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MEANS FOR ANCHORING STARTS AND/OR FINISHES IN COIL WINDINGS

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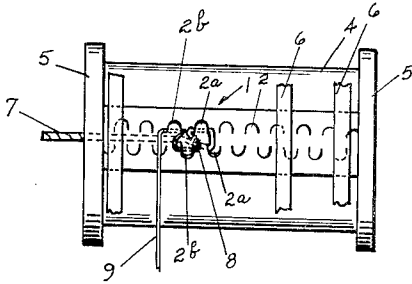


Fig. 1

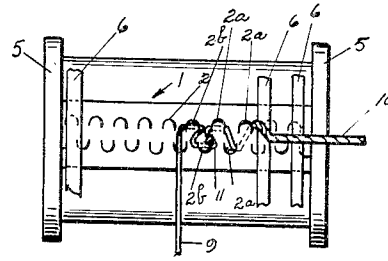


Fig. 2

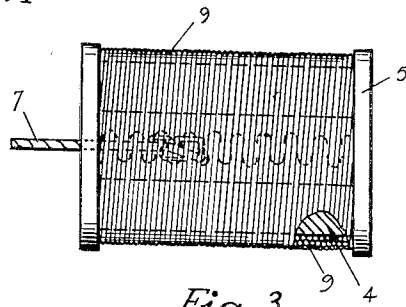


Fig. 3

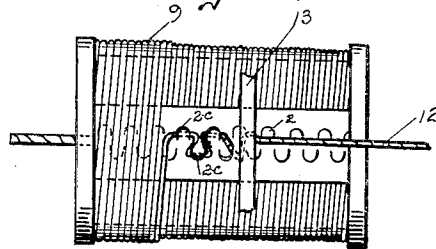


Fig. 4

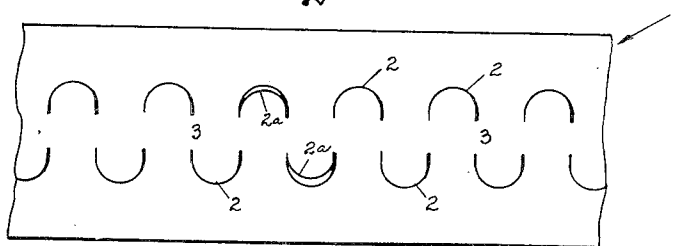


Fig. 5

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MEANS FOR ANCHORING STARTS AND/OR FINISHES IN COIL WINDINGS

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2 Claims. (Cl. 336—192)

This invention relates to an improvement in wound electrical coils and pertains particularly to a novel means of anchoring starts and finishes of the coil lead wires.

There is an urgent need for a better method of fastening the starts and finishes of wound electrical wires. At present, string and tape are used to fasten the ends, but they both tend to loosen with time. They also grip the insulation rather than the wire and will not hold well on wire which is known commercially as "Formvar."

Water activated adhesive tapes will not stick to enamel or the "Formvar" wire. It also tears easily and tends to loosen when the coils are dried. Pressure sensitive tapes are deleteriously affected by oil. Further, it has been found that none of these older methods will resist a pulling force in the direction of the coil axis. To overcome these difficulties and to provide a method of fastening the starts, finishes, and leads from wound wires so as to prevent slipping is an object of my invention.

Another object of my invention is to provide a preformed strip of material incorporating means of securing the start, finish and/or leads from wound coils so that a sudden pull will tend to hold the wire more tightly.

Other objects will appear from time to time in the course of the specification and claims.

The accompanying drawing shows an embodiment of my invention in which:

Fig. 1 is an elevational view of the coil illustrating a manner of fastening the start of the wire with the cable end placed under the anchor strip.

Fig. 2 is an elevational view of the coil illustrating a manner of fastening the start of the wire with the cable end placed over the anchor strip.

Fig. 3 is an elevational view of the coil partially wound and with a portion broken away in section.

Fig. 4 is an elevational view of the coil illustrating a manner of fastening the finish end of the wire.

Fig. 5 is an enlarged detail of the preformed strip showing the manner of cutting.

