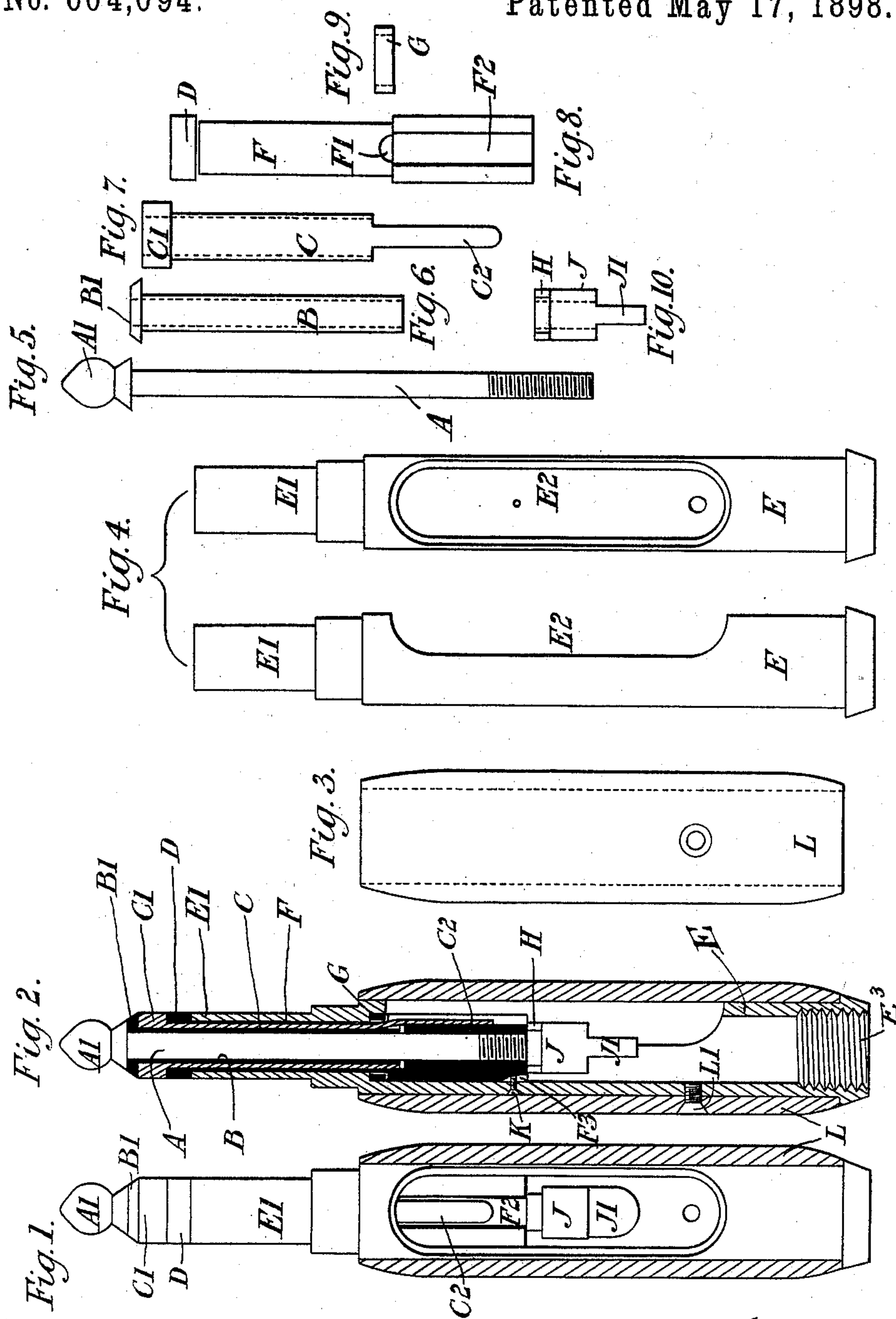


(No Model.)

J. TAYLOR.  
TELEPHONE SWITCHBOARD PLUG.

No. 604,094.

Patented May 17, 1898.



Witnesses:

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# UNITED STATES PATENT OFFICE.

JAMES TAYLOR, OF HEATHERCLIFFE HELSBY, ENGLAND.

## TELEPHONE-SWITCHBOARD PLUG.

SPECIFICATION forming part of Letters Patent No. 604,094, dated May 17, 1898.

Application filed November 21, 1896. Serial No. 613,021. (No model.)

### *To all whom it may concern:*

Be it known that I, JAMES TAYLOR, a subject of the Queen of England, residing at Heathercliffe Helsby, England, have invented certain new and useful Improvements in Telephone-Switchboard Plugs, of which the following is a specification.

As at present constructed triple-contact telephone-plugs are not easy to repair or readjust. The present invention comprises improvements in the construction of such plugs, in part applicable to double-contact plugs, these improvements rendering it possible for a plug to be readily taken to pieces for repairs and readjustment and to be fitted together again with facility. This arrangement is brought about by the employment of a single central bolt, which, with the aid of suitable nuts, binds together all the respective parts of the stem and interior, so that the loosening of the nuts on this bolt enables the plug to be taken entirely to pieces.

