Jan. 26, 1954 H. C. CUNNINGHAM 2,667,564

ELECTRIC HEATING

Filed Aug. 15, 1950 2 Sheets-Sheet 1

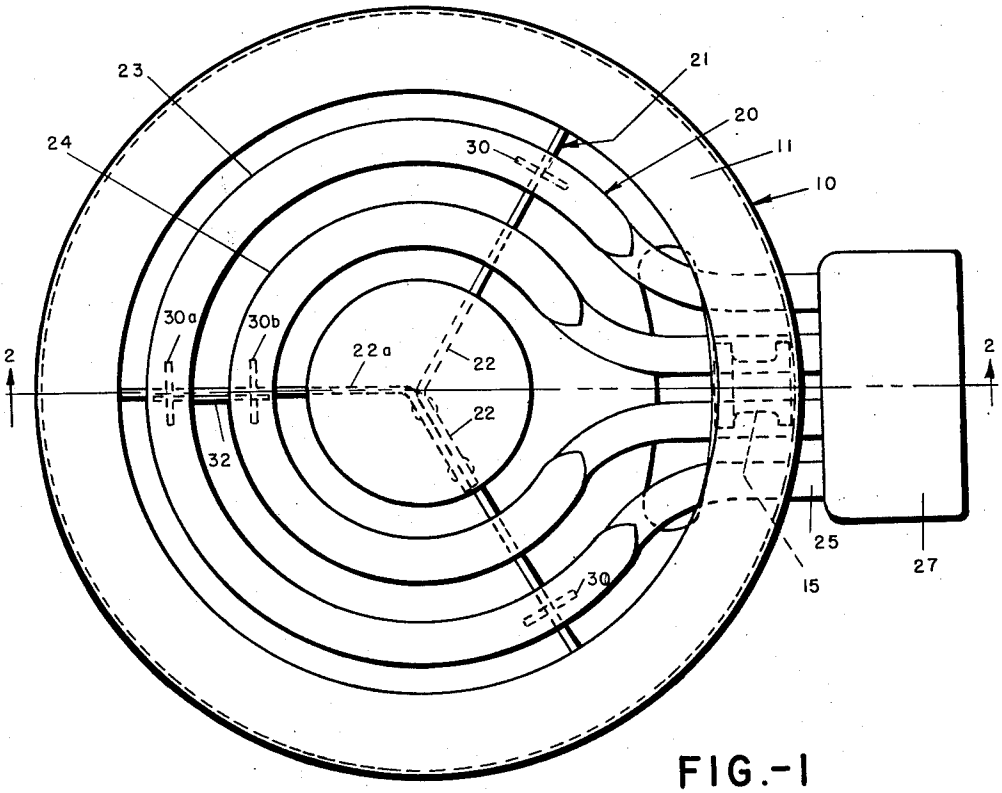


FIG.-1

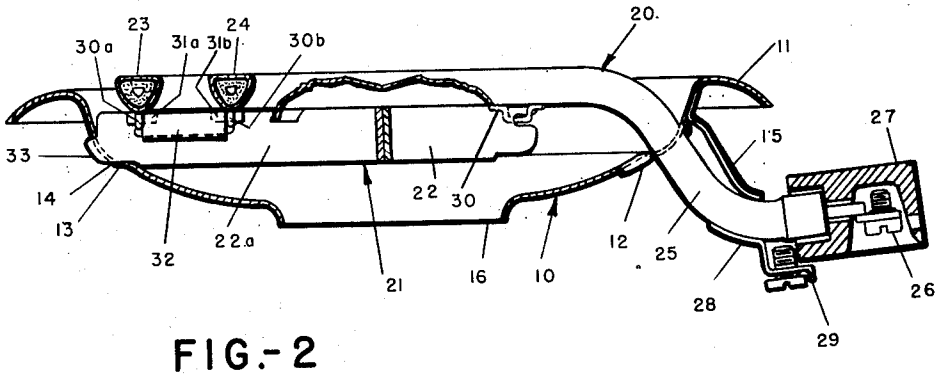


FIG.-2

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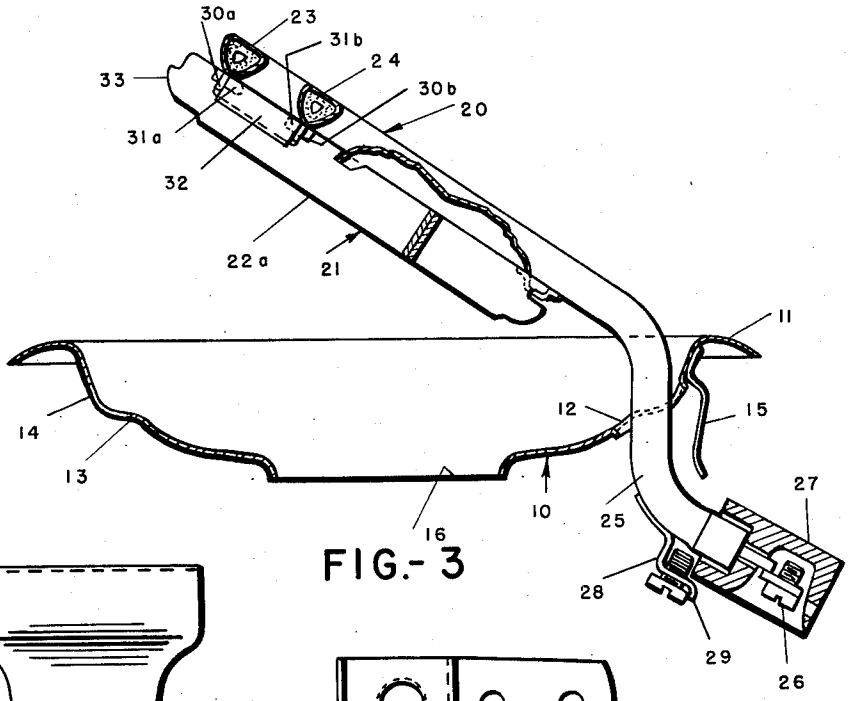


FIG.- 3

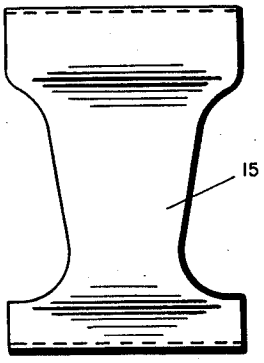


FIG.- 4

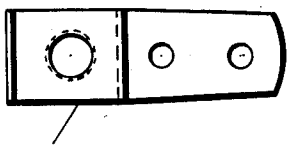


FIG.- 5

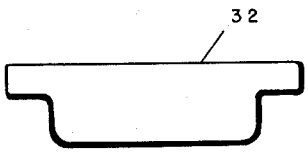


FIG.- 6



FIG.- 7

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ELECTRIC HEATING

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Application August 15, 1950, Serial No. 179,424

6 Claims. (Cl. 219—37)

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My invention relates to electric heating, and the principal object of my invention is to provide an improved electric heating unit especially for use as a surface unit on an electric range or hot plate.

In the drawings accompanying this specification and forming a part of this application I have shown for purposes of illustration what I now consider to be the best mode of carrying my invention into practice, and in these drawings:

Figure 1 is a plan view of this illustrative embodiment;

Figure 2 is approximately a section on the line 2—2 of Figure 1;

Figure 3 is a view similar to Figure 2 but with the frame and elements assembly in raised position;

Figure 4 is an enlarged elevation of the leaf spring shown in edge view in Figures 2 and 3;

Figure 5 is an enlarged elevation of the ground strap shown in elevation in Figures 2 and 3;

Figure 6 is an enlarged elevation of the spacer employed to hold the elements attached to the frame; and

Figure 7 is an edge view of the spacer of Figure 6 showing its contour before it is applied.

The disclosed embodiment of my invention comprises a surface unit including a heating element assembly 20 carried by a reflector 10 provided with an integral rim 11 by which the entire unit is adapted to be supported from the top plate of an electric range or hot plate or other device, not shown.

