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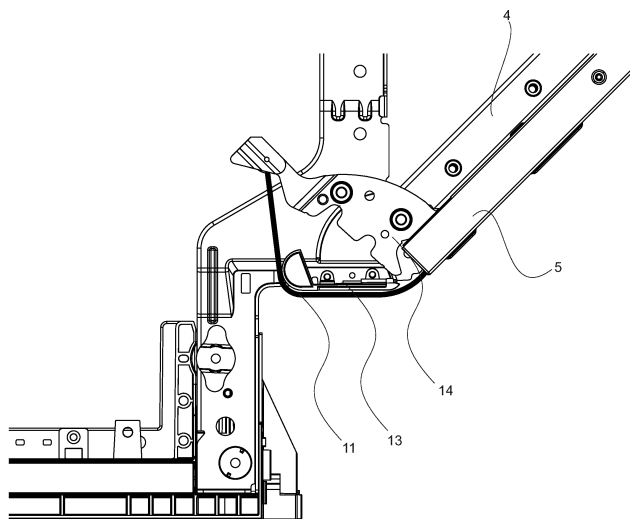
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(54) **A DISHWASHER COMPRISING A DECORATIVE PANEL**

(57) The present invention relates to a dishwasher (1) comprising a body (2); a washing tub (3) which is disposed in the body (2) and wherein the washing process is performed; a door (4) which enables the washing tub (3) to be isolated from the outer environment; a decorative panel (5) which is movably attached onto the door (4); at least one connection pin (6) which is provided on the surface of the decorative panel (5) attached onto the door (4); a housing (7) which is provided on the door (4) and wherein the connection pin (6) moves by sliding; a

connection bracket (8) whereon the decorative panel (5) is attached; a grouping member (12) which is provided on the door (4) and which has a moving member (9) whereon the connection bracket (8) is attached, a spring (10) and a rope (11); and an adjustment mechanism (13) which receives the rope (11) leaving the grouping member (12) after passing over the lower surface of the door (4) and which limits the movement distance of the decorative panel (5) on the door (4).

Figure 5



Description

[0001] The present invention relates to a dishwasher comprising a decorative panel

[0002] In dishwashers, the washing process is performed in the washing tub. The washing tub is isolated from the outer environment by means of a door. In the dishwasher, the door is opened by rotating on the horizontal axis such that the lower edge thereof remains fixed on the body. The door is perpendicular to the floor of the environment in the closed position, and parallel to the floor of the environment in the fully open position. Today, the use of built-in dishwashers is known. The built-in dishwashers are placed in the kitchen furniture and decorative panels compatible with the kitchen furniture are attached onto the door. Thus, the dishwasher is completely hidden in the kitchen and an aesthetic appearance is provided. The decorative panels attached onto the door are selected by the user and mounted on the dishwasher by service staff. The fact that the door is movable between the open position and the closed position makes it difficult to mount the decorative panel. The decorative panels extending to the floor are preferred such that the dishwasher can be completely hidden. Thus, there remains no gap between the dishwasher and the kitchen floor, and a complete kitchen cabinet appearance is provided. However, when the door is moving from the closed position to the open position, the lower part of the long decorative panel hits the dishwasher body and prevents the door from opening. Therefore, systems wherein the decorative panel slides on the door are developed. While the door is moving from the closed position to the open position, the decorative panel slides on the door and moves upwards. Thus, the dishwasher is completely hidden when the door is in the closed position, and the decorative panel slides upwards when shifting to the open position, allowing the door to be opened easily. However, the fact that the sizes and weights of the decorative panels used are different and the amount of sliding cannot be determined in advance makes the installation of the sliding door systems difficult.

[0003] In the state of the art United States Patent Application No. US5980006, a dishwasher is disclosed, comprising a mechanism which enables the weight of the door to be balanced.

[0004] The aim of the present invention is the realization of a dishwasher which provides ease of assembly and use.

[0005] The dishwasher realized in order to attain the aim of the present invention, explicated in the first claim and the respective claims thereof, comprises a body, a washing tub which is disposed in the body, and a door which enables the washing tub to be isolated from the outer environment. A decorative panel is movably attached onto the door. At least one pin is provided on the surface of the decorative panel attached onto the door and a housing is provided on the door wherein the pin is fitted. A connection bracket is provided on the surface of

the decorative panel attached onto the door. By means of a grouping member which is disposed on the door and which has a moving member whereon the connection bracket is attached, a spring and a rope, the decorative panel is enabled to move by sliding on the door.

[0006] The dishwasher of the present invention comprises an adjustment mechanism which receives the rope leaving the grouping element and passing under the door. By means of the adjustment mechanism, the distance that the decorative panel can move on the door can be adjusted.

