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(54) **OPERATION MECHANISM FOR DUAL-POWER SWITCH AND DUAL-POWER SWITCH**

(57) The present disclosure relates to an operation mechanism for a dual-power switch and a dual-power switch. The operation mechanism comprises: a rotation shaft, arranged on a housing of the dual-power switch; a first driving member, arranged on the rotation shaft and can rotate around the rotation shaft; a second driving member, arranged on the rotation shaft and connected to the breaking unit, and can rotate around the rotation shaft between a dual-separation position, a first power-on position and a second power-on position under the driving of the first driving member; a stop member, arranged

on a frame and can move between a locking position and an unlocking position under the driving of the first driving member; and an elastic member for elastically biasing the stop member to the locking position, wherein the first driving member drives the second driving member to rotate after an idle stroke, and the second driving member further drives the breaking unit to switch the state of the dual-power switch; and wherein when the first driving member is rotating by the idle stroke, the first driving member drives the stop member to move from the locking position to the unlocking position.

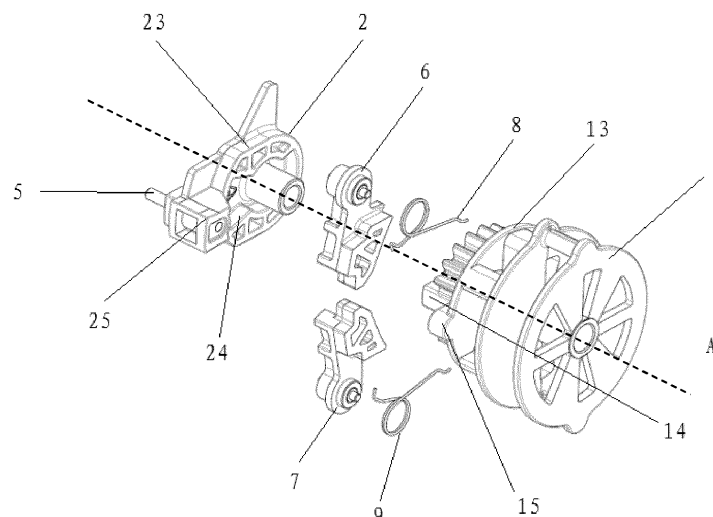


FIG. 1

Description

TECHNICAL FIELD

[0001] The present disclosure relates to an operation mechanism for a dual-power switch and a dual-power switch.

BACKGROUND

[0002] Dual-power switches are widely used in industrial field, especially in emergency power supply system. Based on the status of the power supply circuit, a dual-power switch can switch the load circuit from one power supply to another, for example, between the commercial power supply and the standby power supply, thus maintaining the continuous and reliable operation of the load circuit.

[0003] At present, the dual-power switches are divided into two-stage (two-position) and three-stage (three-position) according to its working positions (also known as working stages). The two-stage dual-power switch is divided into two working positions: a common power supply and a standby power supply, which ensures that the load is always connected with one power supply, and the power is cut off only during the switching period (usually 50-100 ms). The two-stage dual-power switch cannot cut off both power supplies at the same time. The three-stage dual-power switch is divided into three working positions: common power supply, zero position and standby power supply, and the middle zero position can be called dual-separation position, which can ensure the long-term disconnection between the load and the two power supplies. A controller determines whether the three-stage dual-power switch remains in the middle zero position and how long it remains in the middle zero position. Generally speaking, the controller can provide delay control of 0-300 s. The middle zero position provides a buffer time for the switching process of dual power automatic switch, which is beneficial to arc extinguishing and ensures the safety of the whole switching process.

[0004] A traditional middle zero position keeping solution is to use an independent power blocking mechanism, which has high cost and complex structure. Another traditional solution uses friction to keep the middle position, so the reliability is not high.

[0005] Therefore, there is a need for a dual-power switch that can reliably switch and maintain the middle position.

SUMMARY

[0006] The present disclosure provides an operation mechanism for a dual-power switch and a dual-power switch. Such an operation mechanism can ensure that the dual-power switch can perform reliable switching and stably maintain the middle position, and is of simple structure and low cost.

[0007] In one aspect, the present disclosure provides an operation mechanism for a dual-power switch. The operation mechanism is used for driving the breaking unit of the dual-power switch, so that the dual-power switch can be switched between a dual-separation state, a first power-on state and a second power-on state. The operation mechanism is characterized in that, the operation mechanism comprises: a rotation shaft, arranged on a housing of the dual-power switch along a rotation axis; a first driving member, arranged on the rotation shaft and can rotate around the rotation shaft in a first direction and a second direction which are opposite to each other; a second driving member, arranged on the rotation shaft, connected to the breaking unit, and can rotate around the rotation shaft between a dual-separation position, a first power-on position and a second power-on position under the driving of the first driving member; a stop member, arranged on the frame of the housing and can move between a locking position and an unlocking position under the driving of the first driving member, wherein in the locking position, the stop member keeps the second driving member near the dual-separation position; in the unlocking position, the stop member does not block the second driving member; and an elastic member, arranged between the stop member and the frame and elastically biasing the stop member to the locking position, wherein the first driving member drives the second driving member to rotate after rotating by an idle stroke, and the second driving member further drives the breaking unit to switch the state of the dual-power switch; and wherein the first driving member drives the stop member to move from the locking position to the unlocking position when rotating by the idle stroke.

[0008] In an embodiment, the operation mechanism further comprises a driving rod, which is arranged on the second driving member, and the second driving member is connected to the breaking unit through the driving rod.

