

May 1, 1951

J. MCORLLY

2,550,843

ELECTRIC HEATING UNIT

Filed Feb. 12, 1945

2 Sheets-Sheet 1

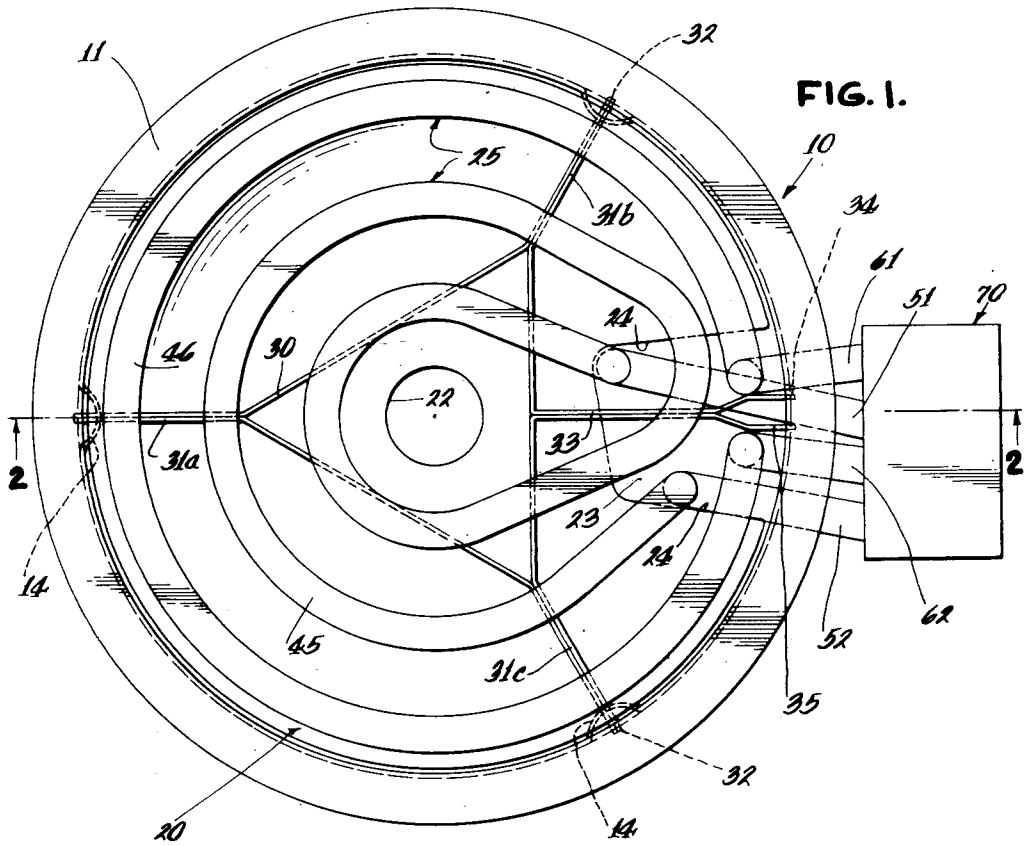


FIG. 1.

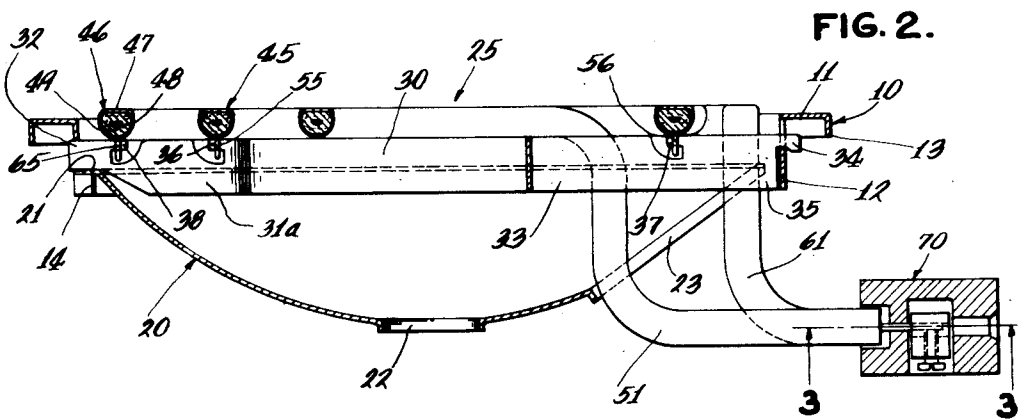


FIG. 2.

