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(54) **MOVABLE CONTACT PRESSURE MAINTAINING STRUCTURE, MOVABLE CONTACT ASSEMBLY AND DUAL-POWER TRANSFER SWITCH**

(57) A movable contact pressure maintaining structure, acting on a movable contact of a dual-power transfer switch, wherein the movable contact pressure maintaining structure includes at least a pair of spring holders and at least a pair of springs; two corresponding spring holders in the at least a pair of spring holders are staggered and installed together relative to each other; the two spring holders are arranged such that two springs of the at least a pair of springs are respectively installed between the two spring holders in parallel; the movable contact is held between the two spring holders and between the two springs. A movable contact assembly including the movable contact pressure maintaining structure as described above. A dual-power transfer switch including the movable contact pressure maintaining structure as described above.

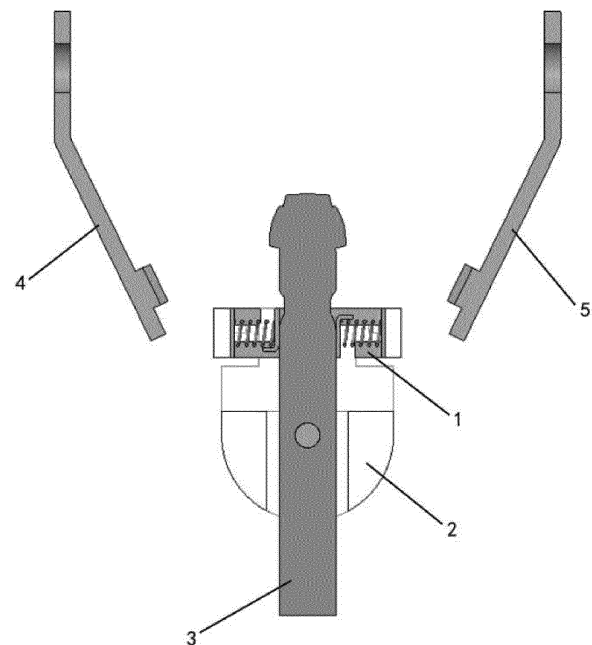


Fig.1

Description

Technical field

[0001] The present disclosure relates to a movable contact pressure maintaining structure, in particular to a movable contact pressure maintaining structure for a dual-power transfer switch (also called ATS). The present disclosure further relates to a movable contact assembly, which includes the movable contact pressure maintaining structure as described above. The present disclosure further relates to a dual-power transfer switch, which includes the movable contact pressure maintaining structure as described above.

Background

[0002] The movable contact of the dual-power transfer switch (also called ATS) has bidirectional contacts, so that it can contact with a first stationary contact of a first power supply and a second stationary contact of a second power supply. At present, the movable contact pressure maintaining mechanism generally includes two independent elastic devices respectively for the two contacts, which leads to a large occupied space and an unstable contact pressure. Especially, when the contact surface (silver spot) of the movable contact and the stationary contact becomes thinner due to ablation (i.e., the overtravel becomes smaller), the contact pressure changes greatly, which affects the mechanical and electrical properties of the dual-power transfer switch.

[0003] In order to improve the rated current capacity and short-time current withstand performance of ATS, it is usually necessary to install a plurality of movable contacts side by side. When ATS works, the wear of different contact surfaces (silver spot) of the movable contacts and the stationary contacts is different, which requires the contact pressure of each movable contact to be independent of each other to ensure that the electrical performance of each movable contact is basically consistent with the electrical performance of the stationary contact, thus obtaining a more stable and reliable ATS.

Summary

[0004] In order to solve one or more defects in the prior art, according to one aspect of the present disclosure, a movable contact pressure maintaining structure is provided, which acts on a movable contact of a dual-power transfer switch.

[0005] The movable contact pressure maintaining structure includes at least a pair of spring holders and at least a pair of springs.

[0006] Two corresponding spring holders in the at least a pair of spring holders are staggered and installed together relative to each other.

[0007] The two spring holders are arranged such that two springs of the at least a pair of springs are respec-

tively installed between the two spring holders in parallel.

[0008] The movable contact is held between the two spring holders and between the two springs.

[0009] Through the parallel connection of the springs, the installation space is small and compact, and a plurality of movable contacts can be installed side by side and their contact pressures are independent of each other, which greatly improves the rated current capacity and short-time current withstand performance of ATS.

[0010] According to the above aspects of the present disclosure, the at least a pair of spring holders include a first spring holder and a second spring with a same structure and a same size.

[0011] The at least a pair of springs include a first spring and a second spring.

[0012] According to the above aspects of the present disclosure, the first spring holder includes a first base portion, a first L-shaped flange and a first U-shaped portion.

[0013] The first L-shaped flange and the first U-shaped portion are respectively located at and extend from two ends of the first base portion.

[0014] The first base portion defines an elongated first through hole therein.

[0015] According to the above aspects of the present disclosure, the first base portion is provided with a first step portion on a side thereof close to the first L-shaped flange.

[0016] The first base portion is provided with a first groove on a side thereof close to the first U-shaped portion.

[0017] The first groove is located between the first U-shaped portion and the first base portion.

[0018] According to the above aspects of the present disclosure, the second spring holder includes a second base portion, a second L-shaped flange and a second U-shaped portion.

[0019] The second L-shaped flange and the second U-shaped portion are respectively located at and extend from two ends of the second base portion.

[0020] The second base portion defines an elongated second through hole therein.

[0021] According to the above aspects of the present disclosure, the second base portion is provided with a second step portion on a side thereof close to the second L-shaped flange.

[0022] The second base portion is provided with a second groove on a side thereof close to the second U-shaped portion.

[0023] The second groove is located between the second U-shaped portion and the second base portion.

[0024] According to the above aspects of the present disclosure, when the first spring holder and the second spring holder are staggered and installed together relative to each other, the first step portion and the second step portion can be slidably contacted with each other, the second L-shaped flange is in the first through hole, the first L-shaped flange is in the second through hole,

an opening of the first U-shaped portion faces the second base portion, and an opening of the second U-shaped portion faces the first base portion.

[0025] According to the above aspects of the present disclosure, an end of the first spring abuts against the first spring holder.

[0026] Another end of the first spring abuts against the second L-shaped flange and is guided by the second L-shaped flange.

[0027] An end of the second spring abuts against the second spring holder.

[0028] Another end of the second spring abuts against the first L-shaped flange and is guided by the first L-shaped flange.

[0029] According to the above aspects of the present disclosure, the movable contact can pass through the first through hole and the second through hole and is installed between the first L-shaped flange and the second L-shaped flange.

[0030] When the movable contact is in an unstressed state, a width of the movable contact is equal to a distance between the first L-shaped flange and the second L-shaped flange, and the movable contact cannot swing freely relative to the first L-shaped flange and the second L-shaped flange.

[0031] According to the above aspects of the present disclosure, an edge of the first groove holds the first spring along a length of the first spring.

[0032] An edge of the second groove holds the second spring along a length of the second spring.

[0033] According to the above aspects of the present disclosure, the first spring is located between the first U-shaped portion and the first base portion.

[0034] The second spring is located between the second U-shaped portion and the second base portion.

[0035] Each groove arranged on each spring holder increases the inner cavity space of each spring holder, so that the total width W of the spring holder becomes smaller and the installation space is saved. At the same time, the inner cavity space can limit each spring, thus avoiding each spring from falling off.

[0036] According to another aspect of the present disclosure, a movable contact assembly is provided, wherein the movable contact assembly includes at least one movable contact, at least one movable contact pressure maintaining structure as described above, and a movable contact bracket.

[0037] The movable contact pressure maintaining structure holds the movable contact therein.

[0038] The movable contact pressure maintaining structure is arranged in the movable contact bracket.

[0039] According to the above another aspect of the present disclosure, the movable contact is installed on the movable contact bracket through a pin.

[0040] A bracket groove is arranged below the movable contact bracket, and a width of the bracket groove is greater than a width of the movable contact, so that the movable contact can swing around the pin in the bracket

groove.

[0041] According to another aspect of the present disclosure, the first spring holder of the movable contact pressure maintaining structure abuts against the movable contact bracket at its end close to the first U-shaped portion.

[0042] The second spring holder of the movable contact pressure maintaining structure abuts against the movable contact bracket at its end close to the second U-shaped portion.

[0043] According to another aspect of the present disclosure, the movable contact assembly further includes a limiting piece.

[0044] The limiting piece is provided with a buckle.

[0045] The movable contact bracket is provided with a clamping groove.

[0046] The limiting piece is installed on the movable contact bracket and cannot fall off from the movable contact bracket through a matching of the buckle and the clamping groove; and the limiting piece is installed across the first spring holder and the second spring holder, so that the first spring holder and the second spring holder cannot fall off from the movable contact bracket.

