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1,650,634	11/1927	Lutzler	99/446
2,247,626	7/1941	Ames	219/395 X
2,550,843	5/1951	McOrlly	219/461 X
3,004,132	10/1961	Harris, Jr., et al.	219/461 X
3,240,147	3/1966	Farber et al.	99/421
3,254,491	6/1966	Cohen et al.	99/421

FOREIGN PATENTS

352,812	4/1961	Switzerland	219/461
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[54] **ELECTRIC COOKTOP WITH A REMOVABLE SPILLOVER DEVICE**
4 Claims, 3 Drawing Figs.

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[51] Int. Cl. H05b 3/76

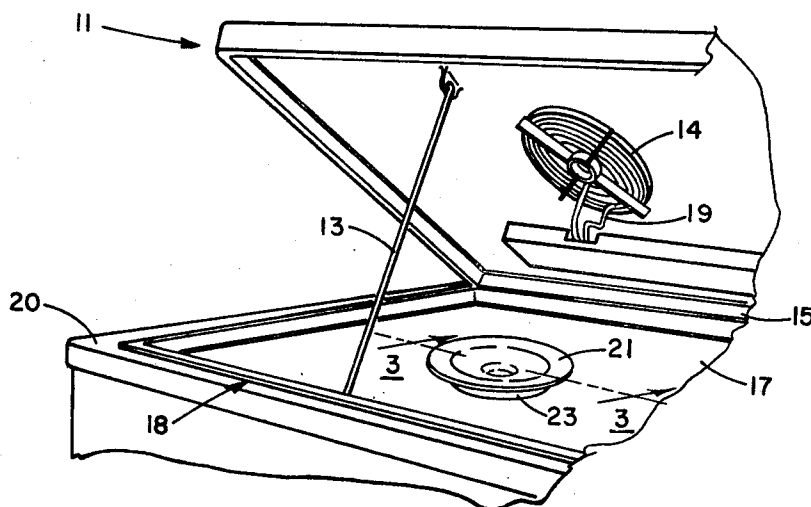
[50] Field of Search 219/458,
461, 462, 395, 445—447; 99/400, 421, 446, 447

References Cited

UNITED STATES PATENTS

1,642,071 9/1927 Hosking 99/446

ABSTRACT: An electric cooktop has a plurality of heating elements installed therein and may be lifted as a unit to provide access to reflectors and spillover bowls positioned unattachedly on a support surface below, thereby enabling ready removal of the bowls and reflectors for cleaning, without removing the heating elements.



