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K. EHROGOTT

RESISTOR SUPPORTING MEANS

Filed Jan. 23, 1925

Fig. 1.

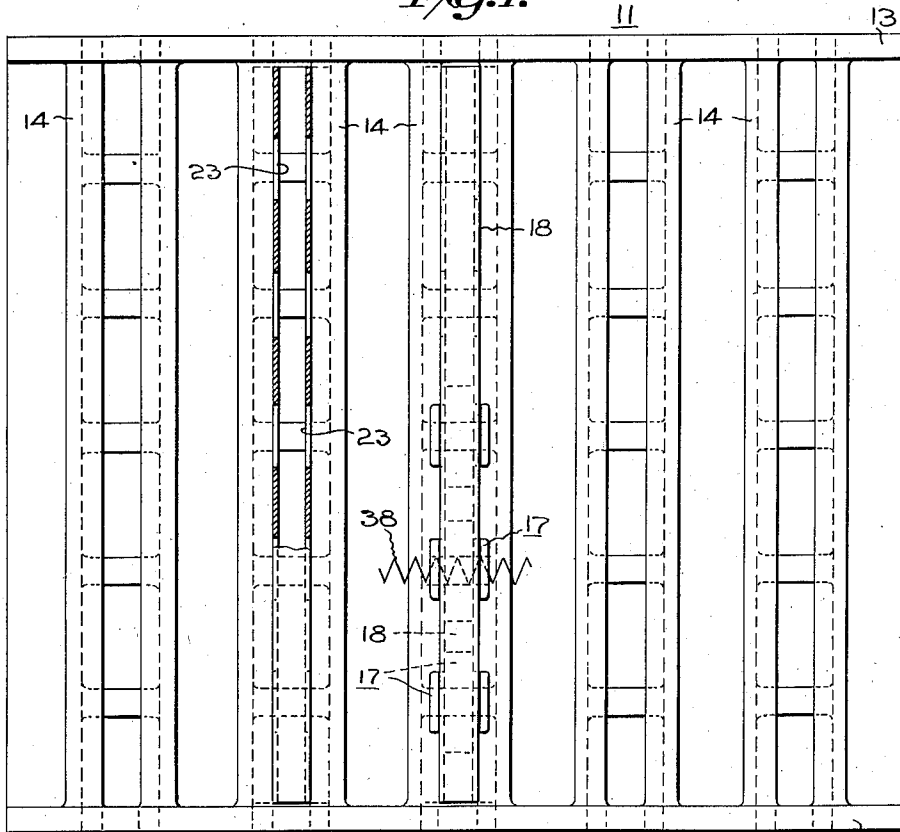


Fig. 2.

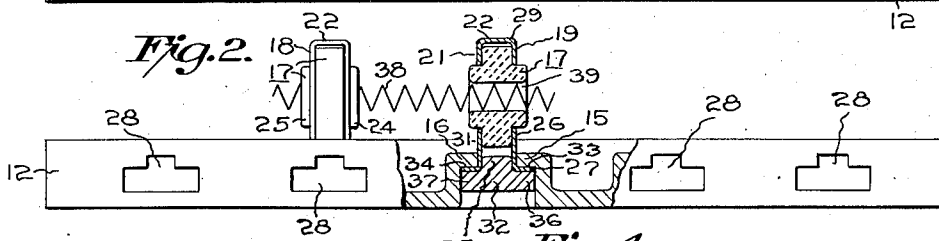


Fig. 3.

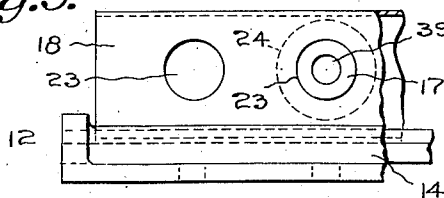
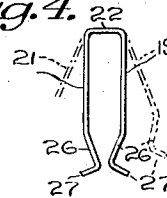


Fig. 4.



WITNESSES:

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KARL EHRGOTT, OF EAST PITTSBURGH, PENNSYLVANIA, ASSIGNOR TO WESTINGHOUSE ELECTRIC & MANUFACTURING COMPANY, A CORPORATION OF PENNSYLVANIA.

RESISTOR-SUPPORTING MEANS.

Application filed January 23, 1925. Serial No. 4,242.

My invention relates to electric heating devices and particularly to resistor-supporting means therefor.

One object of my invention is to provide an electric heating unit that is simple in construction and easily assembled.

Another object of my invention is to provide a means for supporting resistor-supporting insulators that are interlocked thereto, the supporting means being interlocked with a supporting frame.

A still further object of my invention is to provide an insulator-supporting means that initially loosely holds an insulator member and finally securely interlocks therewith and that may be loosely disposed in a supporting frame and finally interlocked therewith.

In practicing my invention, I provide a frame having a plurality of transverse members integral with a pair of members extending upwardly therefrom and laterally thereto. The transverse members are substantially of U-shape and have overhanging portions that extend outwardly therefrom but that are located sufficiently removed from adjacent U-shape members to provide a substantial opening therebetween. Helically wound resistor members are supported in a plurality of aligned insulators that are loosely mounted in a metallic insulator-supporting member. The insulator-supporting members are perforated to provide an extension therethrough of a longitudinally extending portion of the insulator. The sides of the insulator-supporting member extend downwardly and outwardly from the top thereof, the lower portions thereof extending inwardly from the upper portion and the lower end extending outwardly at substantially right angles to the inwardly extending portions. By crimping the sides of the insulator-supporting member inwardly, the insulator is so shaped as to be firmly interlocked therewith.

