

(No Model.)

C. B. STERLING.
ELECTRIC SWITCH.

No. 572,319.

Patented Dec. 1, 1896.

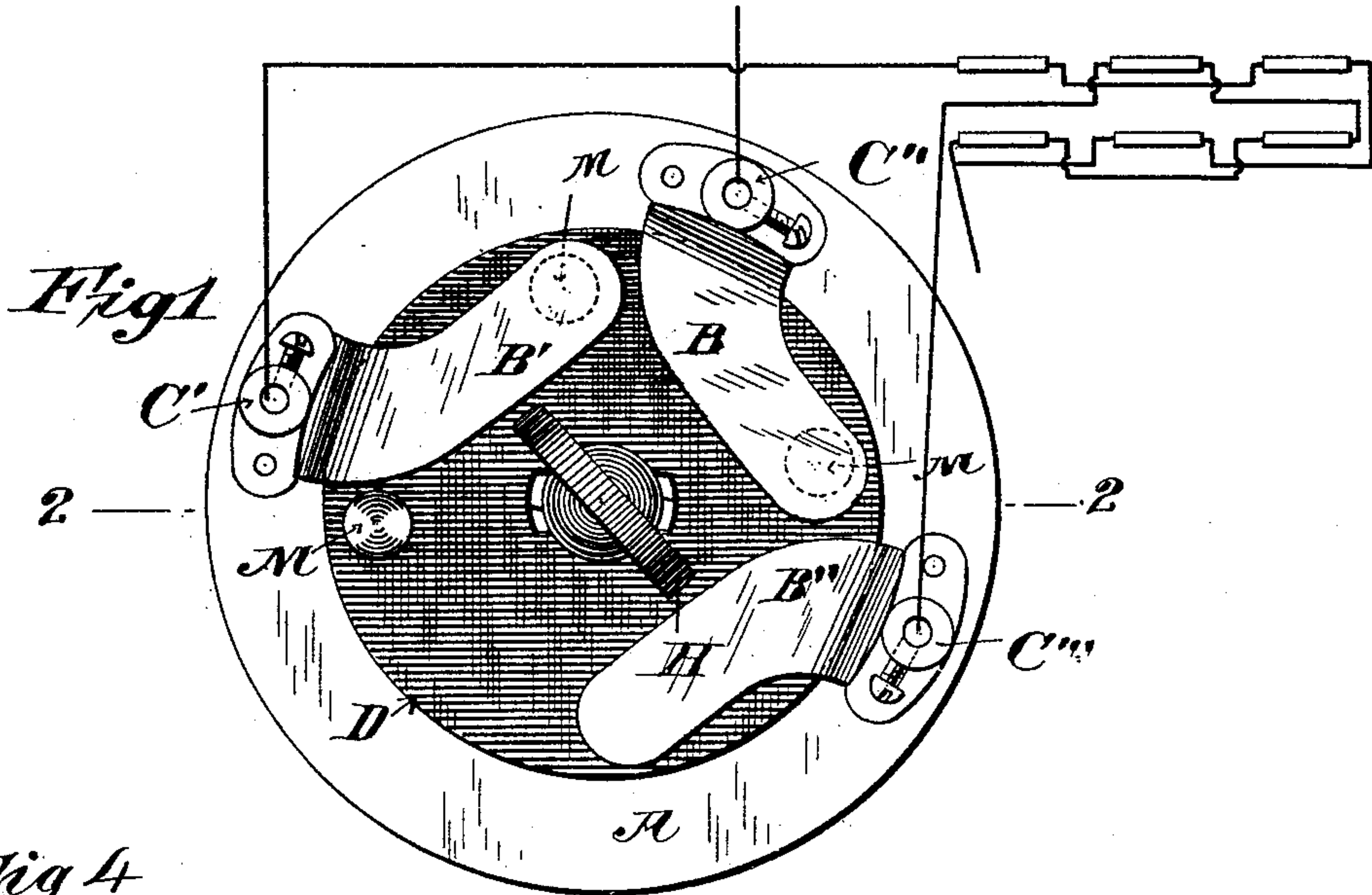
