Sept. 10, 1929. G. H. WHITTINGHAM 1,728,090

CONNECTER FOR EDGEWISE WOUND RESISTANCE COILS

Filed May 29, 1926

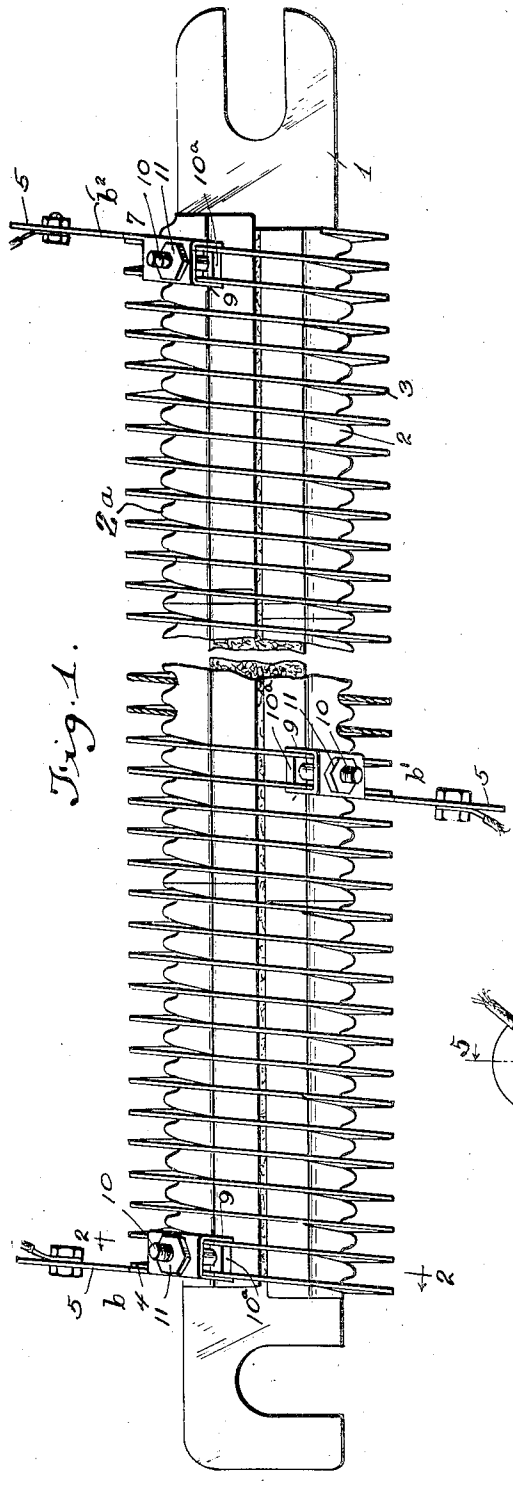


Fig. 1.

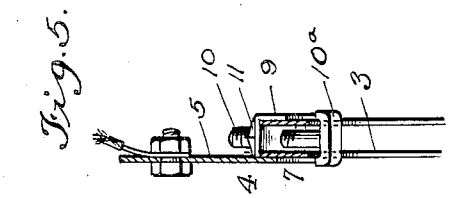


Fig. 5.

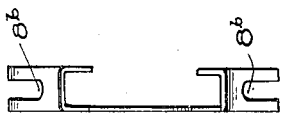


Fig. 4.

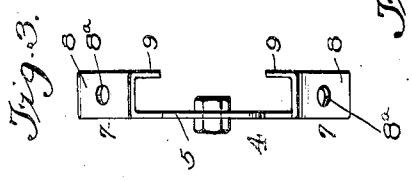


Fig. 3.

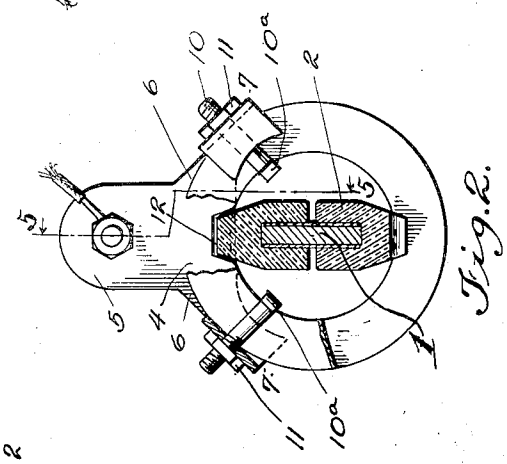


Fig. 2.

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UNITED STATES PATENT OFFICE.

GEORGE H. WHITTINGHAM, OF BALTIMORE, MARYLAND, ASSIGNOR TO MONITOR CONTROLLER COMPANY, OF BALTIMORE, MARYLAND, A CORPORATION OF MARYLAND.

CONNECTER FOR EDGEWISE-WOUND RESISTANCE COILS.

Application filed May 29, 1926. Serial No. 112,564.

This invention relates to connecters adapted for connecting wires to resistance units composed of ribbons of resistance metal wound on edge and mounted on supporting members, having coverings of refractory material, such as porcelain. Terminals for the coils cannot be satisfactorily secured to the refractory material because of its hard and brittle nature, and the ends of the coils are difficult to bend or twist into suitable form for attachment to the terminals. Where it is desired to take off taps or leads from intermediate parts of the coils, connecters are difficult to apply because they cannot be secured to the refractory material.