The insulator-supporting member containing the insulators is inserted between the transverse U-shaped members and is interlocked therewith by forcing its lower portions outwardly by means of a wedging member that is inserted through conforming perforations in the laterally extending members of the frame.

In the single sheet of drawing,
Figure 1 is a top plan view, partially in

section, of an electric heating unit employed in my invention;

Fig. 2 is a front elevational view thereof partially in section;

Fig. 3 is a fragmentary side elevational view thereof; and

Fig. 4 is a front elevational view of an insulator supporting member employed in my invention.

An electric heating unit generally indicated by the numeral 11 comprises a pair of laterally extending members 12 and 13 and a plurality of members 14 that extend transversely therebetween and are integral therewith. The transverse members 14 are of substantially U-shape having overhanging portions 15 and 16 extending towards each other but that are sufficiently removed to provide a substantial opening therebetween. A plurality of insulator members 17 are supported in aligned relation by a member 18 that is located in operative position between transverse members 14 and interlocked in a manner hereinafter more fully described to the overhanging portions 15 and 16 thereof.

The insulator-supporting member 18 comprises substantially a metallic casing of which the sides 19 and 21 thereof extend downwardly and outwardly from the top 22 thereof and are perforated as at 23 to provide for the extension therethrough of shoulder portions 24 and 25 of the insulator members 17. The lower portions 26 of the insulator-supporting member 18 extend initially inwardly from the side portions 19 and 21 thereof and the lower extremities 27 are bent at substantially right angles to the inwardly extending portions 26.

The laterally extending members 12 and 13 of the supporting frame 11 are provided with a plurality of perforations 28 for a purpose hereinafter more fully described.

In assembling the heating unit, insulator members 17 are loosely inserted in the sides of the insulator-supporting members 18 with the shoulder portions 24 and 25 thereof extending slightly therethrough. The sides of the insulator-supporting member are then crimped inwardly until they substantially conform to the sides of the insulator, thereby firmly interlocking with the insulator. The shoulders 24 and 25 thereof extend through the sides of the insulator-supporting member, the walls of the perforations

23 serve to support the insulator from movement downwardly and upwardly, and the sides of the insulator supporting member abut the upper and the lower portions 29 and 31 and prevent lateral movement thereof.

The assembled insulator and supporting members are then inserted at the lower portions thereof between the overhanging portions 15 and 16 of the transverse members 14. A wedging member 32 is inserted through the perforation 28 in the laterally extending member 12 and forced between the inwardly extending lower portions 26 of the insulator-supporting member thereby causing them to assume a substantially vertical position abutting the overhanging portions 15 and 16 of the transverse members 14, with the rectangularly extending portions 27 thereof abutting the under faces 33 and 34 of the overhanging portions 15 and 16. The wedging member 32 is so shaped that a portion 35 thereof abuts the inner surface of the lower portions 26 of the insulator-supporting member 18 to prevent lateral movement thereof, and a pair of portions 36 and 37 extend outwardly beneath the overhanging portions 15 and 16 of the transverse members 14 and abut the rectangularly extending portions 27 of the insulator-supporting member 18 to prevent downward movement thereof. The insulator-supporting member 18 is thereby firmly interlocked with the transverse members 14. A helically wound resistor member 38 may now be threaded through perforations 39 of the insulator members 17 and will be substantially supported thereby in operative position.

It is obvious that the structure employed in my invention is easily assembled with the parts thereof interlocked in such manner that they are held firmly in operative position.

Various modifications and changes may be made without departing from the spirit and scope of the invention, and I desire therefore

that only such limitations shall be placed thereon as are imposed by the prior art or are set forth in the appended claims.

I claim as my invention:

1. In an electric heater, the combination with a supporting frame having a plurality of members of substantially U-shape having overhanging portions, and a plurality of insulator-supporting members adapted to coact with said overhanging portions, of means for interlocking said supporting members with said overhanging portions.

2. In an electric heater, the combination with a supporting frame having a plurality of transverse members, of means disposed between adjacent pairs of said members for supporting a plurality of insulator members.

3. In an electric heater, the combination with a supporting frame having a plurality of transverse members, of means interlocked with and disposed between adjacent pairs of said members for supporting a plurality of insulator members.

4. In an electric heater, the combination with a frame having a plurality of cooperating pairs of transverse members, of a plurality of insulator members adapted initially to be located loosely in between pairs of said transverse members and finally to be interlocked firmly therewith.

5. In an electric heater, the combination with a supporting frame having a plurality of cooperating pairs of transverse members and a plurality of insulator members, of a plurality of insulator-supporting members adapted initially to loosely support said insulator members and finally to interlock firmly therewith and with said respective pairs of transverse members, and means coextensive with said insulator-supporting members for maintaining them in such interlocked condition.

In testimony whereof, I have hereunto subscribed my name this 10th day of January, 1925.

KARL EHROGOTT.