

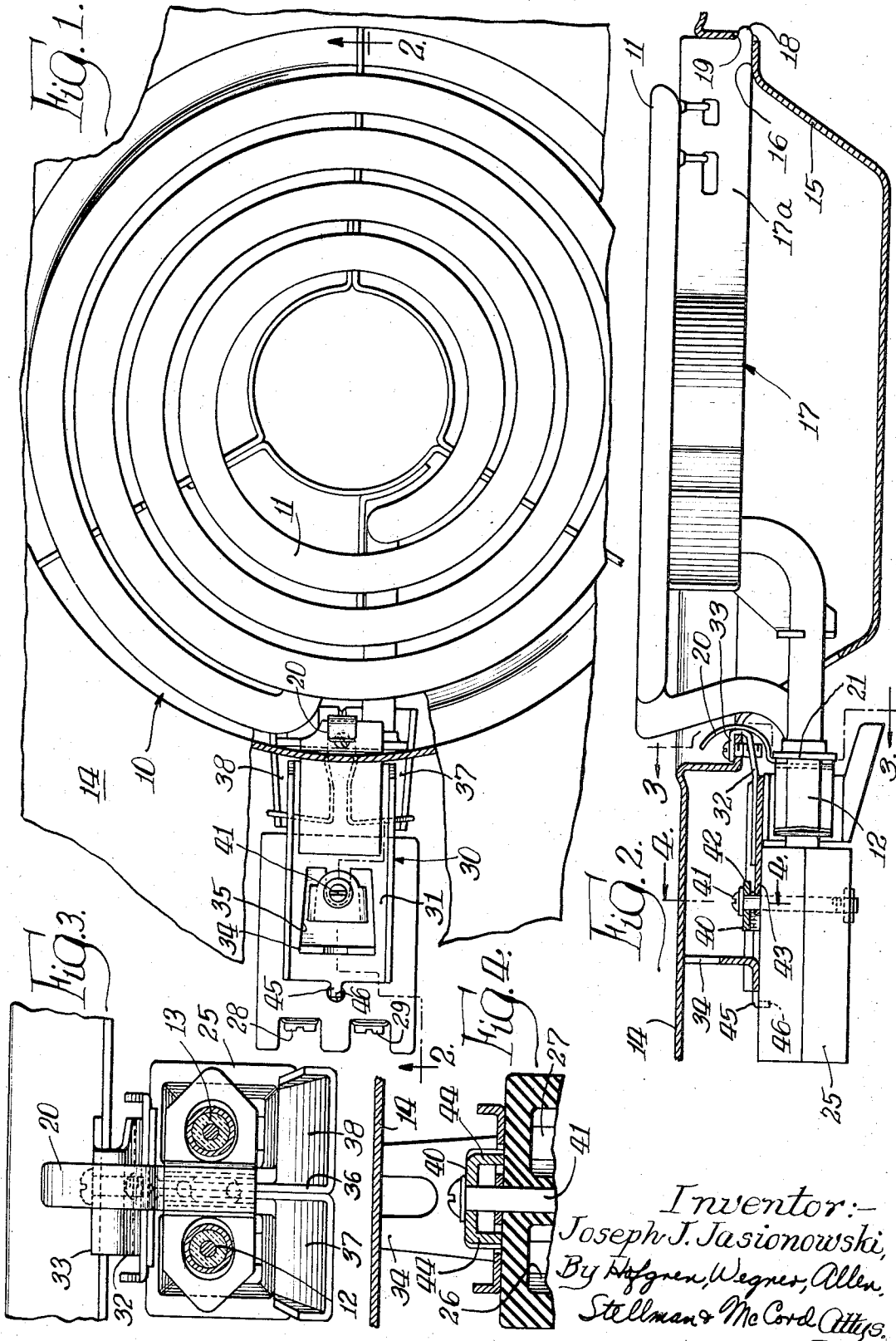
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PLUG-IN RECEPTACLE

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PLUG-IN RECEPTACLE

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ABSTRACT OF THE DISCLOSURE

This invention relates to coil type electric heating units for stove tops wherein there is provided a receptacle into which the terminals of the heating coil may be inserted, with the receptacle being mounted for floating movement and being provided with guides extending therefrom so as to facilitate the entry of the terminal into the receptacle to make contact with electrical contacts positioned therein.

This invention relates to electrical surface units and more particularly to a mounting means for a plug-in type of surface unit.

It is the general object of the present invention to produce a new and improved mounting for a plug-in surface unit of the character described.

It is a more specific object of the invention to produce a mounting for a surface unit including a receptacle into which the terminal ends of the surface unit may be plugged, and in which the receptacle is secured to the cook top with which such unit is associated in a manner permitting the receptacle to float and thus be substantially self-aligning thereby permitting the same to be used in connection with surface units whose terminal ends may be somewhat misaligned.

It is a further object of the present invention to produce a mounting means of the character described in the preceding paragraphs in combination with a spring which is flexed when the terminal ends of the surface unit are inserted into the receptacle to provide a yielding pressure to hold the surface unit in desired operative position.

Other and further objects of the invention will be readily apparent from the following description and drawings, in which:

FIG. 1 is a top plan view of a surface unit in a cook top and illustrating an embodiment of the present invention;

FIG. 2 is a side elevational view partly in section taken along line 2-2 of FIG. 1;

FIG. 3 is a sectional view taken along line 3-3 of FIG. 2; and

FIG. 4 is a view taken along line 4-4 of FIG. 2.

