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B. LAZICH

2,238,740

ELECTRICAL COIL

Original Filed June 8, 1937

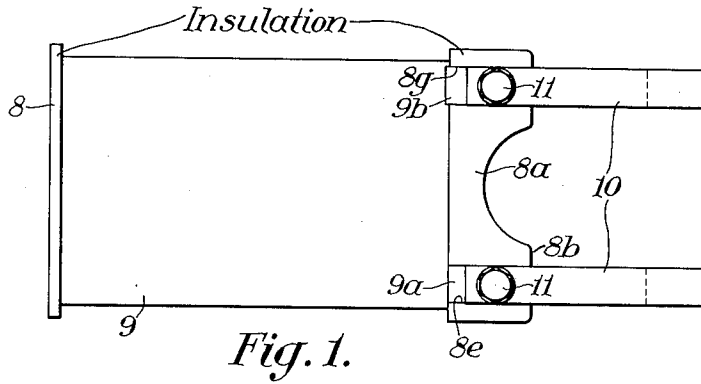


Fig. 1.

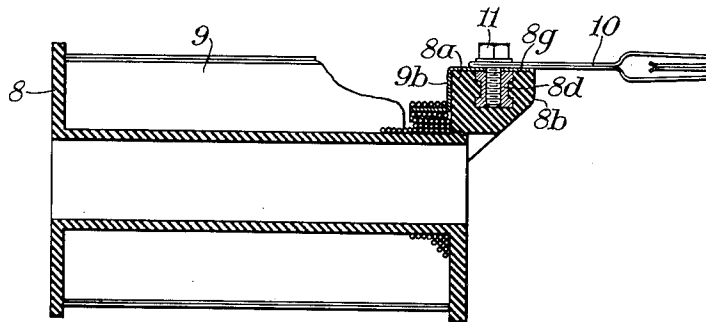


Fig. 2.

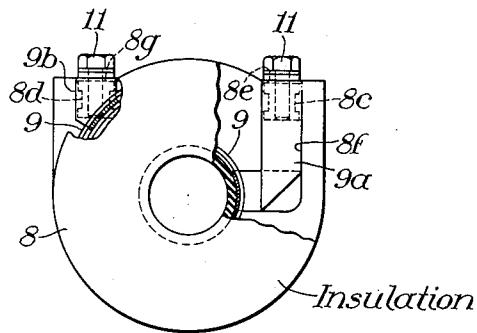


Fig. 3.

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ELECTRICAL COIL

Branko Lazich, Wilkensburg, Pa., assignor to The
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Original application June 8, 1937, Serial No.
146,997. Divided and this application Novem-
ber 16, 1939, Serial No. 304,815

1 Claim. (Cl. 175—21)

My invention relates to electrical coils for use in relays, magnets and the like, and has for an object to provide improved means for making electrical connection with the ends of the coil winding.

According to my invention the coil winding is disposed on a spool of moulded insulating material, and is connected, by means of flat metal strips located in grooves in the spool head, with threaded metal inserts provided in extensions formed on the spool head.

The present application is a division of my copending application for Letters Patent of the United States, Serial No. 146,997, filed on June 8, 1937, for Electrical relays.

I shall describe one form of electrical coil embodying my invention, and shall then point out the novel features thereof in the claim.

In the accompanying drawing, Fig. 1 is a top plan view showing an electrical coil embodying my invention. Fig. 2 is a longitudinal vertical sectional view of the coil shown in Fig. 1. Fig. 3 is a left-hand end view of the coil shown in Fig. 1 with a part of the coil removed or broken away to better illustrate the construction of certain of the remaining parts.

Similar reference characters refer to similar parts in all three views.

Referring to the drawing, the coil in the form here shown comprises a winding 9 wound on a spool 8 of insulating material. The one head 8a of the spool 8 is provided on its outer side with an integral lateral extension 8b having two vertically disposed threaded inserts 8c and 8d moulded therein adjacent its opposite ends. A groove 8e which extends parallel to the longitudinal axis of the spool is formed in the lateral extension 8b directly above the insert 8c, and the inner end of this groove communicates with another groove 8f which extends downwardly at right-angles to the groove 8e and inwardly at right-angles to the axis of the spool to the inner end of the head 8a, and disposed in the grooves 8e and 8f is a flat metal strip 9a which is bent to lie flat in the grooves 8e and 8f in the manner shown. The strip 9a comprises one terminal for the winding 9, and the inner end of this strip is disposed underneath the first few turns of the winding 9 and is soldered thereto, while the outer end of this strip is formed with a hole which aligns with the tapped hole in the associated metal insert 8c. Another groove 8g similar to the groove 8e is formed in the extension 8a directly above the insert 8d, and disposed in this latter groove is another flat metal strip 9b

which constitutes the other terminal for the winding 9. The inner end of this latter strip is wound under the last few turns of the winding 9 and is soldered thereto, while the outer end of this strip is provided with a hole which aligns with the tapped hole in the metal insert 8d.

A coil of the type described is particularly suitable for, although in no way limited to, use in a plug-in relay of the type described in my copending application, Serial No. 146,997, of which the present application is a division, and when the coil is used in this relay female connectors 10 are clamped against the upper sides of the strips 9a and 9b by means of studs 11 secured to the inserts 8c and 8d, respectively, in the manner shown, thereby providing a convenient means for making external circuit connections with the coil. These connectors could, of course, be replaced by circuit wires provided with eyelets or the like for the reception of the studs.

One advantage of a coil constructed in the manner shown is that the leads are fully protected against breakage.

Another advantage of a coil constructed in the manner shown is that the construction is durable and provides a pleasing appearance.

A further advantage of a coil constructed in the manner just described is that it can be readily connected or disconnected from its external circuit connections as many times as desired without damage, and is readily interchangeable with other coils having different characteristics, whereby a relay utilizing the coil can be adapted to operate on any desired voltage.

Although I have herein shown and described only one form of coil construction embodying my invention, it is understood that various changes and modifications may be made therein within the scope of the appended claim without departing from the spirit and scope of my invention.

Having thus described my invention, what I claim is:

A coil for an electroresponsive device comprising a spool of insulating material one head of which is provided on its outer side with an integral lateral extension having moulded therein two metal inserts provided with screw threaded openings, a first groove formed in said one head directly above the one insert and extending from the outer side of said extension to the inner side of said one head, a second groove formed in said one head directly above the other insert and extending from the outer side of said extension to the inner side of said one head and then inwardly along the inner side of said one

head to the central part of said spool, a coil wound on said spool, conducting strips disposed in said grooves and one connected with one end of said coil and the other connected with the other end of said coil and each provided with a hole which aligns with the threaded opening in the associated insert, connectors for establishing external circuit connections with said coil disposed in direct electrical contact with said strips

and each provided with a hole which aligns with the hole in the associated strip and insert, and screws passing through the aligned holes in said connectors and said strips and screwed into the associated inserts, said screws serving both as a means for securing said connectors to said spool and as a means for clamping them into direct electrical contact with the associated strips.

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