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(54) **C-SHAPED GROOVE EMBEDDED MOUNTING PIECE, DAMPING TOGGLE HAVING SAME, AND DAMPING TOGGLING SYSTEM**

(57) Disclosed in the present disclosure is a mounting member embedded in a C-shaped slot, including: a mechanism body, a width of the mechanism body being changeable; when the width of the mechanism body becomes smaller in its own width direction, the mechanism body enters the C-shaped slot from a slot opening of the C-shaped slot and is restricted within the C-shaped slot.

By changing the width of the mechanism body to mount it into the C-shaped slot from the slot opening of the C-shaped slot, this mounting method is simple to operate, which avoids repeated assembly and disassembly of the mechanism body, thereby reducing the mounting time and enhancing the mounting efficiency.

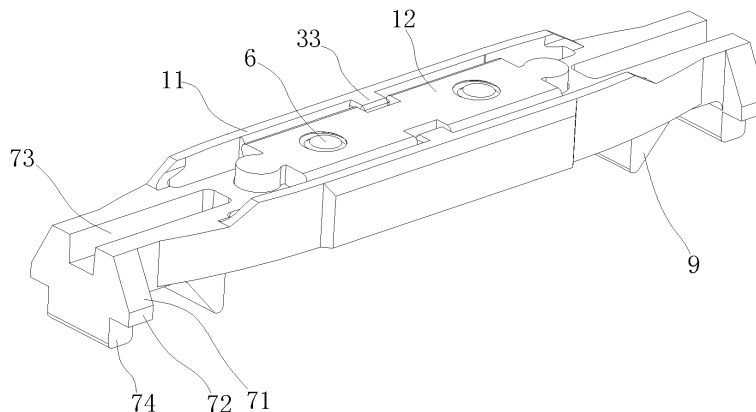


FIG. 2

EP 4 336 010 A1

Description

Technical Field

[0001] The present disclosure relates to the field of hardware accessories, particularly a mounting member embedded in a C-shaped slot, a damping toggle member having the same and a damping toggle system.

Background of the Invention

[0002] In the prior art, during the installation of the damping toggle member and other accessories, an accessory is required to be mounted and configured to a mounting slot with narrow space, in which the accessory is required to enter the mounting slot from the opening of two ends of the mounting slot.

[0003] However, by adopting such an operating method, the accessory is required to be mounted into the mounting slot before sealing the opening of two ends of the mounting slot. In addition, when the accessory is required to be repaired or replaced, the seal of the opening of two ends should be disassembled to proceed with the maintenance or replacement.

[0004] For example, in a sliding door damping system, the mounting slot mentioned above is provided in an upper door frame and the accessory mentioned above is a damping toggle member. During the installation, if the installer installs the left and right door frames on two sides of the upper door frame but forgot to install the damping toggle member, the mounting of the damping toggle member may not proceed subsequently. Reinstalling the damping toggle member is required to disassemble the left and right door frames, which is too costly, time-consuming and labor-intensive. In addition, when the existing damping toggle member is damaged, similarly, the new damping toggle member may only be replaced after disassembling the current door frame.

Summary of the Invention

[0005] In order to overcome at least one of the deficiencies of the prior art mentioned above, provided in the present disclosure is a mounting member embedded in a C-shaped slot.

[0006] The technical solutions adopted in the present disclosure to solve the problem are as follows.

[0007] A mechanism body, a width of the mechanism body being changeable; the mechanism body enters the C-shaped slot from a slot opening of the C-shaped slot and is restricted within the C-shaped slot.

[0008] Width-changeable mechanism body is adopted in the present disclosure so that the mechanism body is easy to install and is restricted within the C-shaped slot.

[0009] Further, the mechanism body includes a first assembly and a second assembly; the first assembly is an elastic element, and the second

assembly is embedded in the first assembly.

[0010] Thus, the first assembly works as a shape-changing body of the mechanism body, used for changing the width of the mechanism body; the second assembly works as a backbone of the mechanism body, used for maintaining the stability of the mechanism body and controlling the change in the shape of the first assembly.

[0011] Further, the first assembly is provided with a placing part, in which the placing part is provided with a first contact surface on two sides thereof, and the second assembly is provided with a second contact surface on two sides thereof; the second assembly is placed in the placing part by abutting the second contact surface to the first contact surface.

[0012] Thus, the second assembly is provided in the placing part of the first assembly, so that the entire structure of the second assembly is more compact after assembling with the first assembly, which effectively reduces the space occupation rate of the two components and simplifies the assembly.

[0013] Further, the first contact surface is a first inclined surface inclined from top to bottom towards a middle of the first assembly, and the second contact surface is a second inclined surface adapted to the first contact surface.

[0014] Thus, the second assembly moves downward under its weight and may abut not only a bottom surface of the placing part but also two sides of the placing part, so that the first assembly may abut not only a bottom surface of the C-shaped slot but also two sides of the C-shaped slot.

[0015] Further, a height of the second assembly is less than a depth of the placing part, so that a top surface of the second assembly is lower than a top surface of the first assembly when the second assembly is placed in the placing part.

[0016] Thus, the role that the top surface of the second assembly is lower than the top surface of the first assembly is that: there is space allowing the second assembly to move upward, and the second assembly is less likely to fall out of the placing part. Specifically, when squeezing two sides of the first assembly, the second assembly moves upward, which may increase the compression of the entire width of the compressed mounting member embedded in a C-shaped slot, thereby facilitating mounting the mounting member embedded in a C-shaped slot into the C-shape slot from the slot opening.

[0017] Further, the placing part is provided with at least two guiding slots, and the second assembly is provided with a guiding block matching the guiding slot; when the second assembly is mounted on the placing part, the guiding block is inserted into the guiding slot to guide the assembly of the second assembly.

[0018] Thus, when assembling the mounting member embedded in a C-shaped slot to the C-shaped slot or disassembling from the C-shaped slot, the second assembly moves in the placing part, in which the snap-in position of the guiding slot and the guiding block may

effectively prevent displacement of the second assembly.

[0019] Further, the placing part is provided with a blocking piece; when the second assembly is mounted on the placing part, the blocking piece is located above the second assembly to restrict a movement of the second assembly.

[0020] Specifically, the second assembly is provided with a blocking slot matched with the blocking piece, and the blocking piece is snap-fitted to the blocking slot to position the second assembly to the placing part.

[0021] Thus, the blocking piece may lock and restrict the position of the second assembly after the second assembly is fully mounted on the placing part, which effectively prevents the second assembly from detaching from the placing part and ensures the normal operation of the mounting member embedded in a C-shaped slot.

[0022] Further, the second assembly is provided with a threaded hole, in which a screw is screwed into the threaded hole; and the screw is rotated to form a spiral push against the second assembly, the screw being moved in a reverse direction relative to the second assembly to enable the second assembly to squeeze against the first assembly.

[0023] Thus, the first assembly is fixed in the C-shaped slot by the compression of a reverse spiral force of the screw, so that the second assembly presses the first assembly against an inner wall of the C-shaped slot, in which the screw mentioned above does not have to pass through the C-shaped slot, thus effectively avoiding damage to the C-shaped slot.

[0024] Further, the mounting member embedded in a C-shaped slot also includes two auxiliary parts, the two auxiliary parts are provided on two ends of the first assembly respectively;

an upper part of two ends of the auxiliary part is a guiding inclined-surface, while a lower part thereof is a positioning surface.

[0025] Thus, the upper part of two ends of the auxiliary part is the guiding inclined-surface, used for guiding the mounting member embedded in a C-shaped slot to enter the C-shaped slot from the slot opening. After finishing the mounting of the mounting member embedded in a C-shaped slot, the positioning surface of the auxiliary part may abut two sides of the slot opening, so as to preliminarily and simply position the mounting member embedded in a C-shaped slot.

[0026] Further, a middle of the auxiliary part is provided with an empty slot.

[0027] Thus, the empty slot is used to provide space to facilitate the compression of the first assembly.

[0028] Further, a bottom of the auxiliary part is provided with a protrusion.

[0029] Thus, the bottom of the auxiliary part is provided with the protrusion, in which the protrusion is used as a handle used for pushing the first assembly and the second assembly to move in the C-shaped slot.