In the accompanying drawings, Figure 1 shows an elevation of the complete plug, the casing or cover being shown in section. Fig. 2 is a central longitudinal section through a complete plug on a plane at right angles to the view shown in Fig. 1. Figs. 3 to 10 show the various parts which constitute the complete plug.

Like letters indicate like parts throughout the drawings.

On one end of a bolt A and solid with it is formed a plug point or ball A'. Over this bolt fits an ebonite tube or sleeve B, one end of which is enlarged to form a washer B', the outer edge of which is tapered. Over this, again, fits a metal tube or sleeve C, on one end of which is formed a collar C', while the other end terminates in a tag or tongue C<sup>2</sup>. An ebonite ring or washer D is now passed over the tube C and placed next the collar portion C'.

The body of the plug is formed of a metal tube E, one end E' of which is smaller than the other. A portion is cut out of the side of the tube E, so as to leave an opening E<sup>2</sup>. An ebonite tube F, one portion of which is of a size to fit within the part E', while the other portion fits into the main part of the plug-body E, has a small opening F' cut in the side of it and a flat portion F<sup>2</sup> cut from this open-

ing from the end of the tube. The interior of this tube F is of such size as to fit closely over the metal tube C, the opening F' being of such size and so placed as to allow of the passage of the tag C<sup>2</sup> from within outward. An ebonite washer G fits over the smaller end of the tube F. After the washer G has been placed upon it the tube F is inserted in the casing E and passed up until its narrow portion is within the narrow portion E'. The bolt A, carrying the ebonite tube B, metal tube C, and washer D, is then passed into the tube F, the tag C<sup>2</sup> being brought out at the opening F', the end of the bolt projecting from the inner end of the tube F. Upon the end of this bolt is placed a smaller nut H and a larger nut J, having a flattened portion J'. A small screw K, passing through the plug-body E, engages with a slot F<sup>3</sup>, cut in the tube F, and prevents the latter, and consequently, also, the tube C, from turning. The end of the tag C<sup>2</sup> is tinned or otherwise prepared to be connected with one end of an insulated wire or conductor, the flattened portion J' of the nut J being similarly prepared to make contact with a second wire. A third conductor makes electrical contact with the plug-body E by engaging with the screw-threads E<sup>3</sup>, cut in the end of the latter. An insulating-casing L is passed over the plug-body E and there secured to the latter by a screw L'.

I claim—

1. In a telephone-switchboard plug, the combination with a metal bolt A, having the head formed solid with it, of metal tubes C and E, insulating-tubes B and F, insulating-rings D and G, nuts H and J, casing L, screws K and L', and electrical conductors, substantially as described.

2. In a telephone-switchboard plug, the combination of a central metal bolt A having a contact-head, metal tubes C and E, said tube C having a tag C<sup>2</sup>, insulating-tubes B, F, said tube F having an opening F' and a groove F<sup>2</sup> to receive the tag, insulating-rings D and G, and nuts H and J, all arranged substantially as described.

3. In a telephone-switchboard plug, the combination with a metal tube C, having a collar and tag, of an insulating-ring D, and tube F fitting over the tube C, the insulat-



ing-tube F having an opening through which the tag passes, and a groove within which it lies.

4. In a telephone-switchboard plug, the  
5 combination with a metal bolt having a head at one end, an insulating-sleeve thereon and having one end enlarged to form a washer lying adjacent to the head of the bolt, a metal sleeve on the said insulating-sleeve, said metal  
10 sleeve having a collar at one end lying adjacent to the washer of the insulating-sleeve and having a tongue at the opposite end, an insulating ring or washer on the metal sleeve adjacent to the collar thereof, a second metal  
15 tube forming the body of the plug having one end smaller than the other, a second insulating-sleeve on the second metal tube, one portion of said latter sleeve fitting within the said smaller portion of the second metal tube,  
20 and the other portion fitting in the larger part of the latter tube, an insulating-washer on the smaller end of the said second insulating-sleeve and a nut on the bolt to secure the various parts thereon, and an insulating-casing secured to the body of the plug, all as specified.

5. In a telephone-switchboard plug, the combination with a metal bolt having a head at one end, an insulating-sleeve thereon and

having one end enlarged to form a washer 30  
lying adjacent to the head of the bolt, a metal sleeve on the said insulating-sleeve, said metal sleeve having a collar at one end lying adjacent to the washer of the insulating-sleeve 35  
and having a tongue at the opposite end, an insulating ring or washer on the metal sleeve adjacent to the collar thereof, a second metal tube forming the body of the plug having one end smaller than the other, a second insulating-sleeve on the second metal tube, one portion 40  
of said latter sleeve fitting within the said smaller portion of the second metal tube, and the other portion fitting in the larger part of the latter tube, an insulating-washer on the smaller end of the said second insulating-sleeve, and a nut on the bolt to secure the various parts thereon, an insulating-casing secured to the body of the plug, a second nut 45  
having a flattened portion, and a screw passing through the plug-body and engaging a slot in the said second insulating-tube. 50

In witness whereof I have hereto set my hand in the presence of the two subscribing witnesses.

JAMES TAYLOR.

Witnesses:

M. BROWN,  
L. M. BIDEN.