JOSEPH MCORLLY
INVENTOR

BY *Freeman Albrecht and Williams*
ATTORNEYS

May 1, 1951

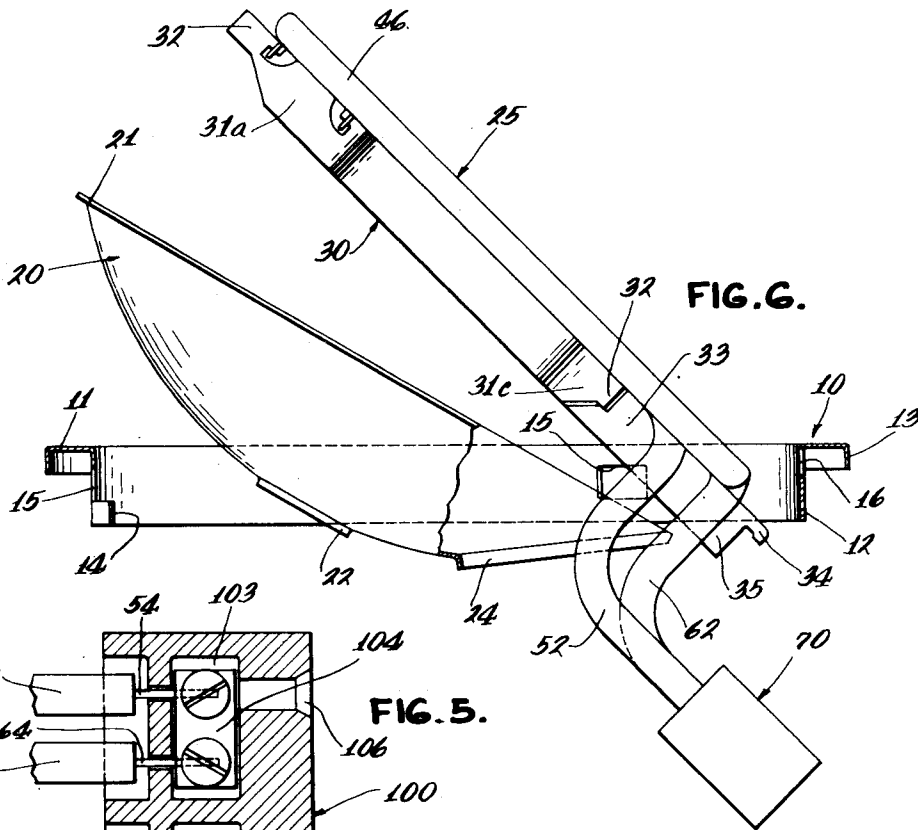
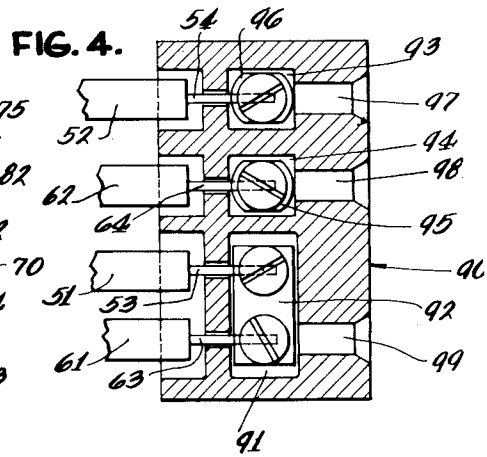
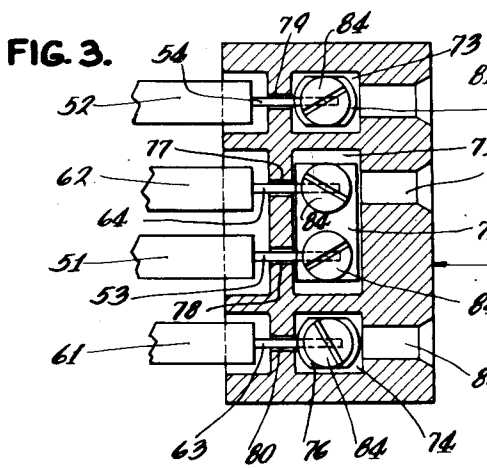
J. MCORLLY

2,550,843

ELECTRIC HEATING UNIT

Filed Feb. 12, 1945

2 Sheets-Sheet 2



JOSEPH MC ORLLY
INVENTOR
BY *Freeman Albrecht and Williams*
ATTORNEYS

UNITED STATES PATENT OFFICE

2,550,843

ELECTRIC HEATING UNIT

Joseph McOrlly, Pittsburgh, Pa., assignor to Edwin L. Wiegand Company, Pittsburgh, Pa., a corporation of Pennsylvania

Application February 12, 1945, Serial No. 577,521

2 Claims. (Cl. 219—37)

1

My invention relates to electric heating units, and has particular application to electric heating units of the type used on electric ranges and electric hot plates, herein referred to as electric range units, and the principal object of my invention is to provide a new and improved electric heating unit of this type.

