

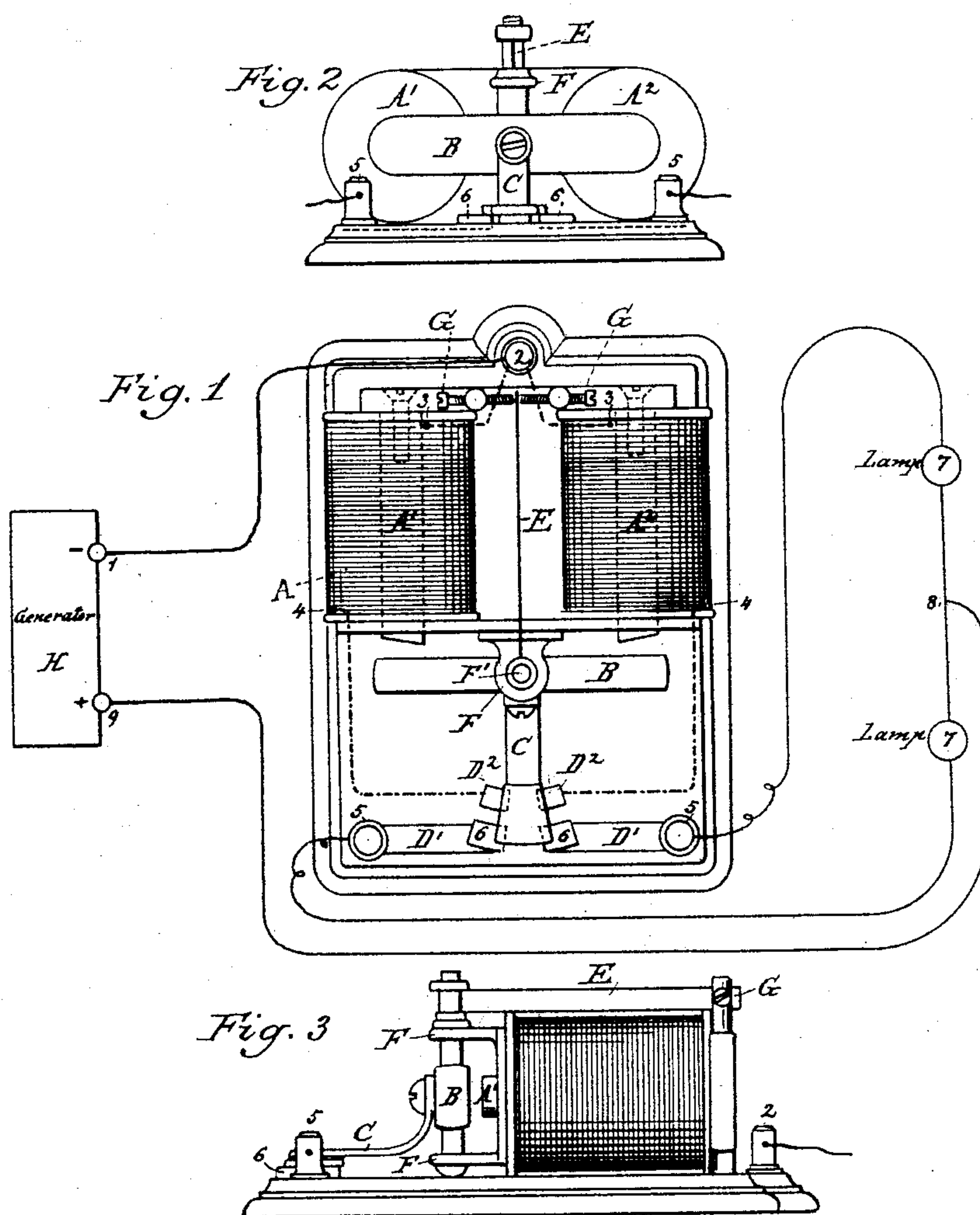
(No Model.)

C. J. VAN DEPOELE.

AUTOMATIC ELECTRIC CIRCUIT CHANGER.

No. 285,859.

Patented Oct. 2, 1883.



Attest:
A. Barthel
E. Scully.

Inventor:
Chas. J. Van Depoele
by *Thos. S. Sprague*
Att'y.

UNITED STATES PATENT OFFICE.

CHARLES J. VAN DEPOELE, OF CHICAGO, ILLINOIS.

AUTOMATIC ELECTRIC-CIRCUIT CHANGER.

SPECIFICATION forming part of Letters Patent No. 285,859, dated October 2, 1937.

Application filed February 11, 1882. (No model.)

