

(No Model.)

W. S. HILL.
CUT-OUT FOR ELECTRIC CIRCUITS.

No. 406,906.

Patented July 16, 1889.

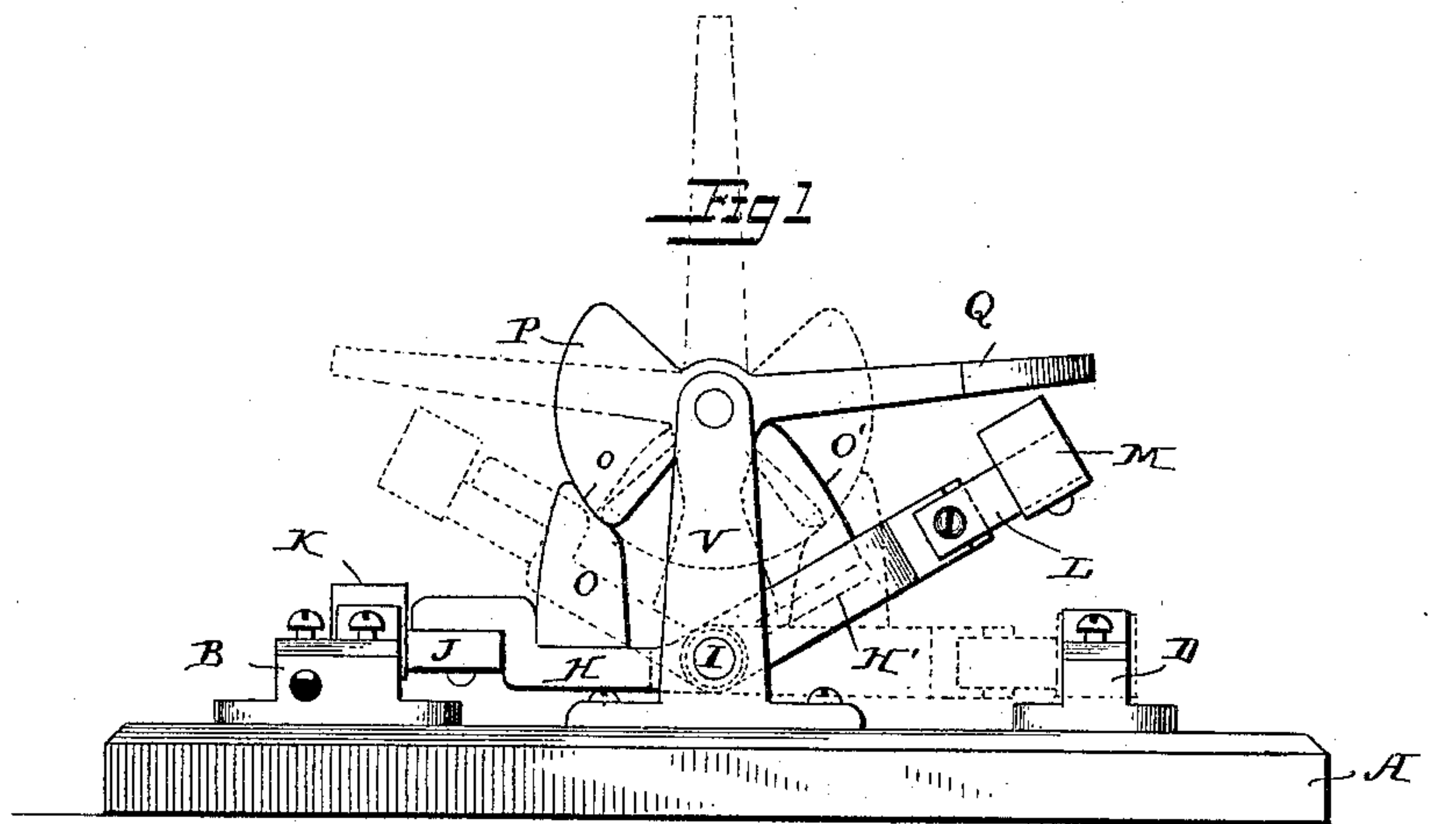


Fig 2.