[0047] According to the present disclosure, the first spring holder and the second spring holder are staggered and installed in the movable contact bracket and limited by the movable contact bracket. One end of the first spring abuts against the first spring holder, and another end of the first spring abuts against the second L-shaped flange and is guided by the second L-shaped flange. One end of the second spring abuts against the second spring holder, and another end of the second spring abuts against the first L-shaped flange and is guided by the first L-shaped flange. The movable contact is installed between the first L-shaped flange and the second L-shaped flange. When the movable contact moves in a direction (for example, to the left), the movable contact pushes the second spring holder to move to the left (with the same displacement). Because the first spring holder is immobile due to the limitation of the movable contact bracket, the second spring holder can push the first spring and the second spring to compress at the same time, and the compression amount of the two springs is the same as the displacement of the second spring holder. At this time, the restoring force of the movable contact (i.e., contact pressure when in contact with the stationary contact) is provided by two springs at the same time, that is, the effect of doubling the spring force value is realized by connecting the springs in parallel.

[0048] The pressure of the movable contact is provided by the combined force of two springs, and the stroke of each spring is consistent with the stroke of the movable contact. Parallel springs can regard the two springs as a whole, which is equivalent to arranging a spring with larger force in a narrow space.

[0049] The technical scheme according to the present disclosure has the following advantages:

1. The installation space is small.

[0050] A plurality of springs are connected in parallel to provide contact pressure, so that a spring with a smaller force value can achieve a larger contact pressure; and when the spring force value is required to be smaller, the volume of the spring can be smaller, thereby saving installation space.

2. Two-way contact pressure is consistent.

[0051] Even if the two spring force values are different, when the movable contact moves to the left/right, the contact pressure is still the same, and the left and right pressures of the movable contact will not be different because of the deviation of the spring force values.

3. The number of parts is reduced.

[0052] Traditional contact pressure springs act independently from left to right, that is, the left spring provides contact pressure to the left and the right spring provides contact pressure to the right, while the contact pressure in this scheme is provided by both the left and right springs at the same time, which makes this scheme save half the number of springs compared with the traditional scheme.

[0053] According to yet another aspect of the present disclosure, a dual-power transfer switch is provided, wherein the dual-power transfer switch includes the movable contact pressure maintaining structure as described above.

[0054] So far, in order that the detailed description of the present disclosure can be better understood and the contribution of the present disclosure to the prior art can be better recognized, the present disclosure has summarized the contents of the present disclosure quite broadly. Of course, embodiments of the present disclosure will be described below and will form the subject matter of the appended claims.

[0055] Likewise, those skilled in the art will recognize that the concept on which the present disclosure is based can be easily used as a basis for designing other structures, methods and systems for carrying out several purposes of the present disclosure. Therefore, it is important that the appended claims should be considered to include such equivalent structures as long as they do not go beyond the spirit and scope of the present disclosure.

Brief description of the drawings

[0056] Those skilled in the art will have a better understanding of the present disclosure through the following drawings, and the advantages of the present disclosure will be more clearly reflected. The drawings described herein are only for illustrative purposes of selected embodiments, not all possible implementations and are intended not to limit the scope of the present disclosure.

FIG. 1 illustrates a schematic plan view of a movable contact assembly having a movable contact pressure maintaining structure according to the present

disclosure;

FIG. 2 illustrates that a movable contact of a movable contact assembly is in contact with a first stationary contact corresponding to a first power supply;

FIG. 3 illustrates a perspective view of a first spring holder of a movable contact pressure maintaining structure according to the present disclosure;

FIG. 4 illustrates a perspective view of a second spring holder of a movable contact pressure maintaining structure according to the present disclosure; FIG. 5 illustrates an assembly diagram of a movable contact pressure maintaining structure according to the present disclosure;

FIG. 6 illustrates a section view of a movable contact pressure maintaining structure according to the present disclosure;

FIG. 7 illustrates a moving state of a movable contact pressure maintaining structure according to the present disclosure under a force along the arrow towards left;

FIG. 8 and FIG. 9 respectively illustrate a cooperative positional relationship between a first groove of a first spring holder and a first spring, and a cooperative positional relationship between a second groove of a second spring holder and a second spring according to the present disclosure;

FIGS. 10(a)-(c) schematically illustrate moving states of the movable contact pressure maintaining structure of the present disclosure under a force along the arrow towards left and a force along the arrow towards right;

FIG. 11 illustrates an assembly view of a movable contact, a first spring holder, a second spring holder, a first spring and a second spring according to the present disclosure;

FIG. 12 illustrates a section view of a movable contact assembly installed with one movable contact according to the present disclosure; and

FIG. 13 illustrates a perspective view of a movable contact assembly installed with a plurality of (three) movable contacts according to the present disclosure.

Detailed description

[0057] Hereinafter, specific embodiments according to the present disclosure will be described in detail with reference to various drawings.

[0058] FIG. 1 illustrates a schematic plan view of a movable contact assembly 2 having a movable contact pressure maintaining structure 1 according to the present disclosure, wherein a movable contact 3 of the movable contact assembly 2 is in a dual-split position. FIG. 2 illustrates that the movable contact 3 of the movable contact assembly 2 is in contact with a first stationary contact 4 corresponding to a first power supply (not illustrated). FIG. 1 and FIG. 2 also illustrate a second stationary contact 5 corresponding to a second power supply (not illus-

trated), and with the rotation of the movable contact assembly 2, the movable contact 3 can be in contact with the second stationary contact 5.

[0059] According to an embodiment of the present disclosure, a movable contact pressure maintaining structure 1 is provided, which acts on a movable contact 3 of a dual-power transfer switch.

[0060] The movable contact pressure maintaining structure 1 includes at least a pair of spring holders and at least a pair of springs.

[0061] Two corresponding spring holders in the at least a pair of spring holders are staggered and installed together relative to each other.

[0062] The two spring holders are arranged such that two springs of the at least a pair of springs are respectively installed between the two spring holders in parallel.

[0063] The movable contact 3 is held between the two spring holders and between the two springs.

[0064] Through the parallel connection of springs, the installation space is small and compact, and a plurality of movable contacts can be installed side by side and their contact pressures are independent of each other, which greatly improves the rated current capacity and short-time current withstand performance of ATS.

[0065] According to the above embodiment of the present disclosure, the at least a pair of spring holders include a first spring holder 6 (as illustrated in FIG. 3) and a second spring holder 7 (as illustrated in FIG. 4) having the same structure and the same size.

[0066] As illustrated in FIG. 5, the at least a pair of springs include a first spring 8 and a second spring 9.

[0067] According to the above embodiments of the present disclosure, as illustrated in FIG. 3, the first spring holder 6 includes a first base portion 6-1, a first L-shaped flange 6-2 and a first U-shaped portion 6-3.

[0068] The first L-shaped flange 6-2 and the first U-shaped portion 6-3 are respectively located at and extend from the two ends of the first base portion 6-1.

[0069] The first base portion 6-1 defines an elongated first through hole 6-1-1 therein.

[0070] According to the above embodiments of the present disclosure, the first base portion 6-1 is provided with a first step portion 6-1-2 on a side thereof close to the first L-shaped flange 6-2.

[0071] The first base portion 6-1 is provided with a first groove 6-1-3 on a side thereof close to the first U-shaped portion 6-3.

[0072] The first groove 6-1-3 is located between the first U-shaped portion 6-3 and the first base portion 6-1.

[0073] According to the above embodiments of the present disclosure, as illustrated in FIG. 4, the second spring holder 7 includes a second base portion 7-1, a second L-shaped flange 7-2 and a second U-shaped portion 7-3.

[0074] The second L-shaped flange 7-2 and the second U-shaped portion 7-3 are respectively located at and extend from the two ends of the second base portion 7-1.

[0075] The second base portion 7-1 defines an elongated second through hole 7-1-1 therein.

gated second through hole 7-1-1 therein.

[0076] According to the above embodiments of the present disclosure, the second base portion 7-1 is provided with a second step portion 7-1-2 on a side thereof close to the second L-shaped flange 7-2.

[0077] The second base portion 7-1 is provided with a second groove 7-1-3 on a side thereof close to the second U-shaped portion 7-3.

[0078] The second groove 7-1-3 is located between the second U-shaped portion 7-3 and the second base portion 7-1.

[0079] According to the above embodiments of the present disclosure, as illustrated in FIGS. 5 and 6, when the first spring holder 6 and the second spring holder 7 are staggered and installed together relative to each other, the first step portion 6-1-2 and the second step portion 7-1-2 can be slidably contacted with each other, the second L-shaped flange 7-2 is located in the first through hole 6-1-1, the first L-shaped flange 6-2 is located in the second through hole 7-1-1, and the opening of the first U-shaped portion 6-3 faces the second base portion 7-1, and the opening of the second U-shaped portion 7-3 faces the first base portion 6-1.

