

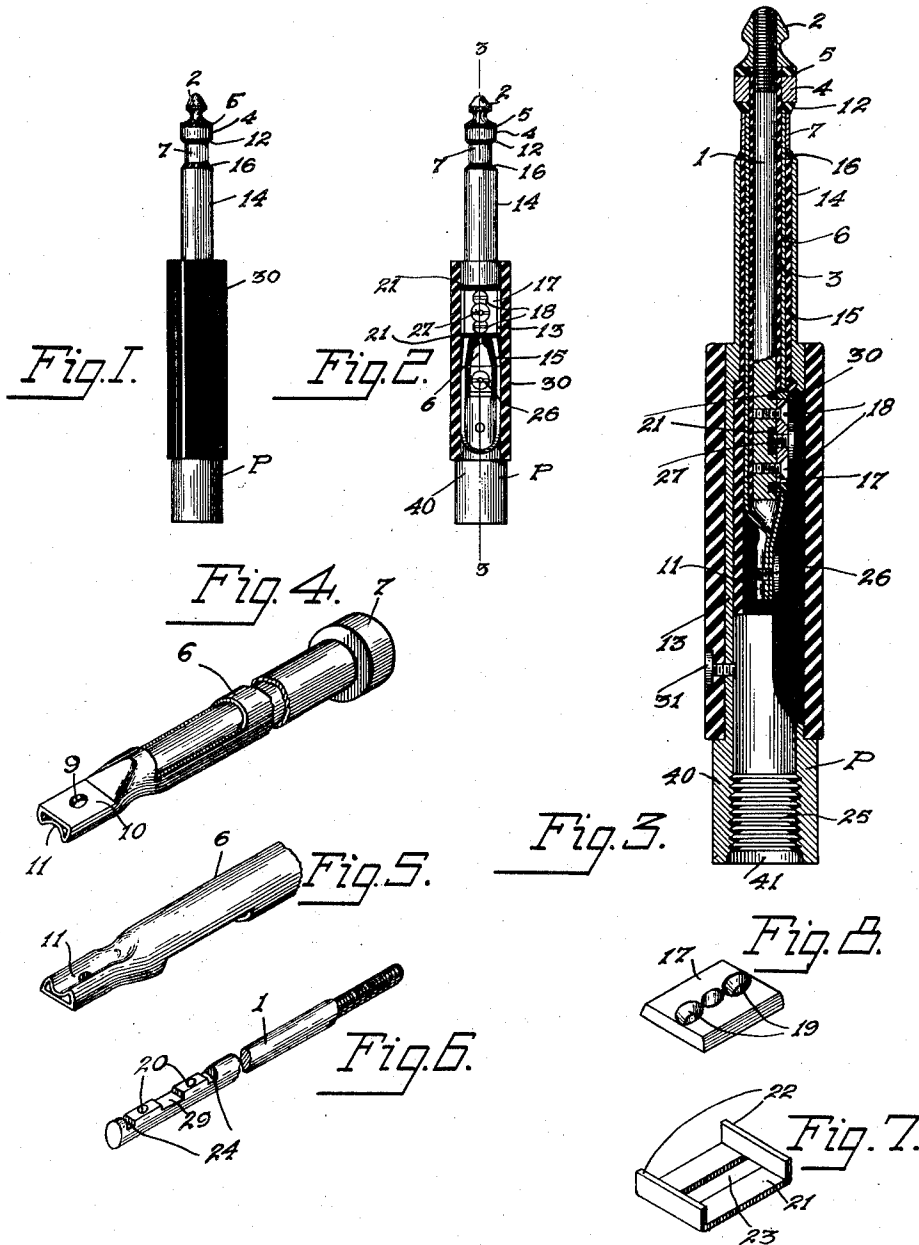
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E. A. BOHLMAN

SWITCHBOARD PLUG

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UNITED STATES PATENT OFFICE.

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SWITCHBOARD PLUG.

Application filed January 21, 1921. Serial No. 438,841.

To all whom it may concern:

Be it known that I, ERNEST A. BOHLMAN, a citizen of the United States of America, and residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Switchboard Plugs, of which the following is a specification.

In the present type of triple-contact telephone plugs the ring conductor consists of two parts, viz., a conducting element and a terminal block which requires machining in order for it to be associated with the conducting element. This type of construction is objectionable because of a high labor cost in manufacturing. Another objection is the likelihood of the terminal block becoming disengaged from its associated conducting element. To overcome these objectionable features of the present type plug, I have designed a conducting element provided with an integrally formed terminal end which obviates the objections of a two-piece construction.

For a more complete understanding of my invention, reference may be had to the accompanying drawing, in which like reference characters in the several views denote like parts, and in which

Fig. 1 is an elevation showing complete plug;

Fig. 2 is a view similar to Fig. 1 but showing the interior of the plug with its protective sleeve in section;

Fig. 3 is a sectional view of the plug along the line 3—3 of Fig. 1;

Fig. 4 is a perspective view of the ring conductor;

Fig. 5 is a perspective of the terminal end portion of the ring conductor;

Fig. 6 is a perspective view of the tip conductor;

Fig. 7 is a perspective view of the insulating washer; and

Fig. 8 is a perspective view of the contact and retaining member.

