C. A. CLARK.

SWITCH INDICATOR.

APPLICATION FILED SEPT. 21, 1908.

943,914. Patented Dec. 21, 1909.

Fig. 1.

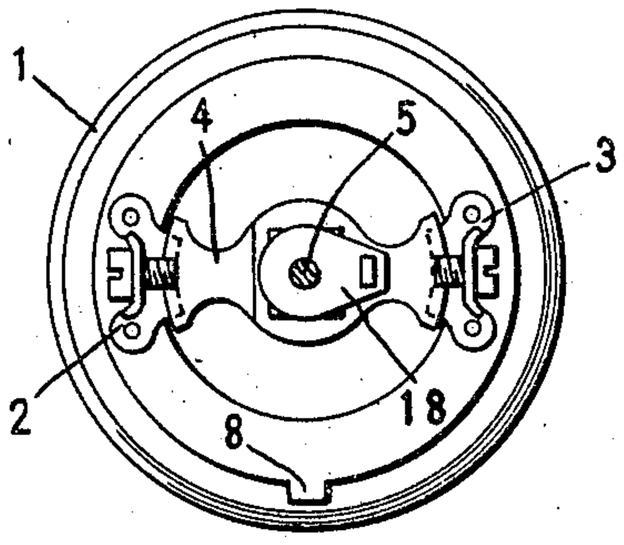


Fig. 2.

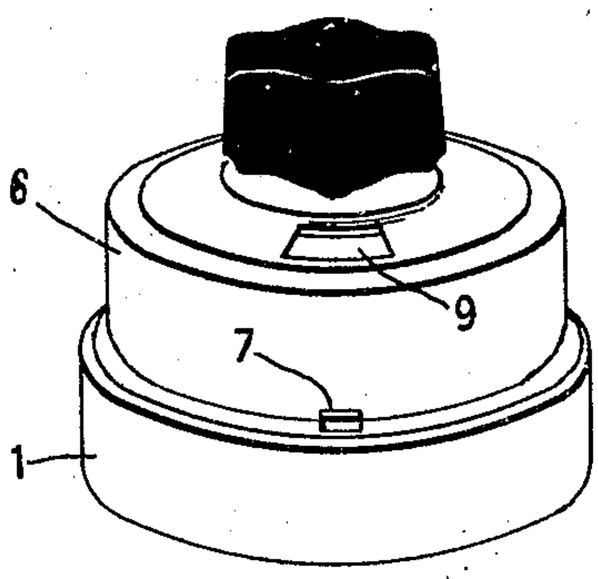


Fig. 3.

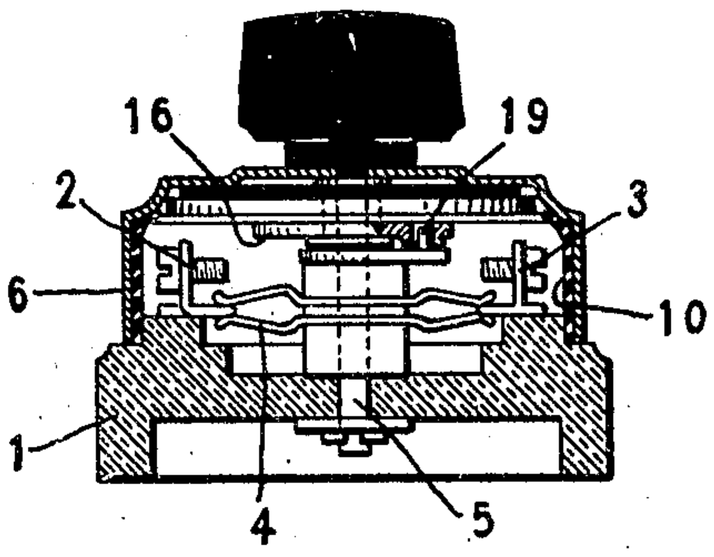
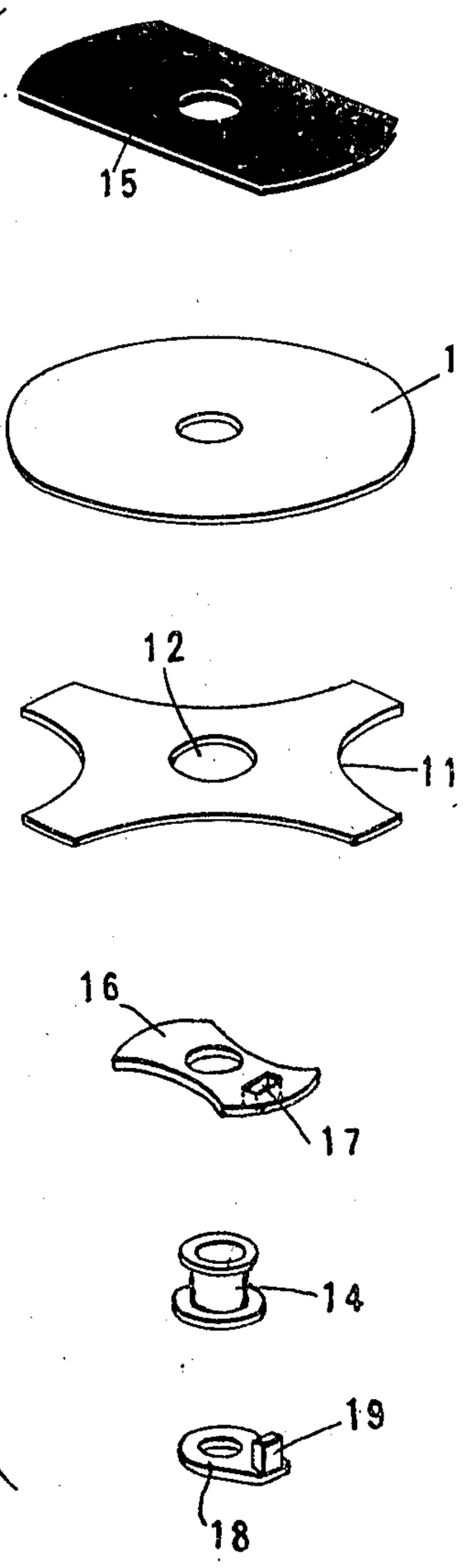


