

(No Model.)

H. T. PAISTE.  
ELECTRIC SWITCH.

No. 399,550.

Patented Mar. 12, 1889.

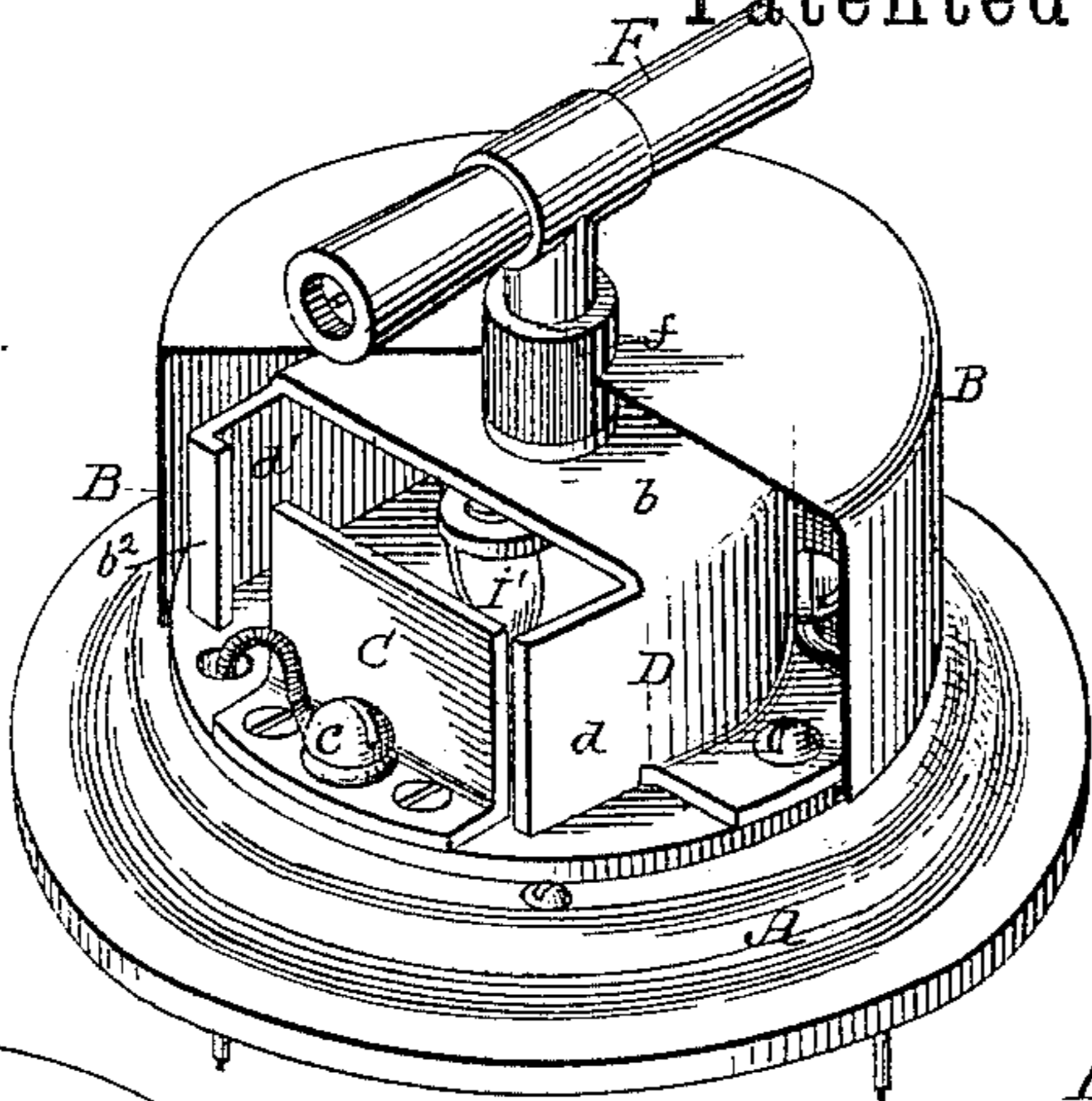


FIG. 2.