Referring now more in detail to my invention, I provide a bolt 1, one end of which has screw-threaded engagement with a suitably tapped ball or tip contact member 2. Over this bolt 1 fits a tube or sleeve 3 of suitable insulating material and having a portion of its rearwardly extending wall cut away for permitting access to one end of

the rod 1, the purpose of which will be understood from what follows:

A metal tube or sleeve 6 is provided, one end of which is provided with a collar or ring contact 7 secured to the sleeve 6 by means of solder or a drive or forced fit. The other end of sleeve 6 is shaped to form a flat surface 10 on one side and a groove 11 on the opposite side, as shown in Figs. 4 and 5, for the purpose of providing a wall of sufficient thickness for the tapped orifice 9. A portion of the wall of the sleeve 6 is cut away, corresponding to that portion cut away in the tube 3. Into this sleeve 6 is inserted the bolt 1 and its insulating sleeve 3, the collar or ring contact 7 being suitably spaced from the tip contact member 2 by a metal spaced washer 4. Said collar or ring 7 and tip contact member 2 are suitably insulated from the spacer washer 4 by means of insulating washers 12 and 5, respectively.

The body of the plug is formed of a metal tube P having a centrally reduced portion 13 and a further reduced portion or end 14, said end 14 serving as the sleeve contact of the plug. A tube 15 of insulating material of a suitable size and insuring a close fit, is inserted into part 14 and in the centrally reduced portion 13. A large portion of the wall of the centrally reduced portion 13 and the wall of the insulating tube 15 is cut away for permitting access to the interior of the plug. Into the insulating tube 15 is inserted the sleeve 6, which carries with it the rod 1, as before described. The sleeve contact end 14 is insulated from the ring contact 7 by means of the insulating washer 16. An insulating strip 21, having integrally formed projections 22, and a slot 23 is provided, the ends of said strip 21 engaging the slots 24 on the bolt 1. The tip conductor bolt 1 and ring conductor sleeve 6 are securely held in an immovable position and prevented from rotating by means of the retaining and contact plate 17, which is insulated from all parts of the plug by the insulating strip 21 and secured to the tip conductor bolt 1 by screws 18 extending through orifices 19 of the retaining member 17 and the slot 23 of the insulating strip 21 and having screw-threaded engagement with suitably tapped orifices 20 in the bolt 1.

The enlarged portion 40 of the plug body P is provided with an opening 41 of a suitable size for permitting the insertion of the cord conductors, the sleeve conductor of the cord making contact engagement with the threads 25 in the opening 41, the ring conductor making contact with the ring conductor sleeve 6 and secured thereto by means of the screw 26, which has screw-threaded engagement with the suitably tapped orifice 9, the tip conductor making contact with the contact and retaining plate 17 and secured thereto by a screw 27 which has screw-threaded engagement with a suitably tapped orifice in the retaining and contact plate 17. A slot 29 is provided between orifices 20 for permitting the projection of the screw 27. The plate 17 is in contact engagement with the bolt 1 by means of screws 18, as before described. An insulating sleeve or cover 30 which serves as the handle, is placed over the centrally reduced portion of the plug and secured thereto by a screw 31 having screw-threaded engagement with a suitably tapped orifice in the reduced portion 13 of the tube P.

What I claim as new and desire to secure by United States Letters Patent, is:

1. A switchboard plug of the character described including a cylindrical conducting element having the walls of its one end formed to engage each other which end is provided with a suitably tapped orifice for receiving a terminal screw, and having its other end open and adapted to receive a conducting element, and an insulation member for insulating said conducting element from said cylindrical conducting element.

2. A switchboard plug of the character described including a cylindrical conducting element having a portion of its wall cut away for permitting access to a second conducting element inserted into said cylindrical

element, said cylindrical conducting element having its one end substantially closed so that the walls of said one end engage each other to form a smooth surface and a corrugated surface in which is provided a tapped orifice for receiving a terminal screw, said one end adapted to limit the incursion of said second conducting element.

3. A switchboard plug as described including a one-piece cylindrical conducting element with the walls of its one end engaging each other and suitably formed for connecting a conductor thereto and also for permitting its insertion into an insulating sleeve, a portion of said element cut away to give access to its interior, said element extending to the plug tip.

4. A three-conductor switchboard plug including a ring element extending to the plug end and a ring-element terminal, said element and terminal shaped from a single piece of metal, said terminal located at the opposite end of the plug, an intermediate portion of said metal cut away to give access to the interior of the plug, a screw member, said terminal having a flat surface and a corrugated surface for providing a screw-threaded orifice for receiving said screw member.

5. A switchboard plug including a ring contact member extending from the plug tip and formed of a single piece of metal, said member cut away to access to its interior, and also having its one end distorted to provide a smooth surface and a corrugated surface in which is provided a tapped orifice for receiving a screw member and a plug handle covering the cut away part.

Signed by me at Chicago, county of Cook and State of Illinois, this 19th day of January, 1921.

ERNEST A. BOHLMAN.