The connecter of the present invention is adapted to be mounted upon the coil itself and is so constructed that it can be readily applied to or taken off of any part of the coil. The connecter comprises a sheet metal plate having a central part suitably formed to constitute a binding post, and having arms diverging from the lower part of the post and provided with U-shaped portions adapted to extend over the outer edges of two adjacent convolutions of the coil. The central parts of these U-shaped portions are provided with openings to receive clamping screws. Clamping screws are provided, having oblong heads which may be inserted through the space between adjacent convolutions and then turned crosswise, and when these screws are tightened, they engage the inner edges of said convolutions and draw the central parts of the U-shaped portions firmly against the outer edges of the convolutions. Thus, the connecter becomes rigidly secured to the edgewise wound coil and is firmly supported by it. The resistance unit shown in the present application comprises a metal supporting bar having a covering composed of refractory material, the latter having toothed ridges onto which the coil is threaded, and the connecter is formed with a notch which may be made to straddle one of these ridges to position the connecter and help to keep it from slipping around on the coil.

In the accompanying drawing,

Fig. 1 is a side elevation of the resistance unit, partly broken away, showing several of the connecters secured to the edgewise wound coil;

Fig. 2 is a section on the line 2—2 of Fig. 1;

Fig. 3 is a top plan view of one of the connecters, the clamping screws being omitted;

Fig. 4 is a similar view of a modification; and,

Fig. 5 is a section on the line 5—5 of Fig. 2, the insulating support for the coil being removed.

Referring to the drawing, a indicates a resistance unit, comprising a metal supporting bar 1, an insulating covering 2, of refractory material, such as porcelain, and a coil 3, consisting of a ribbon of resistance metal wound on edge and mounted on the insulating covering. The supporting bar and the insulating covering are relatively flat, and the latter has on its opposite edges teeth 2^a, which space the convolutions of the coil apart.

In Fig. 1, three connectors, b, b' and b^2, are shown, these connecters being all alike. Each connecter comprises a metal plate 4, having a part 5 suitably shaped to form a binding post and having arms 6, which diverge from the lower end of the post and in the plane of the latter. Each arm has a U-shaped portion 7 at its end, adapted to fit over two adjacent convolutions of the coil. Each U-shaped portion is formed by providing a tongue on the arm which has a part 8 bent over at right angles to the arm, and a part 9, which is bent downwardly at right angles to the part 8. Thus, the arm and the parts 8 and 9 form a U-shaped structure adapted to fit over two of the convolutions of the coil. The central part 8 of each U-shaped portion has an opening 8^a, adapted to receive a clamping screw 10. Each clamping screw has an oblong head 10^a, which may be passed through the coil between adjacent convolutions, but which, when turned crosswise, will engage the inner edges of the convolutions, as shown in Figs. 1 and 2. Nuts 11 are provided on the clamping screws, and when the latter are tightened, the heads on the clamping screws bear against the inner edges of the convolutions and draw the parts 8 of the U-shaped portions against the outer edges of

the convolutions. Thus, when the screws are tightened, the connecter is rigidly secured to the coil and is supported thereby independently of the insulated support. The connecter shown in the drawing is provided with a notch 12, at the base of the binding post, adapted to straddle the toothed ridges of the insulator, for positioning the connecter on the coil, and this interlocking engagement between the connecter and the insulator also helps to prevent slipping of the connecter on the coil.

The connecter may be provided with circular openings or perforations 8^a, as shown in Fig. 3, or it may have notches 8^b to receive the clamping screws, if desired, instead of the perforations. The notches are desirable because if a clamping screw, with an oblong head, becomes lost, as an ordinary screw having a head slightly wider than the space between adjacent convolutions of the coil may be forced through the convolutions at a point removed from the connecter, where the coils have room to spread, and the screw may then be brought up to the connecter and its shank slid into the slot and tightened.

It will be evident that connecters such as described may be applied to any part of the coil after the latter is on the insulator, and that the connecters can be readily removed when desired.

What I claim is:

1. A connecter for edgewise wound resistance coils comprising a sheet metal plate having a central portion, constituting a binding post, and arms diverging from the lower part of said post, each arm having a U-shaped portion adapted to fit over the edges of two adjacent convolutions of a coil, and clamping screws extending through said portions and having heads adapted to bear against the inner edges of said convolutions.

2. A connecter for edgewise wound resistance coils comprising a sheet metal plate having a central portion, constituting a binding post, and arms diverging from the lower part of said post, each arm having a portion adapted to fit over the edges of two adjacent convolutions of a coil, and clamping screws extending through said portions and having heads insertable through the space between said convolutions and adapted to bear against the inner edges of said convolutions.

3. A connecter for edgewise wound resistance coils comprising a sheet metal plate having a central portion, constituting a binding post, and arms diverging from the lower part of said post, each arm having a U-shaped portion adapted to fit over the edges of two adjacent convolutions of a coil, said portion having a notch in its central part extending parallel with the plate, and clamping screws having shanks adapted to fit in the notch and having heads insertable between said convolutions and adapted to bear against the inner edges of said convolutions.

4. A connecter for resistance units of the type comprising an insulator having toothed ridges, and an edgewise wound coil threaded on to the insulator, said connecter comprising a sheet metal plate having a central portion, constituting a binding post, a notch at the base of the binding post adapted to straddle the insulator, and arms diverging from the lower part of said post, each arm having a U-shaped portion adapted to fit over the edges of two adjacent convolutions of the coil, and clamping screws extending through said portions and having heads adapted to bear against the inner edges of said convolutions.

In testimony whereof I hereunto affix my signature.

GEORGE H. WHITTINGHAM.