Fig. 4.



WITNESSES

J. Clyde Kipley.

Kate Brenner

INVENTOR

Charles A. Clark.

BY

Clark & Baker.

ATTORNEYS

UNITED STATES PATENT OFFICE.

CHARLES A. CLARK, OF HARTFORD, CONNECTICUT, ASSIGNOR TO TRUMBULL ELECTRIC MANUFACTURING COMPANY, OF PLAINVILLE, CONNECTICUT, A CORPORATION OF CONNECTICUT.

SWITCH-INDICATOR.

943,914. Specification of Letters Patent. Patented Dec. 21, 1909.

Application filed September 21, 1908. Serial No. 453,974.

To all whom it may concern:

Be it known that I, CHARLES A. CLARK, a citizen of the United States, and a resident of Hartford, in the county of Hartford and State of Connecticut, whose post-office address is 62 Maple avenue, Hartford, Connecticut, have invented certain new and useful Improvements in Switch-Indicators, of which the following is a full, clear, and exact description, whereby any one skilled in the art may make and use the same.

The invention relates primarily to indicators and specifically to indicators for switches, that is, a device which will provide a visual signal to indicate the position of the switch parts and show whether the circuit controlled by the switch is open or closed.

The object of the invention is to provide a simple, compact, and efficient indicator which may be readily applied to the cover of a switch mechanism and which with the cover, may be readily applied to the switch mechanism in predetermined relation of parts, so that the registrations of the dial of the indicator will always correctly show the position of the parts of the switch mechanism.

A still further object is to provide for a definite suspension of the dial with reference to the cover and to insure the proper positioning of said dial with reference to the switch mechanism.

Referring to the drawings: Figure 1 is a plan view of a switch mechanism with the cover removed. Fig. 2 is a perspective view of the switch and cover. Fig. 3 is a sectional view through the switch and cover illustrating the manner of applying the indicator dial. Fig. 4 is a detail view of the various parts shown in perspective, ready to assemble.

In switch devices for controlling electric circuits and particularly in rotary snap switches, it is most desirable to provide an indicator which will visually show the position of the switch parts and indicate whether the circuit controlled by the switch is open or closed.

In rotary snap switches, there is ordinarily employed a plurality of stationary contacts, which form the line wire terminals of an electric circuit and the circuit is closed or opened by a rotary commutator which cooperates with these fixed contacts. The commutator is arranged to be rotated in a step by step movement so that it either occupies a position of closed or open circuit with reference to the stationary contacts. The indicator dial hereinafter described is arranged to be engaged by a rotating part of the switch mechanism and indicates through an opening in the cover whether the parts are in open or closed circuit relation. The dial is also so associated with the cover that the latter may be removed or applied to the switch mechanism at will and without liability of having the dial improperly located with reference to the commutator of the switch when the cover is placed in position.

In the accompanying drawings the numeral 1, denotes a base of insulating material which supports the relatively stationary contacts 2, 3, and the rotary commutator 4, which by its rotation either completes or breaks the circuit through the stationary contacts 2, 3. This commutator is rotated by a spindle 5, a lock and release mechanism being associated with the spindle and commutator in such manner that it has a step by step movement.

