(No Model.)

J. O'BRIEN.

ELECTRIC SWITCH.

No. 442,996. Patented Dec. 16, 1890.

Fig. 1.

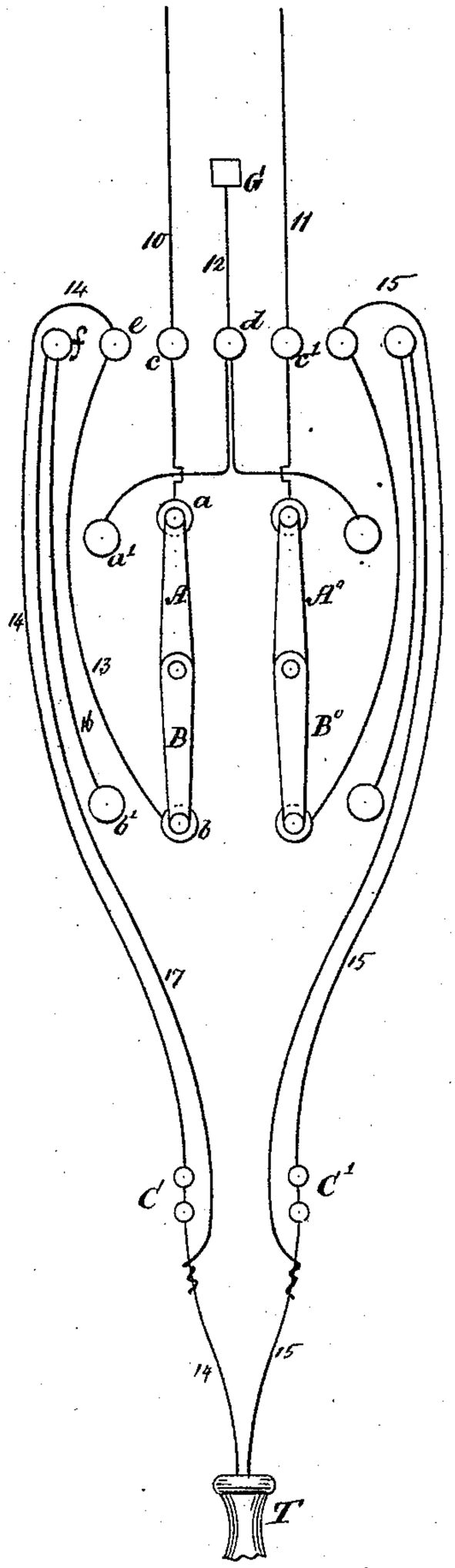


Fig. 2.

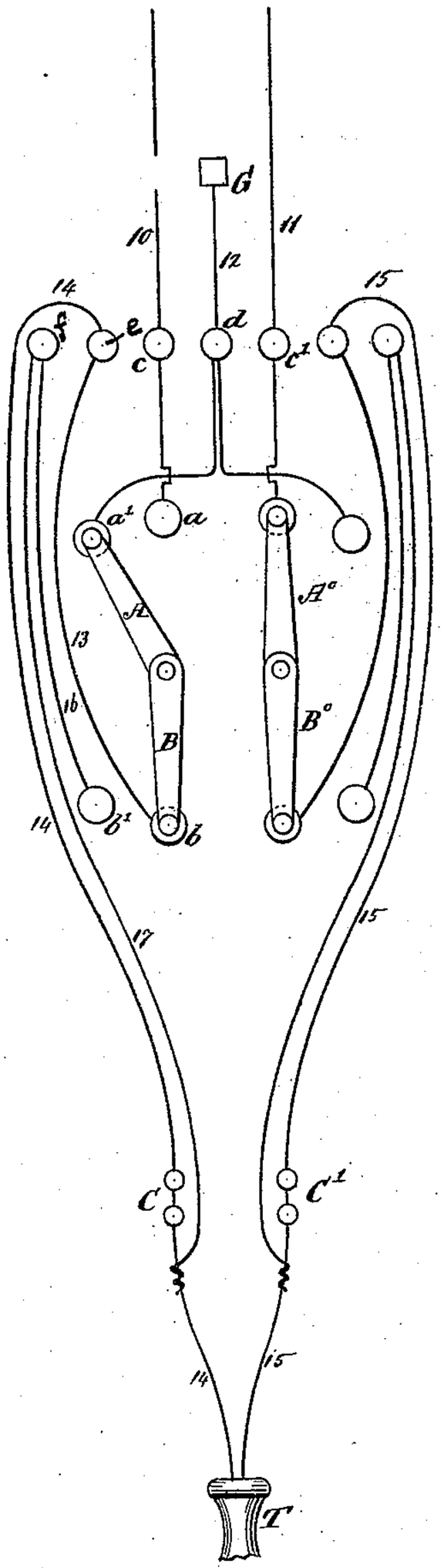
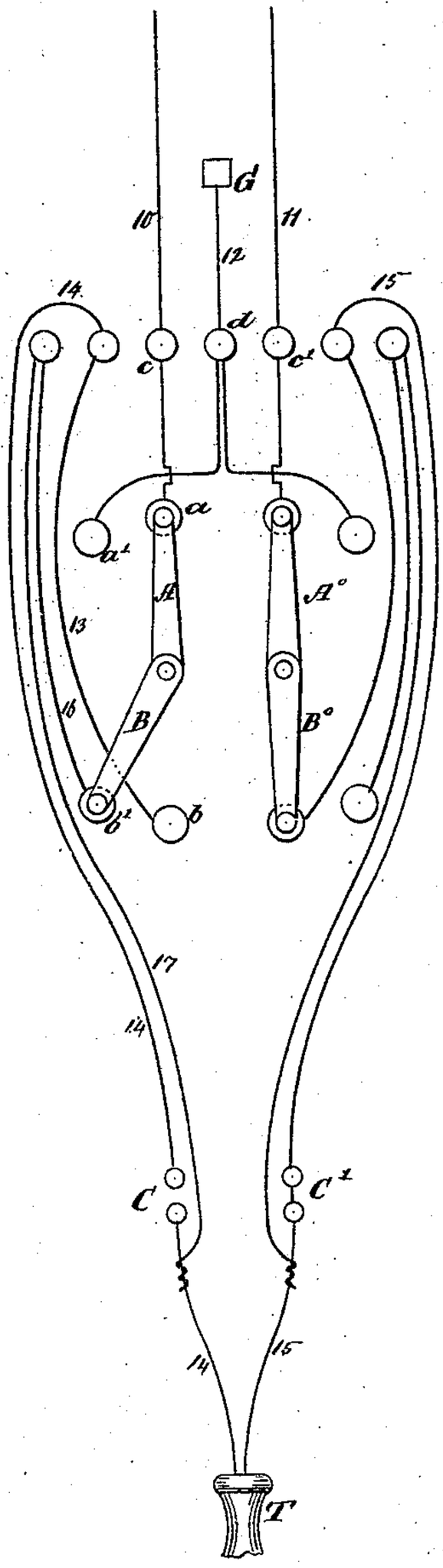


