

(No Model.)

S. H. SHORT.
ARMATURE WINDING.

No. 565,931.

Patented Aug. 18, 1896.

Fig. 1.

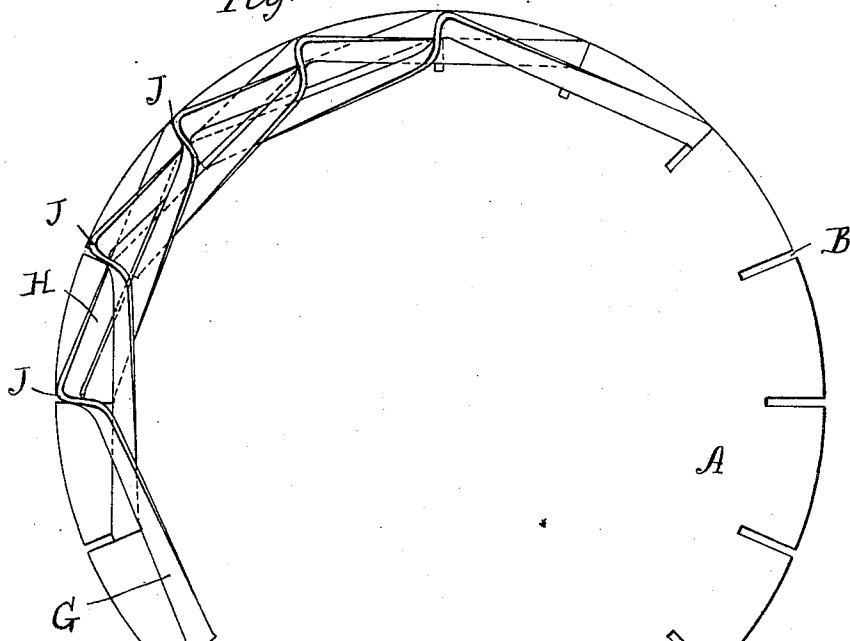


Fig. 2.

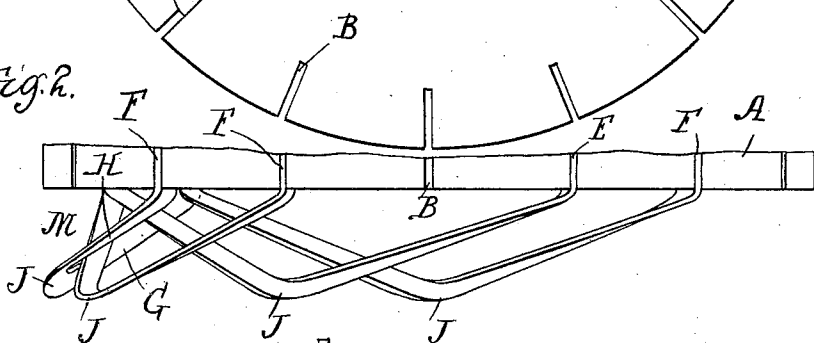
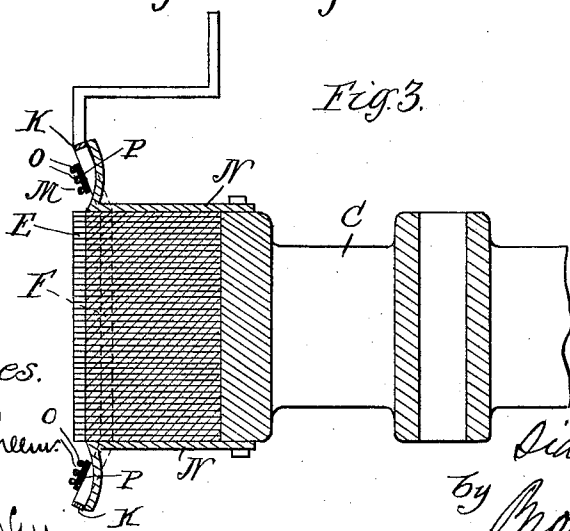


Fig. 3.



Witnesses.

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UNITED STATES PATENT OFFICE.

SIDNEY H. SHORT, OF CLEVELAND, OHIO.

ARMATURE-WINDING.

SPECIFICATION forming part of Letters Patent No. 565,931, dated August 18, 1896.

Application filed May 4, 1896. Serial No. 590,224. (No model.)

To all whom it may concern:

Be it known that I, SIDNEY H. SHORT, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a new and useful Armature-Winding, of which the following is a specification.

This invention relates to armature-windings.

10 The object of the invention is to provide a winding which is simple, thoroughly efficient, economical, easily effected, and easily held in place.

15 The invention consists, substantially, in the construction, arrangement, location, and combination of parts, as will be more fully hereinafter set forth, as shown in the accompanying drawings, and finally specifically pointed out in the appended claims.

20 In the accompanying drawings, Figure 1 is a view in end elevation of an armature-core with a winding constructed in accordance with my invention. Fig. 2 is a broken view, in side elevation, of the construction shown in Fig. 1. 25 Fig. 3 is a central longitudinal sectional view of a form of armature, illustrating the method of application of the winding thereto in accordance with the principles of my invention.