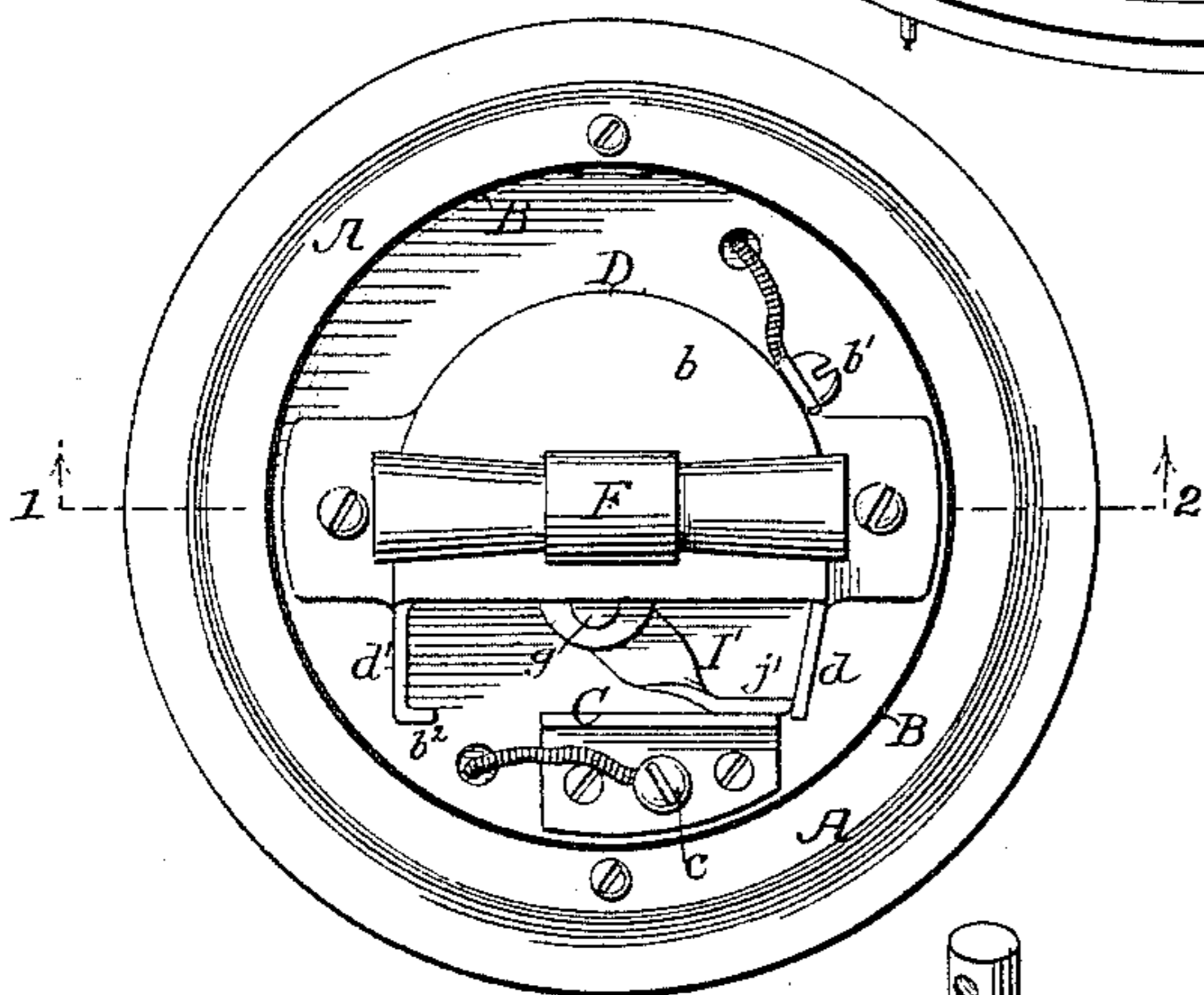


FIG.3.