[0009] In an embodiment, the stop member comprises a first stop member and a second stop member arranged rotatably on the frame and arranged with respect to each other in a mirroring manner, and the elastic member comprises a first elastic member and a second elastic member, wherein the first elastic member exerts an elastic biasing force on the first stop member, and the second elastic member exerts an elastic biasing force on the second stop member, wherein when the first stop member and the second stop member are in the locking position, the first stop member and the second stop member prevents the second driving member from rotating from the dual-separation position to the first power-on position or the second power-on position.

[0010] In an embodiment, the first driving member comprises a first driving surface and a second driving surface, and the second driving member comprises a first driven surface capable of cooperating with the first driving surface and a second driven surface capable of cooperating with the second driving surface.

[0011] In an embodiment, the first driving member

comprises a first body and a first boss arranged on the first body and extending along a radial direction perpendicular to the rotation axis, and two side surfaces of the first boss form the first driving surface and the second driving surface.

[0012] In an embodiment, the second driving member comprises a second body and a recess arranged on the second body and extending along the radial direction, and two side surfaces of the recess form the first driven surface and the second driven surface, wherein the first boss is inserted into the recess.

[0013] In an embodiment, the first driving member further comprises a second boss arranged on the first body, wherein the second boss extends along the radial direction and is outside the first boss, and is located between the first body and the first boss along the direction of the rotation axis, wherein the second boss can drive the first stop member and the second stop member to move between the locking position and the unlocking position respectively.

[0014] In an embodiment, the second driving member further comprises a protrusion arranged on the second body, wherein the protrusion extends along the radial direction and is outside the recess, wherein the first stop member and the second stop member can stop the movement of the protrusion.

[0015] In an embodiment, the first stop member comprises a first body and a first stop portion extending from the first body along the direction of the rotation axis toward the protrusion, and the second stop member comprises a second body and a second stop portion extending from the second body along the direction of the rotation axis toward the protrusion, wherein the first stop portion and the second stop portion are used for stopping the movement of the protrusion.

[0016] In an embodiment, the first driving member can rotate around the rotation shaft between an initial position, a first position, and a second position, wherein after the first driving member rotates from the initial position in a first direction by a first idle stroke, the first driving surface contacts the first driven surface, and when the first driving member continues to rotate in the first direction to the first position, the first driving member drives the second driving member to rotate in the first direction from the dual-separation position to the first power-on position, so that the dual-power switch switches from the dual-separation state to the first power-on state; and wherein, after the first driving member rotates from the initial position in the second direction by a second idle stroke, the second driving surface contacts the second driven surface, and when the first driving member continues to rotate in the second direction to the second position, the first driving member drives the second driving member to rotate in the second direction from the dual-separation position to the second power-on position, so that the dual-power switch switches from the dual-separation state to the second power-on state.

[0017] In an embodiment, the first idle stroke and the

second idle stroke have the same rotation angle.

[0018] In an embodiment, after the first driving member rotates from the first position in the second direction by a third idle stroke, the second driving surface contacts the second driven surface, and when the first driving member continues to rotate in the second direction to the initial position, the first driving member drives the second driving member to rotate in the second direction from the first power-on position to the dual-separation position, so that the dual-power switch is switched from the first power-on state to the dual-separation state; and after the first driving member rotates from the second position in the first direction by a third idle stroke, the first driving surface contacts the first driven surface, and when the first driving member continues to rotate in the first direction to the initial position, the first driving member drives the second driving member to rotate in the first direction from the second power-on position to the dual-separation position, so that the dual-power switch is switched from the second power-on state to the dual-separation state.

[0019] In an embodiment, when the first driving member rotates from the initial position in the first direction by the first idle stroke or rotates from the first position in the second direction by the third idle stroke, the second boss drives the first stop member to rotate in the first direction from the locking position to the unlocking position.

[0020] In an embodiment, when the first driving member rotates from the initial position in the second direction by the second idle stroke or rotates from the second position in the first direction by the third idle stroke, the second boss drives the second stop member to rotate in the second direction from the locking position to the unlocking position.

[0021] In another aspect, the present disclosure further provides a dual-power switch, which comprises the above-mentioned operation mechanism.

[0022] The advantages of the present disclosure are as follows: the present disclosure provides an operation mechanism of a three-position dual-power switch, which can realize reliable switching and can be kept in the middle dual-separation position for a long time, so that a special three-stage automatic dual-power switch conforming to IEC60947-6 and GB14048.11 can be realized, thus meeting the requirements of non-continuous switching modes such as Open transfer and Delayed transfer.

BRIEF DESCRIPTION OF THE DRAWINGS

[0023] Advantages and objects of the present disclosure can be better understood from the following preferred embodiments of the present disclosure described in detail in conjunction with the accompanying drawings. The drawings are not drawn to scale in order to better show the relationship between the components in the drawings. In the drawings:

Fig. 1 shows an exploded schematic view of one embodiment of an operation mechanism for a dual-

power switch according to the present disclosure; Fig. 2 shows an assembly schematic view of one embodiment of an operation mechanism for a dual-power switch according to the present disclosure; Fig. 3 shows a schematic partial perspective view of the operation mechanism of Fig. 2, in which the first driving member is in an initial position and the second driving member is in a dual-separation position; Fig. 4 shows a schematic partial perspective view of the operation mechanism of Fig. 2, in which the first driving member rotates in a first direction by a first idle stroke, the second driving member is in a dual-separation position, and the first stop member is in an unlocking position; Fig. 5 shows a schematic partial perspective view of the operation mechanism of Fig. 2, wherein the first driving member is in a first position and the second driving member is in a first power-on position; Fig. 6 shows a schematic partial perspective view of the operation mechanism of Fig. 2, in which the first driving member rotates by a third idle stroke in a second direction, the second driving member is in the first power-on position, and the first stop member is in the unlocking position; and Fig. 7 shows a schematic partial perspective view of the operation mechanism of Fig. 2, in which the first driving member is in the initial position and the second driving member is in the dual-separation position.

