July 22, 1958 M. E. PRATHER 2,844,703

ELECTRIC RANGE OVEN

Filed Dec. 24, 1956

FIG. 1

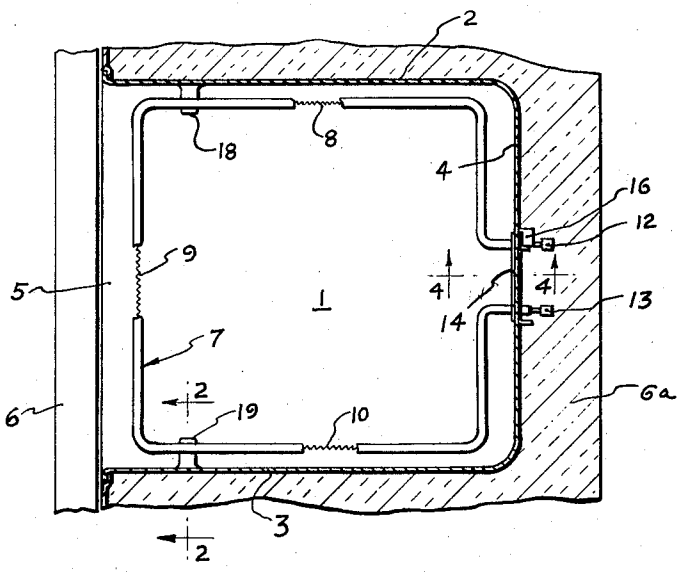


FIG. 4

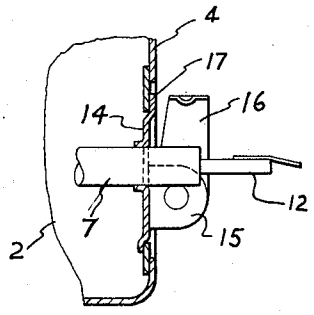


FIG. 2

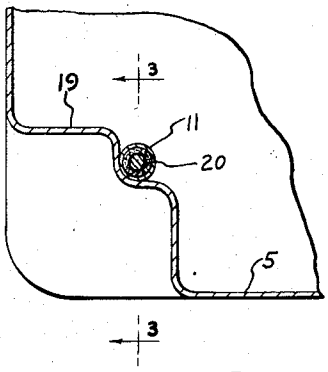


FIG. 5

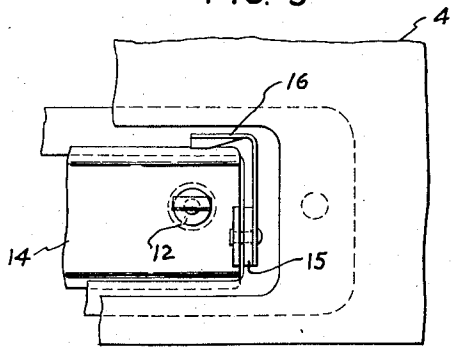
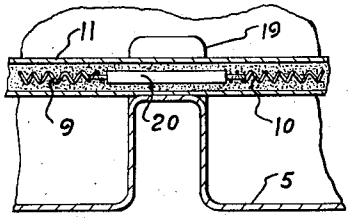


FIG. 3



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2,844,703

ELECTRIC RANGE OVEN

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1 Claim. (Cl. 219—35)

This invention relates to electric range ovens, and has as its principal object the provision of an oven of this type having an improved mounting arrangement for supporting a tubular sheath heating unit therein.

Further objects and advantages of the invention will become apparent as the following description proceeds, and the features of novelty which characterize the invention will be pointed out with particular in the claim annexed to and forming a part of this specification.

Briefly stated, in accordance with one aspect of this invention there is provided an oven liner having walls defining an oven compartment, inwardly projecting portions formed in the liner arranged to support a tubular sheath heating unit, and electrical connectors of negligible resistance enclosed in the portions of the sheath in engagement with the projecting liner portions, whereby the sheath portions surrounding the resistor element are supported in spaced relation from the walls, and overheating of the projecting liner portions is avoided.

For a better understanding of this invention, reference may be made to the following description and the accompanying drawing in which:

Fig. 1 is a fragmentary plan view, partially in section, of an electric range oven constructed in accordance with the present invention.

Fig. 2 is an enlarged fragmentary sectional view taken along the line 2—2 in Fig. 1.

Fig. 3 is a sectional view taken along the line 3—3 in Fig. 2.

Fig. 4 is an enlarged fragmentary sectional view taken along the line 4—4 in Fig. 1.

