

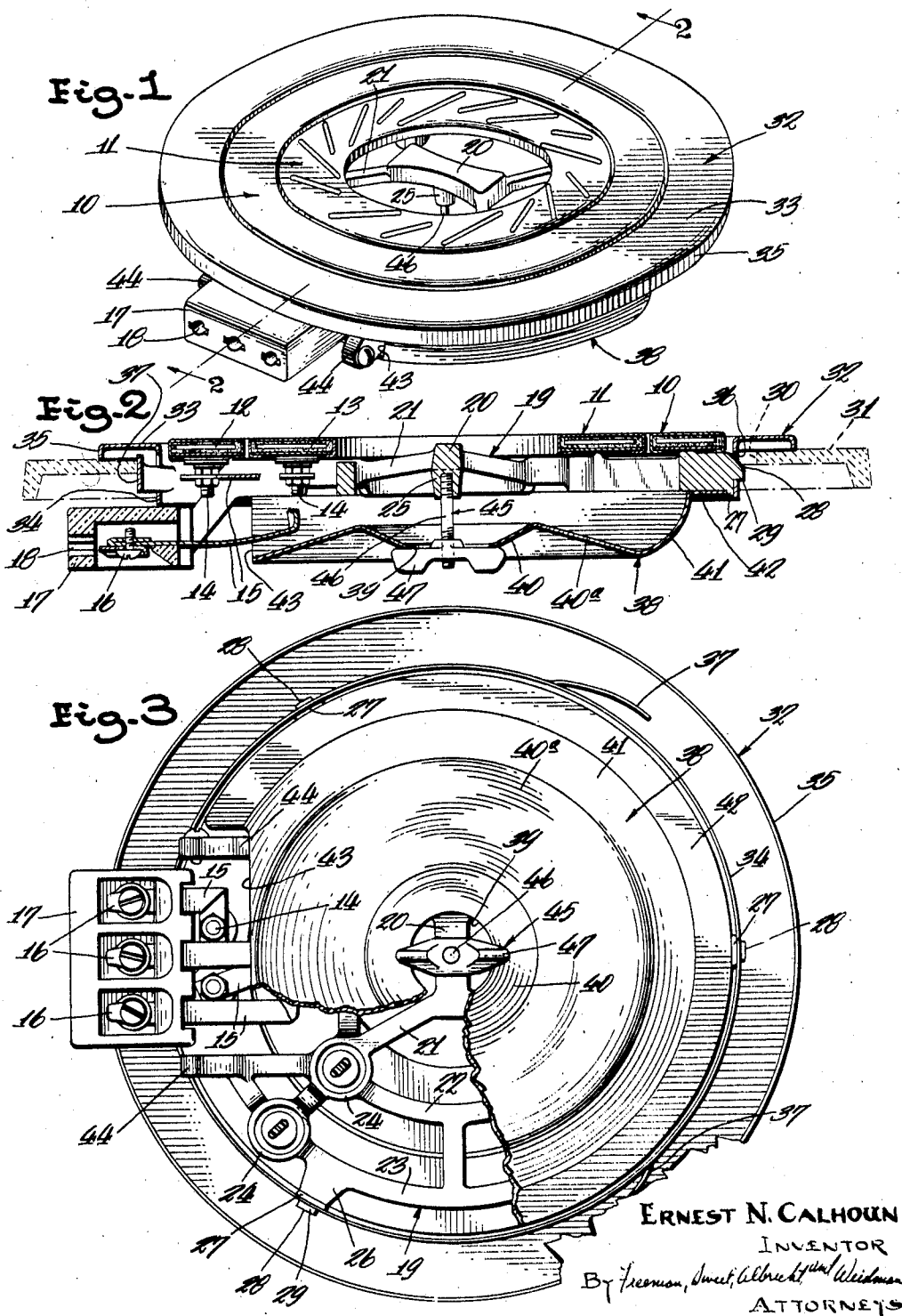
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E. N. CALHOUN

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HEATING MEANS

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HEATING MEANS

Ernest N. Calhoun, Pittsburgh, Pa., assignor, by
mesne assignments, to Edwin L. Wiegand

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My invention relates to heating means, and more particularly to the type of heating means incorporating electrical resistance type of heating units mountable on a support, in combination with a reflector means for directing at least a part of the heat radiating from the heating units. The principal object of my invention is to provide a new and improved relation between the heating means, the support, and the reflector means.

