May 22, 1934. C. E. BENNETT 1,959,338

TERMINAL STRUCTURE FOR ELECTRIC CABLES

Filed Sept. 2, 1932

FIG. 1

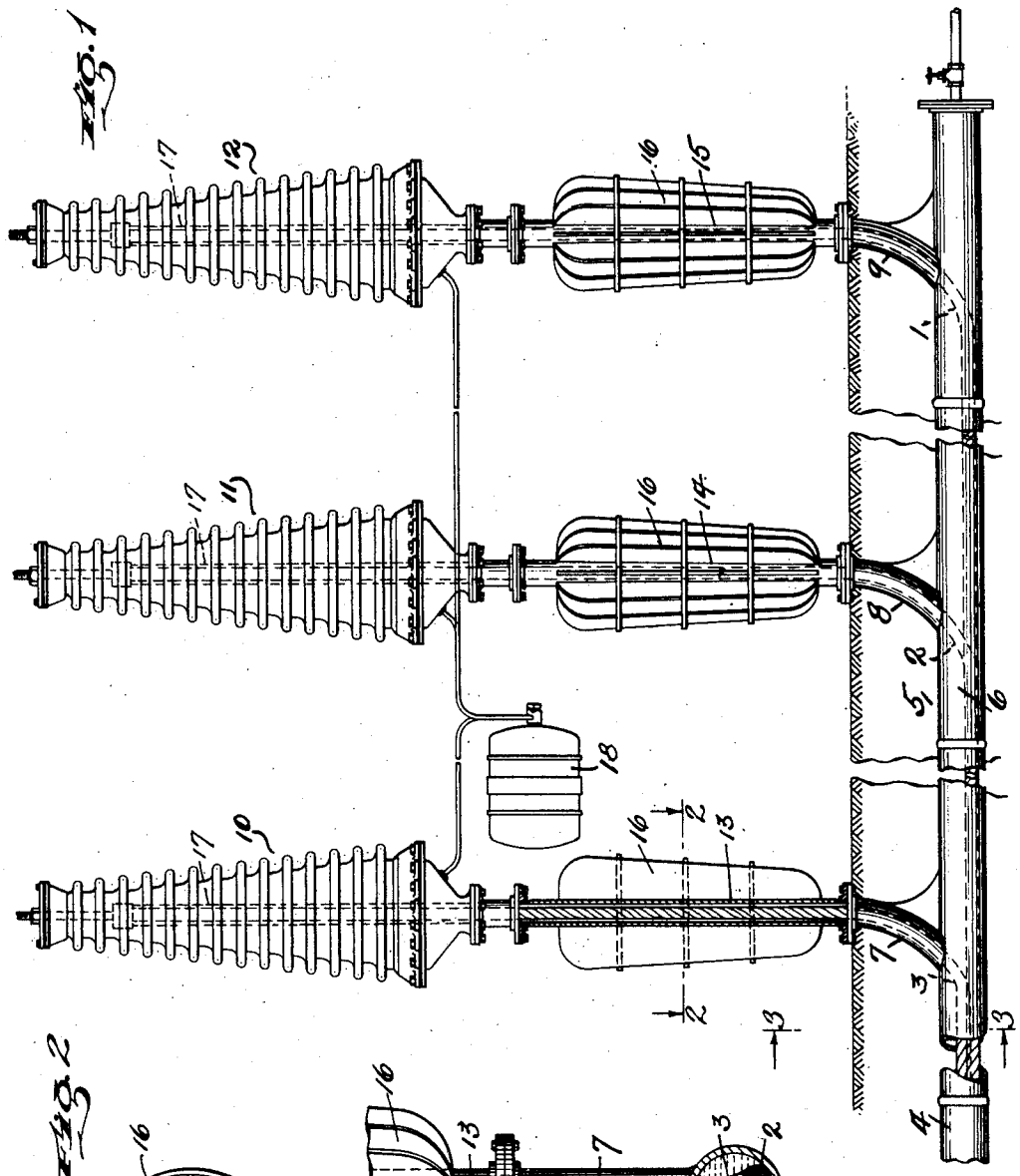


FIG. 2

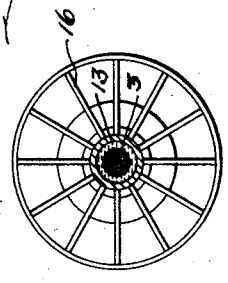
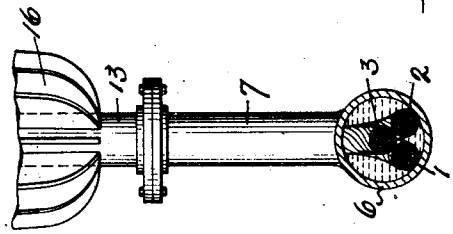


FIG. 3



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TERMINAL STRUCTURE FOR ELECTRIC CABLES

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Application September 2, 1932, Serial No. 631,442

5 Claims. (Cl. 247—6)

This invention is directed to an improvement in terminals for electric cable systems and is particularly well adapted for cable systems of the type constituting the subject-matter of my copending application Serial No. 553,714, filed July 29, 1931, wherein the insulated conductors of the cable are maintained at all times immersed in an insulating fluid such as oil under sufficiently high pressure to increase its dielectric strength.

In the drawing accompanying this application:

Fig. 1 is a part sectional elevational view of an embodiment of my invention;

Fig. 2 is a section on the line 2—2 of Fig. 1; and

Fig. 3 is a section on the line 3—3 of Fig. 1.