DETAILED DESCRIPTION

[0024] Various embodiments according to the present disclosure will be described in detail with reference to the accompanying drawings. Here, it should be noted that in the drawings, the same reference numerals are given to components having basically the same or similar structures and functions, and repeated descriptions about them will be omitted. Unless otherwise specified, the terms "first direction", "second direction", "rotation direction", "left side" and "right side" herein are all described with respect to the drawings of the present disclosure. The term "including A, B, C, etc. in sequence" only indicates the arrangement order of the included components A, B, C, etc., and does not exclude the possibility of including other components between A and B and/or between B and C. The description of "first" and its variants is only for distinguishing between various components, and does not limit the scope of the present disclosure. Without departing from the scope of the present disclosure, a "first component" can be written as a "second component" and so on.

[0025] The drawings in this specification are schematic views to assist in explaining the concept of the present disclosure, and schematically show the shapes of various parts and their relationships.

[0026] Hereinafter, with reference to figs. 1 to 7, preferred embodiments according to the present disclosure

will be described in detail.

[0027] Fig. 1 shows an exploded view of an operation mechanism for a dual-power switch according to an embodiment of the present disclosure. The operation mechanism is used for driving a breaking unit of the dual-power switch, so that the dual-power switch can be switched between a dual-separation state, a first power-on state and a second power-on state.

[0028] As shown in Figs. 1 and 2, the operation mechanism comprises a rotation shaft 3, a first driving member 1, a second driving member 2, stop members, and elastic members.

[0029] The rotation shaft 3 is arranged on a housing (not shown in the figures) of a dual-power switch, such as the housing of the breaking unit of the dual-power switch, along a rotation axis (as shown by the dotted line A in Fig. 1). The first driving member 1 is arranged on the rotation shaft 3 and can rotate around the rotation shaft 3 in a first direction and a second direction opposite to each other. The second driving member 2 is arranged on the rotation shaft 3, connected to the breaking unit, and can rotate around the rotation shaft 3 under the driving of the first driving member! between a dual-separation position, a first power-on position and a second power-on position, which respectively correspond to the dual-separation state, the first power-on state and the second power-on state of the dual-power switch.

[0030] The stop members are arranged on the frame of the housing and can move between a locking position and an unlocking position under the driving of the first driving member 1. The stop members are arranged on a fixed frame 4 of the housing of the breaking unit. In other embodiments, the stop members are arranged on a fixed frame on a side plate of the operation mechanism. In the locking position, the stop members keep the second driving member 2 near the dual-separation position. In the unlocking position, a stop member does not block the second driving member 2, that is, exits the moving path of the second driving member 2. The elastic member is arranged between the stop member and the frame and elastically biases the stop member to the locking position.

[0031] The first driving member 1, after rotating for an idle rotation, drives the second driving member 2 to rotate, and the second driving member 2 further drives the breaking unit to switch the state of the dual-power switch. The first driving member 1 drives the stop member to move from the locking position to the unlocking position when rotating by the idle stroke.

[0032] In addition, the operation mechanism further comprises a driving rod 5, which is arranged on the second driving member 2, and the second driving member 2 is connected to the breaking unit through the driving rod 5. As shown in fig. 1, the driving rod 5 can extend in a direction parallel to the rotation axis, so that the rotation of the second driving member can drive the breaking unit to move.

[0033] For example, the stop members comprise a first stop member 6 and a second stop member 7 which are

arranged rotatably on the frame 4 of the housing and are arranged with respect to each other in a mirroring manner, and the elastic members comprise a first elastic member 8 and a second elastic member 9. The first elastic member 8 exerts an elastic biasing force on the first stop member 6, for example, in the clockwise direction in Fig. 2. The second elastic member 9 exerts an elastic biasing force on the second stop member 7, for example, in the counterclockwise direction in Fig. 2. The first stop member 6 and the second stop member 7, when in the locking position, prevent the second driving member 2 from rotating from the dual-separation position to the first power-on position or the second power-on position.

[0034] As shown in Figs. 3 to 7, the first driving member 1 comprises a first driving surface 11 and a second driving surface 12, and the second driving member 2 comprises a first driven surface 21 that can cooperate with the first driving surface 11 and a second driven surface 22 that can cooperate with the second driving surface 12.

[0035] As shown in Figs. 1 and 3 to 7, the first driving member 1 comprises a first body 13 and a first boss 14 arranged on the first body 13 and extending in a radial direction perpendicular to the rotation axis, and two side surfaces of the first boss 14 form the first driving surface 11 and the second driving surface 12. The first body 13 may have a disk shape or other shapes, which is not limited by the present disclosure.

[0036] As shown in Figs. 1 and 3 to 7, the second driving member 2 comprises a second body 23 and a recess 24 arranged on the second body 23 and extending in the radial direction, and two side surfaces of the recess 24 form the first driven surface 21 and the second driven surface 22. In the assembled state of the operation mechanism, the first boss 14 is inserted into the recess 24. The second body 23 may have a disk shape or other shapes, which is not limited by the present disclosure.