Like reference figures illustrate like parts throughout the specification and claims.

Referring to Fig. 5, I show the preformed anchor strip of pressboard 1 or similar material. This anchor strip 1 is stamped or cut with substantially semi-circular patterns 2 alternately opposed to one another with an uncut portion 3 separating them. The material described by the semi-circular cuts 2 can be bent up as at 2a to form cleats for anchoring a wire in a manner similar to the anchoring used in securing rigging on ships.

In Figs. 1 and 2, I show the preformed anchor strip 1 placed along the length of a core 4. The core 4 has end portions 5 of a greater diameter than the core so that the coils can be held on the core more easily during winding. The anchor strip 1 is held against the core by means of some kind of adhesive tape 6.

In Fig. 1, a cable end 7 is brought under the anchor strip 1 after having been looped in and out of several

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semi-circular cut openings 2a. A splice 8 between the cable end 7 and a magnetic winding wire 9 is looped in and out of a few more semi-circular cut openings 2b on the anchor strip 1 and then wound around the core, it will hold the splice 8 and the anchor strip 1 in place. Any pull on the lead tends to straighten it against the edges of the holes and thereby makes it more secure.

Fig. 3 shows the magnetic winding wire 9 covering the anchor strip 1 and the spliced cable end 7.

In Fig. 2, I show the cable end 10 on the outside of the anchor strip 1 and brought in and out of the semi-circular cut openings 2a. The splice 11 between the cable end 10 and the wire 9 is placed fairly near the mid-section of the core and the magnetic wire 9 is looped in and out around several more of the semi-circular cut openings 2b and then wound around the core. Similar to Fig. 1, any pull on the cable end 10 tends to straighten it against the edges of the holes and thereby tighten it.

In Fig. 4 I show the way in which the anchor strip can be used to fasten the finish of the wound coils 9. The anchor strip is placed along the length of the core over the second from the last winding. The winding is continued over the anchor strip, for a sufficient distance to secure the anchor strip and then the wire 9 and spliced cable end 12 are looped in and out of several semi-circular cut openings 2c to secure the end. An adhesive or sticky tape 13 is placed over the anchor strap end and the cable end 12 to hold them in place.

If taps are desired on the wound coil an anchor strip can be inserted wherever a tap is needed in a manner similar to that shown in Fig. 4. The end for a tap can be anchored and pulled out to the side or end and a new wire can be anchored on the anchor strip and wound.

With this novel anchor strip it is possible to anchor the wire ends or tap leads so that any pull or tension on them tends to tighten the wire. The strip can be used for starts and finishes and if so desired, to facilitate take off taps. While one embodiment of the invention has been described and shown it is to be limited only by the clear import of the following claims.

I claim:

1. An insulated wire coil having a plurality of layers of turns wound about a central core, at least one end of said coil comprising a lead wire adapted to extend axially of said coil, an anchoring strip for said lead wire comprising an axially disposed strip of semi-rigid insulating material having a plurality of axially adjacent wire receiving cleats forming two independent rows thereof, each row being substantially coextensive with the coil and anchoring strip, said cleats in each row being alternately spaced and oppositely directed with respect to the circumferentially adjacent row, said rows being separated from each other by an imperforate portion of said strip, each cleat being defined by a perforated outline margin and an imperforate margin integral with said strip, said imperforate margins being arranged in substantial parallelism with each other and adapted for bending said cleats away from the plane of said strip circumferentially of said coil, said lead wire extending axially of said strip into said coil and passing consecutively under at least some alternate cleats in opposite rows, said lead wire extending along the longitudinal axis of said coil and terminating at any selected one of said cleats and thereafter continuing around the coil to form said wire turns overlaying at least a part of said strip in one of said plurality of layers, whereupon axial stress on said lead causes tighter engagement thereof by said cleats.

2. The invention according to claim 1 wherein said lead wire passes through said strip at least once by means of a hole defined by the outline margin of said cleat

and then continues under alternate cleats in opposite rows
as aforesaid.

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