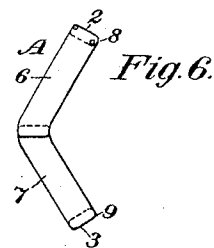
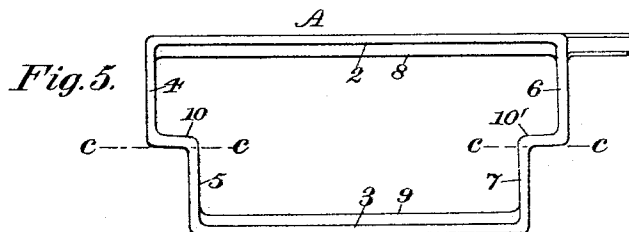
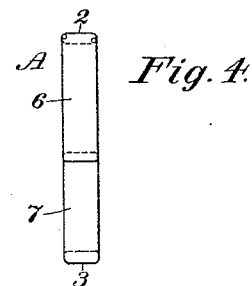
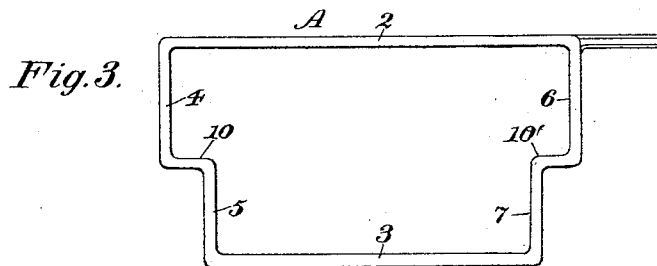
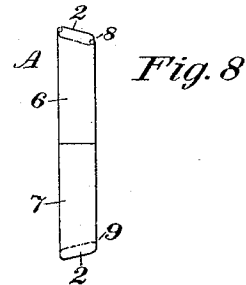
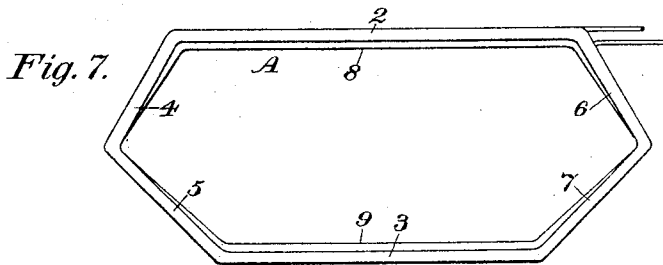
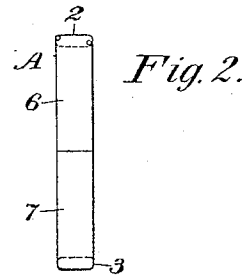
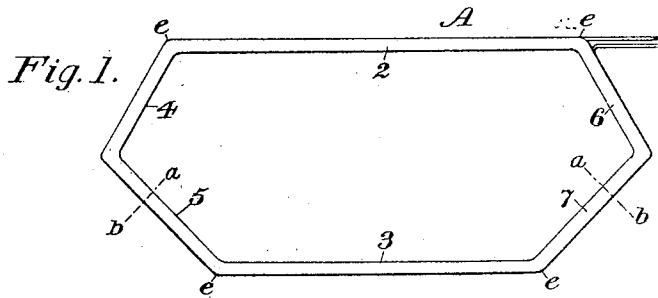


(No Model.)

H. E. HEATH.
METHOD OF FORMING ARMATURE COILS.

No. 535,106.

Patented Mar. 5, 1895.



Witnesses:

J. L. Edwards Jr.
Fred. J. Dole.

Inventor:

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By his Attorney,
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UNITED STATES PATENT OFFICE.

HARRY E. HEATH, OF WINDSOR, CONNECTICUT, ASSIGNOR TO THE EDDY
ELECTRIC MANUFACTURING COMPANY, OF SAME PLACE.

METHOD OF FORMING ARMATURE-COILS.

SPECIFICATION forming part of Letters Patent No. 535,106, dated March 5, 1895.

Application filed May 15, 1894. Serial No. 511,300. (No model.)

To all whom it may concern:

Be it known that I, HARRY E. HEATH, a citizen of the United States, residing at Windsor, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in the Manufacture of Armature-Coils, of which the following is a specification.

