

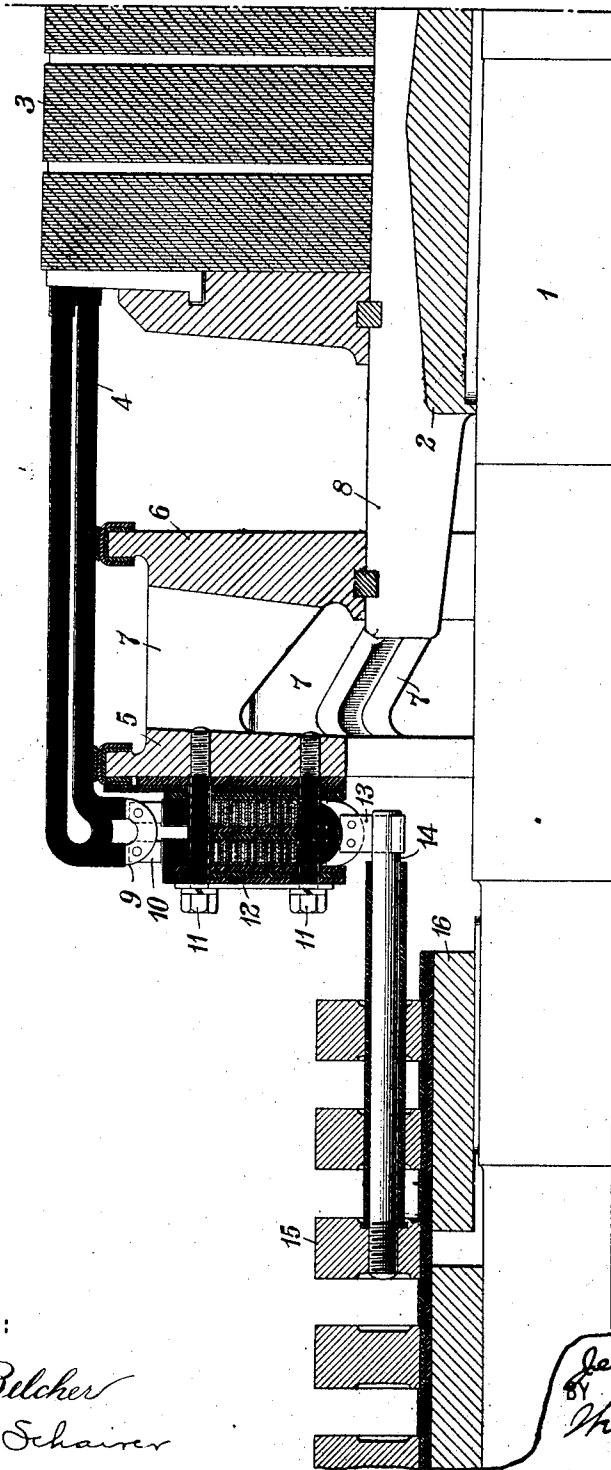
J. BACHE-WIIG.
 ARMATURE FOR DYNAMO ELECTRIC MACHINES.
 APPLICATION FILED MAY 22, 1911.

1,017,071.

Patented Feb. 13, 1912.

2 SHEETS—SHEET 1.

Fig. 1.



WITNESSES:

C. L. Belcher
Otto S. Schairer

INVENTOR

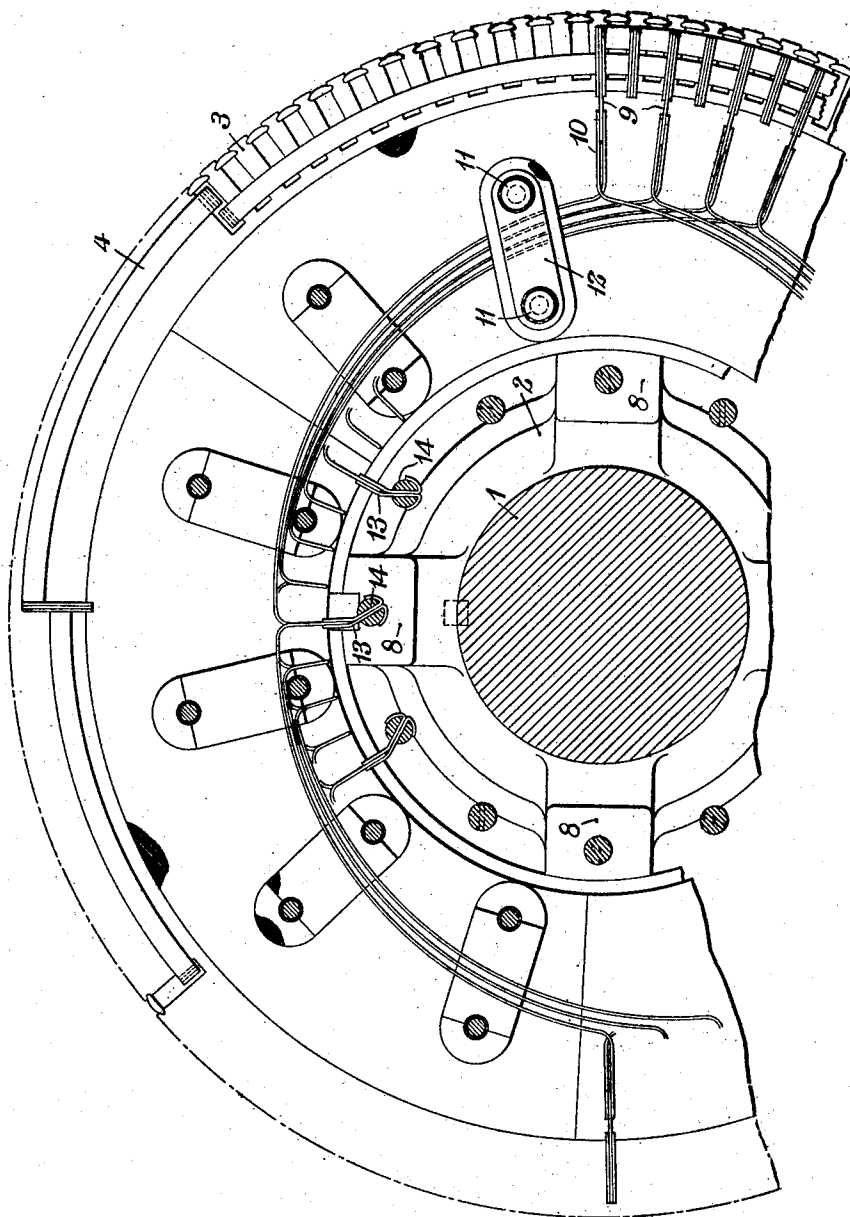
Jens Bache-Wiig
 BY *Wiley & Carr*
 ATTORNEY

J. BACHE-WIIG.
 ARMATURE FOR DYNAMO ELECTRIC MACHINES.
 APPLICATION FILED MAY 22, 1911.

1,017,071.

Patented Feb. 13, 1912.
 2 SHEETS—SHEET 2.

Fig. 2.



WITNESSES:

C. L. Belcher
Otto S. Schaine

INVENTOR

Jens Bache-Wiig
 BY
Wiley E. Carr
 ATTORNEY

UNITED STATES PATENT OFFICE.

JENS BACHE-WIIG, OF EDGEWOOD PARK, PENNSYLVANIA, ASSIGNOR TO WESTINGHOUSE ELECTRIC AND MANUFACTURING COMPANY, A CORPORATION OF PENNSYLVANIA.

ARMATURE FOR DYNAMO-ELECTRIC MACHINES.

1,017,071.

Specification of Letters Patent.

Patented Feb. 13, 1912.

Application filed May 22, 1911. Serial No. 628,738.

To all whom it may concern:

Be it known that I, JENS BACHE-WIIG, a subject of the King of Norway, and a resident of Edgewood Park, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Armatures for Dynamo-Electric Machines, of which the following is a specification.

My invention relates to armatures for dynamo-electric machines, and particularly to armatures in which cross-connections are provided between equi-potential points of their windings, as well as to armatures in which collector rings are connected to suitable points of their windings.

The object of my invention is to provide an armature having such a structure and arrangement of parts as to permit of the employment of a large number of cross connectors which may be readily connected to the proper equi-potential points of its winding and which are compactly and securely supported where they are readily accessible but not exposed to such an extent as to be unsightly and liable to damage or excessive strains.

A further object of my invention is to provide connections between the armature winding and the collector rings of such a nature that they may be conveniently and effectively made.

Figure 1 of the accompanying drawings is a longitudinal sectional view of a portion of an armature constructed in accordance with my invention, and Fig. 2 is an end and sectional view of a part of the armature shown in Fig. 1.

The armature comprises a shaft 1 carrying a spider 2, upon which is mounted a laminated core member 3 having peripheral slots for the reception of a winding consisting of a plurality of coils 4, the end portions of which, as usual, project laterally from the core member and are reversely bent and of V-shape. The projecting end portions of the coils are secured to, but insulated from, a supporting structure consisting of two rings 5 and 6 that are joined by ribs 7 and one of which is mounted upon an extension 8 of the spider 2. In order that the coils or convolutions to which it is desired to attach cross-connectors may be rendered more readily accessible and distinguishable from the remaining convolutions, the reversely bent end or bight portions 9

of the said convolutions are extended radially inward beyond the ends of the other convolutions.

