

A. L. ROHRER.  
ELECTRIC SWITCH.

No. 490,363.

Patented Jan. 24, 1893.

FIG. 2.

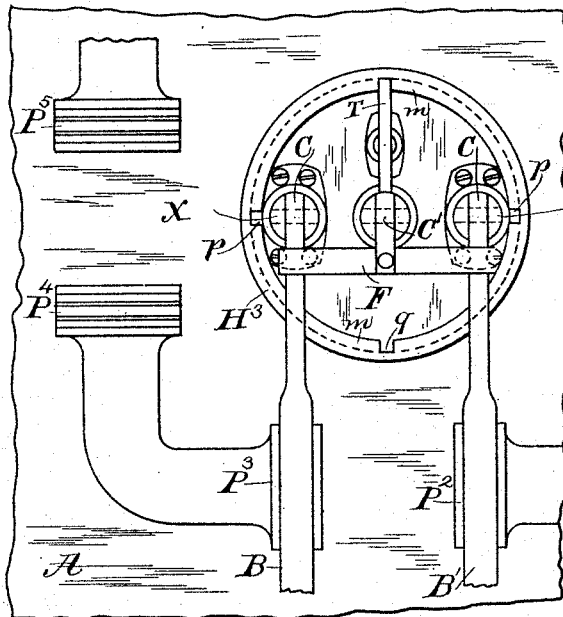


FIG. 1.

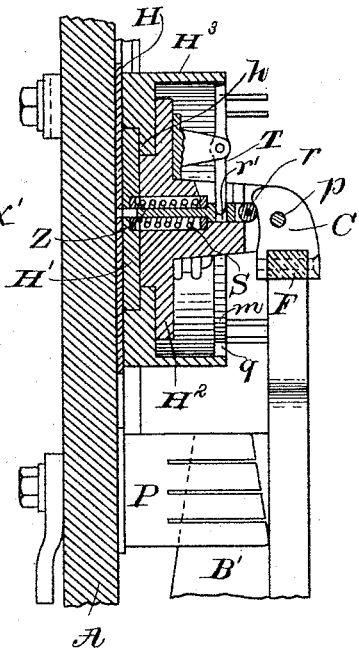


FIG. 3.

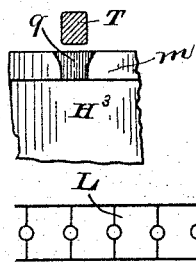
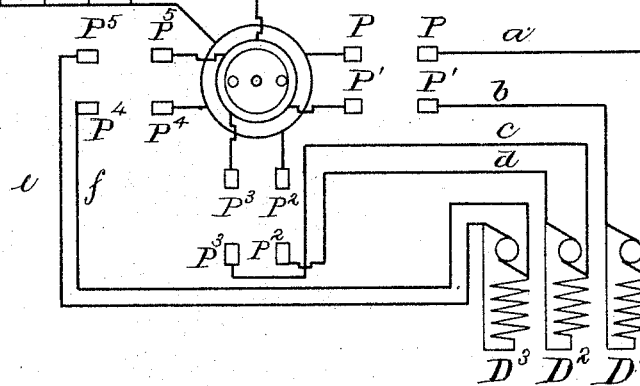


FIG. 4.



WITNESSES.

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a. c. One

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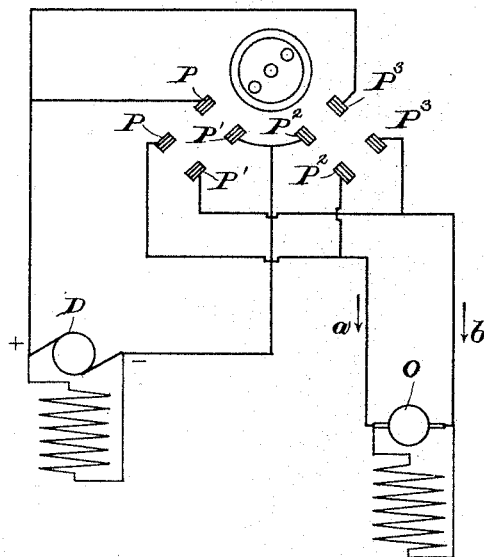
By Bently + Bloodgett  
attys

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FIG. 5.



WITNESSES -

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# UNITED STATES PATENT OFFICE.

ALBERT L. ROHRER, OF LYNN, MASSACHUSETTS, ASSIGNOR TO THE  
THOMSON-HOUSTON ELECTRIC COMPANY, OF CONNECTICUT.

## ELECTRIC SWITCH.

SPECIFICATION forming part of Letters Patent No. 490,363, dated January 24, 1893.

Application filed March 17, 1892. Serial No. 425,225. (No model.)

*To all whom it may concern:*

Be it known that I, ALBERT L. ROHRER, a citizen of the United States, residing at Lynn, in the county of Essex and State of Massachusetts, have invented a certain new and useful Improvement in Electric Switches, of which the following is a specification.

