Oct. 6, 1925. 1,556,029

F. H. REAGAN

METHOD OF CONNECTING INSULATOR UNITS

Filed March 10, 1921

Fig. 1.

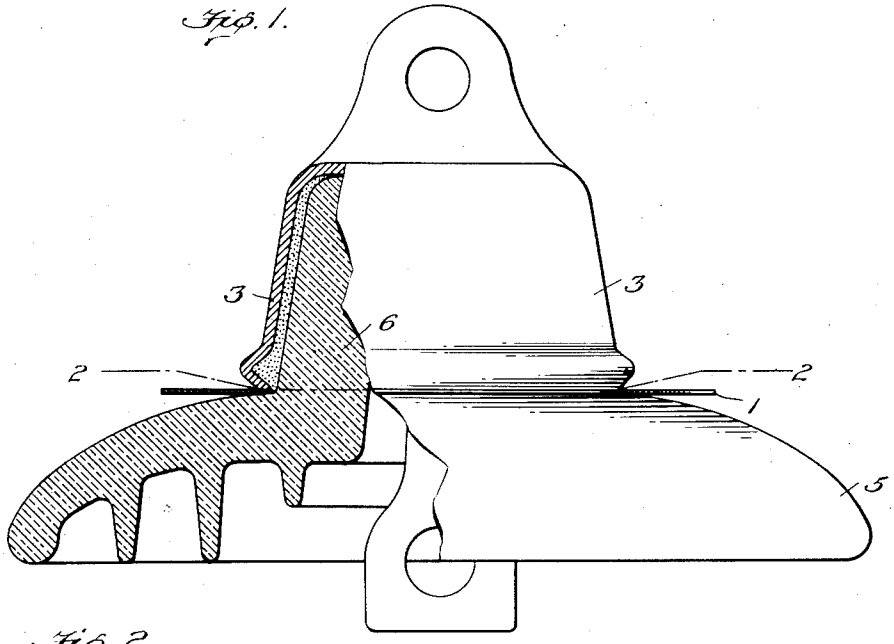
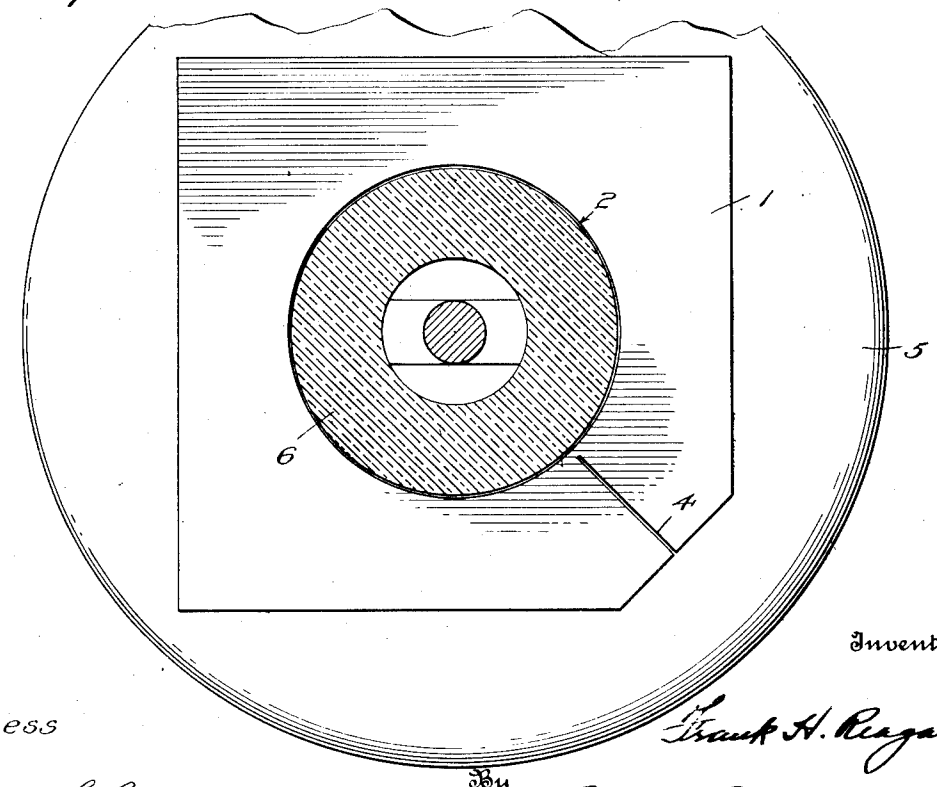


