

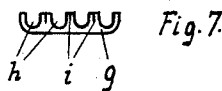
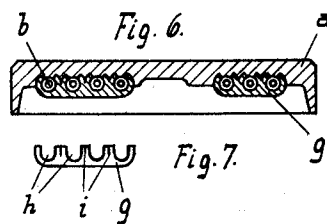
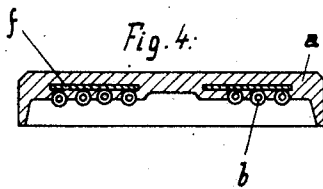
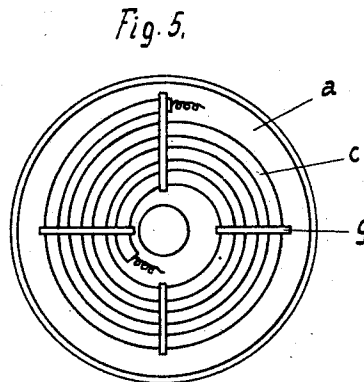
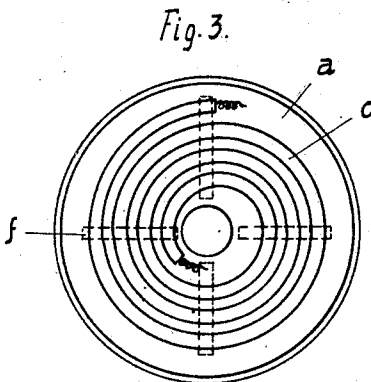
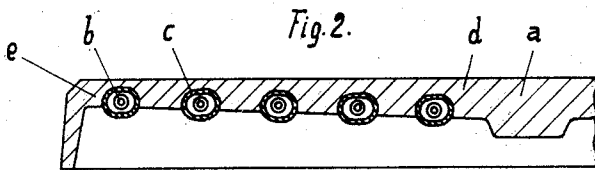
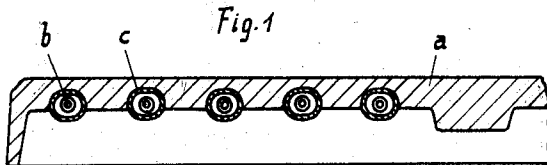
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ELECTRIC HOT PLATE

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ELECTRIC HOT PLATE

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7 Claims. (Cl. 219—37)

The invention relates to improvements in electric hot plates such as are used for cooking purposes and particularly of the low temperature, conduction type of plate. During the manufacture of electric cooking plates in which the heating coils are introduced into tubes with insulation, avoiding therefore a special insulation of the coils in regard to the cooking plates, efforts have been made completely to embed the tubes in the cooking plates made of cast iron or other material. In these efforts however the difficulty is encountered of rendering it necessary in casting around the tubular heating bodies to operate with core models. On the other hand in order to conduct the heat to the surface proper of the cooking plate upon which the pots are to be placed the heating of these parts is economically necessary. The presence of the material surrounding the heating tubes on the other side is technically speaking not necessary from the heating point of view for quite apart from the unnecessary cost of the material, an inaccurate heat distribution is apt to result.

It is the object of the invention to obviate this drawback and for this purpose according to the invention the heating bodies are, by casting, embedded in the cooking plate to the extent only of approximately half their circumference or surface thereby avoiding an inaccurate heat distribution of the downwardly projecting portion. A more material heat loss of the parts of the heating tubes which are not embedded in the casting will hardly occur since air is a much poorer heat conductor than the metal to which the heating tubes would be connected by casting. With such cast cooking plates provided with tubular heating bodies, in order to render the heat distribution still more uniform it might be desirable to strengthen the thickness of the cast plates towards the middle in a manner known per se.

In order to obtain a sufficiently strong connection of the tubular heating body with the cooking plate it is necessary to embed the tubes in the casting material slightly more than half of their total circumference. They may, however, according to another feature of the invention, be anchored in the casting material by a special device which may consist of fixing strips or webs which are firmly connected to the heating body and are completely or partially embedded in the casting material. For example the holding strips for the tubular heating body may consist of sheet metal or wire and may be placed between the heating body and cooking

plate surface. The connection of the tubular heating body to the holding strips is effected by welding or the like. The connection of the holding strips to the tubular members may be effected also by clamping, caulking or the like so that during casting the holding strips are prevented from becoming detached as might happen for example in the case of careless welding.