[0030] Further, a bottom of the mechanism body is pro-

vided with an operating part, in which a width of the mechanism body is changed by operating the operating part.

[0031] Thus, the operating part may change the width of the mechanism body. Therefore, the operating part may adjust the mechanism body to any width and fix the mechanism body of that width.

[0032] Further, the mechanism body is provided with an elastic sheet, in which a side of the elastic sheet is an operating surface; the operating part is provided below the operating surface so that the operating part abuts the operating surface when the operating part moves upwards, so as to push the elastic sheet and drive the elastic sheet to move towards outside the mechanism body.

[0033] Thus, the elastic sheet is tensioned outward and eventually snap-fitted in the C-shaped slot by abutting the operating part to the elastic sheet.

[0034] Further, the mechanism body is provided with a pusher, in which the pusher is a worm or a rack board;

[0035] the worm is engaged with the operating part so that the worm is driven to move towards outside the mechanism body when the operating part rotates; or,

[0036] the rack board is engaged with the operating part so that the rack board is driven to move towards outside the mechanism body when the operating part rotates.

[0037] Thus, after mounting the mechanism body into the C-shaped slot, by transmission of engagement, the worm or the rack board is driven by the operating part respectively, and the worm or the rack board works on the mechanism body, and the mechanism body opens in the C-shaped slot, so as to achieve the installation of the C-shaped slot of the mechanism body.

[0038] A damping toggle member includes the mounting member embedded in a C-shaped slot and a toggle block, in which the toggle block is provided on a bottom of the mounting member embedded in a C-shaped slot.

[0039] Thus, the mounting member embedded in a C-shaped slot works as a mounting base of the toggle block of the damping toggle member to facilitate the installation of the toggle block.

[0040] A damping toggle system includes a damping toggle member and a sliding track for mounting damping pulleys, in which a top of the sliding track is provided with a C-shaped slot and the damping toggle member is mounted into the C-shaped slot and compressed against an interior wall of the C-shaped slot; the toggle block of the damping toggle member is extended downward from a slot opening of the C-shaped slot.

[0041] In summary, the mounting member embedded in a C-shaped slot provided in the present disclosure has technical effects as follows.

[0042] The width dimension of the mechanism body is changeable to enable the mechanism body to be mounted into the C-shaped slot through the slot opening. By extending and retracting to change the width of the mechanism body, this method is simple to operate, which avoids repeated assembly and disassembly of the mechanism body, thereby reducing the mounting time and en-

hancing the mounting efficiency. The damping toggle member includes a mounting member embedded in a C-shaped slot and a toggle block, in which the mounting member embedded in a C-shaped slot works as a mounting base of the toggle block of the damping toggle member to facilitate the installation of the toggle block. The damping toggle system includes a damping toggle member and a sliding track for mounting damping pulleys, in which a top of the sliding track is provided with a C-shaped slot and the mounting member embedded in a C-shaped slot may be quickly mounted into the C-shaped slot. The quick installation of the damping toggle member improves the overall mounting efficiency of the system.

Brief description of the Drawings

[0043]

Fig. 1 is a diagram of embodiment 1 in the present disclosure;

Fig. 2 is an assembling diagram of the first assembly and the second assembly of embodiment 2 in the present disclosure;

Fig. 3 is an exploded diagram of the first assembly and the second assembly of embodiment 1 in the present disclosure;

Fig. 4 is a diagram of the embodiment 2 in the present disclosure;

Fig. 5 is a diagram of the C-shaped slot of embodiment 2 in the present disclosure;

Fig. 6 is a diagram of embodiment 3 in the present disclosure;

Fig. 7 is another diagram of embodiment 3 in the present disclosure;

Fig. 8 is a further diagram of embodiment 3 in the present disclosure;

Fig. 9 is a diagram of embodiment 4 in the present disclosure;

Fig. 10 is the other diagram of embodiment 4 in the present disclosure;

Fig. 11 is a diagram of embodiment 5 in the present disclosure;

Fig. 12 is the other diagram of embodiment 5 in the present disclosure.

[0044] The meanings of the attached markings are as follows:

1 mechanism body; 11 first assembly; 12 second assembly; 2 C-shaped slot; 21 slot opening; 3 placing part; 31 first contact surface; 32 guiding slot; 33 blocking piece; 41 second contact surface; 42 guiding block; 43 blocking slot; 5 threaded hole; 6 screw; 7 auxiliary part; 71 guiding inclined-surface; 72 positioning surface; 73 empty slot; 74 protrusion; 8 sliding track; 9 toggle; 10 avoiding slot; 13 positioning slot; 14 operating part; 141 pushing rod; 142 abutting ring; 143 driving gear; 15 elastic sheet; 16 pusher.

Detailed Description of Embodiments

[0045] For better understanding and implementation, the technical solutions in the embodiments of the present disclosure are clearly and completely described below in conjunction with the attached drawings of the present disclosure.

[0046] In the description of the present disclosure, it is to be noted that the terms "up", "down", "front", "back", "left", "right", "vertical", "horizontal", "top", "bottom", "inside", "outside" and other orientation or position relationships are based on the orientation or position relationships shown in the attached drawings. It is only intended to facilitate description and simplify operation, but not to indicate or imply that the referred device or element has a specific orientation, or is constructed and operated in a specific orientation. Therefore, they should not be construed as a limitation of the present disclosure.

[0047] Unless otherwise defined, all terms including technical and scientific terms used herein have the same meaning as commonly understood by those skilled in the art to which the present disclosure belongs. The terms used herein in the specification of the present disclosure are used only to describe specific embodiments and are not intended as a limitation of the present disclosure.

Embodiment 1

[0048] Referring to Fig. 1, disclosed in the present disclosure is a mounting member embedded in a C-shaped slot. The mounting member embedded in a C-shaped slot includes:

a C-shaped slot 2, the C-shaped slot 2 being a hollow profile, a side of the C-shaped slot 2 being provided with a slot opening 21 in a length direction of the C-shaped slot 2;

a mechanism body 1, the mechanism body 1 being able to be extended or retracted in its width direction, and specifically, the mechanism body 1 includes a first assembly 11;

a width of the first assembly 11 is greater than a width of the slot opening 21, so as to mount the first assembly 11 into the C-shaped slot 2 from the slot opening 21. In the present embodiment, the first assembly 11 is an elastic element. The first assembly 11 is able to be compressed or rebound in its width direction. Therefore, when squeezing a middle of the first assembly 11, the width of the first assembly 11 is smaller than that of the slot opening 21, so that the first assembly 11 may be mounted into the C-shaped slot 2 or the first assembly 11 may be taken out from the C-shaped slot 2.

Embodiment 2

[0049] Referring to Fig. 2, Fig. 3 and Fig. 4, in order to fix the mounting member embedded in a C-shaped slot

into the C-shaped slot 2, on the basis of embodiment 1, the mechanism body 1 includes:

a second assembly 12, the second assembly 12 being a rigid element aiming that: the second assembly 12 is embedded in the first assembly 11 so as to support and fix the shape of the first assembly 11. Therefore, it is to be known that, the second assembly 12 may directly enter the C-shaped slot 2 from the slot opening 21, in which a width of the second assembly 12 is smaller than that of the slot opening 21.

[0050] The assembling process between the first assembly 11 and the second assembly 12 is as follows. A top of the first assembly 11 is provided with a placing part 3, specifically, the placing part being a bar slot. A bottom of the second assembly 12 is provided with steps protruding inward on both sides. After the second assembly 12 is mounted into the placing part 3, a bottom of the second assembly 12 abuts a top surface of the step.

[0051] Specifically, the placing part 3 is provided with a first contact surface 31 on two sides thereof, and the second assembly 12 is provided with a second contact surface 41 on two sides thereof; the second assembly 12 is placed in the placing part 3 by contacting the second contact surface 41 with the first contact surface 31.

[0052] Preferably, for positioning the installation of the second assembly 12 in the placing part 3, the placing part 3 is provided with at least two guiding slots 32. In the present embodiment, a number of the guiding slots 32 is two, and the two guiding slots 32 are provided on two ends of the placing part 3. Correspondingly, the second assembly 12 is provided with a guiding block 42 matching the guiding slot 32; when the second assembly 12 is mounted on the placing part 3, the guiding block 42 is inserted to the guiding slot 32.