Fig. 3.



WITNESSES:

Edward Wolff.

William Miller

INVENTOR:

John O'Brien.

BY Van Santvoord & Hauff

ATTORNEYS

UNITED STATES PATENT OFFICE.

JOHN O'BRIEN, OF NEW YORK, N. Y.

ELECTRIC SWITCH.

SPECIFICATION forming part of Letters Patent No. 442,996, dated December 16, 1890.

Application filed August 28, 1890. Serial No. 363,254. (No model.)

To all whom it may concern:

Be it known that I, JOHN O'BRIEN, a citizen of the United States, residing at New York, in the county and State of New York, have invented new and useful Improvements in Electric Switches, of which the following is a specification.

The object of this invention is a switch, by means of which a break or disturbance in the electric circuit through a telephone or other electrical device can be corrected as soon as the cause of disturbance is detected.

The peculiar and novel construction of my switch is pointed out in the following specification and claim, and illustrated in the accompanying drawings, in which—

Figure 1 shows the switch in position when the metallic-line circuit and the circuit through the telephone or other electrical device is intact. Fig. 2 shows the switch in position when the metallic-line circuit is broken or disturbed while the circuit through the telephone or other electrical device is intact. Fig. 3 shows the switch in position when the metallic-line circuit is intact and the circuit through the telephone or other electrical device is disturbed.

In the drawings, the letters A B designate two switch-levers, which are in metallic contact with each other. In the example illustrated by the drawings both levers have a common pivot, which forms the metallic connection between the two levers; but a separate pivot may be provided for each lever and the metallic connection produced by a wire connecting to the two pivots. Two contact-plates *a a' b b'* respectively are provided for each of the two levers A B, and the electrical conditions are as follows: The wires 10 and 11 are two line-wires, which are intended to form part of a metallic circuit through an electrical device, such as a telephone T. Their ends are fastened in binding-posts *c c'*, from which connection is made with the telephone T, or with any other electrical device. The wire 12 runs from a binding-post *d* to the ground G, and the contact-plate *a* connects with the line-wire 10, while the contact-plate *a'* connects with the ground-wire 12. The contact-plate *b* connects by a wire 13 with a binding-post *e*, from which a wire 14 extends to the telephone T. This wire extends through a lightning-arrester C, and the return-wire 15 extends from the telephone to the lightning-arrester C' and connects with line-wire 11, as will be hereinafter more fully explained. The contact-plate *b'* connects by a wire 16 with a binding-post *f*, and thence by a wire 17 with the telephone T. When all the parts of the metallic circuit are in good working order, switch-levers A B are placed in the position shown in Fig. 1, and the circuit is closed from line-wire 11 through wire 15 to the telephone T and through wires 14 and 13 and switch-levers B A to line-wire 10. If the line-wire 10 should become inoperative from some cause, the switch-lever A is turned to the position shown in Fig. 2 and a circuit is established from line-wire 11 through wire 15 to the telephone and through wires 13 and 14 to contact-plate *b*, thence through the switch-lever B A and contact-plate *a'* to ground-wire 12. If the connection between the wire 14 and the telephone should be broken, which takes place, for instance, if the lightning-arrester C should be burned out, the switch-lever B is turned to the position shown in Fig. 3 and the circuit is established from line-wire 11 through wire 15 to the telephone, and thence through wires 17 and 16, contact-plates *b'*, and switch-levers B A to line-wire 12. In case the line-wire 10 should become inoperative at the same time when the connection between the contact-plate *b* and the telephone is broken the switch-lever A is turned upon the contact-plate *a'* and switch-lever B upon the contact-plate *b'* and the circuit through the telephone is established. A second pair of switch-levers A^0 B^0 is provided, so that if the line-wire 11 should become inoperative or the connection of the wire 15 with the telephone become interrupted the circuit can be established simply by manipulating these switch-levers in the same manner as the switch-levers A B are manipulated.

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

In an electric switch, the combination of the pivoted switch-levers, the pairs of contact-plates *a a' b b'*, the lightning-arrester C, the

telephone T, the connection between the lightning-arrester and the telephone, the connection extending from the contact-plate *b'* directly to the telephone, and connections with the line-wires and the ground, substantially as and for the purposes described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JOHN O'BRIEN.

Witnesses:
WM. C. HAUFF,
E. F. KASTENHUBER.