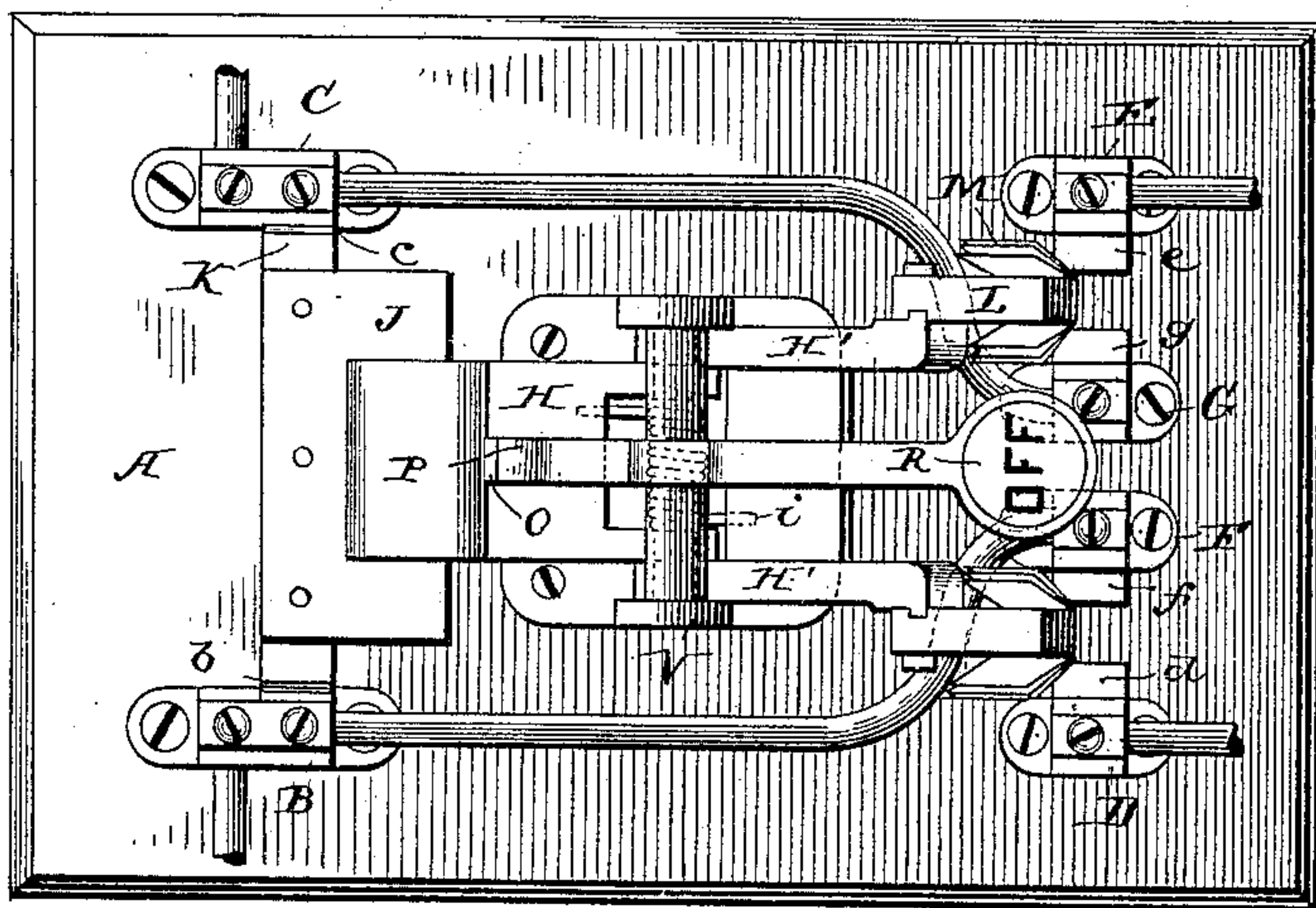
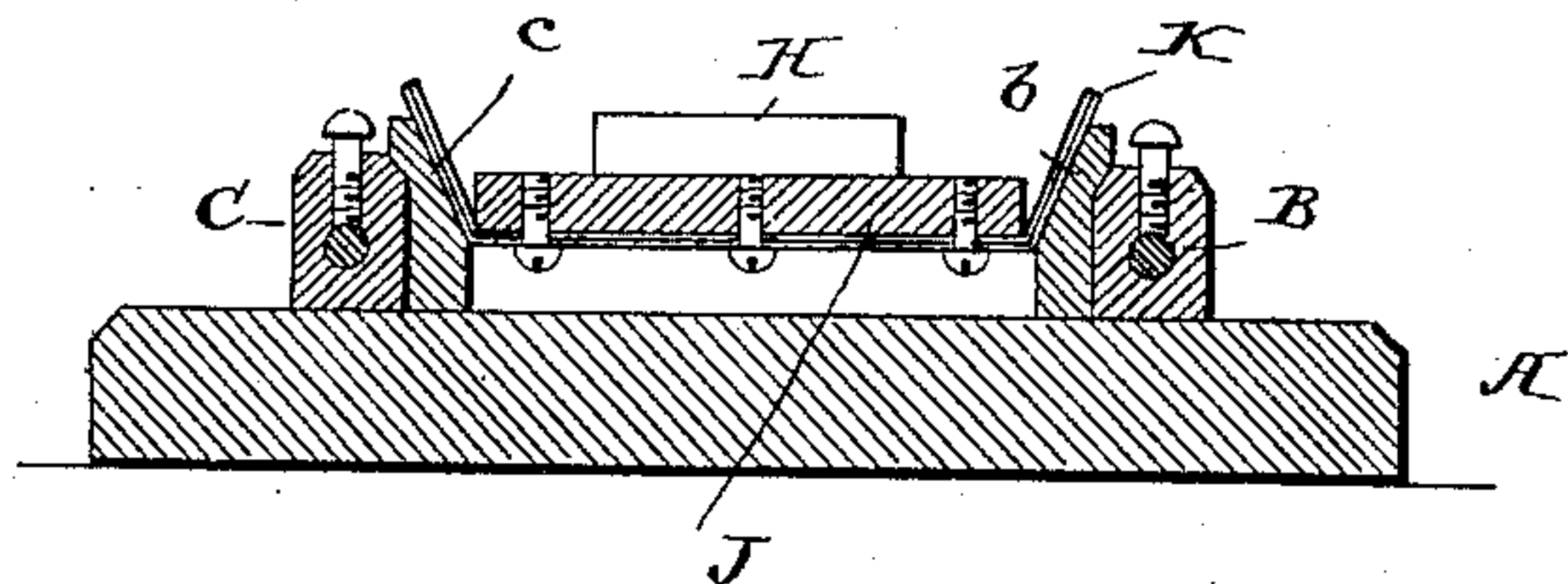