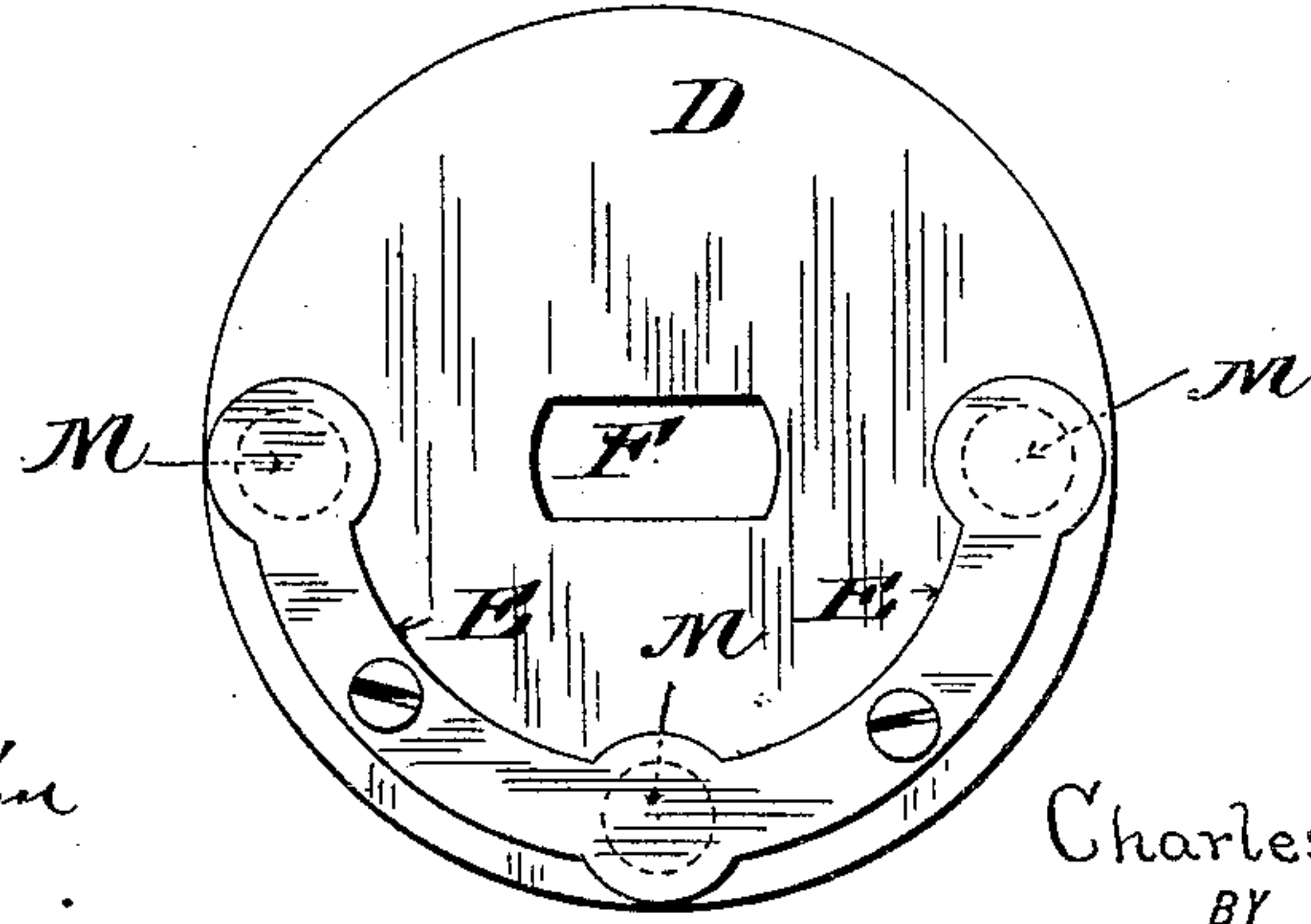
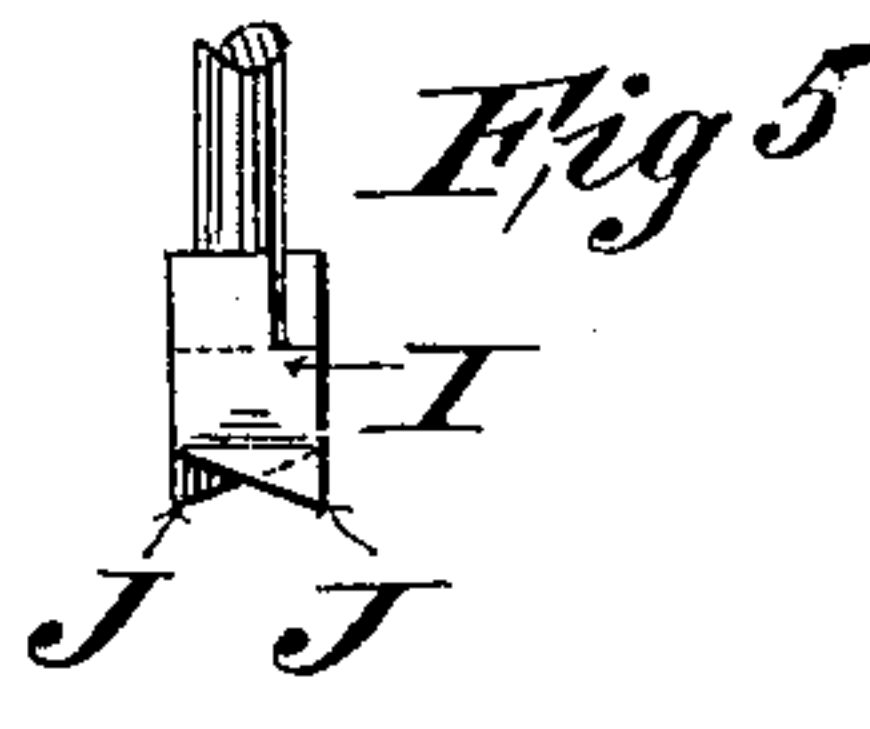
