H. F. WAITE.

ELECTRIC SWITCH.

APPLICATION FILED AUG. 10, 1920.

1,398,580.

Patented Nov. 29, 1921.

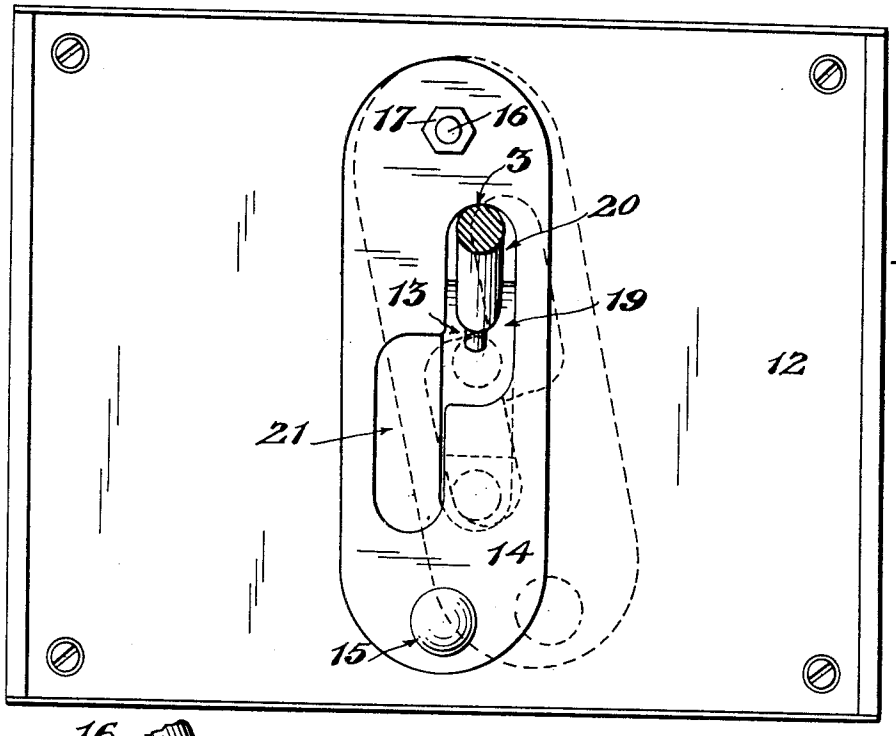


Fig. 1.

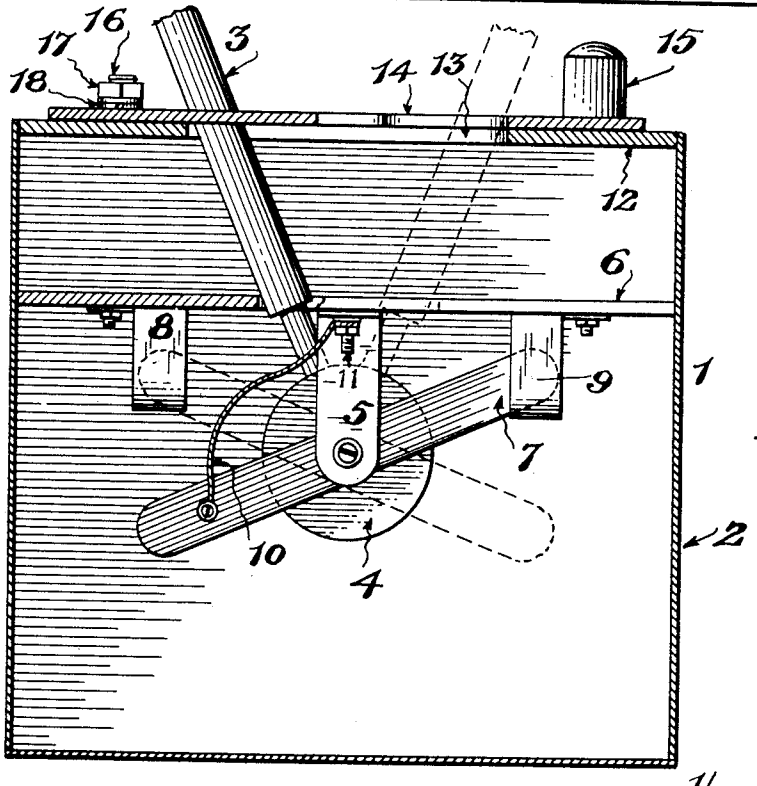


Fig. 2.

Inventor

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By his Attorney

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UNITED STATES PATENT OFFICE.

HARRY F. WAITE, OF NEW YORK, N. Y.

ELECTRIC SWITCH.

