Sept. 9, 1958 M. E. FRY ET AL 2,851,029

DOMESTIC APPLIANCE

Filed Dec. 11, 1952

3 Sheets-Sheet 1

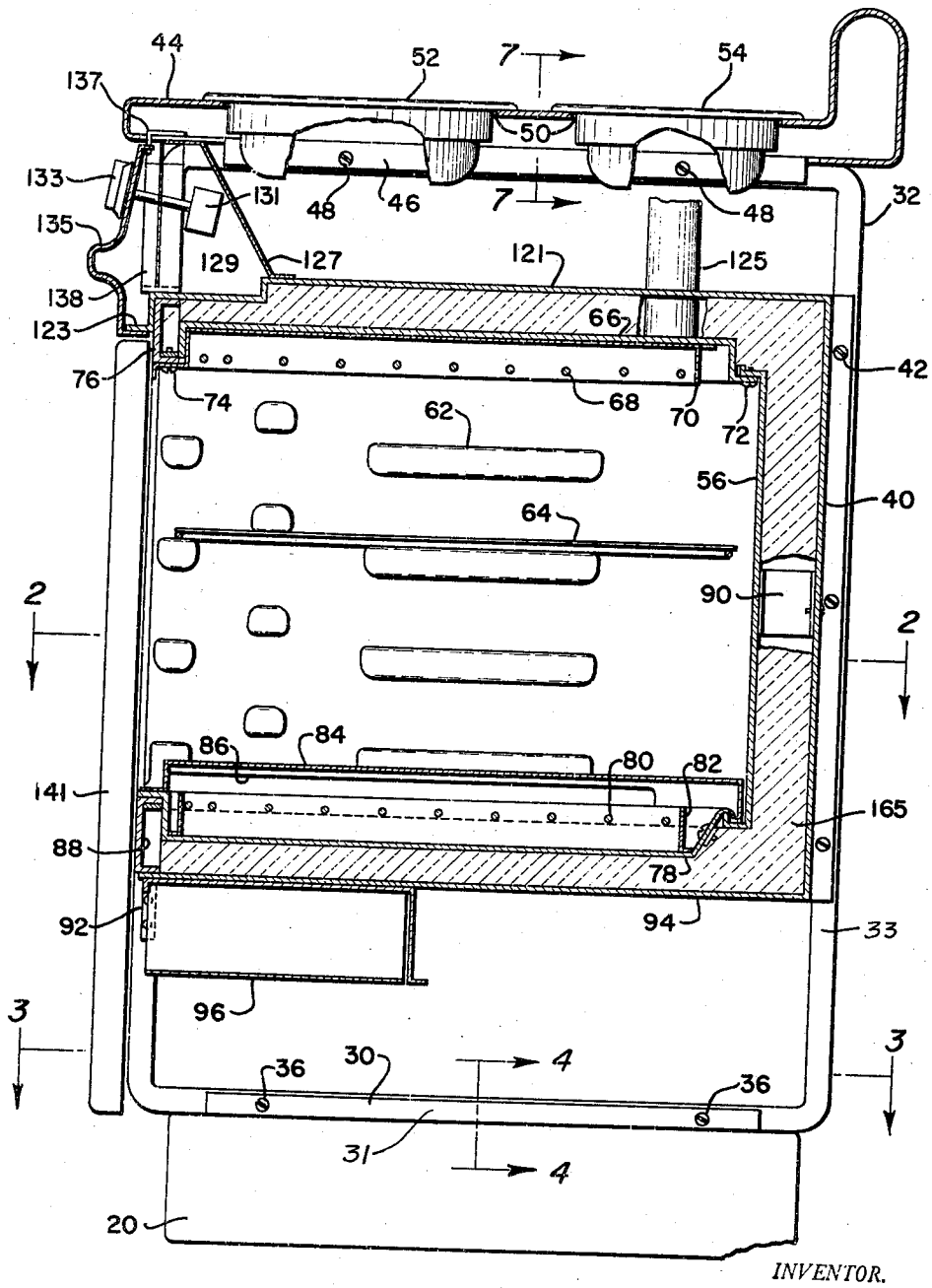


Fig. 1

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Filed Dec. 11, 1952 3 Sheets-Sheet 2

