Aug. 13, 1940. L. E. FISHER ET AL 2,211,107

SWITCH

Filed Nov. 29, 1937

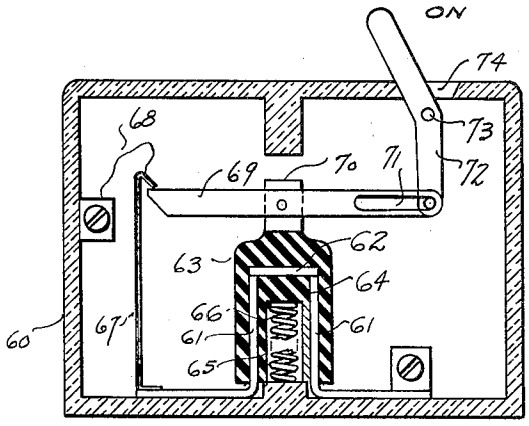


Fig. 1

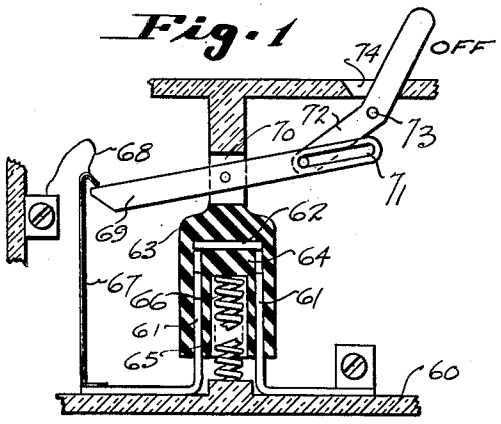


Fig. 2

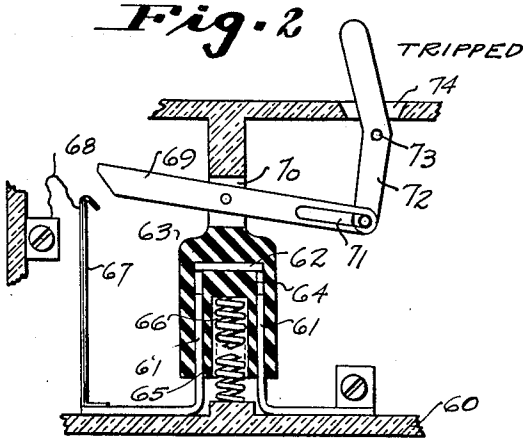


Fig. 3

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SWITCH

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Application November 29, 1937, Serial No. 176,958

2 Claims. (Cl. 200—116)

This application discloses a circuit protective and circuit controlled switch.

For an understanding of the switch hereof, reference should be had to the appended drawing. In the drawing,

Figs. 1 to 3 disclose a switch having a circuit protective thermal release latch, the switch being shown in "on," "off," and "tripped" positions, respectively.

In Figs. 1 to 3 there is disclosed a switch comprising a casing 60 having line and load contacts 61 adapted to be bridged by a bridging contact 62 disposed within a housing 63 formed with a slide 64 which fits between the contacts 61 and is formed with a socket 65 containing a compression spring 66 tending to separate the housing from the base mounting the contacts 61. A bimetal element 67 connected at one end to one of the contacts 61 and at the other by a flexible lead 68 to a suitable binding post forms a latch for a bar 69 pivotally connected to the housing 63 at the pivot 70 and pivotally connected by the pin and slot connection 71 to a handle 72 journalled in the casing at 73 and projecting through a casing slot 74.

The operation of this form of switch is as follows: When the parts are in the condition of Fig. 1 the circuit is established between the binding posts and the parts are held immobile by the spring action because one end of the bar 69 is latched by the thermal latch 67 and the other end by the handle 72, which engages the end of slot 74. If the handle be rotated clockwise to the position of Fig. 2, the bar 69 will rotate counterclockwise about the thermal latch as a pivot due to the action of the spring 66, to cause separation of contact 62 from the contacts 61 and the parts will come to rest in the position of Fig. 2 because of the engagement of the handle with an end of the slot 74.

On overload the latch 67 will warp to the left permitting movement of the parts from the position of Fig. 1 to the position of Fig. 3 by the spring 66. For reset handle 72 may be moved from the position of Fig. 3 to that of Fig. 2 to lower the latch end of the bar 69 and hook it under the latch against the action of spring 66, the latter again tending to maintain the parts immobile.

Now having described the switches hereof, reference will be had to the claims which follow:

1. A circuit interrupter comprising a handle member, a slidable contact block, a rocker arm extending generally transverse to the direction of sliding thereof and pivotally connected, between its ends, to the block, and a circuit current responsive control member, the members being longitudinally spaced and arranged with the block between them, and arranged at and connected to opposite ends of the rocker arm, a spring for moving the block and rocker arm when either end of the latter is released, movement of either member releasing one end of the rocker arm so that the other end thereof, connected to the unmoved member, may remain anchored by its connection thereto during such movement, the parts being so arranged that when the control member is holding the rocker arm, the movement of the handle in one direction permits the spring to cause movement of the block and arm for circuit opening, and that movement of the handle in another direction causes movement of the block and arm, in opposition to the spring, for circuit closing, and also being so arranged that when the control member is not holding the rocker arm, movement of the handle in the direction in which it is moved for circuit opening will cause movement of the arm for reanchoring the arm to the control member, and further being so arranged, that when the control member releases the arm, in response to a circuit abnormality, the arm and block will be moved by the spring to open the circuit and also the handle will move out of its then "on" position.

2. A circuit interrupter comprising a handle member, a slidable contact block, a rocker arm extending generally transverse to the direction of sliding thereof and pivotally connected, between its ends, to the block, and a circuit current responsive control member, the members being longitudinally spaced and arranged with the block between them, and arranged at and connected to opposite ends of the rocker arm, a spring for moving the block and rocker arm when either end of the latter is released, movement of either member releasing one end of the rocker arm so that the other end thereof, connected to the unmoved member, may remain anchored by its connection thereto during such movement, the parts being so arranged that when the control member is holding the rocker arm, movement of the handle in one direction permits the spring to cause movement of the block and arm for circuit opening, and that movement of the handle in another direction causes movement of the block and arm, in opposition to the spring for circuit closing, and also being so arranged that when the control member releases the rocker arm, in response to a circuit abnormality, the arm and block will be moved by the spring to open the circuit and also the handle will move out of its then "on" position, the parts also being so arranged that reanchoring of the arm and control member relatively following a release of the arm by the control member in response to a circuit abnormality will occur simultaneously with movement of the handle into circuit open "off" position.

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