

Aug. 30, 1932.

C. J. HATHORN

1,874,744

RESISTOR MOUNTING

Filed May 9, 1931

2 Sheets-Sheet 1

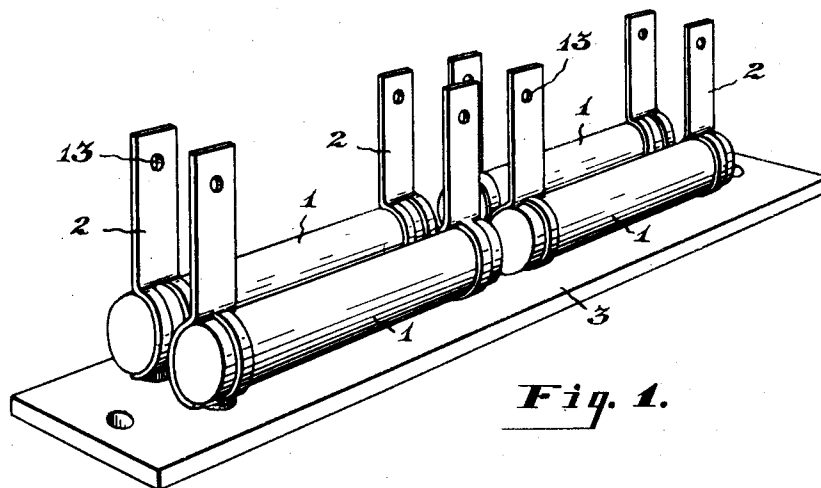


Fig. 1.

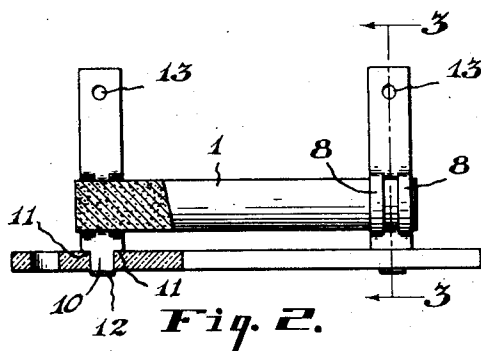


Fig. 2.

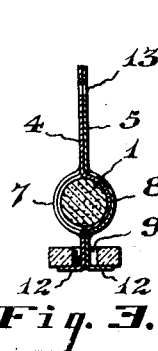


Fig. 3.

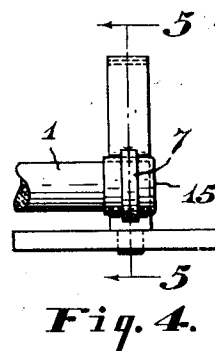


Fig. 4.

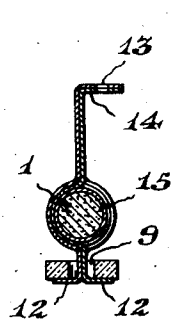


Fig. 5.

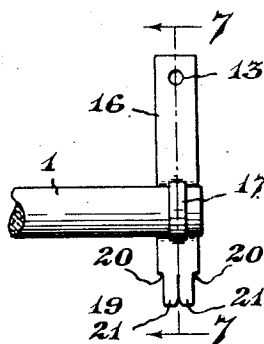


Fig. 6.

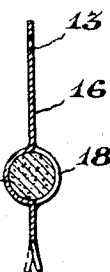


Fig. 7.

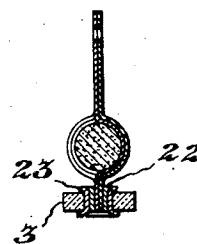


Fig. 8.

INVENTOR
Clarence J. Hathorn
BY Evans & May.
ATTORNEYS

Aug. 30, 1932.

C. J. HATHORN

1,874,744

RESISTOR MOUNTING

Filed May 9, 1931

2 Sheets-Sheet 2

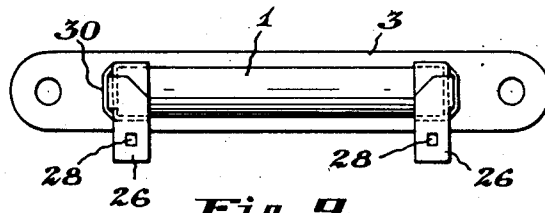


Fig. 9.

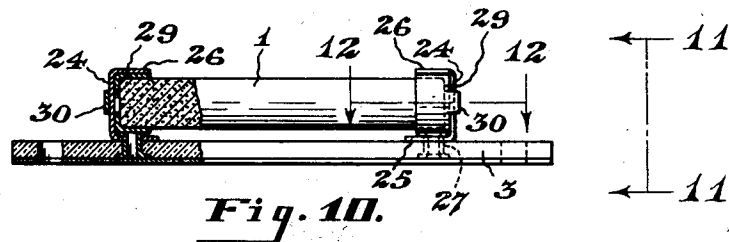


Fig. 10.