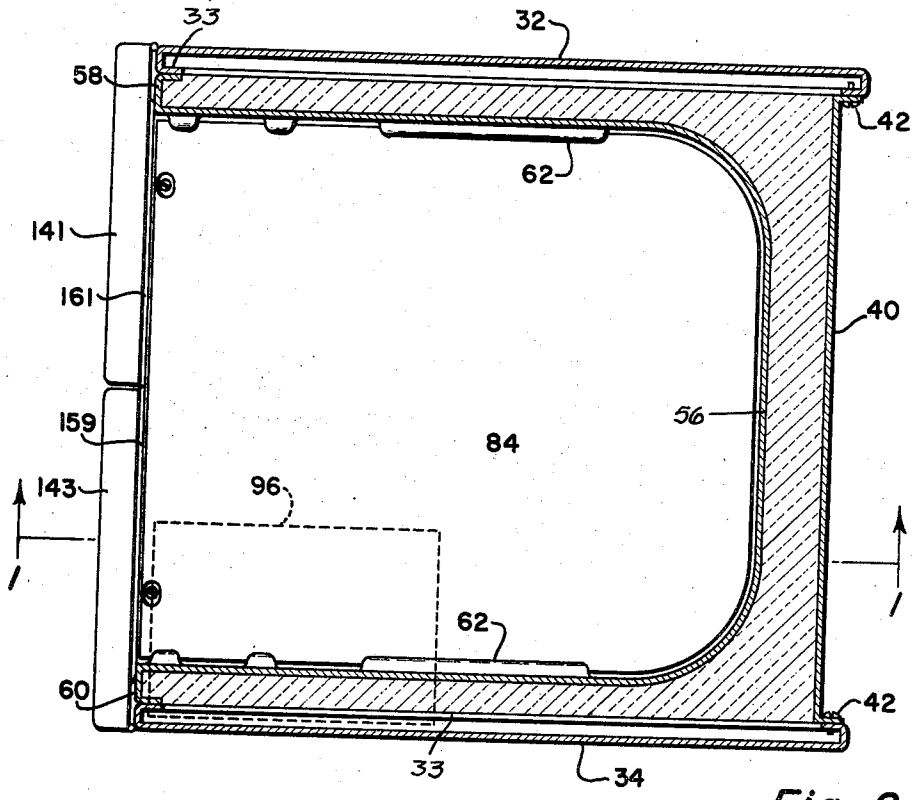


Fig. 2

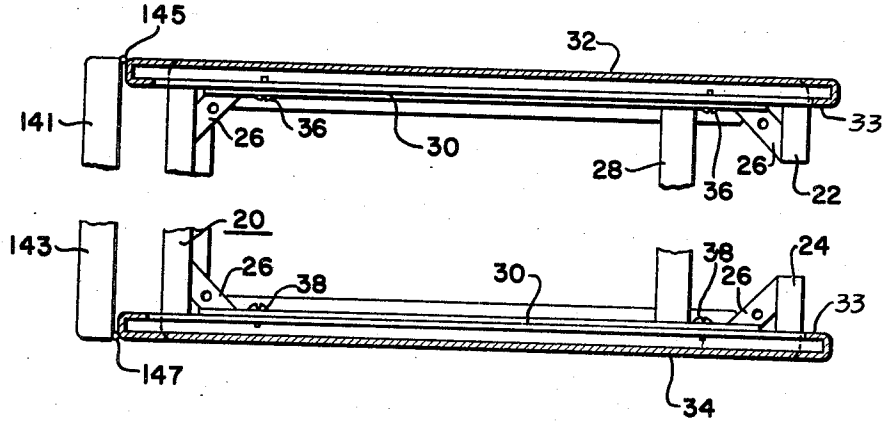


Fig. 3

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3 Sheets-Sheet 3

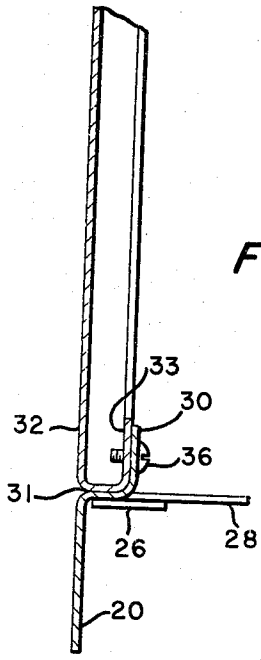


Fig. 4

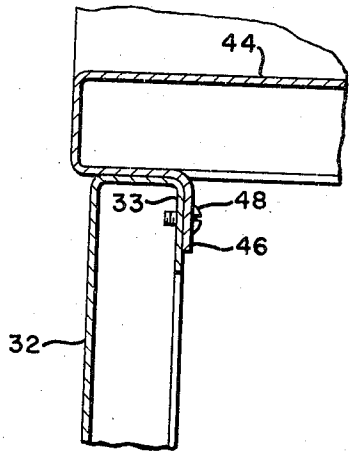


Fig. 5

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2,851,029
DOMESTIC APPLIANCE

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Application December 11, 1952, Serial No. 325,248
4 Claims. (Cl. 126—39)

This invention relates to a domestic appliance and more particularly to small domestic ranges.

It is an object of our invention to provide a simple low cost porcelain coated sheet metal range construction having readily replaceable porcelain coated parts.

It is another object of this invention to provide a low cost range in which the outer porcelain coated side walls take the place of the conventional frame and are provided with a concealed fastening arrangement which will not chip the exposed porcelain coating.

It is another object of this invention to provide double oven doors with a simple sealing arrangement which will prevent leakage.

It is another object of our invention to provide a small electric range in which all of the wiring connections are accessible from the front of the range.

These and other objects are attained in the form shown in which a channel-shaped base extends around the front and both sides and is provided with an upturned inner upper flange. Mounted upon the ledges of the base are the porcelain coated side panels having nipped edges which connect to the upturned flanges of the base. The top is provided with nipped flanges with an additional downwardly extending flange on either side which fastens to the nipped flange of the side panels.

The oven liner is formed principally from a single sheet of metal which forms the side and rear wall and has the front edges turned outwardly and rearwardly to form a flange. This flange meets the nipped flanges at the front of the side walls. Separate flanged members extend across the top and bottom of the front of the liner. The top and bottom of the oven liner