Fig. 2.



Witness

Edwin L. Bradford

Inventor

Frank H. Reagan

By

Attorney

Patented Oct. 6, 1925.

1,556,029

UNITED STATES PATENT OFFICE.

FRANK H. REAGAN, OF ROCHESTER, NEW YORK, ASSIGNOR, BY MESNE ASSIGNMENTS, TO LOCKE INSULATOR CORPORATION, OF BALTIMORE, MARYLAND, A CORPORATION OF MARYLAND.

METHOD OF CONNECTING INSULATOR UNITS.

Application filed March 10, 1921. Serial No. 451,210.

To all whom it may concern:

Be it known that I, FRANK H. REAGAN, a citizen of the United States, residing at Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Methods of Connecting Insulator Units; and I do hereby declare the following to be full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to a method of connecting parts of an insulator unit in which novel means are employed at the time the insulating unit is being connected to the metallic cap to prevent the cement used to connect the cap to the insulating element from flowing over and hardening upon the surface of the insulator element. By my method all necessity for cleaning the insulator by chipping the cement from the surface thereof after the connection is perfected is obviated, thereby avoiding damage to the surface glaze of the insulator which is often injured by the cleaning process to which insulator units have heretofore been subjected.

The principal object of the invention is to provide a frangible member adapted to be mounted upon the insulating unit prior to its assembly with the hollow cap, the said frangible member being adapted to serve as a gasket to prevent the escape of the fluid cementitious material by which the cap and insulating element are connected, and being also adapted to serve as spacing means to prevent the contact of the cap with the adjacent portions of the insulating element. Another object of the invention is to provide a method of connecting the parts of an insulator unit involving the use of a saturated ring or gasket which is adapted to be mounted on one of said parts prior to its assembly with the other part and which is permitted to contract after the assembly so as to provide for its easy removal from the assembled unit.

There are other objects of the invention as will hereinafter more fully appear from the detailed description of the same, particularly when taken in connection with the accompanying drawings wherein I have illustrated a suspension insulator unit connected in accordance with the method herein set forth.

Figure 1 is a view, partially in section and partially in side elevation, of a suspension insulator unit assembled in accordance with my invention.

Figure 2 is a transverse horizontal section on line 2—2 of Fig. 1.

It is the usual practice in connecting insulator units to hollow metallic caps to first invert the cap and then pour into the recess thereof a liquid cementitious material and to subsequently fit the cap over the neck, stem or the projecting portion of the insulating element, which is of substantially the same diameter as the interior diameter of the recess in the cap, to thereby cause the cementitious material to completely fill the space intervening between the enlarged ring which is generally provided at the bottom edge of the said cap and the adjacent portion of the insulating element. The insulating element and cap which are joined by this socket connection are then placed on a drying frame to permit the cement to dry, set or harden so as to rigidly unite the said parts. When the caps are placed on the necks or stems of the insulating elements some of the cement is forced out of the cap and spread over the surface of the insulating element and often hardens thereon. If this cement is allowed to set it is very difficult to remove it without injury to the glaze which is placed over the porcelain. Any injury to the glaze produces a rough spot on the surface of the insulating element upon which dust and dirt will collect, and these rough spots when coated with dirt serve to shorten the gap or distance between the terminals of the unit and are often the cause of destructive arcings and breakdowns of the insulators. It is also highly desirable to so locate the cap with reference to the insulating element as to provide a uniform space between the skirt portion of the insulating element and the lower edge of the cap. The object of this spacing is to prevent contact between adjacent surfaces of the insulating element and the cap caused by the different coefficients of expansion of these two bodies. Such contact is not only detrimental to the connection, but often causes the insulator to break at the juncture of the hub with the skirt portion thereof. Heretofore it has been very