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FIG. 1

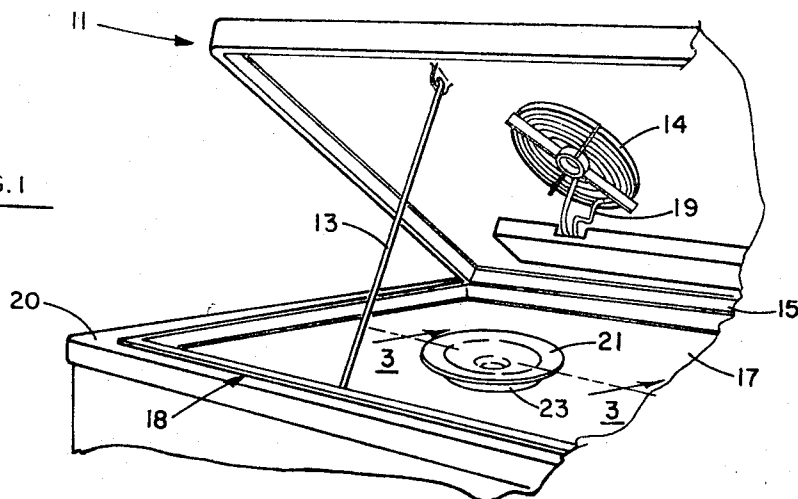


FIG. 2

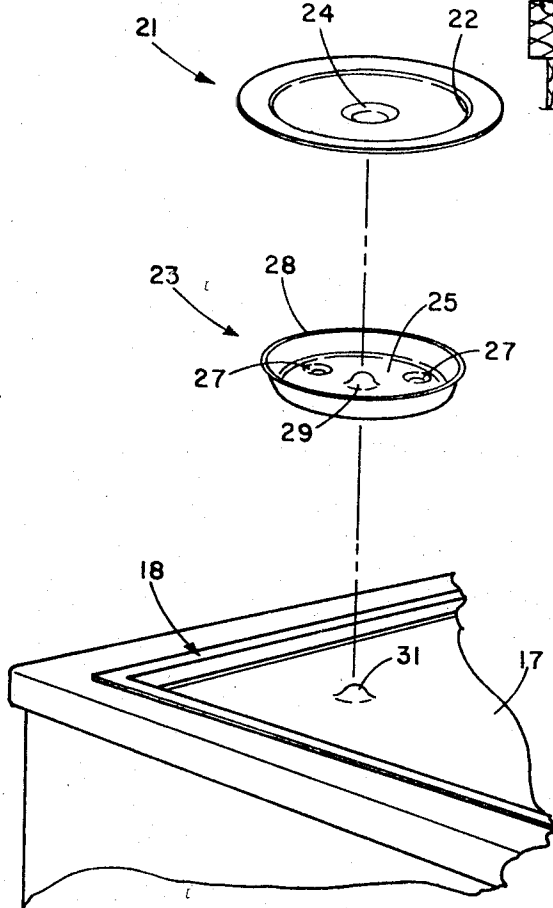
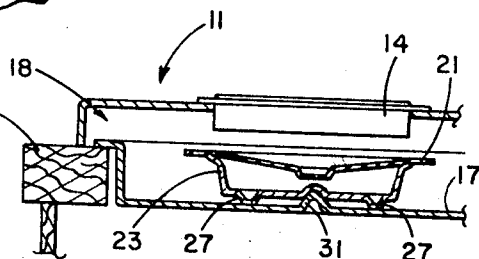


FIG. 3



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ELECTRIC COOKTOP WITH A REMOVABLE SPILLOVER DEVICE

This invention relates to an electric cooktop and more particularly to such a cooktop in which the electric heating elements are secured to a liftable cover and wherein below each such element is positioned a separate removable reflector and spillover bowl.

Electric stoves and cooktops are generally provided with heating elements or burners which have spillover bowls and reflectors which are directly mounted thereon. The heating elements are usually loosely mounted in a cover plate or top so that they can easily be removed along with their associated bowls and reflectors, to facilitate the cleaning of these units. Each time a heating element is removed from its plate, the electric wires connected thereto are usually flexed. In some installations, plug-in connectors are utilized to interconnect the power line and the heating elements. This somewhat lessens the flexing of the wires but presents problems in maintaining good contact in the connector elements with repeated plugging and unplugging.

On such devices there is normally installed directly below the heating element a shiny plate which serves as a combination reflector and spillover bowl or drip pan. The reflector is usually mounted directly below the heating element so that it is in close proximity thereto and frequently is in direct contact with the bracket which supports this element. The reflector therefore operates at an elevated temperature with the result that any food material spilled on the reflector will rapidly burn and become baked onto the surface thereof. Since the reflector is in close proximity to the heating element, it is usually provided with a large notch on its circumference to provide clearance for the terminal ends of the heating element. The notch reduces the volumetric capacity of the spillover bowl, thereby diminishing its effectiveness.

This invention overcomes the aforementioned shortcomings by providing means for securing the heating elements to a hinged cover plate or top providing a support surface which may be pivotally raised as a unit to expose individual reflectors and spillover bowls mounted below. Since it is no longer necessary to remove the individual heating elements in order to gain access to the reflectors and spillover bowls, the electrical leads or connectors need not be exposed or exercised, thereby lessening the chances of electrical failure. The reflector, no longer being in direct contact with the heating element support bracket, is removed a sufficient distance so that its operating temperature is generally kept sufficiently low so that the likelihood of burning on food materials is minimized. The reflector is provided with a drain hole so that any food materials spilled thereon may drain into the spillover bowl located underneath the reflector. The difficult task of scouring an encrusted reflector is thereby eliminated, and the thermal efficiency is improved by maintaining the shiny surface of the reflector. Additionally, the spillover bowl may be designed without a notch in its circumference, thereby allowing increased capacity.

It is therefore the principal object of this invention to provide an improved electrically heated cooktop wherein the routine cleaning functions may be performed without the necessity of handling or removing the electrical heating elements.

It is another object of this invention to provide a cooktop having spillover bowls and reflectors which are less likely to be heated and which can readily be removed for cleaning.

Other objects of this invention will become apparent from the following description taken in connection with the accompanying drawings of which:

FIG. 1 is a perspective view showing one embodiment of the cooktop in the raised position;

FIG. 2 is an exploded view showing the reflector, spillover bowl and support surface therefor of the embodiment of FIG. 1, and

FIG. 3 is a cross-sectional view taken along the plane indicated by 3-3 in FIG. 1 and with the cover in its lowered position.

Briefly described, the device of the invention comprises a liftable cover plate with heating elements mounted therein, a support surface below the cover plate on which a spillover bowl is unattachedly retained directly below each heating element, and a bowl cover member having a drain hole which also functions as a reflector, which is supported by each spillover bowl in nesting relationship therewith. While the spillover bowls are freely mounted for ready removal, means are provided to arrest lateral movement thereof relative to the heating elements.

Referring now to FIG. 1, a perspective view of the cooktop is shown. Cover plate 11 is pivotally attached along edge 15 to box member 18, so that it may be raised and supported in the raised position by rod 13. In the closed position the edge of cover plate 11 rests on the edge of counter top 20 in which box member 18 is supported. Mounted in the top surface of the cover plate 11 are suitable electrical heating elements 14 to which power is provided through electrical lines (not shown) which are connected to terminal ends 19 of each heating element.