[0053] Further, each side of the placing part 3 is provided at least one blocking piece 33 respectively. A top of the second assembly 12 is provided with a blocking slot 43 matching the blocking piece 33. When the second assembly 12 is mounted on the placing part 3, the blocking piece 43 is snap-fitted to the blocking slot 43. It is to be noted that, since the second assembly 12 is able to move upward and downward in the placing part 3, when mounting the blocking piece 33 to the placing part 3, there is a gap between a bottom surface of the blocking piece 33 and a bottom surface of the blocking slot 43.

[0054] Particularly, a height of the second assembly 12 is less than a depth of the placing part 3 so that a top surface of the second assembly 12 is lower than a top surface of the first assembly 11 when the second assembly 12 is placed in the placing part 3.

[0055] Further, after mounting the first assembly 11 into the C-shaped slot 2, the second assembly 12 is then mounted into the placing part 3. Therefore, it is clear that an external force is required to push the second assembly 12 into the placing part. In the present embodiment, since the internal space of the C-shaped slot 3 is relatively small, the second assembly 12 is pushed into the placing part 3 through the spiral force of the screw. Therefore,

the second assembly 12 is provided with, but is not limited to, two threaded holes 5.

[0056] The mounting process between the mounting member embedded in a C-shaped slot and the C-shaped slot 2 is as follows. The second assembly 12 is firstly mounted into the placing part 3, and then the screw 6 passes through a bottom of the placing part 3 to screw the screw 6 at least partially into the threaded hole 5. Squeezing two sides of the first assembly 11, so that the second assembly 12 slides to a top of the placing part 3; until a width of the first assembly 11 is smaller than that of the slot opening 21, the mounting member embedded in a C-shaped slot may be mounted into the C-shaped slot 2 through the slot opening 21. Particularly, since the positioning restriction of the blocking piece 33, when the second assembly 12 moves upward to a highest position, a bottom surface of the blocking slot 43 abuts a bottom surface of the blocking piece 33.

[0057] After the mounting member embedded in a C-shaped slot is completely placed into the C-shaped slot 2, the mounting member embedded in a C-shaped slot recovers and stretches to two sides by the first assembly's 11 own elasticity, so that the placing part 3 is re-extended and reopened. In such case, the second assembly 12 falls back into the placing part 3 by gravity and allows a bottom surface of the second assembly 12 to abut a top surface of the step at the bottom of the placing part 3. Then, the screw 6 is screwed into the C-shaped slot 2, and an end of the screw 6 passes through the second assembly 12 to abut to an inner wall of the C-shaped slot 2. Finally, the second assembly 12 moves towards a side of the C-shaped slot provided with the slot opening 21 by the reverse spiral force, so as to compress against the first assembly 11. Particularly, referring to Fig. 5, in order to prevent an end of the screw 6 abutted an inner wall of the C-shaped slot 2 from displacing, an inner wall opposite to the slot opening 21 is provided with a positioning slot 13. Therefore, an end of the screw 6 abuts the positioning slot 13.

[0058] On the basis of that, further, the first contact surface 31 is restricted as a first inclined surface from top to bottom toward a middle of the first assembly 11. Specifically, the two first contact surfaces 31 form a V-shaped structure with an upward opening. The second contact surface 41 is a second inclined surface matching the first contact surface 31. The objective of the restriction of the inclined surface mentioned above is as follows. According to the description mentioned above, when the screw 6 pushes the second contact surface 12 into the placing part 3, the second inclined surface squeezes the first inclined surface. Therefore, two sides of the first assembly 11 abut two inner walls of the C-shaped slot 2, so as to fix the mounting member embedded in a C-shaped slot to the C-shaped slot 2.

[0059] Preferably, the mounting member embedded in a C-shaped slot further includes two auxiliary parts 7, and the two auxiliary parts 7 are provided on two sides of the first assembly 11 respectively. An upper part of

two ends of the auxiliary part 7 is a guiding inclined-surface 71, while a lower part thereof is a positioning surface 72. A middle of the auxiliary part 7 is provided with an empty slot 73. A bottom of the auxiliary part 7 is provided with a protrusion 74.

[0060] Specifically, a distance between two positioning surfaces 72 is slightly greater than a width of the slot opening 21, and a position of the positioning surface 72 is lower than a position of a main part of the first assembly 11. Two guiding inclined surfaces 71 are inclined from the top of the two positioning surfaces 72 in a direction of contraction from bottom to top towards the middle of the auxiliary part 7 respectively. The protrusion 74 is provided on a bottom of the auxiliary part 7.

[0061] The role of auxiliary part 7 is as follows. When the mounting member embedded in a C-shaped slot is mounted into the C-shaped slot 2, the first assembly is compressed while the auxiliary part 7 is also compressed. In such a case, the empty slot 73 of the auxiliary part 7 is squeezed and closed. When a distance between two positioning surfaces 72 is smaller than a width of the slot opening 21, then the mounting member embedded in a C-shaped slot is mounted into the C-shaped slot 2. After that, loosening the compression on the auxiliary part 7, the two sides of the auxiliary part 7 abut the two sides of the slot opening 21 respectively, so as to preliminarily position the mounting member embedded in a C-shaped slot. Finally, the mounting member embedded in a C-shaped slot is fully fixed by screwing the screw 6. It is to be noted that, after mounting the mounting member embedded in a C-shaped slot, the protrusion 74 is located outside the C-shaped slot 2; the protrusion 74 works as an operating part that takes out the mounting member embedded in a C-shaped slot from the C-shaped slot 2 or that pushes the mounting member embedded in a C-shaped slot to move in the C-shaped slot 2.

Embodiment 3

[0062] The mounting member embedded in a C-shaped slot of embodiment 1 and embodiment 2 is applied to the damping toggle system. The damping toggle system also includes a sliding track 8 and a damping toggle member. Specifically, the damping toggle member includes a mounting member embedded in a C-shaped slot and a toggle 9. In the present embodiment, referring to Fig. 6, Fig. 7 and Fig. 8, the sliding track 8 exemplifies as an upper track. It is to be known that, a bottom of the sliding track is provided with an avoiding slot 10 used for installation and movement of a damping assembly, in which the avoiding slot 10 is provided in a length direction of the sliding track 8.

[0063] Specifically, the mounting member embedded in a C-shaped slot is mounted inside on a top wall. Specifically, the C-shaped slot 2 of the mounting member embedded in a C-shaped slot may be designed as an integral part with the sliding track 8. The C-shaped slot 2 is located right above the avoiding slot 10 of the sliding

track 8, in which the slot opening 21 is now located on a bottom of the C-shaped slot 2.

[0064] The toggle 9 is provided on a bottom of the auxiliary part 7, so the toggle 9 and the protrusion 74 are located outside the C-shaped slot 2, and then the toggle 9 and the protrusion 74 form a double-toggle structure. After the toggle is provided on the bottom of the auxiliary part 7, the mounting member embedded in a C-shaped slot is mounted into the C-shaped slot 2 based on the method mentioned above.

[0065] It is to be noted that, before the mounting member embedded in a C-shaped slot is fully fixed by the screw 6, if the position of the toggle 9 is required to be adjusted, the positioning surface 72 on two sides of the auxiliary part 7 may be pressed to temporarily release the positioning surface 72 from contacting the track so as to move the mounting assembly.

[0066] The damping assembly passes through the avoiding slot 10 and is located below the toggle 9. When the damping assembly moves along the avoiding slot 10, the damping assembly abuts the toggle 9 to trigger the damping mechanism.

Embodiment 4

[0067] In the present embodiment, the difference from embodiment 1 is the structure of the first assembly 11. Specifically, the first assembly 11 includes two terminals and two clamping blocks. Specifically, a width of the terminal is smaller than that of the slot opening 21, and the two terminals are connected to two ends of the two clamping blocks respectively, so as to form a closed-loop series connection of the four components. Particularly, an end of the clamping block is slidably connected to the terminal. Meanwhile, to ensure the reset of the clamping block, a reset spring is provided between an end of the clamping block and the terminal. An inner surface of the clamping block is provided with a first contact surface 31, and the placing part 3 is the position between the two first contact surface 31, in which the protrusion 74 is provided on the first contact surface 31.