1,398,580. Specification of Letters Patent. Patented Nov. 29, 1921.

Application filed August 10, 1920. Serial No. 402,723.

To all whom it may concern:

Be it known that I, HARRY F. WAITE, a citizen of the United States, and a resident of the city of New York, county of Queens, and State of New York, have invented a new and useful Improvement in Electric Switches, of which the following is a specification.

The object of my invention is to provide a switch which may be reversed deliberately by the operator but cannot be reversed inadvertently. Such a switch is extremely useful where a cutting tool which, has to be reversed at times, is run by an electric motor, sometimes in one direction and sometimes in the other, although this switch may be used for any other purpose whatsoever where a reversal of current is desired.

For a more particular description of my invention reference is to be had to the accompanying drawings, forming a part hereof, in which:

Figure 1 is a plan view of a switch provided with my improvement,

Fig. 2 is a sectional view of the same.

Throughout the various views of the drawings, similar reference characters designate similar parts.

My improved switch 1 may be mounted in a box 2, or any other convenient container, and is provided with a handle 3 which runs to a shaft 4 of insulating material which is pivotally mounted in brackets 5 that extend from a partition 6. The insulated shaft 4 carries a number of conducting blades 7 each of which may be insulated from the others and each blade is so arranged and disposed that it may engage either of two sets of jaws 8 and 9 but not both at one time and it may be thrown in a mid position where it will engage neither. These jaws 8 and 9 may be mounted in any suitable way as from the partition 6. The jaws 8 and 9 and the blades 7 are suitably connected in the conventional manner. Only one cable 10 is shown herein and this runs to a blade 7 from a terminal 11, which may be carried by the partition 6 or mounted in any other suitable way.

The partition 6 is slotted to permit the movement of the handle 3 and so is an adjacent wall of the box 2, as the top 12, which is provided with a straight slot 13 which is long enough to permit a full throw of the handle 3. A little less than half of the slot 13 is always covered by a slide 14 which is provided with a handle 15 at one end by which it may be swung on its pivot 16. This pivot preferably consists of a screw on which is mounted a nut 17 and a locking washer 18 so that the cover 14 will not slide too freely. The slot 19 in this plate 14 is provided with two offset portions 20 and 21 only one of which registers with the slot 13 at one time. When the plate 14 is in the position shown in Fig. 1, the part 20 registers with the slot 13 and when it is thrown into position indicated by dotted lines, the part 21 registers with the slot 13. As long as the plate 14 is in the position shown, the handle 3 may be thrown from the position in which it closes a circuit through the jaws 9 to the position in which it is open and no circuit is closed. When the plate 14 is as shown in dotted lines, the handle 3 is then at the other part of its throw and it may be shifted from mid position to the one indicated in dotted lines in Fig. 2 where a circuit is closed through jaws 8. In any event when the handle 3 is shifted it cannot be shifted beyond its mid position except by throwing the plate 14 so that two operations are necessary for a reversal, namely a shifting of the handle 3 to mid position and then a corresponding shift of the plate 14.

If the plate 14 were omitted, the operator might strike the mid position or he might throw the handle far enough beyond the mid position to reverse his motor and thereby cause damage. Such an inadvertent action is impossible where this plate 14 is employed as described.

While I have shown and described one embodiment of my invention, it is obvious that it is not restricted thereto but that it is broad enough to cover all structures that come within the scope of the annexed claims.

What I claim is:

1. A switch with two sets of jaws and blades and means for mounting the blades to engage either set of jaws or neither set, but not both at once, a handle by means of which said blades may be shifted and slotted, oscillating means for limiting the throw of the handle so that the blades may be made to engage one set of jaws or no jaws while the limiting means is in one position and the other set of jaws or no jaws when the limiting means is in a second position.

2. A switch with two sets of jaws and blades and means for mounting the blades so as to engage either set of jaws or neither

set, but not both at once, a handle by means of which said blades may be shifted and a slotted pivoted plate for limiting the throw of the handle, the slot in the plate being arranged with offset portions so that when the handle is in one of said portions, one set of jaws or no jaws may be engaged by the blades and when the plate is shifted, the other set of jaws or no jaws may be engaged by the blades.

3. A switch with two sets of jaws and blades and means for mounting the blades to engage either set of jaws or neither set, but not both at once, a handle by means of which said blades may be shifted and a single, integral means for limiting the throw of the handle so that the blades may be made to engage one set of jaws or no jaws while the limiting means is in one position and the other set of jaws or no jaws when the limiting means is in a second position.

In testimony whereof, I have set my hand this 6 day of August, 1920.

HARRY F. WAITE.