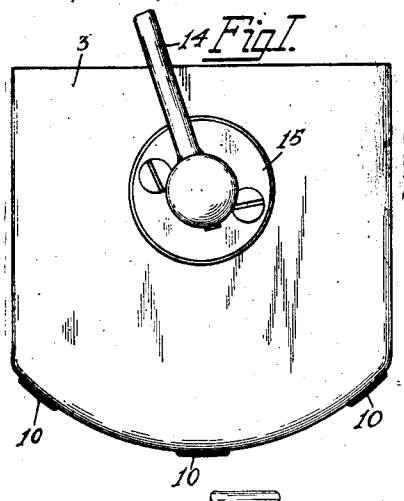
W. KAISLING.

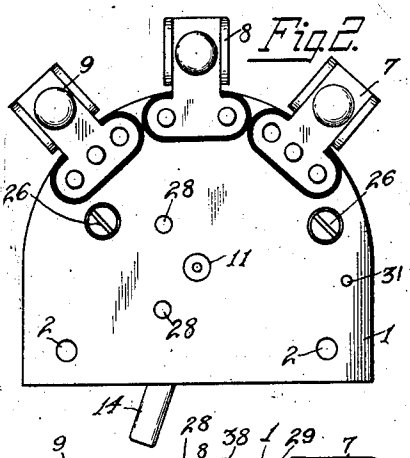
INDICATING SWITCH.

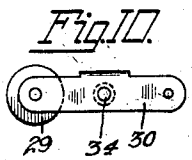
APPLICATION FILED JULY 26, 1913.

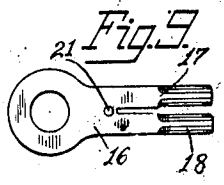
1,179,108.