[0068] Similarly, a width of the first assembly 11 of the present embodiment is adjusted as follows. Two clamping blocks are compressed in opposite directions, then the reset spring is compressed. When the overall width of the first assembly 11 is smaller than that of the slot opening 21, the first assembly 11 is able to pass through the slot opening 21 and be mounted into the C-shaped slot 2. After that, the two clamping blocks are pushed apart back-to-back by the elastic force of the reset spring, and eventually, the first assembly 11 is snap-fitted into the C-shaped slot 2.

Embodiment 5

[0069] In the present embodiment, referring to Fig. 9, the mounting member embedded in a C-shaped slot includes a mechanism body 1 and an operating part 14.

[0070] The mechanism body 1 includes a base and two elastic sheets 15. Two elastic sheets 15 are provided on two lateral edges of a top of the base at an opposite inclination. An inner surface of the elastic sheet 15 is an operating surface. A width of the base is slightly less than that of the slot opening 21 and the base is a rigid member. Particularly, a thickness of a top of the elastic sheet 15 is greater than that of a bottom thereof.

[0071] The operating part 14 includes a pushing rod 141 and an abutting ring 142, in which a top of the pushing rod 141 passes through the base and finally is located between the two elastic sheets 15. Preferably, the pushing rod 141 is screwed to the base and the abutting ring 142 is provided on the pushing rod 141 and located between the two elastic sheets 15.

[0072] Referring to Fig. 10, in the present embodiment, before the mounting member embedded in a C-shaped slot is mounted into the C-shaped slot 2, an overall width thereof is smaller than that of the slot opening 21. Therefore, the mounting process of the mounting member embedded in a C-shaped slot and the C-shaped slot 2 is as follows. A top of the mechanism body 1 passes through the slot opening 21 and enters the C-shaped slot 2. Then, the mechanism body 1 pushes the pushing rod 141 to move into the C-shaped slot 2. The abutting ring 142 abuts the operating surface of two elastic sheets 15 respectively, so that upper parts of the two elastic sheets 15 move in opposite directions and spread out. Finally, the upper parts of the two elastic sheets 15 abut and compress against an inner wall of the C-shaped slot 2. Then, the pushing rod 141 is rotated to spirally push the base, so that the pushing rod 141 and the base are moving oppositely, which ensures that the base and the pushing rod 141 are compressed against an upper wall and a lower wall of the C-shaped slot 2 respectively. Therefore, the mounting member embedded in a C-shaped slot is mounted into the C-shaped slot 2.

Embodiment 6

[0073] In the present embodiment, referring to Fig. 11, the mounting member embedded in a C-shaped slot includes a mechanism body 1, an operating part 14 and a pusher.

[0074] The pusher is provided in the mechanism body 1. Specifically, the mechanism body 1 includes a bottom base and an elastomer provided on the bottom base, in which a middle of the elastomer is provided with a mounting slot, and the pusher is provided on the bottom base and located in the mounting slot. Specifically, a width of the bottom base is smaller than a width of the slot opening 21 of the C-shaped slot 2.

[0075] The operating part 14 includes a rotating rod and a driving gear 143, in which the rotating rod is rotatably provided on the bottom base, and the driving gear 143 is provided on the rotating rod and located in the mounting slot. Preferably, the pusher is a worm. A number of the worms is two. Two worms are movably

provided in the mounting slot. Two worms are symmetrically engaged on two sides of the driving gear 143. Two worms driven by the driving gear 143 vertically abut two inner walls of the mounting slot.

[0076] In the present embodiment, referring to Fig. 12, before the mounting member embedded in a C-shaped slot is mounted into the C-shaped slot 2, the overall width thereof is smaller than that of the slot opening 21. Therefore, the mounting process of the mounting member embedded in a C-shaped slot and the C-shaped slot 2 is as follows. A top of the mechanism body 1 passes through the slot opening 21 and enters the C-shaped slot 2. Then the rotating rod is rotated to drive the two worms to move oppositely and finally push the two lateral walls of the mounting slot to spread out. Finally, the elastomer abuts and compresses against an inner wall of the C-shaped slot 2. Then the rotating rod is rotated to spirally push the mechanism body 1 so that the rotating rod and the mechanism body 1 are moving oppositely, which ensures that the mechanism body 1 and the rotating rod are compressed against an upper wall and a lower wall of the C-shaped slot 2 respectively. Therefore, the mounting member embedded in a C-shaped slot is mounted into the C-shaped slot 2.

[0077] In the other preferred embodiment, the worm may be substituted to a rack board. Similarly, two rack boards are symmetrically engaged on two sides of the driving gear 143. Two rack boards driven by the driving gear 143 vertically abut two inner walls of the mounting slot. Particularly, in order to increase the abutting area between the rack board and an inner wall of the mounting slot, an end of the rack board used for abutting an inner wall of the mounting slot is provided with an abutting board.

[0078] The technical means disclosed in the solution of the present disclosure are not limited to those disclosed in the embodiments mentioned above but also include technical solutions consisting of any combination of the above technical features. It should be noted that for those of ordinary skill in the art, a plurality of improvements and modifications may be made without departing from the principles of the present disclosure. These improvements and modifications are also considered to be within the scope of protection of the present disclosure.

Claims

1. A mounting member embedded in a C-shaped slot, comprising
 - a mechanism body (1), a width of the mechanism body (1) being changeable;
 - the mechanism body (1) enters the C-shaped slot (2) from a slot opening (21) of the C-shaped slot (2) and is restricted within the C-shaped slot (2).

2. The mounting member embedded in a C-shaped slot according to claim 1, wherein the mechanism body (1) comprises a first assembly (11) and a second assembly (12);
the first assembly (11) is an elastic element, and the second assembly (12) is embedded in the first assembly (11).
3. The mounting member embedded in a C-shaped slot according to claim 2, wherein the first assembly (11) is provided with a placing part (3), and the placing part (3) is provided with a first contact surface (31) on two sides thereof, and the second assembly (12) is provided with a second contact surface (41) on two sides thereof; the second assembly (12) is placed in the placing part (3) by contacting the second contact surface (41) with the first contact surface (31).
4. The mounting member embedded in a C-shaped slot according to claim 3, wherein the first contact surface (31) is a first inclined surface inclined from top to bottom towards a middle of the first assembly (11), and the second contact surface (41) is a second inclined surface adapted to the first contact surface (31).
5. The mounting member embedded in a C-shaped slot according to claim 4, wherein a height of the second assembly (12) is less than a depth of the placing part (3) so that a top surface of the second assembly (12) is lower than a top surface of the first assembly (11) when the second assembly (12) is placed in the placing part (3).
6. The mounting member embedded in a C-shaped slot according to claim 4, wherein the placing part (3) is provided with at least two guiding slots (32), and the second assembly (12) is provided with a guiding block (42) matching the guiding slot (32); when the second assembly (12) is mounted on the placing part (3), the guiding block (42) is inserted to the guiding slot (32) to guide the second assembly (12).
7. The mounting member embedded in a C-shaped slot according to claim 4, wherein the placing part (3) is provided with a blocking piece (33); when the second assembly (12) is mounted on the placing part (3), the blocking piece (33) is located above the second assembly (12) to restrict a movement of the second assembly (12).
8. The mounting member embedded in a C-shaped slot according to any one of claims 2-7, wherein the second assembly (12) is provided with a threaded hole (5), and a screw (6) is screwed into the threaded hole (5); and the screw (6) is rotated to form a spiral push against the second assembly (12), the screw (6) being moved in a reverse direction relative to the second assembly (12) to enable the second assembly (12) to squeeze against the first assembly (11).
9. The mounting member embedded in a C-shaped slot according to any one of claims 2-7, further comprising two auxiliary parts (7), the two auxiliary parts (7) are provided on two ends of the first assembly (11) respectively;
an upper part of two ends of the auxiliary part (7) is a guiding inclined-surface (71), while a lower part thereof is a positioning surface (72).
10. The mounting member embedded in a C-shaped slot according to claim 9, wherein a middle of the auxiliary part (7) is provided with an empty slot (73).
11. The mounting member embedded in a C-shaped slot according to claim 9, wherein a bottom of the auxiliary part (7) is provided with a protrusion (74).
12. The mounting member embedded in a C-shaped slot according to claim 1, wherein a bottom of the mechanism body (1) is provided with an operating part (14), wherein a width of the mechanism body (1) is changed by operating the operating part (14).
13. The mounting member embedded in a C-shaped slot according to claim 12, wherein the mechanism body (1) is provided with an elastic sheet (15), and a side of the elastic sheet (15) is an operating surface; the operating part (14) is provided below the operating surface, so that the operating part (14) abuts the operating surface when the operating part (14) moves upwards, so as to push the elastic sheet (15) and drive the elastic sheet (15) to move towards outside the mechanism body (1).
14. The mounting member embedded in a C-shaped slot according to claim 12, wherein the mechanism body (1) is provided with a pusher (16), and the pusher (16) is a worm or a rack board;
the worm is engaged with the operating part (14) so that the worm is driven to move towards outside the mechanism body (1) when the operating part (14) rotates; or,
the rack board is engaged with the operating part (14) so that the rack board is driven to move towards outside the mechanism body (1) when the operating part (14) rotates.
15. A damping toggle member, comprising a mounting member embedded in a C-shaped slot as claimed in any one of claims 1-14 and a toggle block (9), wherein the toggle block (9) is provided on a bottom of the mounting member embedded in a C-shaped slot.