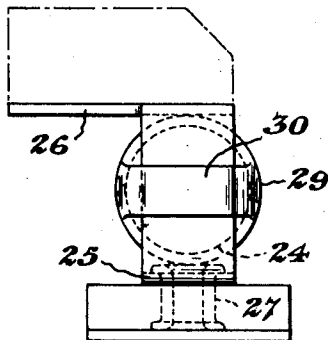


Fig. 11.

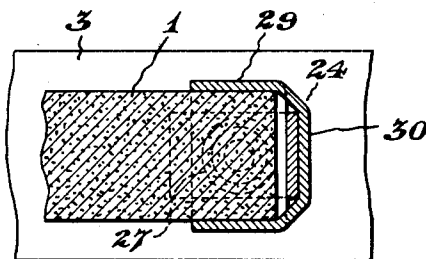


Fig. 12.

INVENTOR
Clarence J. Hathorn
BY *Evans & McCoy*
ATTORNEYS

UNITED STATES PATENT OFFICE

CLARENCE J. HATHORN, OF ST. MARYS, PENNSYLVANIA, ASSIGNOR TO STACKPOLE CARBON COMPANY, OF ST. MARYS, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA

RESISTOR MOUNTING

Application filed May 9, 1931. Serial No. 536,228.

This invention relates to mountings for radio resistor elements and has for its object to provide a mounting in which the resistor element is supported between two terminal members each of which is provided with portions intermediate its ends which embrace and support an end of the resistor with one integral shouldered end portion projecting from the resistor and adapted to serve as a fastening element for attachment to an insulating support, and the other end portion projecting outwardly from the resistor for attachment to conductor wires of the radio circuit.

A further object is to provide a combined resistor support and terminal member which can be quickly and easily attached to the resistor element, which is provided with means by which it may be quickly and easily attached to the insulating support and to conductor wires, and which can be manufactured cheaply.

With the above and other objects in view, the invention may be said to comprise a device as illustrated in the accompanying drawings hereinafter described and particularly set forth in the appended claims, together with such variations and modifications thereof as will be apparent to one skilled in the art to which this invention appertains.

Reference should be had to the accompanying drawings forming a part of this specification, in which:

Fig. 1 is a perspective view showing a number of resistor units mounted on an insulating support;

Fig. 2 is a side elevation of one of the resistor elements and the terminals upon which it is supported; the resistor elements, terminal members and insulating support being shown in section at one end;

Fig. 3 is a section taken on the line indicated at 3—3 in Fig. 2;

Fig. 4 is a fragmentary side elevation showing a slightly modified construction;

Fig. 5 is a section taken on the line indicated at 5—5 in Fig. 4;

Fig. 6 is a fragmentary side elevation showing a modified form of terminal member;

Fig. 7 is a section taken on the line indicated at 7—7 in Fig. 6;

Fig. 8 is a sectional view showing a terminal member having a tubular rivet permanently secured thereto to facilitate attachment to a supporting panel;

Fig. 9 is a plan view showing a further modification of the invention;

Fig. 10 is a side elevation of the resistor unit shown in Fig. 9, the resistor element and its mounting member at one end being shown in section;

Fig. 11 is an end elevation of the resistor unit viewed as indicated by line 11—11 in Fig. 10;

Fig. 12 is a section taken on the line indicated at 12—12 in Fig. 10.

In the accompanying drawings, small resistor elements 1 in the form of carbon rods are shown supported at their ends in combined mounting and terminal members which are indicated generally by the reference numeral 2, the terminal members being attached to and supporting the resistor elements on an insulating support 3 which is shown as a plate of insulating material.

The mounting members 2 are preferably made of a metal such as sheet copper and may be formed by attaching two strips 4 and 5 of sheet copper face to face by soldering or welding, as shown in Figs. 2 and 3. The two attached strips 4 and 5 have longitudinal slits intermediate the ends thereof providing a central longitudinal strap 7 separated by the slits from side straps 8, and the straps 7 and 8 are spread apart and bowed to substantially semi-cylindrical form to provide a cylindrical band intermediate the ends of the mounting member to receive an end of one of the resistor elements 1.

The insulating plate or panel 3 is provided with apertures 9 and each of the mounting members is provided at its inner end with a portion 10 of reduced width adapted to be inserted through an opening 9, and with shoulders 11 at the inner end of the reduced portion 10 which engage with a face of the plate 3 on opposite sides of the opening. The strips 4 and 5 are not attached together at the outer end of the reduced portion 10, and

the unattached ends provide tongues 12 which are adapted to be bent in opposite directions into engagement with the face of the plate 3 opposite that upon which the resistor elements are mounted, the inner end of the mounting members thus providing integral rivets for attachment of the mounting members to the insulating support.

The outer end of each mounting member projects outwardly from the resistor element and may be provided with an aperture 13 to receive a conductor wire which may be soldered in the opening, thus providing a conveniently disposed terminal for attachment of a conductor wire.

The outwardly projecting terminal portion of the mounting member may be straight, as shown in Figs. 1, 2 and 3, or may be bent laterally to provide a flange 14 in which the wire receiving opening is formed, as shown in Fig. 5.

