

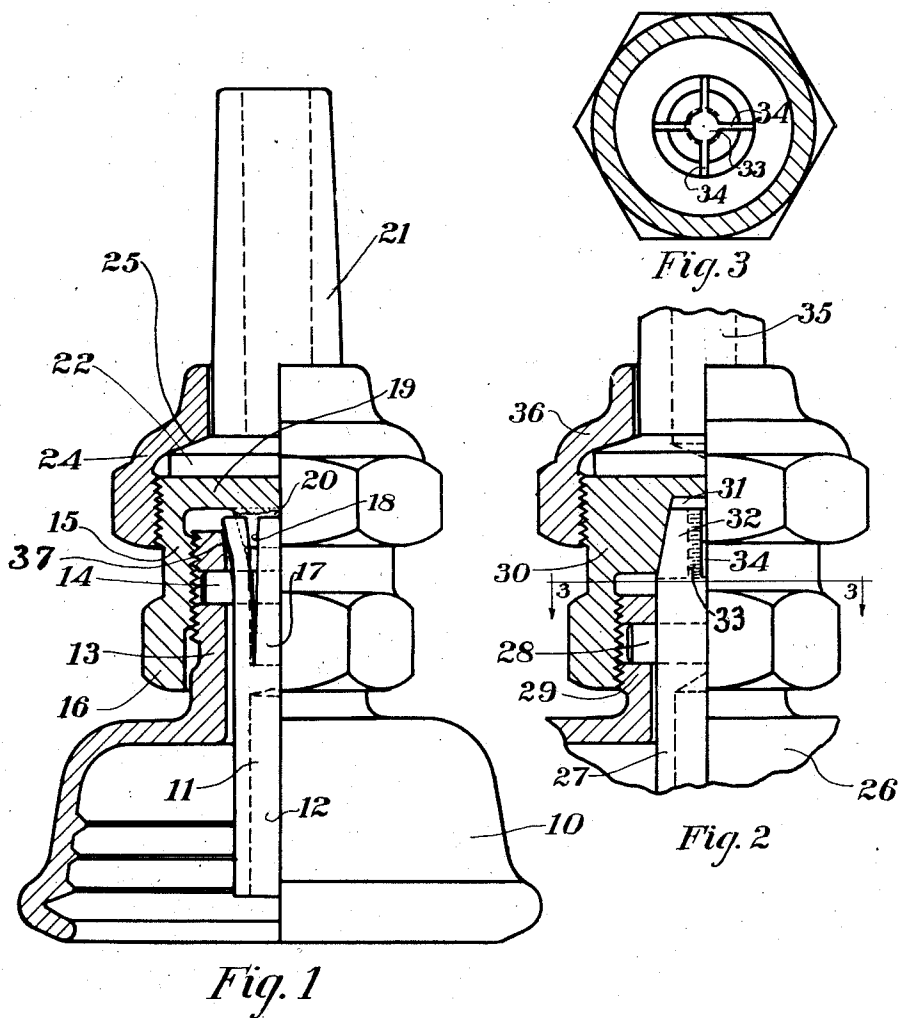
Nov. 13, 1928.

1,691,328

A. O. AUSTIN

TERMINAL FOR INSULATOR BUSHINGS

Filed Aug. 31, 1922



Inventor

Arthur O. Austin

By Nissen & Crane

Attorney

UNITED STATES PATENT OFFICE.

ARTHUR O. AUSTIN, OF BARBERTON, OHIO, ASSIGNOR, BY MESNE ASSIGNMENTS, TO
THE OHIO BRASS COMPANY, OF MANSFIELD, OHIO, A CORPORATION OF NEW
JERSEY.

TERMINAL FOR INSULATOR BUSHINGS.

Application filed August 3, 1922. Serial No. 579,347.

This invention relates to terminal members for connecting a conductor where it emerges from a bushing with the lead conductor extending out from the bushing, the terminal also serving to close the end of the bushing; and it has for its object the provision of a device of the class named in which an effective low resistance contact is secured and which shall be of improved construction and convenient and efficient in operation.