In the drawings 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 these drawings:

Figure 1 is a plan view of this illustrative embodiment,

Figure 2 is a vertical section on the line 2—2 of Figure 1,

Figure 3 is a horizontal section through the terminal block, on the line 3—3 of Figure 2,

Figure 4 is a view similar to Figure 3 showing an alternative arrangement of connections,

Figure 5 is a further view similar to Figure 3 showing a further arrangement of connections, and—

Figure 6 is a view showing the frame and heating element assembly displaced to permit removal of the reflector.

The embodiment of my invention herein disclosed comprises a supporting ring 10 constructed and arranged to carry a reflector 20 and a heating element assembly 25, the latter comprising a frame 30 and two heating elements 45 and 46.

The supporting ring 10 is formed of a single piece of sheet metal and is U-shape in cross-section comprising an annular top portion 11, a relatively long tubular portion 12 depending from the inner margin of the top portion 11 and constructed to enter the usual opening in the top of the range or hot plate, and a relatively short skirt 13 depending from the outer margin of the top portion 11 and adapted to rest on the margin of the top of the stove or hot plate surrounding the opening in which the tubular portion 12 is received.

The tubular portion 12 of the supporting ring 10 is provided adjacent its lower margin with three struck-in portions 14, and the reflector 20 and heating element assembly 25 are supported by the supporting ring 10 respectively by the margin 21 of the reflector 20 resting on these three struck-in portions 14, and by the three arms 31—a—b—c of the frame 30 resting on the margin 21 of the reflector 20 above the struck-in portions 14.

The tubular portion 12 of the supporting ring 10 is provided also with three slots 15 directly

2

above the three struck-in portions 14, and the reflector 20 and heating element assembly 25 are quick-detachably retained in position in the supporting ring 10 by the tips 32 of the arms 31 of the frame 30 snapping into these slots 15 in the tubular portion 12 of the supporting ring 10.

The frame 30 comprises also a further arm 33 extending opposite the arm 31a and is confined to a single position relative to the supporting ring 10 by engagement of the tips 34 of the bifurcated outer portion 35 of the arm 33 in further slots 16 provided in the annular portion 12 of the supporting ring 10 intermediate the slots 15 for the tips 32 of the arms 31b and 31c.

The electric heating elements 45 and 46 are of the tubular type, each comprising a tubular metallic sheath 47, a helical resistor 48 extending longitudinally of the sheath 47, and refractory material 49 embedding the resistor 48 and serving both to insulate the resistor 48 and also to conduct the heat from the resistor 48 to the sheath 47.

The element 46 is disposed generally surrounding the element 45, to afford a desired distribution of heat, especially when only the element 45 is energized, and the element 45 is provided with downwardly offset terminal portions 51 and 52 terminating in terminals 53 and 54, and the element 46 with downwardly offset terminal portions 61 and 62 terminating in terminals 63 and 64.

As shown in Figure 3, the terminals 53—54 and 63—64 enter a terminal block 70 provided with a central recess 71 in which is disposed a double connector 72 and with two laterally disposed recesses 73 and 74 in which are disposed two single connectors 75 and 76. Leading to the central recess 71 are two passages 77 and 78 through which the one terminal 64 of the element 46 and the one terminal 53 of the element 45, enter and are connected to the double connector block 72, while leading respectively to the laterally disposed recesses 73 and 74 are two passages 79 and 80 through which the other terminal 54 of the element 45 and the other terminal 64 of the element 46, enter and are secured respectively to the connector blocks 75 and 76.

In the opposite direction from the passages 77—80 the terminal block 70 is provided with three passages 81, 82, and 83, through which usual feed wires may be inserted and connected respectively to the double connector block 72 and the two single connector blocks 75 and 76, and all of the terminals and feed wires are held in

3

position by clamping screws 84, as is well known in the art.