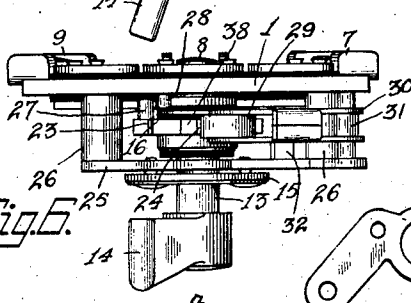
Patented Apr. 11, 1916

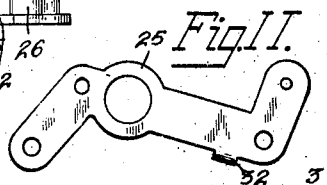


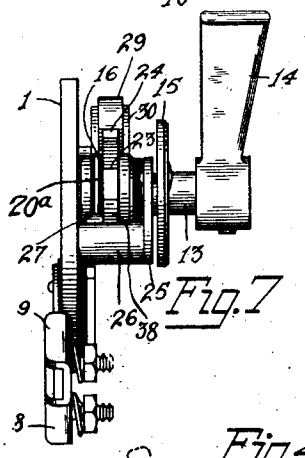


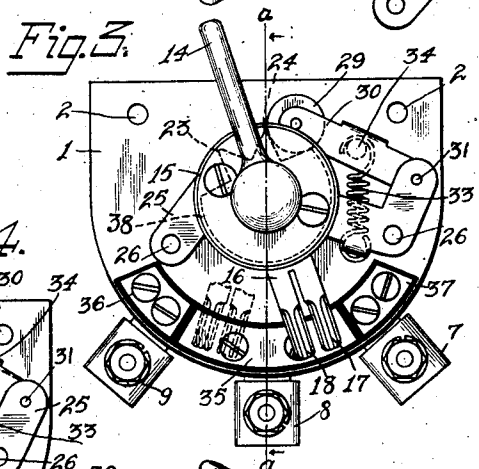


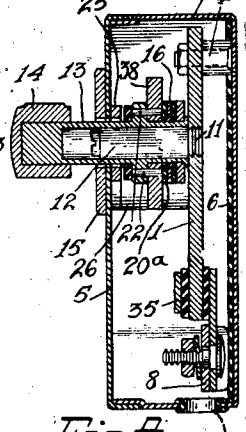


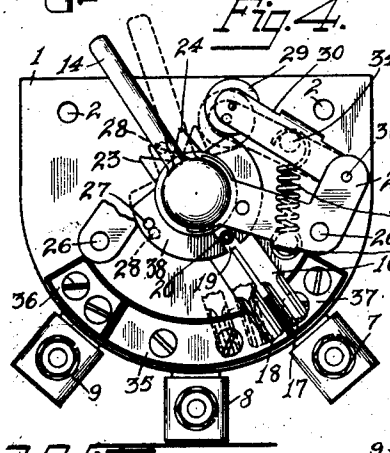


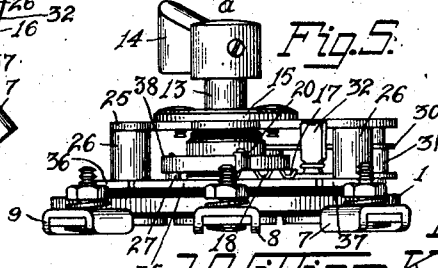












Witnesses:

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Inventor:

William Kaisling

By Curtis B. Camp

Attorney.

UNITED STATES PATENT OFFICE.

WILLIAM KAISLING, OF CHICAGO, ILLINOIS, ASSIGNOR TO KELLOGG SWITCHBOARD & SUPPLY COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

INDICATING-SWITCH.

1,179,108. Specification of Letters Patent. Patented Apr. 11, 1916.

Application filed July 26, 1913. Serial No. 781,442.

To all whom it may concern:

Be it known that I, WILLIAM KAISLING, a citizen of the United States of America, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Indicating-Switches, of which the following is a specification.

My invention relates to indicating switches and is designed to provide a switch which is adapted to control a plurality of circuits, which switch has means whereby suitable indication is made as to the manner in which this switch had been last actuated.

In one form of my invention, which is the form disclosed herein, I utilize a plurality of circuit terminals, the circuit through which is to be controlled by a suitable movable switch element. This movable switch element is provided with means so that whenever completing any given circuit, it must be manually held in that position because when released the switch element will return to a non-circuit controlling position. The movable switch element however has a plurality of resting positions, each one indicating which particular circuit closing function the switch element has last been called upon to perform. I will explain this form of carrying out my invention as it serves well for illustrative purposes in detail in connection with the accompanying drawing, in which—

Figure 1 is a top view of an inclosed switch structure constructed in accordance with my invention; Fig. 2 is a bottom view of my device; Fig. 3 is a top view of the switch structure the casing being removed; Fig. 4 is a similar view showing the parts in an alternative position; Fig. 5 is an end view of the structure shown in Fig. 3; Fig. 6 is an end view looking at the opposite end to that shown in Fig. 5; Fig. 7 is a side view of the device as shown in Fig. 3; Fig. 8 is a sectional view on line *a—a* of Fig. 3; Fig. 9 is a top view of the movable switch element; Fig. 10 is a detail view of a portion of the switch locking mechanism, and Fig. 11 is a detail view of a portion of the framework of the device.

My improved switch element consists of a base plate 1 having holes 2, 2 through the agency of which it is mounted within a casing 3 by means of the bolts 4 as shown more clearly in Fig. 8. The casing 3 is provided with a suitable cover plate 5 and also carries a layer of insulation 6 so that connectors 7, 8, and 9 respectively mounted on the base plate 1 may rest upon the surface of the casing without being short circuited. Outlets 10 are provided in the shell 3 which are preferably of insulating material and which permit conductors to be inserted for connection to the connectors 7, 8 and 9. A screw 11 fixedly secured to the base plate 1 carries a sleeve 12 about which an operating sleeve 13 suitably controlled by a handle 14 is rotatably mounted. An escutcheon plate 15 is preferably provided upon the cover 5 as shown most clearly in Figs. 1 and 8. The sleeve 13 carries an insulatingly mounted switch element 16 which is bifurcated and has the two fingers 17 and 18, which fingers are slightly bent at the opposite sides as shown most clearly in Fig. 5, so as to ride readily over contact surfaces with which they are to coöperate. This sleeve 13 also carries a cam 38, which cam is more clearly shown in Fig. 4 as having a slot 19 whose opposite sides are adapted to engage an insulating roller 20 fixedly carried by the switch element 16 by being mounted in the hole 21 provided therefor. This cam 38 as stated is fixedly secured to the sleeve 13 by being pinned thereto through the agency of the pins 22 as shown more clearly in Fig. 8. The switch element 16 as stated is insulated from the sleeve 13 and is also prevented from having electrical connection with the cam 38 through the interposition of the insulating bushing 20^a. This cam 38 is shown also very clearly in dotted lines in Fig. 3 and has a pair of teeth 23 and 24. A bracket 25 fixedly secured to the base plate 1 through the agency of studs 26, 26 helps to support the upper extremity of the sleeve 13. The element 38 also carries a downwardly projecting pin 27 which is adapted to coöperate with a pair of limit stops or pins 28 to limit the angular movement of the rotatable part of the structure. The roller 29 is carried by a swinging arm 30, which swinging arm is pivotally mounted by being fixedly secured to the pivotally mounted shaft 31 carried between the base plate 1 and the bracket 25. The bracket 25 has a downwardly extending arm 32 which holds one extremity of a spiral spring 33, the opposite extremity of