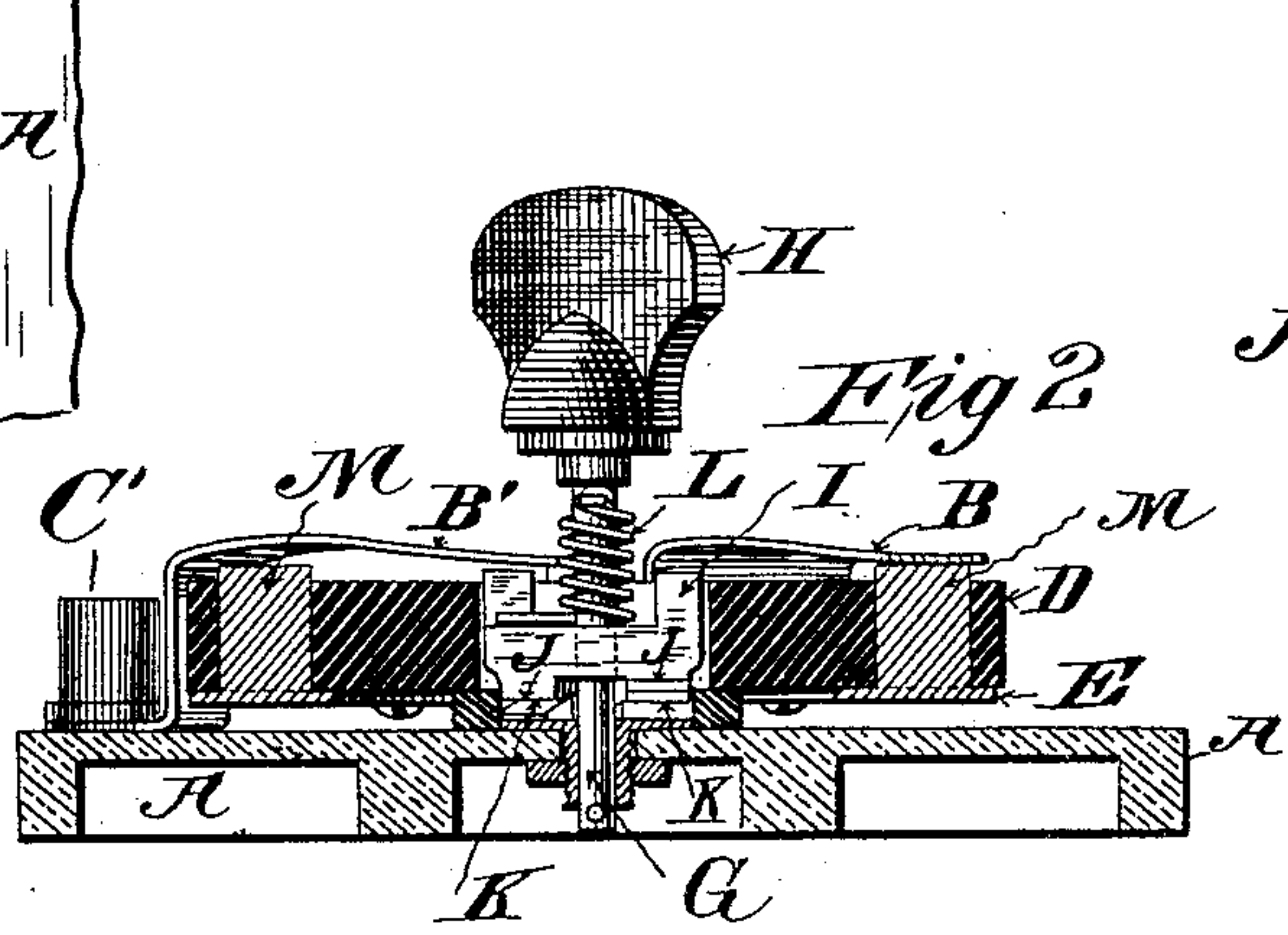
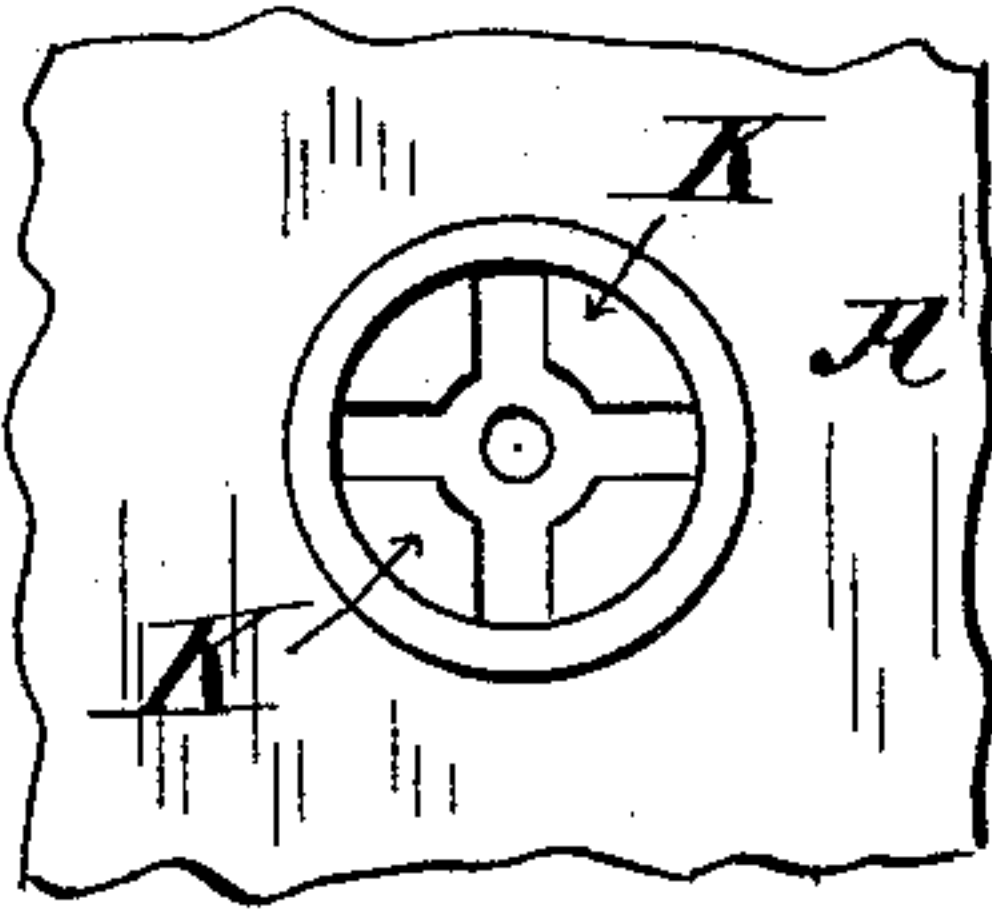


