

J. H. C. WATTS.
Electrical-Switch Pin.

No. 223,969.

Patented Jan. 27, 1880.

Fig. 1.

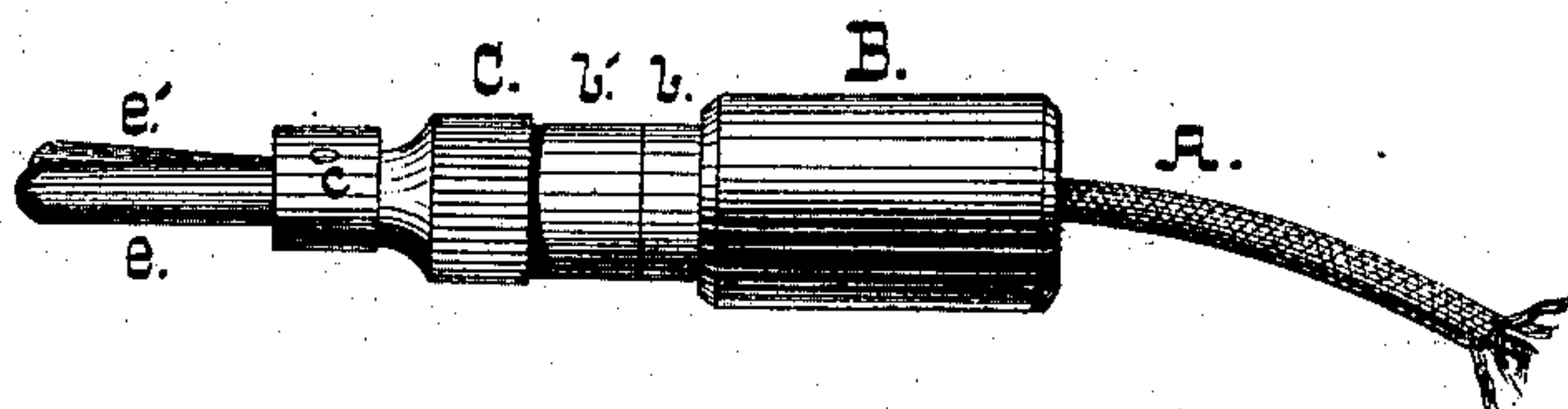
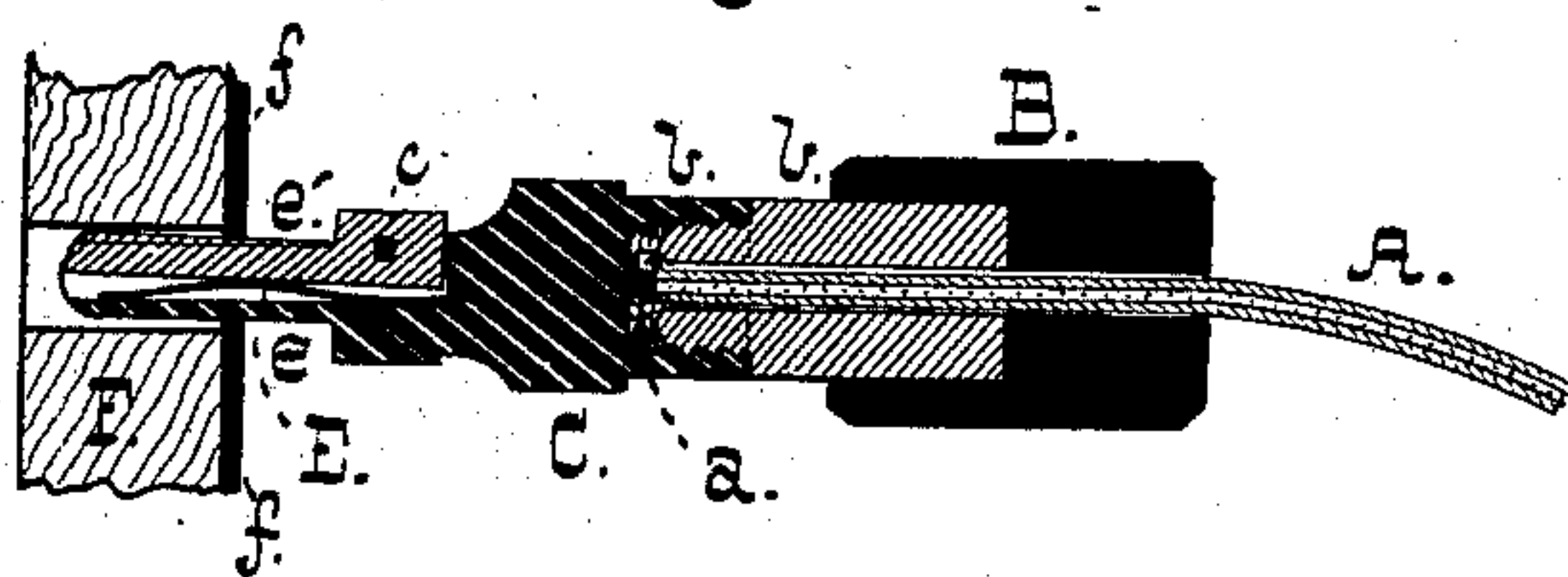