[0080] According to the above embodiments of the present disclosure, one end of the first spring 8 abuts against the first spring holder 6.

[0081] The other end of the first spring 8 abuts against the second L-shaped flange 7-2 and is guided by the second L-shaped flange 7-2.

[0082] One end of the second spring 9 abuts against the second spring holder 7.

[0083] The other end of the second spring 9 abuts against the first L-shaped flange 6-2 and is guided by the first L-shaped flange 6-2.

[0084] According to the above embodiments of the present disclosure, as illustrated in FIG. 11, the movable contact 3 can pass through the first through hole 6-1-1 and the second through hole 7-1-1 and be installed between the first L-shaped flange 6-2 and the second L-shaped flange 7-2.

[0085] When the movable contact 3 is in an unstressed state, the width of the movable contact 3 is equal to the distance between the first L-shaped flange 6-2 and the second L-shaped flange 7-2, and the movable contact 3 cannot swing freely relative to the first L-shaped flange 6-2 and the second L-shaped flange 7-2.

[0086] According to the above embodiments of the present disclosure, as illustrated in FIGS. 8 and 9, the edge of the first groove 6-1-3 holds the first spring 8 along the length of the first spring 8.

[0087] The edge of the second groove 7-1-3 holds the second spring 9 along the length of the second spring 9.

[0088] According to the above embodiments of the present disclosure, the first spring 8 is located between the first U-shaped portion 6-3 and the first base portion 6-1.

[0089] The second spring 9 is located between the second U-shaped portion 7-3 and the second base portion

7-1.

[0090] Each groove arranged on each spring holder increases the inner cavity space of each spring holder, so that the total width W of the spring holder becomes smaller and the installation space is saved. At the same time, the inner cavity space can limit each spring, thus avoiding each spring from falling off.

[0091] According to another embodiment of the present disclosure, a movable contact assembly is provided. As illustrated in FIGS. 11 to 13, the movable contact assembly 2 includes at least one movable contact 3, at least one movable contact pressure maintaining structure 1 as described above, and a movable contact bracket 10.

[0092] The movable contact pressure maintaining structure 1 holds the movable contact 3 therein.

[0093] The movable contact pressure maintaining structure 1 is arranged in the movable contact bracket 10.

[0094] According to another embodiment of the present disclosure, as illustrated in FIG. 12, the movable contact 3 is installed on the movable contact bracket 10 through a pin 11.

[0095] A bracket groove 10-1 is arranged below the movable contact bracket 10, and the width of the bracket groove 10-1 is greater than the width of the movable contact 3, so that the movable contact 3 can swing at a certain angle in the bracket groove 10-1 around the pin 11.

[0096] According to the above another embodiment of the present disclosure, the first spring holder 6 of the movable contact pressure maintaining structure 1 abuts against the movable contact bracket 10 at its end close to the first U-shaped portion 6-3.

[0097] The second spring holder 7 of the movable contact pressure maintaining structure 1 abuts against the movable contact bracket 10 at its end close to the second U-shaped portion 7-3.

[0098] According to another embodiment of the present disclosure, as illustrated in FIG. 13, the movable contact assembly 2 further includes a limiting piece 12.

[0099] The limiting piece 12 is provided with a buckle 12-1.

[0100] The movable contact bracket 10 is provided with a clamping groove 10-2.

[0101] The limiting piece 12 is installed on the movable contact bracket 10 and will not fall off from the movable contact bracket 10, and the limiting piece 12 is installed across the first spring holder 6 and the second spring holder 7, so that the first spring holder 6 and the second spring holder 7 will not fall off from the movable contact bracket 10.

[0102] As illustrated in FIG. 13, on the four-pole product (not illustrated) of ATS, each phase is equipped with three movable contacts 3 (for example but not limited to this), so that higher rated current performance and short-time current withstand performance can be realized.

[0103] According to the present disclosure, as schematically illustrated in FIG. 10(a), the first spring holder 6 and the second spring holder 7 are staggered and in-

stalled in the movable contact bracket 10 and limited by the movable contact bracket 10. One end of the first spring 8 abuts against the first spring holder 6, and the other end of the first spring 8 abuts against the second L-shaped flange 7-2 and is guided by the second L-shaped flange 7-2. One end of the second spring 9 abuts against the second spring holder 7, and the other end of the second spring 9 abuts against the first L-shaped flange 6-2 and is guided by the first L-shaped flange 6-2. The movable contact 3 is installed between the first L-shaped flange 6-2 and the second L-shaped flange 7-2.

[0104] When the movable contact 3 moves in a direction (for example, to the left, as illustrated in FIG 7 and FIG 10(b)), the movable contact 3 pushes the second spring holder 7 to move to the left (with the same displacement). Because the first spring holder 6 is immobile due to the limitation of the movable contact bracket 10, the second spring holder 7 can push the first spring 8 and the second spring 9 to compress at the same time, and the compression amount of the two springs is the same as the displacement of the second spring holder 7. At this time, the restoring force of the movable contact 3 (that is, the contact pressure when in contact with the stationary contact) is provided by two springs at the same time, that is, the effect of doubling the spring force value is realized by connecting the springs in parallel.

[0105] When the movable contact 3 moves in a direction (for example, to the right, as illustrated in FIG. 10(c)), the movable contact 3 pushes the first spring holder 6 to move to the right (with the same displacement). Because the second spring holder 7 is immobile due to the limitation of the movable contact bracket 10, the first spring holder 6 can push the first spring 8 and the second spring 9 to compress at the same time, and the compression amount of the two springs is the same as the displacement of the first spring holder 6. At this time, the restoring force of the movable contact 3 (that is, the contact pressure when in contact with the stationary contact) is provided by two springs at the same time, that is, the effect of doubling the spring force value is realized by connecting the springs in parallel.

[0106] The pressure of the movable contact 3 is provided by the combined force of two springs, and the stroke of each spring is consistent with the stroke of the movable contact 3. Parallel springs can regard the two springs as a whole, which is equivalent to arranging a spring with larger force in a narrow space.

[0107] According to yet another embodiment of the present disclosure, a dual-power transfer switch (not illustrated) is provided, wherein the dual-power transfer switch includes the movable contact pressure maintaining structure 1 as described above.

[0108] The foregoing disclosure provides illustration and description, but is not intended to be exhaustive or to limit embodiments to the precise form disclosed. Modifications and variations can be made according to the above disclosure or can be obtained from the practice of the embodiments.

[0109] Even though specific combinations of features are recited in the claims and/or disclosed in the specification, these combinations are not intended to limit the disclosure of various embodiments. Actually, many of these features can be combined in a manner not specifically recited in the claims and/or not specifically disclosed in the specification. Although each dependent claim listed below may directly depend on only one claim, the disclosure of various embodiments includes each dependent claim combined with each other claim in the claim set.

[0110] Unless explicitly stated, any element, action or instruction used herein should not be interpreted as critical or necessary. In addition, as used herein, the articles "a" and "an" are intended to include one or more items, and may be used interchangeably with "one or more". Furthermore, as used herein, the article "the" is intended to include one or more items cited in conjunction with the article "the" and may be used interchangeably with "one or more". Furthermore, as used herein, the term "set" is intended to include one or more items (e.g., related items, unrelated items, combinations of related and unrelated items, etc.), and may be used interchangeably with "one or more". When only one item is intended, use the phrase "only one item" or similar language. In addition, as used herein, the term "having", "including" or "comprising", variations thereof and the like are intended to be open terms. In addition, the phrase "based on" is intended to mean "based at least in part" unless explicitly stated otherwise. In addition, as used herein, the term "or" is intended to be inclusive when used in series, and may be used interchangeably with "and/or" unless otherwise expressly stated (e.g., if used in combination with "or" or "only one of them").

Claims

1. A movable contact pressure maintaining structure, acting on a movable contact of a dual-power transfer switch, wherein

the movable contact pressure maintaining structure comprises at least a pair of spring holders and at least a pair of springs;
two corresponding spring holders in the at least a pair of spring holders are staggered and installed together relative to each other;
the two spring holders are arranged such that two springs of the at least a pair of springs are respectively installed between the two spring holders in parallel;
the movable contact is held between the two spring holders and between the two springs.

2. The movable contact pressure maintaining structure according to claim 1, wherein

the at least a pair of spring holders comprise a first spring holder and a second spring holder with a same structure and a same size;
the at least a pair of springs comprise a first spring and a second spring.

3. The movable contact pressure maintaining structure according to claim 2, wherein

the first spring holder comprises a first base portion, a first L-shaped flange and a first U-shaped portion;
the first L-shaped flange and the first U-shaped portion are respectively located at and extend from two ends of the first base portion;
the first base portion defines an elongated first through hole therein.