The illustrated assembly 20 comprises a frame 21 having three arms 22 arranged in star formation, two electric heating elements 23 and 24 supported by the frame 21, having their terminal portions 25 extending through an opening 12 in the lateral wall of the reflector 10, and provided with terminals 26 for attachment of the connecting conductors, a terminal block 27 covering the terminals 26, and a ground strap 28 welded to one of the elements 23 and 24 and provided with a terminal 29 for attachment of the grounding conductor.

As herein shown the elements 23 and 24 are removably held to the frame 21 by means of loops 30 welded to the lower sides of the elements 23 and 24, engaging over cooperating projections 31 forming in the arms 22, and normally held in position on the projections 31 by means of a spacer 32 extending intermediate the loops 30*a* and 30*b* engaging the projections 31*a* and 31*b* on the arm 22*a*, formed initially of the contour in-

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dicated in Figure 7, and then flattened into position.

In the present embodiment the assembly 20 is supported from the reflector 10 by the ends of the assembly frame arms 22 resting on a shoulder 13 provided by the contour of the reflector 10, and is releasably held against raising to the position indicated in Figure 3, by the reception of an extension 33 of the arm 22*a* within an aperture 14 formed in the wall of the reflector 10.

Thus to move the assembly 20 to the position shown in Figure 3, the assembly 20 is first moved laterally relative to the reflector 10, to the right as viewed in the present drawings, and to releasably hold the assembly 20 against such movement, in the present embodiment the reflector 10 is provided with a leaf spring 15 welded to the reflector 10 and engaging the terminal portions 25 of the elements 23 and 24 when the assembly 20 is in the normal or operative position as shown in Figures 1 and 2.

Obviously the aperture 12 in the reflector 10 is made of sufficient size to permit the upward swinging of the assembly 20, and preferably the reflector 10 is provided with a central aperture 16 to permit the flow of air from the space below the reflector.

From the foregoing it will be apparent that the described embodiment accomplishes at least the principal object of my invention, and on the other hand, that various alternates may be employed, within the purview of my invention, and therefore that my invention is not limited to the specific construction herein shown and described.

Wherefore I claim:

1. An electric heating unit assembly comprising, in combination with a surface unit tiltable into and out of article receiving position including a heating element shaped to provide an active article receiving portion, terminal portions extending laterally outwardly from said active article receiving portion, and an extension extending from said surface unit in a direction radially outwardly from said active portion and disposed oppositely of said terminal portions, a ring-like member for supporting the assembly from the top plate of an electric range or hot plate including an inwardly extending ledge on which said surface unit rests when in article receiving position, a lateral opening in said ring through which the terminal portions of said heating element extend, an oppositely disposed opening in said ring for receiving the radially outwardly extending extension on said surface

unit, and leaf spring means for urging said radial extension toward and maintaining said radial extension in the opening in said ring when the surface unit is resting on said ledge in article receiving position, said leaf spring means being positioned adjacent to the lateral opening in said ring through which the terminal portions of the heating element extend and having a free end engaging the upper surfaces of the terminal portions of said heating element beyond said lateral opening and exerting lateral force on said heating element terminal portions and thereby on said surface unit.

2. An electric heating unit assembly comprising, in combination with a surface unit tiltable into and out of article receiving position including a heating element shaped to provde an active article receiving portion, terminal portions extending laterally outwardly from said active article receiving portion, and an extension extending from said surface unit in a direction radially outwardly from said active portion and disposed oppositely of said terminal portions, a ring-like member for supporting the assembly from the top plate of an electric range or hot plate including an inwardly extending ledge on which said surface unit rests when in article receiving position, a lateral opening in said ring through which the terminal portions of said heating element extend, an oppositely disposed opening in said ring for receiving the radially outwardly extending extension on said surface unit, and means for urging said radial extension toward and maintaining said radial extension in the opening in said ring when the surface unit is resting on said ledge in article receiving position, said means including a leaf spring depending from the outer surface of said ring, juxtaposed with the lateral opening in said ring through which the terminal portions of the heating element extend, having a free end engaging the upper surfaces of the terminal portions of said heating element beyond said lateral opening, and exerting lateral force on said heating element terminal portions and thereby on said surface unit.