Fig 4



WITNESSES:
C. W. Benjamin
Wm. H. Berrigan Jr.

INVENTOR
Charles B. Sterling,
BY *Wm. H. Berrigan Jr.*
ATTORNEYS

UNITED STATES PATENT OFFICE.

CHARLES B. STERLING, OF NEW YORK, N. Y.

ELECTRIC SWITCH.

SPECIFICATION forming part of Letters Patent No. 572,319, dated December 1, 1896.

Application filed June 13, 1895. Serial No. 552,644. (No model.)

To all whom it may concern:

Be it known that I, CHARLES B. STERLING, a citizen of the United States, residing at New York, in the county of New York, State of New York, have invented certain new and useful Improvements in Electric Switches, of which the following is a full, true, and accurate description, reference being had to the accompanying drawings.

10 Similar letters and numerals denote like parts in the several figures.

The object of my invention is provide a simple, cheap, and efficient electric switch, which may be advantageously employed to regulate the supply of current to lamps, heaters, or other translating devices, where it is desirable to vary the number or position of the translating devices which are to be placed in or out of circuit. For instance, where 20 there are six electric heaters included in a heating system it may be found desirable to place all the heaters in circuit at one time, and at other times only one, two, three, four, or five are to be used, the number and position of the heaters to be used being varied to suit the particular work to be done.

Prior to my invention when desiring to vary or control the number or position of translating devices and the supply of current to the same it has been customary to use for the purpose a number of separate switches grouped together or placed one near each heater. By my invention I am enabled to use a single switch for the purpose of selecting and varying the number or position of the translating devices which are to be put in or cut out of circuit, and my improved switch may be used for numerous combinations of positions and numbers of translators, 40 being limited only by its size or number of contacts included in its construction, either of which may be varied to suit the particular system which the switch is to control.

Referring to the accompanying drawings, 45 Figure 1 is a top view of one form of switch embodying my invention. Fig. 2 is a partly-sectional view of said switch on the line 2 2 of Fig. 1. Fig. 3 is a bottom view of the contact-carrying block. Fig. 4 is a top view of the locking-ratchet. Fig. 5 is a side view of the locking-block.

Upon a base A, of insulating material, is

mounted a spring-contact B, secured to the base by a plate carrying a binding-post C', and there are other spring-contacts B' B'', 55 mounted upon said base and secured by plates carrying binding-posts C' C''. Above the base A is the movable contact-carrier D, preferably of insulating material and carrying one or more contacts E of a length, or size, 60 or shape to be in electrical contact with two or more of the stationary contact-arms B B' B'', before referred to. There is an opening F through the carrier to accommodate a spindle G to move the carrier and which fits into 65 the base A. A handle H is provided to rotate the carrier. A locking-block I fits around the spindle G and loosely in the opening F of the carrier-block and is provided with beveled edges J J, which engage the ratchet 70 K, secured to the base A. A coiled spring L (one end of which engages the locking-block and the other end of which is secured to the spindle) elastically holds the locking-block when the handle is sufficiently rotated. 75

As preferred, the contacts E, carried by block D, are circular blocks M, the upper surfaces of which are slightly above the level of the carrier-block, and two or more of these are connected by the strips E, which may be 80 secured to the under side of the carrier by screws, as in Figs. 2 and 3. The contacts E may also be in two or more series, and each contact may be of a size, or length, or shape to be in touch with two, three, or more of the 85 fixed contact-arms B B' B'', the same block carrying, if desired, a contact which touches two of the arms B B' B'' and another independent contact which touches two or more of the arms B B' B''. The carrier may be in- 90 termittently rotated always in the same direction, or moved backward and forward to make, break, or alter the circuits.

