Feb. 20, 1923. 1,446,067.

F. H. REAGAN.

METHOD OF CONNECTING INSULATOR UNITS.

FILED MAR. 10, 1921.

Fig. 1.

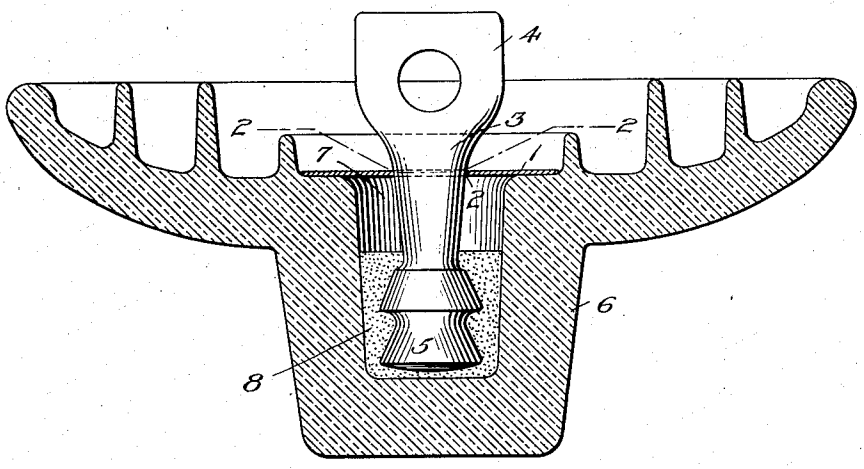


Fig. 2.

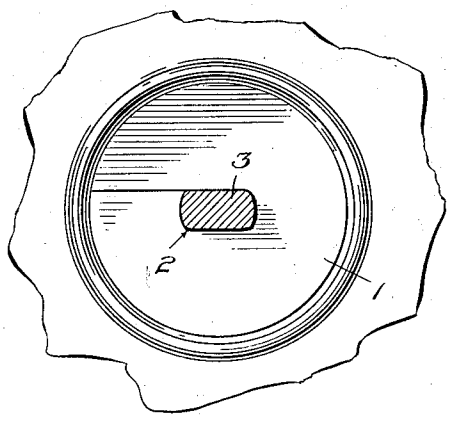
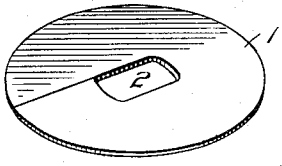


Fig. 3.



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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. 451,211.

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 a 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 a bolt to an insulating element in which I employ novel means to maintain the bolt in a definite position with reference to the insulating element during the interval of time required for the cementitious substance which unites the bolt to the insulating element to set or harden.

The primary object of the invention, broadly stated, is to provide a member adapted to be assembled with the bolt prior to the insertion of the said bolt within the recess formed in the insulating element, the said member being arranged to support the bolt in a predetermined position with reference to the insulating unit until the cement which is introduced into the recess has hardened sufficiently to maintain the bolt in its proper position. Another object of the invention is to provide an inexpensive member convenient to manufacture and which may be readily assembled with the bolt to perform the function set forth above. These and other objects will appear from the detailed description of the invention, particularly when taken in connection with the accompanying drawings wherein I have illustrated an insulator connected in accordance with the novel method which I have devised.

Figure 1 is a view in transverse vertical section of a suspension insulator unit showing the eye bolt connected thereto, the insulator being in an inverted position.

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

Figure 3 is a perspective view of the novel means for temporarily maintaining the eye bolt in assembled position.

Great difficulty has been experienced in the past in maintaining bolts in proper assembled relation with the insulating elements during the time interval which elapses between the insertion of the bolt into the recess in the insulator and the hardening or crystallization of the cementing substance which is interposed between the bolt and the adjacent portion of the wall of the recess in the insulating element. In suspension insulator units where the necessity for accurately maintaining the eye bolt parallel to the vertical axes of the insulating elements is of vital importance, it has been most difficult to temporarily maintain the eye bolts in this position. This is due to the general custom of using an eye bolt, which has a rounded end, on the portion which enters the recess in the insulating element. This rounded end portion and the overweighted outer end, together with the difference in the diameter of the bolt and the diameter of the recess, often result in the eye bolt changing from its correct vertical position to a position at an angle to the vertical axis of the insulator; and if the cement hardens with the bolt in this inclined position the insulator is considered defective. It has been found that the cost of correcting the defects caused by the wrong position of the bolt exceeds the cost of the insulator, and consequently insulators in which the bolts are wrongly assembled are, as a rule, scrapped. By following the method which I have invented it is possible to prevent all danger of the eye bolt being assembled at an angle to the vertical axis of the insulating element and this high loss in manufacture is consequently avoided.

