REMOVABLE PANELS FOR OVENS

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ABSTRACT OF THE DISCLOSURE

Readily removable and cleanable panels for a cooking range, and support structure therefor which is readily removable from within the oven cavity once the panels have been removed therefrom.

This invention relates, in general, to cooking ovens and, more particularly, to readily removable and cleanable panels and support means therefor.

Cooking ovens or oven liners are almost always stationarily mounted within the framework of its associated range and are usually provided with a single access opening, consequently, the interior thereof is somewhat difficult to clean. To facilitate the maintenance of such ovens, readily removable and cleanable panels are sometimes provided which are of such a size and shape as to cover the walls of the oven liner thereby protecting the walls from grease splatter. Wholehearted acceptance by the users of removable panels depends to a large degree upon the ease with which the panels can be installed and removed. Ease of removal and installation is also important to the salesman, the sale of the range, perhaps, being dependent on this feature.

Guide rail structures are commonly utilized for supporting the panels within the oven liner but in such a manner as to necessitate removal of the guide rails before the panels can be withdrawn for cleaning. This is an undesirable arrangement since the guide rail structures do not accumulate grease deposits at the same rate as do the removable panels, therefore, they need not be cleaned each time the panels are cleaned.

Accordingly, it is the general object of this invention to provide an improved panel arrangement for shielding or covering the walls of an oven liner.

It is a more particular object of this invention to provide for use within an oven liner or cavity, an improved protective panel arrangement and support means therefor which facilitates removal and installation of the panels.

These and other objects and advantages of the present invention will become more apparent when considered in view of the following disclosure and drawings, in which:

FIG. 1 is a perspective view of a cooking range incorporating the invention;
FIG. 2 is a fragmentary perspective view of an oven liner including protective panels and support means therefor representing the invention; and
FIG. 3 is a fragmentary perspective view illustrating specific support and interlock features of the invention.

Referring to the drawings, especially FIG. 1, reference character 10 designates generally an electric cooking range having a top 11 supported by a casing or an outer shell 12. A plurality of conventional electrical heating units or elements 13 supported by the top 11 are adapted to be energized by means of switches, not shown, operated by control knobs 14, represented schematically on a back splash panel 16 integral with the top 11. Secured within the shell or casing 12 is a liner or oven 17 having a top wall 18, bottom wall 19, side walls 21 and a rear wall 22 (see FIG. 2). The walls of the liner 17 are spaced from those of the casing 12 to permit installation therebetween of thermal insulation (not shown). The liner 17 has an open end opposite the back wall 22 which is coextensive with an opening in the front wall of the casing 12. Framing the open end of the liner 17 and partially overlapping portions of the front wall of the casing 12 is a peripheral flange 26. A door structure 17 pivotally mounted in a conventional manner to the front wall of the casing, serves to close the open end of the oven 17 and alternately to provide access to the interior thereof.

A plurality of vertically spaced racks 28 supported by a pair of guide rail assemblies 29 (only one being shown) serve to suspend a meat pan, not shown, within the oven cavity 17. Each guide rail assembly 29 comprises a pair of vertically oriented members 31 and 32 interconnected by a plurality of horizontally extending, vertically spaced, rack supporting guide rails 33. Each guide rail 33 has an L-shaped configuration, the foot portion of which is disposed at the front of the oven and has its extremity secured in any suitable manner, for example, by spot welding, to the vertical member 31. The opposite extremity of the guide rails 33 are secured to the vertical member 32 adjacent the rear of the liner 17. It will be seen that with such an arrangement the horizontal spacing between the vertical members 31 is greater than the width of the rack 28 and will therefore permit insertion therebetween of the racks, however, the spacing between the vertical members 32 is less than the width of the rack 28. Consequently, upon insertion of a rack 28, a stop member 35 thereof abuts the vertical members 32 on either side thereby limiting the travel of the racks into the oven liner 17 which prevents scratching or chipping of a removable panel 34 positioned therebehind. The stop members 35 also prevent upward vertical movement of the racks relative to the guide rails 33. A depending stop member 40 on each side of the rack 28 serves to limit forward travel of the rack 8, see FIG. 3.

