

(Model.)

A. H. PALMER.

Switch for Telephone Exchanges.

No. 238,803.

Patented March 15, 1881.

FIG. 1.

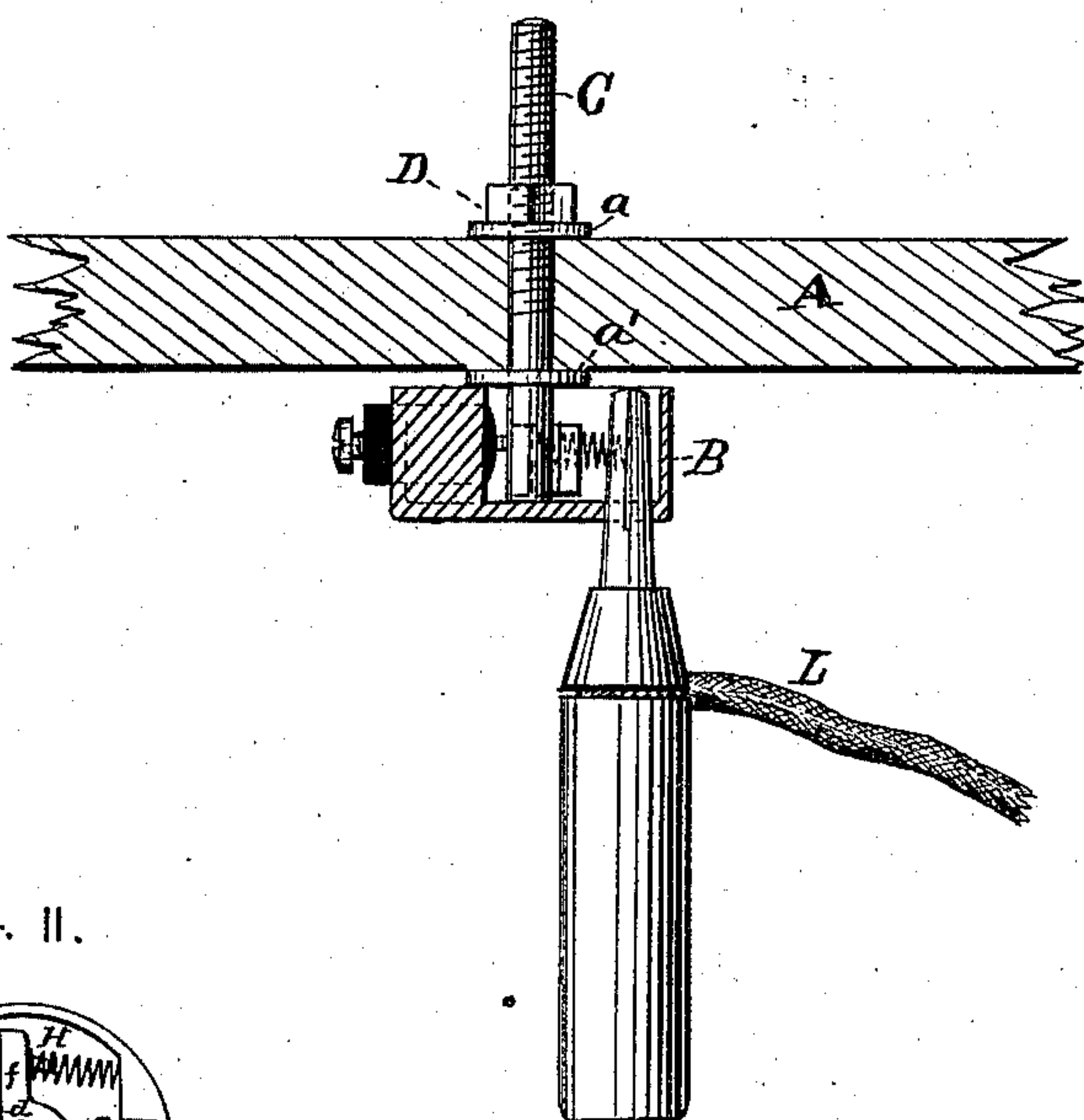


FIG. 11.

