Aug. 25, 1931. F. F. FORSHEE 1,820,696

SUPPORT FOR ELECTRIC HEATING UNITS

Filed May 3, 1927

Fig. 1.

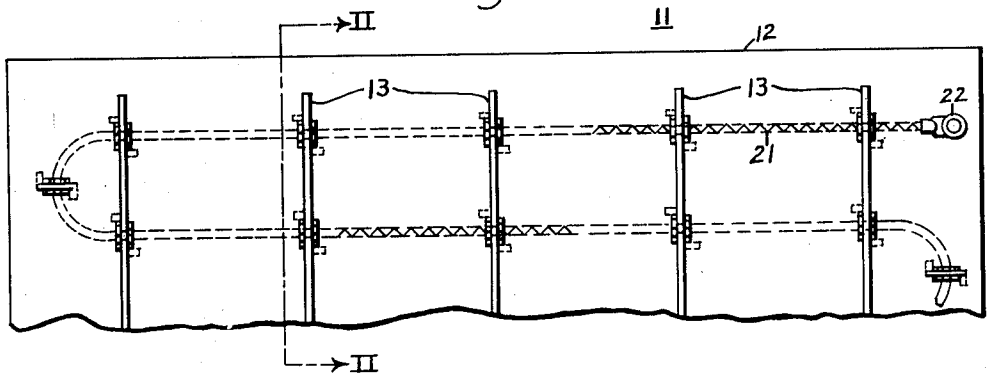


Fig. 2.

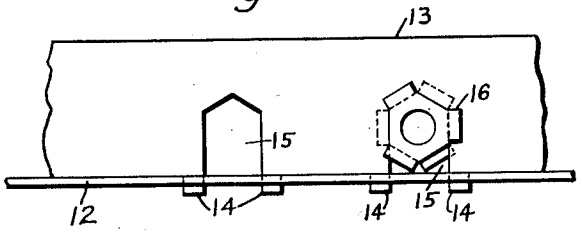


Fig. 3.

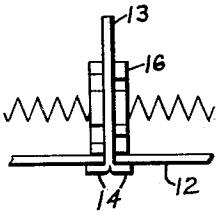


Fig. 4.

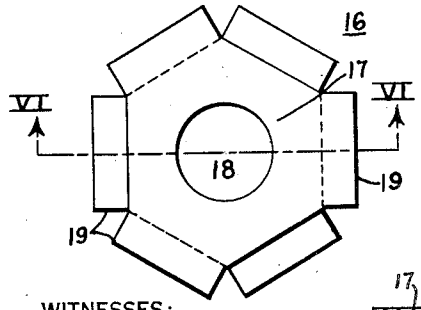


Fig. 5.

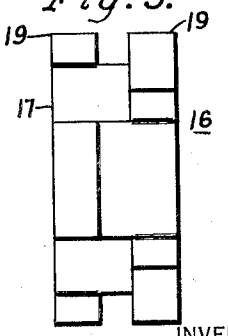
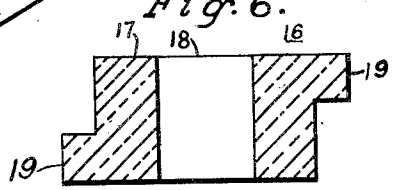


Fig. 6.



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UNITED STATES PATENT OFFICE

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SUPPORT FOR ELECTRIC HEATING UNITS

Application filed May 3, 1927. Serial No. 188,447.

My invention relates to electrically heated devices and particularly to electric-heating units.

An object of my invention is to provide a relatively simple refractory member that shall be inexpensive to manufacture by a molding process, for supporting a resistor wire in a heating unit.

In practicing my invention, I provide a supporting plate, a strip of sheet metal secured thereto on edge by turned-over integral lugs, and having recesses in one edge for receiving refractory thimbles. The thimbles each embody a perforated central portion and a plurality of integral radial extensions thereon, alternate extensions being located at opposite lateral faces of the central portion and staggered peripherally relatively to each other.

In the single sheet of drawings,

Figure 1 is a fragmentary top plan view of a heating unit embodying my invention.

