

(No Model.)

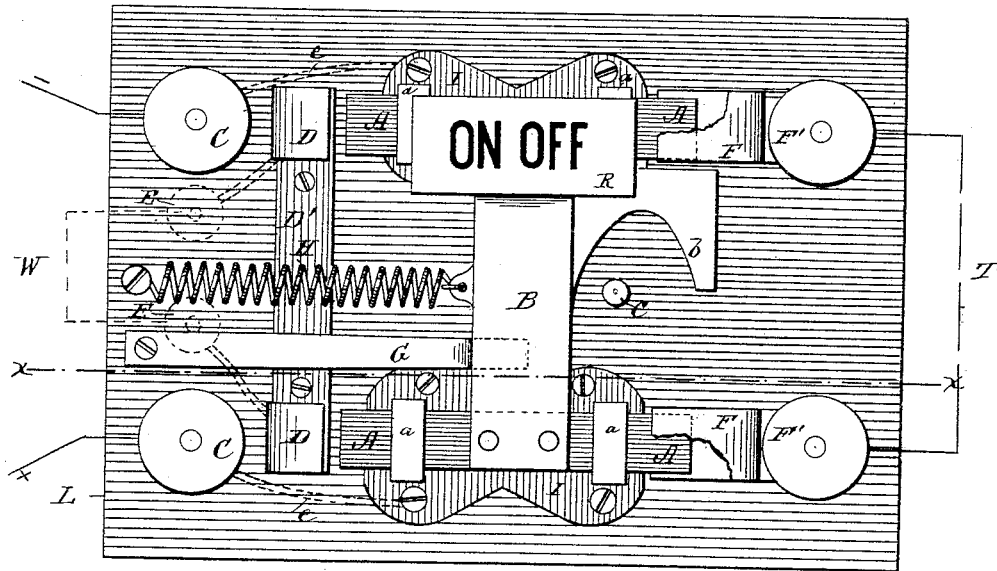
J. M. FAIRCHILD & J. O'CONNOR.

SWITCH FOR ELECTRIC CIRCUITS.

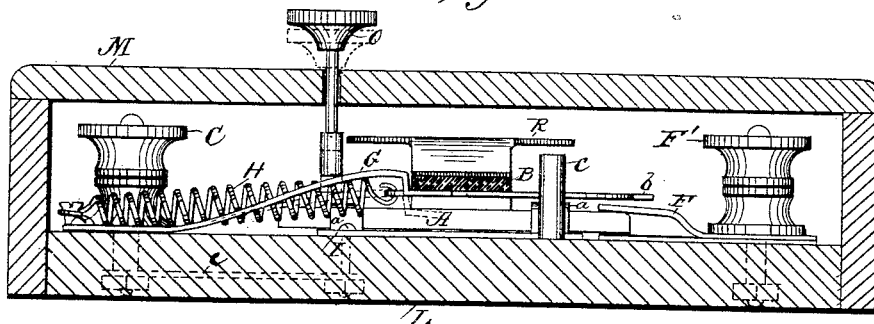
No. 348,456.

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*Fig. 1.*



*Fig. 2.*



WITNESSES:

*W. W. Hollingsworth*  
*Edw. W. Byrne*

INVENTOR:

*J. M. Fairchild*  
*J. O'Connor*  
BY *Munn & Co*

ATTORNEYS.

# UNITED STATES PATENT OFFICE.

JOHN MURRAY FAIRCHILD AND JAMES O'CONNOR, OF PORTLAND, OREGON.

## SWITCH FOR ELECTRIC CIRCUITS.

SPECIFICATION forming part of Letters Patent No. 348,456, dated August 31, 1886.

Application filed May 14, 1886. Serial No. 202,205. (No model.)

*To all whom it may concern:*

Be it known that we, JOHN MURRAY FAIRCHILD and JAMES O'CONNOR, of Portland, in the county of Multnomah and State of Oregon, have invented a new and useful Improvement in Switches for Electric Circuits, of which the following is a specification.

Our invention relates to switches for electric circuits; and it consists in the peculiar construction and combination of parts whereby an electric current may be switched from one circuit to another, or which may serve as a cut-out for the lamps of an electric-light circuit.

Figure 1 is a plan view of the cut-out with the outer case removed, and Fig. 2 is a section through the line *x x* of Fig. 1.

In the drawings, A A represent two parallel rectilinearly-sliding bars, which slide in the straps or keepers *a a* of the metal guide-pieces I. These two bars are connected together, so as to have the same motion, by a hard-rubber bridge-piece, B; but are electrically insulated from each other. The two bars A A and cross-bar B move together after the manner of the bolt of a lock, and they are actuated in one direction by a key which is fitted upon a key-pin, *c*, and whose bit engages with a notched plate, *b*, attached to the cross-bar B, while a spiral spring, H, serves to draw them in the opposite direction.

G is a detent, which is in the nature of a flat spring, with a bend or shoulder that engages with the cross-bar B when the bars A A are adjusted to the right, and holds the said bars against the tension of the spiral spring.

C C are binding-posts, which connect with the opposite poles of the dynamo-electric machine or other source of electricity. These binding-posts connect through wires *e e* and guide-plates I I with the sliding bars A A.

In line with the bars A A, at one end, are two contacts, F F, which are bifurcated, so as to grasp the ends of the bars A A, and are also provided with binding-posts F' F'. At the opposite end are two similar contacts, D D, connected by bar D'. Now, when the bars A A are thrown to the right by the key, the detent G catches and holds the cross-bar B in this position, and the line-circuit from the binding-posts C C is put in connection through bars A A with the contacts F F and the electric lights that may be included in the circuit T. When it is desired to cut out the current from the circuit of contacts F F, the detent G

is pressed down out of engagement with the cross-bar G, and spiral spring H then throws the bars A A to the left, disconnecting them from contacts F F and connecting them electrically with D D and their short-circuit bar D'; or, if it be desired to cut out the circuit F F and establish another, the two contacts D D, instead of being connected by bar D', may be connected by wires, as in dotted lines, to separate binding-posts E E, in which case the main-line current, instead of being short circuited through the instrument, is shunted to another circuit, W.

The parts as so far described are mounted upon a back board or base, L, which is covered by a case, M, and in this case is a push-button and pin, O, which rests upon the detent G, and permits the detent to be removed from cross-bar B, so that the switch-bars A A may be shifted by the spring. The outer case has also a key-hole and a window, through which latter a face-plate, R, moving with the bars A, is made to show "off" or "on," according to the position of said switch-bars.

In fixing the position of the contacts F F and D D they are so spaced or adjusted that the bars A A pass into contact with one pair before leaving the other pair, thus avoiding any break in the continuity of the current on the main line.

Having thus described our invention, what we claim as new is—

1. The parallel and rectilinearly-moving metal bars A A, insulated from each other, but connected mechanically by non-conducting cross-bar B, in combination with guide-plates and two contacts at each end arranged in line with the bars, and means for actuating the bars A A, substantially as shown and described.

2. The parallel and rectilinearly-moving metal bars A A, insulated from each other, but connected mechanically by non-conducting cross-bar B, in combination with guide-plates, the contacts F F and D D, at opposite ends, the spring H, key-plate *b*, and pin *c*, the detent G, and the case having push-pin, and adapted to bear upon and release detent G, substantially as and for the purpose described.

JOHN MURRAY FAIRCHILD.

JAMES O'CONNOR.

Witnesses:

HARRY C. BOYD,

U. K. ARNOLD.