16. A damping toggle system, comprising a damping toggle member as claimed in claim 15 and a sliding track (8) for mounting damping pulleys, wherein a top of the sliding track (8) is provided with a C-shaped slot (2) and the damping toggle member is mounted into the C-shaped slot (2) and compressed against an interior wall of the C-shaped slot (2); the toggle block (9) of the damping toggle member is extended downward from a slot opening (21) of the C-shaped slot (2).

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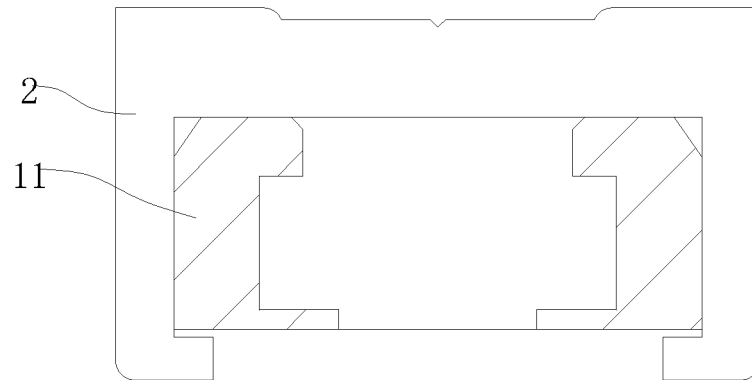


