

(No Model.)

2 Sheets—Sheet 1.

E. P. WARNER.
ELECTRIC SWITCH.

No. 473,435.

Patented Apr. 19, 1892.

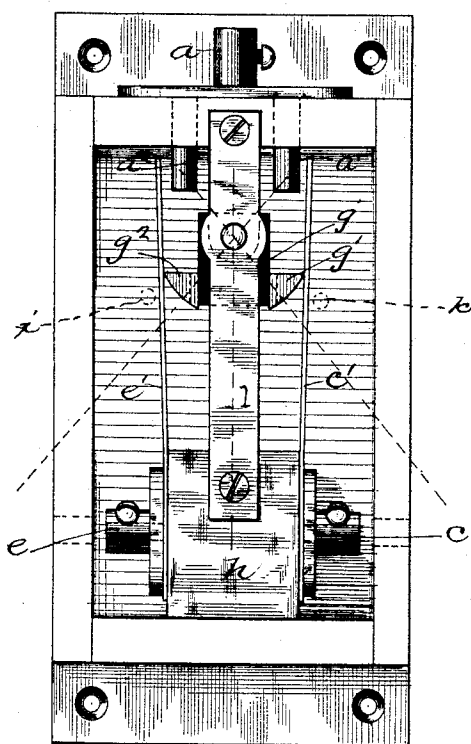


Fig. 1.

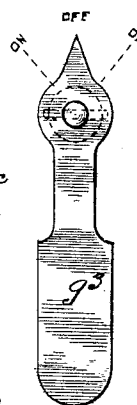


Fig. 3.

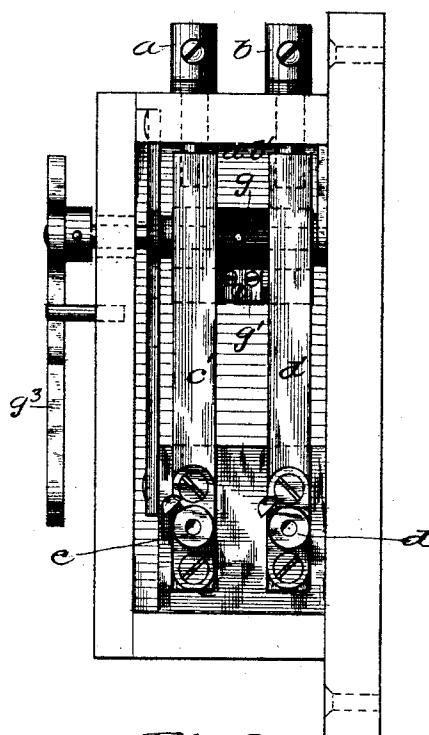


Fig. 2.

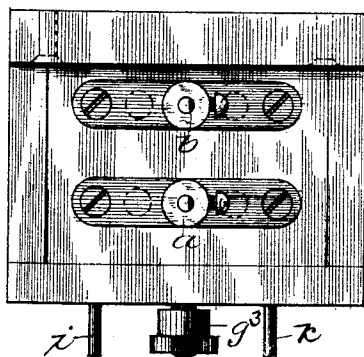


Fig. 4.

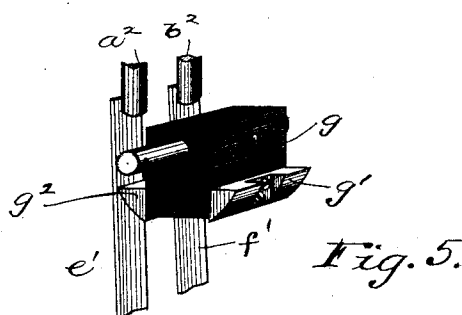


Fig. 5.

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Inventor:

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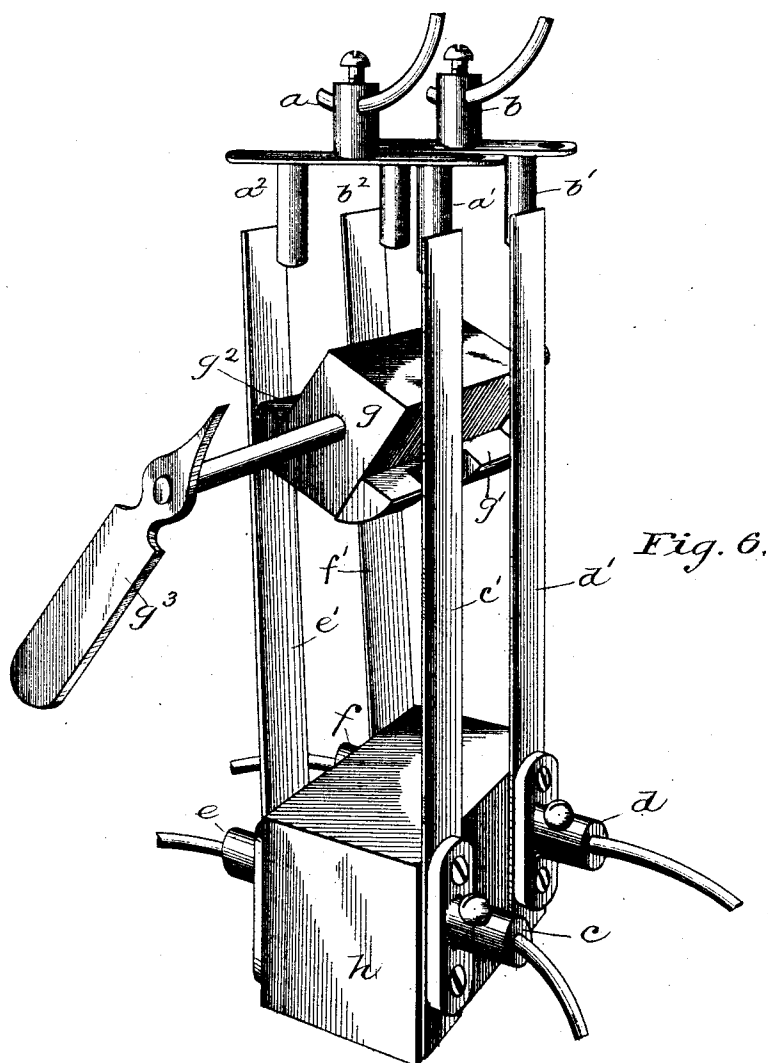
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2 Sheets—Sheet 2.