[0037] As shown in Figs. 1 and 3 to 7, the first driving member 1 further comprises a second boss 15 arranged on the first body 13, which extends in the radial direction and is outside (i.e., radially outside) the first boss 14, and is located between the first body 13 and the first boss 14 along the direction of the rotation axis. The second boss 15 can drive the first stop member 6 and the second stop member 7 to move respectively between their respective locking positions and unlocking positions.

[0038] As shown in Figs. 1 and 3 to 7, the second driving member 2 further comprises a protrusion 25 provided on the second body 23, which extends in the radial direction and is outside (i.e., radially outside) the recess 24. The first stop member 6 and the second stop member 7 can stop the movement of the protrusion 25.

[0039] As shown in Figs. 1 and 2, the first stop member 6 comprises a first body 61 and a first stop portion 62 extending from the first body 61 toward the protrusion 25 in the direction of the rotation axis, and the second stop member 7 comprises a second body 71 and a second stop portion 72 extending from the second body 71 toward the protrusion 25 in the direction of the rotation axis.

The first stop portion 62 and the second stop portion 72 are used to stop the movement of the protrusion 25, so as to stop the second driving member 2.

[0040] The first driving member 1 can rotate around the rotation shaft 3 between an initial position, a first position, and a second position, which correspond to the dual-separation position, the first power-on position, and the second power-on position of the second driving member 2.

[0041] Next, with reference to the drawings, how the action of the operation mechanism can realize the state transition of the dual-power switch is described. Figs. 3 to 5 depict the action of the operation mechanism in the process of the dual-power switch switching from the dual-separation state to the first power-on state. Figs. 5 to 7 depict the action of the operation mechanism in the process of the dual-power switch switching from the first power-on state to the dual-separation state.

[0042] As shown in Figs. 3 to 4, the first driving surface 11 contacts the first driven surface 21 after the first driving member 1 rotates by a first idle stroke from the initial position in a first direction (i.e., counterclockwise in the figure). In this process, the second boss 15 abuts against the first body 61 of the first stop member 6, and overcomes the elastic biasing force exerted by the first elastic member 8 to drive the first stop member 6 to rotate from the locking position to the unlocking position in the first direction, so that the first stop portion 62 no longer blocks the movement of the protrusion 25.

[0043] As shown in Figs. 4 to 5, when the first driving member 1 continues to rotate in the first direction to the first position, the first driving member 1 drives the second driving member 2 to rotate in the first direction from the dual-separation position to the first power-on position, so that the dual-power switch is switched from the dual-separation state to the first power-on state. In this process, the second boss 15 is always overcoming the elastic biasing force exerted by the first elastic member 8 in the former stage to keep the first stop member 6 in the unlocking position, so that the second driving member 2 can follow the first driving member 1 to rotate in the first direction. In the latter stage, the second boss 15 no longer abuts against the first body 61 of the first stop member 6, and the first stop member 6 returns to its locking position under the action of the first elastic member 8. Since neither the first body 61 nor the first stop portion 62 of the first stop member 6 are on the moving path of the protrusion 25 of the second driving member 2, the second driving member 2 can rotate to the first power-on position under the drive of the first driving member 1.

[0044] As shown in Figs. 5 to 6, the second driving surface 12 contacts the second driven surface 22 after the first driving member 1 rotates from the first position in the second direction (i.e., clockwise in the figure) by a third idle stroke. Similarly, in this process, the second boss 15 abuts against the first body 61 of the first stop member 6, and overcomes the elastic biasing force exerted by the first elastic member 8 to drive the first stop

member 6 to rotate from the locking position to the unlocking position in the first direction, thus the movement of the protrusion 25 is no longer blocked.

[0045] As shown in Figs. 6 to 7, when the first driving member 1 continues to rotate in the second direction to the initial position, the first driving member 1 drives the second driving member 2 to rotate in the second direction from the first power-on position to the dual-separation position, so that the dual-power switch is switched from the first power-on state to the dual-separation state. In this process, the first driving member 1 rotates to the initial position set horizontally in Fig. 7, and it does not move any more. In the initial position, the second boss 15 no longer abuts against the first body 61 of the first stop member 6, so that the first stop member 6 returns to its locking position under the action of the first elastic member 8. In addition, after the first driving member 1 rotates to the initial position, the second driving member 2 continues to move in the second direction due to the power provided by the first driving member 1. However, due to the stop provided by the first stop portion 6 of the first stop member 6 and the second stop portion 72 of the second stop member 7 in the two directions, the second driving member 2 will bounce between the first stop portion 6 and the second stop portion 72 until it is completely kept in the dual-separation position.

[0046] The action of the operation mechanism in the process of the dual-power switch switching from the dual-separation state to the second power-on state is similar to that described above with respect to Figs. 3 to 5, and the action of the operation mechanism in the process of the dual-power switch switching from the second power-on state to the dual-separation state is similar to that described above with respect to Figs. 5 to 7. No schematic views are provided here, and the process is described only in words.

[0047] After the first driving member 1 rotates in the second direction (clockwise in the figure) from the initial position by a second idle stroke, the second driving surface 12 contacts the second driven surface 22. In this process, the second boss 15 abuts against the second body 71 of the second stop member 7, and overcomes the elastic biasing force exerted by the second elastic member 9 to drive the second stop member 7 to rotate in the second direction from the locking position to the unlocking position, so that the second stop portion 72 no longer blocks the movement of the protrusion 25.

