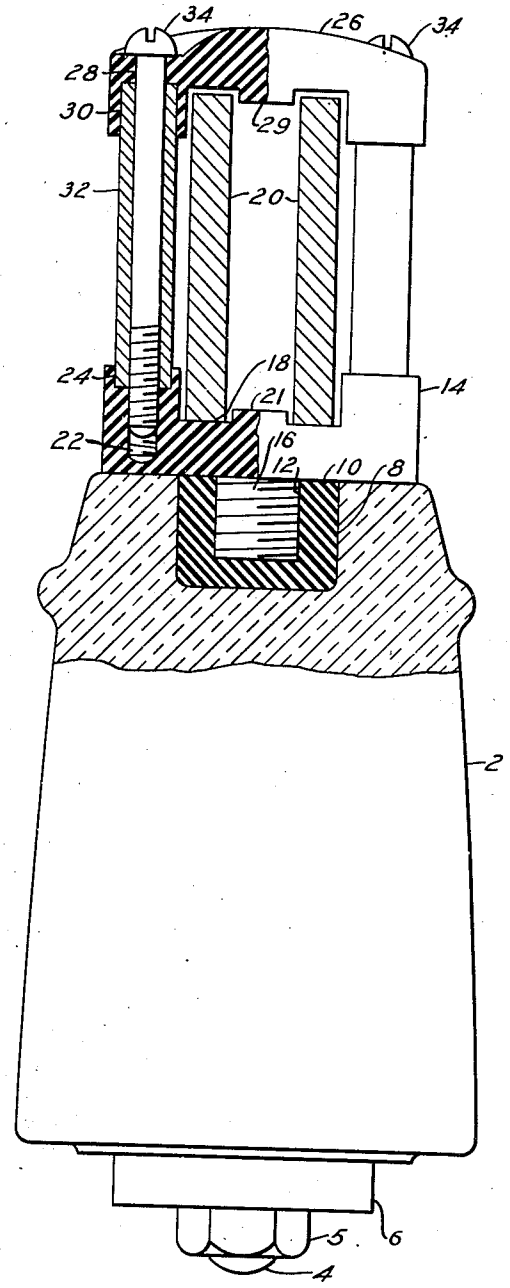
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INSULATOR INCLUDING CLAMPING MEANS FOR SUPPORTING HIGH POTENTIAL CONDUCTORS

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WITNESSES:

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INSULATOR INCLUDING CLAMPING MEANS FOR SUPPORTING HIGH POTENTIAL CONDUCTORS

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1 Claim. (Cl. 174—169)

The present invention relates to electrical insulators, and it has particular relationship to insulators which include clamping means for supporting high potential conductors.

In such constructions as, for example, switching stations for high-tension circuit breakers, the desirability of employing insulators of as small a size as possible without sacrificing insulating properties has long been recognized. Any reduction which may be made in the size of such insulators obviously results in a saving in material and in addition permits more efficient use of the station space. One element which has prevented the use of a smaller insulator is the metal cap or other type clamp which is generally employed to support the conductor thereon. In extending closer to ground than the conductor itself, this metallic clamp reduces the actual insulating or rupture distance of the insulator.

According to the present invention an electrical insulator is provided with a conductor clamp or support which is also made of insulating material. This results in a structure in which the conducting bus itself is the metallic potential carrying member which is nearest to the grounded supporting means.

It is, accordingly, an object of the invention to provide a novel and improved electrical insulator.

Another object of the invention is to provide an insulating structure including a conductor clamping means of non-conducting material.

A further object of the invention is to provide an insulating structure in which the conductor itself is the potential carrying member nearest to the support.

Other objects and advantages of the invention will appear from the following detailed description taken in conjunction with the accompanying drawing, in which the single figure is a side elevational view, partly in section, of an electrical insulator embodying the invention.

Referring to the drawing, there is shown a main insulating body 2 which is preferably of a ceramic material such as porcelain and has a metallic supporting stud 4 secured thereto in a usual manner. By means of this stud and a nut 5 cooperating therewith the insulator body is secured to a supporting bracket 6.

In the upper portion of the body 2 there is formed a hole 8 within which is an insert 10. This insert, which is preferably of a non-conducting material more easily molded and machined than porcelain, has a screw threaded hole 12 in it. The thread at 12 may be cut or molded as desired. While a threaded hole may be formed directly in the insulating body 2, it is preferred to employ the insert 10 because of the difficulty encountered in cutting threads in a ceramic body.

A lower clamping member 14 which is preferably molded from a material similar to that of the insert 10 is provided with a threaded stud indicated at 16. This stud is screwed into the hole 12 to secure the member 14 in proper position upon the insulator 2. The clamping member 14 is provided with seating surfaces 18 for receiving conductors 20 of a multiple bus structure. The surfaces 18 are separated by the projection 21 to maintain the conductors in spaced relationship to facilitate ventilation. Two diametrically opposed holes 22 are provided in the member 14 and screw-threaded, as shown. The upper surface of this clamping member is recessed around the hole 22 as in the manner indicated at 24.

An upper clamping member 26, which may also be of a molded non-conducting material, is provided with a pair of apertures 28 in alignment with the threaded holes 22 in the lower member. The under surface of the member 26 is similar to the upper surface of the lower member 14 and includes a projection 29 for maintaining the upper part of the conductors 20 in spaced relationship. In addition, the member 26 is recessed at its lower surface around the apertures 28 in a manner shown at 30. Each of a pair of spacing sleeves 32 is located with its ends in the corresponding recesses 24 and 30 in the lower and upper members to space them a proper distance apart. Bolts 34 are placed through the apertures 28, passed through the spacing sleeves 32, and threaded into the holes 22 in the lower clamping member to secure the conductors in position.

With the structure shown and described, the potential conducting metal part which is disposed nearest to the supporting bracket 6 is the conductor 20 itself. Since no metallic member is required to secure the conductor 20 in place, the entire height of the insulator 2 is effectively employed.

It will be noted that different lengths of spacing tubes 32 and bolts 34 may be employed with the same apparatus to adapt it for accommodating conductors of different heights and that use of the structure is not limited to the rectangular shaped conductor shown in the drawing.

Because of the various modifications which may be made in the construction shown and described, it is intended that the invention shall be limited

only by the spirit and scope of the appended claim.

I claim as my invention:

In combination, electrical conducting means, an insulating body having a screw-threaded hole in its upper end, attaching means for securing said insulating body to a support, a first clamping member of insulating material for providing a seat for said conducting means, said member having a screw-threaded stud engaging said hole in said insulating body and a plurality of screw-threaded holes in its upper surface, a second clamping member of insulating material having apertures in alignment with said holes in said first member, said second clamping member being disposed over said first member with said conducting means therebetween, bolts extending through said apertures in said second member and engaging said holes in said first member to attach said members together, and sleeve members surrounding said bolts between said members to space said members apart.

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