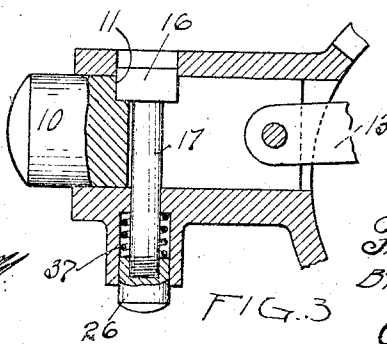
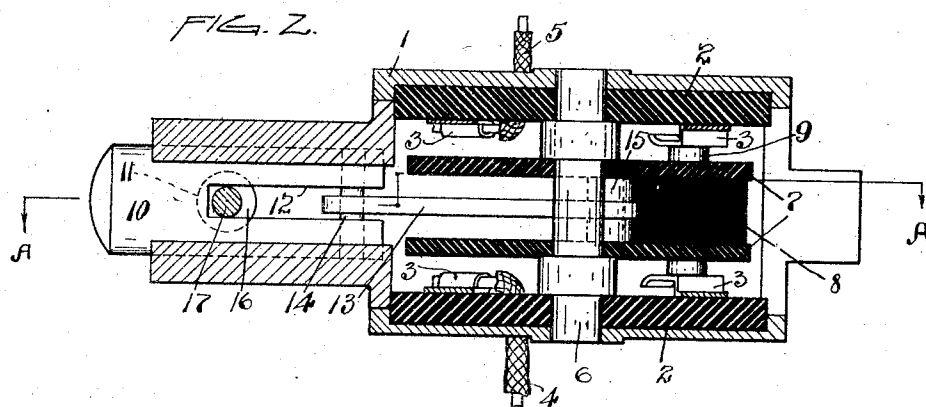


1,047,575.



WITNESSES:

Robert M. S. *RS*

& INVENTOR
 Franklin Schneider
 BY
 J. B. Fay
 ATTORNEY

UNITED STATES PATENT OFFICE.

FRANKLIN SCHNEIDER, OF CLEVELAND, OHIO, ASSIGNOR TO THE VAN DORN & DUTTON COMPANY, OF CLEVELAND, OHIO, A CORPORATION OF OHIO.

ELECTRIC SWITCH.

1,047,575.

Specification of Letters Patent.

Patented Dec. 17, 1912.

Application filed June 8, 1911. Serial No. 631,925.

To all whom it may concern:

Be it known that I, FRANKLIN SCHNEIDER, a citizen of the United States, and a resident of Cleveland, county of Cuyahoga, and State of Ohio, have invented a new and useful Improvement in Electric Switches, of which the following is a specification, the principle of the invention being herein explained and the best mode in which I have contemplated applying that principle, so as to distinguish it from other inventions.

My invention relates to switches for the control of electric circuits. Its general object is the provision of compact switch mechanism which may be conveniently operated to close the circuit to be controlled, and which will keep the circuit closed until it is further operated, whereupon it will instantly move to a position opening the circuit.

Other objects of the invention will appear from the detailed description.

To the accomplishment of this and related ends, said invention, then, consists of the steps and means hereinafter fully described and particularly pointed out in the claims.

The annexed drawing and the following description set forth in detail certain mechanism for carrying on the invention, such disclosed means constituting, however, but one of various mechanical forms in which the principle of the invention may be used.

In said annexed drawings:—Figure 1 is a section of the switch, one part broken away and showing a block of insulation in white, for the sake of clearness; Fig. 2 is a section on the line B—B in Fig. 1, the line A—A in Fig. 2 indicating the plane of the section of Fig. 1; and Fig. 3 illustrates a modification in section corresponding to that of Fig. 1.

The switch may be conveniently used to control the operation of such tools as electrically operated drills, or similar tools, though, of course, this is not its only use, but it may be adapted to practically any desired use.

The switch comprises a casing 1 in which are mounted two spaced blocks 2 of insulating material, which will preferably be of disk shape. Mounted on each block 2, are two contact members 3, the contact members on one block lying opposite the respective contact members on the other block. Con-

nected with the contact members on one block are two lead wires 4, designed to be connected with the source of electricity, and connected with the contact members on the other block are two lead wires 5, designed to be connected with the tool to be operated.

