W. T. PRINGLE.

ELECTRIC SWITCH.

APPLICATION FILED APR. 7, 1909.

982,869. Patented Jan. 31, 1911.

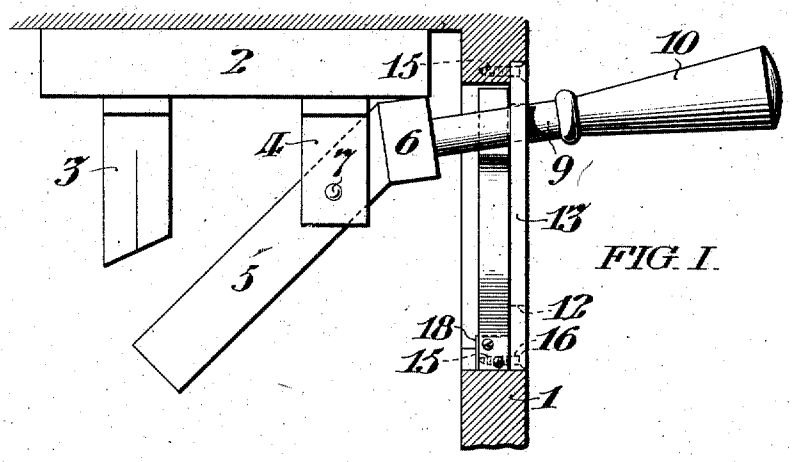

FIG. I.

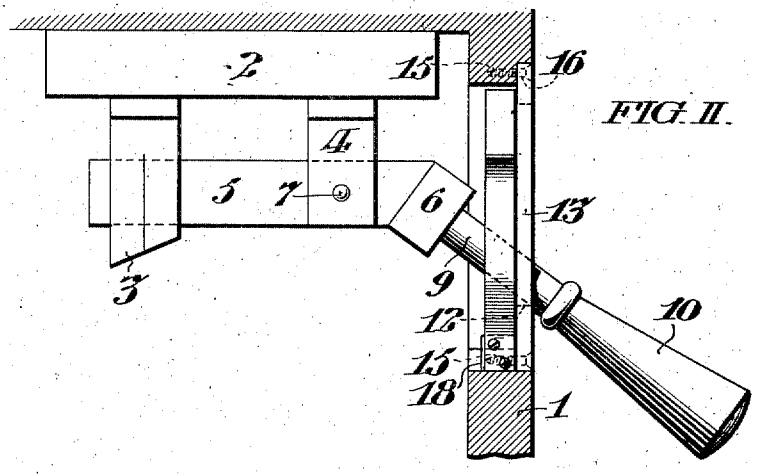

FIG. II.

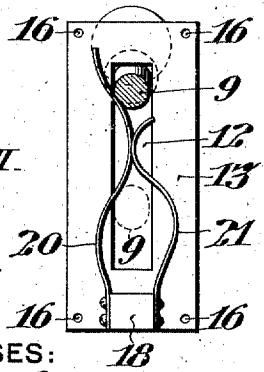

FIG. III.

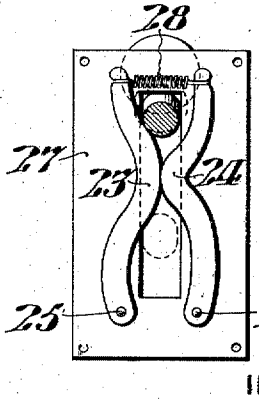

FIG. IV.

WITNESSES:

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ELECTRIC SWITCH.

982,869. Specification of Letters Patent. Patented Jan. 31, 1911.

Application filed April 7, 1909. Serial No. 488,463.

To all whom it may concern:

Be it known that I, WILLIAM T. PRINGLE, of Philadelphia, in the State of Pennsylvania, have invented a certain new and useful Improvement in Electric Switches, whereof the following is a specification, reference being had to the accompanying drawings.

My invention is conveniently applicable to ordinary knife switches, or switches of any type operated by means of a lever, and may be employed with special advantage in theaters or other installations where such switches are covered by a shield or casing through which the levers project and the latter are apt to be accidentally displaced.

As hereinafter described, my invention includes a device which may be supported by a shield or casing covering a switch, and independently of the latter, but in such relation to the switch lever as to detain the latter in either of its extreme positions and prevent said lever from remaining in an intermediate position. As described, said lever controlling device conveniently includes a plate having a slot through which the lever extends, and two opposed resilient or spring pressed members, one of which serves to normally detain said lever in either of its extreme positions, and the other of which in coöperation with the first member serves to prevent said lever from remaining in an intermediate position.