said spiral spring engaging a stud 34 mounted between the opposite sides of the swinging arm 30. The spring 33 always holds the roller 29 in engagement with the cam element 38. This roller thus coöperates with the teeth 23 and 24 and normally holds the switch element 16 in either one of the positions shown in Fig. 3, one position being shown in full lines and the other position being shown in dotted lines.

Now whenever pressure is exerted against the handle 14, to push it in a contra-clockwise direction, the switch element assumes the position shown in Fig. 4, whereupon the roller 29 is pushed outwardly against the force of the spring 33, and when the pressure is released on said arm 14, the parts are again pushed into the position shown in full lines in Fig. 3. Similarly when pressure is exerted against the arm 14 to push it in a clockwise direction, the switch element 16 is moved clockwise beyond the position shown in dotted lines in Fig. 3 to occupy the position on the opposite side of the base plate corresponding to the position shown in full lines in Fig. 4, at which time the roller 29 is again held outwardly and when the pressure is released restores the switch element to the position shown in dotted lines in Fig. 3. The switch element is adapted to coöperate with three contact plates 35, 36 and 37, the contact 35 being in electrical connection with the connector 8, the contact strip 37 being in electrical contact with the connector 7, and the contact strip 36 being in electrical contact with the connector 9. Whenever the movable parts are in their normal positions, which are the positions indicated in Fig. 3, then no contact is established between contact plate 35 and either one of the contact plates 36 or 37. When however the switch element is moved beyond this normal position in either direction circuit is established between the contact plate 35 and either the contact plate 36 or the contact plate 37.

The object of my structure will now be apparent. If for instance the arm 14 is actuated so that contact is established between the elements 35 and 37 and the pressure against the handle 14 then released, then the roller 29 and spring 33 restore the parts to the position shown in full lines in Fig. 3. If however the arm 14 is moved in a clockwise direction to establish contact between the contact plate 35 and the contact plate 36, then when pressure against the arm 14 is released, the roller 29 and spring 33 restore the parts as indicated by the dotted lines in Fig. 3. Unless the arm 14 is held in a position whereby the switch element establishes contact, the switch element is rotated to the normal positions indicated in Fig. 3 so that contact only obtains when pressure is exerted against the arm 14 to hold it in either one of its farthermost positions. It will be obvious however that the arm 14 is arranged to occupy either one of two normal resting positions, and the resting position which the arm occupies is for the purpose of indicating with which particular plate, that is, 36 or 37 contact has been last established. Thus if contact has been established between the plates 35 and 37 and pressure against the handle is released, then automatically the parts resume the position shown in full lines in Fig. 3 to indicate that contact has last been established with plate 37.

I have thus provided a switch structure in which two different circuits, for instance, may be established, which switch structure at the same time has means to indicate which circuit was the one last established or otherwise controlled.

It will be apparent that although the handle 14 may be moved from one indicating position to the other without effecting the closure of either of the contact plates 36, 37, this is not the intended operation of the device as the intermediate indicating positions are provided for the purpose of indicating to which extreme operating position the switch was last moved.

