July 22, 1924. 1,502,194

C. T. HIBBARD

COIL SUPPORT

Filed Oct. 2, 1922

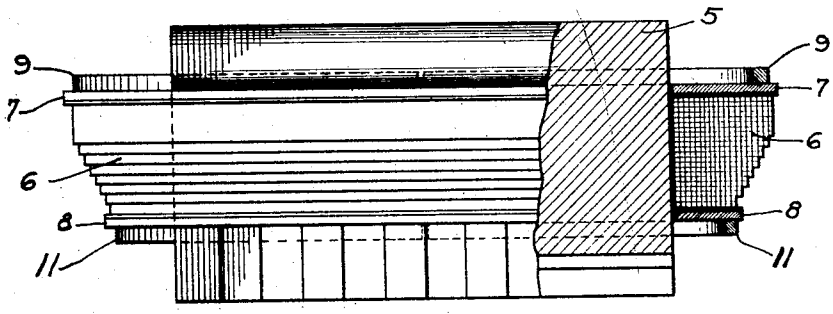


FIG. 1

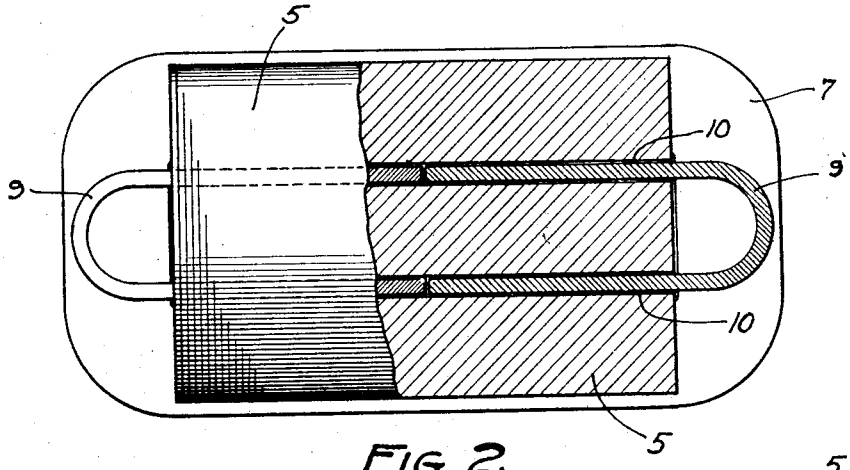


FIG. 2

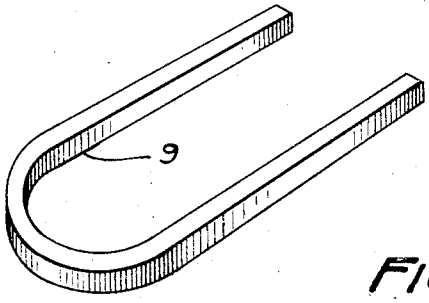


FIG. 3

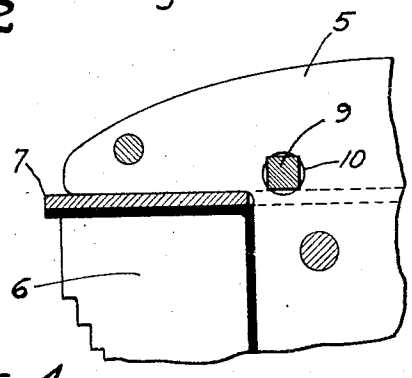


FIG. 4

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UNITED STATES PATENT OFFICE.

CHARLES TRUMAN HIBBARD, OF MINNEAPOLIS, MINNESOTA, ASSIGNOR TO ELECTRIC MACHINERY MANUFACTURING COMPANY, OF MINNEAPOLIS, MINNESOTA, A CORPORATION OF MINNESOTA.

COIL SUPPORT.

Application filed October 2, 1922. Serial No. 591,853.

To all whom it may concern:

Be it known that I, CHARLES TRUMAN HIBBARD, a citizen of the United States, residing in Minneapolis, county of Hennepin, and State of Minnesota, have invented certain new and useful Improvements in Coil Supports, of which the following is a specification.

This invention relates to new and useful improvements in coil supports particularly designed for use in the construction of revolving field poles, such as are commonly used in the rotors of electric generators or motors.

