Feb. 24, 1959 R. J. KING 2,875,313

HEATING UNITS FOR OVENS AND THE LIKE

Filed Nov. 23, 1956

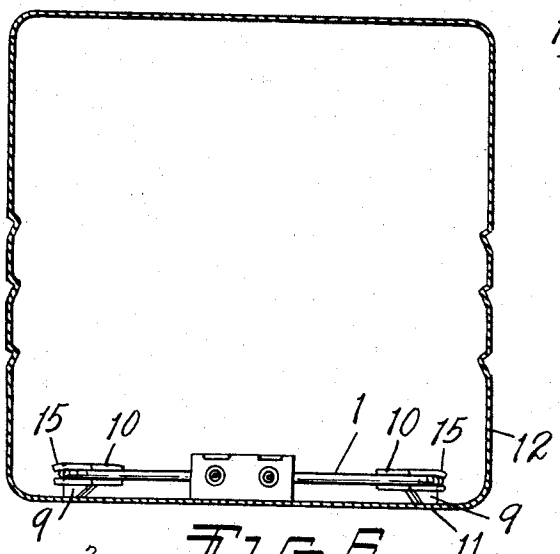


FIG. 6.

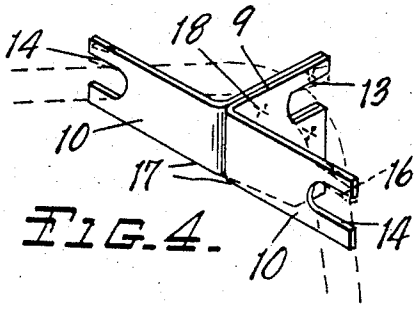


FIG. 4.

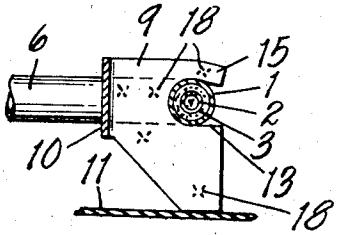


FIG. 2.

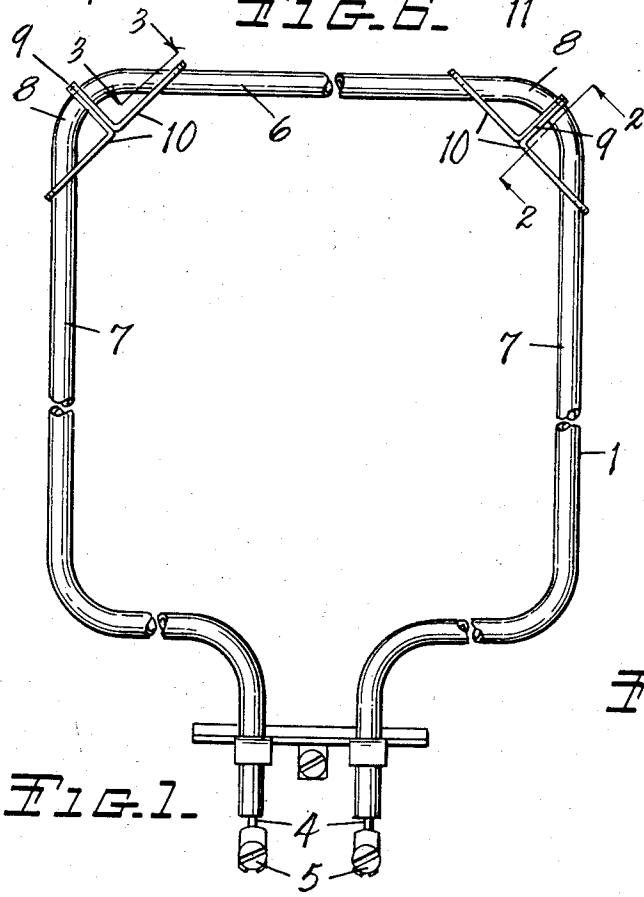


FIG. 1.

