

Aug. 17, 1937.

W. W. HICKS
ELECTRICAL HOT PLATE
Filed Oct. 22, 1935

2,090,122

FIG. 1

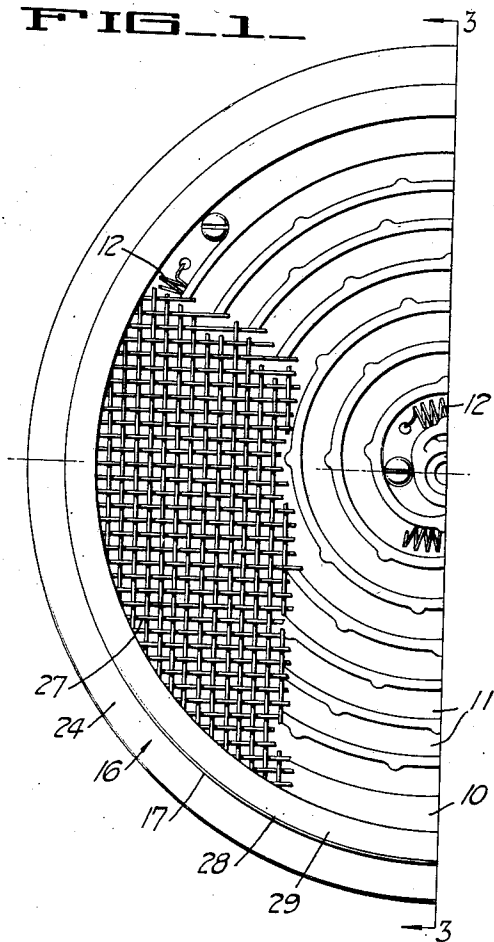


FIG. 2

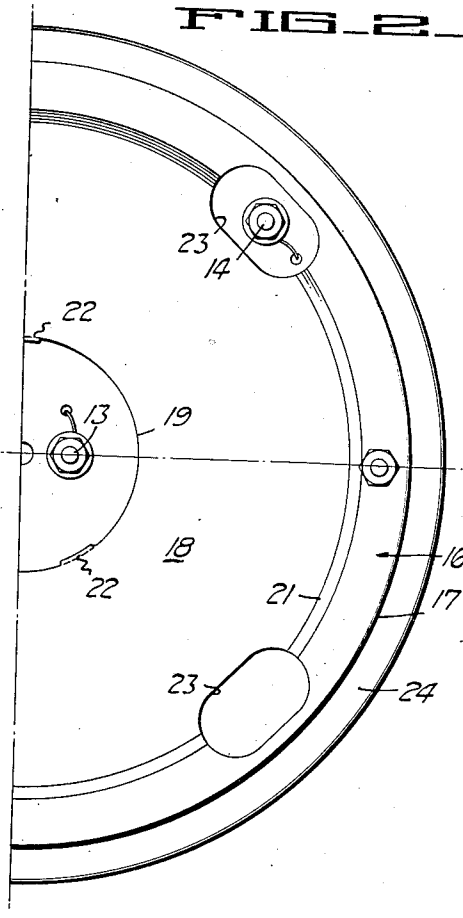
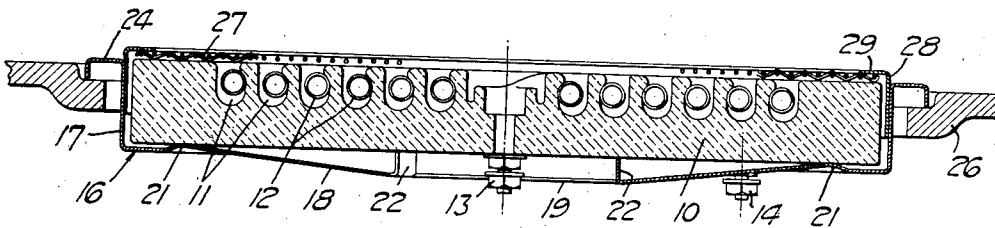


FIG. 3

INVENTOR
William Wesley Hicks
BY *Paul D. Flehr*
ATTORNEY

UNITED STATES PATENT OFFICE

2,090,122

ELECTRICAL HOT PLATE

William Wesley Hicks, San Francisco, Calif.

Application October 22, 1935, Serial No. 46,106

3 Claims. (Cl. 219—37)

This invention relates generally to an electrical hot plate of the type utilized in conjunction with electrical ranges and like electrical appliances.

It is an object of the invention to provide an improved electrical hot plate of the semi-open face type, in which a ceramic form carrying exposed resistance conductors, is provided with a foraminated protective covering. It is a feature of the present invention that the protective covering will not warp or buckle, but will at all times afford a flat surface for engaging the bottoms of cooking utensils.

Another object of the invention is to provide an electrical hot plate in which the ceramic form will be adequately supported for all operating temperatures.

Further objects of the invention will appear from the following description in which the preferred embodiment of the invention has been set forth in detail in conjunction with the accompanying drawing.