In the drawing accompanying this specification, and forming a part of this application, I have shown, for purposes of illustration, one form which my invention may assume, and in this drawing:

Figure 1 is a perspective view of the embodiment of my invention,

Figure 2 is a vertical sectional view, the line of section being suggested by the line 2—2 of Figure 1, and

Figure 3 is a bottom plan view of the embodiment, a part of the reflector means being broken away to more clearly disclose structure otherwise hidden, and a part of the supporting flange being broken off to better fit the view to the sheet.

The embodiment of my invention herein disclosed comprises heating means 10 and 11, which may be in the form of annular, concentric electrical heating units, as best shown in Figures 1 and 2. The heating means 10 and 11 are respectively provided with electrical resistance heating members 12 and 13 disposed within a suitable metallic shell or sheath and suitably insulated from the confining walls of the sheath.

Each of the heating means 10 and 11 is provided with terminals 14 suitably electrically connected to the respective resistance members 12 and 13 to provide for the connection of conductors 15 leading to a source of energy. In this case the conductors 15 lead to terminals 16 disposed within an insulating block 17, which may be of porcelain. The insulating block 17 is provided with apertures 18 through which energy conductors (not shown) may be disposed for connection to the terminals 16. The block 17 is held in operative position by reason of its connection to the conductors 15, the latter preferably being in the form of elongated strips, as best shown in Figure 3.

The heating means 10 and 11 are mounted on a support 19, preferably formed in the shape of an annular spider, as suggested in Figure 3, and having a centrally disposed lug 20 integrally connected, by arms 21, to concentric webs 22 and 23. At each junction of the arms 21 and webs 22 and

23, there is provided a recessed boss 24, having an aperture through which one end of a securing device, such as a staple means, may be passed and secured, the other end of the securing device being secured to a respective heating means. In this manner, the heating means 10 and 11 are effectively secured to the support 19, and as suggested in Figures 1 and 2, the heating means are disposed at the top side of the support 19. The lug 20 is provided with an internally screw-threaded boss 25, projecting from the under side thereof.

At radially spaced points, the web 23 is provided with radial extensions 26, here shown to be three in number and spaced equidistantly with respect to one another. Each of the extensions 26 is provided with a downwardly projecting abutment 27, and a lug portion 28 tapering downwardly from the top surface of the support 19 to a point midway of the width of the extension 26, and forming a shoulder 29. It will be understood that the terms up, down, top, and under are used to designate the disposition of the parts when normally assembled with a stove or other supporting surface.

The heating means 10 and 11, when properly secured to the mounting means 19, may be assembled with a stove surface by resting the under side of the webs 22 and 23, and the extensions 26, directly on the surface, and permitting any depending parts to project through an aperture in the surface. However, in some instances, the aperture 30 in the stove surface 31, as designated by broken lines in Figure 2, is greater in size than the size of the web 23, and in that case an adapter means 32 may advantageously be used. The adapter means 32 here shown comprises an annular sheet metal plate 33 having downturned inner and outer flanges 34 and 35. The inner flange 34 is provided with recesses 36, and the adapter means 32 may be assembled by disposing the terminating margin of the inner flange 34 on the tapered surfaces of the lug portions 28, with the recesses 36 formed in the inner flange 34 in alignment with the lug portions 28, and pressing downwardly on the adapter means 32 to cause the margins of the recesses 36 to snap into engagement with the shoulders 29 of the lug portions 28. The combined structure may then be assembled with the stove by resting the terminating margin of the flange 35 on the stove surface 31 and permitting the depending parts to extend through the aperture 30. The inner flange 34 may be provided with struckout parts 37 to engage the surface of the stove aperture 30 so as to

resiliently hold the assembled heating means in position with respect to the stove.

Disposed on the under side of the support 19, or on the side opposite the heating means 10 and 11, is a reflector means 38, for reflecting upwardly at least a part of the heat radiating from the heating means 10 and 11. The reflector means 38 is here shown as being generally annular and dish-shaped, and is provided with a central aperture 39, surrounded by an upwardly slanting annular surface 40, outside of which is a downwardly slanting annular surface 40a, merging with an abruptly curved annular surface 41 terminating in a flat flange 42. The curved surface 41 and flange 42 are interrupted, as shown at 43, to provide for the passage of the strip conductors 15. It will be apparent that the shape of the reflector means herein shown is merely illustrative of one form thereof, and that the reflector may be shaped otherwise than that herein shown. The margin of the flange 42 is of a diameter to closely lie within the compass of the abutments 27 formed on the extensions 26 of the web 23, so that the reflector is properly registered with the heating means 10 and 11, and the support 19. Application of the reflector means 38 to the support 19 in predetermined position may be assured by forming the support 19 with a pair of spaced arms 44 disposed on opposite sides of the insulating block 17, the arms 44 cooperating with the interrupted portions of the curved surface 41 and flange 42 to provide assembly of the reflector means 38 in one position only.