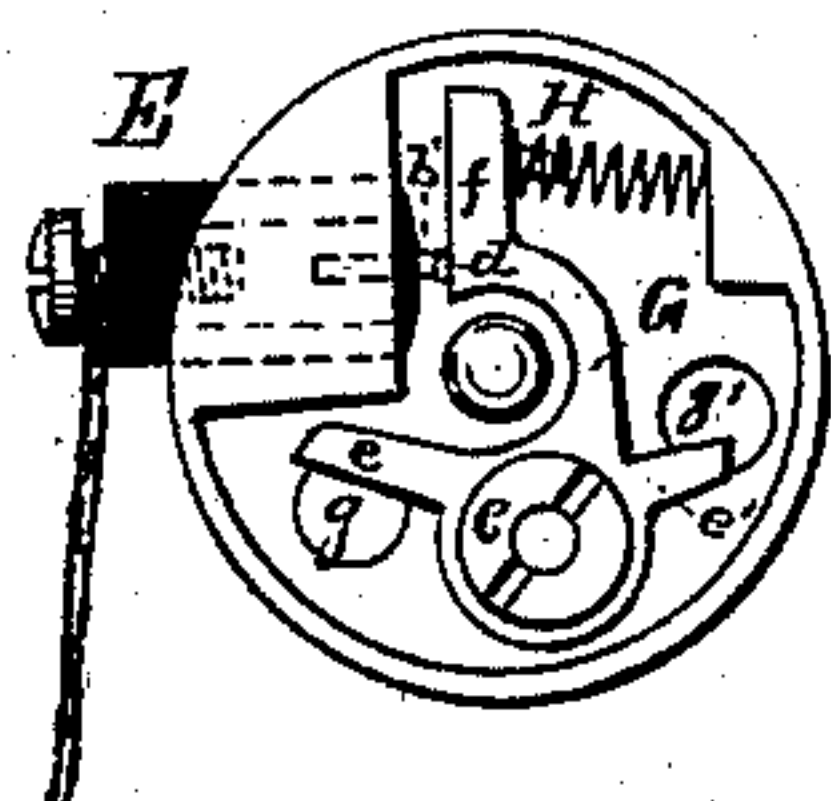


FIG. III.

