(No Model.)

G. H. COLE.

PLUG SWITCH FOR TELEPHONE AND TELEGRAPH CIRCUITS.

No. 377,237. Patented Jan. 31, 1888.

Fig. 1

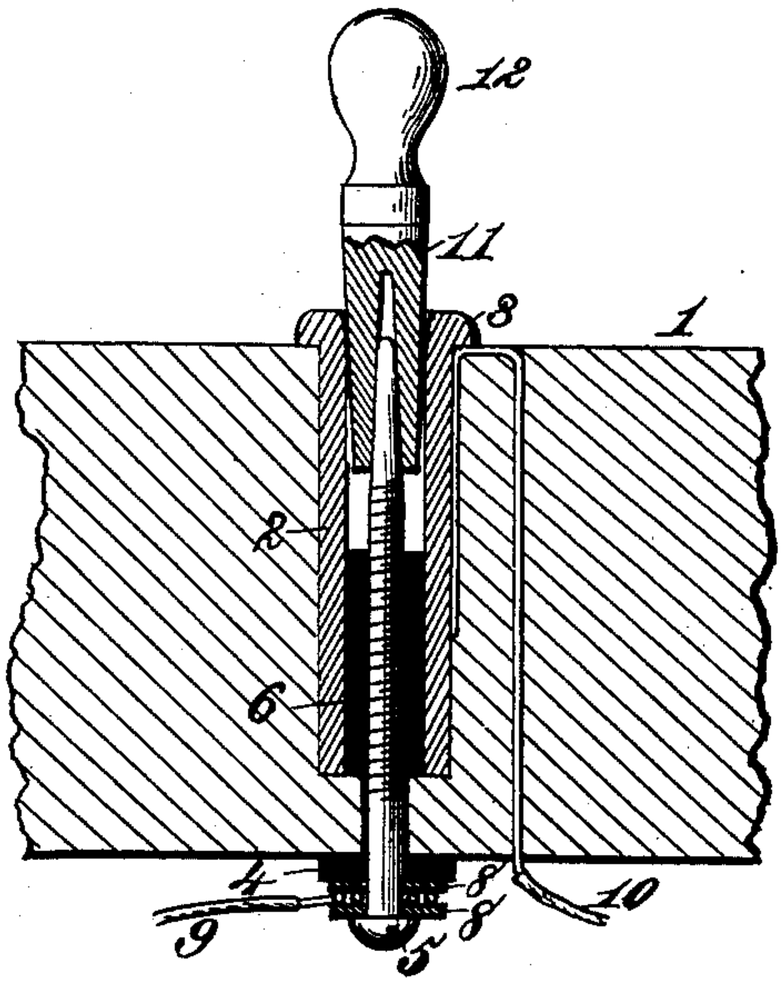
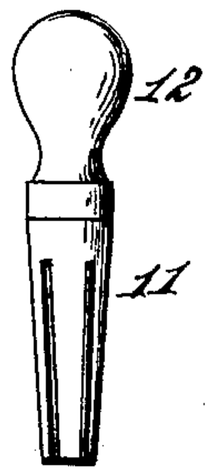
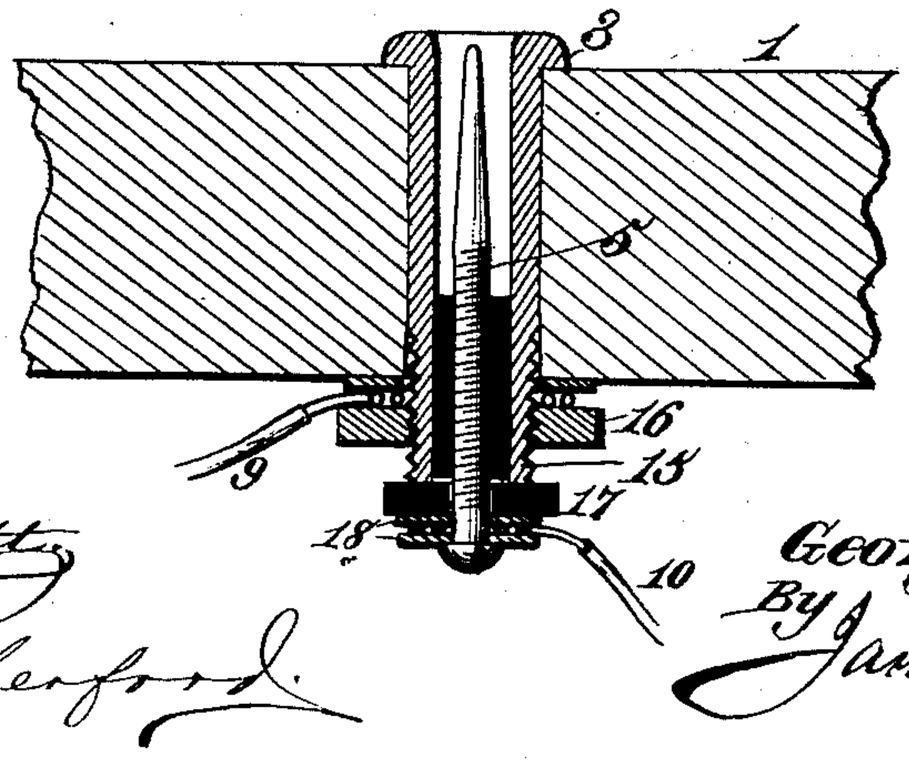


Fig. 2





Witnesses.
Robt Errett.
J. A. Rutherford.