FIG. 1

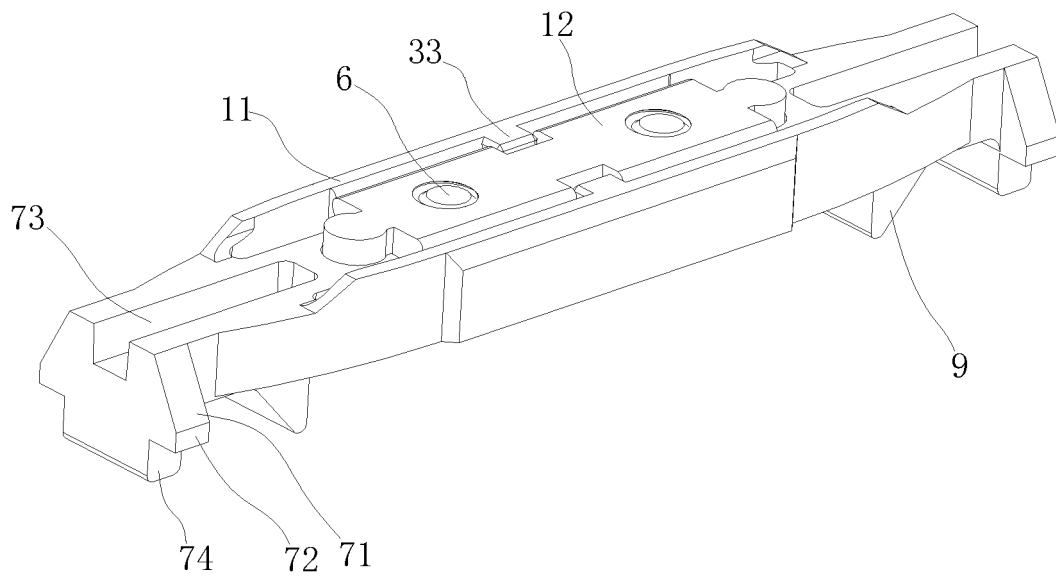


FIG. 2

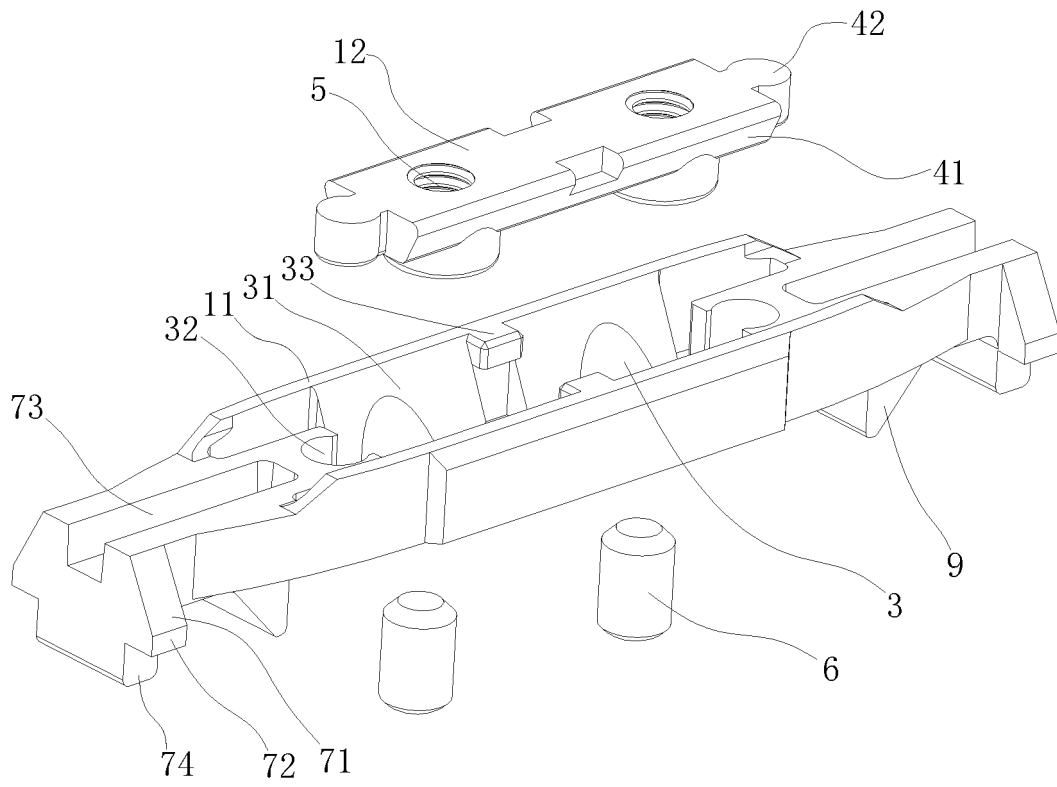


FIG. 3

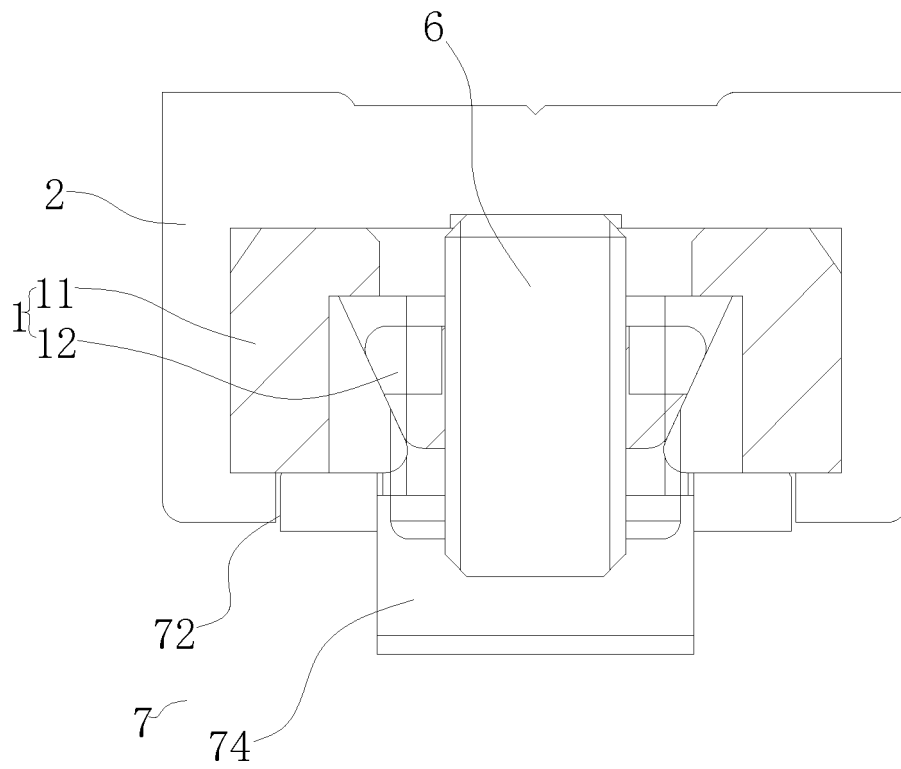


FIG. 4

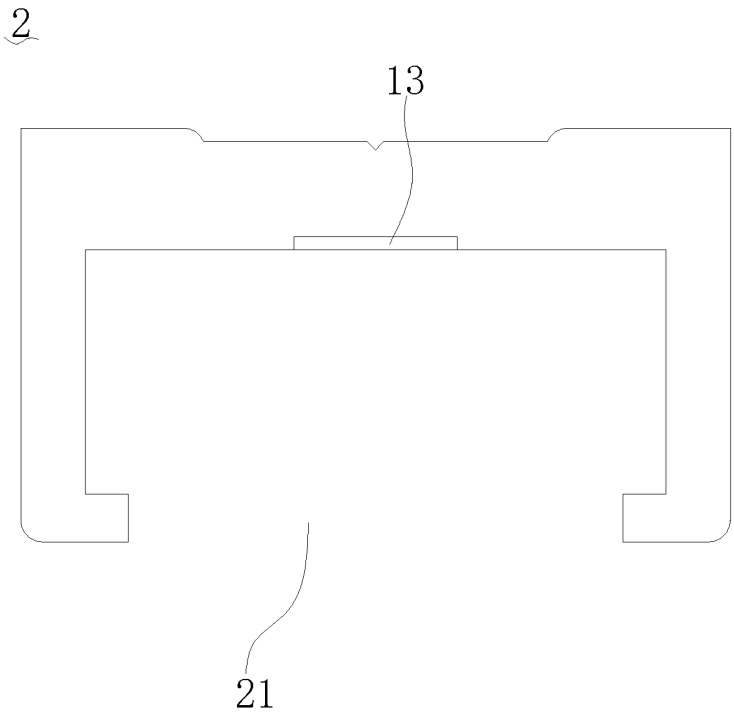


FIG. 5

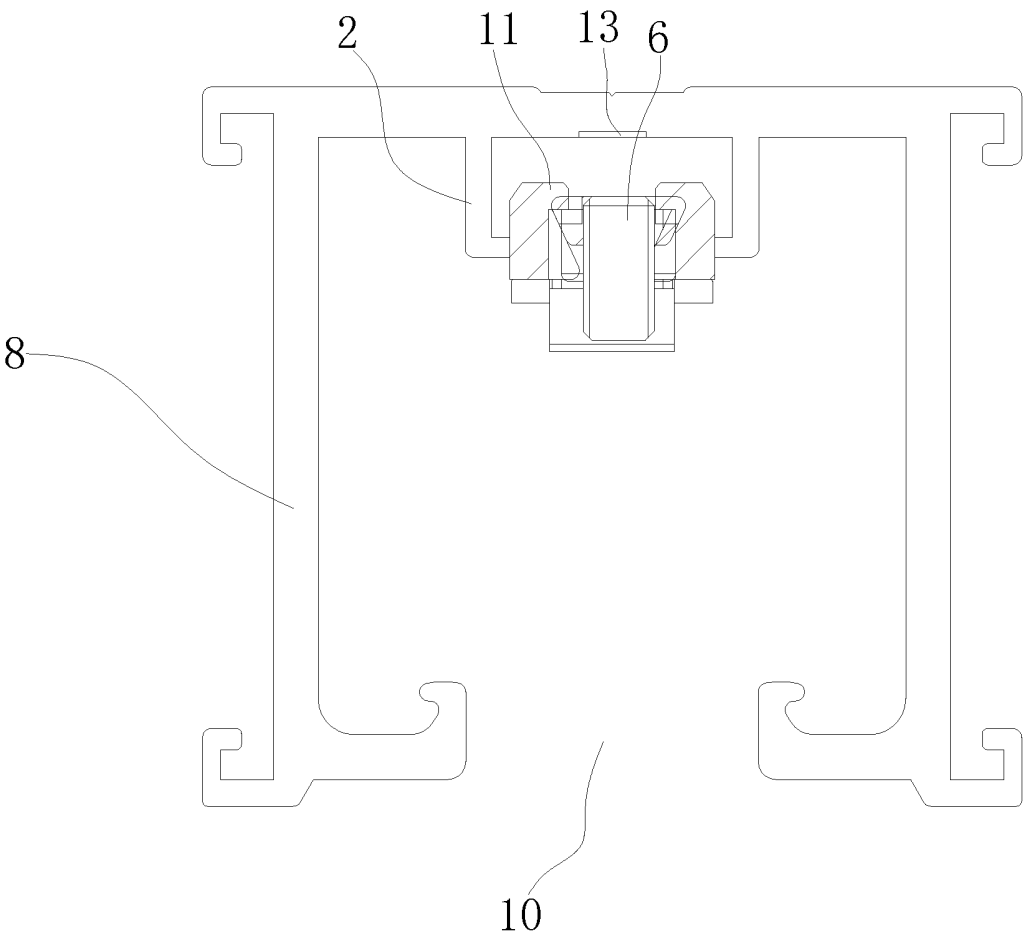


FIG. 6

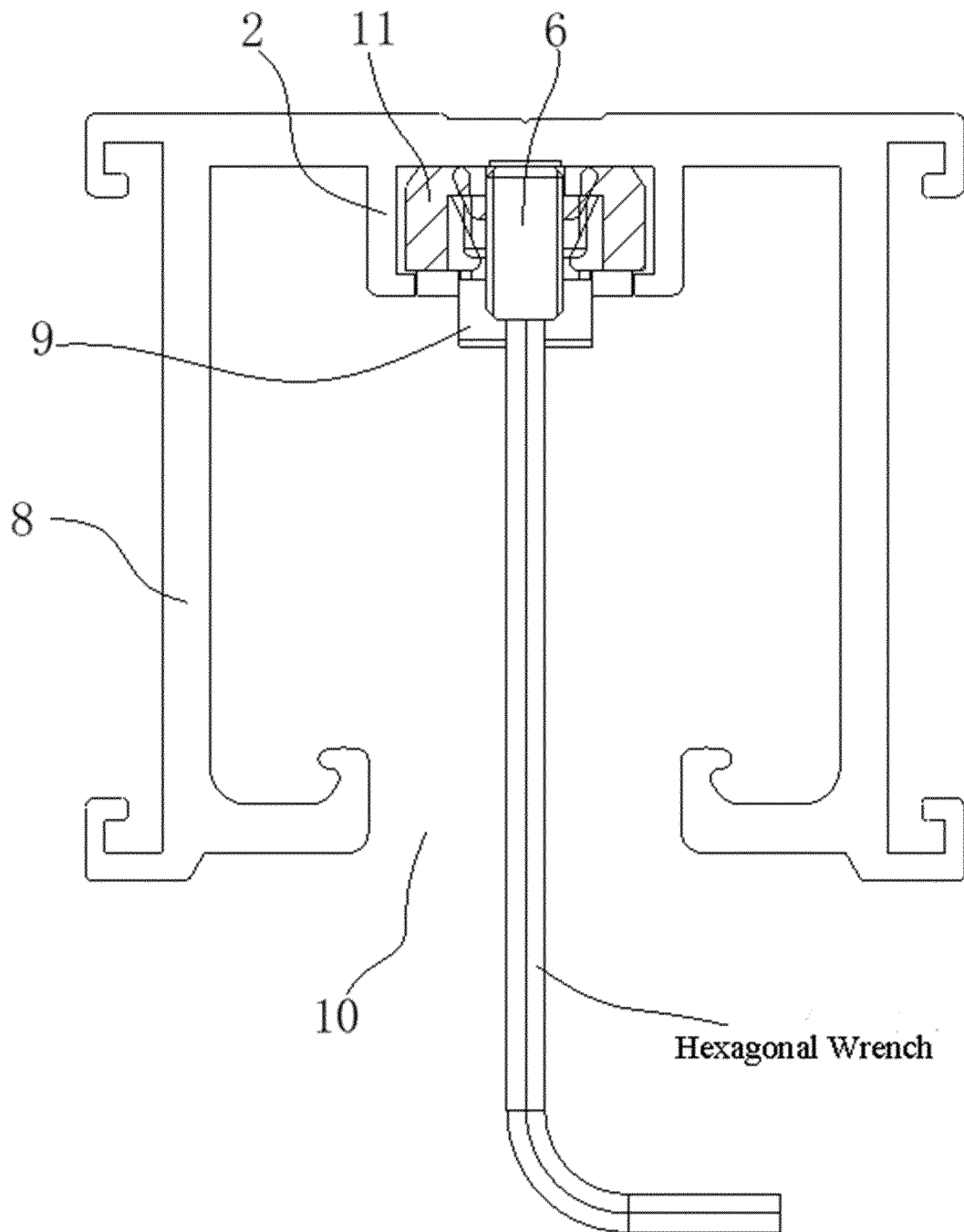


FIG. 7

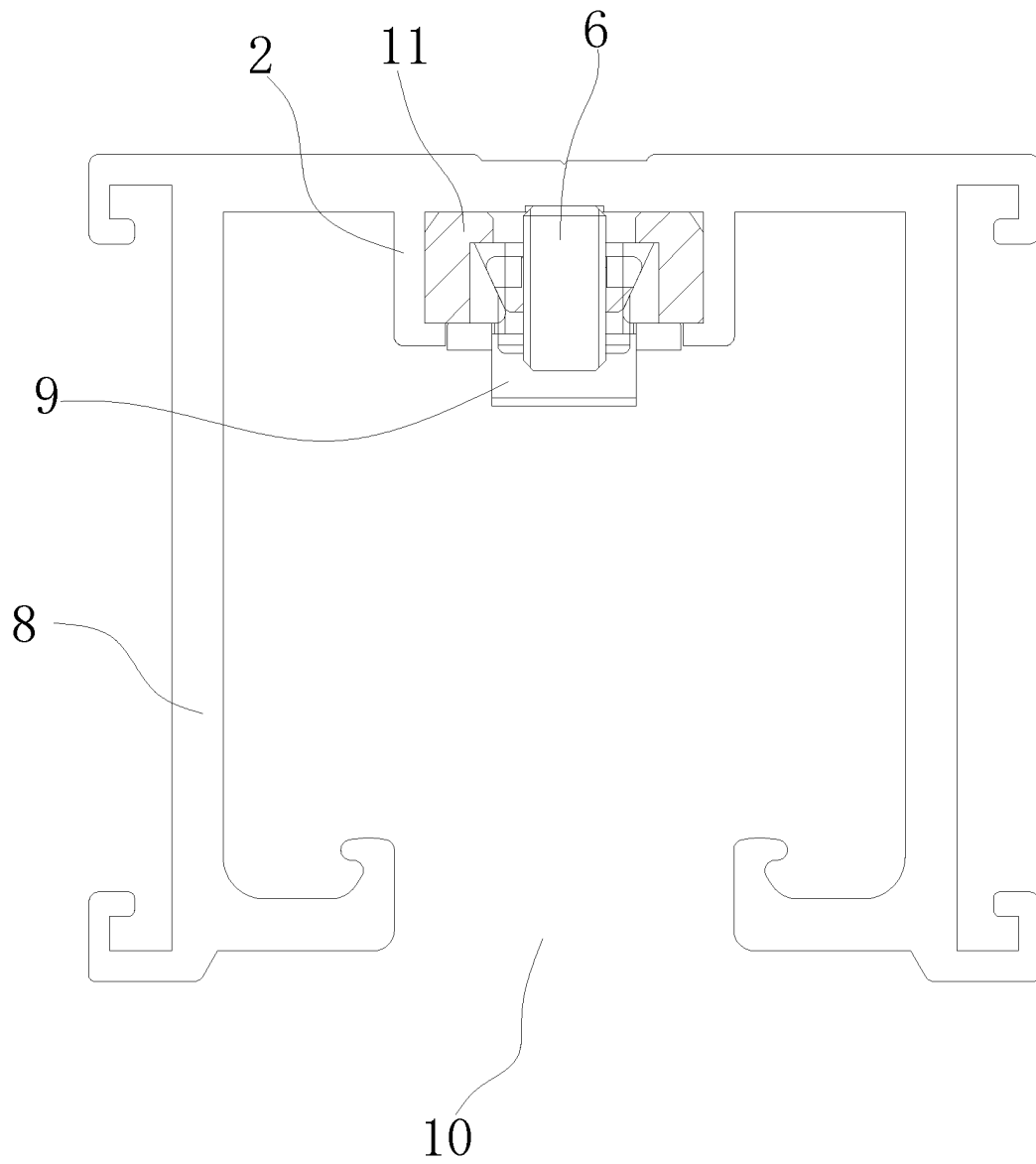


FIG. 8

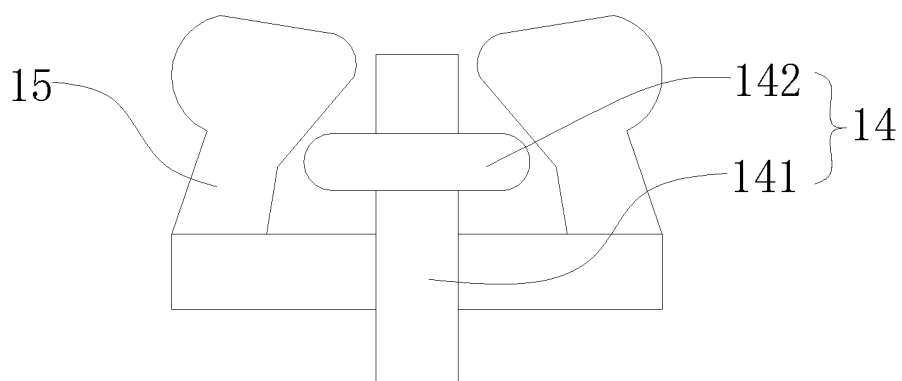


FIG. 9

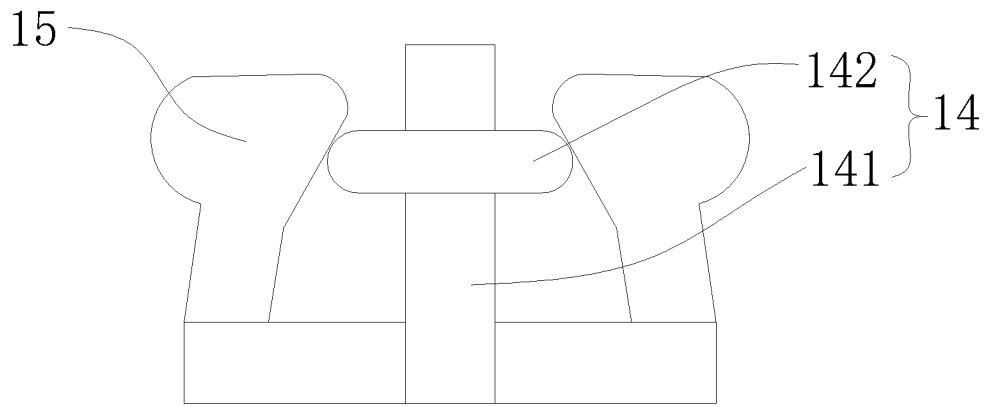


FIG. 10

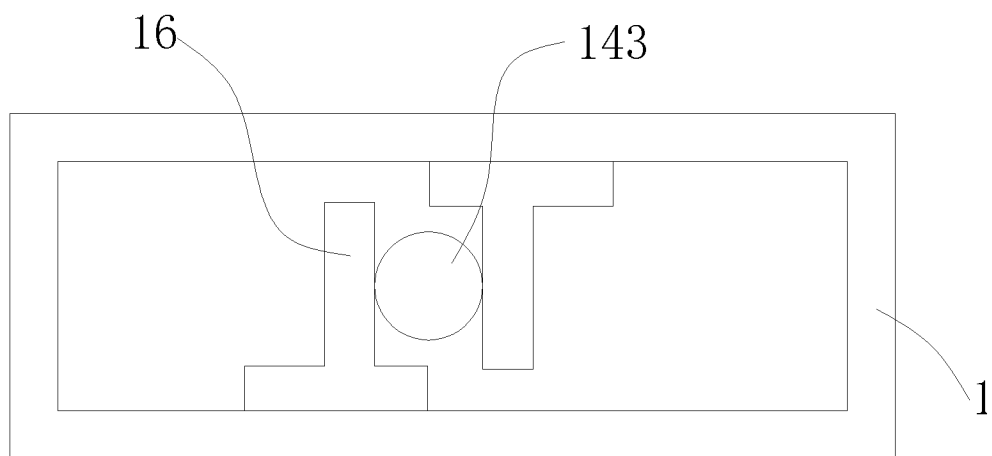


FIG. 11

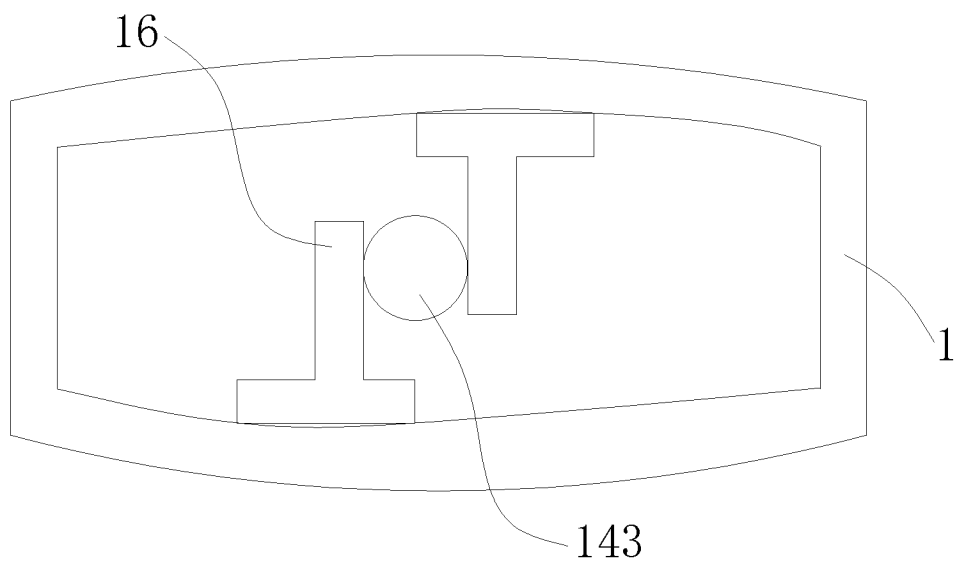


FIG. 12

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2022/142820

A. CLASSIFICATION OF SUBJECT MATTER E06B3/46(2006.01);E06B1/60(2006.01);E06B1/52(2006.01);E05D15/06(2006.01); According to International Patent Classification (IPC) or to both national classification and IPC																		
B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) E06B 3, E06B 1, E05D 15 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) CNTXT, CNKI, ENTXTC, VEN: 广东欧派克家居智能科技有限公司, 槽, C形槽, 凹槽, 嵌入, 插入, 卡紧, 挤紧, 弹性																		
C. DOCUMENTS CONSIDERED TO BE RELEVANT <table border="1"> <thead> <tr> <th>Category*</th> <th>Citation of document, with indication, where appropriate, of the relevant passages</th> <th>Relevant to claim No.