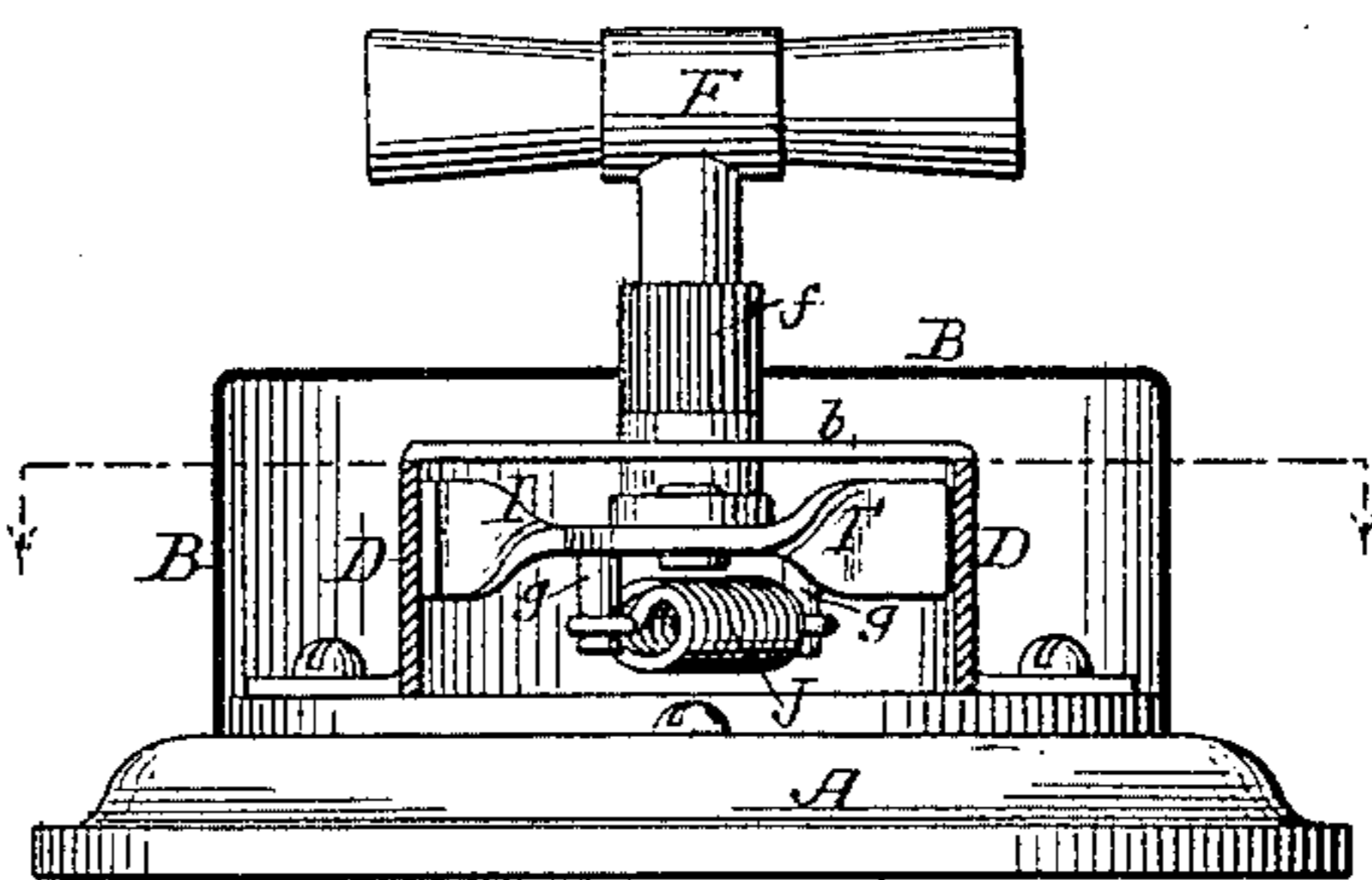


FIG. 6.