In carrying out my process I preferably provide a slotted washer or disk 1 which has been illustrated as circular in outline and provided with a centrally disposed opening 2 equal in size to the cross sectional area of the eye bolt 3 at a predetermined point. Preferably the washer 1 is made from pasteboard or some similar frangible substance to permit of its ready removal from the eye bolt. Since the eye bolt 3 is provided with enlarged ends 4 and 5, respectively, I construct the disk 1 as a split ring so as to permit the same to be assembled with an eye bolt at a point intermediate the ends thereof.

I preferably assemble the washer 1 with the eye bolt and then invert the insulating element 6 into a position corresponding to that illustrated in Fig. 1, and introduce into the cavity 7 thereof a fluid cementing sub-

stance such as porcelain cement mixed with a definite quantity of water and illustrated by the portion of Fig. 1 designated by the numeral 8. I then insert the headed end 5 of the eye bolt into the recess until the movement of the eye bolt is arrested by the washer 1 engaging the inner surface of the insulating element 6 adjacent the mouth of the opening 7. In this position it will be observed that the headed end 5 of the eye bolt is spaced a short distance from the bottom of the cavity 7 and that the portion 5 is immersed in the cement 8. It is desirable to provide some means other than the frictional resistance between the under face of the disk or washer and the adjacent surface of the insulator body to prevent lateral movement of the disk on the insulator. A convenient way to prevent this sliding is to make the disk or washer of sufficient size to fit within the concentric ring formed by the inner petticoat 9 of the insulator. By this construction it will be obvious that the eye bolt is not only maintained in spaced relation to the lower portion of the recess 7 but is maintained on the vertical axis of the insulating element against all possible chances of displacement during the interval required for the hardening of the cement. After the cement has hardened the washer or disk 1 may be removed if desired, although owing to its location it has little or no effect upon the electrical efficiency of the insulator should it be left in position.

I claim:

1. The method of connecting a bolt member to an insulating element having a recess therein for the reception of said bolt member, said method involving introducing a cementing substance into said recess, providing said bolt member with means for engaging the insulating element at a plurality of spaced points and finally inserting said bolt member into said recess so as to cause the said cementing substance to surround a portion of said bolt member.

2. The method of connecting a bolt to an insulating element having a recess therein for the reception of said bolt, said method involving mounting on said bolt a removable member adapted to engage a plurality of spaced points on said insulator element, introducing a fluid cementing substance into said recess, inserting said bolt member into said recess to cause the said cementing substance to surround a portion of said bolt.

3. The method of connecting a bolt to a suspension insulating element provided with a centrally disposed recess adapted to receive the said bolt, said method involving mounting upon said bolt a displaceable member which is adapted to engage, when the bolt and insulating element are in assembled relation, a plurality of spaced points on said insulating element, introducing into said recess a fluid cement, and inserting said bolt into said recess.

4. The method of connecting a bolt to a suspension insulating element provided with a centrally disposed cylindrical recess adapted to receive the said bolt, said method involving mounting upon said bolt at a point intermediate the ends thereof a removable disk, partially filling said recess with a fluid cementing substance, inserting said bolt into said recess until said disk is in engagement with said insulating element.

5. The method of connecting a bolt to a suspension insulating element which is furnished with a recess adapted to receive a portion of said bolt, said method involving introducing a fluid cement into said recess, inserting a portion of said bolt within said recess, positioning on said bolt means for temporarily maintaining the same centrally of said recess and parallel to the vertical axis of the insulating element when assembled with said insulating element and subsequently removing said means.

6. The method of connecting a bolt to an insulating element having an axially disposed recess therein adapted to receive the headed end of the said bolt, said method involving introducing fluid cement into said recess, positioning a disk on said bolt, inserting the headed end of said bolt into said recess until the same is immersed in said cement, maintaining the bolt in assembled position by engaging the said disk with a portion of the insulating element and finally allowing the cement to harden or set.

In testimony whereof I affix my signature.

FRANK H. REAGAN.