4. The movable contact pressure maintaining structure according to claim 3, wherein

the first base portion is provided with a first step portion on a side thereof close to the first L-shaped flange;
the first base portion is provided with a first groove on a side thereof close to the first U-shaped portion;
the first groove is located between the first U-shaped portion and the first base portion.

5. The movable contact pressure maintaining structure according to claim 4, wherein

the second spring holder comprises a second base portion, a second L-shaped flange and a second U-shaped portion;
the second L-shaped flange and the second U-shaped portion are respectively located at and extend from two ends of the second base portion;
the second base portion defines an elongated second through hole therein.

6. The movable contact pressure maintaining structure according to claim 5, wherein

the second base portion is provided with a second step portion on a side thereof close to the second L-shaped flange;
the second base portion is provided with a second groove on a side thereof close to the second U-shaped portion;
the second groove is located between the second U-shaped portion and the second base portion.

7. The movable contact pressure maintaining structure according to claim 6, wherein

when the first spring holder and the second spring holder are staggered and installed together relative to each other, the first step portion and the second step portion are configured to be slidably contacted with each other, the second L-shaped flange is in the first through hole, the first L-shaped flange is in the second through hole, an opening of the first U-shaped portion faces the second base portion, and an opening of the second U-shaped portion faces the first base portion.

8. The movable contact pressure maintaining structure according to claim 7, wherein

an end of the first spring abuts against the first spring holder;
another end of the first spring abuts against the second L-shaped flange and is guided by the second L-shaped flange;
an end of the second spring abuts against the second spring holder;
and another end of the second spring abuts against the first L-shaped flange and is guided by the first L-shaped flange.

9. The movable contact pressure maintaining structure according to claim 8, wherein

the movable contact is configured to be able to pass through the first through hole and the second through hole and is installed between the first L-shaped flange and the second L-shaped flange;
when the movable contact is in an unstressed state, a width of the movable contact is equal to a distance between the first L-shaped flange and the second L-shaped flange, and the movable contact cannot swing freely relative to the first L-shaped flange and the second L-shaped flange.

10. The movable contact pressure maintaining structure according to claim 7, wherein

an edge of the first groove holds the first spring along a length of the first spring;
an edge of the second groove holds the second spring along a length of the second spring, wherein the first spring is located between the first U-shaped portion and the first base portion; the second spring is located between the second U-shaped portion and the second base portion.

11. A movable contact assembly, wherein

the movable contact assembly comprises at least one movable contact, at least one movable contact pressure maintaining structure accord-

ing to one of claims 1 to 10 and a movable contact bracket;
the movable contact pressure maintaining structure holds the movable contact therein;
the movable contact pressure maintaining structure is arranged in the movable contact bracket.

12. The movable contact assembly according to claim 11, wherein

the movable contact is installed on the movable contact bracket through a pin;
a bracket groove is arranged below the movable contact bracket, and a width of the bracket groove is greater than a width of the movable contact, so that the movable contact can swing around the pin in the bracket groove.

13. The movable contact assembly according to claim 12, wherein

the first spring holder of the movable contact pressure maintaining structure abuts against the movable contact bracket at its end close to the first U-shaped portion;
the second spring holder of the movable contact pressure maintaining structure abuts against the movable contact bracket at its end close to the second U-shaped portion.

14. The movable contact assembly according to claim 13, wherein

the movable contact assembly further comprises a limiting piece;
the limiting piece is provided with a buckle;
the movable contact bracket is provided with a clamping groove;
the limiting piece is installed on the movable contact bracket and cannot fall off from the movable contact bracket through a matching of the buckle and the clamping groove; and
the limiting piece is installed across the first spring holder and the second spring holder, so that the first spring holder and the second spring holder cannot fall off from the movable contact bracket.

15. A dual-power transfer switch, wherein the dual-power transfer switch comprises the movable contact pressure maintaining structure according to one of claims 1 to 10.

