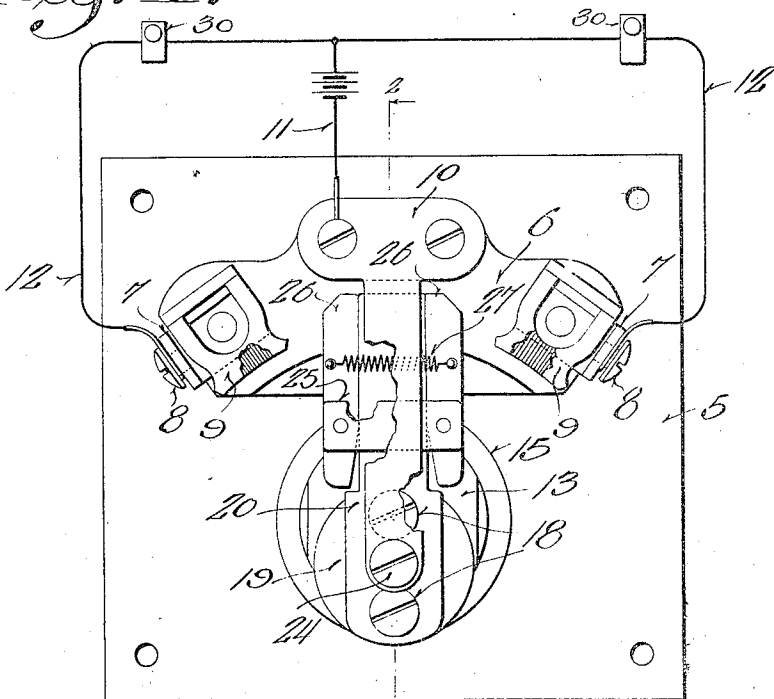


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 QUICK BREAK SWITCH.  
 APPLICATION FILED JUNE 18, 1917.

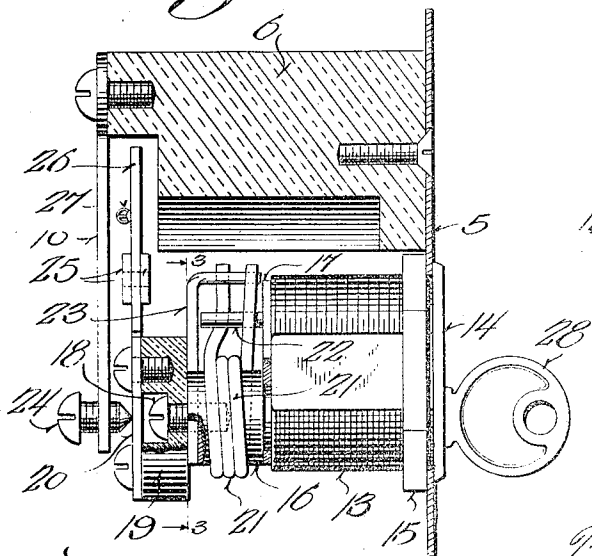
1,289,623.

Patented Dec. 31, 1918.

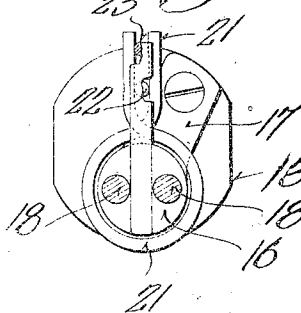
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



*Witness:  
 Charles H. ...*

*Ernest ...  
 Burnett L. Bobroff  
 Attorney*

# UNITED STATES PATENT OFFICE.

BORNETT L. BOBROFF, OF MILWAUKEE, WISCONSIN.

## QUICK-BREAK SWITCH.

1,289,623.

Specification of Letters Patent. Patented Dec. 31, 1918.

Application filed June 18, 1917. Serial No. 175,322.

*To all whom it may concern:*

Be it known that I, BORNETT L. BOBROFF, a citizen of the United States, and resident of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Quick-Break Switches; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to new and useful improvements in electric switches more particularly of the quick-break type adapted for use in connection with high tension currents.

It is in general the object of my invention to simplify and otherwise improve the structure of switches of this character, and it is particularly an object to provide a two-way quick-break switch including a pair of relatively movable knife sections connected by a common spring whereby to procure an exceedingly compact structure possessing a minimum number of parts.

A still further object resides in the provision of a quick-break lock controlled switch which is automatically returned to open position upon release of the manual control member therefor, and whereby said return means serves to facilitate the quick-break action of the switch.

With the above and other objects and advantages in view, the invention resides more particularly in the novel combination, arrangement and formation of parts hereinafter described and pointed out in the appended claims.

In the drawings:

Figure 1 is a plan view of a two-way lock controlled switch embodying my invention.

Fig. 2 is a sectional view through the switch on the line 2—2 of Fig. 1, and

Fig. 3 is a detail sectional view on the line 3—3 of Fig. 2 showing the spring return means for the switch arm.

Referring now more particularly to the accompanying drawings, 5 designates a base plate for the switch, adapted to be secured to any suitable support, and carried on this base plate is an oblong insulating block 6 which has secured to each end of its inner face a plate 7 having one side laterally turned for the reception of a binding screw 8, and having secured thereto a preferably conventional contact strip 9 U-shaped in cross-section to frictionally receive a switch arm. Secured to the central portion of the

block and projecting laterally therefrom between contact strips 9 is a contact plate 10 and this contact plate has secured thereto a common wire 11 of a pair of circuits including wires 12 connected with the binding screws 8, the structure described thus forming the stationary contacts of a two-way switch.

