May 18, 1926.

1,585,017

H. E. CAMPBELL

MAGNET COIL ASSEMBLY

Filed Feb. 9, 1923

Fig. 1.

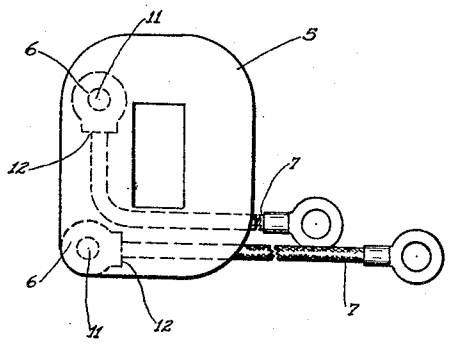


Fig. 2.

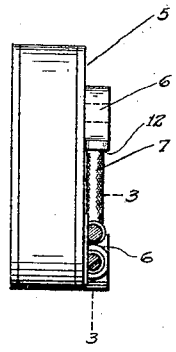
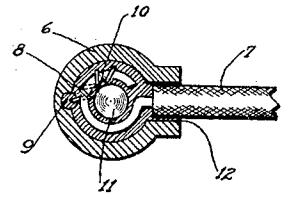


Fig. 3.



INVENTOR.
Harry E. Campbell,
BY
Morsell, Keeney & Morsell,
ATTORNEYS.

Patented May 18, 1926. 1,585,017

UNITED STATES PATENT OFFICE.

HARRY E. CAMPBELL, OF MILWAUKEE, WISCONSIN, ASSIGNOR TO UNION ELECTRIC MANUFACTURING COMPANY, OF MILWAUKEE, WISCONSIN, A CORPORATION OF WISCONSIN.

MAGNET-COIL ASSEMBLY.

Application filed February 9, 1923. Serial No. 618,030.

This invention relates to improvements in magnet coil assemblies, and more particularly to a means for connecting heavy external connecting leads to the same.

In the construction of magnet coils, small fine wires are used, and these, when connected to heavier lead wires, are easily broken, due to the strain to which the lead wires are subjected.

It is, therefore, one of the objects of the present invention to provide a magnet coil in which the lead wires are connected to the magnet coil frame, thereby minimizing the strain which will be imposed on the fine wires and eliminating the use of binding posts.

A further object of the invention is to provide a magnet coil of a very narrow breadth and in which the entire exterior of the frame is formed of insulated material, eliminating any possibility of wires being short-circuited even though the frame rests against metallic surfaces.

A further object of the invention is to provide a magnet coil so constructed that the heavy lead wires may be connected directly with the magnet wires.

A further object of the invention is to provide a magnet coil which is of very simple construction, is strong and durable and inexpensive to manufacture, and is well adapted for the purpose described.

With the above and other objects in view, the invention consists of the improved magnet coil assembly and its parts and combinations as set forth in the claims, and all equivalents thereof.

In the accompanying drawing, in which the same reference characters indicate the same parts in all of the views:

Fig. 1 is a front view of the improved magnet coil;

Fig. 2 is an edge view thereof; and

Fig. 3 is an enlarged sectional view taken on line 3—3 of Fig. 2.

Referring now more particularly to the drawings, it will appear that the numeral 5 represents a magnet frame which is formed preferably of bakelite or other insulating material. On one side or face of said magnet frame, circular flange portions 6 are provided, integral with the frame and of insulating material, for the reception of a pair of heavy terminal wires 7 which enter the side openings, and the interior of said frame contains magnet coils (not shown), the ends 8 of which extend outwardly through openings 9 and are twisted around the inner ends of the terminal wires, as at 10. Said wires are then bent around a projecting portion 11 of the frame so that any strain on wires 7 will be borne by portions 11 and the finer wires will not be broken or strained. The space within said flange portions 6 is then filled with sealing wax or other insulating compound to firmly hold and cover the parts in position and prevent the terminal wires from being pulled away from the finer coil wires and to entirely cover said wires with the insulation.

It will thus be seen that the improved magnet coil is so constructed that the use of binding posts is eliminated and all live wires are completely covered up and insulated. It will further be apparent that the improved magnet coil is of a very simple flat construction and may be inserted in a small space, and is well adapted for the purpose described.

What I claim as my invention is:

1. A magnet coil, comprising a frame portion having circular flange portions projecting therefrom and communicating with the interior of said frame, a magnet wire within said frame and terminating in said flange portions, heavy outer terminal wires extending into said flange portions and connected to the frame and having the end portions of said magnet wire twisted thereabout, said connections being entirely within said flange portions, and means for keeping said wires in a fixed position within said flange portions.

2. A magnet coil, comprising a frame portion having circular flange portions projecting therefrom and communicating with the interior of said frame, a magnet wire within said frame and terminating in said flange portions, heavy outer terminal wires extending into said flange portions and connected to the frame and having the end portions of said magnet wire twisted thereabout, said connections being entirely within said flange portions, and means for keeping said wires in a fixed position within said flange portions and insulating them.

3. A magnet coil, comprising an insulated frame portion having circular flange por-

tions projecting therefrom and communicating with the interior of said frame, said flange portions having side openings, a magnet wire within said frame and terminating in said flange portions, heavy outer terminal wires entering said flange portions and having the ends of said magnet wire directly twisted thereabout, said connections being entirely within said flange portions, said frame having portions which project into said flanges and about which the inner ends of said terminal wires are bent, and an insulating compound disposed in said flanges surrounding and sealing said wires within the flange portions.

In testimony whereof, I affix my signature.

HARRY E. CAMPBELL.