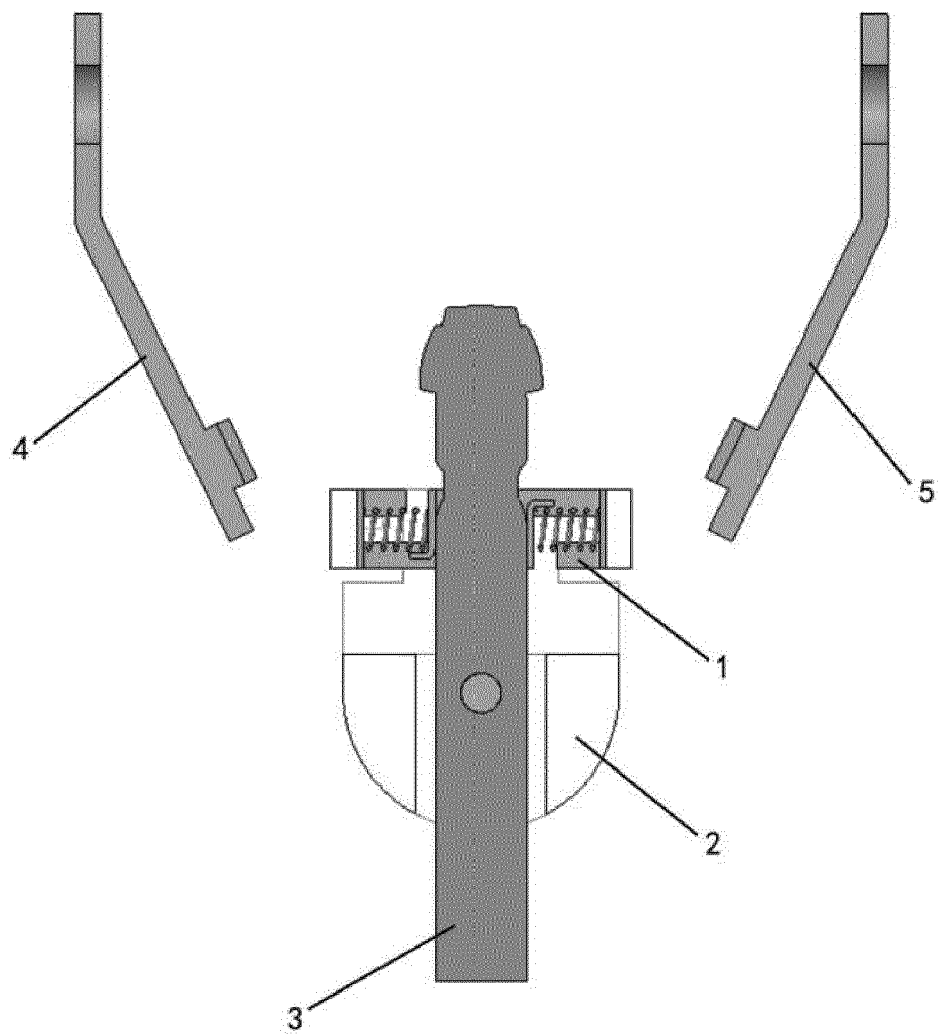


Fig.1

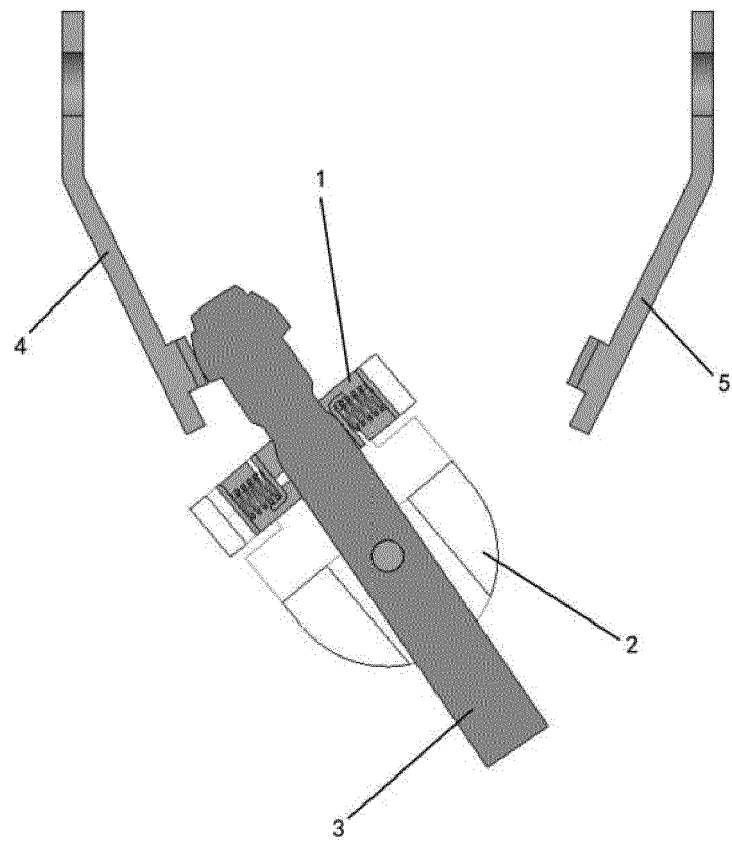


Fig.2

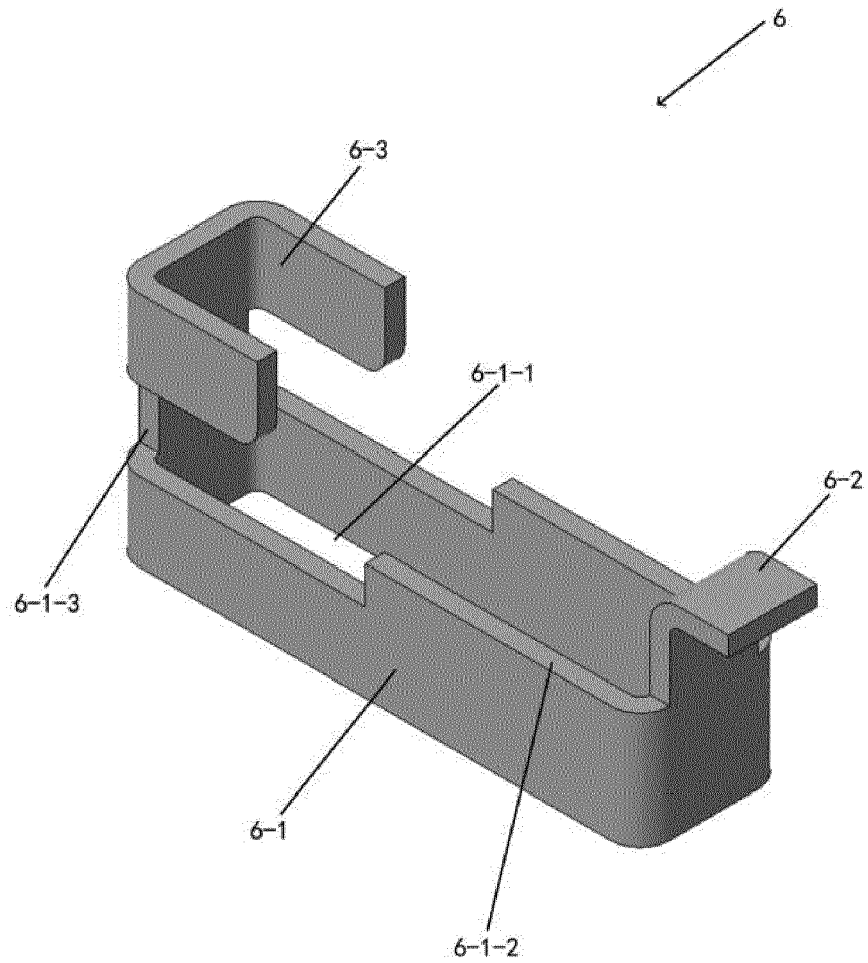


Fig. 3

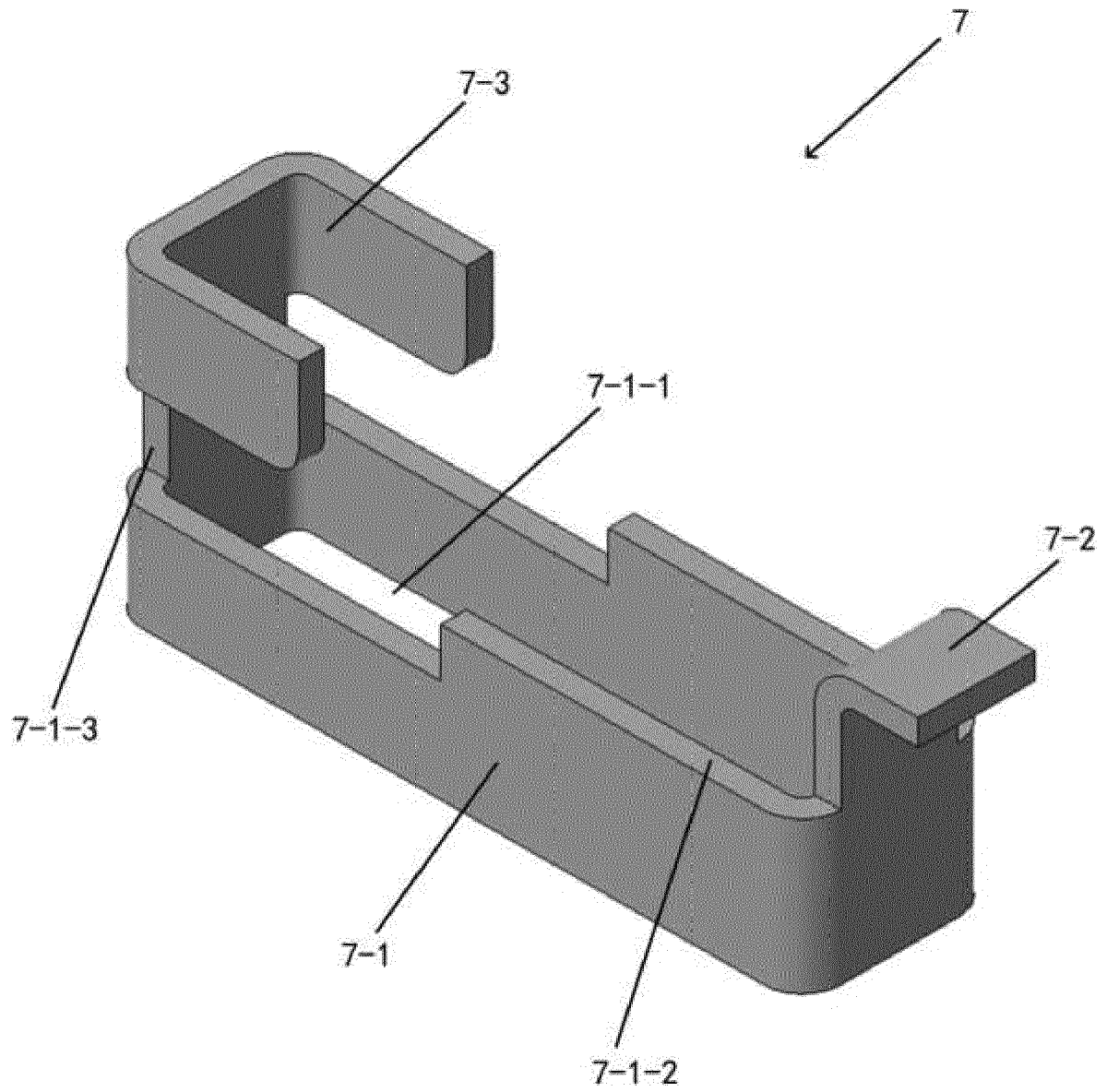


Fig.4

