

Oct. 11, 1927.

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J. M. PECK

SUSPENSION INSULATOR

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Fig. 1

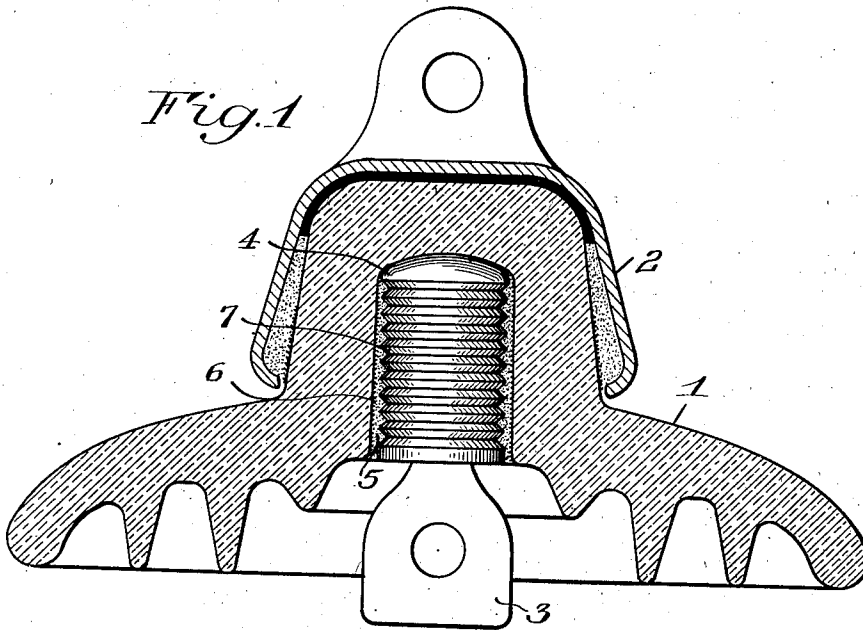
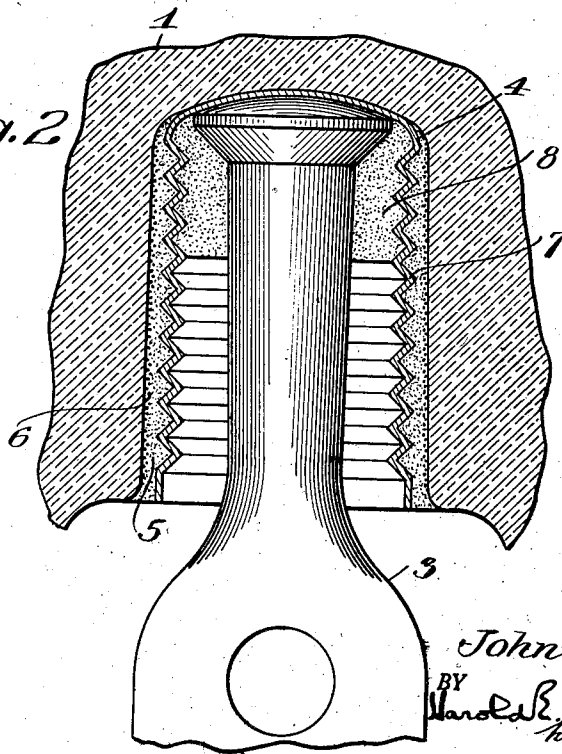


Fig. 2



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SUSPENSION INSULATOR.

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My invention relates to insulators, and has reference more particularly to the general type known as suspension insulators and comprising a body portion of porcelain or suitable insulating material, a metallic bolt member secured within an opening in the porcelain body portion, and a metallic cap member attached to the top of the porcelain body portion.

A principal purpose of my improvement is to attach the bolt member to the body portion in such a way as to afford a more efficient and stronger insulator, which will withstand both electrical and mechanical loads more effectively.

In a more particular aspect, the object of the invention is to secure the bolt member to the insulating body portion in such a manner as to distribute the stresses equally over the entire insulating surface surrounding the bolt member, instead of concentrating the effect of such stresses over a relatively small area of such surface, as in prior constructions.

Another object of the invention is to reduce the destructive effect from expansion, by interposing a flexible member in a cement body between the bolt member and the body portion.

With these ends in view, the invention comprehends the construction that will appear clearly from the following description when read in conjunction with the accompanying drawing, the novel features being pointed out in the claims following the description.

In the drawing:

Figure 1 is a sectional view of a suspension insulator showing the application of a preferred embodiment of my invention, and

Figure 2 is an enlarged sectional view through the load-distributing device.

The invention may be carried out practically in a number of different ways and includes in general a load-distributing member, preferably in the form of a thimble of thin flexible metal having its interior and exterior surfaces corrugated or of other suitable irregular formation, and located in a body of cementitious material between the bolt member and porcelain body portion.

In the construction shown, 1 designates the body portion of a conventional type of suspension insulator provided with a cap 2 and bolt member 3, in the form of an eye-

bolt that is received in an opening in the body 1 and fixedly secured to the body portion.

4 designates a flexible thimble of thin metallic material, preferably co-extensive with the opening in the insulator, and having a closed inner end fitting against the porcelain at the top of the opening. The end of the thimble may be separated from the porcelain surface by a thin film of resilient cement, and is secured in place by a body of Portland cement 5 occupying the space between the exterior side walls of the thimble and the interior sanded surface 6 on the porcelain body portion.

The thimble 4 functions primarily to increase the bearing surface of the porcelain body and distribute the stresses, resulting from both mechanical and electrical loads, equally over the entire adjacent surface of the porcelain body portion, so that an excessive stress is not concentrated at any one given point. This greatly increases the strength of the insulator under practical operating conditions as well as its period of usefulness.

This result may be effected by other forms of load-distributing devices, to transmit the load from the bolt member to the adjacent surface of the porcelain body equally, and the thimble just described is merely one example of different possible means of accomplishment. Where a metal thimble is used, and arranged co-extensive with the opening in the porcelain body portion, it is preferably provided with a series of lateral corrugations 7 throughout the length of the thimble and affording irregular surfaces both exteriorly and interiorly. This effects an interlocking engagement with the cement binder, and also serves to distribute the stresses evenly from top to bottom of the surface of the porcelain body surrounding the opening for the bolt member.

The parts are held together by suitable cementitious material interposed between the porcelain body portion and the thimble, preferably throughout the length of the thimble, and also between the thimble and bolt member for a portion of such length. Preferably I employ Portland cement between the body portion and thimble and a lead alloy between the bolt member and thimble, as designated at 8. There is a certain amount of contraction in the alloy, upon

cooling, and this results in some flexibility between the bolt member and thimble, sufficiently to absorb all stresses due to expansion or contraction. This also permits the bolt member to aline itself properly to a mechanical load, without distorting or breaking either the cement or porcelain body.

The invention may be adapted to insulators in other ways than by the particular structure herein set forth, and this application is intended to cover any modifications or departures coming within the intent of my improvement or the scope of the following claim.

I claim:

In an insulator, the combination with a hollow body portion, of a load distributing

thimble arranged therein and co-extensive in length with the opening in the body portion, the thimble having a series of lateral corrugations throughout its length, a body of cement between the thimble and the body portion, a bolt member arranged within the thimble having an unobstructed cylindrical body and an enlarged head, the body and head of the bolt member being spaced from the sides of the thimble, and a body of cement located between the bolt member and the inner surface of the thimble and acting by engagement with the underside of the head to hold the bolt member in the thimble.

In witness whereof, I have hereunto signed my name.

JOHN M. PECK.