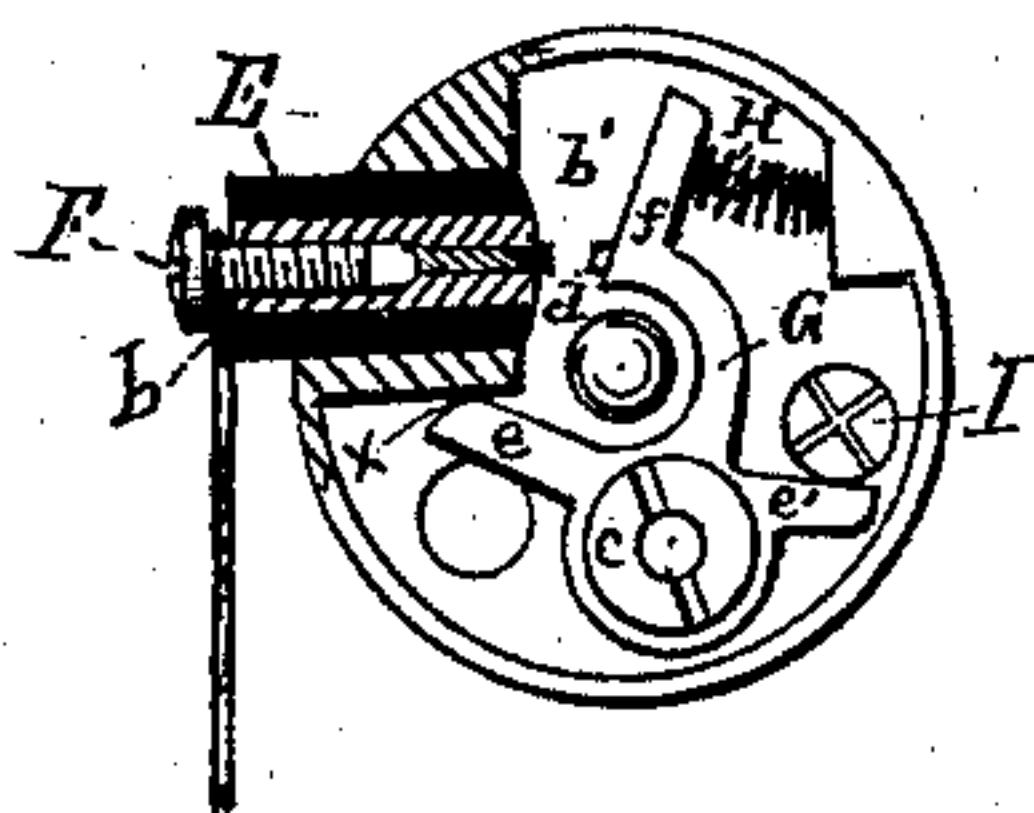
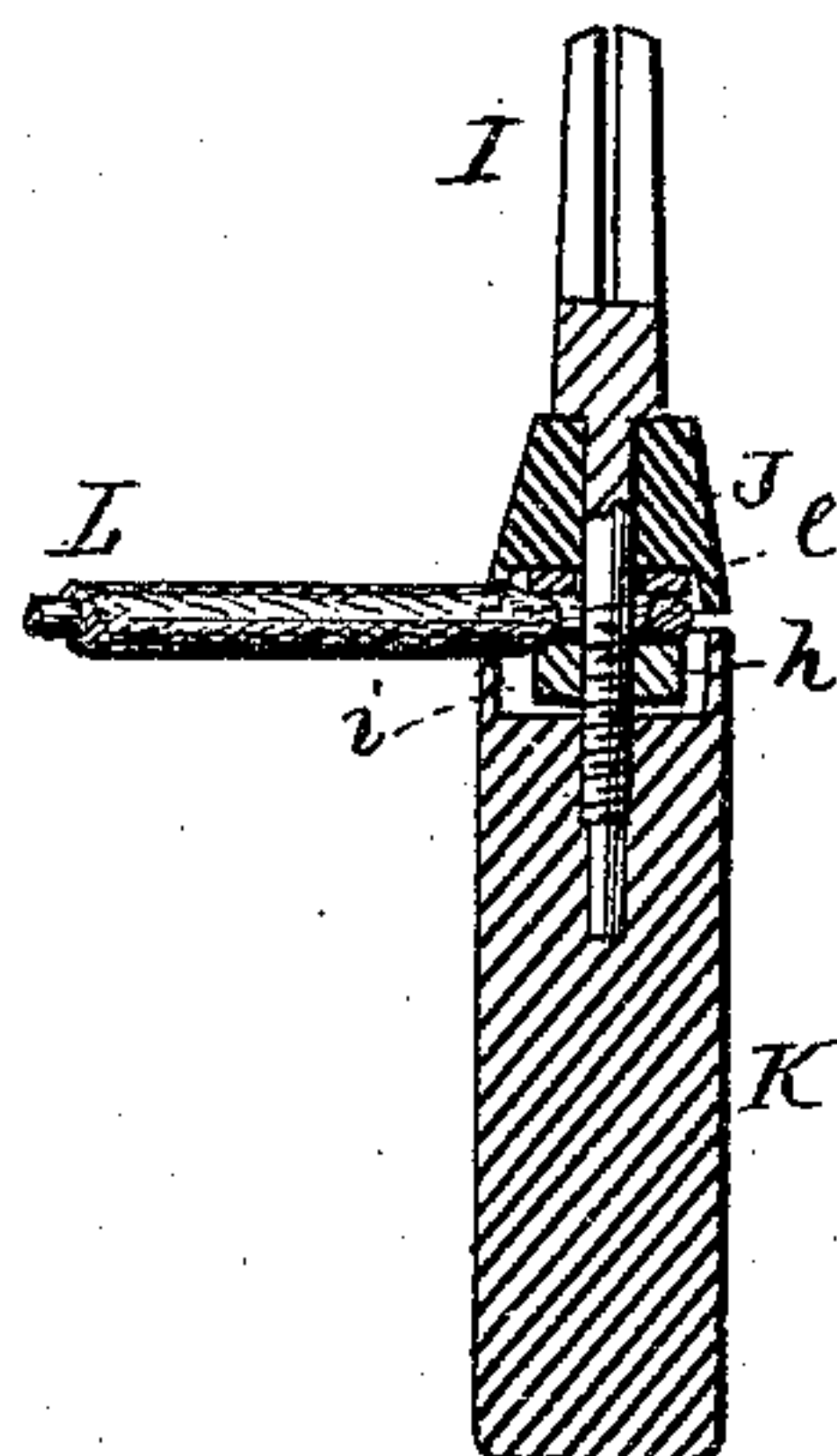


FIG. IV.



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WITNESSES:

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SWITCH FOR TELEPHONE-EXCHANGES.

SPECIFICATION forming part of Letters Patent No. 238,803, dated March 15, 1881.

Application filed June 28, 1880. (Model.)

To all whom it may concern:

Be it known that I, AUGUSTUS H. PALMER, a citizen of the United States, residing in Utica, in the county of Oneida and State of New York, have invented a new and useful Improvement in Switches for Telephone-Exchanges, of which the following is a specification when taken in connection with the accompanying drawings and the letters of reference marked thereon.