As above mentioned the present invention is directed to a terminal construction for electric cable systems of the type above referred to, that is to say, systems of the type in which the insulated conductors of the cable are maintained at all times immersed in a body of insulating fluid under pressure. The insulated conductors of the cable system are designated 1, 2 and 3 and for purposes of illustration are shown enclosed in a metal pipe 4 of steel or iron, this pipe being maintained at all times filled with oil under pressure. If desired a properly reinforced lead sheath may be substituted for the pipe 4.

5 designates what may be termed a terminal manifold for this cable and the pipe 6 of this manifold, which is of steel or iron similar to the pipe 4, constitutes in effect a continuation of the pipe 4. The manifold pipe 6 is equipped with upwardly extending outlet pipes 7, 8 and 9 for the cables 1, 2 and 3, the conductor of cable 1 passing through pipe 9, conductor of cable 2 through pipe 8 and conductor of cable 3 through pipe 7, and upwardly into potheads designated generally 10, 11 and 12.

Bolted or otherwise rigidly secured to the manifold outlet pipes 7, 8 and 9, are upwardly extending tubes 13, 14 and 15, respectively, receiving the cable conductors as will be seen from the drawing, each of these tubes being provided with cooling or radiating fins 16. These tubes 13, 14 and 15 may be considered as a part or continuation of the outlet pipes 7, 8 and 9.

Bolted to the upper ends of the tubes 13, 14 and 15, are the potheads 10, 11 and 12, respectively, which may be for example constructed internally like the structure constituting the subject matter of the copending application of Meyer and Moffitt Serial No. 646,594, filed December 10, 1932, and including the pressure tube 17 of insulating material for the cable conductor, which is sealed off from communication with the pothead but is in communication with the cable pipe or sheath so as to be under internal pressure.

That portion of each pothead external of the pressure tube and which is out of communication with the interior of the pressure tube is kept filled with oil under gravity pressure from reservoir 18.

It will be seen from the foregoing also that my invention provides a method of terminating multiconductor electric cables in which each phase of the cable is led to its own pothead through a pipe of iron, steel or other magnetic material, so that in the event of lightning striking a line connected to such a terminal structure impedance is offered to the impulse or surge which causes a piling up of voltage on the end of the terminal which would tend to flash over or spill over the bushing instead of being carried through on the cable, the spill-over of course bringing the voltage back to normal.

What I claim is:—

1. A terminal structure for multiple conductor electric cable systems of the type in which the insulated cable conductors are loosely disposed in a pipe, said terminal structure comprising in combination a pipe manifold of rigid material sealed to and constituting a continuation of the cable pipe and receiving the cable conductors, rigid outlet pipes for said pipe manifold, each outlet pipe receiving a cable conductor, a pothead supported by each outlet pipe, a pressure tube carried by each outlet pipe and constituting a continuation thereof, each pressure tube extending into a pothead and receiving one of said conductors, said pressure tubes being sealed off from communication with the interior of said potheads, oil in said manifold, outlet pipes and pressure tubes immediately about the insulated conductors and under an applied pressure, and oil in each of said potheads about the exterior of the pressure tubes under a gravity pressure.

2. A terminal structure for multiple conductor electric cable systems of the type in which the insulated cable conductors are loosely disposed in a pipe, said terminal structure comprising in combination a pipe manifold of rigid material sealed to and constituting a continuation of the cable pipe and receiving the cable conductors, rigid outlet pipes for said pipe manifold, each receiving a cable conductor, a potheat supported by each outlet pipe, a pressure tube constituting a continuation of each outlet pipe, each pressure tube receiving a cable conductor and extending into one of said potheats to a point adjacent the

outer end of the pothead, means for sealing said pressure tubes out of communication with the interior of the pothead, oil in said cable pipe, manifold outlet pipes and pressure tubes under an applied pressure, and oil in the potheads about the exterior of the pressure tubes under gravity pressure only.

3. A terminal structure for multiple conductor electric cable systems of the type in which the insulated cable conductors are loosely disposed in a pipe, said terminal structure comprising in combination a pipe manifold of rigid material sealed to and constituting a continuation of the cable pipe and receiving the cable conductors, rigid outlet pipes for said pipe manifold, each outlet pipe receiving a cable conductor, cooling fins for each outlet pipe, a pothead supported by each outlet pipe, a pressure tube of insulating material carried by each outlet pipe, each pressure tube receiving a cable conductor and extending into one of said potheads, each tube being sealed out of communication with said potheads, oil in said manifold, outlet pipes and pressure tubes surrounding the insulated conductors therein and under an applied pressure to increase its dielectric strength, and oil in each pothead surrounding the pressure tubes and under gravity pressure only.

4. In multiple conductor electric cable systems in which the insulated cable conductors are enclosed in a pipe of magnetic material, a terminal structure comprising in combination a manifold pipe of magnetic material attached to and constituting a continuation of the cable pipe, rigid outlet pipes of magnetic material arranged at spaced intervals along said manifold pipe, each of said outlet pipes receiving one of the conductors of the cable, and a pothead supported by each outlet pipe.

5. A terminal structure for multiple conductor electric cables in which the insulated conductors are enclosed in a pipe line, said terminal structure comprising in combination a manifold pipe of magnetic material attached to and freely communicating with said pipe line and constituting a continuation thereof, rigid outlet pipes of magnetic material arranged at spaced intervals along said manifold, each of said pipes freely communicating with the manifold and receiving a cable conductor, and a pothead supported by each outlet pipe.

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