[0048] When the first driving member 1 continues to rotate in the second direction to the second position, the first driving member 1 drives the second driving member 2 to rotate in the second direction from the dual-separation position to the second power-on position, so that the dual-power switch is switched from the dual-separation state to the second power-on state. In this process, the second boss 15 is always overcoming the elastic biasing force exerted by the second elastic member 9 in the former stage to keep the second stop member 7 in the unlocking position, so that the second driving member 2

can follow the first driving member 1 to rotate in the second direction. In the latter stage, the second boss 15 no longer abuts against the second body 71 of the second stop member 7, and the second stop member 7 returns to its locking position under the action of the second elastic member 9. Since neither the second body 71 nor the second stop portion 72 of the second stop member 7 are on the moving path of the protrusion 25 of the second driving member 2, the second driving member 2 can rotate to the second power-on position under the drive of the first driving member 1.

[0049] After the first driving member 1 rotates from the second position in the first direction by the third idle stroke, the first driving surface 11 contacts the first driven surface 21. Similarly, in this process, the second boss 15 abuts against the second body 71 of the second stop member 7, and overcomes the elastic biasing force exerted by the second elastic member 9 to drive the second stop member 7 to rotate in the second direction from the locking position to the unlocking position, thus the movement of the protrusion 25 is no longer blocked.

[0050] When the first driving member 1 continues to rotate in the first direction to the initial position, the first driving member 1 drives the second driving member 2 to rotate in the first direction from the second power-on position to the dual-separation position, so that the dual-power switch is switched from the second power-on state to the dual-separation state. In this process, the first driving member 1 rotates to the initial position set horizontally in Fig. 7, and it does not move any more. In the initial position, the second boss 15 no longer abuts against the second body 71 of the second stop member 7, so that the second stop member 7 returns to its locking position under the action of the second elastic member 9. In addition, after the first driving member 1 rotates to the initial position, the second driving member 2 continues to move in the first direction due to the power provided by the first driving member 1. However, due to the stop provided by the first stop portion 62 of the first stop member 6 and the second stop portion 72 of the second stop member 7 in the two directions, the second driving member 2 will bounce between the first stop portion 62 and the second stop portion 72 until it is completely kept in the dual-separation position.

[0051] As shown in Figs. 3 to 4, the first idle stroke is the rotation angle of the first driving surface 11 in the process of traveling from the initial position to a position in contact with the first driven surface 21, and the second idle stroke is the rotation angle of the second driving surface 11 in the process of traveling from the initial position to a position in contact with the second driven surface 21. The first idle stroke and the second idle stroke may have the same rotation angle. As shown in Figs. 5 to 6, the third idle stroke is the rotation angle of the second driving surface 12 in the process of traveling from the first position to a position in contact with the second driven surface 22, or the rotation angle of the first driving surface 11 in the process of traveling from the second position

to a position in contact with the first driven surface 21.

[0052] Through the initial idle rotation of the first driving member realized by the above structure, the operation mechanism of the present disclosure can quickly and reliably obtain a stable middle dual-separation state, and can reliably switch from the intermediate dual-separation state to the first power-on state or the second power-on state. In addition, the operation mechanism of the present disclosure is simple in structure and low in cost.

[0053] The technical features disclosed above are not limited to the combinations with other features as already disclosed, and those skilled in the art can also perform other combinations of the technical features according to the purpose of disclosure, so as to achieve the purpose of the present disclosure.

Claims

1. An operation mechanism for a dual-power switch, the operation mechanism being used for driving the breaking unit of the dual-power switch so that the dual-power switch can be switched between a dual-separation state, a first power-on state and a second power-on state, **characterized in that** the operation mechanism comprises:

a rotation shaft (3), arranged on a housing of the dual-power switch along a rotation axis (A);
a first driving member (1), arranged on the rotation shaft (3) and can rotate around the rotation shaft (3) in a first direction and a second direction opposite to each other;

a second driving member (2), arranged on the rotation shaft (3), connected to the breaking unit, and can rotate around the rotation shaft (3) between a dual-separation position, a first power-on position and a second power-on position under the driving of the first driving member (1);
a stop member, arranged on a frame (4) of the housing and can move between a locking position and an unlocking position under the driving of the first driving member (1), wherein in the locking position, the stop member keeps the second driving member (2) near a dual-separation position; in the unlocking position, the stop member does not block the second driving member (2); and

an elastic member, arranged between the stop member and the frame (4) and elastically biasing the stop member to the locking position, wherein the first driving member (1) drives the second driving member (2) to rotate after rotating by an idle stroke, and the second driving member (2) further drives the breaking unit to switch the state of the dual-power switch; and wherein the first driving member (1) drives the stop member to move from the locking position

to the unlocking position when rotating by the idle stroke.