The present invention consists in an improved transfer or reversing switch, and its object is to reduce the number of switches or parts necessary to transfer the load circuit from one dynamo to another at a central station, or for transmitting the current generated from one dynamo to different electric circuits. The switch may also be used if necessary, as a simple reversing switch.

The present improvement consists principally in mounting the pivotal portion of a jack-kniveswitch, or switch of similar pattern, so that it is capable of being rotated through the whole or part of a revolution, and the switch contacts may thereby be brought into line with different sets of contact plates which are placed around the axis of revolution. The switch may be of the single or double pole variety, though the latter is preferred in most cases, and the contact plates will preferably be arranged radially about the center of movement of the pivotal portion of the switch.

The invention likewise provides a stop or catch which is controlled by the switch so as to lock it against rotation when closed, but permitting free rotation when the switch is opened.

In the accompanying drawings, Figure 1 is a section of so much of the switch as is necessary to illustrate the invention. Fig. 2 is a plan view of the switch. Fig. 3 is a detail of a portion of the switch. Fig. 4 is a diagram showing how the switch may be connected into an electric circuit when employed to reverse the circuit connections, and Fig. 5 shows how the switch may be employed to transfer the load from one generator to another in a station.

In Fig. 1 A represents a base plate of some suitable insulating material, for example, porcelain, slate, &c. Upon this is placed a flat, thin plate of metal H, which bears a plate H<sup>2</sup>, shaped as shown in Fig. 1 with upright sides under-cut so as to form a flange h. The plates

H' and H<sup>2</sup> are fastened together and are free to rotate, the plate H' fitting under the flange h, and being thereby held in place. Projecting from H<sup>2</sup> are two standards X, X', to the upper ends of which are pivoted at p the arms B, B' of the switch. These arms are made of metal, such as copper, to which are fastened metal ends C, and they are joined together by an insulating bar F which carries a cam C', arranged as shown in Fig. 1. Under the cam is situated a pin Z, free to play in a recess provided therefor in the block H<sup>2</sup>, and normally pressed upward by a spring S. This pin has a small friction roller r at its upper end, over which the cam C' travels, and also a recess r', in which plays the upper end of a short pivoted lever T, which acts as a stop to lock the switch against rotation when in the position shown in Fig. 1, but which will be tripped, leaving the switch free to rotate when the switch arms are raised so as to break the circuit. The lever locks the switch by passing down into slots q which are provided for that purpose in a rim m at the upper end of plate H<sup>2</sup>. P, P', P<sup>2</sup>, &c. represent the line contact plates, in the construction and arrangement of which there is nothing novel. When the switch is thrown down, as in Fig. 1, it closes the circuit, and breaks the circuit when the arms are thrown up.

In Fig. 4 an arrangement is shown such as would be employed when the switch is used to transfer different machines upon the work circuit. Here L represents the external circuit containing the incandescent lamps or other translating devices, which are supplied with current from one or another of the dynamos seen at D', D<sup>2</sup>, D<sup>3</sup>. Each of these dynamos is connected by leads ab, cd, ef, respectively, to contact plates PP', P<sup>2</sup>P<sup>3</sup> and P<sup>4</sup>P<sup>5</sup>. To control the circuit connections at these plates heretofore three separate switches have been required, all of which may be replaced by the single switch herein described; for, as will be understood, the switch arms may be swung into line with any one of the different sets of contacts.

In Fig. 5 an arrangement is shown adapting the switch to serve as a reversing switch. Here D represents the generator, and O the motor or other translating device to be sup-

plied with current therefrom. The generator and motor terminals are connected to the contact plates as shown, and it will be readily understood that when the switch is so set as  
 5 to connect the plates PP and P'P', current will flow through the motor in the direction of arrow *a*, while if the switch on the other hand be placed so as to bridge contacts P<sup>2</sup>P<sup>2</sup> and P<sup>3</sup>P<sup>3</sup>, the circuit connections will be  
 10 reversed and current flow through the motor in the opposite direction as indicated by arrow *b*.

What I claim as new and desire to secure by Letters Patent is:—

15 1. The combination in an electric switch, of the switch arms B, B', each carrying one of the switch contacts and connected together mechanically, with the rotating supporting plate to which both said arms are pivoted on  
 20 a common axis as at *p*.

2. The combination in an electric switch, of

the rotating plate and switch arms pivoted thereto, with the pivoted catch released automatically by the movement of the switch arms on opening the switch, as set forth. 25

3. The combination in an electric switch of the plates H', H<sup>2</sup>, held in place by supporting plate H<sup>3</sup> but free to rotate, with the standards projecting from plate H<sup>3</sup>, and the switch arms pivoted to the other ends of such standards, 30 as described.

4. The combination of the supporting plate free to revolve about a central axis, with the switch arm pivoted thereto and carrying cam C', and the stop T controlled by said cam, as 35 described.

In witness whereof I have hereunto set my hand this 14th day of March, 1892.

ALBERT L. ROHRER.

Witnesses:

JOHN W. GIBBONEY,  
 BENJAMIN B. HULL.