The invention is exemplified in the combination and arrangement of parts shown in the accompanying drawing and described in the following specification, and it is more particularly pointed out in the appended claims.

In the drawings:

Fig. 1 is a part elevation and part section showing one embodiment of the present invention.

Fig. 2 is a view similar to Fig. 1 showing a somewhat modified construction.

Fig. 3 is a section on line 3—3 of Fig. 2 with the central member shown in plan view.

In Fig. 1 the numeral 10 designates a cap or fitting for the end of an insulator bushing to which the cap is secured by cementing or other suitable means. A conductor shown in the drawing as a terminal lug 11 is provided with an opening 12 in which the bushing conductor is secured by soldering, brazing or other suitable means. The cap 10 is provided with an upper projecting sleeve or flange 13 thru which the terminal 11 extends and in which it is supported by a pin 14 passing thru registering openings in the lug and flange. A cap 15 is threaded on to the flange 13 and is provided with a downwardly extending drip lug 16 for preventing entrance of moisture. The upper end of the lug 11 is recessed as shown at 17 and provided with a plurality of slits 18 to permit spreading of the walls of the recess 17. The cap 15 is provided with an imperforate top wall 19 having a downwardly projecting conical lug 20 carried thereby in position to enter the recess 17 and spread the walls thereof when the cap is threaded on to the flange 13. A terminal lug 21 for the lead conductor is provided with a flange 22 which forms butt end contact with the top face of the cap 15. A clamping nut 24 is threaded on to the outer periphery of the cap 15 for holding the lug 21 against the top of the cap.

The flange 22 and clamping nut 24 are provided with engaging tapered surfaces 25 to form electrical contact between the parts. Abutting surfaces of the cap and lug are pressed against one another by the nut 24 to form further electrical connection between these parts. The lug 20 is forced into the recess 17 by the threaded connection between the cap 15 and the flange 13 to provide electrical contact at this point. The walls of the recess 17 and thus spread against the flange 13 providing contact between the flange and terminal lug. Pressure is also brought to bear upon the threaded surface between the parts 13 and 15 by the upward force of the lug 11 on the projection 20 so that these threaded surfaces are caused to make good electrical connection. It will thus, be seen that effective contact surfaces are provided all of which are under pressure so that the resistance of the electrical connection is kept very small.

The terminal lug may have a hole in the upper end for the spreading pin 20 or it may simply be a hollow tube with slots so that it can be expanded radially by the tapered pin 20. The opening in the member 13 is preferably flared at the top. When the spreading member, which may be long or short as occasion requires, is forced into the terminal lug the slots permit expansion and contact is made between the member 13 and the terminal lug 11. By making the taper long in the member 13 a large area of contact may be effected. In this case the contact area of the pin 20, as well as the contact between 13 and 11, may be made large enough to carry heavy currents, for the load placed on the point 14 will be small, most of the load being taken up by the friction between 11 and 13 and the reaction at flared portion if a cone surface is used.

In the modification shown at Fig. 2 the cap 26 supports a terminal lug 27 by means of a pin 28 passing thru registering openings in flange 29 and lug 27. A covering cap 30 is threaded on to the flange 29 and provided with a tapered recess 31 for receiving the tapered end 32 of the lug 27. The end of the lug 27 is bored and tapped at 33 to receive an eye or other devices for connecting a line by means of which the conductor may be drawn thru the bushing.

Slots 34 are formed in the end 32 to pro-

vide resiliency to the conical portion fitted in the recess 31 as the cap 30 is screwed down upon the flange 29. The slotted end of the lug 27 will bear against the base of the recess 31 and thus make tight contact to provide electrical connection between the cap and lug.

A terminal lug 35 for a lead conductor is connected to the cap 30 by a clamping nut 36 in the manner described in connection with

Fig. 1.