Fastening means 45 are provided to hold the reflector means 38 to the support 19, and as here shown, the fastening means 45 comprise a stud 46 provided with screw-threads at its opposite extremities. One extremity of the stud 46 is screw-threadedly disposed within the aperture 39 in the boss 25, and the opposite extremity projects from the boss 25 and extends through the central aperture 39 in the reflector means 38. A wing nut 47 is threaded on the free extremity of the stud 46, the wing nut 47 being run up to engage the surface of the reflector means 38 adjacent the margin of the aperture 39. As best shown in Figure 3, the wing nut 47 is preferably elongated to span the aperture 39, and is relatively narrow so as not to completely obstruct passage through the opening formed by the aperture 39. It will be understood, of course, that the fastening means may be variously changed, as for instance, the stud 46 may be made integral with the wing nut 47, and fastening of the reflector means 38 to the support 19 may be effected by threading the extremity of the stud into the screw-threaded aperture in the boss 25.

From the foregoing it will be apparent to those skilled in the art that the illustrated embodiment of my invention provides a new and improved heating means economical in construction and assembly, and accordingly, accomplishes at least the principal object of my invention. It further will be obvious to those skilled in the art that the illustrated embodiment of my invention may be variously changed and modified without departing from the spirit of my invention, or sacrificing all of the advantages thereof, and that accordingly, the disclosure herein is illustrative only, and my invention is not limited thereto.

I claim:

1. In combination: a support; heating means mounted on said support; reflecting means co-operable with said heating means, said reflecting means being provided with an aperture; and

fastening means having a part engaging said reflecting means adjacent the margin of said aperture, said fastening means being constructed and arranged to hold said reflecting means to said support, and to close off only a portion of said aperture.

2. In combination: a support having centrally disposed lug means provided with a screw-threaded aperture; generally annular heating means mounted on one side of said support; generally annular reflecting means, disposed on the other side of said support, and being cooperable with said heating means, said reflecting means being provided with a central aperture; and fastening means, including a stud provided with screw-threads on its extremities, and an elongated wing nut, one extremity of said stud being screw-threadedly engaged within said lug means aperture, and the other extremity projecting through said reflector aperture and being engaged by said wing nut, said wing nut spanning said reflector means aperture to hold said reflector means to said support, and being relatively narrow to close off only a portion of said reflector means aperture.

3. A heating device, comprising: a support; heating means, secured to one surface of said support; heat directing means, cooperable with said heating means, and comprising a generally dish-shaped body having a central opening, the peripheral edges of said body bearing against the opposite surface of said support; and fastening means extending from said support and through said central opening and engaging portions of said directing means adjacent said opening, holding said directing means to said support.

4. A heating device, comprising: a support; heating means, secured to said support; means for directing heat produced by said heating means, and comprising a generally dish-shaped body having a central opening; and fastening means, holding said directing means to said support, and comprising a stud extending from said support through said body opening and being threaded at this point, the cross-sectional area of said stud being smaller than the cross-sectional area of said opening, so that the periphery of said stud is spaced some distance from the margin of said opening, and a wing nut threaded on said stud and spanning but not blocking said opening and bearing against the surface of said directing means adjacent said aperture.

5. A heating device, comprising: a supporting means, adapted to be supported from a stove top; one or more heating units supported by said supporting means on the upper side of said supporting means; a reflector beneath said supporting means, provided with a central aperture for the passage of air; said supporting means comprising means engaging said reflector adjacent said aperture, supporting said reflector in position, without blocking said aperture.

6. A heating device, comprising: a support, having locating abutment means; heating means, secured to said support; means for directing heat produced by said heating means, comprising a generally dish-shaped body having an opening located interiorly of the margins of said body; fastening means, engaging said directing means adjacent said opening, so constructed and arranged to hold said directing means against axial movement with respect to said support, yet permit lateral movement of said directing means with respect to said support; and the margins of said body abutting said support abutment means to

position said directing means laterally with respect to said support.

5 7. A heating device, comprising: a support, having locating abutment means; heating means, secured to said support; means for directing heat produced by said heating means, comprising a generally dish-shaped body having a central opening; fastening means, comprising a stud extending from said support through said central opening, and a part detachably secured to said stud
10 and engaging said body adjacent said aperture,

the cross-sectional area of said stud being substantially smaller than the cross-sectional area of said opening, whereby said directing means is held against axial movement with respect to said support, yet is permitted to move laterally with respect to said support; and the margins of said body abutting said support abutment means to position said directing means laterally with respect to said support.

ERNEST N. CALHOUN.

10