This invention relates to the manufacture of wound-wire coils for dynamo-electric armatures; the object of the invention being, primarily, to furnish an improved method whereby the wire is first uniformly wound to a particular and novel form and subsequently re-shaped to form a completed coil, ready to be applied to the armature-core, and to accomplish this end quickly and with a high degree of economy.

In the drawings accompanying and forming a part of this specification, Figures 1 and 2 are side and end elevations, respectively, of an armature-coil in the first stage of its formation, said figure illustrating the initial or fundamental "winding-step" of the method of forming an armature-coil in accordance with my present invention. Figs. 3 and 4 are side and end elevations, respectively, of the same coil after being subjected to the second, or "re-shaping" step in the method. Figs. 5 and 6 are side and end elevations, respectively, of one form of completed coil constructed in accordance with my invention by three successive operations. Figs. 7 and 8 are side and end elevations, respectively, of the coil illustrated in Fig. 1, but partially re-shaped and ready to apply to the armature-core, said Figs. 7 and 8 illustrating a modification of my method of forming coils.

Similar characters designate like parts in all of the figures.

In the drawings I have illustrated two forms of coils applicable to armature-cores, the one shown in Figs. 5 and 6 of which is a coil in its completed condition ready to be applied to an armature-core, while the one illustrated in Figs. 7 and 8 is only partially completed, it being in condition to be applied to an armature-core where it will be subsequently re-shaped or bent to the form of the coil illustrated in Figs. 5 and 6. Both of these coils are resultant upon the first step or oper-

ation of forming coils in accordance with my present invention.

The completed coil illustrated in Figs. 5 and 6, (which is the preferred form thereof) is constructed by three successive steps or operations, as follows: A series of wires is first wound upon or uniformly wrapped around a former of hexagonal contour to thus form the coil A illustrated in Fig. 1, comprising the two parallel sides 2 and 3, and angularly-disposed end-portions, 4, 5 and 6, 7, the two parallel sides 2 and 3 being preferably of different lengths to coincide with the longer sides of the armature-core. The next step in the process of forming the coil after my improved method, is to force the end-portions 4, 5, and 6, 7, inward, bending them upon the corners *c* and simultaneously bending the two diametrically-opposite end portions 5 and 7 at the diametrically-opposite points designated by dotted lines *a-b* in Fig. 1, to re-shape the ends of the coil and form inward or re-entrant angles, 10 and 10', leaving said coil in the condition illustrated in Figs. 3 and 4 with the end-portions thereof in parallel lines, as illustrated in Figs. 3 and 4. This step forms, practically, two incomplete parallel unequal rectangles with their common side missing, the inward angles 10 and 10' being substantially central with relation to the opposite sides of the two rectangles, or midway of the width of the coil. The coil in this condition is then bent laterally on dotted lines *c-c*, Fig. 5, to the form shown most clearly in Fig. 6 with their side edges at the requisite angle to adapt the same to the position the coil is to occupy upon the armature-core.

In Figs. 7 and 8, which illustrate a modification of the method of adapting the coil illustrated in Figs. 1 and 2 to the armature-core, the coil is shown with the edges of its longest sides 2 and 3 bent downward at one side, as shown at 8 and 9 so that the wires will occupy the correct position when placed upon the armature-core, after which the end-portions 4, 5, and 6, 7, can be bent into proper position while on the core by means of a mallet or otherwise.

By winding the wire into the hexagonal form of coil illustrated in Figs. 1 and 2, and subsequently re-shaping the coil to form the

inward angles 10 and 10' as illustrated in Figs. 3 and 4, and then bending said coil side-wise to the form illustrated in Figs. 5 and 6, I am enabled to secure the best practical results in the uniformity of winding and at the same time produce a completed coil adapted for use with armature-cores, all with rapidity and economy.

Having thus described my invention, I claim—

The herein-described method of forming armature coils for dynamo-electric machines, which consists in first winding upon a former an elongated hexagonal coil having its opposite sides parallel with each other; and second,

bending all of the short sides of said hexagon inwardly, without increasing the number of salient angles therein, and while maintaining the long sides in parallelism, to form two similar but oppositely-disposed end portions each of which has two parallel members perpendicular to the aforesaid long sides, and to form also a third short member connecting and perpendicular to each pair of said parallel members and in alignment with the opposite short member, substantially as described.

HARRY E. HEATH.

Witnesses:

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