are formed by the sheet metal reflectors of the top and bottom heaters. The sheet metal wall below the oven liner is provided with an electrical connection box. Above the top flange of the oven liner there is provided a removable outer control panel to which is connected the controls and the wiring for the surface heating units. The entire portion of the oven between the control panel and the base is covered by double doors hinged to the side panels and the oven is provided with a seal extending around their peripheries which seals meet when the doors are closed to prevent leakage.

Further objects and advantages of the present invention will be apparent from the following description, reference being had to the accompanying drawings wherein a preferred form of the invention is clearly shown.

In the drawings:

Figure 1 is a vertical sectional view partly diagrammatic of a small domestic electric range embodying one form of our invention taken substantially along the line 1—1 of Figure 2;

Figure 2 is a horizontal sectional view taken substantially along the line 2—2 of Figure 1;

Figure 3 is a horizontal sectional view taken substantially along the line 3—3 of Figure 1;

Figure 4 is a vertical fragmentary sectional view taken substantially along the line 4—4 of Figure 1; and

Figure 5 is a vertical fragmentary sectional view taken along the line 7—7 of Figure 1.

Referring now to the drawings there is shown a base 20 formed of a channel member extending around the front and sides which has projecting portions 22 and 24 at the rear. Gussets 26 are welded into the four corners and a transverse connecting member 28 extends between

the rear portion of the sides. The rigidity of the gusseted channel-shape is augmented by an inwardly offset upturned flange 30 provided on each side. This forms an inwardly flanged ledge 31 on each side which supports the porcelain coated side panels 32 and 34. These side panels 32 and 34 have nipped flanges on their four edges. These nipped flanges 33 include a portion extending perpendicular to the sheet and another portion turned inwardly extending parallel to the sheet.

