Mar. 13, 1923.

1,448,578

A. R. SWOBODA

RESISTANCE ELEMENT

Filed Mar. 10, 1922

Fig. 1.

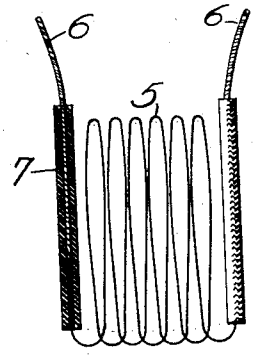


Fig. 2.

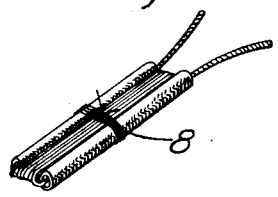
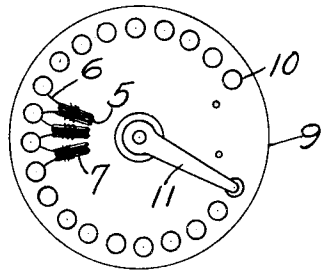


Fig. 3.



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Patented Mar. 13, 1923. 1,448,578

UNITED STATES PATENT OFFICE.

ADOLPH R. SWOBODA, OF NEWARK, NEW JERSEY, ASSIGNOR TO WESTERN ELECTRIC COMPANY, INCORPORATED, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

RESISTANCE ELEMENT.

Original application filed December 6, 1920, Serial No. 428,540. Divided and this application filed March 10, 1922. Serial No. 542,548.

To all whom it may concern:

Be it known that I, ADOLPH R. SWOBODA, a citizen of the United States, residing at Newark, in the county of Essex, State of New Jersey, have invented certain new and useful Improvements in Resistance Elements, of which the following is a full, clear, concise, and exact description.

This invention relates to resistance elements, and is a division of original application, Serial No. 428,540, filed December 6, 1920.

It is an object of the invention to provide a resistance element which is simple in construction, cheap in cost, and which may be easily mounted upon its supporting member.

More specifically, the invention comprises a tiny resistance element, consisting of a coreless winding of insulated resistance wire formed into an elongated unit and bound together, the unit being so small and light and of such character that it may be secured to a supporting member by an adhesive material. This unitary structure is particularly adapted for use in rheostats and other apparatus, where it is necessary to provide an efficient and very compact resistance element.

Other objects and features of the invention will appear from a consideration of the following description taken in conjunction with the accompanying drawing and the appended claims.

In the drawing, Fig. 1 is a front view, part in plan and part in section, showing the invention in its preferred form;

Fig. 2 is a perspective view of the assembled resistance element; and

Fig. 3 is a top elevation of a rheostat equipped with several such resistance elements.

Referring to the drawings, the resistance element consists of very small coreless windings of high resistance insulated wire 5. A lead 6 of fairly heavy gauge stranded copper wire is soldered to each end of the wire 5, and a sleeve 7, of varnished tubing or other comparatively stiff material, is slipped over the leads. These sleeves or splints not only act as an insulation for the copper leads, but they serve as reinforcing members for the element. The assembled resistance element is formed into an elongated unit of substantially the same length as the sleeves 7, and is tied together at its middle portion with a loop of thread 8, as shown in Fig. 2.

Referring particularly to Fig. 3, there is shown a rheostat mounting plate 9, supporting an arcuate row of fixed contacts 10, each of which extends through an aperture in the plate in a manner well understood in the art. A contacting arm 11 is pivoted on the plate 9, and is adapted to rotate over and successively engage the fixed contact members 10. Connected between succeeding contacts 10 are the small resistance elements which lie flat against the mounting plate 9 and are secured thereto by an application of shellac or other adhesive material. It will be seen from the above that a resistance element made in accordance with this invention is simple, cheap to manufacture, and is so small and light in construction that it may be inexpensively secured to a supporting member, as for instance with an adhesive material.

What is claimed is:

1. A resistance element comprising a coreless winding consisting of a plurality of turns of insulated wire formed into an elongated unit, and means for binding the turns together.

2. A resistance element comprising an elongated coreless winding of insulated wire, two sleeves, one for each terminal of the winding, said sleeves situated on opposite sides of said winding and adapted to serve as a reinforcement therefor, and means for securing the winding and sleeves together.

3. A resistance element comprising a coreless winding of insulated wire, a member serving as a splint, and means securing said winding to said splint.

4. A resistance element comprising a coreless winding of insulated wire, a pair of members serving as splints and having a length at least equal to said winding, and means securing said splints together with the winding between them.

5. A resistance element comprising a coreless winding of insulated wire, a terminal wire secured to each end of said winding and of heavier gauge than said winding, two sleeves one for each of said terminals,

said sleeves serving as a reinforcement for said winding, and means for securing the winding and sleeves together.

6. A resistance element comprising a coreless winding of insulated wire, an uninsulated terminal wire secured to each end of said winding and of heavier gauge than said winding, two sleeves of insulating material and of a size to tightly secure said terminal wires, and means for securing the winding and the sleeves together.

In witness whereof, I hereunto subscribe my name this 8th day of March, A. D. 1922.

ADOLPH R. SWOBODA.