

Oct. 25, 1949.

E. MOSTHAF
INSULATED TERMINAL
Filed March 6, 1948

2,485,629

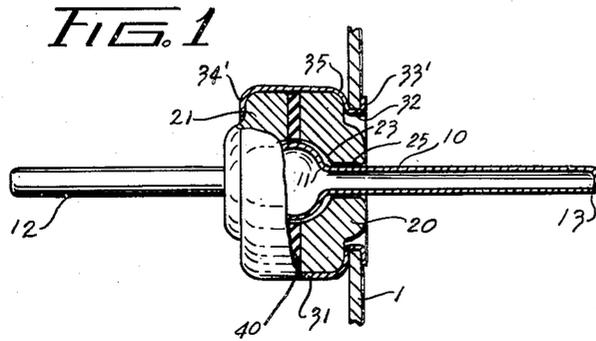


FIG. 2 FIG. 2a FIG. 3 FIG. 3a

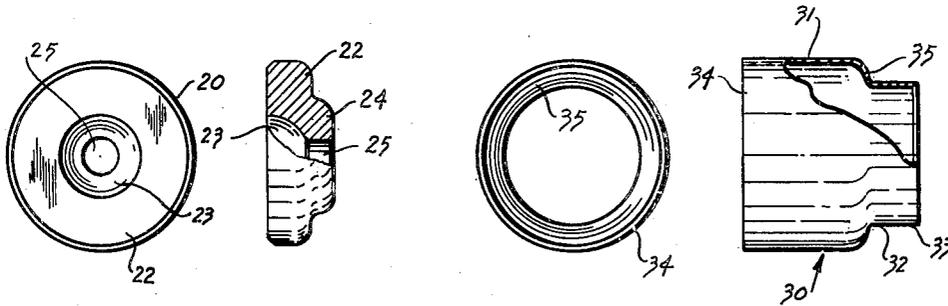


FIG. 5

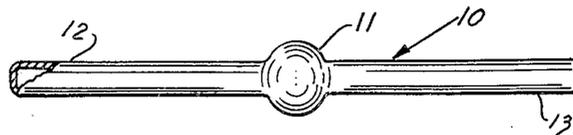
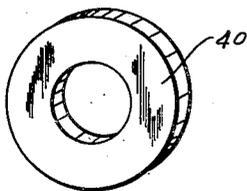


FIG. 4



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UNITED STATES PATENT OFFICE

2,485,629

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Application March 6, 1948, Serial No. 13,501

4 Claims. (Cl. 174-153)

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This invention relates to an insulating terminal. More particularly it relates to an insulated terminal adapted to be attached to and to extend through a wall or similar barrier.

An object of this invention is to provide an insulated terminal which has a part adapted to be attached to a wall and a conductor insulated from the attaching part which contains a conducting terminal on either side of the attaching part.

Another object of the invention is to provide a terminal adapted to extend through a wall which is easily attachable to the wall and in which the conductor is insulated from the wall.

Another object of the invention is to provide a terminal having a conducting part surrounded by insulating material and having the insulated material surrounded and held together by an attaching part, all of the respective parts being so constructed as to be easily assembled and adapted to be easily attached to a structure.

Another object of the invention is to provide a conductor which is well anchored and insulated in insulating material for extending through a wall or a barrier.

These objects and others ancillary thereto are obtained by providing a conducting rod or tube with an intermediate enlarged portion, by providing a pair of insulating disks which closely fit about the rod or tube and also enclose at least a part of the enlarged portion, and by providing a ferrule or ring portion adapted to hold the insulating disks together with the enlarged portion of the conductor between the disk. Preferably also an elastic insulating material is placed between the insulating disks to securely hold the conductor against movement and prevent rattling, chafing of the disks, etc.

The novel features characteristic of this invention are set forth with particularity in the appended claims. The invention itself, however, both as to its organization and its method of operation, together with additional objects and advantages thereof, will best be understood from the following description of specific embodiments when read in connection with the accompanying drawing in which:

Figure 1 is a side view of the terminal partly in cross-section attached to a wall.

Figure 2 is a plan view of one of the insulating pieces from the inside thereof.

Figure 2A is a side view of the insulated disk, partly in cross-section.

Figure 3 is an end view of a ferrule.

Figure 3A is a side view of the ferrule before assembling.

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Figure 4 is a perspective view of the elastic disk.

Figure 5 is a view of the conductor, partly in cross-section.

As shown in the drawings, the conductor 10 comprises an intermediate enlarged portion 11 and the extending end or leg portions 12 and 13. This conductor may be round in cross-section or polygonal and it may be tubular or solid. In the figure shown it is tubular and the enlarged portion 11 approximates the spherical form. One reason that this form of conductor is preferred is that it is easy to enlarge the portion 11 of a tube into a spherical form by blowing, for example. The conductor may be made of any conducting material such as copper, silver, brass, carbon, etc.

