

(No Model.)

A. H. PALMER.
ELECTRIC PLUG SWITCH.

No. 531,424.

Patented Dec. 25, 1894.

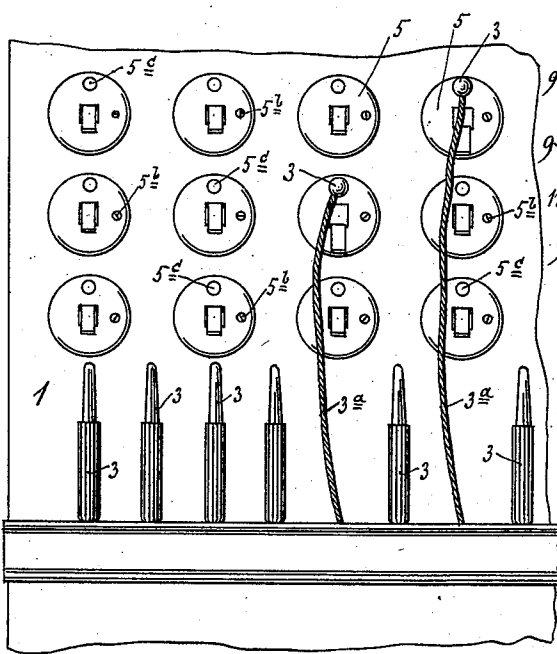


Fig. 1.

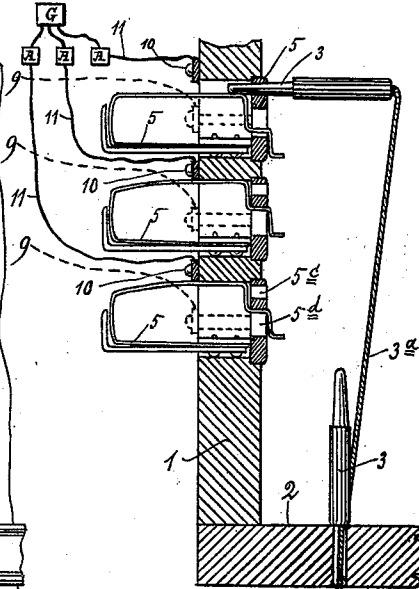


Fig. 2.

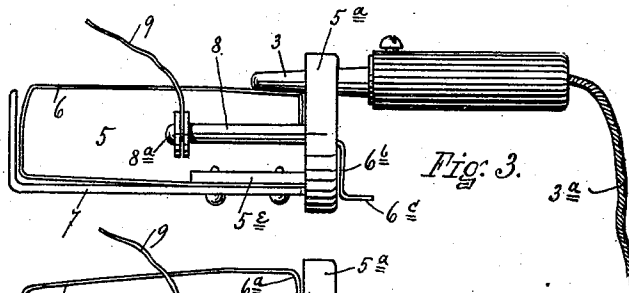


Fig. 3.

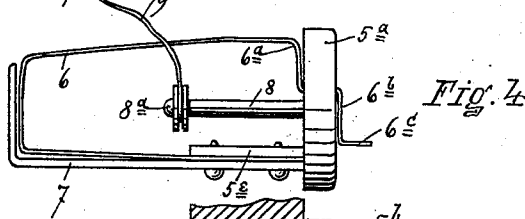


Fig. 4.

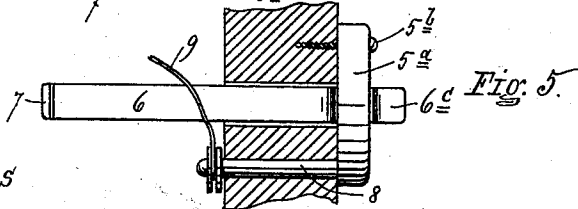


Fig. 5.

WITNESSES

Rich. A. George.
Geo. A. Raymond.

INVENTOR.

AUGUSTUS H. PALMER

BY Kelly, Robinson & Love

ATTORNEYS.

UNITED STATES PATENT OFFICE.

AUGUSTUS H. PALMER, OF UTICA, NEW YORK.

ELECTRIC PLUG-SWITCH.

SPECIFICATION forming part of Letters Patent No. 531,424, dated December 25, 1894.

Application filed October 17, 1894. Serial No. 526,170. (No model.)

To all whom it may concern:

Be it known that I, AUGUSTUS H. PALMER, of Utica, in the county of Oneida and State of New York, have invented certain new and useful Improvements in Electric Plug-Switches; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and numerals of reference marked thereon, which form part of this specification.

My invention relates to an improvement in plug switches, more particularly intended for use with telephones.

In the drawings which accompany and form a part of this specification and in which similar letters and numerals of reference refer to corresponding parts in the several figures, Figure 1 shows a face view of a part of the switch-board fitted with my improved plug switches. Fig. 2 shows a vertical section of the board. Fig. 3 shows in detail the switching mechanism and plug which are used in the switch, or, as it is commonly termed, "jack." Fig. 4 shows the switching mechanism or "jack" with the plug removed. Fig. 5 shows a plan view of the switching mechanism or "jack."