2. The operation mechanism according to claim 1, **characterized in that** the operation mechanism further comprises a driving rod (5), the driving rod (5) is arranged on the second driving member (2), and the second driving member (2) is connected to the breaking unit through the driving rod (5).
3. The operation mechanism according to claim 1, **characterized in that** the stop member comprises a first stop member (6) and a second stop member (7) arranged rotatably on the frame (4) and arranged with respect to each other in a mirroring manner, and the elastic member comprise a first elastic member (8) and a second elastic member (9), wherein the first elastic member (8) exerts an elastic biasing force to the first stop member (6), and the second elastic member (9) exerts an elastic biasing force to the second stop member (7).
wherein when the first stop member (6) and the second stop member (7) are in the locking position, the first stop member (6) and the second stop member (7) prevent the second driving member (2) from rotating from the dual-separation position to the first power-on position or the second power-on position.
4. The operation mechanism according to any one of claims 1 to 3, **characterized in that** the first driving member (1) comprises a first driving surface (11) and a second driving surface (12), and the second driving member (2) comprises a first driven surface (21) which can cooperate with the first driving surface (11) and a second driven surface (12) which can cooperate with the second driving surface (11).
5. The operation mechanism according to claim 4, **characterized in that** the first driving member (1) comprises a first body (13) and a first boss (14) arranged on the first body (13) and extending along a radial direction perpendicular to the rotation axis, and two side surfaces of the first boss (14) form the first driving surface (11) and the second driving surface.
6. The operation mechanism according to claim 5, **characterized in that** the second driving member (2) comprises a second body (23) and a recess (24) arranged on the second body (23) and extending along the radial direction, and two side surfaces of the recess (24) form the first driven surface (21) and the second driven surface (24), wherein the first boss (14) is inserted into the recess (24).
7. The operation mechanism according to claim 6, **characterized in that** the first driving member (1) further comprises a second boss (15) arranged on the first body (13), and the second boss (15) extends

along the radial direction and is outside the first boss (14), and is located between the first body (13) and the first boss (14) along the direction of the rotation axis.

wherein, the second boss (15) can drive the first stop member (6) and the second stop member (7) to move between the locking position and the unlocking position respectively.

8. The operation mechanism according to claim 7, **characterized in that** the second driving member (2) further comprises a protrusion (25) arranged on the second body (23), the protrusion (25) extends along the radial direction and is outside the recess (24), wherein the first stop member (6) and the second stop member (7) can stop the movement of the protrusion (25).
9. The operation mechanism according to claim 8, **characterized in that** the first stop member (6) comprises a first body (61) and a first stop portion (62) extending from the first body (61) towards the protrusion (25) along the direction of the rotation axis, and the second stop member (7) comprises a second body (71) and a second stop portion (72) extending from the second body (71) towards the protrusion (25) along the direction of the rotation axis. wherein, the first stop portion (62) and the second stop portion (72) are used for stopping the movement of the protrusion (25).
10. The operation mechanism according to claim 7, **characterized in that** the first driving member (1) can rotate around the rotation shaft between an initial position, a first position and a second position,

wherein after the first driving member (1) rotates from the initial position in the first direction by a first idle stroke, the first driving surface (11) contacts the first driven surface (21), and when the first driving member (1) continues to rotate in the first direction to the first position, the first driving member (1) drives the second driving member (2) to rotate in the first direction from the dual-separation position to the first power-on position, so that the dual-power switch is switched from the dual-separation state to the first power-on state; and wherein after the first driving member (1) rotates from the initial position in the second direction by a second idle stroke, the second driving surface (12) contacts the second driven surface (22), and when the first driving member (1) continues to rotate in the second direction to the second position, the first driving member (1) drives the second driving member (2) to rotate in the second direction from the dual-separation

position to the second power-on position, so that the dual-power switch is switched from the dual-separation state to the second power-on state.

11. The operation mechanism according to claim 10, wherein the first idle stroke and the second idle stroke have the same rotation angle.
12. The operation mechanism according to claim 10, **characterized in that**,
after the first driving member (1) rotates from the first position in the second direction by a third idle stroke, the second driving surface (12) contacts the second driven surface (22), and when the first driving member (1) continues to rotate in the second direction to the initial position, the first driving member (1) drives the second driving member (2) to rotate in the second direction from the first power-on position to the dual-separation position, so that the dual-power switch is switched from the first power-on state to the dual-separation state; and
after the first driving member (1) rotates from the second position in the first direction by a third idle stroke, the first driving surface (11) contacts the first driven surface (21), and when the first driving member (1) continues to rotate in the first direction to the initial position, the first driving member (1) drives the second driving member (2) to rotate in the first direction from the second power-on position to the dual-separation position, so that the dual-power switch is switched from the second power-on state to the dual-separation state.
13. The operation mechanism according to claim 12, **characterized in that**,
when the first driving member (1) rotates from the initial position in the first direction by the first idle stroke or rotates from the first position in the second direction by the third idle stroke, the second boss (15) drives the first stop member (6) to rotate in the first direction from the locking position to the unlocking position.
14. The operation mechanism according to claim 12, **characterized in that**,
when the first driving member (1) rotates from the initial position in the second direction by the second idle stroke or rotates from the second position in the first direction by the third idle stroke, the second boss (15) drives the second stop member (7) to rotate in the second direction from the locking position to the unlocking position.
15. A dual-power switch comprising the operation mechanism according to any one of claims 1 to 14.