Inventor.
George H. Cole.
By James L. Norris.
Atty.

UNITED STATES PATENT OFFICE.

GEORGE H. COLE, OF ATLANTA, GEORGIA.

PLUG-SWITCH FOR TELEPHONE AND TELEGRAPH CIRCUITS.

SPECIFICATION forming part of Letters Patent No. 377,237, dated January 31, 1888.

Application filed June 30, 1887. Serial No. 242,970. (No model.)

To all whom it may concern:

Be it known that I, GEORGE H. COLE, a citizen of the United States, residing at Atlanta, in the county of Fulton and State of Georgia, have invented new and useful Improvements in Plug-Switches for Telephone and Telegraph Circuits, of which the following is a specification.

The present invention relates to that class of switches for connecting one electric circuit with another, or for altering any of the connections of a telephone or telegraph line or circuit, which are termed "plug-switches," and are made of pieces of metal connected each to its appropriate wire or part of circuit, but slightly separated from each other, so that the insertion of a plug or pin in the interval between them serves to make the connection.

The invention consists in the construction and arrangement of parts hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a sectional view of a plug-switch adapted specially for telephone switch-boards. Fig. 2 is another form of plug-switch used upon telephone call-wire switch-boards and telegraph switch-boards.

The reference-numeral 1 desgnates a telephone or telegraph switch-board or other support upon which my improved plug-switch is mounted. The latter consists of a metal tube, 2, which has a flange, 3, at one end, serving as a bearing on one side of the switch-board, and also forming a slightly-flaring mouth to facilitate the insertion of a plug or pin. The tube 2 extends partly through the board or base 1, and is held in place by a screw, 5, which runs from the rear side of the board and enters a sleeve, 6, of hard rubber or other insulating material, inserted into the tube 2. This insulating-lining does not extend the entire length of the tube. The metallic screw or pin 5 passes through the tube 2 from the end thereof containing the insulating-lining, and its threads engage with or press into said lining, so as to hold the parts together. The end of the screw-pin is tapering and threadless and terminates within the unlined portion of the tube 2, so as to leave an interval or space between such pin and the tube 2. The headed end of the screw receives two metal washers, 8, which rest upon the insulating-washer 4, and between these metal washers 8 one line-wire, 9, or part of a circuit-wire is clamped, the other wire, 10, to be connected with the first, being passed through the switch-board 1 and connected with the flanged end of the tube 2.

In order to connect one circuit with another, I make use of a split hollow plug, 11, which has a suitable knob or handle, 12, and is designed to be inserted into the flanged end of the tube 2, so as to slip onto the metal pin 5 and complete the metallic connection between the same and the unlined portion of the tube 2. A switch of the type represented in Fig. 1 is particularly adapted for use upon telephone switch-boards.

In the construction shown in Fig. 2 the parts already described are also present, the only difference being in the manner of holding the tube in place and mode of connecting or clamping the circuit-wires. The screw-threaded end 15 of the tube 2, projecting from the switch-board, is in this modified form of switch made longer than in the other form, and receives a metallic nut, 16, which bears upon the base 1. An insulating washer or nut, 17, is placed upon the screw-threaded tube, and then two metal washers, 18, are retained by passing the screw-pin 5 through the same so as to enter the insulating-lining.

One circuit-wire is, in the type shown in Fig. 2, wrapped around the metal tube, so as to be clamped by the metal nut 16, and the other wire is held between the metal washers 18. The split hollow insertible plug is also used in connection with the type of switch shown in Fig. 2, which, as has already been stated, is specially adapted for telephone call-wire switch-boards and telegraph switch-boards.

By the construction and arrangement of parts comprising a plug switch as above described I attain greater simplicity and ease of operation than in switches heretofore devised.

What I claim as my invention is—

1. The combination, in a switch-plug, of the metal tube adapted to enter a switch-board, the tubular insulating-lining arranged within one end of the metal tube, the headed pin passing through the insulating-lining beyond the same into the metal tube, the insulating-

washer on said pin, the metallic washers arranged on the pin, between the head thereof and the insulating-washer, and the insertible hollow plug adapted to enter the metallic tube, substantially as described.

2. The combination, in a switch-plug, of the metal tube adapted to enter a switch-board, a tubular insulating-lining arranged within one end of said tube, a headed pin engaging and extending through the lining and extending beyond the latter into the tube, the insertible hollow plug adapted to enter the tube over the pin, a circuit-wire connected with the tube beyond its lining, and a circuit-wire connected with the external end of the pin, substantially as described.

3. The combination, in a switch-plug, of the metal tube adapted to enter a switch-board, a tubular insulating-lining arranged within one end of the tube, the headed pin extending through the tube into the latter beyond the lining, the insertible hollow plug adapted to enter the tube, the insulating-washer on the pin, the metal washers on the pin, between its head and the insulating-washer, a circuit-wire connected with the tube beyond the lining thereof, and a circuit-wire held between the metal washers on the pin, substantially as described.

4. The combination of the metal tube flanged at one end and screw-threaded at the other and having an insulating-lining extending part of its length, the metal screw or pin, the metallic nut, the insulating-washer, and the metallic washers, with a base or switch board, circuit-wires, and an insertible hollow plug adapted to connect the metal pin with the tube, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

GEO. H. COLE.

Witnesses:
W. J. COLE,
H. H. JACKSON.