Oct. 10, 1950 S. O. GENLOTT 2,525,030

ELECTRIC HEATING UNIT

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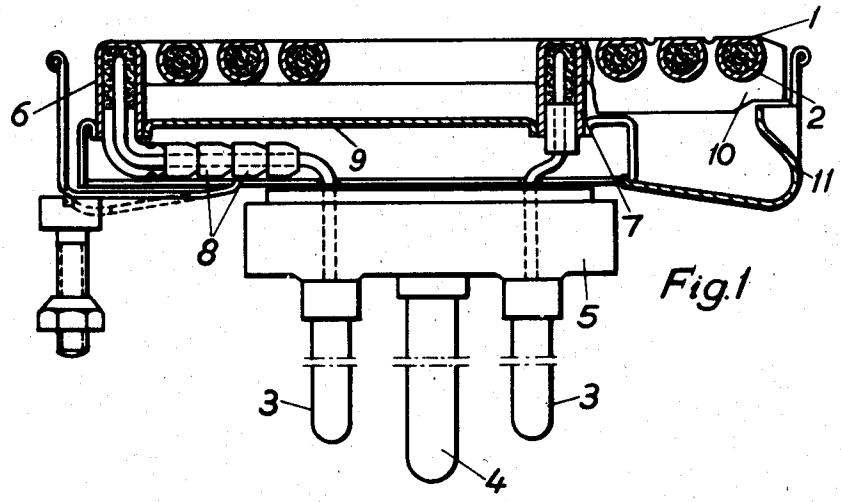
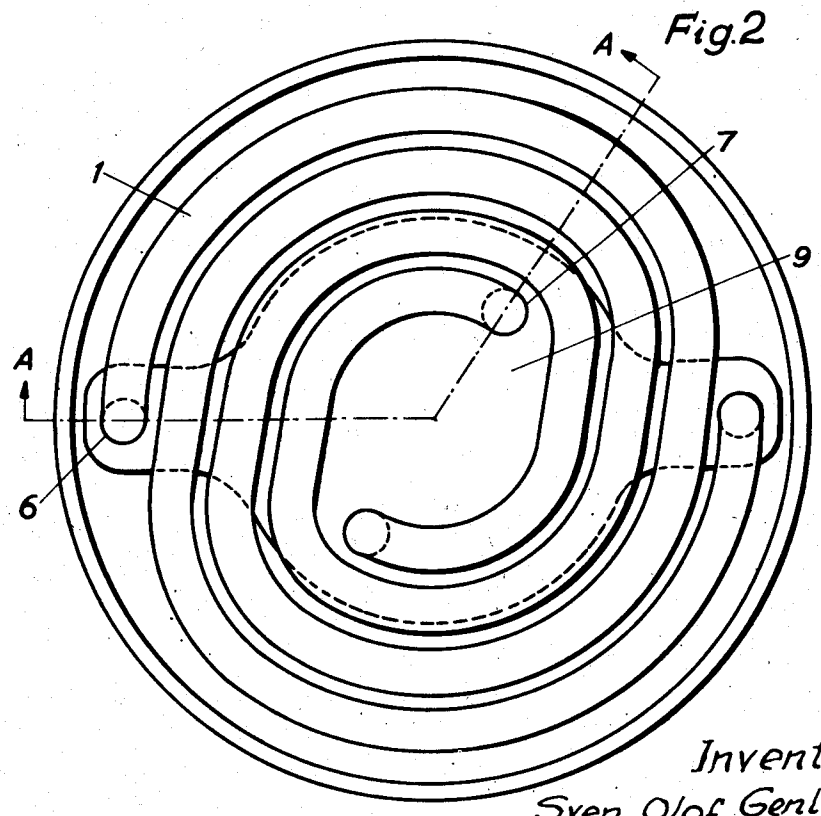


Fig.1

Fig.2



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ELECTRIC HEATING UNIT

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1 Claim. (Cl. 219—37)

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Electric heating units for electrical ranges and similar electrical apparatus are generally made in such a manner that the heat is produced in a spiral of resistance wire, which is insulatedly enclosed in a tube. The tube is then bent in a flat spiral resting on a suitable structure and provided with terminal arrangements and the like to form the heating unit. If a cooking vessel is placed on such a heating unit, the heat is transmitted from the flat tube spiral to the bottom of the cooking vessel partly by radiation and partly by conduction.

When the temperature of the spiral is comparatively low, as was the case in earlier electrical ranges, a very good contact between the spiral and the cooking vessel was necessary in order to give sufficient heat transmission, and in order to get such a good contact it was necessary to use vessels with a comparatively thick bottom, ground so as to be exactly flat. Such vessels are, however, rather expensive, and in order to permit the use of common, thin-bottomed cooking vessels nowadays, the temperature chosen for the tube spiral is so high that most of the heat is transmitted by radiation. The use of a high temperature in the spiral has, in turn, been made possible by the new heat-resisting alloys, generally consisting of iron, nickel, and chromium, which can withstand, without corrosion, temperatures up to 700°–800° C. Such alloys are, however, very hard and the tubes will therefore, be very difficult to bend in sharp bends. This creates the problem as to how the ends of the spirals are to be carried to the connection details of the heating unit. In heating units with tube spirals, the connection details therefore are as a rule placed at a periphery of the unit in order to avoid too sharp bends on the tubes. However, it is often necessary to have the connection details in the central part of the heating unit.

The present invention relates to a construction, which enables such a design by connecting the ends of the tube spiral at the periphery of the heating unit as also at its central part to a closed case on the underside of the heating unit, in which case the heat dissipating resistance wires are protectively carried to terminal pins arranged at the central part of the heating unit.

The attached drawing shows an embodiment of the invention, where Fig. 1 is a sectional view along the line A—A in Fig. 2, which shows a heating unit according to the invention viewed from above.

On the drawing, 1 indicates the heat resisting tube bent in a flat spiral. The heating unit comprises two such tubes. 2 is the resistance spiral, insulatedly enclosed in the tube, 3 indicates the

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ordinary terminal pins. 4 indicates an earthing pin. These terminal pins are arranged on the terminal block 5 of insulating material in the central part of the heating unit.

The ends of the tubes are at 6 at the periphery of the heating unit and at 7 at its central part carried to case 9 available at the underside of the heating unit. Only some simple bends of the tubes are required for this purpose. The resistance spiral 2, which is easily bendable, is then carried to the connecting terminals 3. If required, the resistance wire spiral can be insulated outside the end of the tube by means of insulating bushings 8. The tube spirals 1 are supported by means of a number of supporting plate irons 10, which in turn rest on an outer bowl 11 serving as a collection for spilled cooking. This collection bowl 11, which is easily detachable for washing, can be made with suitable reflecting qualities which are very well maintained due to the good washing possibilities of the bowl. In order to prevent liquid and the like spilled in cooking from flowing down and damaging the insulation on the terminals, the ends of the tubes 1 and the terminal leads are protected by means of the closed case 9 the upper side of which is also formed as a reflector.

I claim as my invention:

An electric heating unit for electrical ranges and similar electrical apparatus, comprising at least one heat-dissipating resistance wire, a protecting tube bent to flat spiral form and enclosing each said wire, a closed terminal box below the center of said spiral, supporting means for said spiral attached to the upper side of said box, an insulating block carrying contact pins attached to the bottom of said box, one end of each protecting tube tightly entering said box at its periphery and at the other end entering at the center, and an annular-shaped bowl removably attached below said spiral and having an inner diameter slightly smaller than said box and an outer diameter slightly larger than said spiral.

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