United States Patent

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[54] OVEN SHELF ADAPTED TO ABSORB MICROWAVE ENERGY AND CONDUCT HEAT TO A LOAD

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[52] **U.S. Cl.** **219/10.55**

[51] **Int. Cl.** **H05b 9/06**

[58] **Field of Search** 219/10.55

[56] **References Cited**

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Primary Examiner—J. V. Truhe

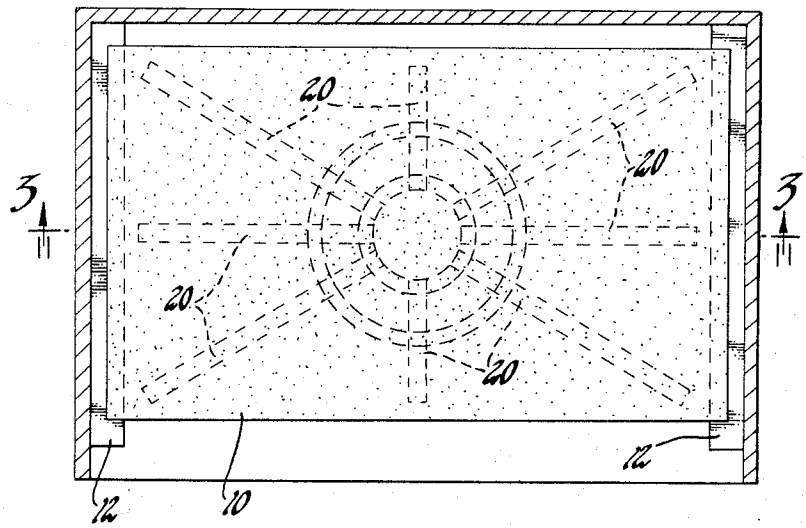
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[57] **ABSTRACT**

This invention relates to a shelf for use in microwave ovens. A base member made up of microwave energy absorptive material is shaped to conform to the interior perimeter of the cavity with which it is to be used for converting the microwave energy into heat. Embedded within the base member are a plurality of rods of a heat conductive material arranged in a preselected pattern which will convey the heat generated within the microwave energy absorptive base material in the presence of microwave energy to an oven load.

