No. 886,561. PATENTED MAY 5, 1908.

W. L. WATERS.

COIL SUPPORT.

APPLICATION FILED SEPT. 4, 1906.

2 SHEETS—SHEET 1.

Fig. 1.

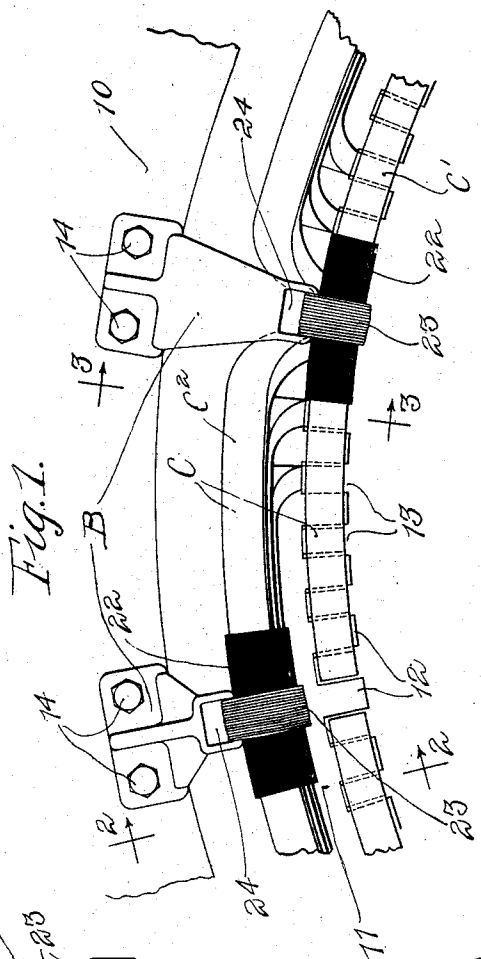


Fig. 2.

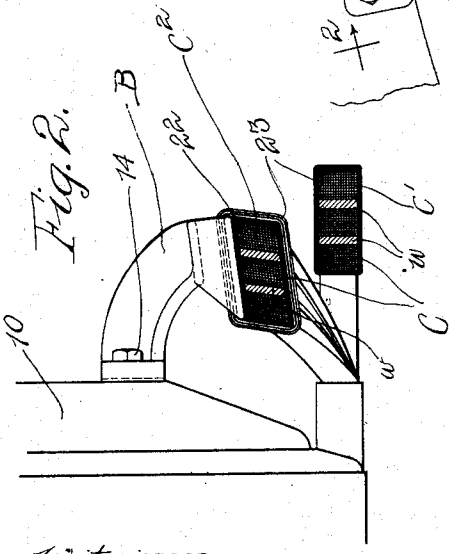
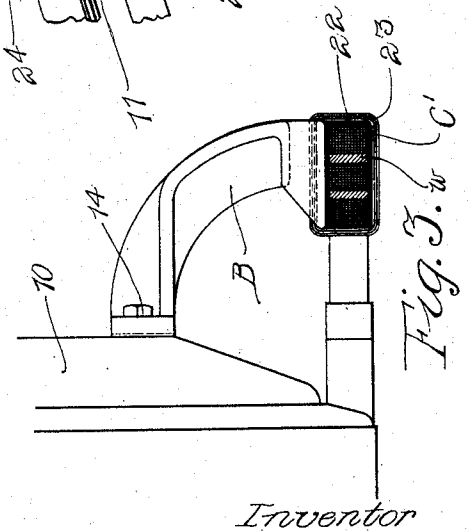


Fig. 3.



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2 SHEETS—SHEET 2.

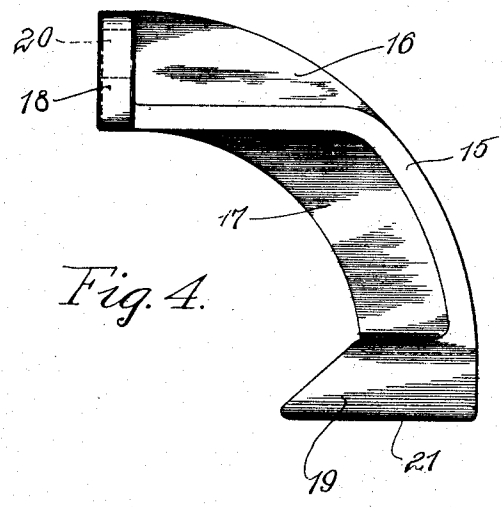


Fig. 4.