Fig 3.



Witnesses

Prof. Hinkel Jr.
W. S. McArthur

Inventor

W. S. Hill
by Foster Freeman

Attorneys

UNITED STATES PATENT OFFICE.

WARREN S. HILL, OF BOSTON, MASSACHUSETTS.

CUT-OUT FOR ELECTRIC CIRCUITS.

SPECIFICATION forming part of Letters Patent No. 406,906, dated July 16, 1889.

Application filed May 4, 1888. Serial No. 272,833. (No model.)

To all whom it may concern:

Be it known that I, WARREN S. HILL, a citizen of the United States, residing in Boston, county of Suffolk, State of Massachusetts, have invented certain new and useful Improvements in Cut-Outs for Electric Circuits, of which the following is a specification.

My invention relates to cut-outs for electric circuits, and has for its object to provide a simple, cheap, and effective device that is not liable to get out of order and is sure in its operation; and it consists in a construction and arrangement of parts, substantially such as hereinafter set forth.

Referring to the accompanying drawings, Figure 1 is a side elevation of a device embodying my invention. Fig. 2 is a plan view of the same, and Fig. 3 is an end view.

In the use of electricity, and especially where a comparatively heavy current is used, as in systems of electric lighting or power systems, it is desirable to have a cut-out or switch located in some convenient position where it can be operated by any one without danger and with certainty, so as to disconnect the circuit consuming the current from the main circuit. This is especially useful in cases of fire or accident—such as crossing of wires and the like—and it is one of the objects of my invention to produce a device which is especially useful for this purpose, and I have described my present invention as applied in this way.