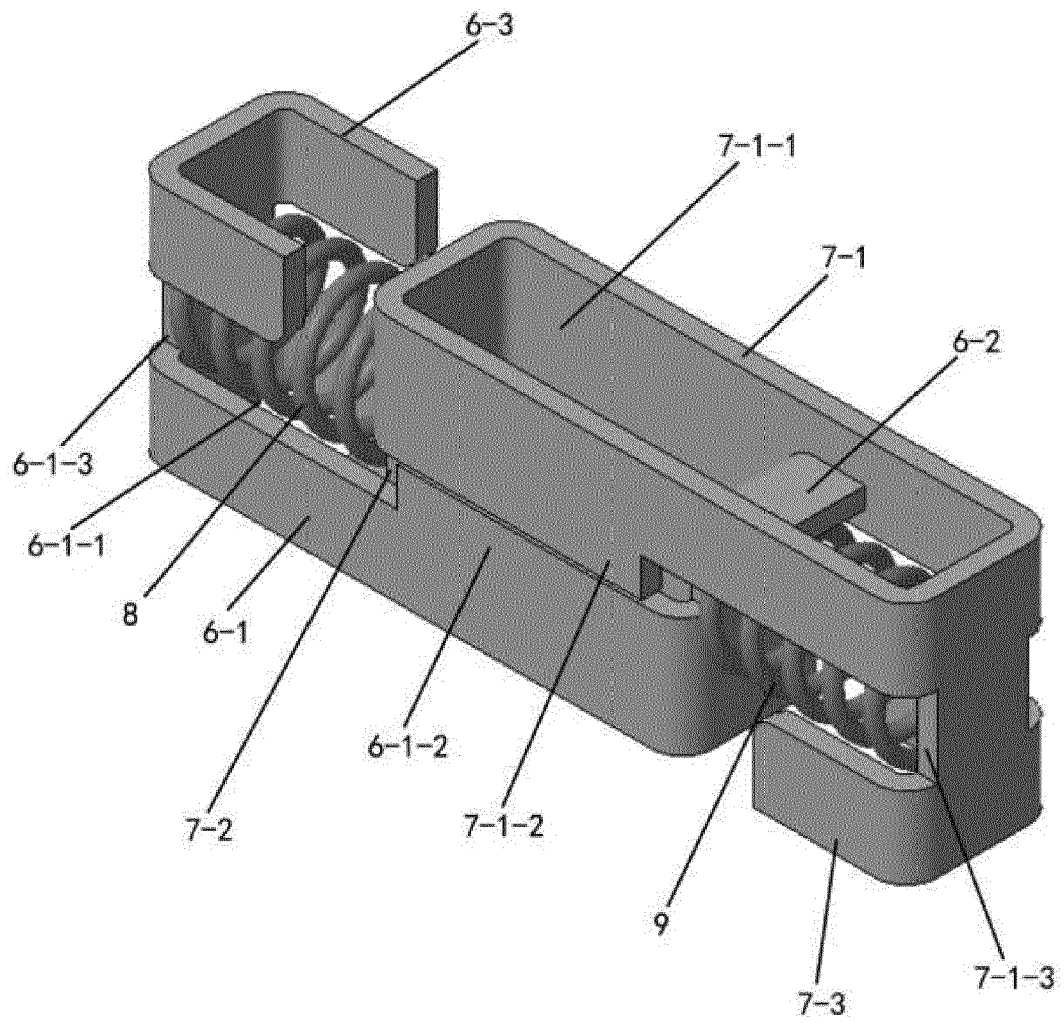


Fig.5

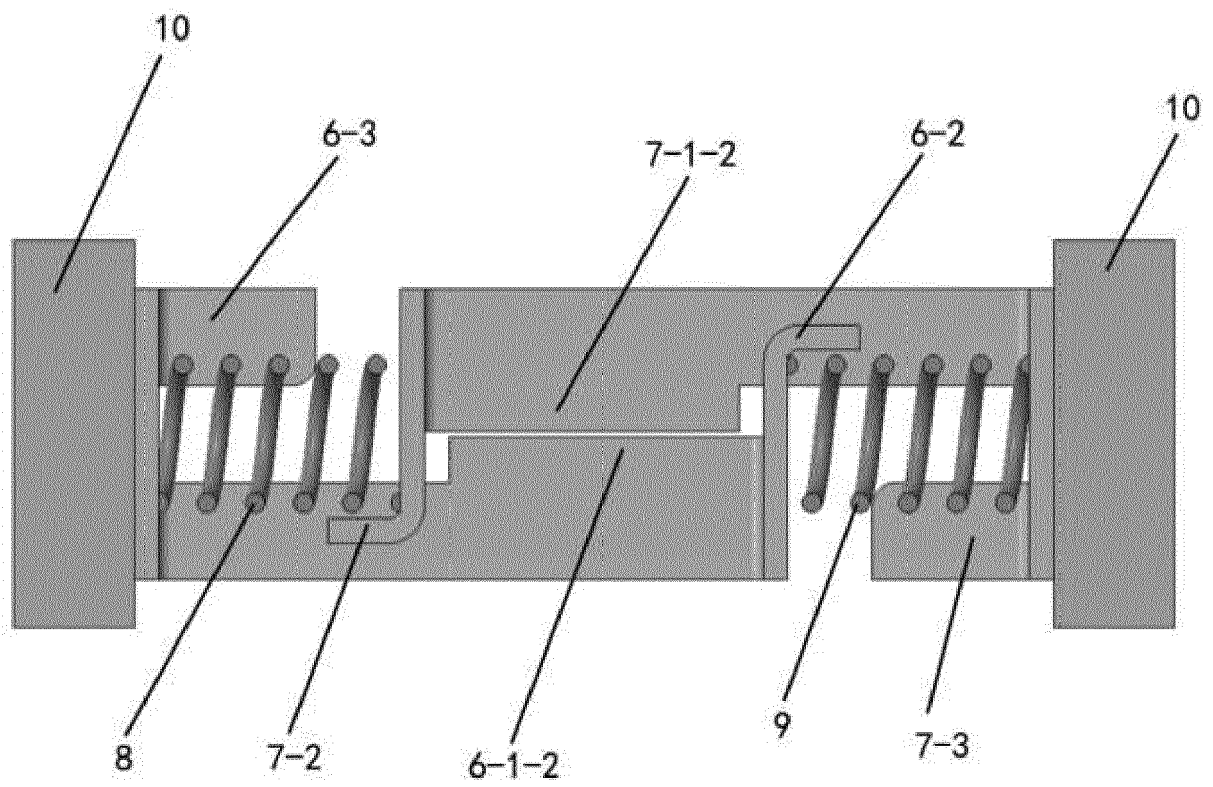


Fig.6

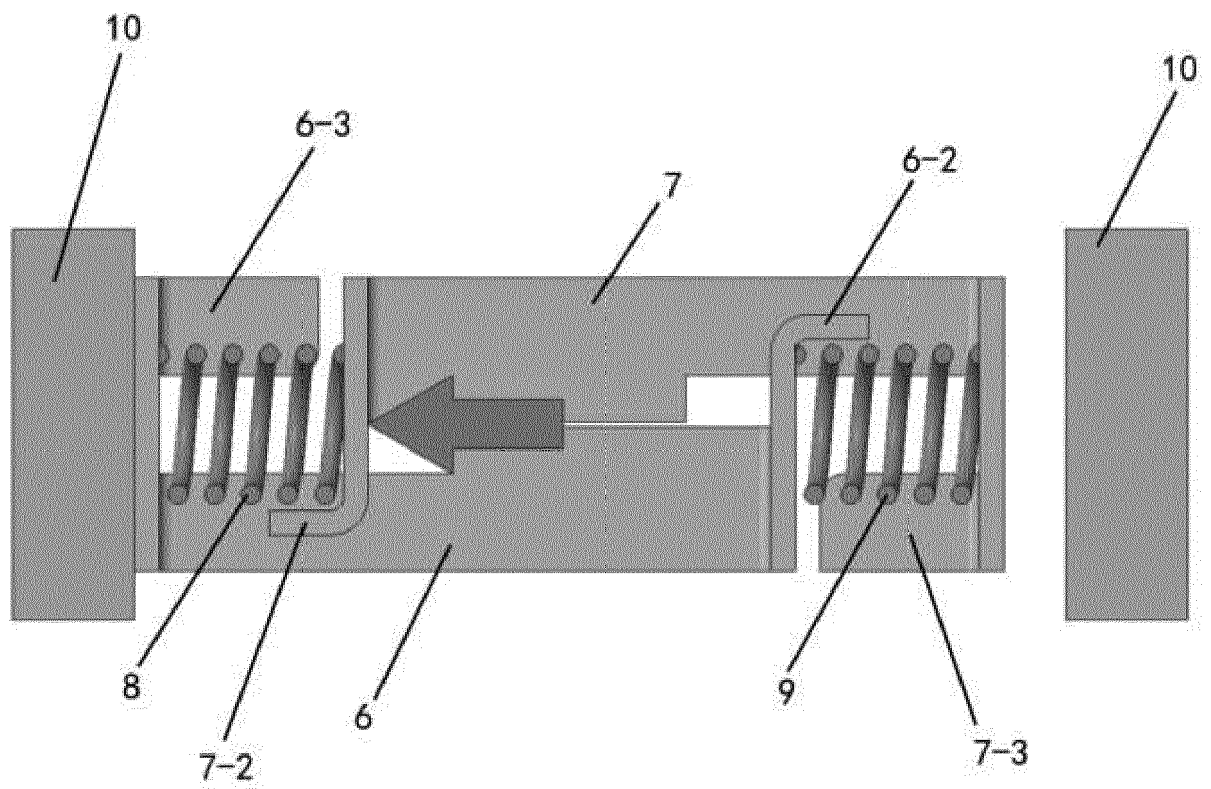


Fig.7

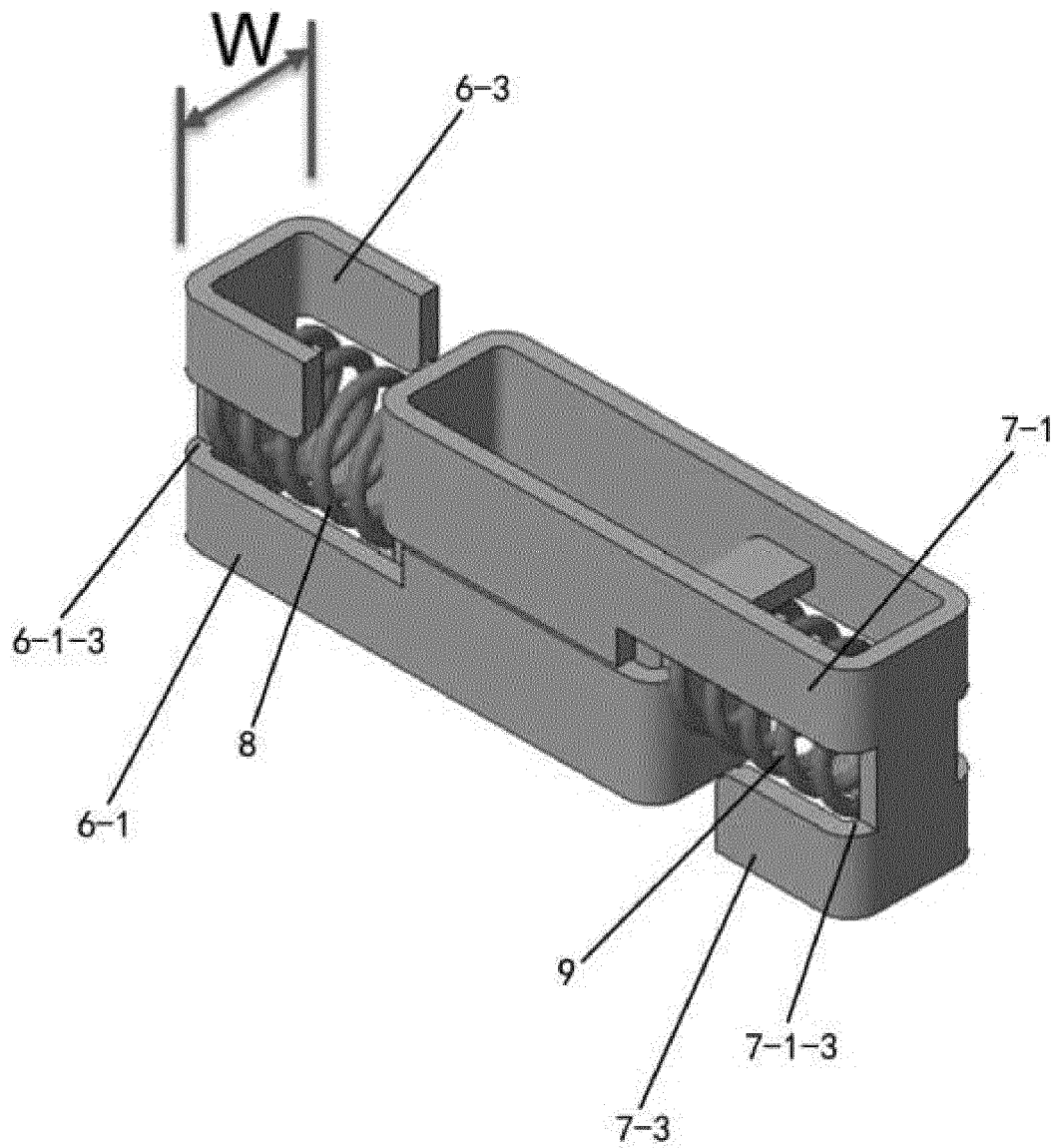


Fig.8

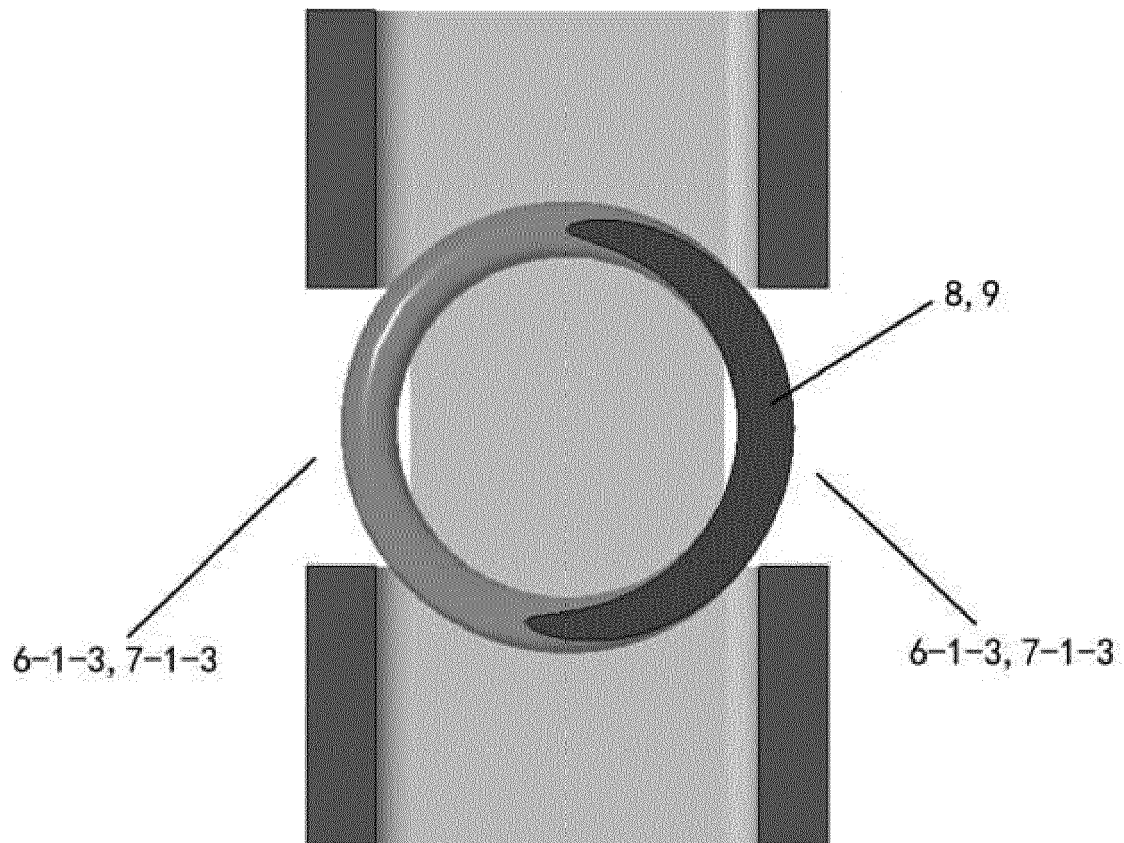