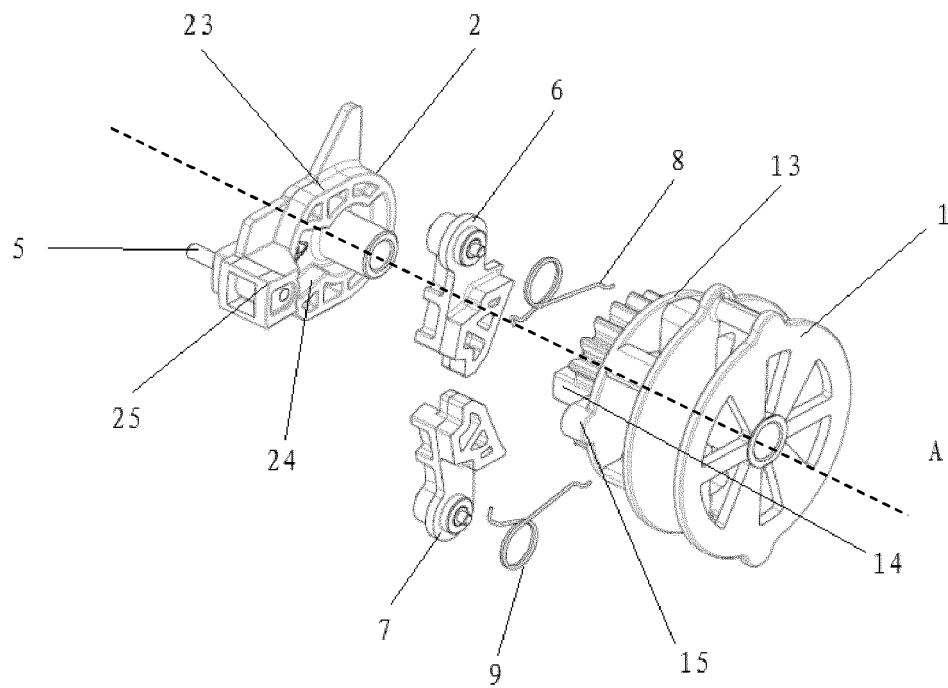


FIG. 1

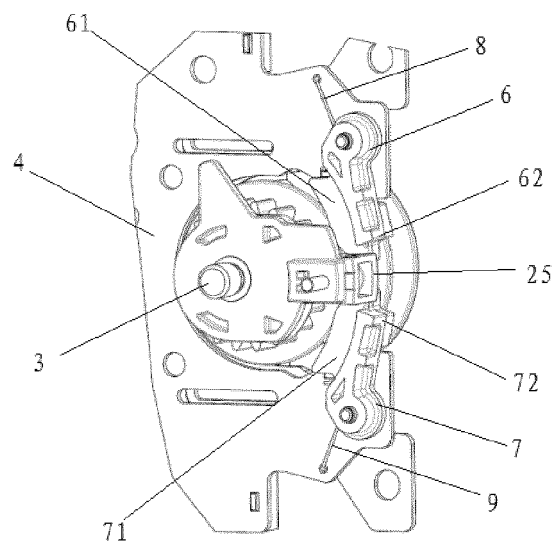


FIG. 2

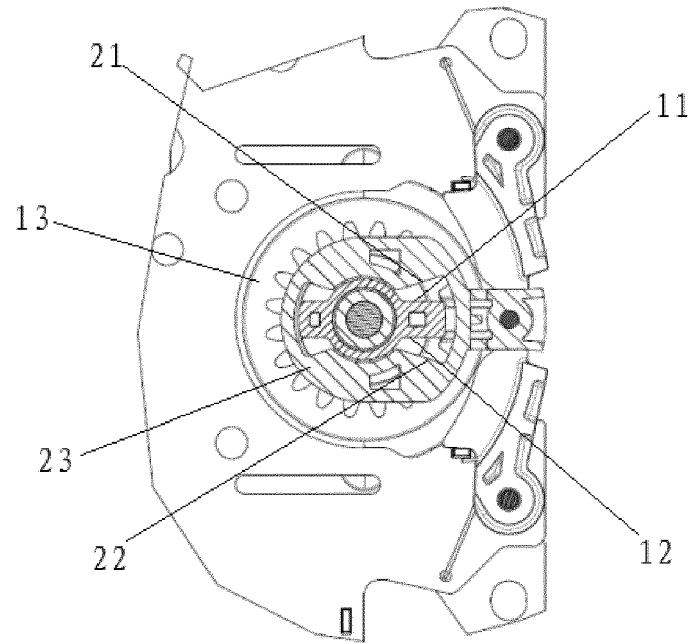


FIG. 3

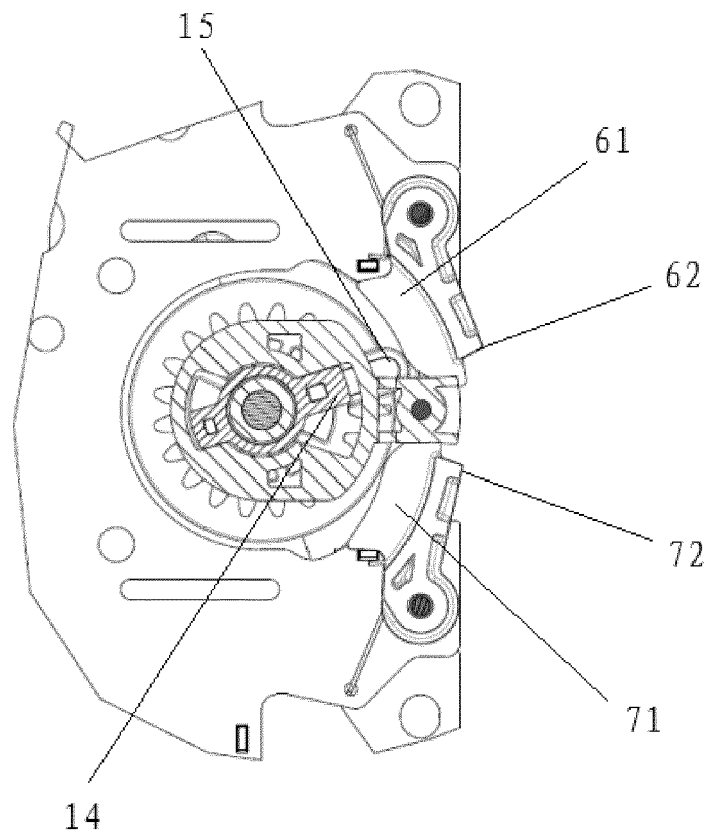


FIG. 4

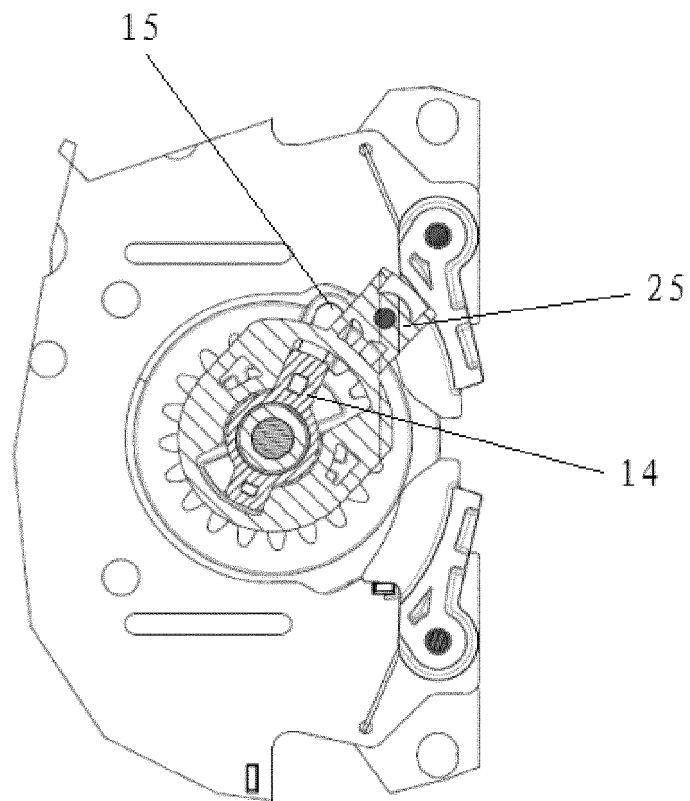


FIG. 5

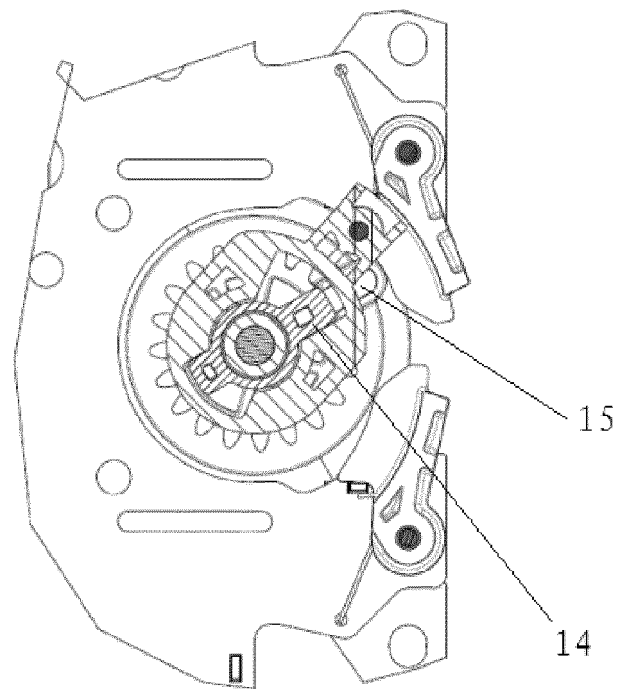


FIG. 6