The insulating disks, of which there are two, 20 and 21, as shown in Figure 1, comprise a relatively large rim portion 22 in which is the relatively large depression 23 adapted to surround about half of the enlarged portion of the conductor. Opposite the depression 23 is a wide annular ring 24 containing the orifice 25 which is large enough to receive the end 12 or 13 of the conductor but too small to prevent passage of the enlarged part 11, therethrough. These insulating parts or disks may be round, square or polygonal in shape. The material of the disk may be any type of insulating material such as steatite, glass bonded mica, or other ceramic materials. The disk may also be made from synthetic resinous materials such as phenol formaldehyde, condensation products, polystyrene, polyethylene, the polymer of tetrafluoroethylene, etc. Two disks of the same shape may be used and are preferably used for convenience but it is obvious that two pieces of different shape could be employed as long as the depressions 23 cooperate to hold the enlarged part 11 of the conductor 10.

It is also possible to employ four half disks although there does not appear to be any advantage for this construction. The ferrule or ring of 30 is shown in Figures 3 and 3A as it appears before the terminal is assembled. The ferrule comprises a cylindrical portion 31 and a smaller cylindrical portion 32 connected by a shoulder portion 35. The cylindrical portion 31 is adapted to surround the rims 22 of the insulating disks 20 and 21 and the said cylindrical portion 31 is long enough so that edge 34 extends beyond the end of the assembled insulating disks 20 and 21. In assembling the end 34 is swedged over the rim portion of the disk 21 as shown at 34' in Figure 1. Also the edge 33 of the cylindrical part 32 is long

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enough so that it can be bent back over a wall as shown at 33' in Figure 1. This ferrule may be made of plastic or ductile material which can be bent and holds its bent shape. Thin sheets of brass, steel and similar metals may be used for the ferrule.

Preferably the space between the two insulating disks 20 and 21 is filled by a relatively elastic material such as rubber, neoprene, other synthetic rubber materials, plasticized polyvinyl compounds, etc. The elastic material may take the form of the disk or washer 40 of Figure 4. This washer 40 serves to prevent the insulating disks 20 and 21 from rubbing each other, permits the tight fit of the ferrule about the insulating disks and holds the conductor 10 against rattling and rotation.

To assemble the terminal of the present invention it is only necessary to thread the disk 40 and one of the insulating disks on the conductor 10 from one end and to thread the other insulating disk onto the conductor 10 from the other end. The ferrule 30 is then slipped over the insulating disks with the shoulder 35 resting against the rim 22 of one of the disks and the edge 34 is then swedged over the rim 22 of the other disk by a suitable mechanism. The terminal is then ready to be attached to a wall.

For attaching to the wall various means may be employed. The ferrule 30 may be welded or soldered to a wall or the ferrule may be attached by swedging the edge 33 over the wall as shown at 33' in Figure 1.

Although certain specific embodiments of this invention have been shown and described, it will be understood that many modifications thereof are possible.

I claim:

1. An insulated terminal comprising, a conductor having two oppositely extending leg portions to which other conductors may be attached and an enlarged portion intermediate the two leg portions, at least two insulating parts, one on each side of the enlarged portion of said conductor, said insulating parts when held together being adapted to cooperate to hold the enlarged portion of the conductor and prevent movement of said conductor with respect to said insulating parts, an elastic washer between the adjacent portions of the insulating parts and means surrounding said insulating parts adapted to hold them together about said conductor.

2. An insulated terminal comprising, a conductor having two oppositely extending leg portions to which other conductors may be attached and an enlarged portion intermediate the two leg portions, two disks of insulating material,

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each of said disks containing a small orifice adapted to receive the smaller legs of said conductor but adapted to prevent passage of the enlarged portion of said conductor therethrough, each of said disks also containing an enlarged depression adjacent said orifice adapted to surround a part of said enlarged portion, and a shouldered metal ferrule surrounding said insulating disks adapted to securely hold the latter together about said conductor.

3. An insulated terminal comprising, a conductor having two oppositely extending leg portions to which other conductors may be attached and an enlarged portion intermediate the two leg portions, two disks of steatite material, each of said disks containing a small orifice adapted to receive the smaller legs of said conductor but adapted to prevent passage of the enlarged portion of said conductor therethrough, each of said disks also containing an enlarged depression adjacent said orifice adapted to surround a part of said enlarged portion, an elastic washer between the adjacent portions of said disks, and a shouldered metal ferrule surrounding the said insulating disks and said elastic washer and adapted to securely hold the insulating disks and washer together.

4. An insulated terminal comprising, a conductor having two oppositely extending leg portions to which other conductors may be attached and an enlarged portion intermediate the two leg portions, two disks of glass bonded mica each of said disks containing a small orifice adapted to receive the smaller legs of said conductor but adapted to prevent passage of the enlarged portion of said conductor therethrough, each of said disks also containing an enlarged depression adjacent said orifice adapted to surround a part of said enlarged portion, an elastic washer between the adjacent portions of the insulating disks and a shouldered metal ferrule surrounding said insulating disks and said elastic washer and adapted to securely hold the insulating disks and washer together.

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