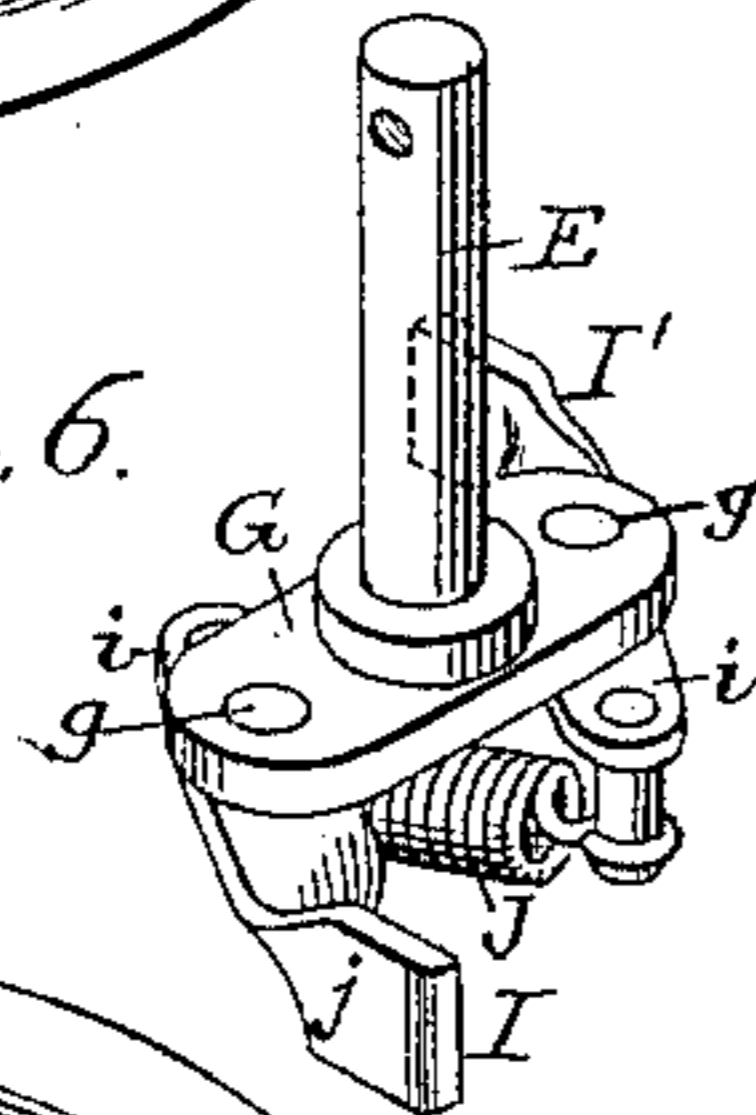


FIG. 4.

