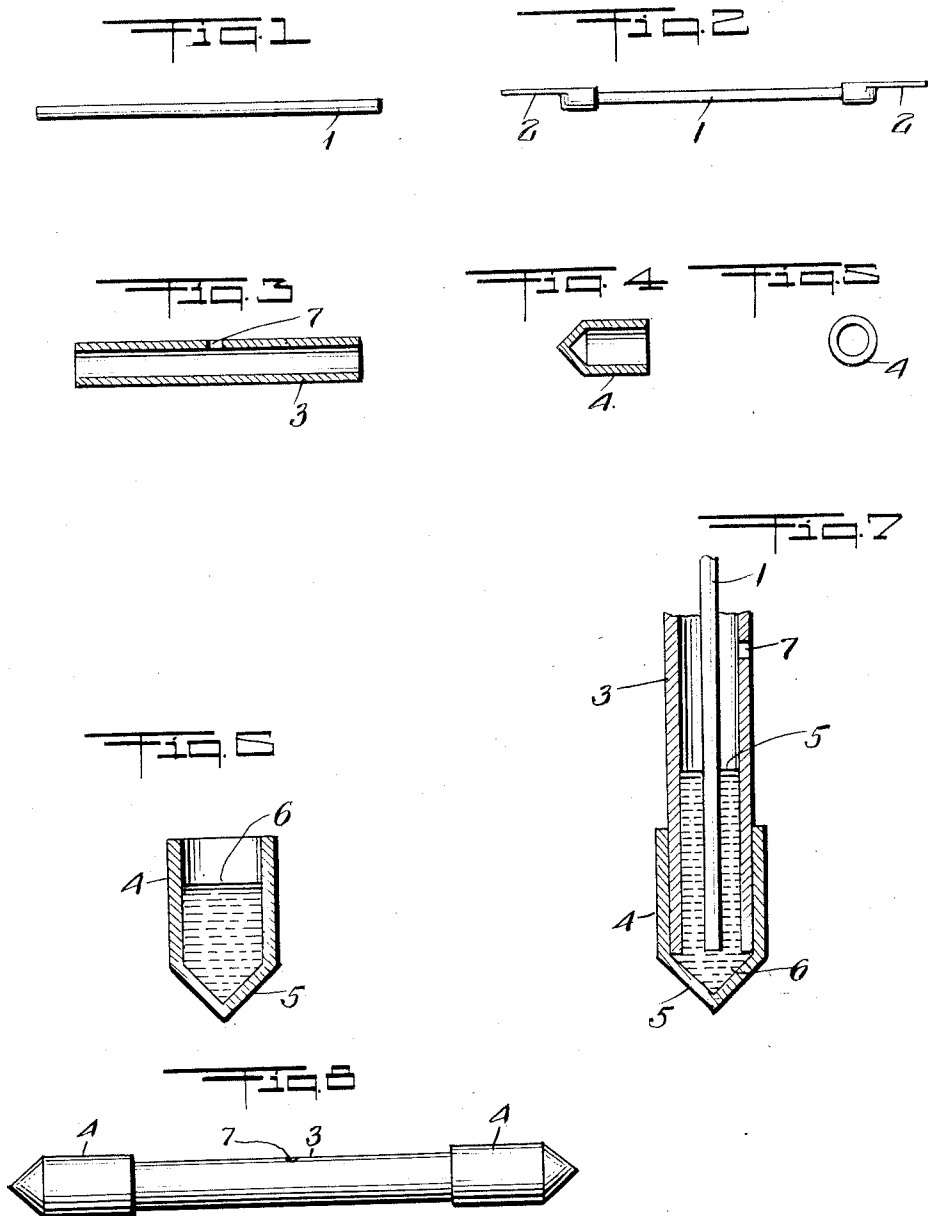


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ELECTRICAL RESISTANCE
Filed March 21, 1925



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ELECTRICAL RESISTANCE.

Application filed March 31, 1925 Serial No. 17,377.

This invention relates to electrical resistances; especially electrical resistances of the so-called grid leak type for use in connection with radio apparatus.

5 An object of the invention is to provide a grid leak resistance which is of simple, efficient and inexpensive construction, and which can be encased and finished so as to produce a strong and durable article.

10 The nature of the invention is disclosed in the following specification and drawings with the reservation that changes may be made without departing from the principle by which the invention is distinguished.

15 On the drawings:

Figures 1 and 2 are side views of types of resistance elements used in the practice of my invention;

20 Figure 3 is a longitudinal section of the body of a casing for housing such resistance elements;

Figures 4, 5, and 6 are respectively a section, an end view, and an enlarged section containing solder of a cap or closure for such a casing;

25 Figure 7 is a longitudinal section of part of a completed resistance member according to my invention.

30 Figure 8 is a side elevation of such a member or device when finished.

The same characters of reference identify the same parts throughout.

Numeral 1 indicates a resistance element in the form of a rod of glass, quartz fibre, or any other suitable material, having a coating of metal or any other electrically conductive substance to impart to the rod low electrical conductivity. Such an element may have metallic tips or terminals 2 at its ends to enable it to be mounted to better advantage. It is disposed in a sleeve or tubular casing 3, the ends of which will be closed by caps 4, having conical ends 5. The caps 4 are preferably of metal while the tubing 3 is of some insulat-

ing material, and when the tubing 3, caps 4, and element 1 are assembled, they are held together at each end by solder 6.

In practice the complete resistance member is assembled by putting some solder into one cap and then inserting one end of the tubing 3 and element 1, the latter being held in the axial center of the body of the casing 3. As soon as the solder cools, the parts at this end are tightly secured to one another. The same step is then performed at the other end. When the remaining cap receives melted solder and the other end of the tubing 3, with rod 1, is thrust into it, the excess confined air escapes through an aperture 7 in the tubing 3; and thus the air in the tubing 3 is not put under appreciable compression. If this aperture 7 were omitted, the air inside the tubing 3 would be given enough pressure to force part of the solder out between the tubing and cap, and the cap might be partly pushed off the end of the sleeve 3, if released before the solder becomes set, and thus an efficient seal and tight engagement of the parts at both ends of the member would not ensue. The aperture 7 can afterwards be closed if desired.

Having described my invention, what I believe to be new and desire to secure and protect by Letters Patent of the United States is:—

A resistance member comprising an element of low electrical conductivity, an insulating sleeve to encase said element, and caps of conductive material to close the extremities of said sleeve, with a metallic binding material in the ends of said sleeve and engaging said ends in said caps to hold the caps in place, the sleeve being perforated between said caps.

Signed at Philadelphia, in the county of Philadelphia and State of Pennsylvania, this 17th day of March, A. D. 1925.

CHARLES E. VAWTER.