A shaft 6 is secured in the casing, substantially at its center, and on this shaft are rotatably secured two disks 7 of insulating material, which are spaced apart by two substantially diametrically opposite blocks 8, also of insulating material. Through each of these blocks 8 extends a pin 9 of conducting material, and these are designed, in one rotative position of the disks, to contact with the respective pairs of contacts 3.

A member 10 is reciprocably held in the casing, and is provided with a recess 11, from which extends, in the direction of its length, a slot 12. A link 13 is pivoted to the member 10 on a pin 14, and to the disks 7, eccentrically of their axis, on a pin 15. A bolt 16 is movable at right angles to the member 10, and bears a projection 17, which extends through the slot 12. A spring 18 pushes the bolt 16 against the member 10, and when the recess 11 is brought into register with the bolt 16, the latter is adapted to enter the recess. The tension of the spring 18 may be varied by the screw 19.

Reciprocable in the casing, in a direction parallel to the direction of movement of member 10, is a second member 20. This member is provided with a cam surface 21, and the projection 17 on the bolt 16 bears against the member 20. The spring 22 tends to hold the member 20 in outer position. A spring 23 is secured to a pin 24 attached to the disks 7, and to a pin 25 attached to the casing, and tends to rotate the disks to that position where the contacts carried by the disks will be out of contact with the fixed contacts.

In operation, the normal position will be that in which the circuit is broken, and the mechanism is held in that position by the spring 23. If the operator pushes the member 10 inwardly, the disks carrying the movable contacts will obviously be moved, and when these movable contacts are in engagement with the pairs of fixed contacts, the recess 11 registers with the bolt 16, which is pressed into the recess, and holds the parts in the position closing the circuit.

When it is desired to break the circuit, it is only necessary to press inwardly upon the member 20 and the cam surface formed on the member thrusts upwardly on the projection 17 and thus pushes the bolt from the recess 11. The member 10 is now free to move outwardly and hence the spring 23 moves the disks back to the position in which the circuit is broken. The slot 12 allows the member 10 to reciprocate despite the projection 17. It will thus be understood that the switch mechanism is compactly arranged, and is adapted to easily and quickly make or break the circuit in which it is connected. An improved result is obtained by placing the contacts on opposite blocks, and placing between them disks of insulation, for by this arrangement of parts all arcing between the contacts is prevented.

In Fig. 3, is illustrated a somewhat simpler arrangement for releasing the member 10 than that described above. The modification consists in the elimination of member 20 entirely, the bolt 16 being extended to receive a knob or push-button 26 on its lower end whereby said bolt may be directly raised out of the recess 11. A spring 27, cooperative with such knob is then preferred to the spring 18 that pressed against the bolt in the previous construction, in order to normally seat such bolt in said recess 11.

Other modes of applying the principle of my invention may be employed instead of the one explained, change being made as regards the mechanism herein disclosed, provided the means stated by any of the following claims or the equivalent of such stated means be employed.

I therefore particularly point out and distinctly claim as my invention:—

1. In a device of the character described, the combination of a movable switch member; a spring tending to hold said member in "off" position; a longitudinally slidable member connected with the switch member; retaining means adapted to engage said slidable member when the switch member is in

"on" position; a second longitudinally slidable member disposed parallel with the first slidable member and adapted, on movement in one direction, to disengage said retaining means from the first slidable member; and a spring tending to move the second member in the opposite direction.

2. In a device of the character described, the combination of a movable switch member; a spring tending to hold said member in "off" position; a longitudinally slidable member connected with said switch member, and provided with a recess in its side; a bolt adapted to engage said recess when the switch member is in "on" position; a spring tending to move said bolt to engaging position; a second longitudinally slidable member disposed parallel with the first slidable member and adapted, on movement in one direction, to disengage said bolt from said recess; and a spring tending to move the second member in the opposite direction.

3. In a device of the character described, the combination of a movable switch member; a spring tending to hold said member in "off" position; a longitudinally slidable member connected with said switch member, and provided with a recess in its side and with a slot extending longitudinally from the recess; a second longitudinally slidable member disposed parallel with the first slidable member and provided with an inclined surface on the side adjacent the first slidable member; a bolt adapted to engage said recess when the switch member is in "on" position, said bolt being provided with a projection extending through said slot and adapted to be engaged, on movement of the second member in one direction, by said inclined surface; and a spring tending to move said second slidable member in the opposite direction.

Signed by me this 2nd day of June, 1911.
FRANKLIN SCHNEIDER.

Attested by—

BURTON W. SWEET,
JNO. F. OBERLIN.