The two assemblies 29 which are supported in the oven liner 17 in a manner to be discussed hereafter cooperate to support the read panel 34 adjacent the rear wall 22. To this end the panel 34 is provided with pairs of apertures 36 (only one pair being shown) through which extended portions 37 and 38 of upper and lower guide rails 33 extend.

Each assembly 29 is provided with a channel shaped support 39 having its open end facing upwardly for supportingly receiving a removable side panel 41. A tab member 42, formed integrally with the support channel 39 and projecting sidewardly through a suitable aperture provided in the side wall 21 of the liner 17, together with the guide rail extensions 37 and 38 of upper and lower guide rails 33 which extend through suitable apertures 43 (only one being shown) in the rear wall 22 of the liner, serve to support the assemblies 29 within the liner 17. The extensions of the vertical members 31 through suitable apertures in the top wall 18 of the liner serve to restrain inadvertent horizontal movement of the assemblies 29.

A removable panel 44 serving to shield the lower wall of the liner 17 comprises side portions 46 which are turned upwardly to meet the lower edges of the side panels 41. The bottom panel 44 is secured solely by the bottom wall of the liner 17 and it may, therefore, be removed independently of the other panels and the guide rail assemblies 29, the lowermost portions of which are disposed above the side portions 46. Likewise, the side panels 41 which are slidable into the channel supports 39 (see FIG. 1), are removable independently of the guide rail assemblies 29.

Contrariwise, removal of the rear panel 34 necessitates removal of the assembly 29 first, which removal is accomplished by applying an upward force in the area of the
tab member 42 to effect withdrawal thereof from the aperture in the side wall 21, pulling down on the vertical member 31 and then withdrawing the assembly from the open end of the liner 17. Installation of the rear panel 34, which is accomplished by reversing the foregoing procedure, is facilitated by the provision of alignment tabs 47 insertable in apertures 48 in the rear wall 22 of the liner. The tabs 47 serve to align the apertures 36 in the panel with the apertures 43 in the liner so that the extensions 37 and 38 may be readily inserted therethrough.

That the removable panels 34, 41 and 44 are readily cleanable they are provided with a highly polished chromium plated surface coating or finish but may be coated with any suitable material, for example, polytetrafluoroethylene resin commercially available under the trade name “Teflon.”

Since numerous changes may be made in the above described apparatus and different embodiments of the invention may be made without departing from the spirit thereof, it is intended that all matter contained in the foregoing description or shown in the accompanying drawings, shall be interpreted as illustrative and not in a limiting sense.

What is claimed is:

1. In range apparatus comprising an oven cavity delineated by top, bottom, side and rear walls; removable means adjacent each side wall for supporting removable racks therebetween; each of said rack supporting means comprising upper and lower horizontally disposed members interconnecting vertically oriented front and rear members; a removable rear panel; said horizontally disposed members and said rear wall being provided with means cooperating to removably support said rear panel adjacent the rear wall of the oven cavity; a pair of side panels, means carried by each of said rack supports for removably supporting said side panels adjacent respective side walls during use of said oven and permitting removal of said panels independently of said rack supports and said racks; and a bottom panel supported solely by said bottom wall and removable independently of said rack supports.

2. Structure as specified in claim 1, wherein said cooperating means for supporting said rear panel comprises an extension of at least one of said horizontally disposed members of each rack support beyond the rearwardly disposed vertically oriented member and a surface provided by an aperture in the rear wall of the liner into which said extension is insertable after passing through an aligned aperture in said rear panel.

3. Structure as specified in claim 2, including means for aligning the apertures in said rear panel with those in said oven wall prior to installation of said supporting racks.

4. Structure as specified in claim 3, wherein said means for supporting said side panels comprises a channel shaped member carried by said rack supports such that its open end faces upwardly for receiving said side panels.

5. Structure as specified in claim 4, wherein said removable panels are provided with surface coatings exhibiting characteristics facilitating cleaning thereof.

6. Structure as specified in claim 5, wherein said coating comprises polytetrafluoroethylene.

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