[0007] In an embodiment of the present invention, the dishwasher comprises a hinge arm which enables the door to move on the body by rotating and an adjustment mechanism which is attached onto the hinge arm. The adjustment mechanism comprises a fixing piece and a holding piece. The holding piece is movably attached onto the fixing piece by means of the adjustment member.

[0008] In an embodiment of the present invention, the dishwasher comprises at least one channel which is provided on the fixing piece and wherein the part of the holding piece extending over the fixing piece slides.

[0009] In an embodiment of the present invention, the dishwasher comprises a movement transmission member which is provided on the holding piece and an opening which receives the adjustment member and which is provided on the fixing piece. The adjustment member passes through the movement transmission member, enabling the movement transmission member to move across the opening. Thus, the holding piece is enabled to move.

[0010] In an embodiment of the present invention, the dishwasher comprises the adjustment mechanism which changes in length by means of the movement of the holding piece when the adjustment member is moved. Thus, the pulling amount of the rope attached onto the decorative panel changes and the movement distance of the decorative panel on the door is determined.

[0011] In an embodiment of the present invention, the dishwasher comprises the adjustment mechanism which reduces the sliding distance of the decorative panel on the door when the length of the adjustment mechanism is extended, and which increases the sliding distance of the decorative panel on the door when the length thereof is shortened.

[0012] In an embodiment of the present invention, the dishwasher comprises the adjustment member in the form of a screw and the movement transmission member which has an inner surface compatible with the adjustment member. By means of the screw form, the adjustment member is rotated clockwise or counterclockwise such that the holding piece approaches or moves away from the fixing piece. Thus, the length of the adjustment member changes.

[0013] In an embodiment of the present invention, the dishwasher comprises the adjustment member in the form of a pin and the movement transmission member having a plurality of level claws thereon and at least one

recess on the inner surface thereof so as to align with the level claws. By means of the movement of the adjustment member, the level claws fit into the recesses such that the holding piece is moved.

[0014] In an embodiment of the present invention, the dishwasher comprises the holding piece which has a U form on the outer surface thereof.

[0015] By means of the present invention, a dishwasher is realized, comprising an adjustment mechanism which facilitates the mounting of decorative panels with different weights and sizes on the door.

[0016] A dishwasher realized in order to attain the aim of the present invention is illustrated in the attached figures, where:

Figure 1 - is the perspective view of the dishwasher.

Figure 2 - is the rear view of the door.

Figure 3 - is the perspective view of the grouping member.

Figure 4 - is the sideways view of the door, the adjustment mechanism and the hinge arm when the door is closed.

Figure 5 - is the sideways view of the door, the adjustment mechanism and the hinge arm when the door is open.

Figure 6 - is the perspective view of the adjustment mechanism.

[0017] The elements illustrated in the figures are numbered as follows:

- 1- Dishwasher
- 2- Body
- 3- Washing tub
- 4- Door
- 5- Decorative panel
- 6- Connection pin
- 7- Housing
- 8- Connection bracket
- 9- Moving member
- 10- Spring
- 11- Rope

12- Grouping member

13- Adjustment mechanism

14- Hinge arm

15- Fixing piece

16- Adjustment member

17- Holding piece

18- Channel

19- Movement transmission member

20- Opening

21- Level claw

22- Recess

[0018] The dishwasher (1) comprises a body (2); a washing tub (3) which is disposed in the body (2) and wherein the washing process is performed; a door (4) which enables the washing tub (3) to be isolated from the outer environment; a decorative panel (5) which is movably attached onto the door (4); at least one connection pin (6) which is provided on the surface of the decorative panel (5) attached onto the door (4); a housing (7) which is provided on the door (4) and wherein the connection pin (6) moves by sliding; a connection bracket (8) whereon the decorative panel (5) is attached; and a grouping member (12) which is provided on the door (4) and which has a moving member (9) whereon the connection bracket (8) is attached, a spring (10) and a rope (11). The connection bracket (8) is attached onto the moving member (9). By means of the rope (11) and the spring (10) connected to the rope (11) which are both connected to the moving member (9), the decorative panel (5) is enabled to move by sliding on the door (4).

[0019] The dishwasher (1) of the present invention comprises an adjustment mechanism (13) which receives the rope (11) leaving the grouping member (12) after passing over the lower surface of the door (4) and which limits the movement distance of the decorative panel (5) on the door (4). The rope (11) leaving the grouping member (12) passes over the lower edge of the door (4) and reaches the adjustment mechanism (13). The adjustment mechanism (13) enables the rope (11) to be pulled at a certain distance.

[0020] In an embodiment of the present invention, the dishwasher (1) comprises a hinge arm (14) which enables the door (4) to be attached onto the body (2) and to move by rotating, and the adjustment mechanism having a fixing piece (15) attached onto the hinge arm (14) and a holding piece (17) attached to the fixing piece (15) by means of an adjustment member (16). The adjustment

mechanism (13) comprises the fixing piece (15) and the holding piece (17). By means of the fixing piece (15), the adjustment member (13) is fixed on the hinge arm (14). The holding piece (17) is movably attached onto the fixing piece (15) by means of the adjustment member (16).