Fig.9

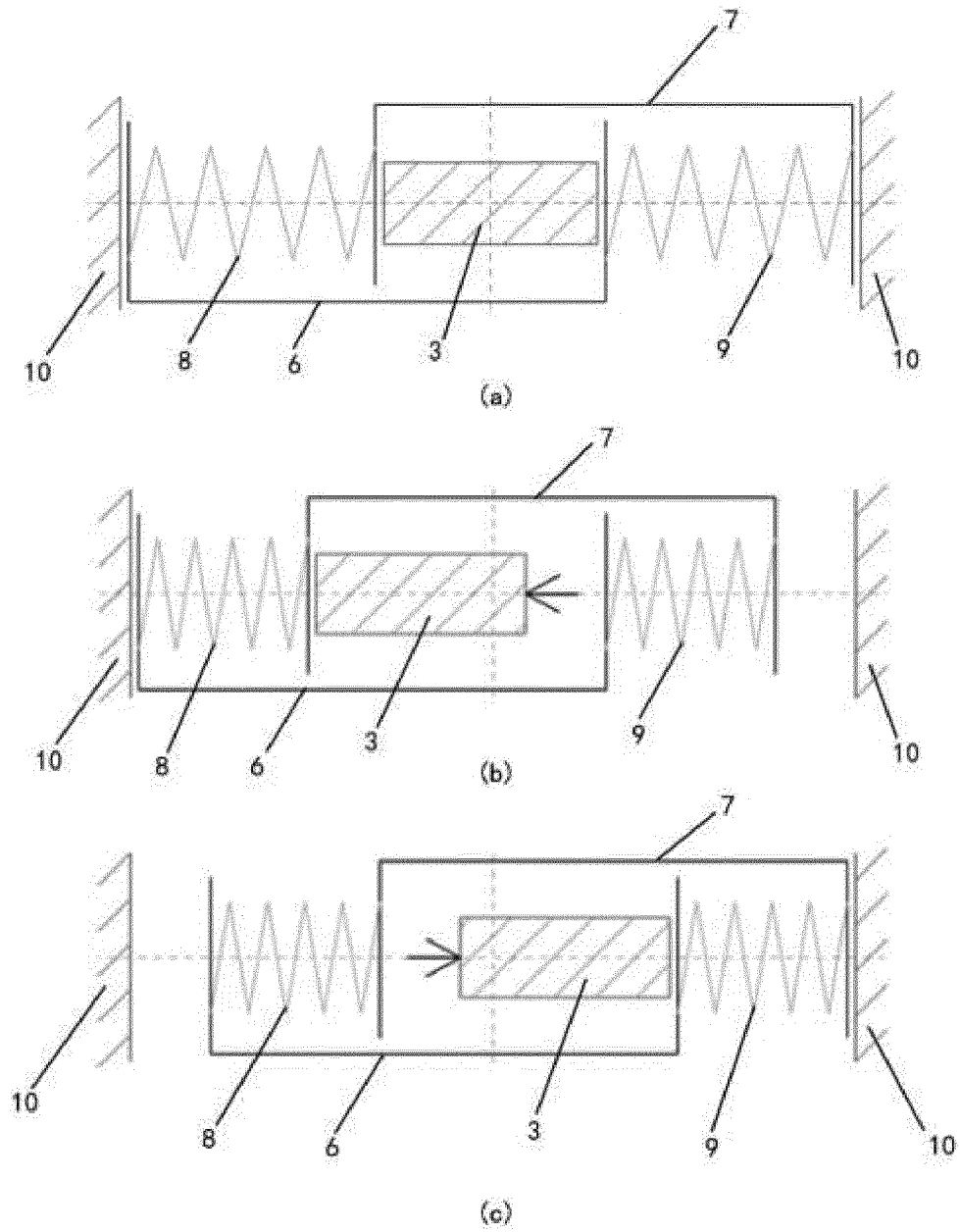


Fig.10

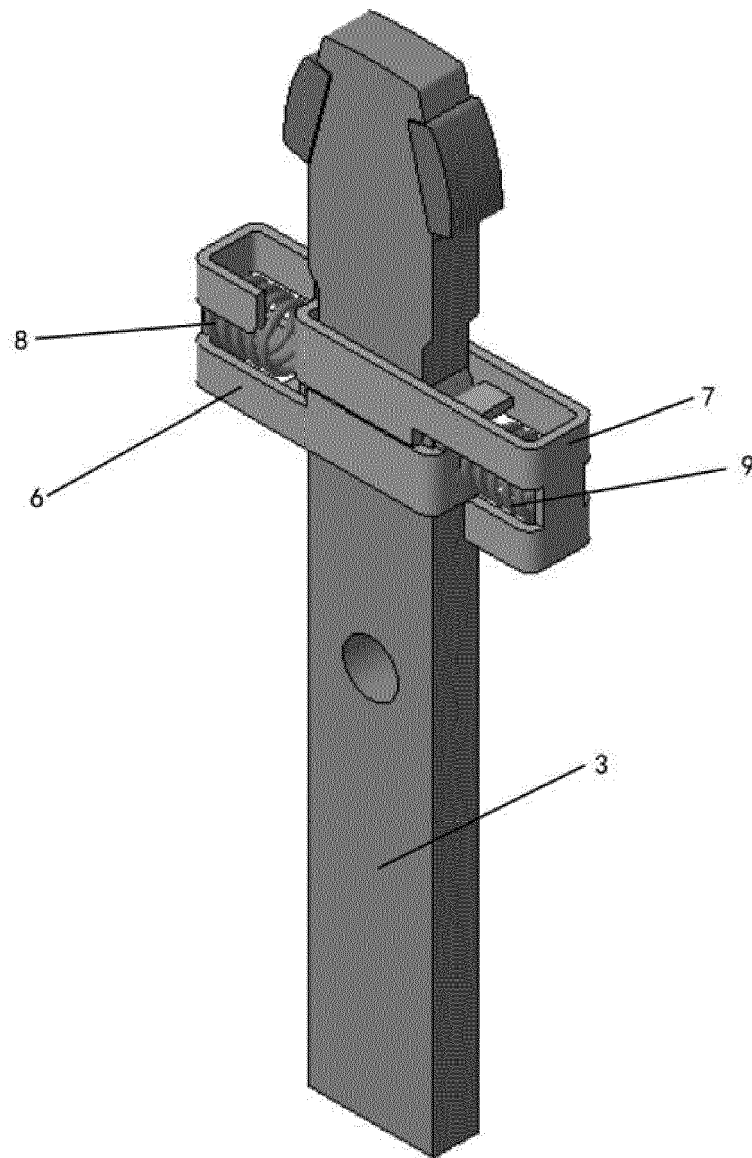


Fig.11

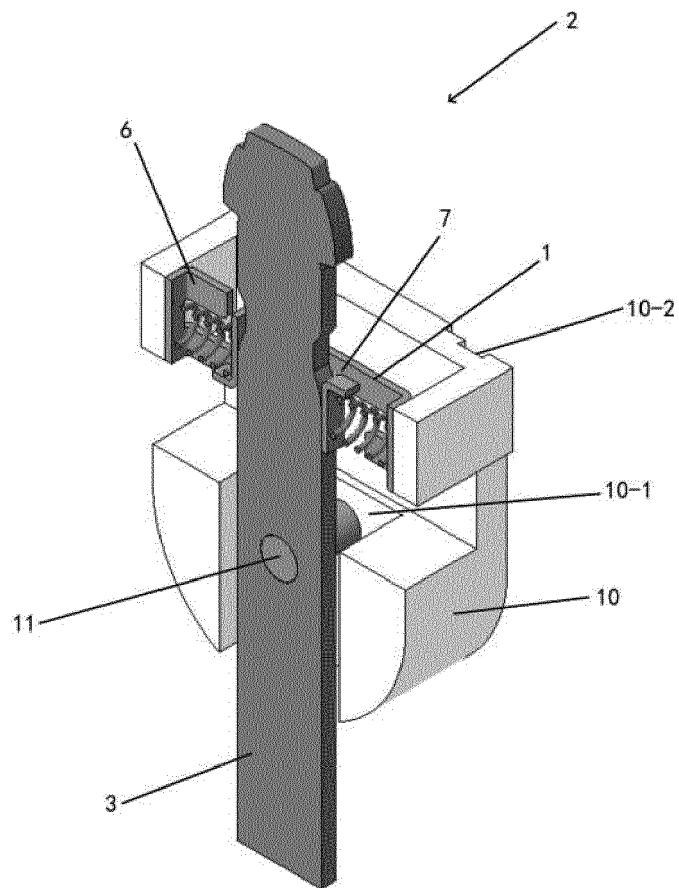


Fig.12

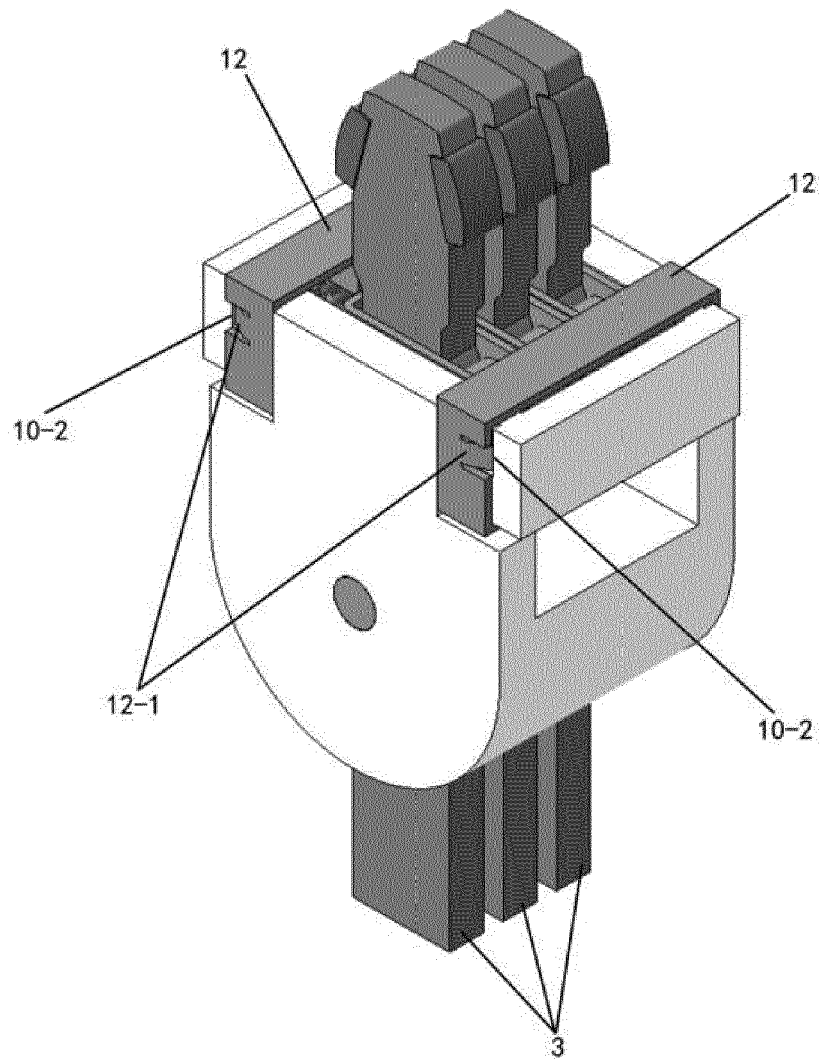


Fig.13



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			H01H
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 17 March 2022	Examiner Ramírez Fueyo, M
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