E. P. WARNER.
ELECTRIC SWITCH.

No. 473,435.

Patented Apr. 19, 1892.



Witnesses:
Chas. G. Hawley.
Ella Edler

Inventor:
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UNITED STATES PATENT OFFICE.

ERNEST P. WARNER, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE WESTERN ELECTRIC COMPANY, OF SAME PLACE.

ELECTRIC SWITCH.

SPECIFICATION forming part of Letters Patent No. 473,435, dated April 19, 1892.

Application filed February 2, 1889. Serial No. 298,492. (No model.)

To all whom it may concern:

Be it known that I, ERNEST P. WARNER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Transfer-Switches, (Case No. 23,) of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to electric switches of the class employed in electric lighting for changing the connections of a lamp-circuit from one dynamo to another.

My invention relates especially to the circuit-changing device, which consists of two pairs of springs, the pairs being mounted on the opposite sides of an insulating-block and a pivoted shifter operated by hand, whereby either pair may be separated from the lamp-circuit terminals, respectively, and connected together through the shifter, while the other pair close upon said terminals, respectively. Thus the lamp-circuit is disconnected from the dynamo of one pair of springs and connected with the dynamo of the other pair of springs, while the circuit of the dynamo thus disconnected is maintained through the medium of a connecting-piece upon the shifter.

My invention will be readily understood by reference to the accompanying drawings, in which—

Figure 1 is a front view of a box containing a switch embodying my invention, the face of the box and crank-handle being removed. Fig. 2 is a side view of the same. Fig. 3 is a front view of the crank-handle. Fig. 4 is a plan view of the box, showing the lamp-circuit terminals and the stops for limiting the movement of the crank. Fig. 5 is a detached perspective view of the shifter and two of the circuit-changing springs. Fig. 6 is a detailed perspective view showing the manner of connecting the circuits with the switch and the operation of the circuit-changing springs.

Like parts are indicated by similar letters of reference throughout the different figures.

Referring to Fig. 6, we will consider binding-posts a and b as connected with the different ends of the lamp-circuit. Binding-posts c d

we will consider as connected with different terminals of one dynamo-machine, while binding-posts e f may be considered as connected with the different terminals of another dynamo-machine. The shifter g is pivoted between the pairs of springs—that is, between the springs c' d' on one side of block h and the springs e' f' on the other side of said block h . The shifter, as shown, consists of a block of insulating material provided with metallic pieces g' and g'' on opposite sides thereof. These pieces g' g'' are insulated from one another and have convex faces adapted to press against the pairs of springs, respectively. The handle g^3 is adapted to be moved between the stops i k or to rest midway between said stops, as shown in Fig. 4. The switch-box, as shown in Fig. 2, may be screwed up against the wall in any convenient place. The lamp-circuit connected with binding-posts a b may be connected with either one of the dynamo-machines, as may be desired. Thus, as shown in Fig. 6, the handle g^3 being thrown to the left the springs c' d' are closed upon lugs a' b' , respectively, said lugs being connected, respectively, with the binding-posts a and b , as shown. In this position of the handle the springs e' f' are connected together through the medium of the metallic piece g^2 , while at the same time they are lifted from lugs a^2 b^2 , which are also connected with binding-posts c d , respectively. The plate l , which is secured to the upper end of the case and to the block h , as shown in Figs. 1 and 2, serve as a support or bearing for the shaft of the shifter. When the crank g^3 is midway between the stops i k , as shown in Figs. 1 and 4, the members of each pair of springs will be connected together, while both pairs will be disconnected from the terminals a b of the lamp-circuit. Moving the handle to the left allows spring c' to close on contact a' and spring d' to close on contact b' , thus looping the dynamo connected with binding-posts a b into the circuits connected with binding-posts c d , as before described. On the other hand, moving the handle g to the right over against the stop k allows spring e' to close on contact a^2 and spring f' to close on contact b^2 . At the same time the metallic piece g^2 is separated from said springs, and thus the

lamp-circuit connected with binding-posts *a b* is looped into circuit with the dynamo connected with binding-posts *e f*.

I have described my switching device as used in connection with arc-light circuits. It is evident that it might be used with any other circuits to which it is adapted.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

The combination, with two pairs of springs pressing inwardly, the members of each pair being adjusted to close upon different contact-pieces, respectively, of a shifter, said shifter

being pivotally mounted between said springs, different contact-points at the free ends of the different springs of the two pairs, the springs being of a tension to close thereon when unopposed by the shifter, whereby on rotating the shifter the electrical connections are transferred, substantially as and for the purpose specified.

In witness whereof I hereunto subscribe my name this 6th day of December, A. D. 1888.

ERNEST P. WARNER.

Witnesses:

GEORGE P. BARTON,

CHAS. G. HAWLEY.