Fig. 2.



Witnesses,
C. M. Lang.
Edw. Barclay.

Inventor,
J. H. C. WATTS.
by
A. D. Williams
Attorney.

UNITED STATES PATENT OFFICE.

J. HENRY C. WATTS, OF BALTIMORE, MARYLAND.

ELECTRICAL SWITCH-PIN.

SPECIFICATION forming part of Letters Patent No. 223,969, dated January 27, 1880.

Application filed December 23, 1879.

To all whom it may concern:

Be it known that I, J. HENRY C. WATTS, of Baltimore city, State of Maryland, have invented certain new and useful Improvements in Switch-Pins; and I hereby declare the same to be fully, clearly, and exactly described as follows, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of the device; Fig. 2, a central longitudinal sectional view of the same.

My invention relates to that class of devices in use for closing-circuit on telegraphic or telephonic switch-boards; and it has for its object to furnish a device for the purpose named so constructed as to retain itself securely in the switch-board, and be not liable to become displaced from the hole by accidental jars or jolts.

Switch-board pins have heretofore generally been furnished with cylindrical tips cleft longitudinally at right angles, so as to be compressible and bind against the metallic edges of the switch-board holes when thrust therein. As a result the tips of the pins, when in place, were tapering, and this taper became permanent as the metal of which the tips were composed gradually lost its resiliency from constant or intermittent use. In any case, even when the pins were new, the resultant of the thrusts against the edges of the switch-board holes was outward from the board, so that the security of the pins was represented by the difference between this force and the coefficient of friction, and the pins were liable to fall out of the holes. I obviate this tendency by so constructing the pins that they tend to press into the holes instead of outward, and the result of jars or jolts to the switch-board is to settle the pins, if possible, more firmly in the holes. This I effect by providing the pin with an enlarged resilient tip, whereby the thrust against the edges of the switch-hole is such as to tend to draw the pin into the hole, as will readily be understood.

In the accompanying drawings, A is the connecting-wire, and B the handle of the pin, constructed, by preference, of hard rubber or equivalent insulator in order to avoid the perception of a shock as one withdraws the pin from the board. A metallic thimble, *b*, is attached to the handle B, and is screwed

into the part *b'*, which is integral with the tip *e*. The connection A is led through the central-hole of the handle, and its metallic core being laid bare and tied in a knot, *a*, the parts *b b'* are screwed together, compressing the knot against the metallic faces and insuring electric connection, while incidentally furnishing a neat and secure means of attaching the connection A to the pin.

The part *b'* is milled at C to afford facility for screwing the parts together or separating them.

The tip *e* is cylindrical, and is slotted longitudinally, as shown. In the slot is pivoted at *c* a tongue, *e'*, which is normally thrust outward, as shown in Fig. 1, by means of the spring E.

F is the switch-board, having metallic plates *f f*, as usual.

The operation of the device will have been made evident from the foregoing description of its construction. Being forced into the switch-board hole, the spring-tongue *e'* is somewhat depressed in the slot-closing circuit between the plates *f f*. That part of the tip within the hole is, however, larger than the part without it, and the pin is securely retained in place.

Especially is the device of importance when used on a telephonic switch-board, where there is a constant liability to displace the pins, due to the interlacing and contact of the connections A, a jerk being apt to be communicated to several pins whose connections are in contact with that of a pin which is being removed from the board.

Instead of having the tongue pivoted in a slot in the tip, it may simply shut down upon it; but the described construction is preferred, as it prevents any lateral displacement of the tongue with reference to the tip.

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

1. A switch-pin having a resilient tongue pivoted within or upon its tip, as set forth.
2. A switch-pin having a longitudinally-slotted tip and a tongue, *e'*, pivoted therein, and normally thrust outward by means of a spring, as set forth.

J. HENRY C. WATTS.

Witnesses:

R. D. WILLIAMS,
FRED E. WAIT.