While this invention is susceptible of embodiment in many different forms, there is shown in the drawings and will herein be described in detail an embodiment of the invention with the understanding that the present disclosure is to be considered as an exemplification of the principles of the invention and is not intended to limit the invention to the embodiment illustrated. The scope of the invention will be pointed out in the appended claims.

Electric ranges have, of course, been used for many years and electric ranges using plug-in type surface units are becoming increasingly popular because of the ease with which the unit may be removed and the area beneath the surface unit exposed for cleaning. It has been the practice to provide a receptacle secured to the cook top having channels or apertures into which the terminal ends of the unit may be inserted, but there has been difficulty experienced in the past when the terminal ends are not perfectly aligned so as to match the channels in the re-

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ceptacle. This difficulty is eliminated by the present invention which provides a mounting for the receptacle allowing the same to "float," i.e., by giving it a limited degree of freedom of movement, so that it may align itself with the terminal ends as the latter are advanced toward the apertures or channels in the receptacle.

As can be seen from the drawings, there is shown a surface unit 10 being in the usual form of an electric heating coil 11 having a pair of terminal ends 12 and 13. The heating unit is mounted in the normal cook top 14 being provided with a pan or drip area 15 and an annular ledge 16 upon which the three legs of the spider 17 may rest in order to support the heating unit. One of the legs 17a of the spider is provided with a finger 18 receivable in an opening 19 in the pan. Opposite the leg 17a there is provided a spring 20 secured to a ground clip 21 mounted on the terminal ends 12 and 13.

A receptacle 25 of usual construction is provided with a pair of apertures or channels 26 and 27 into which the terminal ends may be inserted with the channels having therein a pair of electrical contacts 28 and 29, a portion of which extends outwardly beyond the receptacle as shown in FIG. 1 to be secured to a source of electrical current.

The receptacle is secured to the cook top by means of a bracket 30 having a relatively flat portion 31 overlying the top of the receptacle 25 and carrying an extension 32 extending outwardly of the bracket and terminating in a recurved portion 33 which is secured by means of the screw shown to the ledge 16 as illustrated in FIG. 2. A pair of legs 34 are outstruck from the flat portion 31 of the bracket and bent upwardly at right angles thereto as shown to be in position to contact the underside of the cook top 14 and thus assist in maintaining the bracket (and hence the receptacle) in proper position. An aperture 35 is thus formed in the bracket.

Integrally secured to the bracket is a vertically extending web 36 which carries a pair of guides 37 and 38 adapted to guide the terminal ends into the channels 26 and 27.

A member 40 is securely fastened to the upper surface of the receptacle 25 by means of bolt 41 extending through a suitable aperture therein and a matching aperture in the receptacle. The member 40 is provided with a lip 42 which overlies the edge of the aperture 35 and overlies a portion 33 of the top surface 31 of the bracket which extends into the aperture 35. The portion 43 is provided with an opening therein substantially larger than the bolt 41 so that the latter does not restrict the movement of the bracket as hereinafter described. The member 40 is provided with a pair of sides 44 extending therefrom so as to space the lip above the top portion 31 of the bracket. The latter portion of the bracket is provided with a finger 45 extending into a hole 46 in the upper surface of the receptacle.

Inasmuch as the hole 46 is somewhat larger than the finger 45 and the hole in the portion 43 is substantially larger than the bolt 41, it will be realized that the bracket 30 is not firmly secured to the receptacle 25, but rather is secured thereto through what might be termed a lost motion connection in that some relative movement therebetween is permitted. The lip 42 overlying the bracket prevents the same from separating from the receptacle, but because it is slightly spaced above the top surface of the bracket (and is smaller in dimension than the aperture 35) a floating movement is permitted.

Thus, as the terminal ends 12 and 13 are advanced toward the channels 26 and 27 (and are guided toward such channels by the guides 37 and 38), any misalignment of the terminal ends will cause the receptacle to move one way or the other properly to align the parts so that the

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terminal ends may be inserted. When they are fully inserted, the spring 20 is deflected and as the finger 18 enters the opening 19, it is yieldably held therein by the pressure of the spring 20.

By reason of the foregoing construction there has been provided a mounting for a surface unit which is self-adjusting within a limited degree, to allow for deviations from precise alignment of the terminal ends of the unit.

I claim:

1. In combination with a coiled electrical surface unit having a pair of parallel terminal ends, said unit being adapted for use on a cook top, a mounting assembly comprising a receptacle of insulating material having a pair of parallel channels therein, electrical contacts within said channels, a bracket to be secured in fixed relation to the cook top, a pair of guides secured to the bracket and means for securing the receptacle to the bracket to position the guides adjacent the open ends of the channels and extending outwardly and downwardly therefrom to guide the terminal ends thereinto, said securing means including a lost motion connection between the bracket and the receptacle to permit the receptacle to move with insertion of the terminal ends to align the channels therewith.

2. In combination with a coiled electrical surface unit having a pair of parallel terminal ends, said unit being adapted for use on a cook top, a mounting assembly com-

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prising a receptacle of insulating material having a pair of parallel channels therein, electrical contacts within said channels, a bracket to be secured in fixed relation to the cook top, said bracket having an aperture therein, a member secured to the receptacle and having a lip, a finger on said bracket and means loosely securing the bracket to the receptacle with the finger positioned in an opening in the receptacle and with the lip overlying the upper edge of the aperture to permit the receptacle to move with insertion of the terminal ends to align the channels therewith.

3. Apparatus of the character described in claim 2 in which the surface unit is supported on a three legged spider one of the legs of which is provided with a finger receivable in an opening in the cook top and apparatus including a spring secured to the terminal ends of the unit engageable with said bracket to yieldably hold the finger in said opening.

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