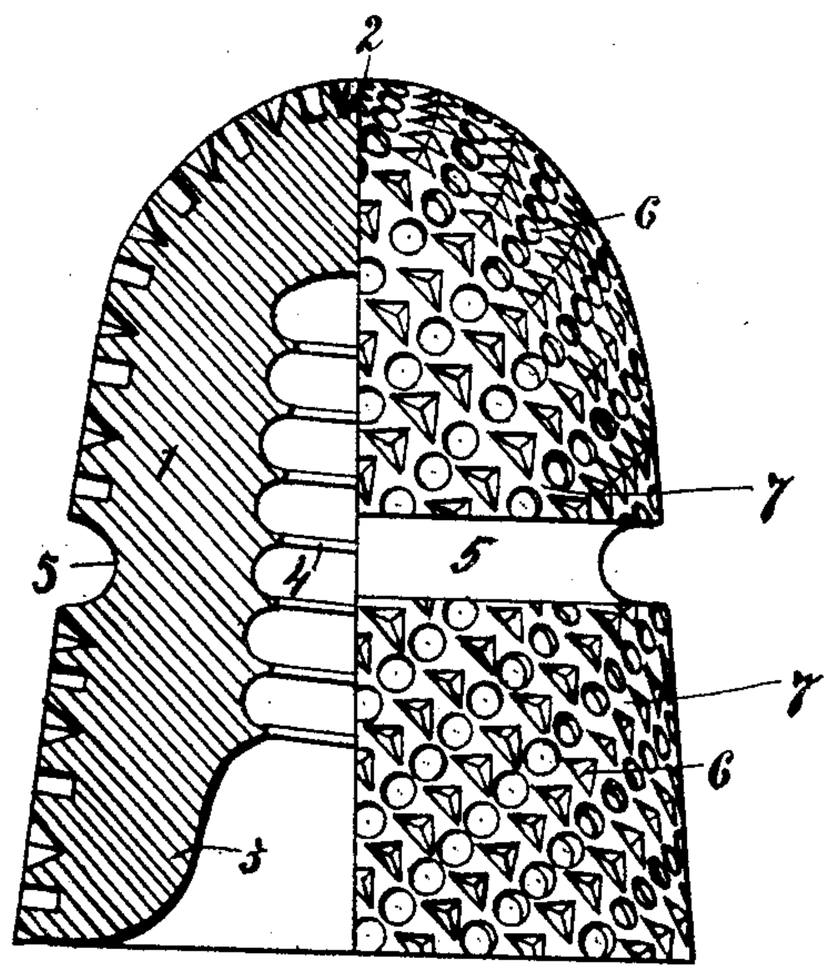
No. 633,176. Patented Sept. 19, 1899.

F. H. WITHYCOMBE.

INSULATOR.

(Application filed Feb. 2, 1899.)

(No Model.)



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INSULATOR.

SPECIFICATION forming part of Letters Patent No. 633,176, dated September 19, 1899.

Application filed February 2, 1899. Serial No. 704,319. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK HENRY WITHYCOMBE, of the city of Montreal, Province of Quebec, Canada, have invented certain new and useful Improvements in Insulators; and I do hereby declare that the following is a full, clear, and exact description of the same.

It is well known that the glass and other insulators used on telegraph and other electric lines are frequently made the targets of and are damaged by stones and other missiles. The damage resulting partially or wholly destroys their usefulness and necessitates the trouble and expense of replacing them, besides causing inconvenience by the interruption of communication or by breakage.

My invention relates to the special construction of the exposed surfaces of the insulators apart from the general design or material employed.

My invention has for its object to render insulators less liable to breakage by providing a simple and efficient means to enable them the better to withstand the impact of foreign bodies.

The invention consists generally in replacing the smooth outer surfaces of insulators as now made of glass, porcelain, or other insulating material by an outer surface construction of small protuberances, ridges, or depressions, each protuberance or ridge being of greater height than thickness. These small protuberances, ridges, or intervening portions between the depressions, which may be of any desired section, form an exterior construction which will break down readily with the impact of missiles. This breaking down of the intercepting parts cushions the blow and relieves the main portion or body of the insulator or extension therefrom from the full severity of the impact. It will thus be seen that the small parts with which the missile first comes into contact, offering a sufficiently less resistance than that portion of the main body or extension therefrom it is intended to protect, will crush or crumble under the force of impact, and thus cushion the blow by using up a large proportion of the energy. Experiment has proved this to be the case.

Insulators having a number of petticoats, whether extending horizontally, vertically, or obliquely, of proportions which render them very easy of breakage by missiles can thus be made to offer greater resistance to fracture by forming the exposed surfaces in the way and as herein described.

Reference is made to the annexed drawing, which is an elevation, half in section, illustrating one application of the invention to one form of insulator.

The insulator shown is of the same general form as those now in use, having a central cylindrical part 1, surmounted by a dome-shaped upper portion or crown 2, and having depending from it the petticoat 3. The interior is provided with the usual threads 4, adapted to screw on the end of the supporting pin, peg, or stick. The usual groove 5 is provided for attaching the wire.

The insulator shown in the drawing is formed with small depressions 6, which may be of any desired shape (conoidal, triangular, or pyramidal, as shown, or otherwise) and preferably arranged in oblique cross-hatch lines, as shown, or in any other desired manner, so that there can be no interference with the flow of water, the portion 7 intervening between the depressions being in every case preferably of greater height than thickness and forming a protective cushion on the exposed surfaces of the insulator and extensions therefrom. The function of such a surface formation (made up, as it is, of a number of small depressions and the intervening portions, which may be of any desired section) is that when a missile strikes the insulator it will come in contact first with the portions intervening between the depressions in such surfaces, which, being of a fragile or easily-broken and yielding formation, will give way to the impact of the foreign body. Thus in the form shown the intervening portions would be first broken down. The energy of the impact will be largely expended in crushing these parts. The result will be to cushion the blow and reduce its severity

as regards the main body of the insulator or any extension therefrom, and unless the impact be very severe and violent the main body of the insulator or extension therefrom will be saved from fracture.

Having described my invention and the way in which it is to be applied, what I claim as new, and desire to secure by Letters Patent, is—

1. An insulator the surface of which is divided up into small depressions 6 and intervening portions 7 the latter adapted to form a protective cushion for the purpose set forth.

2. An insulator the surface of which is divided up into small depressions 6 and intervening portions 7 arranged in oblique cross-hatch lines and the rib portions adapted to form a protective cushion, for the purpose set forth.

In testimony whereof I have affixed my signature in presence of two witnesses.

FREDERICK HENRY WITHYCOMBE.

Witnesses:
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