difficult to avoid the defects herein pointed out and it has been practically impossible in quantity production to prevent the caps from settling on the hubs so that the caps either contact with the skirt portions of the insulating element or assume an angular position on said hub.

By the method hereinafter described all of the difficulties above set forth are avoided and an inexpensive method is provided for obtaining clean insulators and for affording sufficient clearance between the insulating unit and the cap to take care of all expansions and contractions of the two bodies without detriment to the insulator or to the connection.

In carrying out my method I provide a disk or plate 1, preferably made of cardboard, although any absorbent material of sufficient mechanical strength may be advantageously substituted therefor. The said disk is provided with an opening 2 the diameter of which is substantially the same as the diameter of that portion of the insulating element which is adapted to fit within the cap 3. These disks or plates 1 may be and preferably are provided with a slot 4 extending from the marginal edge to a point adjacent the opening 2. Prior to the application of these disks to the insulating elements I preferably soak the same in a liquid to a point of saturation, although this step may be omitted if desired. By soaking the disks to a point of saturation I perform two important functions. First, I increase the thickness of the disk, and second, I prevent the disk from acting as a sponge to withdraw from the cementitious material a portion of the liquid which would be detrimental to the cement. I then force the saturated disk over the projection on the insulator until the disk is positioned on said projection a distance slightly less than the depth of the recess within the cap. I then invert the cap and introduce therein the cementitious material and then join the cap and the projection on the insulator in socketed relationship until relative movement between said cap and said projection is stopped by the engagement of the disk with the lower extremity of the said cap. Since the disk is in engagement with the lower extremity of the cap and is also in engagement with the wall of the insulating element it will act as a gasket to prevent the escape of the cementitious material. The parts are then placed on the drying frame for a period of time to permit the setting of the cementitious material. When the cementitious material has hardened or set the moisture in the disk 1 will have evaporated, causing a contraction of the disk and spacing the same away from the lower edge of the cap. If any of the cementitious material has escaped between the edge of the cap and the disk the lateral extension of the disk will prevent this cement from flowing over the exterior surface of the skirt portion 5 of the insulating element. Upon the removal of the insulating unit from the drying frame the disk is broken away preferably by engaging the same on opposite sides of the slot 4 and tearing the slot so that it extends into the opening 2, and then by removing the disk bodily from the insulator.

It will be understood that while I have illustrated my invention in connection with the usual form of suspension insulating unit having a frusto-conical hub member 6 extending upwardly from the skirt portion 5, my method may be advantageously used with any other types of insulators.

It will of course be apparent that the disks 1 are of a nature readily permitting quantity production of the same and are exceedingly cheap to manufacture, and that by providing disks having openings therein of different diameters any size of insulating elements may be used, and by using disks of different thicknesses any desired spacing of the cap and insulating element may be readily obtained.

I claim:—

1. The method of connecting the parts of an insulator unit of the type in which the insulating element is provided with a portion adapted to have a socketed fit within a recess in a metallic cap, said method involving mounting upon the said portion of the insulating element an expanded packing ring prior to the assembly of said element and cap, and subsequently contracting said packing.

2. The method of connecting the insulating element of a suspension insulator to a metallic cap having a recess adapted to receive a projection on the insulating element, said method involving saturating an absorbent disk, mounting said disk upon the projection on the insulating element, introducing a cementing substance into the recess of said cap, joining said insulating element and cap in socketed relation, and subsequently drying said disk.

In testimony whereof I affix my signature.

FRANK H. REAGAN.