1 Claim, 3 Drawing Figures



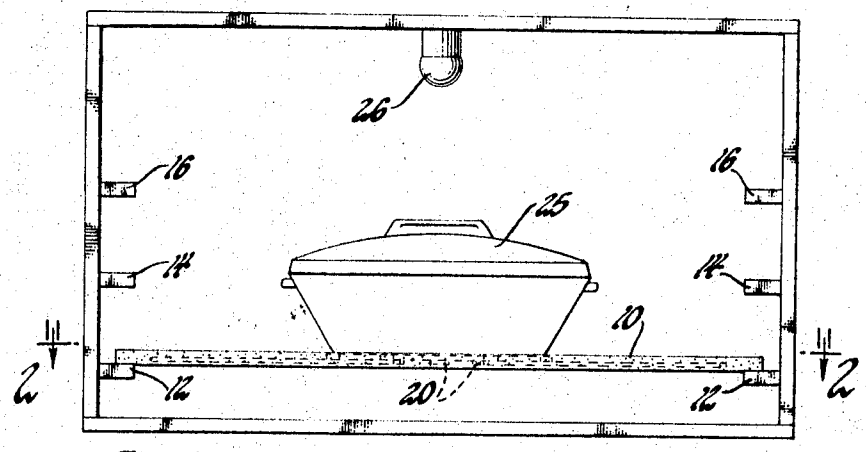


Fig. 1

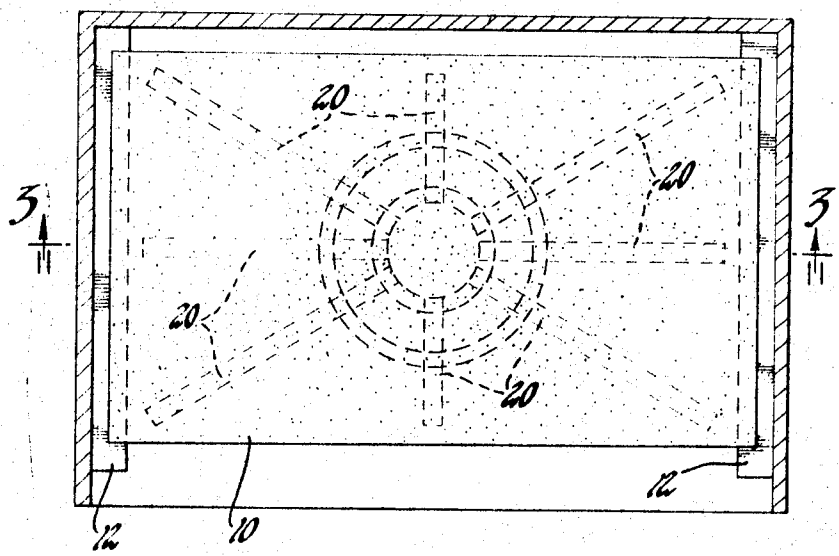


Fig. 2

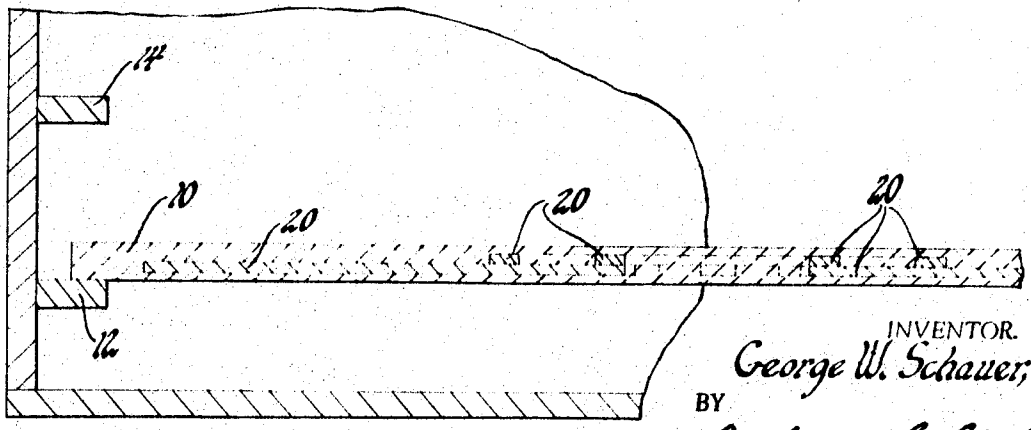


Fig. 3

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OVEN SHELF ADAPTED TO ABSORB MICROWAVE ENERGY AND CONDUCT HEAT TO A LOAD

The present invention relates to oven shelves and, more particularly, to oven shelves for use with microwave energy ovens.

It is an object of this invention to provide an improved shelf for use with microwave energy ovens.

It is another object of this invention to provide an improved shelf for use with microwave energy ovens wherein the heat produced upon the absorption of microwave energy by a base member of microwave energy absorptive material is conducted to an oven load by a plurality of rods of a heat conductive material which are embedded within the material of the base member and arranged in a preselected pattern which will convey the heat generated therein to the load.

In accordance with this invention, a shelf for use with an oven cavity permeated with microwave energy is provided wherein a plurality of rods of a heat conductive material embedded within a base member of microwave energy absorptive material shaped to conform to the interior perimeter of the cavity are arranged in a preselected pattern to conduct the heat produced in the base member material upon the absorption of microwave energy to an oven load.

For a better understanding of the present invention, together with additional objects, advantages and features thereof, reference is made to the following description and accompanying drawing wherein

FIG. **1** is a front view looking into a microwave oven cavity,

FIG. **2** is a section view of FIG. **1** taken along line **2—2** and looking in the direction of the arrows, and,

FIG. **3** is a section view of FIG. **2** taken along line **3—3** and looking in the direction of the arrows.

Referring to the FIGURES of the drawing, a base member **10**, which may be composed of a material which will readily absorb microwave energy, is shaped to conform to the interior perimeter of the oven. One example of a suitable material for base member **10** is a high temperature ceramic material. A commercially available product of this type is marketed by Emerson and Cumming, Inc. under the trademark "ECCOSORB" WG, BR and HT. It is to be specifically understood that this is not the only material of which base member **10** may

be composed as other materials possessing similar characteristics may be employed.

Base member **10** may be supported within the oven cavity by conventional shelf support members **12**. For purposes of selecting different positions of the shelf within the oven, additional conventional shelf support members **14** and **16** may be provided.

Embedded within base member **10** are a plurality of rod members **20** which may be composed of a heat conductive material which will conduct the heat produced in the support member **10** microwave energy absorptive material in the presence of microwave energy. Any metallic material such as copper or aluminum may be employed for rod members **20**. To conduct the heat generated within the base member material to a load within the oven, which may be a conventional baking dish **25**, the rods **20** are arranged in a preselected pattern or grid as is clearly shown in FIG. **2**.

The oven load **25** is placed upon the shelf with the bottom thereof in the proximity of the center of the pattern of rod members **20** and microwave energy is introduced into the oven cavity through a conventional microwave antenna **26**. The material of base member **10** will become heated in the presence of the microwave energy and rod members **20** will conduct the heat generated therein to the bottom of the oven load, conventional baking dish **25**, thereby supplying heat thereto.

While a preferred embodiment of the present invention has been shown and described, it will be obvious to those skilled in the art that various modifications and substitutions may be made without departing from the spirit of the invention which is to be limited only within the scope of the appended claim.

I claim:

1. A shelf for use with oven cavities permeated with microwave energy comprising, a base member of a microwave energy absorptive material shaped to conform to the interior perimeter of the cavity with which it is to be used and a plurality of rods of a heat conductive material embedded within said base member and arranged in a preselected pattern which will convey the heat generated within the material of said base member in the presence of microwave energy to an oven load.

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