

C. McL. GRAHAM.
INSULATOR.
APPLICATION FILED AUG. 4, 1908.

930,750.

Patented Aug. 10, 1909.

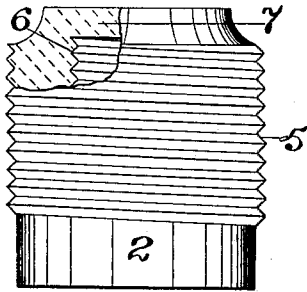


Fig. 1.

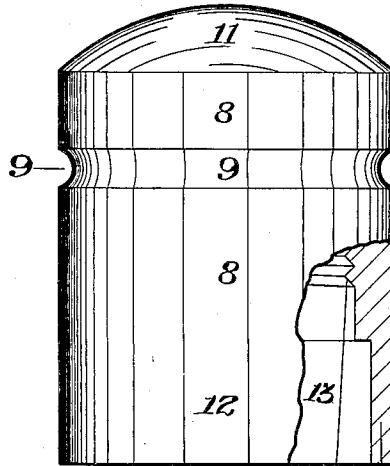


Fig. 2.

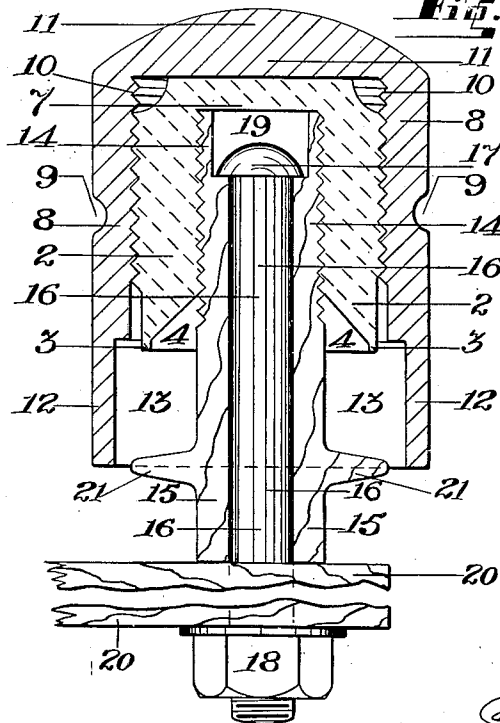


Fig. 3.

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UNITED STATES PATENT OFFICE.

CHARLES McLACHLAN GRAHAM, OF MALVERN, VICTORIA, AUSTRALIA.

INSULATOR.

No. 930,750.

Specification of Letters Patent.

Patented Aug. 10, 1909.

Application filed August 4, 1908. Serial No. 446,871.

To all whom it may concern:

Be it known that I, CHARLES McLACHLAN GRAHAM, a subject of the King of Great Britain and Ireland, residing at 16 Isabella street, Malvern, in the county of Bourke, State of Victoria and Commonwealth of Australia, civil servant, have invented a certain new and useful Improved Insulator, of which the following is a specification.

10 This invention relates to insulators composed of such non-conducting material as glass, earthenware or porcelain, to which electric wires or similar bodies are attached.

15 In the past a variety of such devices have been used, the most common and general of which are those known as the "double-shed" variety usually manufactured from porcelain.

20 The chief objections to many of these insulators have been their liability to breakage, their comparatively high conductivity when broken, or when possessing flaws or cracks in the non-conducting material and the leakage of the current which takes place (more or less) at the support. It is customary to cover an insulator with an iron cap when rendered excessively liable to breakage, but it is also recognized that iron capped insulators have increased objections and 30 should only be used in extreme cases.

This invention contemplates providing an insulator giving the highest possible resistance to leakage of the current, which is both light and durable, contains the maximum of insulating effect with a minimum of material, has a dripping lip from which all the moisture coming in contact with the insulating medium is precipitated, is easily attached to its support which may be of non-conducting material, is structurally strong and entirely prevents any possible diversion of current from an electrified body attached to it. Further, upsplashing of rain water in wet weather is obviated and foreign substances 45 to a large extent are excluded from the interior of the insulator.

According to this invention the vital parts of the insulator are surrounded by a protector preventing injury by stone throwers 50 or during transportation and thus lowering the percentage of breakages. This protector is of special character and preferably made of a non-conducting material such as wood. The insulator support may also be of a cheap and effective character and a combination is produced which is most effective in humid

or damp climates and the parts of which are easily renewed and inexpensively maintained.