To all whom it may concern:

Be it known that I, CHARLES J. VAN DEPOELE, of Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Devices for Automatically Changing the Direction of Electrical Currents; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification.

The nature of my invention relates to certain new and useful improvements in the construction and operation of a device for automatically changing the direction of electrical currents; and it consists in an automatic switch having a pair of electric magnets connected in multiple arc, and a centrally-pivoted armature adapted to be held either to the right or left when current is passing through the magnets, and a pair of lamps or other working resistances each in circuit with one of the said magnets, and connections whereby the entire current is switched from one half of the system to the other when the resistance therein becomes abnormally great, as will be hereinafter fully set forth, together with certain details of construction and arrangement by which the main features of my invention are carried out.

The length of carbon points as now made for use in arc-lamps is insufficient to run more than eight or nine hours under ordinary circumstances; and the object of my invention is to continue the light, where a longer service is required, by automatically changing the current from the lamp wherein the carbons are consumed to a fresh lamp or to other electrodes in the same lamp.

Figure 1 is a plan view of my switch. Fig. 2 is a front end view of the same. Fig. 3 is a side view of the same.

In the accompanying drawings, A' A² are common magnets-cores. B is an armature swinging at its center F. C is a contact-breaker rigidly attached to the center of the armature B, with which it moves. D' are contacts leading to binding-posts at 5 5. D² are contacts receiving the wires of magnets A. E is a spring rigidly attached at one end to the shaft of armature B. Said spring is intended to hold the armature B in the position shown in the drawings—that is, with its ends at equal dis-

tance from the poles of the magnets A, except under conditions hereinafter described. F F are carriers for the shaft of said armature, in which carrier the armature swings freely. G are set-screws to adjust the spring E to the armature B.

The operation is as follows: H is the source of electricity, battery, or dynamo-machine which is to run the lamps, and 9 is the positive pole, where a conducting-wire is attached, which carries the currents to the point 8, as shown in the drawings. A second conductor is connected to the negative pole 1 of the battery and to the binding-post 2 of the switch. The current passes from said binding-post through the magnet A', and said binding-post conveys the same current to and through the magnet A², the currents entering both magnets at the points marked 3 and leaving the magnets at 4. The conductors attached at these points marked 4 are carried to contacts D² D². The current now flows from D² D² through the contact-breaker C to contacts D' D' at the points marked 6. The current then flows from the binding-posts 5 5 through proper conductors to the two lamps or electrodes 7 7. The moment the current is established the magnet-cores A' A² become magnetized and act upon the armature B. The current is now passing through both lamps at the same time; but, since the cores A' A² act on opposite ends of the armature B, one or the other of the magnets will attract the armature to its pole, either right or left, and in so doing the contact will be broken with the other pole and with one of the lamps or electrodes. As long as the carbon in the burning lamp lasts the current through it will not be broken; hence the magnet which is holding the armature will continue to hold the same until the current is broken by the consumption of the carbon in the active lamp. The instant this takes place the magnet which was before operative will now release the armature, which will return, under the actuation of the spring, to its normal position, and by so doing contact will be made with the next lamp through its corresponding magnet, which is now master of the situation, and this magnet will hold the armature until the second carbon is consumed, when, unless fresh carbons have been supplied to the first lamp, the mag-

net will release the armature to resume again its normal condition; but if such fresh carbons have been supplied the change will instantaneously be again made, and so on, as long as the consumed carbons are alternately replaced by fresh ones.

What I claim as my invention is—

1. In an automatic switch, a pair of electro-magnets connected in multiple arc, and a centrally-pivoted armature adapted to be held either to the right or left when current is passing through the magnets, and a pair of lamps or other working resistances, each in circuit with one of the said magnets, and connections whereby the entire current is switched from one half of the system to the other when the resistance therein becomes abnormally great, as set forth.

2. An automatic switch consisting of a centrally-pivoted armature provided with a projecting contact-piece and double-acting re-

tracting spring, in combination with a pair of magnets connected in multiple arc and adapted to attract the opposite ends of the pivoted armature, and thereby to move the said contact-piece, and suitable contact-points and connections through which the entire current is switched by the movement of the armature and contact-piece, as set forth.

3. In an automatic switch, the combination of the magnets $A' A^2$, centrally-pivoted armature B, provided with the adjustable double-acting retracting-spring E, and an oscillating contact-piece, C, and suitable supports, F, with the contact-points $D' D^2$ and connections extending therefrom to the generator and to the working resistances, substantially as shown and described.

CHARLES J. VAN DEPOELE.

Witnesses:

H. S. SPRAGUE,
E. SCULLY.