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1,950,156

METHOD OF MAKING TERMINAL CONNECTIONS

Filed June 28, 1930

FIG. 1

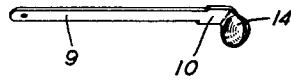


FIG. 4

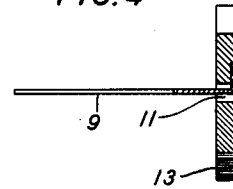


FIG. 2

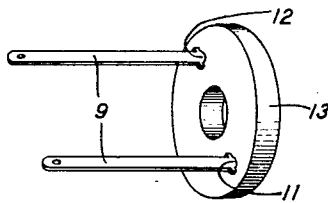


FIG. 3

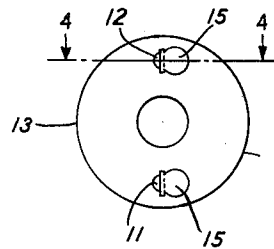
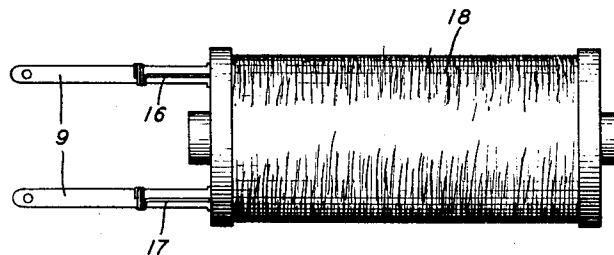


FIG. 5



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## UNITED STATES PATENT OFFICE

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## METHOD OF MAKING TERMINAL CONNECTIONS

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2 Claims. (Cl. 29—155.55)

This invention relates to a method of making terminal connectors.

Magnet spools and electric coils in general are usually provided with end plates or heads of insulating material and on the spool heads are mounted terminal connectors to which the ends of the wire forming the coil are connected.

It is an improvement over Patent 322,469 to J. Opitz, dated June 5, 1906. In this patent is disclosed a terminal connector having a disc portion which is arranged to be pressed in a counter-sunk hole in the spool-head of the coil for holding the terminal in place, the coil winding back of the disc assisting in holding the terminal in place.

According to the present invention the disc portion extends at right angles with respect to the length of the terminal and is formed with a portion having a concavo-convex cross section of a diameter corresponding to that of the counter-sunk or recess placed out of center with a hole in the spool-head of the relay. An enlarged portion of the terminal is forced through this hole and the concave convex portion is then flattened when in position in the recess in the spool-head for spreading the material radially and thereby forcing the peripheral edge of the disc thus formed into the spool-head for anchoring that portion of the terminal firmly therein, thus effectively preventing the terminal from working loose from the spoolhead, without the use of other securing media and at the same time effecting a great saving in repair expenses.

In the drawing, Fig. 1 is a perspective view of an improved terminal connector;

Fig. 2 is a perspective view of a spool-head with a pair of terminals assembled;

Fig. 3 is a rear view of Fig. 2;

Fig. 4 is a sectional view of a spool-head and terminals taken approximately on line 4—4 of Fig. 3 showing the terminals anchored in the spool-head; and

Fig. 5 is a plan view of the magnet coil equipped with improved terminal connecting pieces.

The same reference characters refer to similar parts in each of the figures in the drawing.

As shown in Fig. 1 the terminal connector piece is made of flat metal punching of rectangular cross section and has an enlarged portion 10 and a cup-shaped end 14. The enlarged portion 10 is adapted to be forced through holes 11 and 12 in the head or plate 13.

The cup-shaped end 14 of the terminal piece extends laterally with respect to the length of the shank portion 9 and fits a counter-sunk hole

15 in the rear end of the spool-head as shown in Figs. 3 and 4. This counter-sunk hole is considerably deeper than the thickness of the material and of a diameter corresponding to the diameter of the cup portion 14 which is pressed therein and flattened in order to form a disc of a greater diameter than the original diameter of the cup in order to force the edge of the disc thus formed into the insulating material of the spool-head for anchoring that portion of the terminal firmly therein, while the sinking of the disc below the surface of the insulating spoolhead effectively prevents the liability of short-circuiting a number of turns of the coil windings through their coming into contact with the terminals due to friction between these elements and the consequent wearing of the enamel insulation on the wire.

The ends 16 and 17 of the wire which forms the coil 18 are passed into the holes 11 and 12 and attached to the terminals 9, as shown in Fig. 5.

Terminal connectors mounted according to the method of this invention have proven entirely satisfactory and not liable to become loose on the spool-head of the relay even after a long period in practical use.

What is claimed is:

1. The method of securing a terminal in the insulating spoolhead of a coil, which consists in changing a flat disc portion at the end of the terminal into a concavo-convex form, inserting this portion in a recess of like diameter sunk in the insulating part and changing the shape of said portion into a flat disc of a diameter greater than the diameter of the recess whereby the terminal is held in place solely by the forcing of the metal into the spoolhead.

2. The method of securing a terminal to an insulating spoolhead of a coil which consists in forming a cup-shaped portion at the end of the terminal shank, placing this portion in an inverted portion in a recess sunk in the insulating material to a depth greater than the thickness of the material and of a diameter equal to that of the cup and increasing the diameter of this portion by changing its form into a disc of a diameter greater than the original diameter of the cup-shaped portion whereby the terminal is held in place solely by the forcing of the metal into the spoolhead.

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