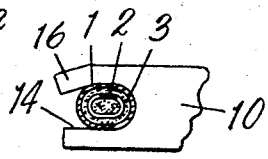


FIG. 3.

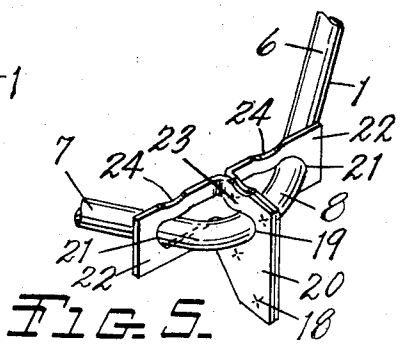


FIG. 5.

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HEATING UNITS FOR OVENS AND THE LIKE

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6 Claims. (Cl. 219—19)

This invention relates to heating units for ovens and the like and particularly the supporting brackets or legs therefor.

The main objects of this invention are:

First, to provide a heating unit for ovens and the like in which the supporting legs or brackets are mounted on or secured to the heating element so that they do not become displaced in use or in handling of the unit.

Second, to provide a heating unit for ovens and the like in which the legs or supporting brackets may be quickly and securely mounted without likelihood of in any wise distorting the sheath of the unit.

Objects relating to details and economies of the invention will appear from the description to follow. The invention is defined and pointed out in the claims.

A preferred embodiment of the invention is illustrated in the accompanying drawing, in which:

Fig. 1 is a fragmentary plan view of a heating unit embodying my invention.

Fig. 2 is a fragmentary view somewhat enlarged on a line corresponding to line 2—2 of Fig. 1, the relation of the supporting leg or bracket to an oven bottom or the like being indicated.

Fig. 3 is a fragmentary view on line 3—3 of Fig. 1.

Fig. 4 is a perspective view of one of the supporting brackets, its relation to the heating element being indicated by distorted lines.

Fig. 5 is a fragmentary perspective view of a modified form or embodiment of my invention.

Fig. 6 is a vertical section of an oven illustrating the operative relation of the heating unit of my invention thereto, the oven structure being shown conventionally.

The embodiment of my invention illustrated comprises a tubular sheath 1 having a resistance element 2 disposed centrally thereof and insulated from the sheath, the insulation being indicated at 3. The resistance element is desirably of the coiled wire type and has terminals 4 projecting from the ends of the sheath and provided with binding posts 5.

The unit in this embodiment is of generally rectangular shape and comprises a rear member 6 and side members 7 having curvedly merging portions 8 at the rear corners of the unit.

The supporting bracket in the preferred embodiment of Figs. 1, 2 and 3 is of generally T-shape comprising the leg portion 9 and the laterally projecting arms 10. The leg portion projects below the arms to rest on a support such as the bottom 11 of an oven shown at 12, see Fig. 6. The leg portion 9 has an outwardly facing or opening slot 13, while the arms 10 have outwardly facing slots 14.

The brackets are disposed at the corners of the unit with the curved portion 8 thereof disposed in the slot 13, and the side and rear members are disposed in the slots 14. The portions of the brackets defining the slots are upset or clamped onto the portions of the sheath disposed therein at 15 and 16. This securely locks or retains the brackets on the heating element so that they cannot swing

or turn relative thereto and no brazing or tight clamping such as might distort the sheath is required.

The further advantage of the structure is that the brackets are made up of two angularly bent parts of sheet metal designated generally by the numeral 17, which may be formed in the flat by a single die and the arms bent oppositely and the leg portions secured by spot welds as indicated at 18.

In the embodiment shown in Fig. 5 the slots 19 in the leg member 20 of the bracket face inwardly as do also the slots 21 in the arms 22 of the bracket. In this embodiment the brackets are engaged over the corner portions of the heating element from the outer side thereof instead of the inner side as in the embodiment shown in Figs. 1, 2, 3 and 4. The upsets 23 in the leg members and 24 in the arms of the bracket secure the bracket upon the heating element in substantially the same way as has been described.

