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R. E. MARBURY

CONDENSER TERMINAL

Filed Aug. 3, 1921

Fig. 1.

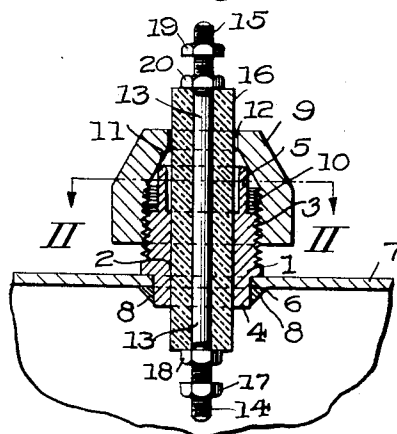


Fig. 2.

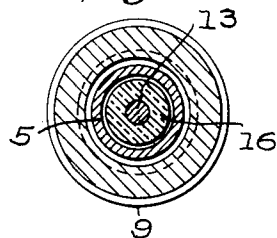


Fig. 3.

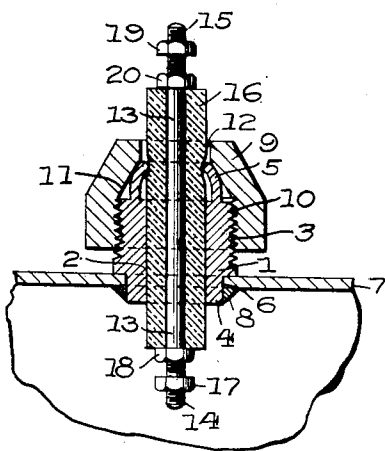
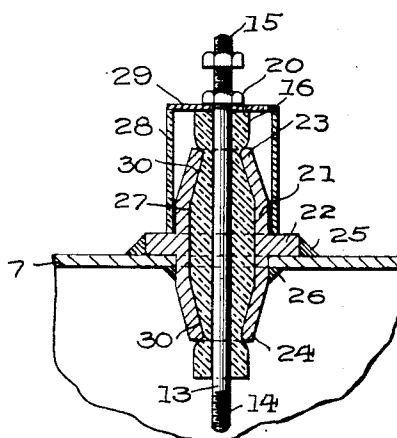


Fig. 4.



WITNESSES:

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CONDENSER TERMINAL.

Application filed August 3, 1921. Serial No. 489,541.

This invention relates to condensers, more particularly to condensers of the oil-impregnated type.

In my copending application, Serial No. 449,650, filed March 5, 1921, is described a condenser terminal comprising an insulated electrode or terminal which is held within a threaded base member secured to the condenser casing by co-operating screw threads and permanently held in place by welding or brazing.

The electrode is contained within an insulating bushing which is secured to the base member by a tapered seat which, when assembled, engages a corresponding tapered surface in the base member. A jacket-and-screw-and-nut combination is provided to draw the tapered members together when tension is applied, thus providing an oil-tight joint.

My present invention contemplates providing a condenser terminal which is cheaper in construction and is suitable for low-voltage application, it being among the objects thereof to provide terminals which may be readily assembled, which do not require great accuracy in machining of the parts, which employ relatively inexpensive insulating materials and which are effective in providing oil-tight joints.

In the accompanying drawing, constituting a part hereof and in which like reference characters designate like parts,

Figure 1 is a sectional view, partially in elevation, of a condenser terminal formed in accordance with this invention, showing the assembled insulating bushing prior to crimping;

Fig. 2 is a sectional view taken along the line II—II of Fig. 1;

Fig. 3 is a sectional view, partially in elevation, of an assembled terminal, with the insulating bushing crimped to seal the joint, and

Fig. 4 is a sectional view, partially in elevation, of a modified condenser terminal having both ends of the bushing crimped.

A substantially tubular base member 1, having an opening 2 extending therethrough, a threaded body portion 3, a reduced extended end 4 and a yieldable annular, cylindrical or tubular end portion 5, is positioned in an opening 6 provided in condenser casing 7 and is secured thereto at 8 in any suit-

able manner, as by brazing or welding. A collar 9 having an internally threaded body portion 10 co-operating with the threaded portion 3, is mounted on the base 1. The collar 9 is provided with a tapered seat 11 and a constricted opening 12.