The bottom of the side panels 32 and 34 fit into the ledge provided at both sides of the base 20 and the upturned portion of their nipped flanges 33 is fastened directly to the upturned flanges 30 by the screws 36 and 38. The screws 36 and 38 are sufficiently remote from the outer surface of the side panels 32 and 34 that they are not likely to cause the chipping of any porcelain on the outer surface. Thin resilient spacers may be placed on the ledge of the base 20 beneath the bottom of the side panels 32 and 34. A rear panel 40 is provided having outturned flanges fastened by the screws 42 to the inturned parts of the nipped flange 33 on the rear edge of both side panels 32 and 34. All of the screws thus far mentioned are readily accessible.

A porcelain coated top 44 is likewise provided with the nipped flanges and has additional downwardly turned inner side flanges 46 which are analogous to the flanges 30 of the base. These flanges are fastened by screws 48 which thread into the inwardly turned portions of the nipped flanges which are parallel to the main portion of the side panels 32 and 34. These screws 48 are accessible through the burner openings 50 provided in the top 44 for accommodating the surface heaters 52 and 54.

The oven liner 56 is formed principally of a single sheet of metal extending along both sides and the back of the oven compartment. This sheet is formed with nipped flanges 58 and 60 at the front of both sides which meet the nipped flanges of the side panels 32 and 34. The sides of the oven liner 56 are provided with embossed shelf supports 62 for supporting the oven shelves such as the shelf 64. The top of the oven is provided by the recessed sheet metal reflector 66 for the upper heating unit which is provided with the heating element 68. The heating element 68 is fastened to the supporting member 70 which is fastened in the recessed portion of the reflector 66. The reflector 66 is provided with outturned flanges fastened by the screws 72 to the inturned flanges of the liner 56 at the sides and rear. In the front, the outturned flanges 66 of the reflector are connected by the screws 74 to a transverse channel member 76 which connects the top of the outwardly flanged front sides of the liner 56.

The bottom of the liner 56 is provided with inturned flanges which support the outturned flanges of the recessed reflector 78. Within the reflector 78 there is provided a heating element 80 supported on the support 82 within the reflector 78. The bottom heating unit is covered by a sheet metal baffle 84 having downwardly turned flanged edges and having openings 86 in both side flanges. A second channel member 88 extends horizontally between the side flanges at the front of the liner 56 near the bottom and is fastened thereto.

The liner 56 is supported at the rear by a bracket 90 fastened to the rear wall 40. The liner 56 is supported at the front by two L-shaped corner brackets 92 extending between the channel member 88 and the adjacent inwardly turned flanges at the front edge of both side panels 32 and 34.

A bottom wall 94 is provided beneath the reflector 78 spaced a suitable distance away to provide an insulation space. This bottom wall 94 extends between the side panels 32 and 34 and extends from the rear panel 40 forwardly to the channel 88. Fastened to this bottom

wall 94 is an electrical connection box 96 which provides the electrical connections to the upper and lower heating elements 68 and 80. This connection box is readily accessible from the front of the range so that the range may be made a part of a kitchen ensemble fitted between two other kitchen unit sections.

Above the oven there is provided a top wall 121 extending from the rear panel 40 forwardly over the top channel 76 and provided at its front end with an outwardly extending protruding drop flange 123 which fits over the channel 76. Passing through the top wall 121 is a tubular vent 125 extending from the reflector 66 to the bottom of the burner or heating unit 54.

The top wall 121 is also provided with a sheet metal deflector 127 extending upwardly at an angle separating the space beneath the heating elements from the space 129 in which are located the surface heating unit switches 131. The surface heating unit switches 131 are provided with control and indicating knobs 133 on the outside of a removable front panel 135. This removable front panel 135 has all of the switches 131 for the surface heaters 52 and 54 fastened to it. It is provided with openings in its top flange receiving the projections 137 bent downwardly from the vertical members fastened to the top wall 121 at each end of the front panel 135. The bottom portion of the control panel 135 extends over the flange 123 and may be fastened to it.