3. An electric heating unit assembly comprising, in combination with a surface unit tiltable into and out of article receiving position including a heating element shaped to provide an active article receiving portion, terminal positions extending laterally outwardly from said active article receiving portion, and an extension extending radially outwardly from said active portion and disposed oppositely of said terminal portions, a ring-like member for supporting the assembly from the top plate of an electric range or hot plate including an inwardly extending ledge on which the active portion of the heating element rests when the heating element is in article receiving position, a lateral opening in said ring through which the terminal portions of said heating element extend, an oppositely disposed opening in said ring for receiving the radially outwardly extending extension on said active portion and means for urging said radial extension toward and maintaining said radial extension in the opening in said ring when the active portion of the heating element is resting on said ledge in article receiving position, said means including a leaf spring secured to the outer surface of said ring above said lateral opening, depending from said ring, juxtaposed with and substantially overlying the lateral opening in said ring through which the terminal portions of the heating element extend, said leaf spring being angled in a direction away from said lateral opening and having a free end extending below the center of said lateral opening and engaging the upper surfaces of the terminal portions of said heating element beyond said lateral opening, and exerting lateral force on said heating element terminal portions and thereby on said surface unit.

4. An electric heating unit assembly comprising, in combination with a surface unit tiltable into and out of article receiving position including a heating element shaped to provide an active article receiving portion, terminal portions extending laterally outwardly from said active article receiving portion, and an extension extending radially outwardly from said active portion and disposed oppositely of said terminal portions, a reflector provided with an integral annular rim by which said assembly is adapted to be supported, an inwardly extending ledge on said reflector on which the active portion of the heating element rests when the heating element is in article receiving position, a lateral opening in said reflector through which the terminal portions of the heater element extends, an oppositely disposed opening in said reflector for receiving the radially outwardly extending extension on said heating element, and means for urging said radial extension toward and maintaining said radial extension in the opening in said reflector when the heating element is resting on said ledge in article receiving position, said means including a resilient member depending from the outer surface of said reflector and substantially overlying the lateral opening in said reflector through which the terminal portions of the heating element extend, and having a free end extending below the center of said lateral opening and only having abuttable engagement with the upper surfaces of the terminal portions of said heating element beyond the lateral opening, and exerting lateral force on said terminal portions through said abuttable engagement and thereby on said heating element.

5. An electric heating unit comprising an assembly including a frame and heating element means overlying said frame and carried thereby, a bowl-like reflector having means adapted to rest on a supporting surface and thereby be supported, said reflector having an inwardly directed horizontal ledge surface upon which said frame rests in operative position within said reflector, and said reflector also having an aperture in its wall, said heating means comprising an active portion upon which the object to be heated is adapted to rest and terminal means extending angularly and downwardly from said active portion and loosely through said aperture to form a loosely hinged connection of said assembly with said reflector, whereby said assembly may be tilted upwardly from operative position and may also be shifted horizontally along said ledge surface, latch means in part carried by said reflector and in part carried by said assembly and positioned in opposed relation to said hinge connection, said latch means being moved to latching or unlatching relation by horizontal shifting of said assembly, and a leaf spring adjacent said hinge connection and having one end connected to said reflector and its opposite end in position to be abutted by said terminal means when said assembly is in operative position and to yieldably urge said assembly horizontally along

said ledge surface in a direction to effect interengagement of said latch means.

6. An electric heating unit comprising an assembly including a frame and heating element means overlying said frame and carried thereby, said heating element means including an active portion upon which the object to be heated is adapted to rest and terminal means extending angularly outwardly and downwardly from said active portion, a bowl-like reflector having an aperture in its side wall, resilient means positioned to generally block free access through said aperture, said reflector having also an inwardly extending horizontal ledge surface, said assembly being assembled with said reflector by tilting the former relative to the latter and moving said terminal means through said aperture to extend outwardly of said reflector, and thereafter lowering said assembly to operative position within said reflector and in supported relation on said ledge surface, movement of said assembly to operative position causing engagement of said terminal means with said resilient means and flexing of the latter to urge said assembly to shift along said ledge, and latch means interengaged by such shifting movement.

HARRY C. CUNNINGHAM.

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