[0021] In an embodiment of the present invention, the dishwasher (1) comprises the adjustment mechanism (13) having at least one channel (18) wherein the part of the holding piece (17), attached to the fixing piece (15), that extends over the fixing piece (15) moves by sliding. The part of the holding piece (17) that extends over the fixing piece (15) is received by the channel (18) on the fixing piece (15). Thus, the holding piece (17) is fitted so as to move by sliding.

[0022] In an embodiment of the present invention, the dishwasher (1) comprises the adjustment mechanism (13) having a movement transmission member (19) provided on the part of the holding piece (17) extending over the fixing piece (15) and through which the adjustment member (16) passes, and an opening (20) whereon the movement transmission member (19) moves by sliding, which receives the adjustment member (16) and which is provided on the fixing piece (15). The holding piece (17) comprises the movement transmission member (19) through which the adjustment member (16) passes. The movement transmission member (19) is provided on the part of the holding piece (17) that extends over the fixing piece (15). When the adjustment member (16) is moved, the movement transmission member (19) also moves. Thus, the holding piece (17) is enabled to move by sliding on the fixing piece (15), to move closer or move away.

[0023] In an embodiment of the present invention, the dishwasher (1) comprises the adjustment mechanism (13) which changes in length by means of the movement of the holding piece (17) on the fixing piece (15) when the adjustment member (16) is moved. By moving the adjustment member (16), the holding piece (17) approaches the fixing piece (15) or moves away from the fixing piece (15) by means of the movement transmission member (19). Thus, the length of the adjustment mechanism (13) is extended or shortened.

[0024] In an embodiment of the present invention, the dishwasher (1) comprises the adjustment mechanism (13) which reduces the sliding distance of the decorative panel (5) on the door (4) when the length of the adjustment mechanism (13) is extended, and which increases the sliding distance of the decorative panel (5) on the door (4) when the length thereof is shortened. As the holding piece (17) moves away from the fixing piece (15), the length of the adjustment mechanism (13) is extended and pulls the rope (11) more since the amount of rope (11) running over the same increases. Thus, the distance reserved for the decorative panel (5) to slide on the door (4) is shortened. The decorative panel (5) is enabled to make less sliding movement on the door (4). As the holding piece (17) moves closer to the fixing piece (15), the length of the adjustment mechanism (13) is shortened and pulls the rope (11) less since the amount of rope (11)

running over the same decreases. Thus, the distance reserved for the decorative panel (5) to slide on the door (4) is increased. The decorative panel (5) is enabled to make more sliding movement on the door (4).

[0025] In an embodiment of the present invention, the dishwasher (1) comprises the adjustment member (16) in the form of a screw and the movement transmission member (19) having a screw form on the inner surface thereof so as to transmit the movement of the adjustment member (16). As the adjustment member (16) is rotated clockwise or counterclockwise, the movement transmission member (19) is moved and the length of the adjustment mechanism (13) is changed.

[0026] In an embodiment of the present invention, the dishwasher (1) comprises the adjustment member (16) in the form of a pin, a plurality of level claws (21) provided on the adjustment member (16), and the movement transmission member (19) having at least one recess (22) on the inner surface thereof so as to align with the level claws (21). By means of fitting the level claws (21) into the recesses (22), the length of the adjustment mechanism (13) is enabled to be changed.

[0027] In an embodiment of the present invention, the dishwasher (1) comprises the holding piece (17) in the form of a U such that the outer surface thereof receives the rope (11). By means of the U form of the holding piece (17), the rope (11) is prevented from leaving the holding piece (17).

[0028] By means of the present invention, a dishwasher (1) is realized, comprising the decorative panel (5) of which the movement distance can be determined by means of the adjustment mechanism (13) with adjustable length. During assembly, the length of the rope (11) can be adjusted depending on the size and weight of the decorative panel (5) by means of the adjustment mechanism (13). Thus, ease of assembly and use is provided.

Claims

1. A dishwasher (1) **comprising** a body (2); a washing tub (3) which is disposed in the body (2) and wherein the washing process is performed; a door (4) which enables the washing tub (3) to be isolated from the outer environment; a decorative panel (5) which is movably attached onto the door (4); at least one connection pin (6) which is provided on the surface of the decorative panel (5) attached onto the door (4); a housing (7) which is provided on the door (4) and wherein the connection pin (6) moves by sliding; a connection bracket (8) whereon the decorative panel (5) is attached; and a grouping member (12) which is provided on the door (4) and which has a moving member (9) whereon the connection bracket (8) is attached, a spring (10) and a rope (11), **characterized by** an adjustment mechanism (13) which receives the rope (11) leaving the grouping member (12) after passing over the lower surface of the door

(4) and which limits the movement distance of the decorative panel (5) on the door (4).

terized by the holding piece (17) in the form of a U such that the outer surface thereof receives the rope (11).