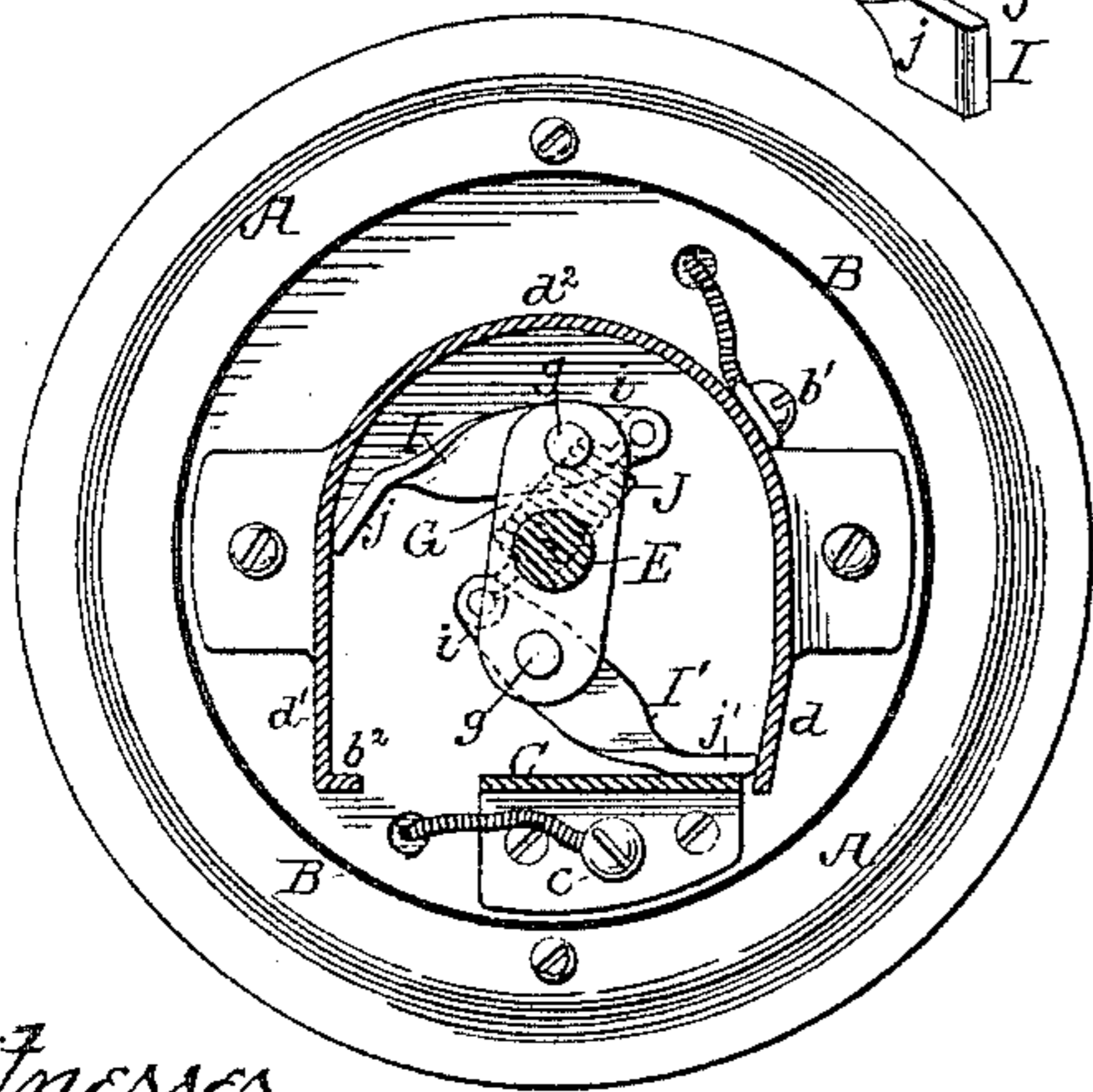


FIG. 7.

