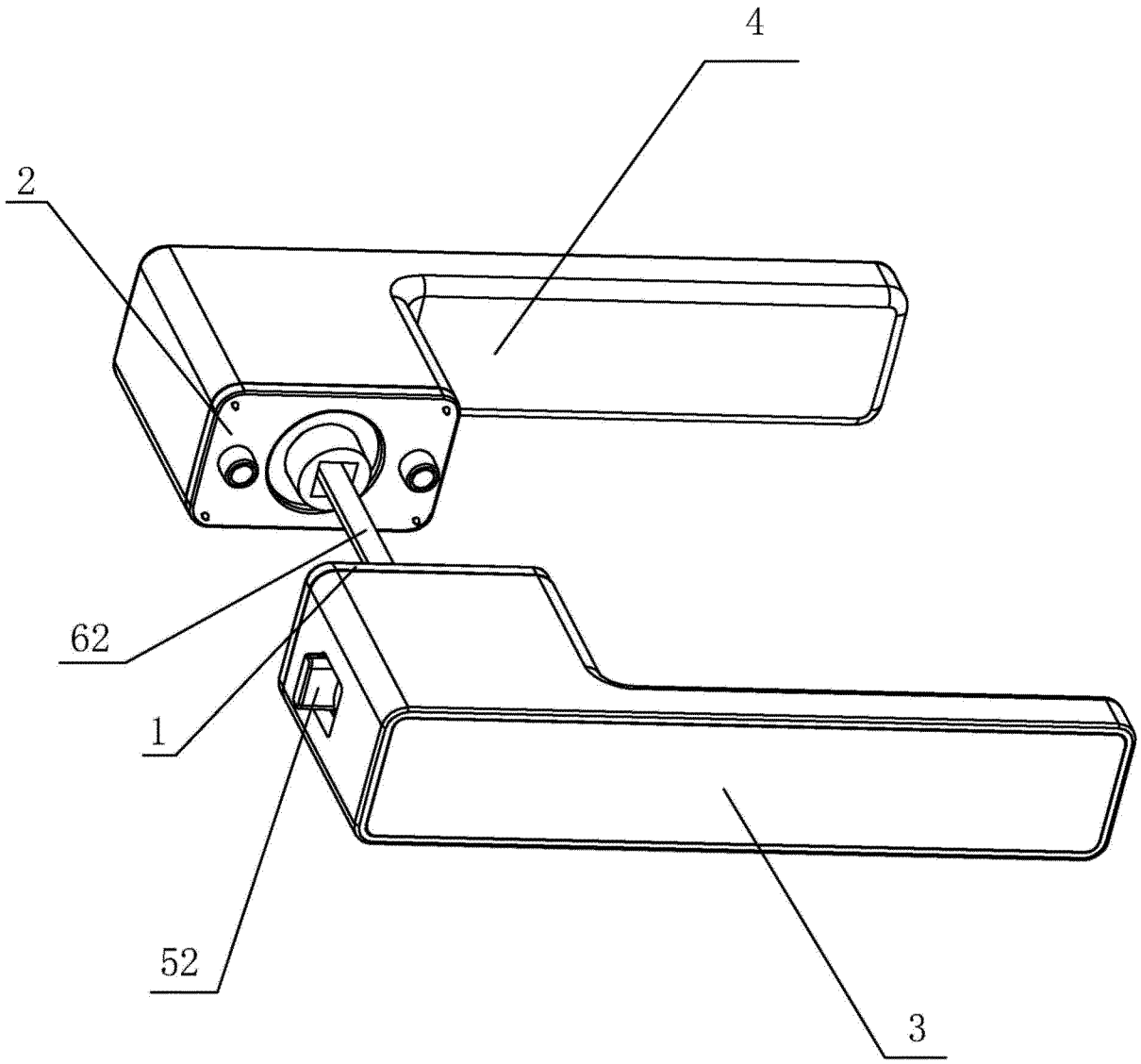

Fig. 1

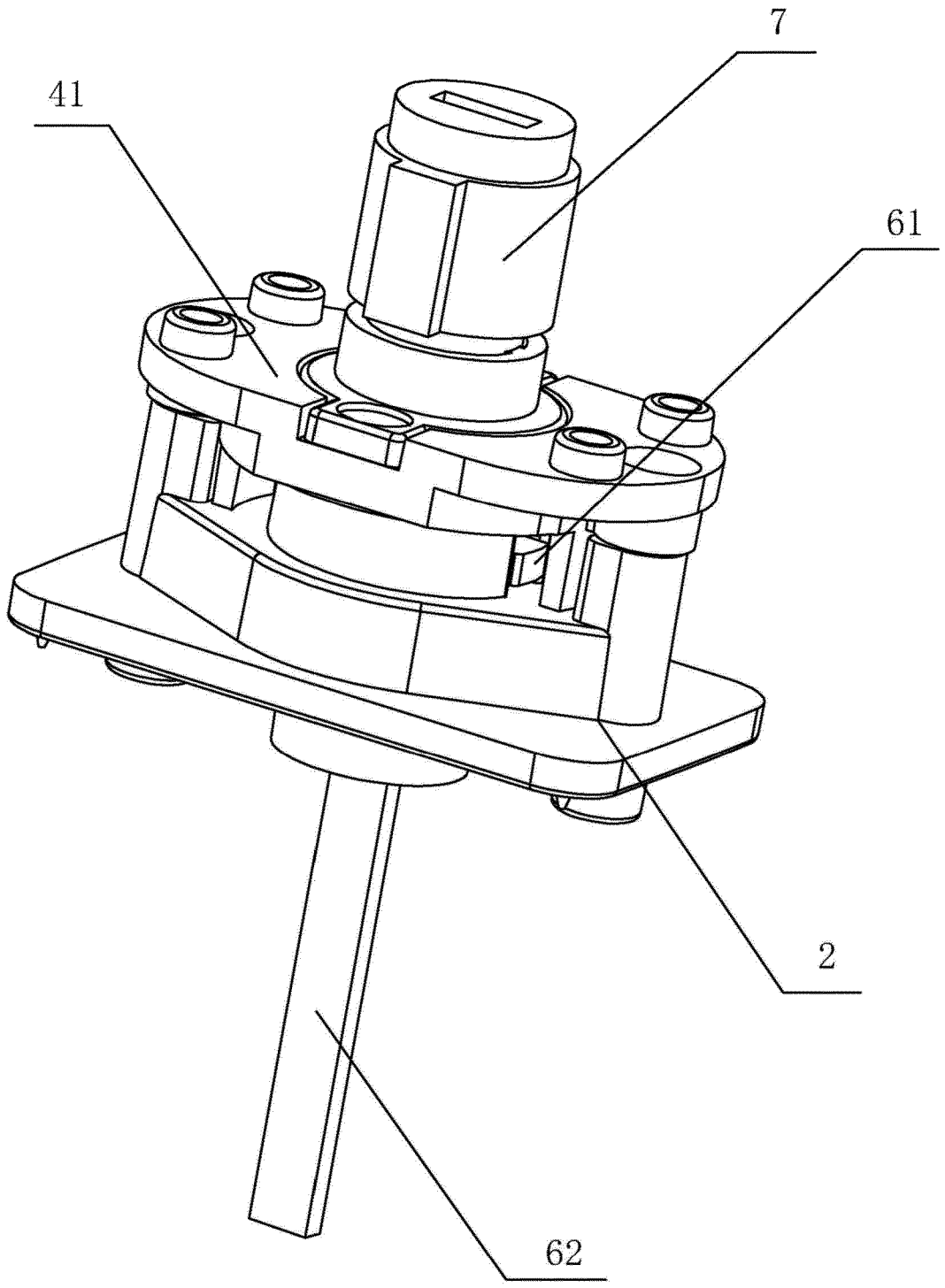

Fig. 2

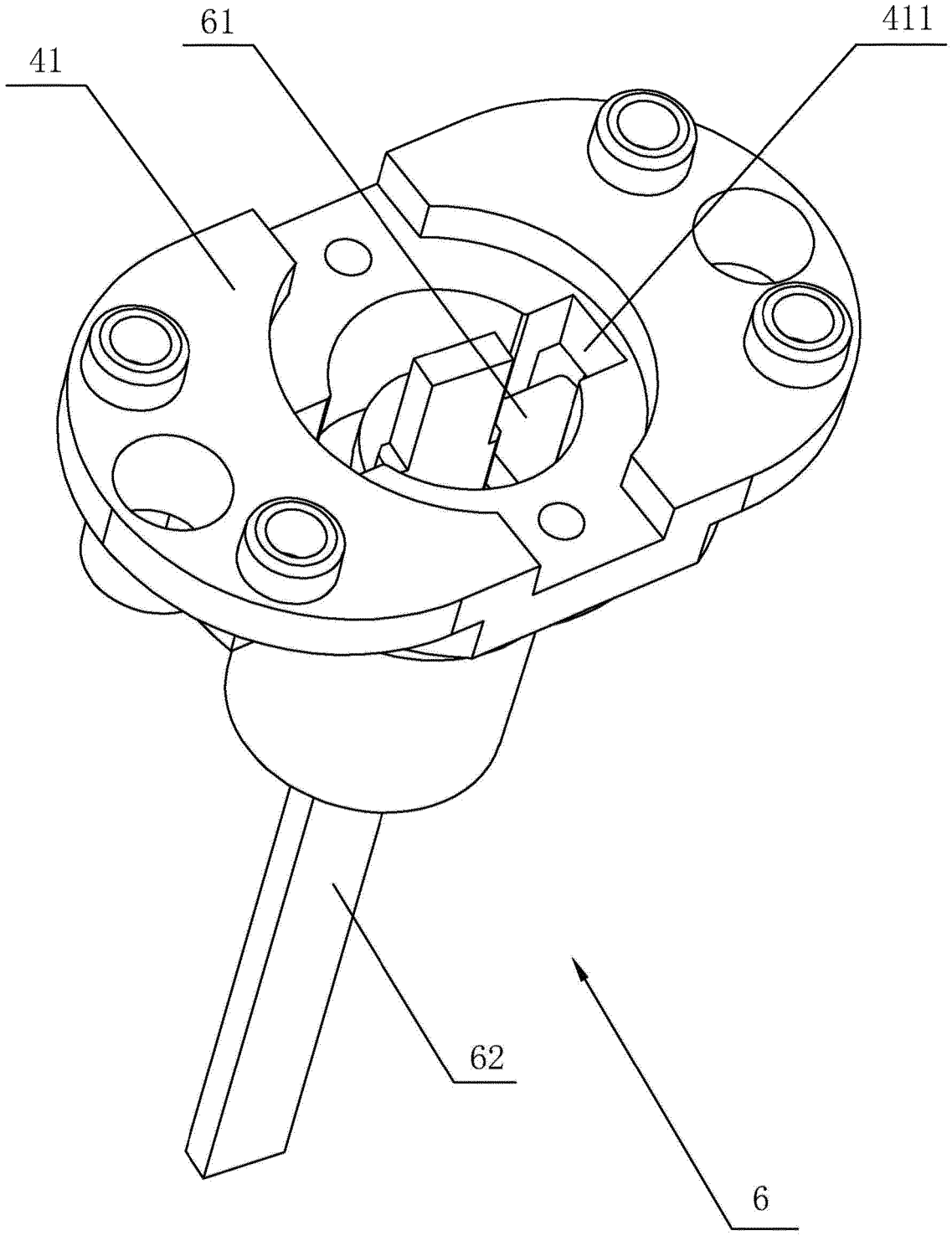

Fig. 3

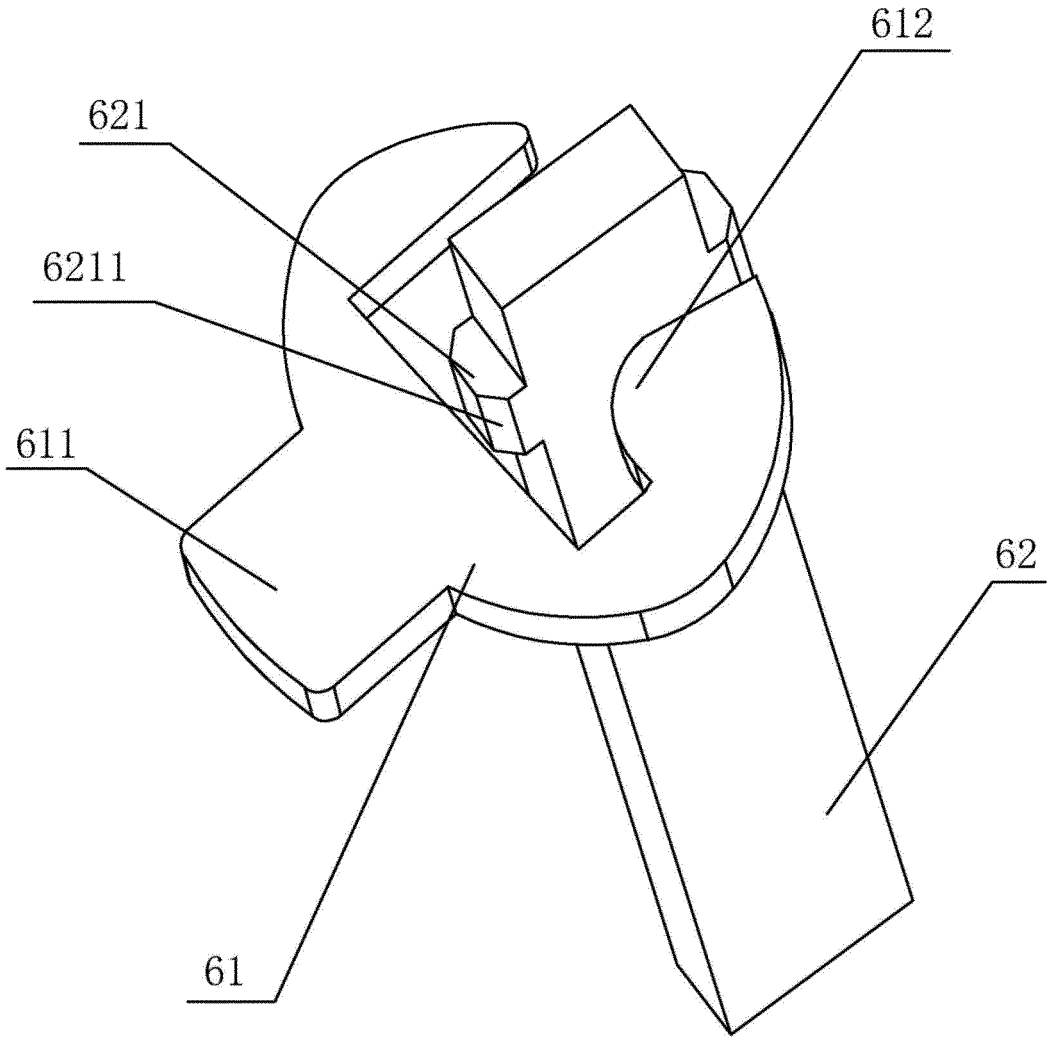

Fig. 4

