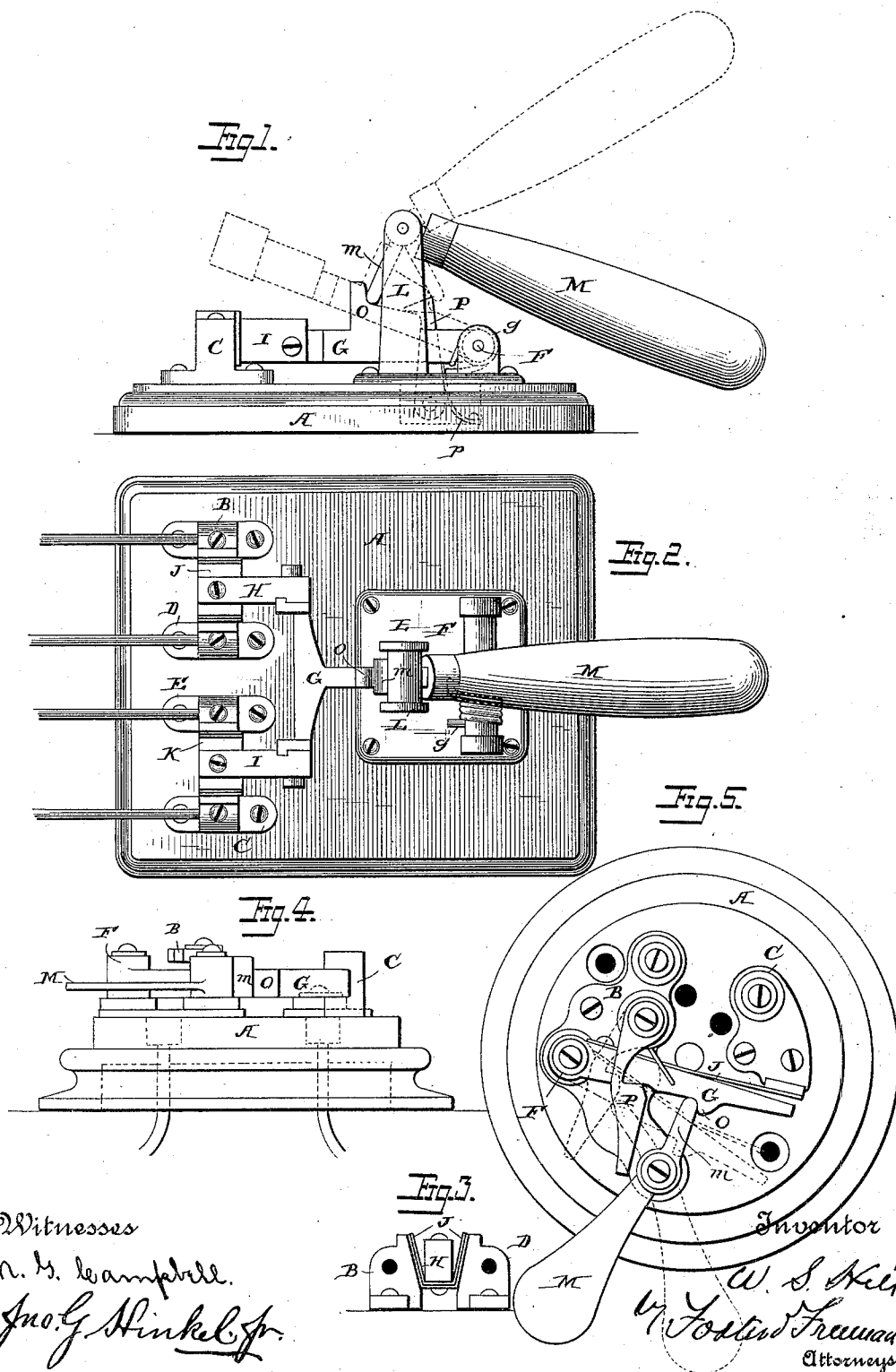


(No Model.)

W. S. HILL.
ELECTRIC SWITCH.

No. 398,510.

Patented Feb. 26, 1889.



UNITED STATES PATENT OFFICE.

WARREN S. HILL, OF BOSTON, MASSACHUSETTS.

ELECTRIC SWITCH.