2. A dishwasher (1) as in Claim 1, **characterized by** a hinge arm (14) which enables the door (4) to be attached onto the body (2) and to move by rotating, and the adjustment mechanism having a fixing piece (15) attached onto the hinge arm (14) and a holding piece (17) attached to the fixing piece (15) by means of an adjustment member (16). 5
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3. A dishwasher (1) as in Claim 2, **characterized by** the adjustment mechanism (13) having at least one channel (18) wherein the part of the holding piece (17), attached to the fixing piece (15), that extends over the fixing piece (15) moves by sliding. 15
4. A dishwasher (1) as in Claims 2 to 3, **characterized by** the adjustment mechanism (13) having a movement transmission member (19) provided on the part of the holding piece (17) extending over the fixing piece (15) and through which the adjustment member (16) passes, and an opening (20) whereon the movement transmission member (19) moves by sliding, which receives the adjustment member (16) and which is provided on the fixing piece (15). 20
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5. A dishwasher (1) as in any one of Claims 2 to 4, **characterized by** the adjustment mechanism (13) which changes in length by means of the movement of the holding piece (17) on the fixing piece (15) when the adjustment member (16) is moved. 30
6. A dishwasher (1) as in any one of the above claims, **characterized by** the adjustment mechanism (13) which reduces the sliding distance of the decorative panel (5) on the door (4) when the length of the adjustment mechanism (13) is extended, and which increases the sliding distance of the decorative panel (5) on the door (4) when the length thereof is shortened. 35
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7. A dishwasher (1) as in any one of Claims 2 to 6, **characterized by** the adjustment member (16) in the form of a screw and the movement transmission member (19) having a screw form on the inner surface thereof so as to transmit the movement of the adjustment member (16). 45
8. A dishwasher (1) as in any one of Claims 2 to 6, **characterized by** the adjustment member (16) in the form of a pin, a plurality of level claws (21) provided on the adjustment member (16), and the movement transmission member (19) having at least one recess (22) on the inner surface thereof so as to align with the level claws (21). 50
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9. A dishwasher (1) as in Claim 2 or Claim 3, **charac-**

