

No. 728,152.

PATENTED MAY 12, 1903.

A. F. BATCHELDER.
INSULATING MEANS FOR ELECTRICAL APPARATUS.

APPLICATION FILED SEPT. 17, 1902.

NO MODEL.

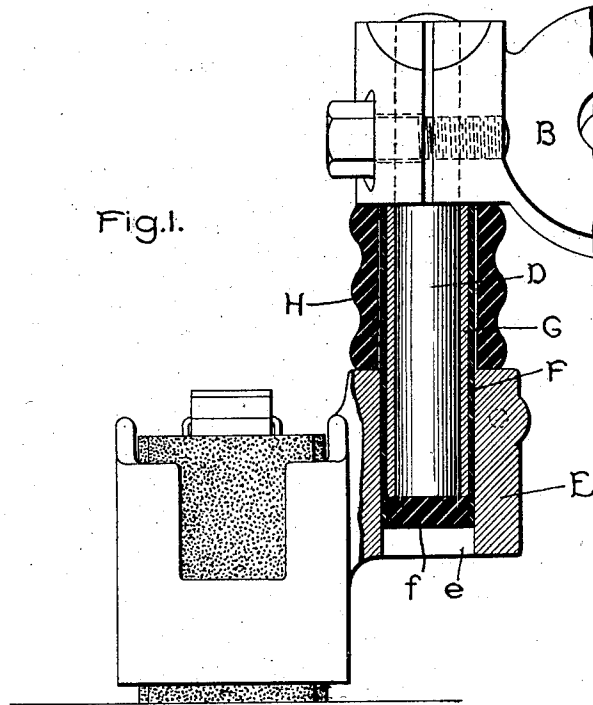
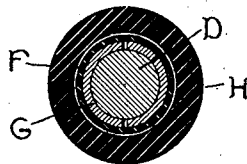


Fig. 2.



Witnesses.

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UNITED STATES PATENT OFFICE.

ASA F. BATCHELDER, OF SCHENECTADY, NEW YORK, ASSIGNOR TO GENERAL ELECTRIC COMPANY, A CORPORATION OF NEW YORK.

INSULATING MEANS FOR ELECTRICAL APPARATUS.

SPECIFICATION forming part of Letters Patent No. 728,152, dated May 12, 1903.

Original application filed September 3, 1901, Serial No. 74,245. Divided and this application filed September 17, 1902, Serial No. 123,792. (No model.)

To all whom it may concern:

Be it known that I, ASA F. BATCHELDER, a citizen of the United States, residing at Schenectady, county of Schenectady, State of New York, have invented certain new and useful Improvements in Insulating Means for Electrical Apparatus, (Case No. 3,127, a division of my application, Serial No. 74,245, filed September 3, 1901,) of which the following is a specification.

My invention relates to means for insulating electrical apparatus, and more especially to such apparatus or parts thereof as are subjected to vibrations and strains.

The object of my invention is to provide means for electrically insulating one part from another, which will permit a rigid or driving fit to be made between the parts.

In carrying out my invention I employ an insulating material which is adapted to withstand relatively large compression strains, such as mica, and form it into a shell shaped to fit a cavity or recess formed in one member and protect the inner surface thereof by an expansible metallic shell and drive the male member into the flexible metallic shell. By properly regulating the thickness of the insulating and metallic shells and the diameters of the male and female members a driving fit may be obtained at the insulated joint which is fully as secure against displacement as in the case of a driving fit between two metallic parts.

My invention will be more readily understood by reference to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is an elevation of a brush-holder connected to its securing-plate by means of a stud insulated therefrom according to one form of my invention, and Fig. 2 is a transverse section of the stud and insulation.

As shown in the drawings, the brush-holder E is provided with a cylindrical socket *e*, extending therethrough. In the socket *e* is placed one end of a tube F, of dry mica or other insulating material capable of withstanding compression strains. Care is taken in shaping the tube F to have it of uniform

thickness and of an external diameter to fit the socket *e*. An expansible lining G of sheet metal, preferably made in the form of a split tube, as shown in Fig. 2, is placed within the tube F. In assembling the parts the expansible tube G may be supported on an anvil adapted to enter the lower end of the socket *e*, and the stud D, which is carefully turned to the proper size, is driven into the upper end of the expansible tube G. By reason of the non-compressible nature of the insulating material F the frictional engagement of the several parts D G F E upon one another is as great as in the case of a driving fit of iron upon iron.

The lower end of the insulating-tube F is closed by a mica disk *f*, inserted in the lower end of socket *e* and tightly engaging the inner walls of the tube F. In cases where the socket is open at one end only the mica disk will be forced down into place before the expansible tube G is inserted.

The tube of insulation F extends a considerable distance outside the socket *e*, and in order to protect it from injury, either from blows or abrasion, I provide a protector H in the form of a sleeve made of suitable insulating material, such as hard rubber or porcelain. The protector H is provided with a corrugated outer surface to increase the creeping-surface.

It is apparent that the insulating-tube F and the mica disk *f* might be made integral, that the expansible tube G might be made of a single piece of readily-expansible metal, and that other changes might be made without departing from the spirit and scope of my invention.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. Means for supporting and insulating electrical apparatus, which comprises a metal portion provided with a socket, a metal stud adapted to enter said socket, insulation between the stud and the socket, and an expansible metal lining between the stud and the insulation.

2. Means for supporting and insulating electrical apparatus, which comprises a metal

portion having a socket, a tube of insulation fitting said socket, a split metal lining for said tube, and a metal stud having a driving fit in said lining.

- 5 3. Means for supporting and insulating electrical apparatus, which comprises a metal portion having a socket, a tube of insulating material fitting said socket and projecting beyond the same, a two-part metal lining in said
10 tube, a metal stud adapted to be driven into said lining to expand it and wedge the insu-

lating material and the stud in said socket, and a smooth-surfaced protector surrounding the projecting portion of the insulating material.

In witness whereof I have hereunto set my hand this 12th day of September, 1902.

ASA F. BATCHELDER.

Witnesses:

EDWARD WILLIAMS, Jr.,
HELEN ORFORD.