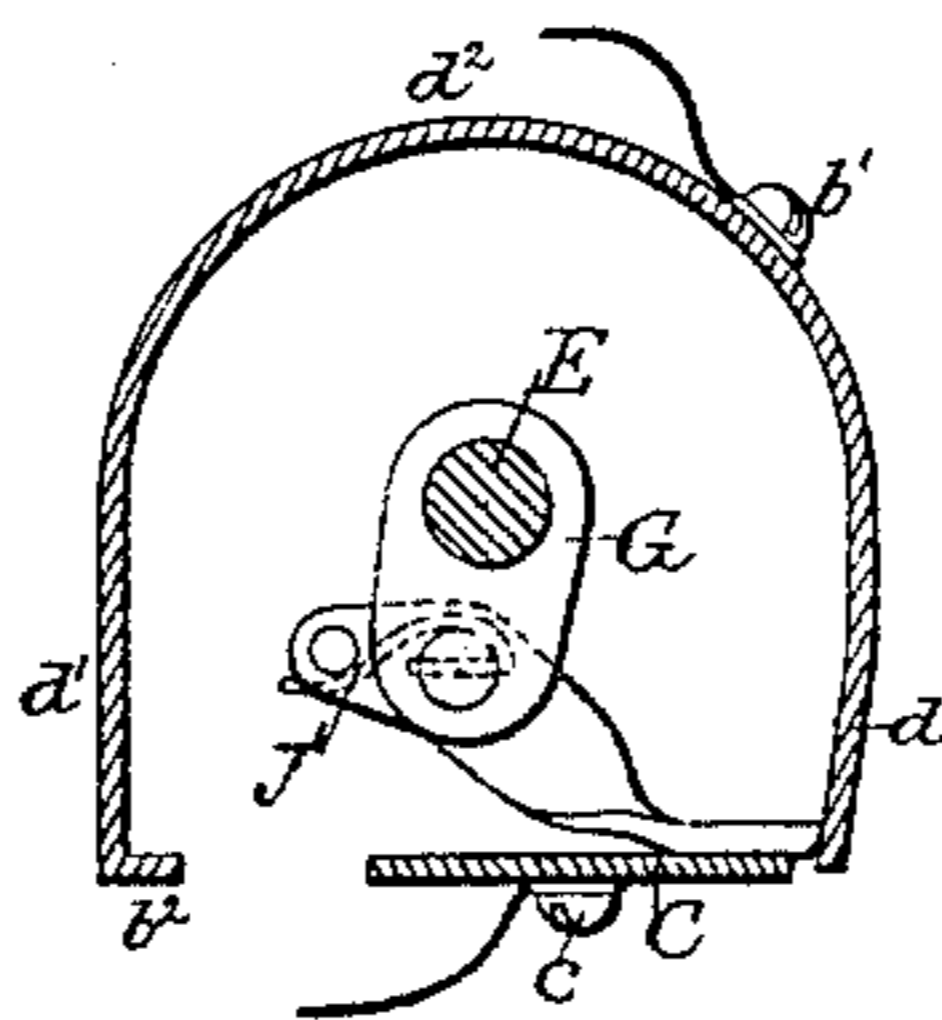
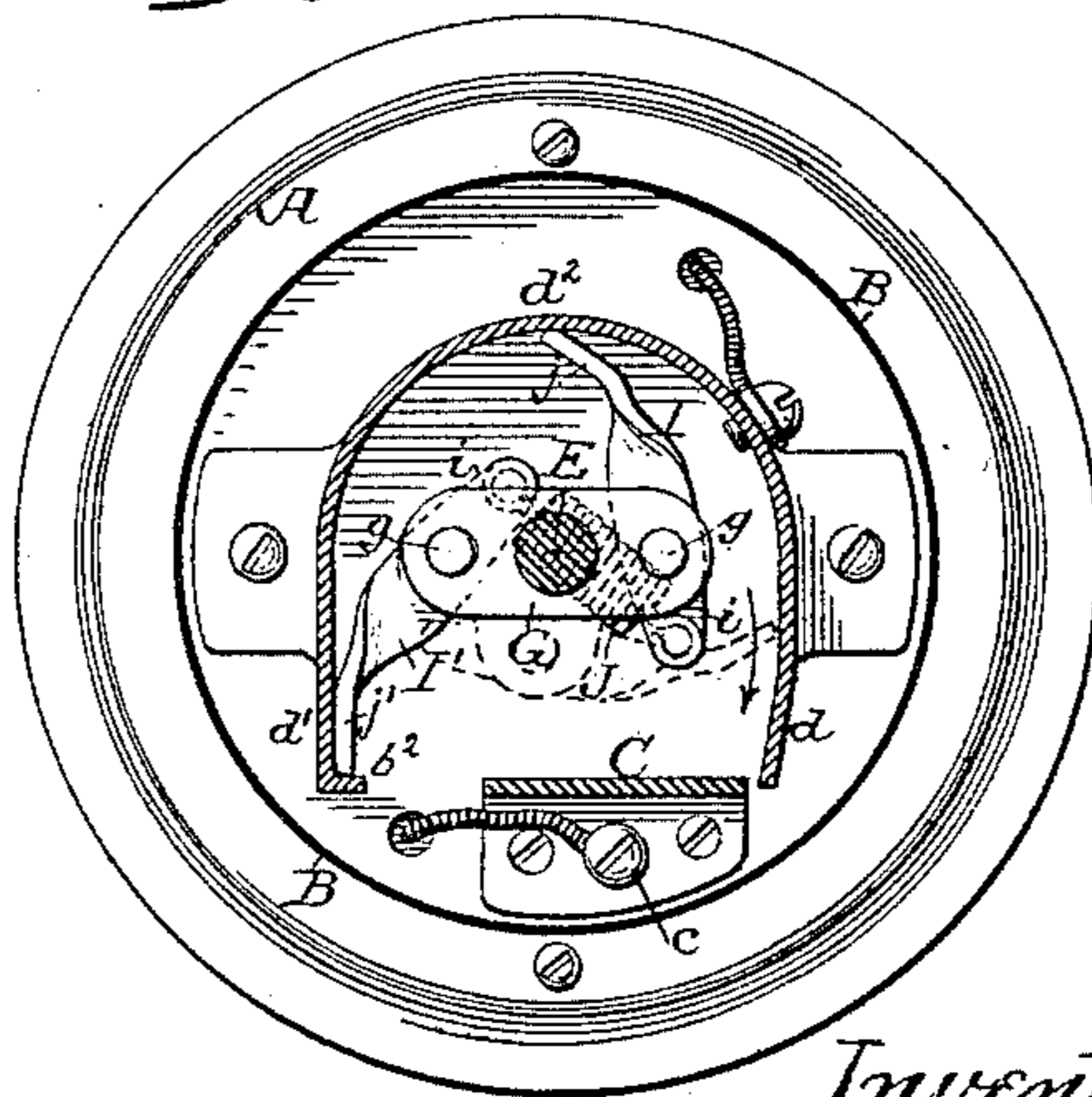