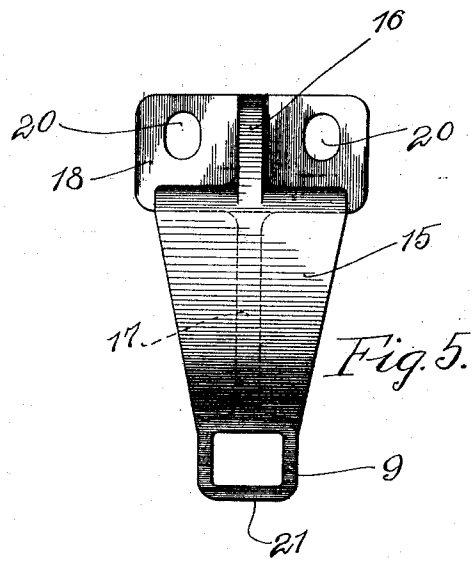


Fig. 5.

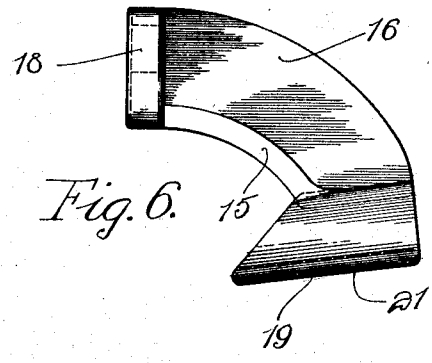


Fig. 6.

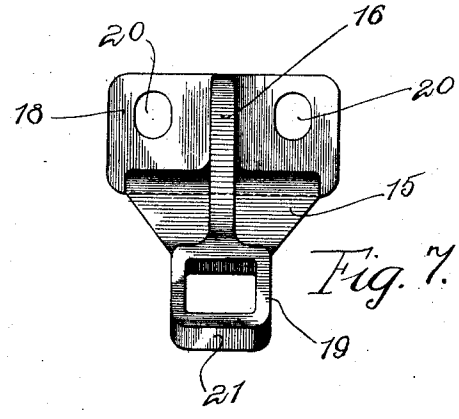


Fig. 7.

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UNITED STATES PATENT OFFICE.

WILLIAM L. WATERS, OF MILWAUKEE, WISCONSIN, ASSIGNOR TO NATIONAL BRAKE & ELECTRIC COMPANY, OF MILWAUKEE, WISCONSIN, A CORPORATION OF WISCONSIN.

COIL-SUPPORT.

No. 886,561. Specification of Letters Patent. Patented May 5, 1908.

Application filed September 4, 1906. Serial No. 333,210.

To all whom it may concern:

Be it known that I, WILLIAM L. WATERS, citizen of the United States, residing at Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented a certain new and useful Improvement in Coil-Supports, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to dynamo electric machinery and more particularly to means for supporting armature coils, and its object is to provide a coil support which will be more simple and of greater efficiency than those of the prior art. While it will appear that the coil support of my invention could be employed in many different ways and in different types of machines, I find that it is particularly useful when employed to support the stationary armature coils in alternating current machines which have a large pole pitch. It has been found very difficult to get a support for these armature coils which would be rigid and secure enough to prevent the coils from vibrating when the machine was in motion.

Broadly, my invention provides a support in the form of a bracket which is clamped at one end to the machine frame and is provided at its other end with an engaging surface, to which the coils may be secured by means of rope or similar material passing about the coils and through an opening in the support proximate to the engaging surface. I find that in the employment of my support, it is very easy to properly insulate the coils and to mechanically protect them so as to eliminate all liability of damage on account of sudden strains due to short circuits or similar causes frequently found in this class of machine.