The binding-post C' is connected by proper conductors with a main conductor, and binding- 95 posts C' C'' are each connected with heaters, lamps, or other translating devices. For instance, when heating a car and using three heaters on either side the post C' engages the wire from the trolley, the post C' 100 engages the circuit which includes heaters 1 and 3 on one side and heater 5 on the other side, while the left-hand post C'' engages the circuit which includes heater 2 on one side

and heaters 4 and 6 on the other side. As shown in Fig. 1, the circuit is closed between the trolley-contact B and one knob of carrier-contact current thus flowing through heaters 1 3 5. Upon a movement of the carrier each of the three knobs M would be in contact with an arm, so that the two sets of heaters would be in circuit in series multiple. The next movement of the carrier would place one knob M in contact with the upper arm B and one knob in contact with the arm B'', while the left arm B' would be over an insulating portion of the carrier, and this would cut heaters 1 3 5 out of circuit. A third movement of the carrier would bring the insulating portion of the carrier under the upper arm B and would open the circuit and bring one knob under arm B' and another knob under the right-hand arm B'', while the intermediate knob would be untouched. A fourth movement of the carrier would restore the connections to that shown in Fig. 1. Thus that form of my invention illustrated in Fig. 1 is adapted, when used as described, to, first, put three heaters 1 3 5 in circuit; second, to put two sets of three heaters 1 3 5 and 2 4 6 into circuit in series multiple; third, to cut one of such sets 1 3 5 out of circuit, while the other set 2 4 6 remains in circuit, and, fourth, to cut all heaters out of circuit, all of which could not be accomplished prior to my invention, so far as I am aware, without the use of two switches, one for each series. However, I desire it to be understood that I have selected the above-referred-to installation of heaters only as an example of what may be accomplished by a simple form of my invention. If the size, or length, or shape of the contacts be varied or more than one series be used with the same carrier, many other installations may be controlled.

While I have herein shown and described one form of my invention which I have found may be usefully employed, yet I do not desire to be understood as confining myself to the described form, as obviously the invention may be modified, as found desirable by persons skilled in the making or use of electric switches, without departing from my invention.

What I claim is—

1. In an electrical switch, a rotatable stem, provided with a handle, a carrier-plate loosely carried by the rotatable stem, a yielding connection between said plate and stem, said carrier-plate provided with contacts and two or more of said contacts being connected with each other by a conductor at the under side of the plate, in combination with fixed contacts connected with electrical conductors and overhanging the carrier-plate, all of said fixed contacts being in the path of all the carried contacts, substantially as described.

2. In an electrical switch, a rotatable carrier-plate provided with contacts, and two or more of said contacts being connected with each other by a conductor at the under side of the plate, a lock therefor and a stem and handle for locking and throwing the carrier-plate as desired the carrier-plate loosely carried by the rotatable stem, and a yielding connection between said stem and carrier-plate in combination with fixed contacts connected with electrical conductors and overhanging the carrier-plate, all of said fixed contacts being in the path of all the carried contacts, substantially as described.

3. In an electrical switch, a rotatable carrier-plate provided with contact-plugs projecting through the carrier-plate and above its surface, a conducting-strip secured to the under side of the plate, and supporting two or more of said plugs, means to rotate the plate, and overhanging fixed contacts all arranged in the path of all the contact-plugs, substantially as described.

4. In an electrical switch, a rotatable carrier-plate provided with contact-plugs projecting through the carrier-plate and insulated from each other, a conducting-strip secured to the under side of the plate, and connecting two or more of said plugs, means to rotate the plate, and overhanging fixed contacts all arranged in the path of all the contact-plugs, substantially as described.

In witness whereof I have hereunto signed my name this 8th day of June, 1895.

CHARLES B. STERLING.

In presence of—

L. F. H. BETTS,

W. H. BERRIGAN, Jr.