Fig. 2 is a sectional view therethrough, taken on the line II—II of Fig. 1 and shown on an enlarged scale,

Fig. 3 is an end view of the parts shown in Fig. 2,

Fig. 4 is a view, in front elevation, of a refractory thimble shown on a still further enlarged scale,

Fig. 5 is an end view thereof, and

Fig. 6 is a sectional view therethrough taken on the line VI—VI of Fig. 4.

An electric heating unit 11 comprises a supporting plate 12 of sheet metal having secured thereto a plurality of strips 13 of sheet metal located in parallel-spaced relation thereon and secured thereagainst by integral lugs or extensions 14 extending beyond one edge thereof, which edge is provided with a plurality of spaced recesses 15.

The recesses are adapted to receive refractory thimbles 16, which are shown on an enlarged scale in Figs. 4 to 6 of the drawings. As there shown, each thimble comprises a central portion 17 having an opening or perforation 18 extending longitudinally therethrough. A plurality of spaced sets of radially-extending integral extensions 19 are provided on the central portion, the extensions of each set alternating peripherally with the extensions of the other set, the extensions of each set being located at the two lateral faces of the central portion 17. The extentions of one set are staggered relatively to the extensions of the other set peripherally of the central portion 17.

I have shown the central portion as being substantially hexagonal at its outer peripheral surface and while I prefer this contour to any other, I do not desire to be limited thereto, as any other number of faces may be employed or I may use a substantially circular contour.

As shown more particularly in Fig. 2 of the drawings, the inner portions of the recesses 15 are made of triangular shape in order to conform to the periphery of the central portion 17. The longitudinal distance between the two sets of extensions 19 is made sufficient to permit the strip 13 to be located therebetween, as is shown more particularly in Fig. 3 of the drawings.

I am well aware that refractory thimbles having a central perforation extending therethrough in a longitudinal direction have been used heretofore, but the spaced flanges thereof have been continuous in a peripheral direction and when such thimbles were molded, it was necessary to employ a molding machine having molding members movable in more than one direction; that is, while certain elements of the mold were movable in one direction, other elements of the mold had to be moved in a direction at right angles to the movement of other elements in order to properly mold such a thimble.

The thimble embodying my invention can be molded in a machine whose movable members move in one plane only, that plane being longitudinally of the thimble and in a direction axially of the opening 18. A thimble of this kind can be molded by the use of three uniformly-peripherally-spaced extensions projecting, say to the left, and by three cooperating uniformly-peripherally-spaced extensions projecting to the right and staggered relatively to the members

extending to the left. Another element is, of course, provided for forming the perforation 18, this latter member extending in either direction. Hence, a thimble of this kind can be molded in a much simpler molding device than has heretofore been necessary where the peripheral flanges were continuous and separated by a peripheral groove.

As hereinbefore stated, a number of sheet metal strips 13 having a plurality of recesses 15 in one edge thereof, in which thimbles 16 are located are mounted against a supporting plate. A resistor 21, which may be in the form of a helically-wound resistor wire, extends through the perforations 18 and therebeyond to be supported away from the supporting plate 12 and to thereby provide a light-weight and substantially open heating unit. The usual terminal members, one of which is indicated at 22, may be provided, but as this detail constitutes no part of my invention, it is not described in detail.

Various modifications may be made in the device embodying my invention without departing from the spirit and scope thereof, and I desire, therefore, that only such limitations shall be placed thereon as are imposed by the prior art or are specifically set forth in the appended claims.

I claim as my invention:

1. A molded refractory thimble embodying a central portion of polygonal shape in lateral section and having a longitudinal opening therein, and a plurality of integral radial extensions on the central portion, said radial extensions being located alternately at opposite lateral faces of the central portion and spaced longitudinally and peripherally from each other.

2. A molded refractory insulator for supporting a resistor comprising a body portion provided with an opening for the resistor and lugs disposed on opposite faces thereof, the lugs on the one face being staggered relative to those on the other, said lugs extending laterally of a plane containing the axis of said opening.

In testimony whereof, I have hereunto subscribed my name this 28th day of April, 1927.

FRANK F. FORSHEE.