The lock member comprises a barrel 13 and this barrel is passed through the base plate 5 and is secured thereto by a peripheral flange 14 on its outer end and by a nut 15 threaded on its body and clamping the base plate against the flange, the barrel being preferably flattened longitudinally to prevent its rotation relative to the plate. Projecting from the barrel is a spindle 16, held against relative movement longitudinally of the barrel by a plate 17 on the inner end of the barrel and this spindle has secured by the screws 18 to said projected end an insulating block 19 which carries a switch arm 20 projecting between the contact members 9. This switch arm is resiliently urged to a position intermediate of the contact members 9 by a spring wire 21 coiled about the projected end of the spindle and having its ends extended radially thereof and adapted to bear against a pin 22 projecting from the lock barrel 13 and against the laterally directed finger of a bar 23 passed transversely through and secured in the spindle.

The contact plate 10 is resilient in nature, and has its free end disposed adjacent the axis of the lock, and passed through said free end in alinement with said lock axis is a contact screw 24 bearing against the switch arm 20 and providing for flow of current through said switch arm from the contact plate, the end of the screw being beveled to permit free rotation of the arm.

The outer side portions of the contact arm are cut away, and disposed transversely of the intermediate portion of the arm are plates 25 between the outer projecting ends of which are pivoted the rear ends of knife sections 26 which are normally urged in abutting relation with the sides of the arm by a coiled spring 27 secured thereto and traversing the arm. The rear inner sides of these knife sections are beveled to abut the sides of the arm and limit the outward pivotal movement of the sections.

Taking up now the operation of the switch, the spindle is turned in either direction by means of the usual key 28 of the

lock, to engage the switch arm and the adjacent side knife section 26 thereof within either of the U-shaped contact members 9, it being noted that the laterally turned sides of the plates form stops limiting movement of the knife arm, and that the contact members are of sufficient width to procure contact engagement thereof with both the switch arm and the adjacent knife section. Upon releasing the key, the switch arm will immediately move back to intermediate position under action of the spring 21. The resilient strength of the U-shaped contact members 9 is, however, greater than the resilient strength of the spring 27, and thus in moving from contacting relation with one of the contact members 9, the adjacent knife section would be retained therein and would move pivotally with respect to the knife arm, thus splitting the current and upon the knife section reaching its limit of pivotal movement, it would be released from the contact member 9, and the spring 27 being then under tension would procure a snapping movement. This snapping movement is obviously in addition to the snapping movement which would be effected by the release of the key 28 due to the spring 21 and thus an exceedingly rapid action is procured in disengaging the conditions, to prevent the undesired occurrence of the usual arc. The two independent circuits formed by these parts and the wires 11 and 12 each contains an alarm or other indicating means to show when either of the circuits is complete, such means in the present instance shown in the form of buzzers 30. Any other desired indicating device could be equally as well used, one being disposed in each circuit.

While I have shown and described a preferred embodiment of my invention, it is obvious that under different conditions of use, various modifications and changes of structure may be resorted to without departing in any manner from the spirit of my invention and it is further obvious that various of the features of my invention may be used independently inasmuch as under certain circumstances it may be desired to dispense with the lock control feature of my invention in particular connection with the quick-break feature.

What is claimed:

1. A switch of the class described including a rotatable member, a switch arm carried by said rotatable member, a stationary electric contact engageable by said switch

arm upon rotation of the member, a contact plate extending transversely across one end of the rotatable member and urged toward said rotatable member, and a contact member carried by the contact plate and in electrical connection with the contact arm, the engaging portion of said contact member coinciding substantially with the axis of rotation of the rotatable member.

2. A switch of the class described comprising an operating member including a rotatable spindle, an insulating block, a stationary electric contact on said block, a stationary current conducting spring contact plate secured at one end to the insulating block, the free end of said contact plate being disposed adjacent to and spaced from one end of the spindle, an insulating plate secured to the last mentioned end of the spindle, a switch arm attached to the insulating plate to insulate the same from the operating member, said arm being movable toward or away from the stationary contact by rotation of the spindle and disposed between said insulating block and the contact plate, and a contact member carried by the free end of the stationary contact plate and engaging the movable switch arm in axial alinement with the rotatable spindle.

3. A switch of the class described comprising a carrying plate, an insulating block secured to the inner wall of said carrying plate, an operating member including a rotatable spindle disposed inwardly of said plate, a stationary electric contact on said block, a stationary current conducting spring contact plate secured at one end to the insulating block, its free end being disposed adjacent to and spaced from the inner end of the spindle, an insulating plate secured to the inner end of the spindle, a switch arm attached to the insulating plate and movable between the contact plate and the insulating block by the rotation of said spindle, whereby to move the same toward or away from the stationary electric contact, and an adjustable contact member threaded through the free end of the spring contact plate and having its pointed end engaged with the switch arm adjacent its connection with the insulating plate and in axial alinement with said spindle.

In testimony that I claim the foregoing I have hereunto set my hand at Milwaukee, in the county of Milwaukee and State of Wisconsin.

BORNETT L. BOBROFF.