

No. 737,704.

PATENTED SEPT. 1, 1903.

G. A. CAMPBELL & W. L. RICHARDS.

SELF INDUCTIVE COIL.

APPLICATION FILED FEB. 8, 1902.

NO MODEL.

Fig. 3.

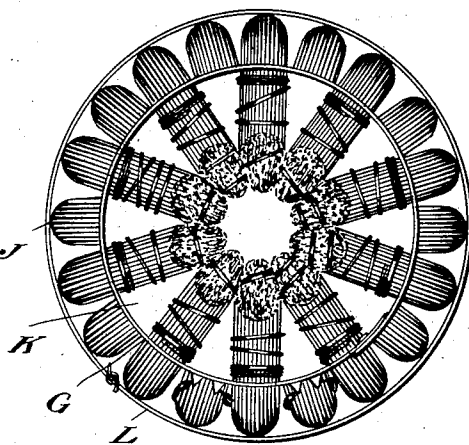


Fig. 4.

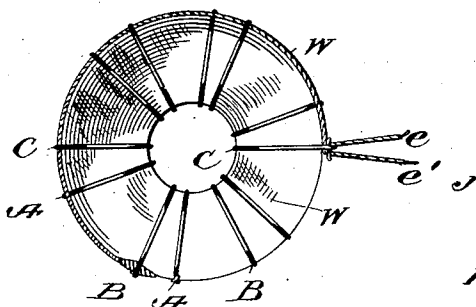


Fig. 2.

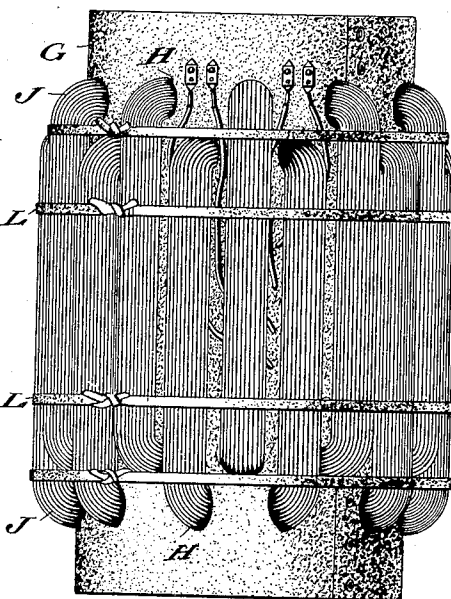
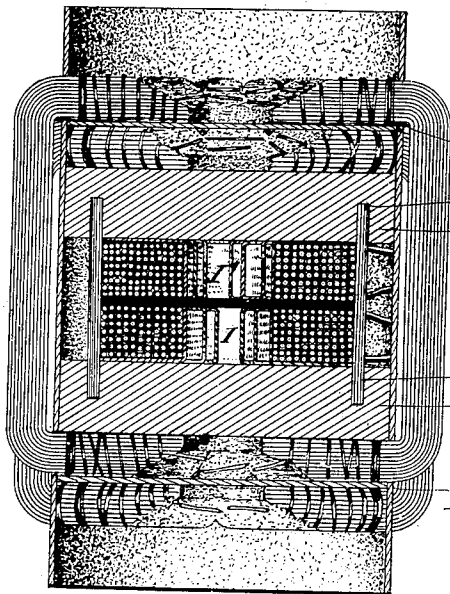


Fig. 1.



Inventor

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Witnesses

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UNITED STATES PATENT OFFICE.

GEORGE A. CAMPBELL, OF NEWTON, AND WILTON L. RICHARDS, OF MALDEN, MASSACHUSETTS, ASSIGNORS TO AMERICAN TELEPHONE AND TELEGRAPH COMPANY, A CORPORATION OF NEW YORK.

SELF-INDUCTION COIL.

SPECIFICATION forming part of Letters Patent No. 737,704, dated September 1, 1903.

Application filed February 8, 1902. Serial No. 93,240. (No model.)

To all whom it may concern:

Be it known that we, GEORGE A. CAMPBELL, residing at Newton, and WILTON L. RICHARDS, residing at Malden, in the county of Middlesex and State of Massachusetts, have invented certain Improvements in Self-Induction Coils, of which the following is a specification.

The invention has reference to a form of self-induction coil employing iron in its magnetic field, which is the sole invention of the said Campbell and forms the subject-matter of an application for a patent of even date herewith, Serial No. 93,239, filed by the said Campbell. The coils of the two applications do not differ electrically, and the present invention relates merely to mechanical construction. Both coils have been designed for use upon loaded lines, and in both iron wires grouped in bundles are disposed as a magnetic shield outside the winding of the induction-coil proper in the less intense portion of the magnetic field, while the magnetic circuit is completed by air or a substitute for air in the more intense portion of the magnetic field. The present invention consists in a contrivance for the ready application of the bundles of iron wires outside of the winding of copper forming the induction-coil proper.

Since self-induction coils employed for loading electric lines are for the most part used in pairs on metallic circuits, one coil of the pair in one line-wire and the other coil of the pair in the opposite wire and the two coils of the pair are wound upon the same spool, actual or imaginary, the present invention is illustrated in the drawings as applied to a pair of self-induction coils adapted to be connected up, as aforesaid, in a metallic circuit. It will be obvious that the invention is as applicable to a single self-induction coil as to a pair.

In the drawings, Figure 1 represents in vertical cross-section a pair of self-induction coils provided with an iron shield in bundles according to our invention. Fig. 2 is a side elevation of the same, and Fig. 3 is an end view or plan. Fig. 4 is a plan of a single self-induction coil before the iron is applied thereto.

I and I' are the two self-induction coils. They are alike. A description of one is a description of the other. They are wound of insulated copper wire *w w*, &c., the two ends

e e' being brought to the same side of the coil for connections with the line. Outside of the coils the wires thereof have a protection of rubber.

A A are strands for binding a single coil.

B B are strands for binding the two ends of a coil together.

C C are strands for binding the two coils together. For convenience in handling during manufacture the two coils bound together as aforesaid are placed between two wooden disks E E, which are then fastened together by pins F F. Held thus in framework between the disks the pair of self-induction coils is placed within a closely-fitting cylinder of cardboard G or other suitable material having at each end two rows of perforations H H.

J J, &c., are bundles of iron wire bent to a U shape and having their ends inserted in the holes H H, &c., as shown, at either end of the framework containing the pair of self-induction coils. The two layers of bundles at either end of the framework thus formed are separated by pieces of cardboard K K, &c., equally spaced. L L, &c., are binding-straps to secure the bundles J J. The bent ends of the bundles J J, &c., within the cylinder may be covered with paper; but this is necessary neither for mechanical construction nor for electrical operation.

We claim—

1. The combination with the pair of self-induction coils I I' and the U-shaped bundles of iron wire J J outside of said self-induction coils, of the perforated cylinder of insulating material for holding said bundles in place, substantially as described.

2. A self-induction coil with bundles of iron wire in the magnetic field outside of said coil, the said bundles being held in place by a cylinder of insulating material perforated at the ends, substantially as described.

In testimony whereof we have signed our names to this specification, in the presence of two subscribing witnesses, this 4th day of February, 1902.

GEO. A. CAMPBELL.
WILTON L. RICHARDS.

Witnesses:

GEO. WILLIS PIERCE,
JOSEPH A. GATELY.