

H. G. FRENCH.
ELECTRIC SWITCH.
APPLICATION FILED MAR. 21, 1914.

1,156,681.

Patented Oct. 12, 1915.

Fig. 1.

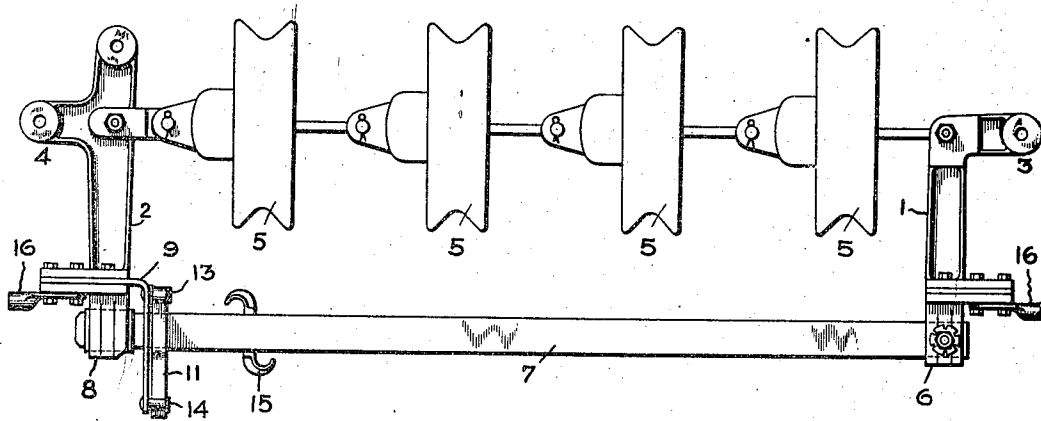


Fig. 2.

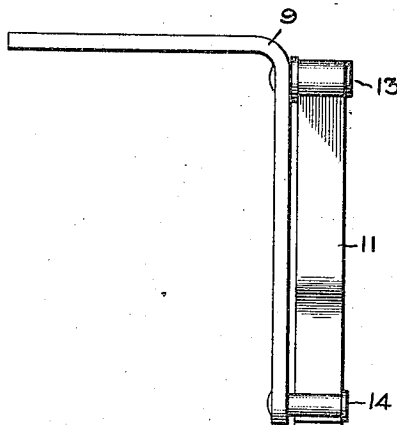
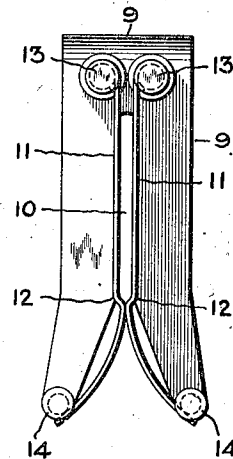


Fig. 3.



Witnesses:

Benjamin B. Hull
William O. Ford

Inventor:
Henry G. French,
by *Alfred S. Davis*
His Attorney

UNITED STATES PATENT OFFICE.

HENRY G. FRENCH, OF SCHENECTADY, NEW YORK, ASSIGNOR TO GENERAL ELECTRIC COMPANY, A CORPORATION OF NEW YORK.

ELECTRIC SWITCH.

1,156,681.

Specification of Letters Patent.

Patented Oct. 12, 1915.

Application filed March 21, 1914. Serial No. 826,432.

To all whom it may concern:

Be it known that I, HENRY G. FRENCH, a citizen of the United States, residing at Schenectady, in the county of Schenectady, State of New York, have invented certain new and useful Improvements in Electric Switches, of which the following is a specification.

My present invention relates to electric switches and more particularly to means for holding a switch of the knife blade type firmly locked in its closed position.

In many cases, especially in high tension line disconnecting switches it is found desirable to support a switch in such a way that it opens downward. With a construction of this nature although the contact clips may be designed so as to exert considerable pressure upon the switch blade it frequently happens that after continued use the pressure exerted by the clips becomes insufficient to hold the switch closed. Also, if the switch is subject to vibration the switch may be gradually opened by the action of gravity. By use of my invention these disadvantages are entirely obviated and the switch is held closed under all conditions, irrespective of the way in which it is mounted, until it is desired that it be opened. The construction which I employ also enables the switch to be opened by a simple operation of withdrawing the blade from the contact clips without any necessity for first releasing any complicated mechanism.

