SURFACE HEATING UNIT WITH A REMOVABLE SUPPORT

2 Claims, 5 Drawing Figs.

ABSTRACT: A surface heating unit for use with an electric range or the like having a metal sheathed resistance heating element coiled into a flat spiral. The heating element is supported in a flat plane by a spider underlyng the element. The spider has a hub with a plurality of radial arms. Encircling the heating element is a removable trim ring that is supported in an opening in a cooktop and it functions to engage the extremities of the spider to support the same. A U-shaped clip member is staked to the underside of the turns of the element. One radial arm of the spider is forced fit into the clip and becomes integral therewith.
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BACKGROUND OF THE INVENTION

The average housewife today has become more interested in cleanliness around her kitchen range, and particularly in the area of the surface heating elements of an electric range. With the widespread adoption of the automatic self-cleaning oven, the housewife has become more critical of the presence of any food soil or spillage on the cooktop of the range. While it is not always possible to eliminate soil, it is possible to facilitate the ease of cleaning the soil so that it does not build up.

A principal object of the present invention is to provide a surface heating unit for an electric range or the like with an easily removable spider for the elimination of crevices in which food soil may become lodged so as to facilitate cleaning.

A further object of the present invention is to provide a surface heating unit of the class described with a removable spider that is easily attachable to the heating element to obtain a flat heating surface and a rigid construction.

A still further object of the present invention is to provide a surface heating element of the class described with a fastening means for the spider that also serves to rigidify the coiled configuration of the heating element.

SUMMARY OF THE INVENTION

The present invention, in accordance with one form thereof, relates to a surface heating unit for an electric range or the like having a tubular heating element that is coiled into a flat spiral. The element is supported on a spider that has a hub with a series of radial arms. The spider is supported at its extremities on a trim ring which encircles the heating element. A sleeve is fastened to the turns of the element and one radial arm of the spider is attached in the sleeve whereby said heating element and support member may be raised and lowered together.

BRIEF DESCRIPTION OF THE DRAWINGS

My invention will be better understood from the following description taken in conjunction with the accompanying drawings and its scope will be pointed out in the appended claims.

FIG. 1 is a top plan view of a surface heating unit embodying the present invention showing a Y-shaped spider positioned beneath the heating element 11. The edge of the cooktop 10 surrounding the opening therein is formed with a recessed ledge by virtue of a vertical flange 29 and narrow horizontal flange or ledge 30 which extends inwardly toward the center of the opening. A peripheral edge 32 of the reflector pan 27 is seated on the ledge 30 as best seen in FIG. 2. The center of the reflector pan 27 is provided with a large opening 34 so that food spillage does not accumulate in the pan but will drain into a large collecting pan or reservoir (not shown) provided beneath the cooktop.

Also, as is common in this art, a decorative trim ring 36 is seated around the opening in the cooktop 10 to lie generally in the plane of the heating unit 12. The heating unit 12 is adapted to be supported from the trim ring 36 by means of a spider 38 which is shown as a Y-shaped member of symmetrical configuration having a hub 39 and a series of three radial arms 40. This spider is preferably a stamped sheet metal part having a deep drawn configuration that is hollow on the underside. The hub is a relatively large circular drum for projecting up into the opening 14 in the heating unit 12. The hub generally fills the opening and serves as a center medallion upon the top of which the manufacturer usually affixes his trademark or trade name. The extremities of the radial arms 40 are seated on a narrow, recessed inner ledge 42 of the trim ring 36. The coiled heating elements 15 and 16 are somewhat flexible in nature, and they are seated on the three radial arms 40 of the spider 38 to provide a firm foundation so that the top of the heating unit 12 is as perfectly flush as is possible to obtain a good metal to metal contact relationship with the underside of a cooking utensil.

The present invention relates to means for fastening the spider 38 to the underside of the heating elements 15 and 16. This is accomplished by the use of a U-shaped clip member 45 shown at the top of FIG. 1, and at the right side of FIG. 2. This U-shaped clip member 45 has a bight portion 46 that lies below the heating element and has two vertical arms 47, 47 for engagement therewith. The top edge 48 of each arm 47, 47 is notched at 49 to receive several (i.e., two or more) turns of the heating elements 15 and 16, as is best seen in FIG. 2. These notched top edges 48 are staked to the heating elements to form a permanent, four point, fastening connection for the clip member 45. Thus in order to attach the spider 38 to the heating elements 15 and 16, it is merely necessary to raise the heating unit and push one of the radial arms 40 of the spider
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38 into the clip or sleeve 45 with a forced fit until they become integral with each other. Upon subsequent raising of the heating unit 12, the spider 38 remains as a part of the heating elements, although the spider is removable by forcing it from the sleeve 45 for ease in cleaning the spider in the sink separate from the heating unit 12.

It should be apparent to those skilled in this art that while I have described what, at present, is considered to be the preferred embodiments of this invention in accordance with the Patent Statutes, changes may be made in the disclosed design without actually departing from the true spirit and scope of the invention.

I claim:

1. A surface heating unit for an electric range or the like comprising a tubular heating element of convolute configuration with a plurality of turns, and a removable support member underlying the heating element, said support member having a hub and a plurality of radial arms, and a tubular, sheet metal clip member fastened to the underside of the heating element across several turns of the heating element, one arm of the said support member being locked in the clip member by a forced fit, whereby said heating element is held in contact with the support member.

2. A surface heating unit as recited in claim 1 wherein the said sheet metal clip member is of upright U-shaped configuration whose bight portion lies below the heating element and whose two arms are each provided with notches along the top edge each for receiving a turn of the tubular heating element, the notched top edge of each arm of the clip member being staked to the heating element.