Other advantages possessed will be manifest and further objects apparent from the following description. 60

Referring to the drawings which form a part of this specification. Figure 1 represents an elevation partly in section, of the insulating medium. Fig. 2 is an elevation partly in section of the protector. Fig. 3 is a sectional view of the protector inside of which is the insulating medium upon its support. 65

Similar numerals of reference indicate corresponding or like parts where they occur in the several views. 70

On reference to the drawings it will be seen that the insulating medium has preferably a parallel wall 2, the thickness of which will depend upon circumstances. The said insulating medium is formed of glass, earthenware, porcelain, or other suitable materials. The said wall 2 has a dripping lip 3 beneath a conical annular chamber 4 forming its bottom. The outside of the said wall 2 has an exterior thread 5 thereon (Fig. 1) which may extend from the top to the bottom thereof or for a portion of that distance. Inside the said wall is an internal thread 6 (Fig. 1) extending from its top to the conical annular chamber at its bottom. 85

Above the wall is a roof 7, the thickness of which will depend upon conditions. It may be flat inside and outside as shown, or it may be concave or convex either inside or outside, or both. The said roof may be integral with or attached to the insulating medium. Surrounding the insulating medium is a protector. This can be made of any material or combination of materials, and need not be of a non-conducting nature. It has an upper wall 8 preferably parallel on the inside and the outside. On the outside of the said wall is a wire groove 9 in which, is secured the electrified body to be supported. Inside the said wall is an internal thread 10 (Fig. 2) registering with the external thread 5 upon the insulating medium. Above the top of the upper wall 8 is a cover 11 which may be integral therewith or attached thereto. This cover is preferably convex upon its top. 95 Below the upper wall 8 is a lower wall 12. The said lower wall 12 is preferably thinner than the upper wall 8 with which it is integral. It extends below the dripping lip 3 and forms a chamber 13 within which and the conical annular chamber 4 above it moisture 100 110

condenses. The said insulating medium is threaded by its internal thread 6 to the upper end 14 of a wooden or like non-conducting support 15 accommodating a metallic or
 5 other central reinforcing member 16 having a head 17 and provided on its threaded lower end with a nut 18. In the top of the said non-conducting support is a recess 19 within and below the upper edge of which the head
 10 17 of the central member reposes. The bottom of the non-conducting support rests upon the body 20 to which the insulator is retained by the nut 18 upon the lower end of the central reinforcing member passing
 15 therethrough.

Attached to or integral with the support is an upsplash preventer 21 which is below the insulator or may be within the chamber 13. Its conformation in plan is preferably
 20 circular and it may be of any area, dependent upon circumstances. By it in wet weather upsplashing of rain water into the interior of the insulator is prevented and also dust and like foreign substances to a great extent ex-
 25 cluded.

The parts of this invention are assembled as follows:—The central member 16 is placed within the support 15 and if not impeded in circumferential movement therein by fric-
 30 tional contact is prevented from circulating by any well known means. The internal thread 8 upon the insulating medium is then threaded around the threaded top of said support. The said insulating medium is
 35 screwed down so that its roof rests upon the top of the said support. The protector is then threaded over the external thread 5 of the insulating medium. It in turn is threaded downwardly until its cover makes con-
 40 tact with the roof of the said insulating medium. The insulator is then attached to any desired body by the central member 16.

As the controlling features of this invention could be otherwise applied and carried
 45 out by various modifications, and arrangements, without departing from its spirit and scope, it is intended and desired that the matter contained in the foregoing description shall be interpreted as illustrative of an

embodiment at present preferred and not in 50 a limiting sense.

Having now described my invention, what I claim as new and desire to secure by Letters Patent is—

1. The herein described insulator com- 55 prising a central bolt or reinforcing member, a wooden support transfixed by said bolt and provided with a threaded upper end; an inverted cup-shaped insulating medium threaded both internally and externally and
 60 screwed upon the upper end of said support and having an annular chamber in its lower end and a dripping lip at the outer edge of said chamber, and an inverted cup-shaped protector internally threaded and screwed
 65 upon said insulating medium and depending below the dripping lip on said medium but separated from the lip by an annular chamber, and means to prevent water splashing into said chamber, substantially as de- 70 scribed.

2. The herein described insulator comprising a central bolt or reinforcing member, a wooden support surrounding said member and provided with a circumferential up- 75 splash preventer and having a threaded upper end; an inverted cup-shaped insulating medium threaded internally and externally and screwed upon the upper end of said support and having an annular chamber on its 80 lower end and a dripping lip at the outer edge of said chamber, the said lip lying above the plane of the upsplash preventer; and an inverted cup-shaped protector internally threaded and screwed upon the insu- 85 lating medium and depending below the dripping lip on said medium but separated from the same and from the upsplash preventer by an annular chamber, said chamber being substantially closed by said upsplash 90 preventer.

In testimony whereof I affix my signature in the presence of two subscribing witnesses.

CHARLES McLACHLAN GRAHAM.

Witnesses:

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