In the drawings, reference-sign A designates 30 an armature-core, which may be of any usual or convenient construction and having peripheral seats B arranged to receive the side portions of the coils or frames of the winding. In the form shown in Fig. 3 I employ a spider 35 or hub C, supporting a laminated core D, the laminations of said core being suitably grooved, as indicated at E, to receive the winding coils or frames.

In carrying out my invention I employ a 40 winding coil or frame formed by bending the winding at the point J upon itself, thereby forming two arms. The portions G H of these two arms are then bent in opposite directions away from the bend J and inclined relatively 45 to each other, as shown, said arms thereby lying in planes inclined with respect to each other. Each of the arms of the coil or winding is then again bent laterally to form the side portions F of the coil, said side portions 50 F being arranged in substantial parallelism with respect to each other and contained in the same plane, and the ends K of the wind-

ing are then suitably connected, through suitable connections, to the commutator-segments of the armature in the usual or any ordinary 55 or convenient manner. The side portions F of the coils are arranged in the peripheral seats B of the core. From this construction it will be seen that when the coils or windings are arranged in position upon the core the points 60 J will occupy a position as far away from the axis of rotation of the core as the side portions F of said coils or windings. This is an important feature for the reason that thereby more space is given in which to arrange the 65 end portions of the coils or windings which comprise the portions G H and the bend J upon the core, and in the arrangement described the bend J, which constitutes the uniting-point of the portions G H of the coil 70 or winding, is arranged radially to the circumference of the core upon which the coil is wound.

From the foregoing description it will be seen that the portions G F of the coil or winding 75 lie in the same plane, but in a plane inclined relatively to the plane containing the sides or portions H F of the same coil or winding, both of said planes being segmental with respect to the surface of the core and hence 80 parallel to the axis of the core.

From the construction described it will be seen that the end portions of the coils or windings G H and uniting portion J project beyond the end of the core, as shown in Figs. 2 85 and 3, and form a channel, as indicated at M, when viewed in side elevation, being at substantially the same radial distance from the axis of the core as the side portions F of the coils or windings. This is an important 90 feature of my invention, for thereby I am enabled to employ the curved or grooved supporting-flange N for said end portions of the coils or windings, and I am enabled to bind said end portions of the coils or windings by 95 means of the binding-wires O, with an interposed insulated material P, thereby providing a most efficient construction of armature.

In carrying out my invention it will be seen, as shown in Fig. 1, that the side portions F 100 of each coil are respectively arranged in the top and bottom portions of their receiving-seats B, that is to say, one side portion of each coil is arranged in the bottom of the receiv-

ing slot or seat B, while the other side portion of said coil or winding is arranged in the top portion of the corresponding seat B. In this manner the windings or coils are applied to the core, the inclinations given to the halves of each coil or winding with respect to each other bringing the bends or uniting portions J the same radial distance from the axis of rotation of the armature as the side portions F of such coils or windings, thereby securing sufficient room for the end portions of the coils to facilitate their application to the core and to provide means for binding the coils into their respective relative positions.

Having now set forth and explained the object and nature of my invention and a form of apparatus embodying the same, what I claim as new and useful and of my own invention, and desire to secure by Letters Patent of the United States, is—

1. The combination with a core, provided with peripheral seats, of coils or windings bent to form end and side portions, said side portions arranged to be received in said seats and said bends arranged at a radial distance from the axis of said armature substantially corresponding to the radial distance from said axis of the side portions of said coils as and for the purpose set forth.

2. In an armature-winding, the combination with a core of a coil or winding applied thereto, said coil or winding bent to form end and side portions, each side and an end portion included in the same plane with each other but in a plane inclined with respect to the plane containing the other side and end portion of the same coil, the relative inclination of said planes being such that said bends are at the same radial distance from the center of said core as said side portions as and for the purpose set forth.

3. In an armature-winding, the combination

with a core of a winding applied thereto, said winding bent to form side and end portions, said end portions being inclined relative to each other, thereby forming in side view a channel and means arranged inside the channel for binding said coils, as and for the purpose set forth.

4. In an armature-winding, the combination with a core of windings applied thereto each bent to form end and side portions, each side and an end portion contained in the same plane, but in a plane inclined with respect to the plane containing the other side and end portion of the same coil, and a binding for said coil arranged in the channel formed by said end portions, as and for the purpose set forth.

5. In an armature-winding, the combination with a core and winding-coils applied thereto, said windings bent to form side and end portions which side and an end portion are included in the same plane inclined with respect to the other side and end portion of the same coil, binding-wires for said end portions and an insulation interposed between said binding-wires and said end portions, as and for the purpose set forth.

6. In an armature-winding winding-supports core-windings applied thereto, each winding being bent to form side and end portions, each side and an end portion being included in a plane inclined with respect to the plane containing the other side and end portions, and means for binding said windings to said supports, as and for the purpose set forth.

In witness whereof I have hereunto set my hand, this 27th day of April, 1896, in the presence of two subscribing witnesses.

SIDNEY H. SHORT.

Witnesses:

R. T. BONE,

M. A. KENSINGER.