Upon a suitable base A, which is preferably of insulating material, are mounted the binding-screws of terminals of the various circuits, B C being the terminals of the main conductors and D E the terminals of the loop or working-circuit, as the lighting-circuit of a house, for instance. Connected to the terminals B C of the main circuit are conductors leading to the terminals F G, which are preferably arranged in line with the terminals D E of the working-circuit.

Mounted upon a suitable standard V, at some convenient point intermediate the terminals of the main and working circuits, are pivoted levers or frames H H', hinged to a central pivot I and provided with springs *i*, which tend to make the parts normally assume a position at an obtuse angle to each

other. This frame may be variously constructed; but, as shown, the end thereof is provided with a plate J, supporting a conducting-connection K. While this conductor K may be of any desired form and material, I prefer to make it of a series of plates or laminæ of metal, and to secure it upon the under side of the plate J, with its ends extending, as shown in Fig. 3, and this plate J is of such size as to pass easily between the inclines *b* and *c* of the binding posts or terminals B C. In this way it will be seen that when the conductor K is passed between the inclined surfaces of *b c* it will produce a rubbing contact, which will keep the portions bright and insure good electrical connection. The other end of the lever, or the other portion H' thereof, is bifurcated and provided with extensions L, which carry the connectors M, also preferably made of sheets or laminæ of conducting material, and adapted to make contact between the inclined edges *d f* and *e g* of the respective binding-posts.

In order that the levers may be operated positively to make and break the various connections, I provide the standards or projections O, secured to the levers, and these standards have a curved surface *o*, against which the segment P, mounted in the standards *v* and provided with a handle Q for operating it, impinges. This handle may be provided at its ends with indicating-marks, as R, showing whether the current is off or on.

Such being the preferred construction, the operation will be readily understood to be as follows: When it is desired to disconnect the working-circuit, the lever H occupies the position shown in the drawings, and connects the terminals *b* and *c* of the main circuit by the conductor K, and the lever is held in position by the segment *p*, bearing upon the curved portions of the projection O, and at the same time the connections between the terminals of the working-circuit are opened. When, however, it is desired to complete the connections with the working-circuit, the lever Q is rotated, and with it the segment *p*, and it will be seen that the shape and size of the segment are such that it does not pass from connection with the standard O' on the portion H of the lever until it has come in con-

tact with the similar standard O' on the portion II' of the lever and forced the conductors M into contact with the terminals of the working-circuit, when the portion L II' will be locked in position, and the portion H will be raised by the spring, as shown in dotted lines in Fig. 1. In this way I avoid any sparking in operating the switch, and as there is no electric connection with any of the operating parts of the segment or levers there is no danger of shock to the person operating the cut-out.

While I have thus specifically described the preferred embodiment of my invention, it will be evident to those skilled in the art that the form and construction of the parts may be varied without departing from the spirit thereof.

What I claim is—

1. In an electric cut-out, the combination, with the main and working circuit terminals, of two pivoted frames, each carrying connecting-conductors, a lever for operating both the frames, a segment on the lever, and projections on the frames arranged in the path of the segment, the segment being wider than the space between the projections, whereby the connections between one set of terminals must be completed before the connections between the other set are broken, substantially as described.

2. In an electric cut-out, the combination, with the main and working circuit terminals, of a pivoted frame carrying connecting-conductors arranged to complete the circuit between the main-line terminals, another pivoted frame carrying connecting-conductors

arranged to complete the circuit between the working-circuit conductors and the main line, a lever for operating both the frames, a segment carried by the lever, and projections on the frames in the path of the segment, substantially as described.

3. In an electric cut-out, the combination, with one set of main-line terminals, of a pivoted frame carrying a conductor arranged to complete the circuit between said terminals, another set of main-line terminals electrically connected with the first set, a set of working-circuit terminals arranged adjacent thereto, and another frame carrying connecting-conductors arranged to complete the circuit between the last-named main-line conductors and the working-circuit conductors, substantially as described.

4. The combination, with the base-board, of one set of main-line conductors, another set of main-line conductors electrically connected thereto, a set of working-conductors arranged adjacent to the latter, a standard arranged between the two sets of main-line conductors, a lever mounted in the standard having a segment, and two frames pivotally mounted in said standard carrying connecting-conductors and having projections arranged in the path of the segment, substantially as described.

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

WARREN S. HILL.

Witnesses:

LOUIS E. HILL,
LEONARD STONE.