My invention will be more clearly understood by referring to the accompanying drawings in which

Figure 1 is an elevation view of a part of a machine employing a device of my invention; Fig. 2 is a sectional view on the line 2—2 of Fig. 1; Fig. 3 is a sectional view on the line 3—3 of Fig. 1; Fig. 4 is a side elevation of the support; Fig. 5 is a front view of the bracket shown in Fig. 4; Fig. 6 is a side view of the support, this bracket being of slightly different construction, so as to accommodate the coils in a different position, as will be hereinafter described; Fig. 7 is a front view of the bracket shown in Fig. 6.

In all these drawings like parts are designated by like reference characters.

The machine frame is shown at 10, and the stationary armature is shown at 11, this armature being of the toothed type, the teeth being shown at 12, 12, the slots in which the coils are disposed being shown at 13, 13.

To the machine frame is clamped, as shown, the bracket B by means of the bolts 14, 14. As is clearly shown in Fig. 2, the bracket B extends forwardly and downwardly and supports at its lower end the armature coils C. In order that the coils be properly disposed within the slots, I find it desirable to employ two kinds of bracket, one being of the shape as shown in Figs. 4 and 5, and the other being of the shape as shown in Figs. 6 and 7. The purpose of this will be hereinafter pointed out.

The bracket consists of a body portion 15, the flange or web portions 16 and 17, the face plate 18, and the loop or ring member 19. The face plate 18 is provided with bolt holes 20, 20, which are slightly elongated as shown in the drawings so as to admit of the proper adjustment of the bracket. The support has the flat engaging surface 21 at its lower end, to which the armature coils are adapted to be secured. The form of bracket shown in Figs. 4 and 5 is such that when in place, this surface registers with the slots in the armature, whereby a rectangular coil, such as shown at C′ may be secured thereto when properly disposed in its respective slots. In order that all the coils be properly disposed in their respective slots, I find it desirable to dispose the coils one about the other as is clearly shown in Fig. 2, and in order to support the coils in this position, I employ the form of bracket shown in Figs. 6 and 7. The engaging surface 21 of this form of bracket is slanted slightly as shown in the drawings, so that the proper disposition of the coils in their respective slots may be secured. This form of bracket, as shown at C^2, C^2, in Fig. 2, is of rhomboidal cross section, whereby the proper angle may be secured, so that the coils may be properly carried so as to be disposed properly in their respective slots. I find it convenient to secure to each bracket a plurality of coils which may be separated from each other by means of blocks *w* of wood or similar material. The coils may be

surrounded at the bracket by the insulating material 22, of vulcanite or similar material which protects the coils, both mechanically and electrically. The coils may then be securely tied to the engaging surface of the bracket by means of rope or string 23 which passes about the assembled coils and passes through the opening 24 in the member 19.

It is evident that when the supports of my invention are employed, the coils may be easily and quickly removed and will be rigidly and securely supported when in proper position. The supports are such that the different parts are of easy access, and the entire construction may be easily adjusted to meet the requirements of the machine.

While I have herein shown but one embodiment of my invention, it is evident that changes and modifications may be made by those skilled in the art without departing from the spirit or scope of my invention. I do not wish, therefore, to be limited to the precise construction herein shown, but

I claim as new and desire to secure by Letters Patent:

1. In a dynamo electric machine a coil support consisting of a body portion extending axially and inwardly from a face plate adapted to be secured to the machine frame, said body portion having at its lower end an enlarged member having an opening therethrough, said enlarged member having a lower flat engaging surface to which the coils may be secured by means of a rope or string passing about said coils and through said opening.

2. In a dynamo electric machine a coil support consisting of a body member and face plate at one end thereof, and an enlarged member at the other end of said body portion, said enlarged member having a lower flat engaging surface and an opening therethrough, whereby the coils may be secured to said engaging surface by means of a rope or string passing about said coils and through said opening.

In witness whereof, I have hereunto subscribed my name this 31st day of August A. D., 1906.

WILLIAM L. WATERS.

Witnesses:
ARTHUR W. FAIRCHILD,
JOHN A. MCCORMICK.