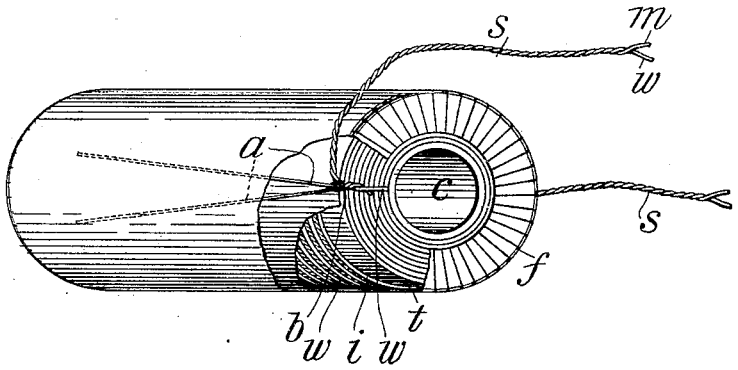
No. 648,446. Patented May 1, 1900.

R. VARLEY.

ELECTROMAGNETIC COIL.

(Application filed Dec. 18, 1899.)

(No Model.)



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UNITED STATES PATENT OFFICE.

RICHARD VARLEY, OF JERSEY CITY, NEW JERSEY.

ELECTROMAGNETIC COIL.

SPECIFICATION forming part of Letters Patent No. 648,446, dated May 1, 1900.

Application filed December 18, 1899. Serial No. 740,650. (No model.)

To all whom it may concern:

Be it known that I, RICHARD VARLEY, a citizen of the United States, residing in Jersey City, county of Hudson, State of New Jersey, have invented certain new and useful Improvements in Electromagnetic Coils, of which the following is a specification.

The object of my invention is to impart increased mechanical strength and durability to the terminal of electromagnetic coils.

My invention includes a coil composed of a series of layers, each layer consisting of a series of insulated convolutions. The ends of the terminal convolutions are led out to form terminals of the coil. I employ in combination with this section or terminal wire a section of wire, preferably of similar diameter, composed of some soft ductile metal, like tin-coated copper. Two or more such wires are twisted together into a strand, and the tin coating supplies a convenient foundation for a soldered junction. To provide against unwinding the convolutions by any pull or strain upon the terminal which may occur, I anchor the point where the terminal is turned out from a convolution by connecting at the described point a filament, which may be either metal or fibrous, in the form of a loop or single, and preferably consists of a fibrous thread, as of silk or cotton. I tie this to the terminal at the described point, carrying the ends of the loop back along the surface of the coil and fasten it to the surface either by the use of some adhesive material or by some suitable mechanical means.

The accompanying drawing illustrates my invention.

I show a coil composed of a bare wire *w* and a fibrous thread *i*, of insulating material, separating adjacent convolutions of the wire. I may employ instead of the thread *i* a wire having an insulating fibrous covering. This may be electrically connected with the wire *w*. Between each pair of layers of wire *w* there is a paper tube. The series of paper tubes are arranged concentrically and project at each end of the tube. One exterior paper tube has its ends fringed or serrated, as at *f*, said ends being turned down upon the ends of the tubes and the coil and cemented in position. The projecting concentric tubes prevent the unwinding or displacement of the end convolutions of the wire *w*. I take a strand of thread, like *a*, tying it to the wire at the point where said terminal wire leaves its convoluted form, and I carry the thread *a* back along the exterior surface of the coil and cement it in position, substantially as shown. To increase the mechanical strength of the terminal wire *w*, I take a section of wire of soft ductile material *m* (I prefer to use tin-coated copper) and I twist the terminal wire *w*, with the tinned section *m*, into a strand *s*. This affords facility for soldering to a terminal connection, like a screw-cup, and greatly increases the mechanical strength of the terminal.

What I claim, and desire to secure by Letters Patent, is—

In an electromagnetic coil a free stranded terminal consisting of a section of the coiled wire and a short section of tin-coated wire twisted therewith combined with a strand of insulating material fixed to said stranded terminal and to the surface of the coil.

RICHARD VARLEY.

Witnesses:

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