The end of the resistor element is commonly provided with a coating of copper to provide a good electrical connection with the terminal member, and the terminal member may be provided with a metal cap 15, such as shown in Fig. 4, to receive an end of the resistor element.

The mounting member may be made from a single strip of sheet metal of suitable thickness as illustrated in Figs. 6 and 7, in which the sheet metal strip 16 has longitudinal slits intermediate the ends thereof providing a central strap 17 and side straps 18 which are spread apart and bowed to semi-cylindrical form to provide a cylindrical band to receive the resistor element. The inner end of the strip 16 has a portion 19 of reduced width and shoulders 20 at the inner end of the reduced portion 19 adapted to engage the face of the panel at opposite sides of the opening therein. The reduced portion 19 is slit centrally at the outer end thereof to provide tongues 21 which may be bent laterally into engagement with the bottom of the insulating plate.

As shown in Fig. 8, the mounting member has a projecting portion 22 at its lower end to which is permanently attached, preferably by soldering, a tubular rivet 23 which may be inserted through the opening of the supporting plate and headed over against the bottom of the plate.

In the modification shown in Figs. 9 to 12, inclusive, a mounting member 24 is employed which consists of a piece of sheet metal, preferably copper, which is bent to U-shape to provide a base flange 25 and an outer externally projecting attachment flange 26. The base flange 25 has a tubular rivet 27 permanently secured thereto which is adapted to extend through an aperture in the panel 3 and to be headed over against the under side of the panel to rigidly secure the mounting member to the panel. The flange 26 is provided

with an aperture 28 to receive a conductor wire. The resistor element 1 is provided at each end with a metal cap 29 which fits tightly thereon and each of these caps has parallel slits extending across the end thereof and the metal between these slits is pressed outwardly to provide retaining straps 30 which are spaced from the body of the cap sufficiently to provide an aperture at the end of each cap adapted to receive a mounting member 24. In assembling a resistor unit the caps 29 are placed on the ends of a resistor element 1 and the mounting members 24 are inserted within the retaining straps 30. The unit is then placed on the panel 3 with the tubular rivets 27 extending through apertures in the panel and the ends of the rivets 27 are headed over the margins of the panel openings to firmly clamp the mounting members to the panel. The conductor wires may then be conveniently soldered to the flanges 26 of the mounting members.

It is apparent that the present invention provides a very simple and economical mounting for small resistor elements enabling these resistor elements to be quickly and easily attached to a supporting panel, and that no soldering of connections is required in mounting the resistor units on the insulating panel. Since the mounting members are made of relatively soft metal, such as sheet copper, these members may be quickly and easily joined to the supporting panel and are firmly held by the integral fastening means in position to receive the conductor wires.

Furthermore, it is to be understood that the particular form of product shown and described, and the particular procedure set forth, are presented for purposes of explanation and illustration and that various modifications of said product and procedure can be made without departing from my invention as defined in the appended claims.

What I claim is:

1. Means for mounting a resistor element on an insulating support comprising a combined mounting member and terminal composed of sheet metal and having a supporting portion intermediate its ends adapted to receive a resistor element, said member having one end portion in the form of a rivet for attachment to the insulating support and its opposite end in the form of a terminal to which conductor wires may be attached.

2. The combination with a resistor element in the form of a rod and an insulating support in the form of a plate having an aperture therein, of a combined mounting member and terminal composed of sheet metal and having a band portion intermediate its ends adapted to encircle an end of the resistor rod, said member having one end portion of reduced width adapted to be inserted in the opening of the supporting plate and provided with shoulders at the inner end of the reduced por-

tion engageable with the face of the supporting plate, said end portion having tongues bendable into engagement with the opposite face of the supporting plate, the
5 opposite end of said member being in the form of a terminal to which conductor wires may be attached.

3. The combination with a resistor element in the form of a rod and an insulating support, of a combined mounting member and terminal in the form of a strip of sheet metal which has portions intermediate its ends separated by longitudinal slits and spread apart to provide a band to encircle the resistor
15 rod, said strip having an inner end portion of reduced width adapted to be inserted in an opening in the insulating support, said end portion having shoulders at the inner end of the reduced portion for engagement
20 with one face of said support and tongues adapted to be bent into engagement with the opposite face of the support, the opposite end of said strip providing means for attachment of conductor wires.

25 4. The combination with a resistor element in the form of a rod and an insulating support in the form of a plate having an aperture therein, of a combined mounting member and terminal comprising a U-shape piece
30 of sheet metal having a base flange adapted to rest on the panel which has a rivet integrally joined thereto and adapted to extend through the panel aperture, said mounting member having a laterally projecting attachment flange at its outer end, and a cap on the
35 end of the resistor element adapted to be received between the flanges of the mounting member, said cap having a strap at the end thereof embracing the mounting member
40 intermediate its flanges.

In testimony whereof I affix my signature.
CLARENCE J. HATHORN.

45

50

55

60

65