In the alternate arrangement shown in Figure 4, the terminals 53—54 and 63—64 enter a terminal block 90, provided at one side with a double recess 91 in which is disposed a double connector 92 to which are secured the terminals 53 and 63, provided at the other side with two single recesses 93 and 94 in which are disposed two single connectors 95 and 96 to which are secured the terminals 64 and 54 respectively, and provided in the opposite direction with three passages 97, 98, and 99, through which usual feed wires may be inserted and connected to the double connector 92 and the single connectors 95 and 96 respectively.

However, in the further arrangement shown in Figure 5, designed for two-wire feed, the terminals 53—54 and 63—64 enter a terminal block 100, provided at one side with a double recess 101 in which is disposed a double connector 102 to which are secured the terminals 53 and 63, provided at the other side with another double recess 103 in which is disposed another double connector 104 to which are secured the remaining terminals 54 and 64, and provided in the opposite direction with two passages 105 and 106, through which usual feed wires may be inserted and connected to the two double connectors 102 and 104 respectively.

In any event the element 45 is provided with two depending loops 55 and 56 constructed and arranged to be engaged respectively with a finger 36 on the arm 31a and with a finger 37 on the further arm 33 and thereby to hold the element 45 in position on the frame 30. The element 45 is provided with only one depending loop 65, constructed and arranged to be engaged with a second finger 38 on the arm 31a of the frame 30, however the terminal portions 61—62 of the element 46 closely straddle the bifurcated portion 35 of the further arm 33, and thereby additionally position the element 46 relative to the frame 30.

As appears in the drawings, the finger 38 holding the element 46 extends in the opposite direction from the fingers 36 and 37 holding the element 45, so that the element 45 is disengageable from the frame 30 by movement relative to the frame 30 in one direction, and the element 46 by movement relative to the frame 30 in the opposite direction.

As will be understood by those skilled in the art, the terminal portions 51—52 and 61—62, and the terminals 53—54 and 63—64, of the elements 45 and 46, all are relatively rigid. Therefore when the terminals 53—54 and 63—64 are connected in the terminal block 70, 90, or 100, the elements 45 and 46 are effectively held against the movements in opposite directions necessary to disengage either the loops 55 and 56 from the fingers 36 and 37 or the loop 65 from the finger 38, and thereby both of the elements 45 and 46 are secured against detachment from the frame 30. Also the element 46, although secured to the frame 30 at only one place, nevertheless also is held against the frame 30 throughout.

The reflector 20 is provided with a central opening 22 for the discharge of spillage and for ventilation, and with a cut-out 23 for the terminal portions 51—52 and 61—62 of the elements

4

45 and 46, and is held against angular movement by engagement of the sides 24 of the cut-out 23 with the terminal portions 51—52 of the element 45.

5 With the above construction, the heating element assembly may be conveniently cleaned, also the reflector, the supporting ring, or both, may be removed for cleaning or replacement, merely by displacing the heating element assembly into approximately the position shown in Figure 4. The heating element assembly may be removed entirely, merely by disconnecting the three feed wires. Or either or both of the elements may be removed from the frame, merely by disconnecting sufficient of the heating element terminals. And of course by the reverse operations the various parts may be reassembled with equal facility.

From the foregoing it will be obvious to those skilled in the art that the embodiment of my invention herein disclosed provides a new and improved electric heating unit and therefore accomplishes at least the principal object of my invention. On the other hand, it will be obvious also that various modifications and changes may be made, while still retaining some or all of the advantages and benefits, and therefore that the within disclosure is illustrative only, and that my invention is not limited thereto.

Wherefore I claim:

20 1. An electric range unit comprising a frame and two electric heating elements supported by said frame, said frame and said elements comprising interacting members detachably securing said elements to said frame and permitting detachment of one of said elements on movement relative and approximately parallel to said frame in one direction and detachment of the other of said elements on movement relative and approximately parallel to said frame in a different direction, and means interconnecting said elements releasably preventing said movements.

2. An electric range unit comprising a frame and two electric heating elements supported by said frame, said frame and said elements comprising interacting members detachably securing said elements to said frame and permitting detachment of one of said elements on movement relative and approximately parallel to said frame in one direction and detachment of the other of said elements on movement relative and approximately parallel to said frame in approximately the opposite direction, and means interconnecting said elements releasably preventing said movements.

JOSEPH MCORLLY.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
933,622	Caven	Sept. 7, 1909
1,597,900	Keene	Aug. 31, 1926
2,119,680	Long	June 7, 1938
2,180,600	Mills	Nov. 21, 1939
2,286,161	Rights et al.	June 9, 1942
2,357,150	Vogel	Aug. 29, 1944
2,370,767	Backer	Mar. 6, 1945
2,413,477	Wiegand	Dec. 31, 1946