I have thus set forth one form which my invention may take, but it will be readily apparent that changes and modifications may be made without departing from its spirit.

Having however thus described one form for illustrative purposes, what I claim as new and desire to secure by Letters Patent is:

1. A switch device comprising a reciprocatable actuating member having four positions, said positions being two extreme operative positions and two intermediate indicating positions, switch contacts for each of said extreme positions, a wiper controlled by said actuating member for engaging said contacts, said actuating member being adapted to be manually moved into either extreme operative position, and means whereby when the operator releases the hold upon the actuating member when in either operative position it is automatically restored to an intermediate indicating position.

2. A switch device comprising a reciprocatable actuating member having four positions, said positions being two extreme operative positions and two intermediate indicating positions, switch contacts, a contact wiper controllable by said actuating member for coöperating with said switch contacts, means whereby said actuating member may be manually moved into either operative position by the operator, and mechanism whereby when the operator releases the hold upon the moving means when the actuating member is in either operative posi-

tion said means and actuating member are automatically restored to an intermediate indicating position.

3. A switch device comprising a reciprocatable actuating member having two extreme operative positions and an intermediate indicating position for each operative position, switch contacts, a contact wiper controlled by said actuating member for engaging the said switch contacts when said actuating member is in either extreme operating position, a lever whereby said actuating member may be manually moved into either operative position by the operator, and spring actuated restoring mechanism whereby when the operator releases the hold upon said lever when the actuating member is in either operative position said lever and actuating member are automatically restored to the corresponding intermediate indicating position.

4. A switch device comprising a rotatable switch member adapted to be reciprocated into extreme operative positions, switch contacts corresponding to each operative position and adapted to be engaged by a contact wiper when said actuating member is in either extreme operating position, an operating element whereby said actuating member may be manually rotated into either operative position by the operator, and spring actuated restoring mechanism for automatically restoring the actuated member and operating element from either operative position to a corresponding intermediate indicating position when the operator releases the hold upon the operating element.

5. A switch device comprising a reciprocatable actuating member having four positions, said positions being two extreme operative positions and two intermediate indicating positions, switch contacts for each of said extreme positions, said actuating member being adapted to be manually moved into either extreme operative position, a serrated member attached to said actuating member, and a pivoted member coöperating with said serrated member whereby when the operator releases the hold upon the actuating member when in either operative position it is automatically restored to an intermediate indicating position.

6. A switch device comprising a reciprocatable actuating member having four positions, said positions being two extreme operative positions and two intermediate indicating positions, switch contacts adapted to be closed when said actuating member is in either operating position, means whereby said actuating member may be manually moved into either operative position by the operator, a toothed member secured to said actuating member, and a pivoted member coöperating with said toothed member whereby when the operator releases the hold upon the moving means when the actuating member is in either operative position said actuating member is automatically restored to an intermediate indicating position.

7. A switch device comprising a reciprocatable actuating member having two extreme operative positions and an intermediate indicating position for each operative position, switch contacts adapted to be rendered effective when said actuating member is in either extreme operating position, a lever whereby said actuating member may be manually moved into either operative position by the operator, a cam member attached to said actuating member, and a spring controlled roller in engagement with said cam member, whereby when the operator releases the hold upon said lever when the actuating member is in either operative position said lever and actuating member are automatically restored to the corresponding intermediate indicating position.

8. A switch device comprising a rotatable switch member adapted to be reciprocated into extreme operative positions, switch contacts corresponding to each operative position and adapted to be rendered effective when said actuating member is in either extreme operating position, an operating element whereby said actuating member may be manually rotated into either operative position by the operator, a cam member associated with said actuating member, and a pivoted spring controlled member provided with a roller for coöperating with said cam member, for automatically restoring the actuated member and operating element from either operative position to a corresponding intermediate indicating position when the operator releases the hold upon the operating element.

Signed by me at Chicago, county of Cook and State of Illinois, in the presence of two witnesses.

WILLIAM KAISLING.

Witnesses:
G. E. MUELLER,
B. O'BRIEN.