A metallic rod condenser or electrode 13, threaded on its ends 14 and 15 and having sleeve 16 of insulating sheet material, such as treated cloth, fish paper or the like, spirally wound thereon, is inserted in the opening 2 of the base 1 to extend therethrough and through the collar 9.

The collar 9 is screwed down on the base member 1 to force the annular end portion 5 inwardly into the body of the sleeve 16, thus crimping the material at all points around a perimeter of the portions 5 to provide a leak-proof joint. Thus, portions of the sleeve 16 extend radially outwardly beyond the inner surface of the crimped end 5 at each side thereof to form an annular channel therefor. Screw nuts 17, 18, 19 and 20 are provided for electrical-contact connections with the condenser element in the casing and with an outside circuit.

In the modification shown in Fig. 4, a collar 21, provided with a flange 22, is seated on the condenser casing 7 and secured thereto by welding or brazing around the edge 25. The sleeve 21, if desired, may be further secured by welding or brazing to the inner side of the casing 7 at 26. A metallic rod 13, having threaded ends 14 and 15 and having an insulating sleeve 16, is inserted in the opening 27 of the collar 21.

The ends 23 and 24 of the collar 21 are contracted by means of a suitably shaped die to cause the insulating sleeve 16 to be compressed around the rod 13 to form a leak-proof joint. A protecting shell 28 of fibrous insulating material is seated on the flange 22 and is secured thereto by a washer 29 and nut 20. To prevent cutting of the insulating material 16 by the ends 23 and 24 of collar 21 the edges 30 thereof are usually beveled or curved.

A condenser terminal constructed in accordance with the above description is insulated completely from the condenser casing and provides joints between the various members which are entirely leak proof. The machining of the parts is comparatively simple and does not require extreme accu-

racy, since the efficiency of the joints is dependent upon the mechanical functioning of the gripping member which consolidates the insulating material.

- 5 It will be obvious that various changes in the construction of the parts may be made within the scope of this invention. For instance, the base 1 may be threaded into the condenser casing or secured thereto by a nut.
- 10 The projecting ring 5 may be separate from the base 1 and may be inserted between the base 1 and the collar 9, and the sleeve 16 may be formed of any suitable insulating material that will become distorted when
- 15 pressure is exerted thereon by the end of the ring 5 or by the ends 23 and 24 of collar 21. These and other changes in details of construction may be made within the scope of my invention.

20 I claim as my invention:

1. An electrical terminal comprising a base member having an exteriorly-threaded tubular body portion and a yieldable tubular end portion of greater inner diameter and
- 25 smaller outer diameter than the body portion, a conductor and a sleeve of insulating material sealed in position thereon extending through said end portion, and a collar having an interiorly-threaded portion for cooperation with said threaded body and an interiorly-tapered portion to force said end portion into said sleeve.
- 30 2. An electrical terminal comprising a hollow base having a threaded body portion and
- 35 a reduced annular end portion, a collar provided with a tapered seat for said reduced end portion and having a threaded inner sur-

face co-operating to the threaded portion of said base, and a conductor having a plurality of spirally-wound superposed layers of sheet insulation thereon within said base, said reduced portion being contracted to crimp an annular channel in said insulation to form a leak-proof joint.

3. An electrical terminal comprising a hollow base having a threaded body portion and a cylindrical portion projecting therefrom, a collar provided with a tapered seat for engaging said cylindrical portion and having a threaded inner surface co-operating with the threaded portion of said base and a conductor having a plurality of spirally-wound superposed layers of sheet insulation thereon within said base, said cylindrical portion being contracted to crimp an annular channel in said insulation and to force the insulation against said conductor to form a leak-proof joint.

4. An electrical terminal comprising a base member having a tubular body portion and a yieldable tubular end portion of greater inner diameter and smaller outer diameter than the body portion, a conductor and a sleeve of insulating material sealed in position thereon disposed in said end portion, and a collar co-operating with said body portion for longitudinal binding relation thereto and having an interiorly-tapered portion to force said end portion into said sleeve.

In testimony whereof, I have hereunto subscribed my name this 25th day of July, 1921.

RALPH E. MARBURY.