The embodiment shown in Fig. 5 has the same manufacturing advantages as that of the embodiment of Figs. 1 to 4, inclusive.

The leg members or brackets in both embodiments are secured so that they do not become dislocated or distorted even when subject to rough handling or in use.

I have illustrated and described my invention in highly practical embodiments thereof. I have not attempted to illustrate or describe other embodiments or adaptations as it is believed that the disclosure will enable those skilled in the art to embody or adapt my invention as may be desired.

I claim:

1. A heating unit for ovens and the like comprising a tubular self-supporting sheath having an insulated resistance element therein, said sheath comprising a horizontal rear member and horizontal side members disposed substantially perpendicularly to the rear member and curvedly merging therewith, and metal supporting brackets comprising leg portions disposed within and depending below said curvedly merging portions and having outwardly facing slots in their upper ends in which said curved portions are disposed, the leg portions being disposed centrally relative to the curved portions, said brackets having laterally projecting arm portions at the upper ends of the inner edges of the leg portions, said arm portions having longitudinal slots opening at the ends thereof and in which said rear and side members are disposed, portions of the brackets defining said slots being upset into clamping retaining engagement with said sheath.

2. A heating unit for ovens and the like comprising a tubular self-supporting sheath having an insulated resistance element therein, said sheath comprising a horizontal rear member and horizontal side members disposed substantially perpendicularly to the rear member and curvedly merging therewith, and metal supporting brackets comprising leg portions having slots therein in which said curved portions are disposed, the leg portions being disposed centrally relative to the curved portions and depending therebelow, said brackets having laterally projecting arm portions at the inner edges of the leg portions, said arm portions having longitudinal slots in which said rear and side members are disposed, portions of the brackets defining said slots being upset into clamping retaining engagement with said sheath.

3. A heating unit comprising a tubular self-supporting sheath having an insulated resistance element therein, said sheath comprising horizontally angularly disposed merging members, and a metal supporting bracket comprising a portion disposed within and centrally relative to the juncture of the members and depending therebelow and having an outwardly facing sheath receiving slot, said bracket having laterally projecting arm portions hav-

ing longitudinal slots opening at the ends thereof and in which said members are received, portions of the bracket defining said slots being in retaining engagement with said sheath.

4. A heating unit comprising a tubular self-supporting sheath having an insulated resistance element therein, said sheath comprising horizontal angularly disposed merging members, and a metal supporting bracket comprising a portion disposed within and centrally relative to the juncture of the members and depending therebelow and having a slot therein receiving the juncture portion, said bracket having laterally projecting arm portions having longitudinal slots therein in which said members are received, portions of the bracket defining said slots being in upset retaining engagement with said sheath.

5. A heating unit for ovens and the like comprising a tubular sheath having an insulated resistance element therein, said element including horizontal angularly disposed members having a curved merging portion therefor, and a generally T-shaped metal supporting bracket having registering slots extending into the arms thereof, the curved portion of the sheath being disposed in said slots with the central arm of the bracket disposed centrally of the said curved portion, the other arms of the bracket being in engagement with the angularly disposed members of the sheath, the arms of said bracket being upset into retaining engagement with the sheath members and the merging portion thereof, the central arm of the bracket constituting a supporting leg.

6. A heating unit for ovens and the like comprising a tubular sheath having an insulated resistance element therein, said element including angularly disposed members having a curved merging portion therefore, and a generally T-shaped metal supporting bracket having slots in the arms thereof, the curved portion of the sheath being disposed in the slot of the central arm of the bracket, the other arms of the bracket being in engagement with the angularly disposed members of the sheath, the arms of said bracket being in retaining engagement with the sheath members and the merging portion thereof, the central arm of the bracket constituting a supporting leg.

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