SPECIFICATION forming part of Letters Patent No. 398,510, dated February 26, 1889.

Application filed May 17, 1888. Serial No. 274,131. (No model.)

To all whom it may concern:

Be it known that I, WARREN S. HILL, a citizen of the United States, residing at Boston, Suffolk county, State of Massachusetts, have
5 invented certain new and useful Improvements in Electric Switches, of which the following is a full, clear, and exact specification.

My invention relates to electric switches, and has for its object to provide a simple,
10 cheap, and effective switch that shall be positive in its action and not liable to get out of order; and it consists in a construction and arrangement of parts substantially such as is hereinafter set forth.

15 Referring to the accompanying drawings, Figure 1 is a side view of a device embodying my invention. Fig. 2 is a plan view of the same. Fig. 3 is a detail. Figs. 4 and 5 are
20 respectively side and plan views of a modified arrangement.

Mounted upon a suitable base, A, are the terminals B C of the main circuit, and suitably arranged in proper relation thereto are the terminals D E of another circuit. These
25 terminals, while they may be arranged in various positions, are shown in the embodiment of my invention illustrated in Figs. 1 and 2 in line with each other, and the adjacent faces of each pair of terminals are inclined or beveled,
30 so as to present a tapering or wedge-shaped space between each pair of terminals.

Mounted upon a suitable bar, as F, is a hinged arm or lever, G, and this is normally held in the position shown in dotted lines,
35 Fig. 1, by a suitable spring, g. This arm, as shown, is provided with two extensions, H I, which may be of insulating material, and mounted at the ends of these extensions are connectors J K. These connectors, while they
40 may be variously constructed, are shown in the present instance as consisting of a series of metal plates secured to the ends of the extensions H I, and these plates being secured thereto at or near the centers the ends project
45 on each side and bear upon the inclined faces of the terminals, producing a rubbing or frictional contact, which keeps them bright and insures good electrical connection between the parts.

50 In order to operate the arm or lever G and to force and hold it in proper position, I mount

upon the standards L an arm or handle, M, provided with an extension, m, which is adapted to engage with the lever G, and in order to produce the best results the lever G is formed
55 with a projection, O, having an inclined face, against which the extension m impinges.

In order to prevent accidental displacement of the arm carrying the connectors, I have found it convenient in some instances to provide a locking catch or pawl, P, which in this
60 instance is secured to the base-plate adapted to engage with the projection O, being pressed by a spring, p, and it will be readily seen that when the handle M is operated the extension
65 m will come in contact with the pawl or catch and force it away and allow the spring to raise the lever G and disconnect the circuit. From this construction it will be seen that the electrical connections can be surely and positively
70 made, and at the same time there is absolutely no danger of the current passing through the operating devices or the operator, as there is no electrical connection between these parts and the circuit terminals.

In the construction shown in Figs. 4 and 5 substantially the same elements are exhibited, in which B C are the electric terminals, G the lever pivoted in its support F and actuated by a spring in one direction and in the
80 opposite direction by the handle M and extension m, bearing upon the projection O on the lever. The catch or pawl P also bears upon the lever O and operates as before described. Instead, however, of having the connector J secured at its center to the arm, it is
85 shown as secured at one end thereto, the other end being free from the arm, and being made of spring material it will impinge upon the terminal C before the lever G comes in contact
90 therewith, and this will produce the desired rubbing action to keep the contact bright.

It will readily be understood by those skilled in the art that my invention may be embodied in other shapes and forms without departing
95 from the essential features thereof; but those shown in the drawings I have found to be exceedingly simple and effective and to answer the purposes desired.

What I claim is—

1. In an electric switch, the combination, with the terminals having inclined faces, of

an arm carrying insulated projections, connectors consisting of a series of thin plates having free ends secured to said projections, and arranged to bear upon the inclined faces of the terminals, and a handle for operating said arm, substantially as described.

2. In an electric switch, the combination, with the two sets of terminals arranged in a line, each having an inclined face, of a lever carrying two insulating projections, a connector consisting of a series of plates having their centers secured to the insulating projections, a spring for operating the arm in one

direction, a handle having an extension-bearing upon a projection of the lever for operating it in the other direction, and a locking-catch for securing it in position, 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:

LEONARD STONE,
LOUIS E. HILL.