Referring to the drawing:

Fig. 1 is a plan view, illustrating one half of a hot plate incorporating the present invention.

Fig. 2 is a view similar to Fig. 1, but looking at the bottom of the hot plate.

Fig. 3 is a cross sectional detail taken along the line 3—3 of Fig. 1.

The hot plate illustrated in the drawing consists of a plate-like form 10 of ceramic material, and which is annular in contour. The upper face of this form is provided with grooves 11, to accommodate the coiled resistance conductors 12. Terminals 13 and 14 are carried by the form, for making connections with current supply lines. The adapter casing 16 in which this form is disposed, is made of suitable sheet metal, and includes the annular side wall 17, and the downwardly dished bottom wall 18. The bottom wall is provided with a central opening 19, through which liquids may drain.

In order to provide properly distributed points of contact between the ceramic form and the bottom wall of the casing 16, means are provided as follows:—Near the outer periphery of the bottom wall 18, there is an annular upwardly pressed portion 21, upon which the adjacent surface of the ceramic form may rest. Adjacent the periphery of opening 19, the bottom wall is also provided with upwardly turned lugs 22, which contact the lower side of the ceramic form in a region near the center of the plate. In place of utilizing a plurality of lugs 22, it is evident that a single annular flange may be employed, pro-

vided the flange is formed with suitable slots or apertures for the drainage of liquid.

The terminals 13 are accommodated by the central opening 19 in the bottom wall 18. Terminals 14 are accommodated by additional openings 23. The casing is also shown provided with an annular flange 24, for supporting the plate upon the top surface 26 of an electric range.

Protection for the upper face of the ceramic form, and for the conductors 12, is afforded by a screen 27. This screen is formed of non-corrodible metal wire, which is capable of withstanding the relatively high temperature to which it is subjected. The openings through the wire screen should be sufficient to avoid intercepting a major part of heat radiated from the resistance conductors and the ceramic form. However they should be sufficiently small to enable the screen to catch larger fragments of food, and to prevent passage of implements such as the tines of a fork, which one might attempt to insert to remove foreign material from the grooves of the ceramic form. In order to retain the screen 27, an annular ring 28 is provided, which can be made of pressed metal, and which has a force fit within the adapter casing 16. This ring is formed to provide an annular flange 29, which overlies the peripheral edge portion of the screen. The engagement between the flange 29 and the screen is such that while the screen is retained to prevent accidental displacement, it may expand and contract independently with respect to the ceramic form 10, and with respect to the ring 28.

The hot plate described above has many desirable features. The screen 27 does not materially decrease the efficiency of heat transfer to the bottoms of cooking utensils. However the protection which it affords materially increases the useful life of the hot plate, and minimizes the possibility of short-circuiting the resistance conductors through the charring of food particles, as well as mechanical injury to the ceramic form. When the plate is heated even small droplets of liquid will not pass through the screen, but are immediately vaporized. Because of the manner in which the screen 27 is retained, it will not warp or buckle, but will at all times present a flat surface to the bottom of the utensils. The ceramic form is more or less full floating within the adapter casing 16, and it is supported in such a manner that it may properly carry the weight of utensils, even when heated to relatively high temperatures.

I claim:

1. In an electrical hot plate, a plate-like form of ceramic material, said form being annular in contour and having grooves provided in its upper face, a resistance conductor disposed within said grooves, an adapter casing in which said ceramic form is disposed, said adapter casing being formed of sheet metal and including a downwardly dished bottom wall and an annular contoured side wall adapted to extend about the side edges of the ceramic form, said bottom wall having an annular portion thereof pressed upwardly for engaging the bottom face of the ceramic form along an annular line of contact spaced inwardly from but adjacent the periphery of the form, and also having supporting means for engaging the bottom face of the form at points located relatively close to the center of the form.
2. In an electrical hot plate, a relatively flat and annular contoured adapter casing formed of sheet metal, the bottom wall of said casing having a central opening and being dished downwardly, an annular portion of said bottom wall spaced inwardly from but adjacent the periphery of the

casing being pressed upwardly, a plate-like form of ceramic material disposed within said casing and resting upon said upwardly pressed annular portion, and additional supporting means extending upwardly from said bottom wall in a region adjacent the opening through the same and engaging the bottom face of said ceramic form.

3. In an electrical hot plate, a relatively flat and annular contoured sheet metal adapter casing, said casing having a bottom wall provided with a central opening and being dished downwardly, an annular portion of said bottom wall spaced inwardly from but adjacent the outer periphery of said casing, being pressed upwardly, a plate-like form of ceramic material disposed within said adapter casing and having its lower face engaging said annular portion, said form having grooves provided in its upper face, a resistance conductor disposed within said grooves, and additional supporting means for the central portion of the ceramic form, said last mentioned means comprising spaced members extending upwardly from points adjacent the inner peripheral edge portion of said casing.

WILLIAM WESLEY HICKS. 25