Figure 1

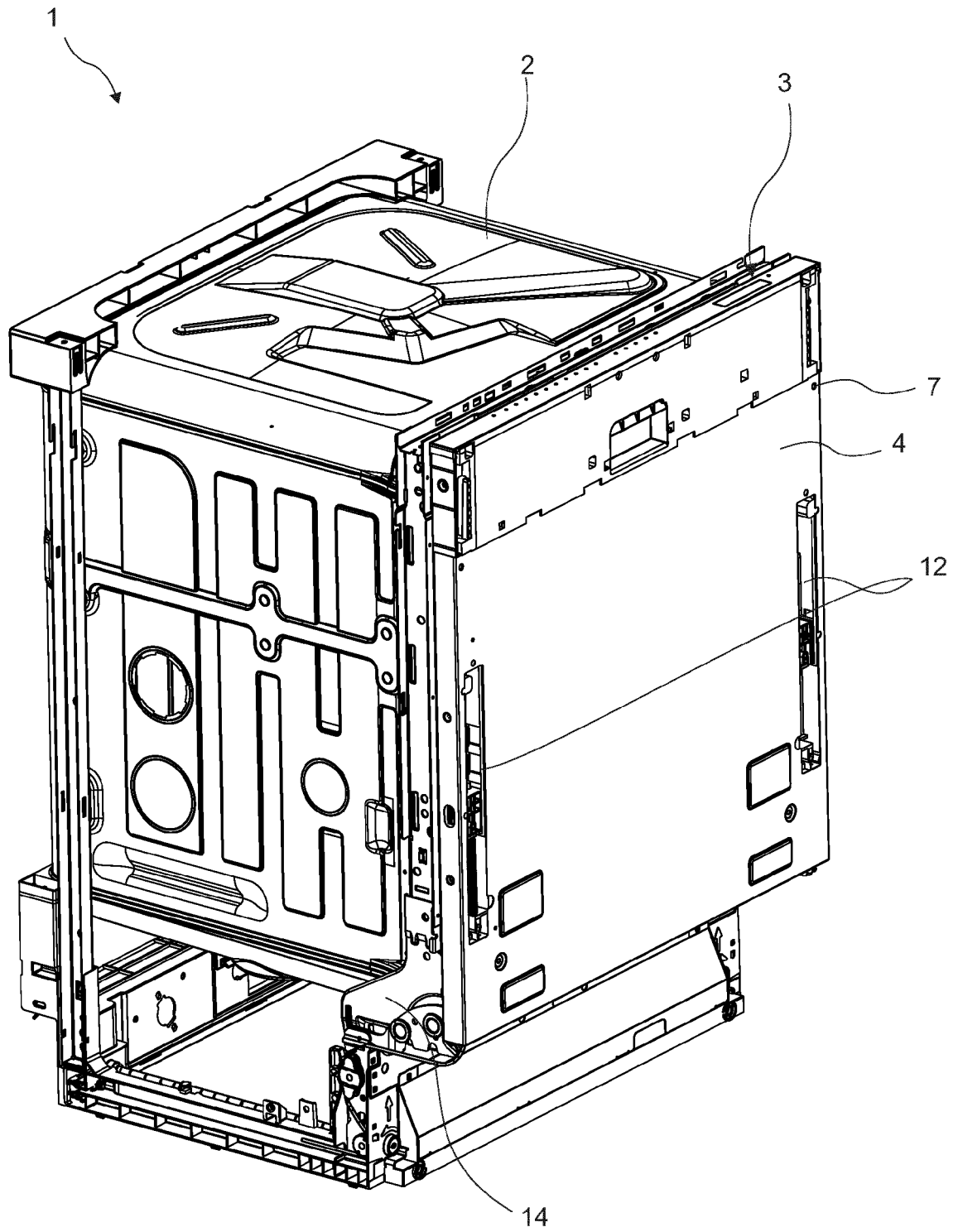


Figure 2

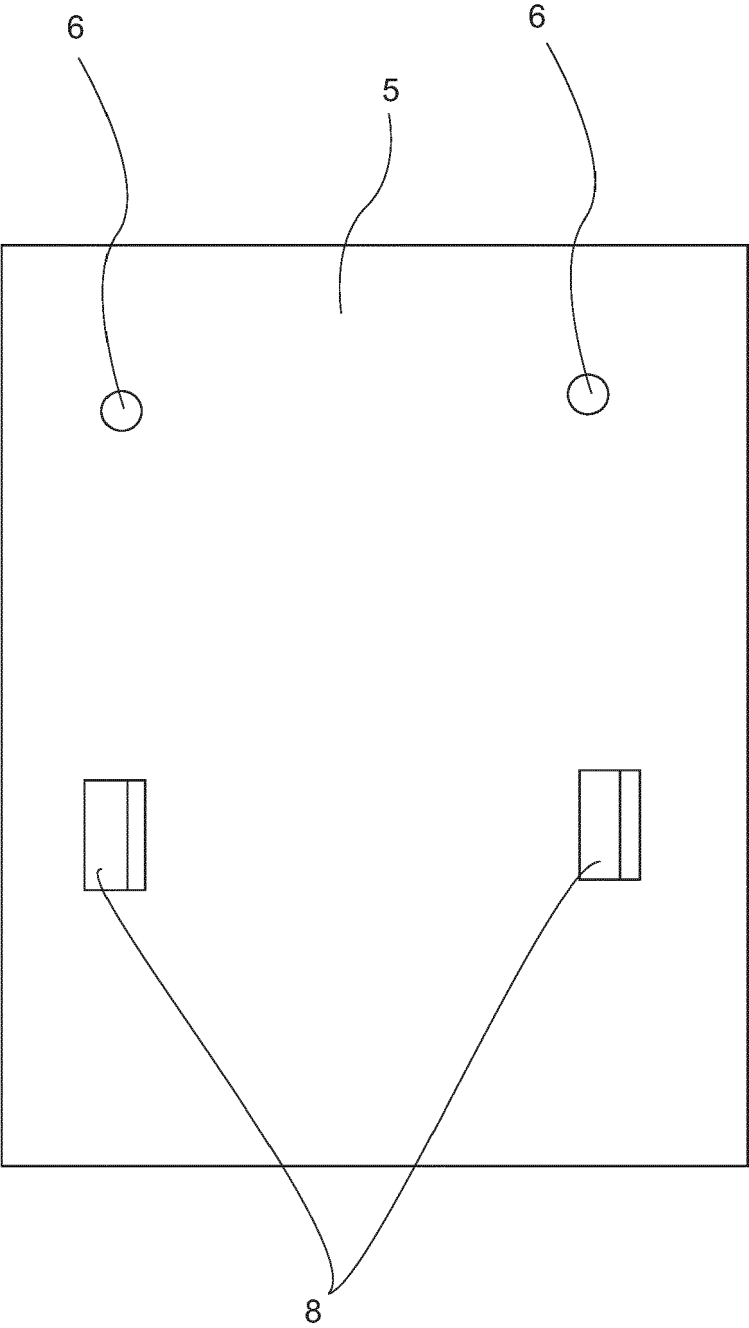


Figure 3

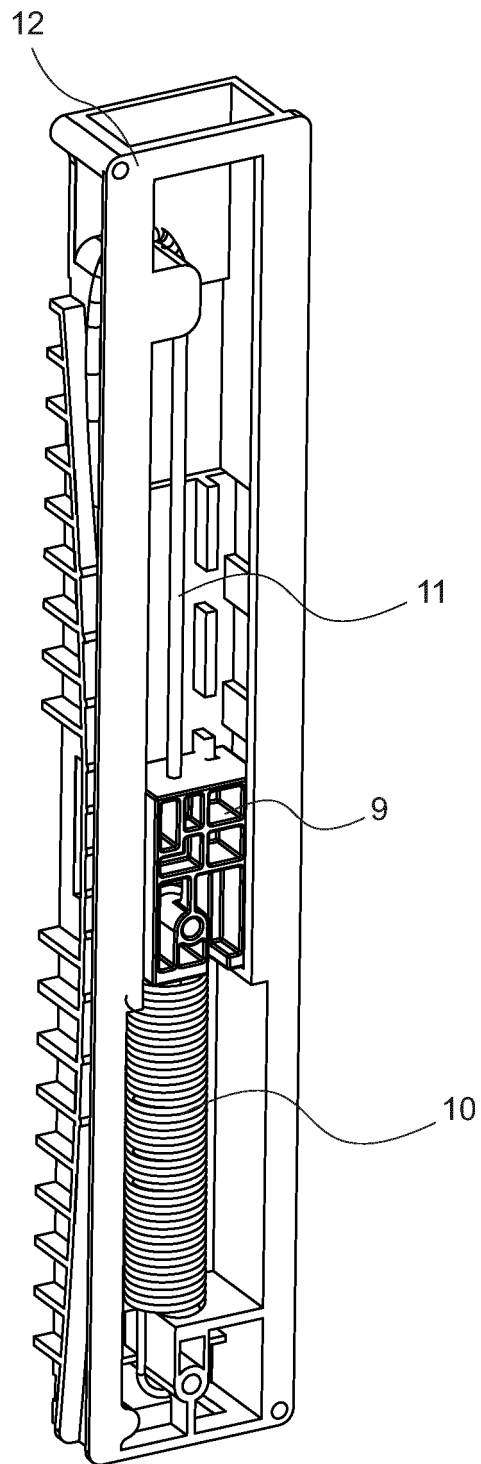


Figure 4