I claim:

1. A bushing terminal comprising a fitting for the end of a bushing, a conductor supported by said fitting, an imperforate cover cap threaded on said fitting, said conductor having a tapered portion at the end thereof and a tapered contact portion on said cap arranged to engage the tapered portion at the end of said conductor, said tapered portions being pressed into engagement with one another by the threaded connection between said cap and fitting.

2. An insulator bushing terminal comprising a fitting for the end of a bushing having a cylindrical flange projecting upwardly therefrom, a conductor positioned within said flange, means supported by said flange for supporting said conductor, a cover cap threaded on to said flange and covering the end of said conductor and tapered plug and socket portions on said cap and conductor respectively for providing electrical connection between said cap and conductor, said conductor being slotted at the end to provide resilient bearing between said tapered members.

3. An insulator bushing terminal comprising a fitting for a bushing having an opening therethrough, means for supporting a conductor in said opening, an imperforate covered cap for closing said opening threaded on said fitting, tapered contact surfaces on integral parts of said conductor and cap for engaging one another and having their surfaces forced together by the threaded connection between said cap and fitting, and means for connecting a lead conductor with said cap.

4. An insulator bushing terminal comprising a fitting for the end of a bushing having an opening therethrough, a conductor positioned in said opening, a pin engaging registering openings in said conductor and fitting to support said conductor, a covered cap threaded on said fitting, said cap and conductor having tapered engaging surfaces pressed together by the threaded connection between said cap and fitting and means for securing a lead conductor to said cap.

5. A bushing terminal comprising a fitting for an insulator bushing having a seat for receiving the end of the bushing and an opening extending through the fitting, means for supporting a conductor in said opening, a closure cap threaded on said fitting and covering

said opening and the end of said conductor, said cap and fitting having tapered engaging portions, one of which is separated into sections to afford yielding pressure between said surfaces.

6. A bushing terminal comprising a fitting for an insulator bushing having an opening therethru, a conductor in said opening means on said fitting for supporting said conductor, a closure cap for said opening threaded on said fitting, said conductor and cap having engaging tapered male and female portions at the end of said conductor, one of said portions being slitted to permit yielding under pressure exerted by the threaded connection between said cap and fitting.

7. A bushing terminal comprising a fitting for a dielectric bushing said fitting having a cylindrical flange thereon, a conductor positioned within said flange, a pin passing thru registering openings in said conductor and flange for supporting said conductor, a closure cap threaded on said flange and having an imperforate top, engaging portions on said conductor and cap having tapered contact surfaces, one of said portions being divided into sections to permit yielding thereof when said surfaces are pressed together by tightening said cap on said fitting and means for connecting a lead conductor with said cap.

8. In combination, a fitting for an insulator bushing, a conductor member extending therethrough and having the end thereof slotted for a limited distance from the end of the conductor, a closure cap threaded on said fitting and having a wedging portion thereon for engaging said resilient members and pressing them against said fitting to produce good electrical contact between said conductor and fitting.

9. In combination a fitting for an insulator bushing having an opening therethrough, a conductor in said opening, means for holding said conductor in position therein, said conductor having the end thereof slitted to provide resilient tongues, an imperforate cap threaded onto said fitting, and a wedging member on said cap and operating against the lateral surfaces of said tongues to press said tongues against the wall of said opening when said cap is tightened, thus providing good electrical connection between said conductor and fitting and exerting pressure on the threaded connection between said cap and fitting to insure good electrical connection between their threaded surfaces.

10. A fitting for an insulator bushing comprising a cap arranged to cover the end of a bushing and having a flange of less diameter than said cap extending upwardly from the top thereof, said flange having an opening therethrough, a conductor extending through said opening and having a portion of the end

thereof projecting beyond said flange, said projecting portion being slitted to provide resilient tongues, and a cover cap threaded upon the exterior of said flange and providing
5 an imperforate closure for an opening through said flange, said cover cap having a tapered boss extending toward the end of

said conductor and arranged to enter between said tongues to force said tongues outwardly against the inner face of said flange.

10

In testimony whereof I have signed my name to this specification on this 29th day of July A. D. 1922.

ARTHUR O. AUSTIN.