

No. 685,470.

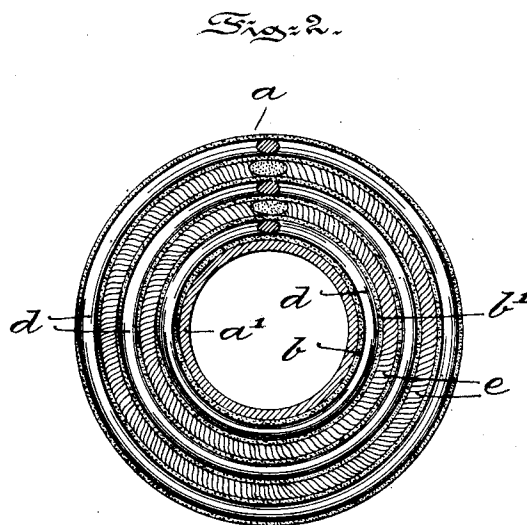
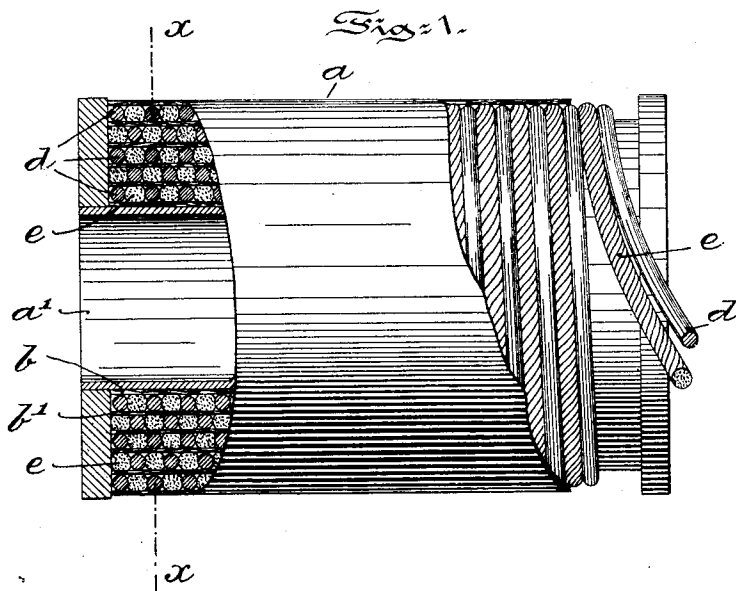
Patented Oct. 29, 1901.

J. A. HEANY.

WINDING FOR ELECTROMAGNETIC SPOOLS OR COILS.

(Application filed Oct. 18, 1900.)

(No Model.)



Witnesses:
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UNITED STATES PATENT OFFICE.

JOHN A. HEANY, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO THE TETER-HEANY DEVELOPING COMPANY, OF PHILADELPHIA, PENNSYLVANIA, AND CHARLESTON, WEST VIRGINIA, A CORPORATION OF WEST VIRGINIA.

WINDING FOR ELECTROMAGNETIC SPOOLS OR COILS.

SPECIFICATION forming part of Letters Patent No. 685,470, dated October 29, 1901.

Application filed October 18, 1900. Serial No. 33,430. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. HEANY, a citizen of the United States, residing at the city of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Windings for Electromagnetic Spools or Coils, of which the following is a specification.

My invention has relation to a winding for a spool or coil to be used for electromagnets, solenoids, and the like, and in such connection it relates to the construction and arrangement of such a winding.

By my present invention the wire uncovered or naked is laid upon the spool accompanied by a thread or cord of asbestos or similar non-combustible and insulating material. The wire and cord are wound side by side upon a sheet or layer of asbestos or similar substance and after being wound are covered by a second sheet or layer of said substance. Such a coil is not liable to readily be short-circuited.

The nature and scope of my invention will be more fully understood from the following description, taken in connection with the accompanying drawings, forming part hereof, in which—

Figure 1 is a top or plan view of a solenoid-coil embodying my invention, certain portions being sectioned and other portions broken away to more clearly illustrate the construction of the coil; and Fig. 2 is a vertical sectional view on the line $x x$ of Fig. 1.

Referring to the drawings, a represents the spool of a solenoid-coil, having a tubular axis a' , upon which the coil is to be wound.

In carrying out my invention there is first wound upon the tube or axis a' a sheet or layer b of asbestos or similar heat-non-conducting and insulating material. Upon this sheet or layer b is laid the wire d to form the first section of the coil. The wire d is wound spirally upon the sheet b , accompanied by a cord or thread e , of asbestos or similar material, the wire d and cord e being arranged

side by side. When this layer has been wound onto the spool, both ends of the wire forming the said layer project from either end of the spool. When the wire d and cord e have been wound to form the first section of the coil, then a second sheet b' , of asbestos, is wound upon the section and the wire d and cord e again wound upon the second sheet b' . In the instance of the second winding both ends of the wire project beyond either end of the spool. This is continued until the spool is built up. When this has been effected, the wire at the right-hand or outlet end of the first layer is connected with the wire at the left-hand or inlet end of the second layer, and the wire at the right-hand or outlet end of the second layer is connected with the wire at the left-hand or inlet end of the third layer, and so on—that is, so that the current will pass continuously in one direction throughout the coil. In laying the second section above a wire d of the first section a cord e of the second section is laid, and vice versa. When thus formed, the wire d of the coil will be completely embedded or isolated in asbestos, the cords e lying on either side of the wire d and the sheets b and b' lying, respectively, below and above said wire. The structure thus formed is cheaper and better than the ordinary coils, because the wire is wound in an uncoated and uninsulated condition, is of smaller cross-section or area, and is of correspondingly less weight and cost.

Having thus described the nature and object of my invention, what I claim as new, and desire to secure by Letters Patent, is—

A spool or coil for electromagnets and the like built up of successive superposed sections of live wire wound between layers or sheets of asbestos and a cord of asbestos disposed alongside said sections of wire in the winding of the same so that the sections of wire will be embedded in the layers or sheets of asbestos and be surrounded by the cords of asbestos and in such manner as that a wire at the right or outlet end of the first

layer will be connected with the wire at the
left or inlet end of the second layer and the
wire at the right or outlet end of the second
layer will be connected with the wire of the
5 left or inlet end of the third layer and so on,
so that the current can pass continuously in
one direction throughout the coil.

In testimony whereof I have hereunto set
my signature in the presence of two subscrib-
ing witnesses.

JOHN A. HEANY.

Witnesses:

J. WALTER DOUGLASS,
THOMAS M. SMITH.