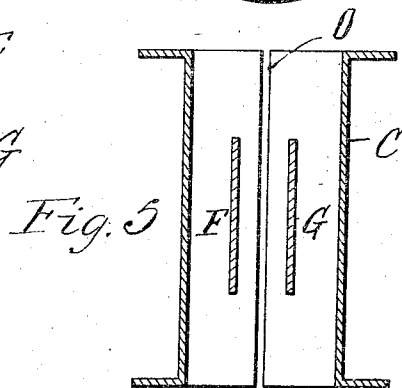
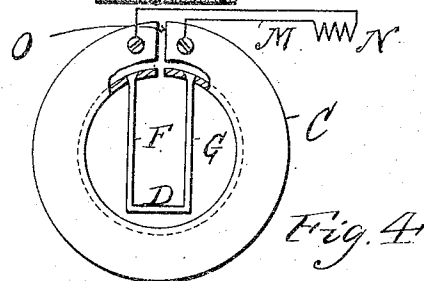
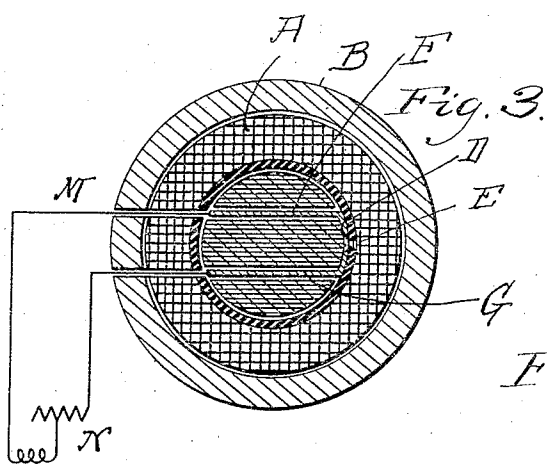
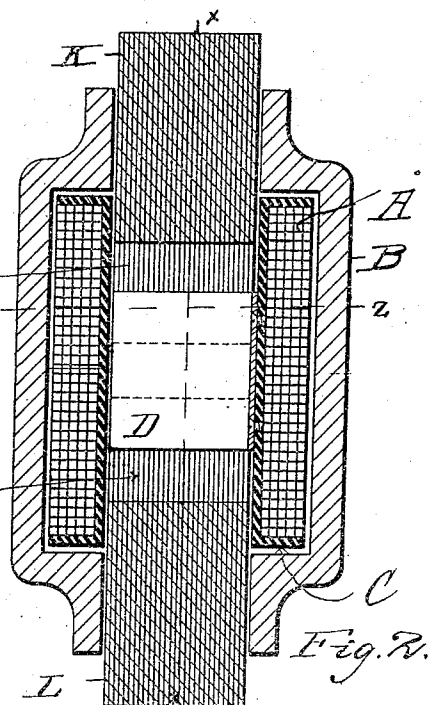
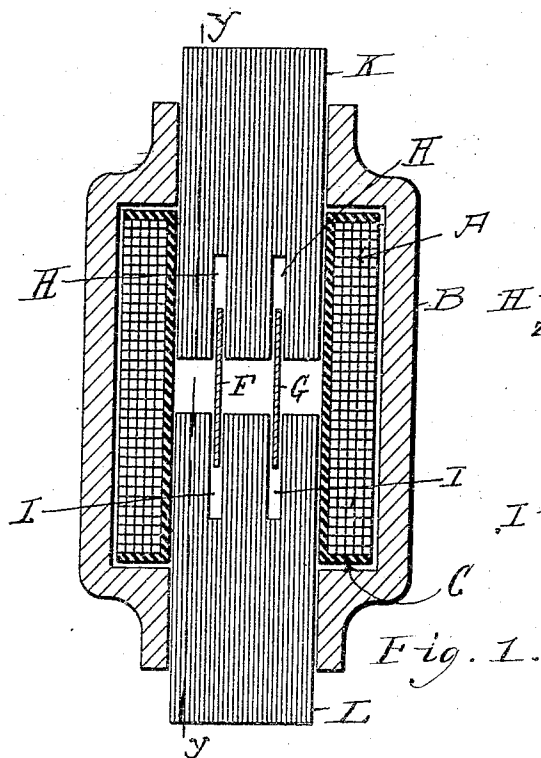


D. L. LINDQUIST.
 ALTERNATING CURRENT ELECTROMAGNET.
 APPLICATION FILED FEB. 6, 1913.

1,066,294.

