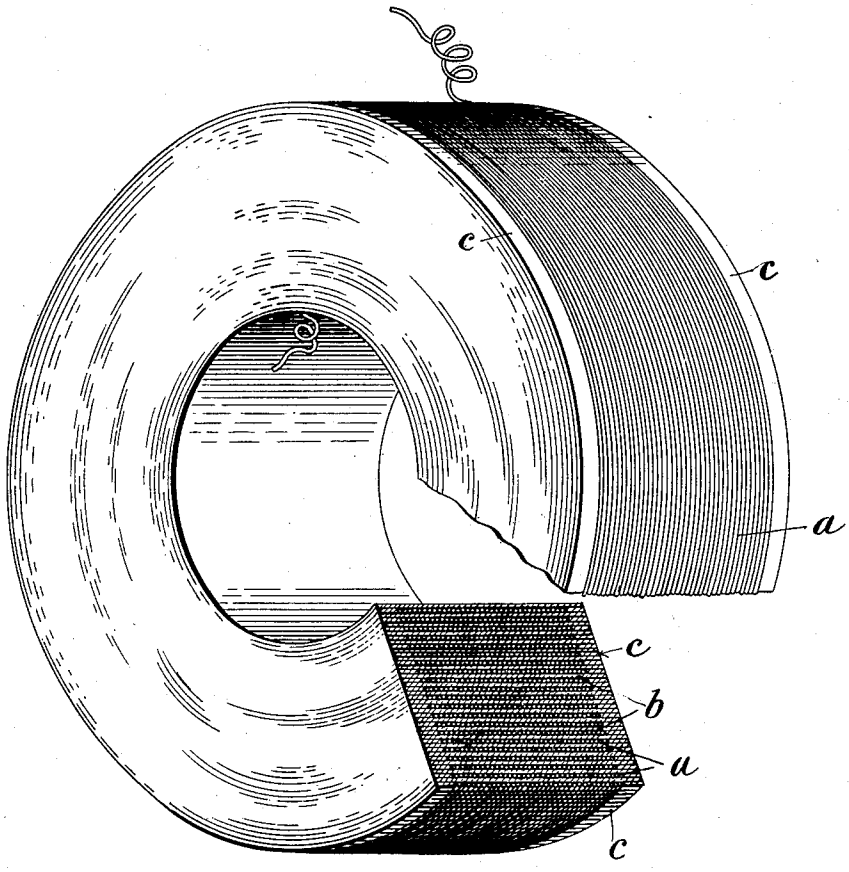
No. 736,177. PATENTED AUG. 11, 1903.

R. VARLEY.

ELECTRICAL COIL.

APPLICATION FILED MAY 15, 1903.

NO MODEL.



Witnesses
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No. 736,177. Patented August 11, 1903.

UNITED STATES PATENT OFFICE.

RICHARD VARLEY, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR TO VARLEY DUPLEX MAGNET COMPANY, A CORPORATION OF NEW JERSEY.

ELECTRICAL COIL.

SPECIFICATION forming part of Letters Patent No. 736,177, dated August 11, 1903.

Application filed May 15, 1903. Serial No. 157,222. (No model.)

To all whom it may concern:

Be it known that I, RICHARD VARLEY, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Electrical Coils, of which the following is a full, clear, and exact description.

This invention is an improved construction of electromagnetic coils, the object being to provide a cheap and efficient coil wherein the turns or convolutions are held in their proper relation with each other without the use of a spool or supporting end flanges or of binding-tape.

To this end my invention consists of a coil in which the successive layers are separated from each other by sheets or wrappings of paper or other sheet material, the edges of which, extending beyond the ends of the layers, are thickened or reinforced to form an annular shoulder or stop for the end convolutions of the layer. Thus the thickened extensions, which are all located in the same radial plane, form a compact disk on each end of the coil, serving all the purposes of solid end flanges and being attached to the sheets which extend between the layers of wire are securely held from displacement.

A coil of this character is illustrated in the accompanying drawing, a segment thereof being broken out to show the internal construction.

The wire-winding is arranged in layers *a*, as usual; but between the layers is inserted suitable material, such as paper in sheet form, (indicated by *b*) After each layer of wire is wound it is covered by a wrapping of the sheet material. Each sheet of such material is provided along its edges with a reinforcing strip or band *c*, which is pasted thereto. The portion covered by the bands projects on each side of the coil, the winding-space being between the inner edges or shoulders of the two bands. The wire of each layer is wound close up against each shoulder, which thereby forms a stop to retain the end convolutions in place, preventing them by reason of the tension or rough handling from falling out of place. The bands or stops may be substantially the same thickness as the wire; but they may also vary therefrom in thickness without defeating the object of the invention.

It will be seen that as the coil is built up layer by layer the end stops are packed together one on top of the other and form substantially solid supports on each head or end of the coil. Accurate winding of coils can be accomplished in this way, because the sheets, with the stops, which are prepared in advance, determine the length of the layer and afford uniformity throughout. It will be seen that the solid ends or heads are anchored in place by the sheets which pass between the layers of the winding, so that there is no danger of their becoming detached. Coils made this way do not require to be bound with tape to hold the convolutions in place, as has been the common practice heretofore, but are ready to be at once inserted in the machine or instrument for which they are intended. The use of the sheets of paper between the layers has been a common practice heretofore in order to obtain even winding, and the addition of the reinforced edges to provide the stops is a small and inexpensive expedient, affording substantial advantages in the manufacture and in the product.

Having described my invention, I claim—

1. A coil for electrical purposes, consisting of a plurality of layers of convolutions in combination with smooth sheet material interposed between the layers and having reinforced edges extending beyond the ends of the layers and forming abutments for the end convolutions of the layers.

2. An electrical coil, consisting of alternate layers of wire and smooth paper, the paper layers extending laterally beyond the end turns of the wire layers, said extending portions having attached thereto strips or bands of paper forming a double thickness and serving as abutments for the end turns of the layers.

In witness whereof I subscribe my signature in presence of two witnesses.

RICHARD VARLEY.

Witnesses:

M. M. CROSWELL,

WILLETT CHADWICK.