The cross connectors 10 consist of reversely-bent strap conductors that were originally of U-shape but the legs of which are bent away from each other and have their ends connected to the extended end or bight portions of the coils 4. The cross-connectors are insulated from each other and are so shaped as to nest together, and they are securely clamped against the outer annular face of the supporting ring 5 by means of bolts 11 and plates 12 that are located beneath the heads of the bolts, insulating material being interposed between the plate 12 and the cross connectors and between the ring 5 and the cross-connectors. The cross connectors are thus located where they are readily accessible and may be conveniently applied, removed or inspected, and, since they are located between radial planes within the end portions of the coils, they are neither unsightly nor obtrusive to such an extent as to be unduly liable to injury. As the end portions of the coils to which the connections are made are extended beyond the remaining end portions of the coils, the cross connectors may be readily and conveniently attached thereto, or disconnected therefrom, without bending or spreading the ends of the coils apart. Consequently, there is not only less labor involved in making the connections, but there is also less liability of damaging the coils or impairing their insulation.

Certain of the cross connectors 10 have their bight portions extended inwardly beyond the remaining cross connectors, and are provided with clips 13 consisting of two short pieces of strap conductor placed side by side. The clips 13 are provided for the purpose of making connections between the cross connectors and the ends of rods 14 that extend parallel to the axis of the armature and are connected at their other ends to collector rings 15 that are mounted upon, but insulated from, a sleeve or spider 16 carried by the shaft 1. The ends of the rods 14 are longitudinally slotted for the reception of the clips 13, and the ends of the clips are spread apart and bent over the cylindrical surfaces of the rods. With this construction, the sleeve 16 carrying the collector rings may be pressed upon the shaft after

the remainder of the armature is completed without experiencing difficulty in making the connections between the rods 14 and the clips carried by the cross connectors.

5 I claim as my invention:

1. An armature for dynamo-electric machines comprising a core, a plurality of coils upon the core having reversely bent projecting end portions, reversely bent connectors having their ends connected to the bight portions of certain of the coils, collector rings, and connections between the bight portions of certain of the connectors and the collector rings.

15 2. An armature for dynamo-electric machines comprising a core, a plurality of coils upon the core having reversely bent projecting end portions, reversely bent connectors having their ends connected to the bight portions of certain of the coils, the said connectors being located in radial planes between the ends of the coils, collector rings, and connections between the bight portions of certain of the connectors and the collector rings.

3. An armature for dynamo-electric machines comprising a core, a plurality of coils upon the core having reversely bent end portions projecting therefrom, certain of the said reversely bent end portions extending beyond the remainder thereof, and reversely bent connectors having their ends connected to the extended end portions of the coils.

35 4. An armature for dynamo-electric machines comprising a cylindrical core, a plurality of coils upon the core having reversely bent end portions projecting from the core, certain of the said reversely bent end portions extending radially inward beyond the remaining coils, and reversely bent nested connectors having their ends connected to the extended end portions of the coils and arranged to lie in radial planes between the projecting end portions of the coils.

45 5. An armature for dynamo-electric machines comprising a cylindrical core, a plurality of coils upon the core having reversely bent end portions projecting from the core,

certain of the said reversely bent end portions extending radially inward beyond the remaining coils, reversely bent nested connectors having their ends connected to the extended end portions of the coils and arranged to lie in radial planes between the projecting end portions of the coils, an end member associated with the core, and means for clamping the said connectors to the end member.

6. An armature for dynamo-electric machines comprising a cylindrical core, a plurality of coils upon the core having reversely bent end portions projecting from the core, certain of the reversely bent end portions extending beyond the end portions of the remaining coils, reversely bent nested connectors having their ends connected to the extended portions of the coils, the bight portions of certain of the said connectors being extended beyond the bight portions of the remaining connectors, collector rings and connections between the same and the extended bight portions of the nested connectors.

7. An armature for dynamo-electric machines comprising a cylindrical core, a plurality of coils upon the core having reversely bent end portions projecting from the core, certain of the reversely bent end portions extending beyond the end portions of the remaining coils, reversely bent nested connectors having their ends connected to the extended end portions of the coils, the bight portions of certain of the said connectors being extended beyond the bight portions of the remaining connectors, collector rings, conducting rods connected to the collector rings and having slotted ends, and clips extending into the slotted ends of the rods and attached to the projecting bight portions of the nested connectors.

In testimony whereof, I have hereunto subscribed my name this 4th day of May, 1911.

JENS BACHE-WIIG.

Witnesses:

BENJ. M. WILLIAMS,
B. B. HINES.