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2,498,842

INSULATING HOLDER FOR HEATING UNITS

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FIG. 1

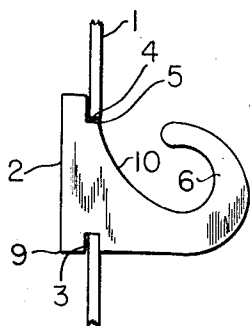


FIG. 2

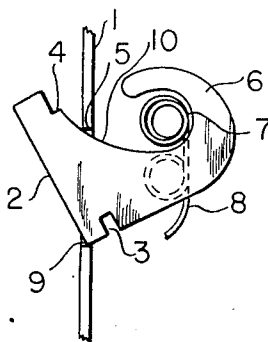
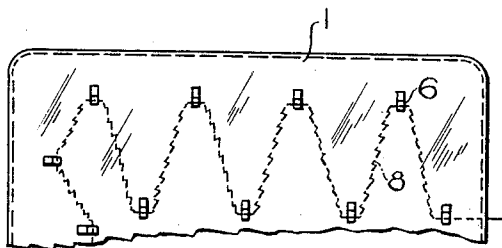


FIG. 3



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4 Claims. (Cl. 219—19)

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This invention relates to insulators for electric wire, cables and the like and more particularly to insulators used to support coiled resistance wires used in the heating elements of electric ovens and broilers, this application being a continuation-in-part of my application Serial No. 659,915, filed April 5, 1946, now Patent No. 2,490,139, dated December 6, 1949.

Heretofore great difficulty has been experienced in the insertion of these hook type insulators and especially in the removal and insertion of new insulators when the original insulators become broken through heat or accident or carelessness of operation. It is one of the objects of this invention to provide an insulated hook which may be inserted or removed from either side of its carrying plate and which will when in position lock itself in position.

Other objects and advantages will be apparent from the following specification and the accompanying drawings in which—

Fig. 1 is a side view of an insulator support in position on a base plate constituting an exemplary embodiment of the invention;

Fig. 2 is a side view of an insulator support with resistance wire therein being inserted into an opening in the base illustrating the insertability of the insulating support from the outside;

Fig. 3 is a plan view of an electric resistance heating unit base plate and insulator supports embodying the invention.

Referring to the drawings, 1 is a base plate such as is employed for a broiler or other cooking or heating device. 2 is the base of the insulator support which has a substantially rectangular recess 3 in it at the upper part of the base on one side and a step 4 located opposite the recess 3. The recess 3 and step 4 are preferably of a width only slightly greater than the thickness of the base plate 1 and are normally in the same plane, so that the outer side of the base plate and the end edges of its oblong opening 5 are engaged by them. The outer or heating element portion of the insulator holder is in the form of a hook 6 of considerable thickness whose bottom at 7 is made of a size to accommodate the diameter of the helical wire heating element 8. The base plate 1 is provided with rectangular openings 9 whose length is approximately the distance between the bottom or inner end of recess 3 and the shoulder 4 and whose width is the width of the insulator support.

Referring to Fig. 2 of the drawing, the distance between the bottom corner 9 of the base 2 and the widest portion of the shank 10 of the hook 6

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is made such that this distance is preferably slightly less or exactly equal to the distance between the longest side of the rectangular opening 5, the reason for this being that unless this distance is about equal to or slightly less than the longer diameter of the opening 5 the hook may not be placed in the opening 5 from the outer or hook side, which is extremely important when it is necessary to replace broken insulators without the need for removing the entire base plate 1 or structure covering it from the stove or other heating or cooking device. The distance, however, may be slightly greater than the long diameter of opening 5 and the hook sprung through this opening of the base plate, momentarily enlarging or stretching the long diameter of the opening of the base plate, which is usually made of resilient sheet material capable of yielding to pressure and then returning to its original position.

In operation when the stove is assembled at the factory the base plate 1 is put into position, then the insulators are tilted as shown in Fig. 2 and inserted through the opening 5, then brought forward until the recess 3 encompasses one of the shorter or end edges of the base plate opening and the shoulder 4 abuts against the opposite edge and the rear side of the base plate. Resistance wires may now be strung along the prelocated insulated hooks as shown in Fig. 3, and should through careless use or other causes, one of the insulated hooks become fractured, a new one may easily be inserted from the inside as heretofore described and the resistance wire restored to its resting place with the hook without disturbing the rest of the hooks in the assemblage.

Obviously should it be desired when the oven or heater is being assembled the insulated hooks may be inserted from the rear with facility so that it may be said that the hooks are insertable in the rectangular openings from either direction.

What I claim is:

1. In a device of the character described, a sheet metal base plate having an opening therein through which a holder and support for holding and supporting a resistance wire may be inserted and removed, a resistance wire holder of insulating material comprising a base of greater length than said opening, a resistance wire engaging portion and a connecting portion between it and the base, said base extending when in normal position beyond said opening on the side of the plate opposite said engaging and connecting portions, said holder having a recess near the junction of the base and connecting portions of a size

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and positioned to receive one edge of the opening, a step opposite said recess spaced from the bottom of said recess a distance approximately equal to the length of said opening, the distance from one lateral extremity of said base to the nearest opposite boundary of said connecting portion being not greater than the longest diameter of said opening.

2. In a device of the character described, a sheet metal base plate having an opening therein through which a holder and support for holding and supporting a resistance wire may be inserted and removed, a resistance wire holder of insulating material comprising a base of greater length than said opening, a resistance wire engaging portion and a connecting portion between it and the base, said base extending when in normal position beyond said opening on the side of the plate opposite said engaging and connecting portions, said holder having a recess near the junction of the base and connecting portions of a size and positioned to receive the edge of the opening, a portion of said holder opposite said recess spaced from the bottom of said recess a distance approximately equal to the length of said opening, the longest diameter of said opening being approximately equal to the distance from one lateral extremity of said base to the nearest opposite boundary of said connecting portion.

3. In a device as specified in claim 2, the greatest diameter of said opening being sub-

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stantially equal to but not materially greater than the distance from the lateral extremity of said base to the opposite boundary of said connecting portion.

4. In a device as specified in claim 2, the distance from the said lateral extremity of said base to the nearest opposite boundary of said connecting portion being slightly greater than the greatest diameter of said opening and the sheet material surrounding said opening being resilient in character and capable of yielding slightly under pressure to permit said holder base to be forced therethrough from the direction of said resistance engaging portion and the holder held in position therein by engagement of said edge of the base plate with said recess.

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