Various constructional forms of the invention are illustrated by way of example in the annexed drawing in which:

Fig. 1 shows a constructional form in a sectional view with heating bodies cast in.

Fig. 2 shows an arrangement in which the centre of the cooking plate is thicker than the outer portion.

Fig. 3 shows a bottom view of a cooking plate with heating body suspended from holding strips.

Fig. 4 is a section of this cooking plate.

Fig. 5 shows a bottom view of a cooking plate with heating bodies secured to webs.

Fig. 6 is the corresponding section thereof and Fig. 7 illustrates a web in detail.

In the constructional example shown in Figs. 1 and 2, *a* is the cooking plate in which the heating bodies *b* have been embedded by casting over their upper circumference *c* to the extent of half or a little over half their total circumference so that they are freely exposed in downward direction. In the constructional form shown more particularly in Fig. 2 the centre portion *d* of the cooking plate *a* is made thicker than the outer circumferential portion *e* thereof.

In the constructional forms according to Figs. 3 and 4, *a* is again the cooking plate and *c* the heating tube coiled to the shape of a spiral. To the turns of the spiral the holding strips *f* are connected by welding. These holding strips *f* are embedded in the casting material during casting thereby excluding the possibility of the heating body becoming loose.

In the arrangement according to Figs. 5 and 6 the holding of the heating body *c* is effected by webs *g* which are secured to the tubular heating body by caulking. Each web *g* prior to its connection to the tubular heating body *c* is made in the form shown in Fig. 7. It is provided with notches *h* for the accommodation of the individual turns of the heating body *c*. The tongues *i* between each two notches *h* are slotted and after insertion of the heating body *c* are bent around the latter so as to embrace it without risk of becoming detachable. To the plate the webs are definitely secured during the casting of the plate.

We claim:

1. An electric hot plate of the low temperature, conduction type comprising in combination a tubular heating body and a supporting plate therefor, the said supporting plate integrally embracing said heating body to such an extent that the said heating body is only partially embedded in the surface of said supporting plate opposite the cooking surface.
2. An electric hot plate of low temperature, conduction type comprising in combination a tubular heating body in the form of a spiral and a supporting plate therefor, the surface of said supporting plate opposite its cooking surface partially embracing the said heating body so that the thickness at the centre of the said supporting plate is greater than at the edges thereof.
3. An electric hot plate of low temperature, conduction type comprising in combination a heating coil having a plurality of turns, a supporting plate therefor, the surface of said supporting plate opposite the cooking surface integrally embracing the said heating coil so as partially to embed the latter therein and means for maintaining the turns of the said heating coil in position in the plate.
4. An electric hot plate of low temperature, conduction type comprising in combination a heating coil having a plurality of turns, a supporting plate therefor, the surface of said supporting plate opposite the cooking surface integrally embracing the said heating coil so as partially to embed the latter therein and a plurality of holding strips for maintaining the turns of the said heating coil in position.
5. An electric hot plate of the low temperature, conduction type comprising in combination a heating coil having a plurality of turns, a supporting plate therefor, the surface of said supporting plate opposite the cooking surface integrally embracing the said heating coil so as partially to embed the latter therein and a plurality of webs for maintaining the turns of the said heating coil in position while the said supporting plate is being cast thereon.
6. An electric hot plate of the low temperature, conduction type comprising in combination a heating coil having a plurality of turns, a supporting plate therefor, the surface of said supporting plate opposite the cooking surface integrally embracing the said heating coil so as partially to embed the latter therein and a plurality of holding strips for maintaining the turns of the said heating coil in position, the said holding strips being welded to the said heating coil and being completely embedded in the said supporting plate.
7. An electric hot plate of the low temperature, conduction type comprising in combination a heating coil having a plurality of turns, a supporting plate therefor, the surface of said supporting plate opposite the cooking surface integrally embracing the said heating coil so as partially to embed the latter therein and a plurality of webs for maintaining the turns of the said heating coil in position, the said webs being attached to the said heating coil by caulking and being partially embedded in the said supporting plate.

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