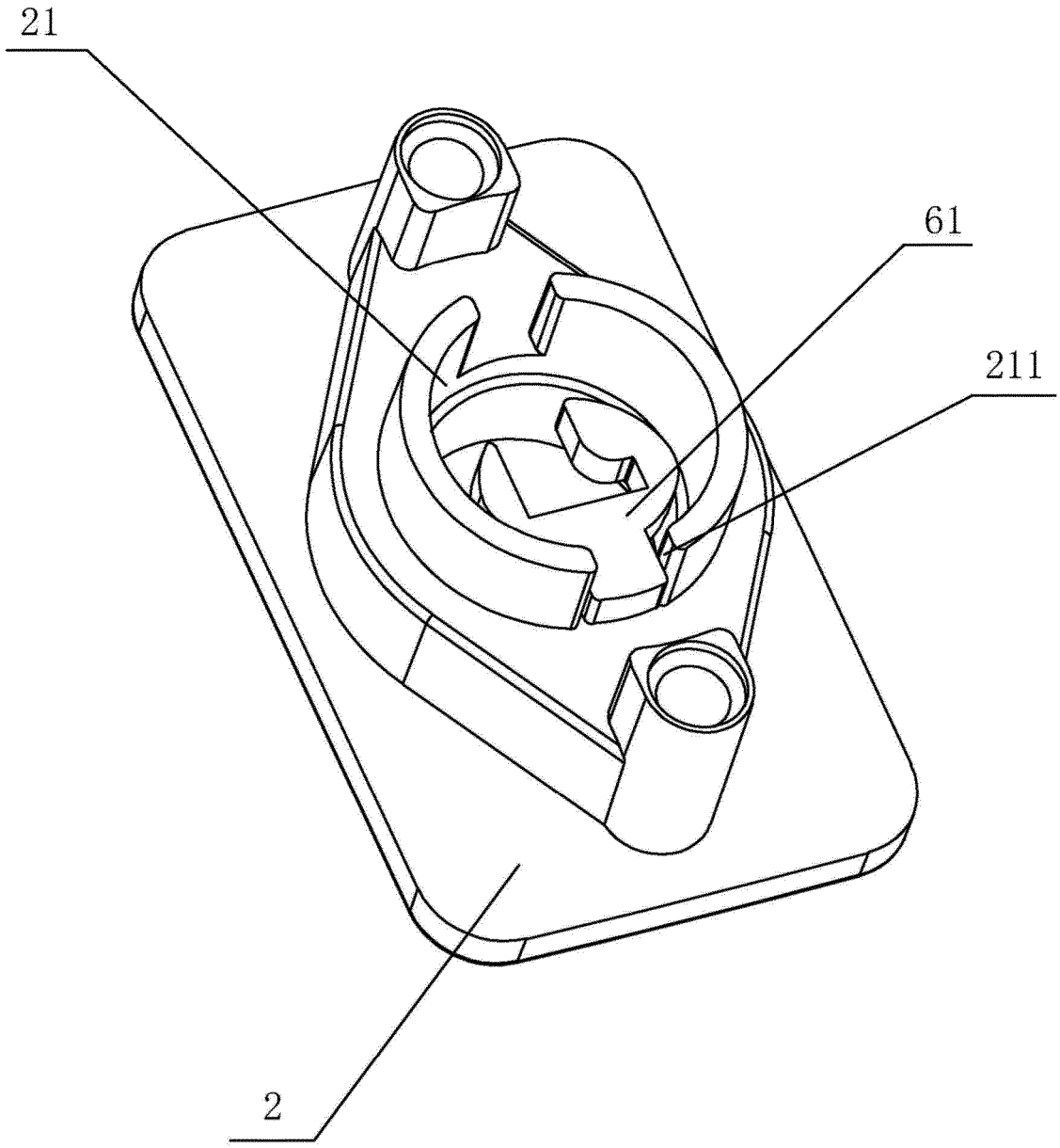

Fig. 5

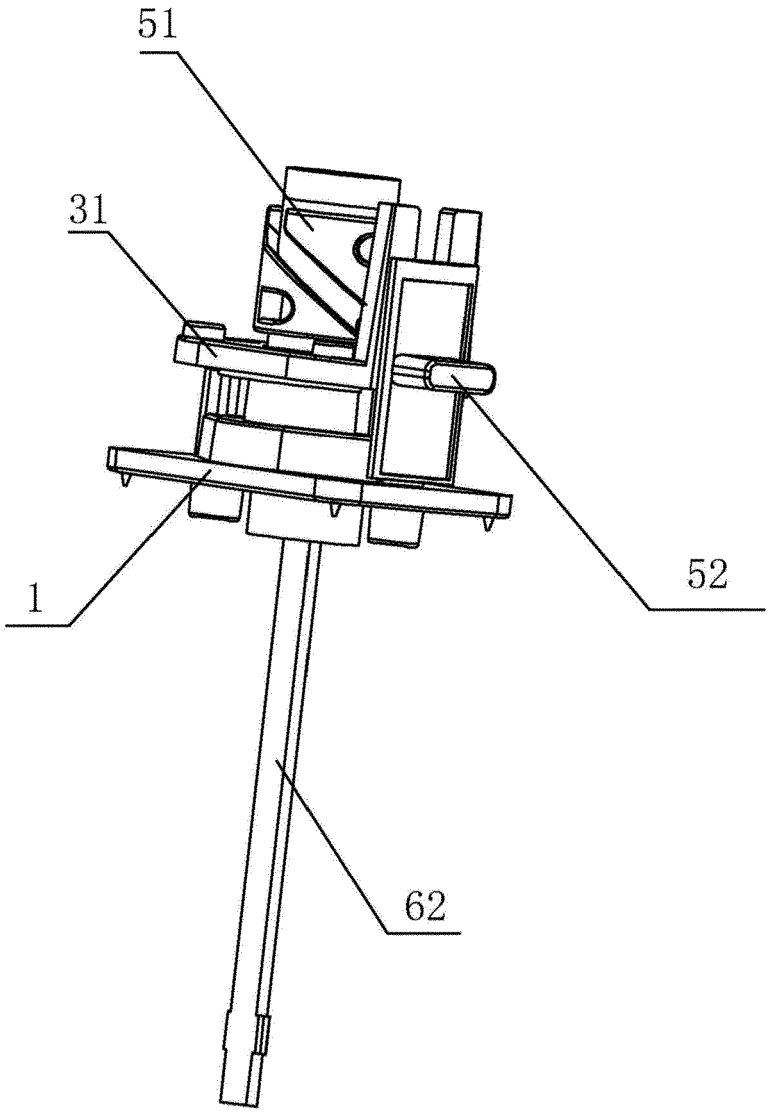

Fig. 6

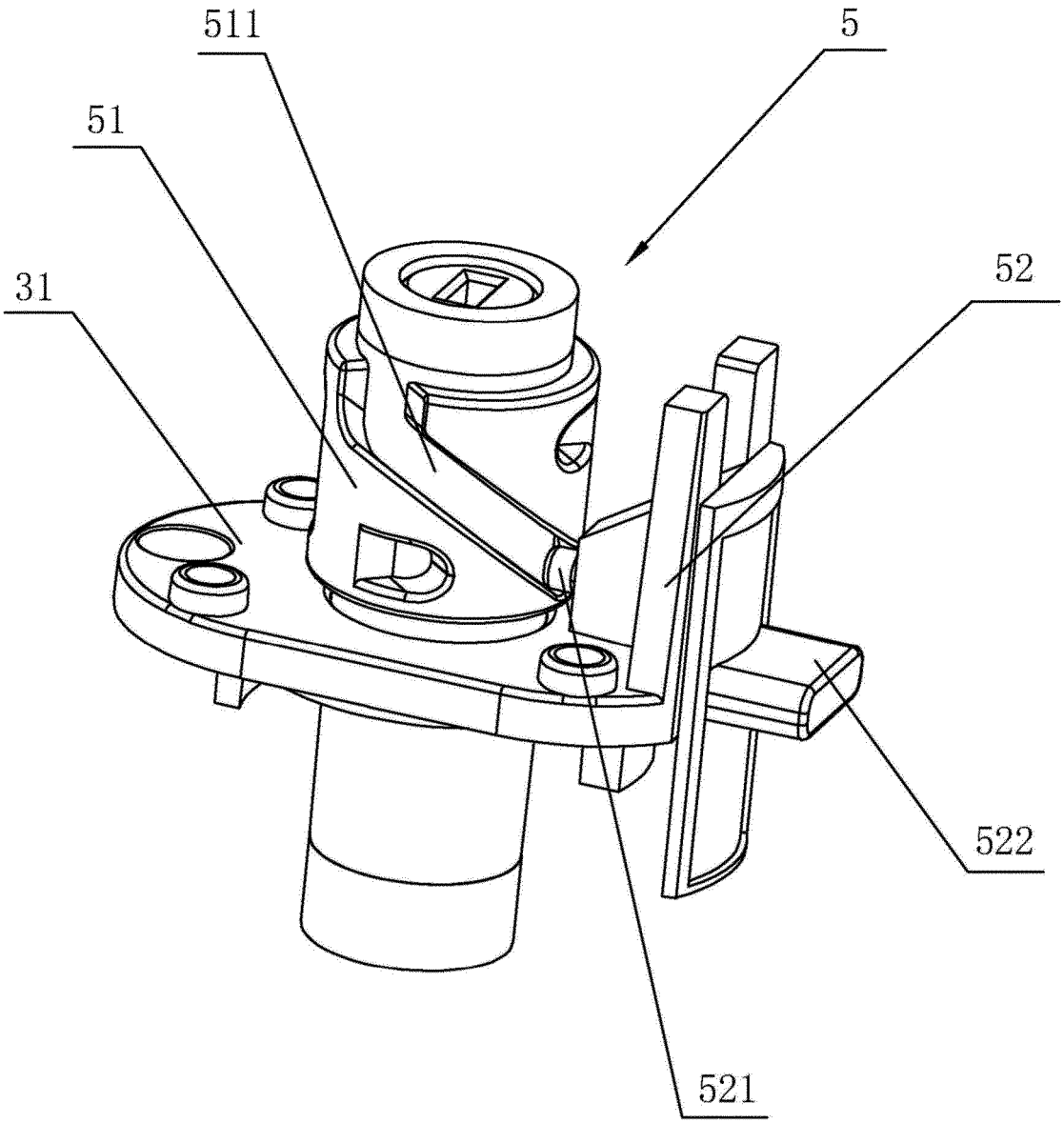

Fig. 7

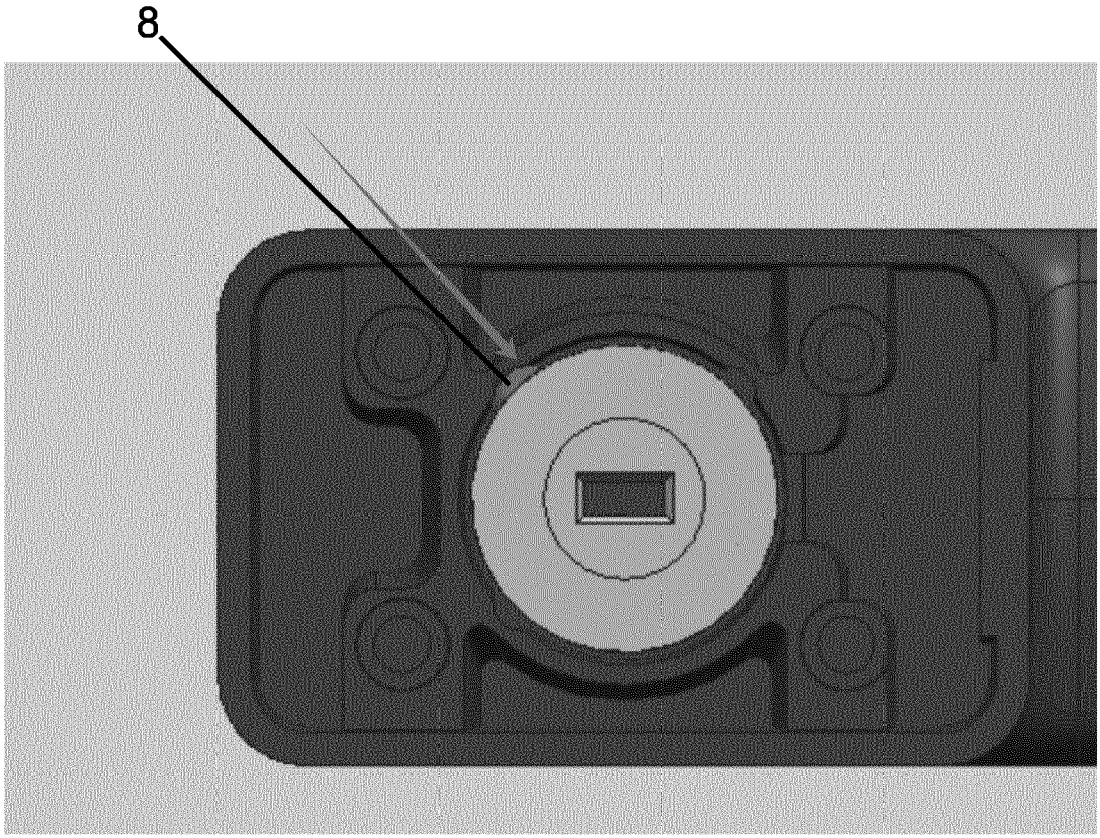

Fig. 8

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EUROPEAN SEARCH REPORT

Application Number
EP 24 19 1049

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 2007/051145 A1 (CHANG JING-CHEN [TW]) 8 March 2007 (2007-03-08)	1-3,7,8	INV. E05B13/00 E05B13/10
A	* paragraph [0020] - paragraph [0029] * * figures 2-6 *	4-6	
X	US 6 470 721 B2 (TAIWAN FU HSING IND CO LTD [TW]) 29 October 2002 (2002-10-29)	1-3,7,8	
A	* column 2, line 46 - column 4, line 52 * * figures 1-8 *	4-6	
X	US 6 543 265 B1 (FAN FANG-YI [TW]) 8 April 2003 (2003-04-08)	1-3,7,8	
A	* column 2, line 52 - column 7, line 4 * * figures 1-9B *	4-6	

TECHNICAL FIELDS SEARCHED (IPC)
E05B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	13 December 2024	Antonov, Ventseslav

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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13-12-2024

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2007051145 A1	08-03-2007	NONE	
US 6470721 B2	29-10-2002	NONE	
US 6543265 B1	08-04-2003	NONE	

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- CN 216110120 U **[0001]**