FIG. 5.



Witnesses  
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# UNITED STATES PATENT OFFICE.

HARRY T. PAISTE, OF WEST CHESTER, PENNSYLVANIA.

## ELECTRIC SWITCH.

SPECIFICATION forming part of Letters Patent No. 399,550, dated March 12, 1889.

Application filed April 28, 1888. Serial No. 272,112. (No model.)

*To all whom it may concern:*

Be it known that I, HARRY T. PAISTE, a citizen of the United States, and a resident of West Chester, Chester county, Pennsylvania, have invented certain Improvements in Electric Switches, of which the following is a specification.

The object of my invention is to construct an electric switch by which the circuit can be instantly made or instantly broken to prevent what is termed "sparking," and, furthermore, to so construct the switch that it will be impossible for the operator to control the making or breaking circuit of the arm after it reaches a certain point in its revolution.

In the accompanying drawings, Figure 1 is a perspective view of my improved switch with part of the casing broken away. Fig. 2 is a plan view with the casing in section. Fig. 3 is a transverse section on the line 1 2, Fig. 2. Fig. 4 is a diagram showing the circuit completed. Fig. 5 is a diagram showing the circuit broken. Fig. 6 is a detached perspective view of part of the device, and Fig. 7 is a view of the switch in its simplest form.

A is the base-plate, on which the switch mechanism is mounted, and B is the casing which covers the working parts.

D is the terminal plate of one of the electric wires, and is U shape in form, having two substantially parallel sides,  $d$   $d'$ , connected by a segment of a circle,  $d^2$ , the whole being partially covered by a cross-plate,  $b$ . This plate D is preferably struck up from one piece of metal.