Referring to the reference figures and letters in a more particular description of the device, 1 indicates the face of the switch-board, provided, as is usual, with a shoulder-like offset 2 on which the plugs 3 rest when not in use, and beneath which are provided weights 4 or equivalent mechanism for taking up slack in the connections 3^a between the plugs. The switch or "jack" 5 is provided with a face-plate 5^a, preferably of circular form, and partially let into the face of the board, as shown in Fig. 2, and secured therein by a screw 5^b. The face-plate 5 is provided with a plug opening 5^c and a slotted opening 5^d. From the rear of the face-plate projects a rigid arm 5^e to which is secured one end of the spring 6. The free end of the spring 6 extends to a position opposite the plug opening 5^c where it is provided with a shoulder 6^a occupying a position, when the plug is not inserted, opposite the plug opening 5^c. The spring is then bent and con-

tinued through the slotted opening 5^d and bent again to form the shield 6^b for the opening 5^d. It is then bent to form the projecting lip 6^c which can be pressed downward to operate the spring.

For supporting the spring 6 and strengthening it so as to enable it to withstand the pressure of the plug when placed in the plug-hole 5^c without operating the spring, I provide an L-shaped supporting arm 7 secured to the rigid projection 5^e at the same point that the spring is secured. On the rear face of the face-plate 5^a is also provided a stud 8 of a length to substantially extend through the switch-board 1, and on the rear end is adapted to be attached, by means of screws and washers 8^a, or other suitable means, the line wire 8. On the rear of the switch-board 1 are provided contact conductor pieces 10. To these conductor pieces are attached the ground wires 11 passing through the annunciator A, and when the plug is not in position, the upper portion or arm of the spring 6 engages the piece 10 and establishes an electrical connection between line-wire 9 and the ground-wires 11.

In describing the operation of the device, we will assume that a telephone subscriber's line-wire 9 is attached to each of the "jacks" and that normally they are in the position shown in Fig. 4 and the left-hand portion of Fig. 1. In the circuit with the subscriber can also be provided "tell-tales" for calling the operator's attention. When the subscriber calls, the operator connects the subscriber with any other subscriber by taking one of the plugs 3 and placing the finger on the projection 6^c of the "jack" and depressing the same so as to free the opening 5^c and allow the plug to be inserted into the position shown in the upper portion of Fig. 2. In doing this, the connection between the spring 6 and the contact pieces 10 is broken. The other plug 3 of the pair is inserted in the subscriber called by depressing the spring 6 by means of the projection 6^c and placing the plug in. Two subscribers are then connected. There may also be introduced in the connection 3^a of each pair of plugs a "tell-tale" as is common, if desired. To disconnect, the operator simply withdraws the plugs 3 from the respective

"jacks" into which they have been placed, and when withdrawn the spring 6 moves from the position shown in Fig. 3 to that shown in Fig. 4, establishing the ground connection with each subscriber's line-wire.

It may be noted that the jack cannot be operated and the plug inserted except by the operator depressing the spring by means of the projecting lip 6^c of the spring, thus obviating any possibility of putting the plug in position where it would appear to be performing its office, when in reality it was performing no function whatever, on account of the ground not having been broken.

In the use of this device, the ground must be fully and completely broken before the plug can be inserted. When the plug is withdrawn, the device automatically closes the ground circuit, thus obviating extra work on the part of the operator in closing the ground circuit.

In practice, it is found that operators are liable to forget to close the ground circuit after disconnecting a subscriber; but my device automatically does this, and the subscriber is always in position to "call" the office.

What I claim as new, and desire to secure by Letters Patent, is—

1. The plug switch or "jack" herein described, having the face-plate or body with a plug opening, a spring having a shoulder

closing the opening against the plug, and a projection through the face of the body by means of which the spring can be operated, and a conductor with which the spring is adapted to engage when the plug is removed, combined, substantially as set forth.

2. The combination in a plug switch or "jack," of a body or face-plate having a plug opening and a line-wire connection, a spring attached to the back of the plate and having a shoulder on its movable end closing the plug opening against the plug, and also having a projection through the face of the plate by means of which the spring may be operated, and a conductor with which the spring will engage when the plug is removed, substantially as set forth.

3. A plug switch having a body, a plug opening in the body, a spring secured to the body having a shoulder on the free end adapted to close the plug opening against the plug, means for operating the free end of the spring to free the plug opening, and a contact piece with which the free arm of the spring is adapted to engage, combined, substantially as set forth.

In witness whereof I have affixed my signature in presence of two witnesses.

AUGUSTUS H. PALMER.

Witnesses:

GEO. A. GAYMONDS,
DWIGHT H. COLEGROVE.