The switch mechanism *per se* forming no part of the present invention is not described in detail herein, particularly, as rotary snap switches are well-known in the art and it is apparent that the indicator may be applied to such devices of various mechanical form.

The switch mechanism is inclosed by a cup-like cover 6, which is provided with a notch 7, adapted to engage a lug 8, upon the base, so that the cover must always be brought into registering position with reference to the base. This cover is also provided with a sight opening 9, through which the indications of the dial may be observed. Interiorly arranged with reference to the cover is an insulating lining 10, and this if extended across the under side of the cover would have a perforation registering with the sight-opening 9.

Located within the lining 10, is a spider 11, provided with a central perforation 12, and acting as a support for the rotary dial.

As shown herein, the indicator dial consists of a disk 13, journaled upon a bearing 14, which projects upwardly through the spider 11, and has secured to its upper end a plate or bar 15, and at its lower end an actuator plate 16, the plate or bar 15, and the actuating plate 16, are bound together

with the bearing tube 14, with their longitudinal axes coincident, and each of the members have central perforations through which the spindle 5, may pass.

The actuator plate 16, has an opening 17, formed at one side of the central perforation and in the line of its longitudinal axis and that of the plate or bar 15. This insures a positive relative position of the bar 15, and the actuator plate 16, while the disk 13, is not strictly confined and compelled to move with the actuator.

As shown herein the disk 13, is preferably of a light color, while the bar 15, is of a dark color. This merely for convenience of indicating by the light color that the circuit is closed or the switch is "on," while the dark color indicates that the circuit is open or the switch is "off." Obviously other indicia than the light and dark colors might be employed provided they properly indicate by their differences the "on" and "off" position of the switch parts through the sight opening.

The indicator dial comprising the parts 15, 13, and 16, are assembled upon the spider 11, with the bushing or bearing 14, swaged over to properly hold the bar 15, and actuator plate 16. The spider is then inserted within the lining of the cover 6.

Projecting from the spindle 5, is a crank arm 18, having an upwardly projecting lug 19, adapted to engage a perforation 17, of the actuator plate 16. This crank arm is assembled in predetermined position with reference to the commutator bar 4, so that upon engagement of its lug 19, with the perforation 17, the dark indication of the dial is brought below the sight opening of the cover when said cover is in registering position with the base.

It will be seen from this arrangement of parts that the cover may be removed or applied to a switch mechanism always with the certainty that the actuator plate 16, will be engaged by the lug of the crank arm in such manner that the proper indication must appear below the sight opening of the cover. It is only necessary to place the cover over the base and rotate it until the interengaging parts fall into position. There is a particular advantage in arranging the several parts of the dial upon a spider or like support, as all of the parts may be accurately formed and may be nicely adjusted with reference to the cover and switch mechanism. The spider provides a substantial support and gives a good bearing for the rotating dial mechanism.

What I claim as my invention and desire to secure by Letters Patent is:

1. An indicator dial for switches comprising a disk, a rotary bar upon said disk extending transversely thereof, and with a different color than the disk, and an actuator plate secured to rotate with said bar and having means of attachment to the switch mechanism at a point to one side of the center of rotation thereof.

2. An indicator for switches comprising a spider forming a support and adapted for insertion within a switch cover, and bearing an indicator rotarily mounted thereon and provided with operative means for engaging a movable part of the switch mechanism.

3. In an electric switch a cover therefor, a lining for the cover, a spider supported within the cover and provided with a central bearing, an indicator journaled upon said bearing and an actuator plate connected therewith on the opposite side of said spider and adapted for connection with a rotary member of the switch mechanism.

4. In an electric switch, a cover therefor, a spider adapted for insertion within the cover, a disk appurtenant to the spider, an indicator bar extending across said disk and rotarily supported upon the disk, and an actuator plate secured to said transverse bar, and provided with means of attachment to a movable part of the switch.

5. In an electric switch, in combination a circuit making and breaking mechanism including a rotary commutator, a cover inclosing said mechanism, a spider adapted for insertion within the cover, an indicator rotarily supported by said spider, and means appurtenant to said indicator and extending through the spider for engaging with a rotatable member of the make and break device.

6. In an electric switch, in combination, a circuit making and breaking mechanism including a rotary commutator, a cover inclosing said mechanism, a spider adapted for insertion within the cover, an indicator rotarily supported by said spider, an actuator plate positively connected with the indicator though free to move with reference to the spider, and a crank arm operatively arranged with reference to a rotary member of the make and break mechanism, and adapted to engage the actuator plate.

CHARLES A. CLARK.

Witnesses:
FRANK T. WHEELER,
HENRY TRUMBULL.