Fig. 5 is a right side elevation view of the structure shown in Fig. 4.

Referring to the drawing, the numeral 1 designates an oven compartment defined by side walls 2 and 3, rear wall 4 and bottom wall 5, the oven compartment having a front opening which may be closed by door 6 so as to form a closed compartment. Walls 2, 3, 4 and 5 form an oven liner which is preferably surrounded by insulating material 6a supported in a range body or cabinet (not shown).

Oven compartment 1 is heated by a heating unit 7 comprising resistor elements 8, 9 and 10 supported in end-to-end relation within a tubular metal sheath 11 (Figs. 2 and 3) and a pair of electrical terminals 12 and 13 connected to resistor elements 8 and 10 respectively. Heating unit 7 is formed in substantially rectangular shape as shown in Fig. 1, and is horizontally disposed in compartment 1 adjacent bottom wall 5, side walls 2 and 3, and rear wall 4 so as to provide proper heat distribution during baking operations. The two ends of sheath 11 surrounding terminals 12 and 13 respectively are supported at the rear of the oven compartment and are arranged so that the terminals may be electrically connected to power supply conductors. In the present embodiment of the invention, the terminal portions of sheath 11 are fixedly secured to a hinge plate member 14 which is pivotally secured to a rearwardly projecting ear 15 rigidly mounted on rear wall 4 so that heating unit 7 may be pivoted upwardly to a raised position for cleaning purposes. Preferably a spring clip 16 secured to rear wall 4 is arranged to engage the upper edge 17 of the hinge plate 14 so as to retain the heating unit in its raised position. However, the particular structure for supporting the terminal portions of heating unit 7 is not a part of the present invention, and it will be understood that other mounting arrangements, such as a plug and receptacle mounting arrangement of a type well known in the art may be employed.

In order to firmly support heating unit 7 in oven compartment 1, it is necessary that the forward portion thereof be supported, and in accordance with the present invention I have provided projecting portions 18 and 19 formed in bottom wall 5 and located so as to support portions of tubular sheath 11. To avoid overheating of the oven liner at the points where projections 18 and 19 are formed, I have provided electrical connector 20 between adjacent end portion of resistor elements 9 and 10, and a similar connector (not shown) between the adjacent end of resistor elements 8 and 9. Connector 20 has negligible resistance, being formed from a length of straight wire and preferably having a relatively large cross sectional area (as compared with that of resistor elements 8, 9 and 10). However it will be understood that connector 20 may be a straight section of the resistance wire forming the helix shaped resistor elements inasmuch as its resistance in this case will also be substantially negligible as compared with the helix portions. The connectors are somewhat longer than the longitudinal extent of the surface of projections 18 and 19 in contact with sheath 11 so that the portions of heater 7 directly adjacent the projections remain relatively cool, as compared with the portions of the heating unit containing resistor elements. Thus, overheating of the oven liner in the support portions 18 and 19 is avoided. Inasmuch as porcelain enameled steel is commonly used in forming oven liners of the type disclosed herein, it will be understood that this is particularly important because porcelain enamel does not have sufficient heat resistant characteristics to withstand without damage the high temperatures which may exist along the heating portions of heating unit 7.

From the foregoing description it will be seen that I have provided a simple and relatively inexpensive mounting arrangement for oven heating units in which the supporting elements may be formed when the oven liner is fabricated and does not require additional supporting element parts.

While I have shown and described a particular embodiment of my invention, I do not desire the invention to be limited to the particular construction disclosed, and I intend by the appended claim to cover all modifications within the true spirit and scope of my invention.

What I claim as my invention is:

An electric range oven comprising first and second side walls, and top, bottom and rear walls defining an oven compartment, a heating unit including first, second and third resistor elements supported in end to end relation within a tubular metal sheath, electrical terminals connected to one end of each of said first and third resistor elements, the adjacent ends of said first and second resistor elements within said sheath being connected by a first electrical connector of negligible resistance, the adjacent ends of said second and third resistor elements being connected by a second electrical connector of negligible resistance, said heating unit being formed in substantially rectangular shape and horizontally disposed in said compartment adjacent said bottom, side and rear

walls, said first and second connectors being located in said sheath so as to be adjacent said first and second side walls respectively, said bottom wall having first and second projecting portions located so as to support the portions of said sheath surrounding said first and second connectors respectively, each of said first and second projecting portions being integral with said bottom wall and including substantially vertical wall sections indented upwardly from the plane of said bottom wall, whereby the portions of said sheath surrounding said resistors are supported in spaced relation from said walls.

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