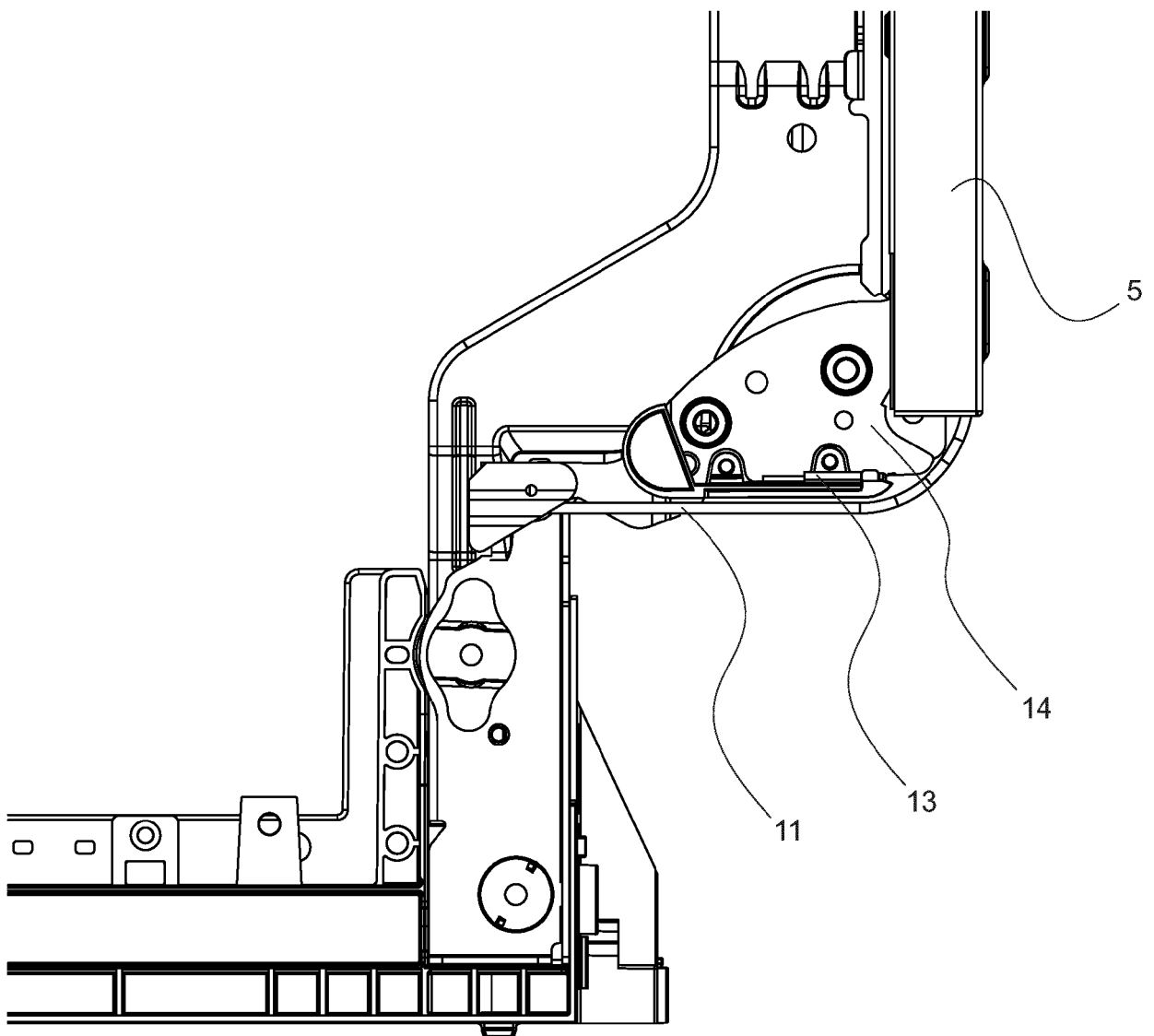


Figure 5

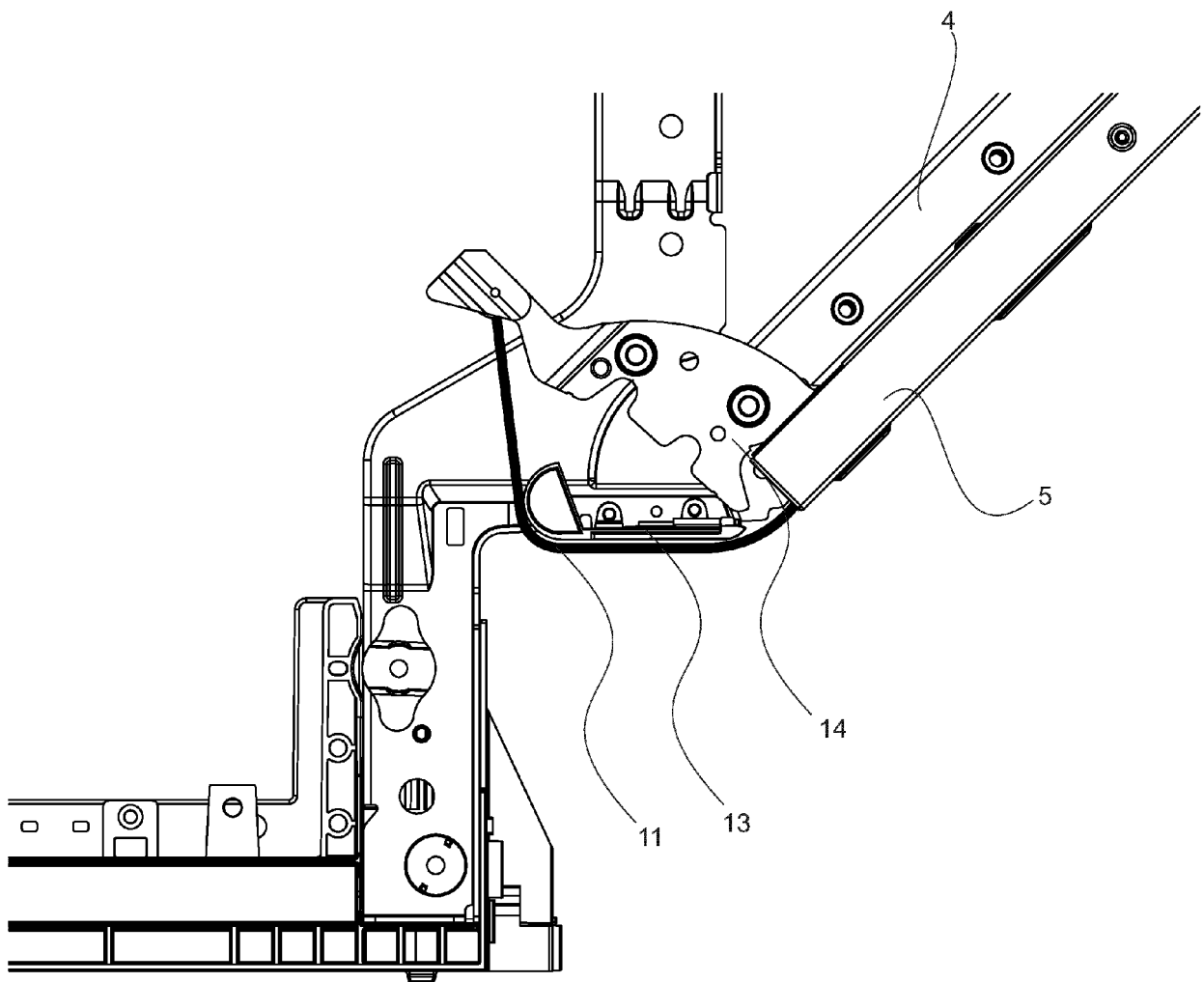
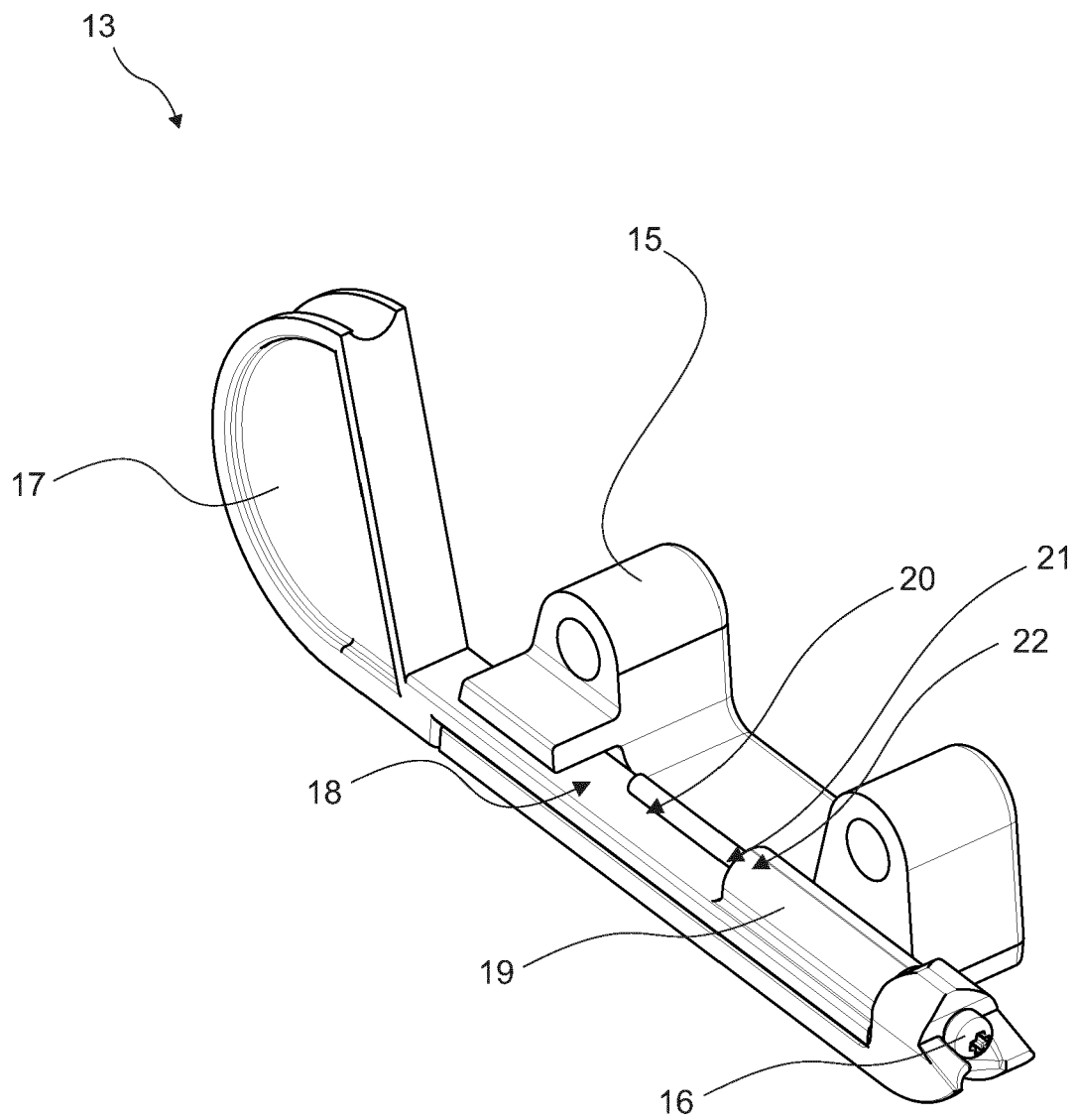


Figure 6





EUROPEAN SEARCH REPORT

Application Number

EP 23 17 6337

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EPO FORM 1503 03.82 (P04C01)

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The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 25 October 2023	Examiner Weidner, Maximilian
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**ANNEX TO THE EUROPEAN SEARCH REPORT
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