My invention will best be understood by reference to the accompanying drawing forming a part of this specification in which;

Figure 1 shows a switch of the high tension, outdoor, disconnecting type adapted for suspension on the transmission line, and equipped according to one form of my invention, and Figs. 2 and 3 are enlarged plan views showing in detail the form of my invention illustrated in Fig. 1.

As shown in Fig. 1 the switch comprises two arms 1, 2, provided with eyes 3, 4, as means for attaching them to supporting cables. These arms are insulated from each other by means of the disk strain insulators 5. The arm 1 carries contact clips 6 to which the knife blade 7 is pivoted. The arm 2 carries clips 8 adapted to receive the knife blade. The arm 2 also carries an L

shaped member 9, the vertical branch of which is provided with a Y-shaped slot 10 to serve as a guide for the switch blade; this slot being placed in alinement with the contact clips 8 which receive the switch blade. This member is comparatively rigid with respect to the contact clips and prevents them from being sprung out of line or otherwise injured. On each side of this slot are mounted flat spring members 11 which are substantially parallel with the sides of the slot. These spring members are also provided with curved shoulders 12 in order that they may normally touch each other near the point where the slot becomes wider, either when the switch is open or when the blade is received between them. The spring members are pivotally mounted by bending one end around the studs 13. The opposite ends are free to slide on the studs 14 when the members are separated by the insertion or withdrawal of the switch blade. The switch blade is preferably provided with an S-shaped hook 15 whereby the switch may be opened or closed by a pole hook (not shown) and terminals 16 are provided for attaching the line conductors to the switch.

With this construction it will be evident that when the switch is closed it will be firmly held in that position, the spring members 11 coming together and surrounding the blade, and that if these spring members are made sufficiently strong there will be no possibility of the switch opening by reason of vibration or shock of any kind. By exerting a strong steady pull on the hook 15 however, the switch may be opened when desired without difficulty or may be closed as readily.

I do not desire to restrict myself to the particular form or arrangement of parts shown and described since it is apparent that they may be changed or modified without departing from my invention.

What I claim as new and desire to secure by Letters Patent of the United States, is:—

1. In an electric switch, the combination of a switch blade and spring locking members surrounding said blade, each of said locking members having one end pivotally mounted and the other end free to slide over a fixed stud.

2. In combination in an electric switch, a

switch blade, contact clips, a member having a Y-shaped slot in alinement with said clips and spring members on each side of the slot to hold the blade in its closed position.

5 3. Locking means for a knife blade switch comprising spring members adapted to surround the blade of said switch, each of said spring members having one end pivotally mounted and the other end free to slide over
10 a fixed stud.

4. In combination in an electric switch, a switch blade, a member having a V-shaped slot for guiding and receiving said blade and spring members carried by said guide
15 member and adapted to surround the blade.

5. In an electric switch, the combination of a switch blade, a member having a Y-shaped slot for guiding and receiving said blade, and spring members pivotally mounted
20 ed on each side of said slot and adapted to hold the blade in place when the switch is closed.

6. In an electric switch, the combination of a switch blade, a member having a Y-shaped slot to guide and receive said blade,
25 and spring members mounted on each side of said slot and normally touching each

other at the point where the slot begins to widen.

7. In an electric switch the combination 30 of a blade, contact clips, a guiding member having a Y-shaped slot in alinement with said clips, studs on each branch of said guiding member near the ends thereof, spring locking members having one of their
35 ends pivoted on each side of said slot near its base and their other ends free to slide on said studs.

8. In a disconnecting switch the combination of a pivotally mounted switch blade, 40 contact clips for receiving said blade, said contact clips being insulated from the mounting of said blade and movable with respect thereto, a guide member having a Y-shaped slot in alinement with said clips 45 and spring members on each side of the slot to hold the blade in closed position.

In witness whereof, I have hereunto set my hand this 20th day of March 1914.

HENRY G. FRENCH.

Witnesses:

BENJAMIN B. HULL,
HELEN ORFORD.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."