Spillover bowl or drip pan 23 is removably supported on the surface of bottom portion 17 of box member 18 and on each such bowl there is removably disposed, in nesting relationship, a bowl cover or radiation reflector 21. A spillover bowl and radiation reflector are disposed on box bottom portion 17 directly beneath each heating element 14 provided in cover plate 11.

As shown in FIGS. 2 and 3, spillover bowl 23 may be formed of pressed sheet metal or the like, in a generally circular configuration having a bottom portion 25 with hemispherical foot elements 27 projecting downwardly therefrom. In the center of the spillover bowl bottom 25 is an indentation forming a dimple 29 projecting upwardly into the bowl 23. In order to prevent corrosion and facilitate cleaning, the bowl 23 may be coated with porcelain or other noncorrosive substance. Projecting upwardly from the box bottom portion 17, and located directly beneath the center of heating element 14 provided in cooktop 11, is a hemispherical protrusion 31, adapted to matingly fit within the dimple 29 formed in the bowl bottom 25. One such locating protrusion 31 is located directly beneath the center of each heating element 14 provided in cooktop 11, for the purpose of locating a spillover bowl 23 below each heating element, and arresting the lateral movement thereof.

Bowl cover or radiation reflector 21 is circular dishlike member which may be formed of sheet metal having a shiny surface on its upper side. The radiation reflector is formed with a downward projecting concentric shoulder element 22, the diameter of which is slightly smaller than the diameter of the lip 28 of spillover bowl 23, thereby allowing the reflector to be nested in the bowl centrally positioned thereon. The reflector is dished or sloped toward its center and a drain hole 24 is formed in the center of the reflector in order to allow any food material which may spill thereon to drain downwardly into the spillover bowl. The reflector 21 serves as a cover for spillover bowl 23, and reflects upwardly any radiant energy transmitted from the bottom surface of the heating elements, thus keeping the temperature of the bowls low enough so that the burning on of food material is minimized.

In the operation of the device of the invention, the spillover bowl 23 serves as a collector for any food materials which may be spilled through the heating elements. Unlike prior art devices, no notch is required in the sides of the bowl to provide clearance for the terminal ends of the heating element. Therefore a given diameter spillover bowl is capable of handling a substantially greater amount of spillover. No part of the reflector or spillover bowl is in contact with the heating element or the support therefor, and such components are sufficiently removed from the heating elements that they will not be greatly heated thereby. Since the radiation reflector 21 operates at a reduced temperature, any food material spilled thereon will tend not to burn but instead will drain through the drain hole 24 into the drip pan below, where the food material will be protected by the reflector from further heating.

Because food material will tend not to burn on the surface of the reflector, it will retain a high reflectivity, thereby assuring optimum thermal efficiency.

In order to clean the components, the cover plate 11 is raised from the horizontal cooking position to the elevated position shown in FIG. 1, and supported in the raised position by rod 13. It is not necessary to handle the heating elements, thereby avoiding disturbing the electric wires or their connections and reducing the risk of their failure.

It is to be noted that the device of this invention is equally applicable to use with the heating elements of conventional stoves and ranges, as well as cooktops.

The device of this invention thus provides means for facilitating the cleaning of the spillover bowls and radiation reflectors of electric cooktop stoves and ranges, obviating the necessity for removing the heating elements in performing this function, at the same time affording more efficient utilization of these units.

I claim:

1. In an electrical cooktop, the combination of:

- a. a box member;
- b. an electrical heating element comprising an open circular coil;
- c. a cover plate member pivotally attached to said box member, said plate member having an opening to receive said heating element;
- d. means for mounting said heating element in the opening of said cover plate member;
- e. said box member having a substantially flat bottom portion lying below said cover plate means and substantially

parallel thereto;

f. a spillover bowl;

g. a bowl cover member having a drain hole therein and being adapted to provide drainage through the hole to said spillover bowl;

h. means for removably locating said spillover bowl on said box member bottom portion directly below said heating element and for arresting the lateral motion thereof relative to said heating element;

i. said bowl cover member being at least equal in size to the opening in said cover plate member and being supported on said bowl in nesting relationship therewith; and

j. said bowl cover member comprising a radiation reflector for reflecting heat energy received from said heating element.

2. The combination of claim 1 wherein said locating and arresting means comprises:

an indentation formed in the bottom of said spillover bowl, and a mating protrusion extending upwardly from the surface of said box member bottom portion, the bowl being placed on said bottom portion with said protrusion fitting into said indentation.

3. The combination of claim 1 wherein said bowl cover member has a downwardly extending shoulder portion formed therein, said shoulder portion fitting matingly along the inner lip of said bowl.

4. The combination of claim 1 wherein said radiation reflector has a shiny upper surface.

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