</th> </tr> </thead> <tbody> <tr> <td>PX</td> <td>CN 115126388 A (GUANGDONG OPK SMART HOME TECHNOLOGY CO., LTD.) 30 September 2022 (2022-09-30) claims 1-16</td> <td>1-16</td> </tr> <tr> <td>PX</td> <td>CN 217950139 U (GUANGDONG OPK SMART HOME TECHNOLOGY CO., LTD.) 02 December 2022 (2022-12-02) claims 1-16</td> <td>1-16</td> </tr> <tr> <td>X</td> <td>CN 207449671 U (ZHENJIANG DAQO SECHERON TRACTION POWER CO., LTD.) 05 June 2018 (2018-06-05) description, paragraphs 23-24, and figures 1-2</td> <td>1</td> </tr> <tr> <td>A</td> <td>CN 108643746 A (FOSHAN NANHAI SONGGANG HAONENG HARDWARE PLASTIC CO., LTD.) 12 October 2018 (2018-10-12) entire document</td> <td>1-16</td> </tr> <tr> <td>A</td> <td>CN 204512086 U (CSR ZHUZHOU ELECTRIC LOCOMOTIVE CO., LTD.) 29 July 2015 (2015-07-29) entire document</td> <td>1-16</td> </tr> </tbody> </table>	Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	PX	CN 115126388 A (GUANGDONG OPK SMART HOME TECHNOLOGY CO., LTD.) 30 September 2022 (2022-09-30) claims 1-16	1-16	PX	CN 217950139 U (GUANGDONG OPK SMART HOME TECHNOLOGY CO., LTD.) 02 December 2022 (2022-12-02) claims 1-16	1-16	X	CN 207449671 U (ZHENJIANG DAQO SECHERON TRACTION POWER CO., LTD.) 05 June 2018 (2018-06-05) description, paragraphs 23-24, and figures 1-2	1	A	CN 108643746 A (FOSHAN NANHAI SONGGANG HAONENG HARDWARE PLASTIC CO., LTD.) 12 October 2018 (2018-10-12) entire document	1-16	A	CN 204512086 U (CSR ZHUZHOU ELECTRIC LOCOMOTIVE CO., LTD.) 29 July 2015 (2015-07-29) entire document	1-16
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A	CN 204512086 U (CSR ZHUZHOU ELECTRIC LOCOMOTIVE CO., LTD.) 29 July 2015 (2015-07-29) entire document	1-16																
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Date of the actual completion of the international search 27 March 2023	Date of mailing of the international search report 27 March 2023																	
Name and mailing address of the ISA/CN China National Intellectual Property Administration (ISA/CN) China No. 6, Xitucheng Road, Jimenqiao, Haidian District, Beijing 100088 Facsimile No. (86-10)62019451	Authorized officer Telephone No.																	

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2022/142820

C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	CN 208456355 U (FOSHAN NANHAI SONGGANG HAONENG HARDWARE PLASTIC CO., LTD.) 01 February 2019 (2019-02-01) entire document	1-16
A	WO 2018028653 A1 (ZHONGSHAN OPIKE HARDWARE PRODUCTS CO., LTD.) 15 February 2018 (2018-02-15) entire document	1-16

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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.

PCT/CN2022/142820

Patent document cited in search report	Publication date (day/month/year)	Patent family member(s)	Publication date (day/month/year)
CN 115126388 A	30 September 2022	None	
CN 217950139 U	02 December 2022	None	
CN 207449671 U	05 June 2018	None	
CN 108643746 A	12 October 2018	None	
CN 204512086 U	29 July 2015	None	
CN 208456355 U	01 February 2019	None	
WO 2018028653 A1	15 February 2018	None	

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