Figure I is a sectional view, showing my device attached to the switch-board. Fig. II is a rear view, showing the parts in contact with the ground-wire. Fig. III is a view showing the ground-connection broken with the plug or connector inserted. Fig. IV is a sectional view of my improved plug or connecting-pin.

This invention relates to an improvement in electric switches and devices for operating the same, and is constructed with special reference to communications by telephone where several instruments are arranged upon the same circuit or several circuits centering at a single point, the object being to receive a call from one instrument at the central office for communication with a second instrument, and so as to call that instrument and then put the two in communication; and the invention consists in the construction, as hereinafter described, and particularly recited in the claims.

A represents the switch-board into which any desired number of cases, B, are inserted, and secured by means of a central screw-bolt, C, nut D, and copper washers *a* and *a'*. The operating-parts of the switch are inclosed within the case B, and by this means are protected from dirt and dust and not so liable to be clogged up.

In any opening on one side of the case B is inserted a tube or packing, *f*, of vulcanite or other suitable insulating material, E, into which is secured a female screw, *b*, with a platina point, *b'*, secured in its inner end, and the outer end of which receives the male screw F by which the ground-wire is attached. By this simple device any size of wire can be connected to the case without disturbing the platina point, (see Fig. III,) which makes this style or mode of connection very reliable.

Instead of a female screw a bushing may be inserted in the vulcanite B with a platina

point, and instead of the male screw a plug may be used without departing from the spirit of my invention.

G is a jack or dog pivoted in the case at *c*, and is provided with two short arms or lugs, *e* and *e'*, and one long arm or lug, *f*. The long arm or lug is provided with a platina point at *d*, which, when a ground-connection is on, rests against the platina point *b'* in the female screw *b*, (see Fig. III,) and is kept there by the force exerted on the long arm by the spiral spring H. This spring, being placed at the outer end of the long arm or lug *f*, exerts more power in retaining said arm in contact with the ground-line than if placed at any other point on the arm, thus forming a flexible, positive, and reliable connection. The lugs *e* and *e'* are located so as to project slightly over the holes *g* and *g'* in the case B, so that when the pin or connecting-plug I is inserted in either hole it will come in immediate contact with the lug and the arm *f* will be thrown back, thus cutting off the ground, and at the same time the lug *e* will be thrown in contact with the wall of the case B at the point *x*, and connection made.

The plug or connecting-pin I is slitted, as shown in Figs. III and IV, so as to make the point elastic and less liable to be displaced and more easy of insertion. It may, however, also be made solid. The outer end or shank of pin I has a tip of vulcanite or other insulating material attached thereto, and is also screw-threaded to receive the nut *h*, and also to enable it to be securely attached to the handle K, which is also made of vulcanite or other insulating material.

The parts J and K are cut out so as to form a cavity, *i*, to receive the nut *h*, washer *l*, and wire L, the said wire being secured to the shank of the pin I by simply bending the end around the same and tightening up the nut *h* against the wire. A hole is made in the tip J to receive the wire through the side thereof instead of at the end, as in the old style, which is liable to be twisted, broken, or worn out very fast.

The operation of my device is as follows: The cases B to any desired number, according to the number of subscribers, are secured in the switch-board *a* at the central or other exchange, and are connected with wires or other

suitable means to current or charged wires. (Not shown.) The device or devices are then in the condition shown in Fig. II, with the "ground" on. A call is made to the central or other exchange by a subscriber, as is well understood, which is answered by the attendant. The wishes of the calling subscriber having been made known to him, and the connection he wishes to be made, the attendant inserts the pin or plug in the case answering to the order made for communicating—say with W—and then inserts the pin or plug attached to the other end of the short or switching wire into the case of the party calling. The ground is thereby cut off in both, as shown in Fig. III, and an electric current established between the two subscribers. When the pins or plugs are removed the jack or dogs are thrown back by the force of the springs and a ground current resumed.

Having thus described my invention, what

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

1. The combination of the perforated case B and pin I with the pivoted dog G and male and female screws *b* and F, arranged in the manner and for the purpose set forth.

2. The jack or dog G, provided with the arms or lugs *e* and *e'* and arm *f*, and contact-points *b'* and *d*, in combination with the plug or plugs I, whereby the ground is cut off and an electric circuit established, as set forth.

3. The pin or plug I, constructed as described, in combination with the washers *l*, nut *h*, and wire L, whereby the wire is admitted through the side of the plug-handle and a simple and reliable connection made.

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Witnesses:

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