For a small range a drop door may be dangerous. It is possible that if too great a weight or force is placed upon the drop door when in the open position the range may be tilted over by this weight or force if the range is not fastened. Also a drop door takes considerable room. According to this invention there are provided double doors 141 and 143 which are provided with side hinges 145 and 147 which fit into the recess 149 upon the outer side flanges of the door.

The doors 141 and 143 have a flange extending entirely around each of their perimeters. These doors extend from the control panel 135 down to the base 20 so that the space beneath the bottom wall 94 is covered by the doors and requires no other concealing wall.

Insulation 165 preferably in the form of mineral or glass wool is provided between the oven liner 56 and the side panels 32 and 34 as well as the top and bottom walls 121 and 94 and the rear wall 40. The interior of the doors 151, 153 is also provided with similar insulation 167.

Preferably the rear panel 40 and the top and bottom walls 121 and 94 are made from a single sheet of metal suitably bent for this. The integral rear panel 40 and the top and bottom walls 121 and 94 support the insulation and aid in supporting the structure. Together with the side panels 32 and 34 they form a rigid box structure which makes a frame unnecessary.

While the form of embodiment of the invention as herein disclosed constitutes a preferred form, it is to be understood that other forms might be adopted as may come within the scope of the claims which follow.

What is claimed is as follows:

1. A frameless range including a base having side ledges provided with vertical flanges extending upwardly from the inner edges of the ledges, vertical side panels having nipped flanges resting upon said side ledges, fastening means fastening said nipped flanges to said vertical flanges, said side panels having nipped flanges on their vertical rear edges, a back panel extending between the rear edges of the side panels and having integral forwardly extending sheet portions at the top and bottom extending substantially to the front edges of said side panels, said back panel having side flanges fastened to the innermost portions of the nipped flanges on the vertical rear edges of said side panels.

2. A frameless range including a base having side ledges provided with vertical flanges extending upwardly from the inner edges of the ledges, vertical side panels having nipped flanges resting upon said side ledges, fastening means fastening said nipped flanges to said vertical flanges, said side panels having nipped flanges on their vertical rear edges, a back panel extending between the rear edges of the side panels and having integral forwardly extending sheet portions at the top and bottom extending substantially to the front edges of said side, said back panel having side flanges fastened to the innermost portions of the nipped flanges on the vertical rear edges of said side panels, an oven liner located in front of said back panel between said forwardly extending sheet portions having outwardly extending flanges fastened to the front edge portions of said forwardly extending sheet portions and to the vertical front edges of said side panels.

3. A frameless range including an oven compartment formed by a single sheet extending around the sides and rear of the oven compartment, said sheet being provided with a flange at the front of both sides, flanged members across the top and bottom of the oven compartment between the flange at the front of both sides, said single sheet terminating with inturned flanges extending along the top and bottom of the side and rear walls, a top heating unit assembly including an upper sheet metal reflector constituting a piece separate from the side walls but extending between and supported by the top inturned flanges to enclose the top of the oven compartment and a top heating element supported by said upper reflector, and a bottom heating unit assembly including a lower sheet metal reflector constituting a piece separate from the side walls but extending between and supported by the bottom inturned flanges to close the bottom of the oven compartment and a bottom heating element supported by said lower reflector.

4. A frameless range including an oven compartment formed by a single sheet extending continuously around the sides and rear of the oven compartment and having upper and lower continuous flanged edges, said sheet being generally rectangular when in a single plane, said sheet being also provided with a flange at the front of both sides, flanged members across the top and bottom of the oven compartment between the flange at the front of both sides, heating means extending across the top and bottom of the oven compartment between said sides connected to said continuously flanged edges, and an outer shell surrounding and spaced from said sheet and said heaters connected to said flanges and flanged members.

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