My invention comprises the various novel features of construction and arrangement hereinafter more definitely specified and claimed.

In the drawings; Figure I is a fragmentary vertical sectional view of a casing, showing an ordinary knife switch with my invention applied thereto, the switch lever being in the open position. Fig. II is a fragmentary sectional view similar to Fig. I, but showing the switch lever in closed position. Fig. III is an inner face view of the lever controlling device shown in Figs. I and II, the opposed movable members thereof being resilient. Fig. IV is a view similar to Fig. III, but showing a modified form of the invention wherein the opposed movable members are rigid but adapted to oscillate toward and away from each other.

In said figures; 1 is a casing inclosing a switch having the insulating base 2, terminals 3, and bearing brackets 4. The switch blades 5, being rigidly connected by the yoke bar 6, are mounted to oscillate on the pivots 7 in said brackets 4, when operated by the lever 9, provided with the handle 10. Said lever 9 extends through the slot 12 in the plate 13 of the lever controlling device, which is set in a suitable recess in said casing 1, to which it is rigidly connected by screws 15 extending through the openings 16, in said plate. As shown in Fig. III, said plate 13 is provided with the boss 18, which supports the two opposed relatively movable members 20 and 21, which are conveniently formed of spring metal. As indicated, said member 20 is so shaped as to bear upon the lever 9 and normally retain it in either of its extreme positions in said slot 12. Said member 21 is so shaped as to project into the path of said lever intermediate of its extreme positions and in opposition to said member 20, so as to force said lever 9 away from its intermediate position in either direction of its traverse. It is to be understood that the coöperative effect of the opposed relatively movable members 20 and 21 aforesaid is such that an appreciable manual effort is required to shift the lever 9 past its intermediate position, but when past said position said members, and particularly the member 21, tend to throw said lever to its extreme position, and, said member 20 then retains said lever in said extreme position until it is again manually shifted.

The form of my invention shown in Fig. IV comprises opposed relatively movable members 23 and 24 having the respective functions of the members 20 and 21 above described. However, said members 23 and 24 are rigid but mounted to oscillate upon respective pivots 25 and 26 extending from their supporting plate 27. The upper ends of said members 23 and 24 are connected by the spring 28 which normally presses them into the relative position shown; said spring being conveniently detachably engaged with said members as indicated.

It may be observed that it is characteristic of both forms of my invention above described that a device is provided which is primarily separate and distinct from the switch mechanism so that it is capable of being mounted in any desired relation with the switch lever in accordance with the construction of the casing inclosing the switch mechanism, but, when said device is arranged in coöperative relation with the switch mecha-

nism as above described it has the effect of not only producing a snap action of the switch in both directions but prevents the switch mechanism from being left in an intermediate position wherein the terminals and blades might be damaged by arcing. Moreover, it may be observed that my invention aforesaid has the economical advantage that it is applicable to switches of the ordinary types, to effect an operation which it has hitherto been only possible to effect at greater expense, with more elaborate switch mechanism.

I do not desire to limit myself to the precise details of the construction and arrangement above described, as it is obvious that various modifications may be made therein without departing from the essential features of my invention as defined in the appended claims.

I claim:—

1. The combination with a switch mechanism having an oscillatory operating lever; of a device distinct from the said switch mechanism and arranged to be supported independently thereof; having opposed relatively movable members arranged to engage said lever and effect a snap action thereof; one of said movable members being arranged to normally retain said lever in either of the extreme positions of the latter.

2. The combination with a switch mechanism having an oscillatory operating lever; of a device distinct from the said switch mechanism and arranged to be supported independently thereof; having opposed relatively movable members arranged to engage said lever and effect a snap action thereof; one of said movable members being arranged to normally retain said lever in either of the extreme positions of the latter; and, the other of said movable members being arranged to bear upon said lever only when the latter is in an intermediate position.

3. The combination with a switch mechanism having an oscillatory operating lever; of a device distinct from the said switch mechanism and arranged to be supported independently thereof; having opposed relatively movable members arranged to engage said lever and effect a snap action thereof; one of said movable members being arranged to normally retain said lever in either of the extreme positions of the latter; and, the other of said movable members being arranged to bear upon said lever only when the latter is in an intermediate position; said members being rigid, pivotally supported at one end and spring pressed at the other end.

In testimony whereof I have hereunto signed my name at Philadelphia, Pennsylvania, this twenty-fourth day of March 1909.

WILLIAM T. PRINGLE.

Witnesses:
L. W. Hall,
W. W. Beatty.