C is the terminal plate of the other wire,  $c$  being the binding-post for the terminal C, and  $b'$  being the binding-post for the terminal D.

A vertical shaft, E, has its bearings in the cross-plate  $b$  of the terminal D, and is provided with a suitable handle, F, preferably of non-conducting material, and situated between a shoulder on this shaft and the handle is a non-conducting washer,  $f$ , which insulates the case B from the working parts of the device.

Mounted at the lower extremity of the shaft E is a cross-head, G, having depending pivot-pins  $g$   $g$ , on which are pivoted two levers, I I', of the form shown clearly in Fig. 6, the short arms  $i$   $i$  of the levers being connected by a coiled spring, J, the long arms of the levers

having flat faces  $j$   $j'$ . When the circuit is to be completed, the handle F is turned so that the two faces  $j$   $j'$  of the levers will assume the position shown in Fig. 4—that is, the face of one of the levers resting upon the terminal D, while the face of the other lever rests upon the terminal C—while if the circuit is to be broken the handle is turned so that the levers will assume the position shown in Fig. 5, the faces of both levers bearing against the terminal D and being clear of the terminal C. When it is desired to turn the levers from the position shown in Fig. 5 to the position shown in Fig. 4, the levers remain in contact with the terminal D until the ends of the levers are moved to the position shown by dotted lines in Fig. 5, in which position the plate D is tangent to the arc of a circle traversed by the end of the long arm of the advance-lever, and consequently said lever will be actuated by its spring, the end of the long arm of the lever moving with a sliding contact along the straight face of the terminal D and gradually increasing in speed, so as to finally fly from the plate D to the plate C so rapidly as to preclude sparking. As the end of the terminal plate D is practically at right angles to the terminal plate C, it will be impossible to move the shaft back, as the end of the long arm of the lever will bear against the terminal plate D. When in the position shown in Fig. 4, the current passes directly from the terminal C to the terminal D through the long arm of the lever, making connection at that point, and it also passes from one terminal to the other through the medium of the two levers and the cross-head carrying the same. The latter, however, is the main circuit, the direct contact between the two terminals being simply used to give a better connection, and this connection being broken as soon as the handle is turned, so that all the current then follows the other course until finally cut off, when the parts assume the position shown in Fig. 5. When the parts are in the position shown in Fig. 5, the lug  $b^2$  on the end of the side plate,  $b'$ , of the terminal D prevents any reverse movement of the handle F, as the end of the long arm of the lever will press directly against this lug  $b^2$ , the spring tending at all times to keep the face of the lever against the terminal D.

In Fig. 7 I have shown in place of the two levers a shaft provided with one lever only, the lever in this instance having a spring, J', mounted on its pivot and bearing against a pin on the short arm of the lever, which tends to keep the long arm of the lever always against either the terminal D or C. In this instance the current will pass directly from the terminal D through the lever to the terminal C.

I claim as my invention—

1. The combination of a switch-shaft, an arm thereon, a spring-lever carried thereby, and a terminal having a portion tangential to the pivot of the lever, whereby the free arm of said lever has a sliding contact with the tangential portion of the terminal during that portion of its movement which is due to the action of the spring, all substantially as specified.

2. The combination of the U-shaped terminal D and the flat terminal C, placed across the open end of the U-shaped terminal, with

a switch-shaft having an arm, a contact-lever pivoted to said arm, and a spring acting on said lever and serving to move the same independently of the arm, all substantially as specified.

3. The combination of the U-shaped terminal and the straight terminal, a shaft having a cross-head, and two levers, I I', pivoted thereto and connected together by a spring, each lever having contact-faces for bearing upon the terminals, substantially as described.

4. The combination of the U-shaped terminal having a lug, b<sup>2</sup>, with a straight terminal, C, and the shaft and spring-lever for completing the circuit between the terminals C D, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HARRY T. PAISTE.

Witnesses:

WILLIAM D. CONNER,  
HARRY SMITH.