In the usual construction of revolving field poles, means must be provided for supporting the ends of the field coils upon the pole bodies against the centrifugal force acting thereon, as a result of the revolution of the field poles upon their axis. Without the use of a suitable support the ends of the coils may become distorted, resulting in the possible short circuiting of said coils thereby rendering the apparatus inoperative. The usual types of coil supports now in use incur considerable expense in their construction, some being made of cast metal and others of sheet metal. Perhaps the most common type of coil support now in use is the so-called "pole tip" type, which is formed by bending the pole tips of the punchings at the ends of the poles, outwardly at right angles with reference to the end of the pole body and thereby providing a supporting means. The above type, however, is not satisfactory as it necessitates the use of heavier pole punchings at the end of the poles, and also there is danger of the sheet metal fracturing when being bent or formed as above described, thereby rendering it unsafe.

In this novel invention there is shown an improved type of coil support of very simple design, and one which may be constructed at a minimum cost. This "staple type" coil support is also adaptable to various sizes of poles and may be readily and quickly inserted into said poles without the use of rivets, etc., thus providing a very practical and inexpensive coil support.

The specific object of this invention, therefore, is to provide an improved coil support.

Other objects of the invention will more fully appear from the following detailed description and the accompanying drawings and will be pointed out in the annexed claims.

In the accompanying drawings there has been disclosed a structure designed to carry out the objects of the invention, but it is to be understood that the invention is not confined to the exact features shown, and various changes may be made within the scope of the claims which follow.

In the drawings:

Figure 1 is a view in side elevation and partially in section of an assembled field pole and showing my staple type coil support applied thereto;

Figure 2 is a plan view of Figure 1, partially in section and showing the means provided for supporting the coil supports;

Figure 3 is a perspective view of a coil support; and

Figure 4 is a fragmentary cross sectional view showing the coil support inserted in the pole body.

In the selected embodiment of the invention here shown, there is illustrated an assembled field pole 5 comprising the usual field coil 6 and upper and lower field flanges 7 and 8.

A coil support 9, substantially U-shaped in form and preferably square in cross section, is provided and is adapted to be inserted into suitable apertures 10 in the upper portion of the pole body, as shown in Figure 2. The underside of the loop of said coil support bears upon the upper surface of the field flange 7. A similar coil support 11 may also be provided in the lower portion of the pole body and be adapted to bear against the under surface of the flange 8, thus securely supporting the field coil 6 therebetween.

Referring now to Figure 4, it will be seen that the distance diagonally of the section of the coil support is slightly larger than the diameter of the apertures in the pole body into which it is inserted, thereby providing sufficient resistance to insertion of the coil support, into the pole body so as positively to prevent its accidental removal therefrom. By the above construction the coil supports may also be inserted or driven into the pole body by merely being struck with a hammer, thus providing a very practical and simple support which may be readily

and quickly assembled in the pole body without loss of time.

It is also preferable to make the length of the coil supports such as to permit the ends thereof to abut each other, as shown in Figure 2, in order to avoid reduction of the sectional area of the pole body. The coil supports are also shown as square in cross-section but it is to be understood that the invention is not limited to the use of this particular shape, as the material may be round, or of any other suitable shape, and still provide a practical coil support.

I claim as my invention:

1. In combination with a pole body having apertures therein, round in cross-section, of coil supports having arms polygonal in cross-section to fit said apertures and of slightly greater diameter than the diameter of said apertures.

2. A pole body having apertures in its upper and lower portions, substantially U-shaped coil supports having ends fitting snugly into said apertures, and a field coil supported between said coil supports.

3. A pole body having round apertures in its upper and lower portions, substantially U-shaped coil supports having square ends to enter said apertures and being diagonally of slightly greater diameter than said apertures to fit snugly therein, and a field coil interposed between said coil supports.

4. A pole body having apertures in the ends thereof, substantially U-shaped coil supports having arms fitting snugly into said apertures with the ends of the opposite arms in abutting relation therein, and the curved portion of said supports projecting outside said pole body, said supports being arranged in the upper and lower portions of said pole body, and a field coil interposed between said supports.

In witness whereof, I have hereunto set my hand this 27th day of September, 1922.

CHARLES TRUMAN HIBBARD.