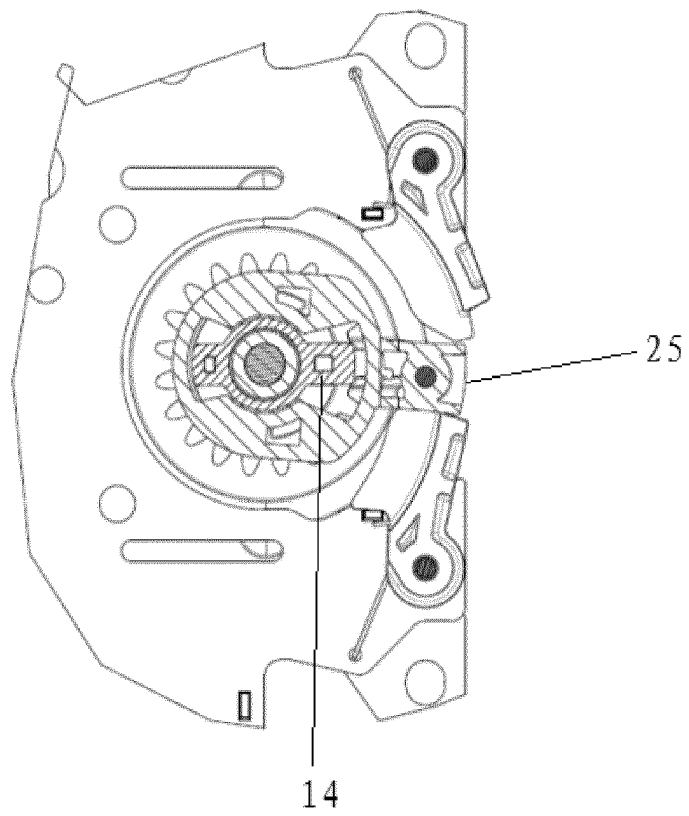


FIG. 7



EUROPEAN SEARCH REPORT

Application Number

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			TECHNICAL FIELDS SEARCHED (IPC)
			H01H
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 6 September 2023	Examiner Findeli, Luc
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