Patented July 1, 1913.



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UNITED STATES PATENT OFFICE.

DAVID L. LINDQUIST, OF YONKERS, NEW YORK.

ALTERNATING-CURRENT ELECTROMAGNET.

1,066,294.

Specification of Letters Patent.

Patented July 1, 1913.

Application filed February 6, 1912. Serial No. 746,443.

To all whom it may concern:

Be it known that I, DAVID L. LINDQUIST, a subject of the King of Sweden, residing at Yonkers, in the county of Westchester and State of New York, have invented a certain new and useful Improvement in Alternating-Current Electromagnets, of which the following is a specification.

The invention relates to an alternating current electro-magnet, of the general type disclosed in U. S. Letters Patent No. 744,773, granted to me November 24, 1903, and more particularly to the specific type disclosed in U. S. Letters Patent Nos. 1,005,855 and 1,005,856, granted to me October 17, 1911, wherein the core carries a secondary conductor or secondary conductors, in which is induced a current of different phase from that energizing the primary. As set forth in the aforesaid Letters Patent, such an alternating current magnet will hold its moving member firmly in attracted position without vibration or chattering.

My present invention consists in the construction wherein the primary and secondary conductors are both stationary. The secondary conductor, in the form of a U-shaped plate, is secured within the primary coil, and enters recesses in the polar extremities of the parts of the core. Either of said parts, or both of them, may be movable.

In the accompanying drawings—Figure 1 is a vertical section of my electro-magnet on the line *x, x* of Fig. 2. Fig. 2 is a vertical section on the line *y, y* of Fig. 1. Fig. 3 is a horizontal section on the line *z, z* of Fig. 2. Fig. 4 is a horizontal section of a modified form of the device in which the spool and secondary conductor are made integral. Fig. 5 is a vertical section of said spool and secondary conductor.

Similar letters of reference indicate like parts.

A is the primary coil, and B the casing. In Figs. 1, 2 and 3, the flanged tube or spool C, on which the coil A is wound, is of non-conducting material, and has within it the U-shaped secondary conductor D, the cross bar of which is curved to fit against the inner periphery of said spool and is attached

thereto by any suitable means, such as screws E. Said conductor is placed at about the middle of the spool, and its arms F, G are received in recesses H and I made respectively in the polar faces of the core members K, L. Either of said core members may be fixed in the spool and the other left movable to constitute the armature, or both may be movable. The secondary circuit, which includes the U-shaped conductor D, is here completed by the wire M which is attached to the ends of the arms thereof, and which includes a resistance N which may be variable.

When the primary coil is energized by alternating current, the moving member is, or the moving members of the core are, drawn into contact within the spool. A current of different phase is induced in the secondary circuit. Hence the current magnetizing the core never falls to zero, and the armature or armatures are held in contact without vibration or chattering.

In the modification shown in Figs. 4 and 5, the spool C is of copper or other high conducting material, and the U-shaped plate D may be cast or otherwise made integral therewith. Between the points of junction of the arms of plate D and the spool body, the spool is split longitudinally, as shown at O, and the wire including the resistance N is attached to the spool flanges.

The object of the resistance N is to permit of phase adjustment of the displaced currents.

I claim:

1. An alternating current electro-magnet of the type set forth, comprising a primary coil, a fixed secondary conductor disposed within said coil, and a movable laminated core having in its polar end longitudinal recesses receiving said secondary conductor.

2. An alternating current electro-magnet of the type set forth, comprising a primary coil, a fixed secondary conductor disposed within said coil, and two laminated cores having in their opposing polar ends recesses receiving said secondary conductor.

3. An alternating current electro-magnet of the type set forth, comprising a primary coil, a fixed secondary conductor disposed

within said coil, and two movable laminated cores having in their opposing polar ends recesses receiving said secondary conductor.

4. An alternating current electro-magnet
5 of the type set forth, comprising a primary coil, a tubular sleeve therein, a U-shaped plate of material of high conductivity secured to said sleeve, means for closing the secondary circuit through said plate, and an

armature having recesses in its polar ex- 10 tremity receiving said arms.

In testimony whereof I have affixed my signature in presence of two witnesses.

DAVID L. LINDQUIST.

Witnesses:

GERTRUDE T. PORTER,
MAY T. MCGARRY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."