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Lee

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[54] MICROWAVE OVEN WITH A FUNCTION FOR DRYING TABLEWARE AND A DRIVE CONTROL METHOD THEREOF

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[30] Foreign Application Priority Data  
Aug. 31, 1989 [KR] Rep. of Korea ..... 12598/1989

[51] Int. Cl.<sup>5</sup> ..... H05B 6/80

[52] U.S. Cl. .... 219/10.55 R; 219/10.55 B; 219/10.55 E; 219/10.55 M; 99/DIG. 14

[58] Field of Search ..... 219/10.55 E, 10.55 F, 219/10.55 R, 10.55 D, 10.55 B, 10.55 M; 34/1; 99/DIG. 14, 451

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Primary Examiner—Philip H. Leung

## [57] ABSTRACT

A microwave oven with a function for drying tableware dryer. The microwave oven includes a heater and a magnetron controlled by a microcomputer, a tableware basket holder detachably equipped with a tableware basket, a water bucket and a plate. A tableware basket holder sensing section is mounted for sensing the tableware basket holder when it is inserted in a cavity of the microwave oven. The tableware drying function is performed by driving the heater under the control of the microcomputer when a tableware basket holder sensing signal is generated from the tableware basket holder sensing section.

2 Claims, 3 Drawing Sheets

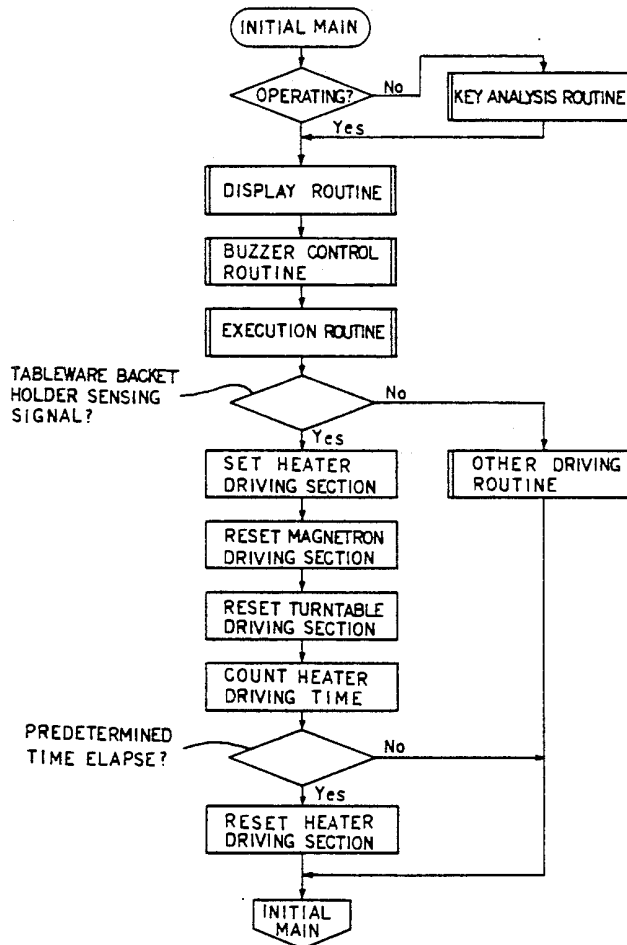


FIG. 1A  
CONVENTIONAL ART

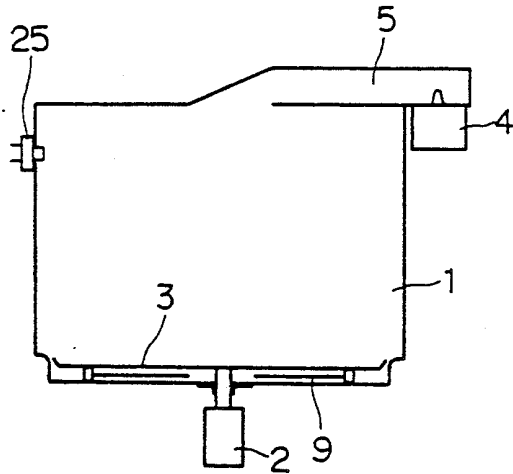


FIG. 1B  
CONVENTIONAL ART

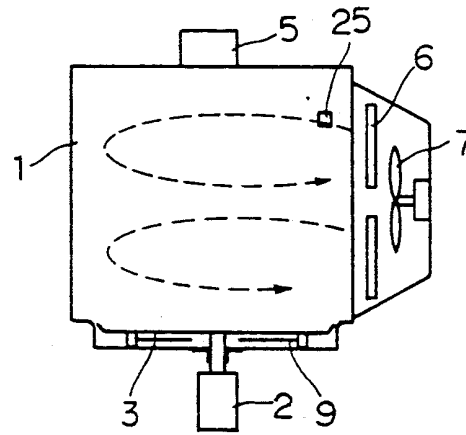


FIG. 2

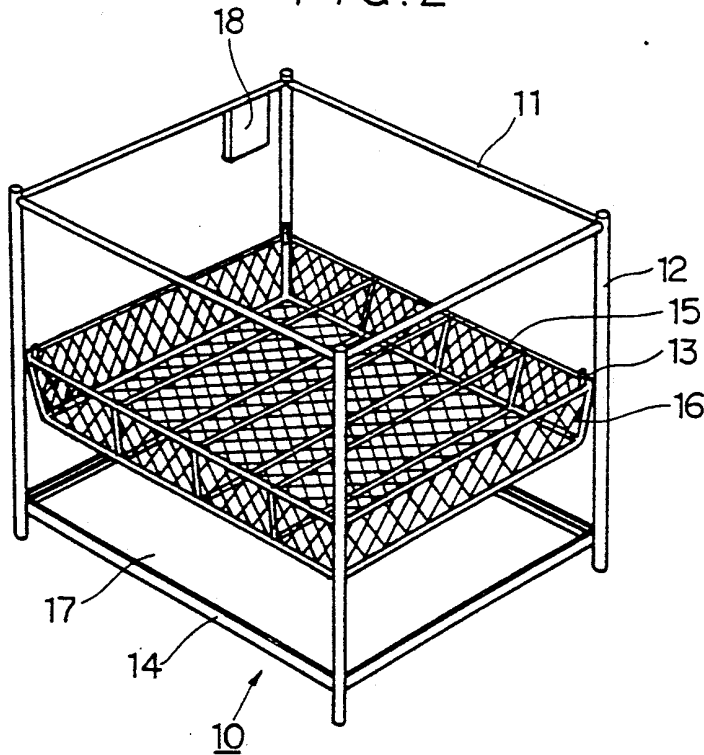


FIG. 3

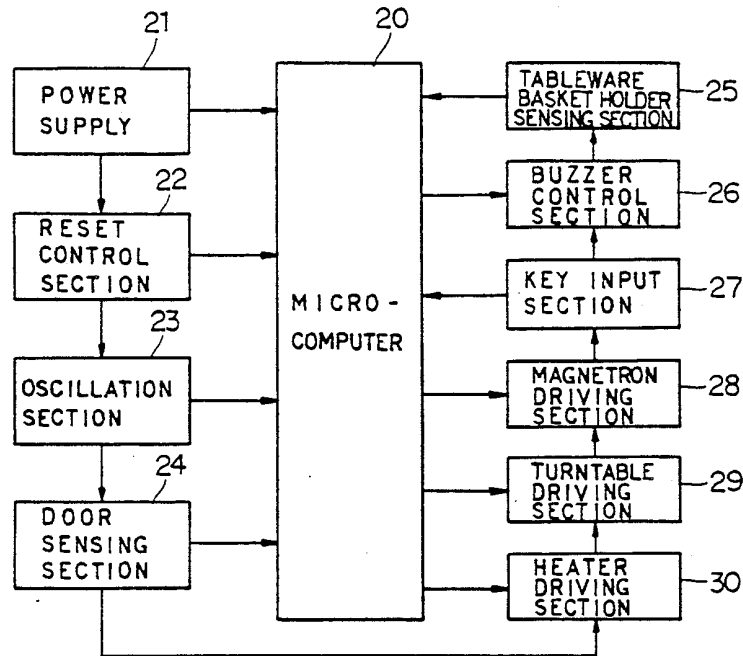


FIG. 4

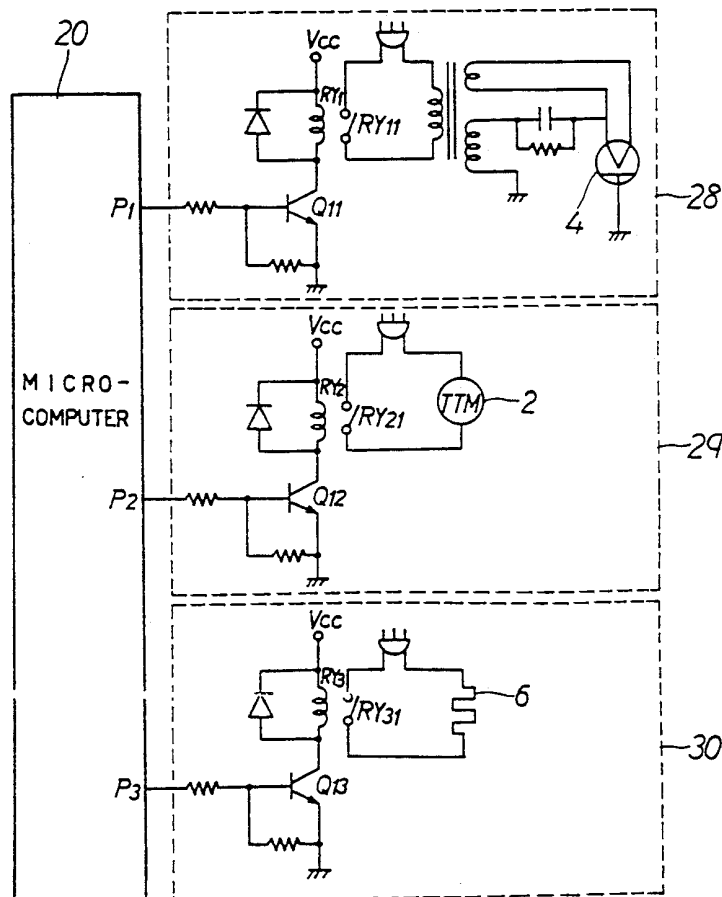
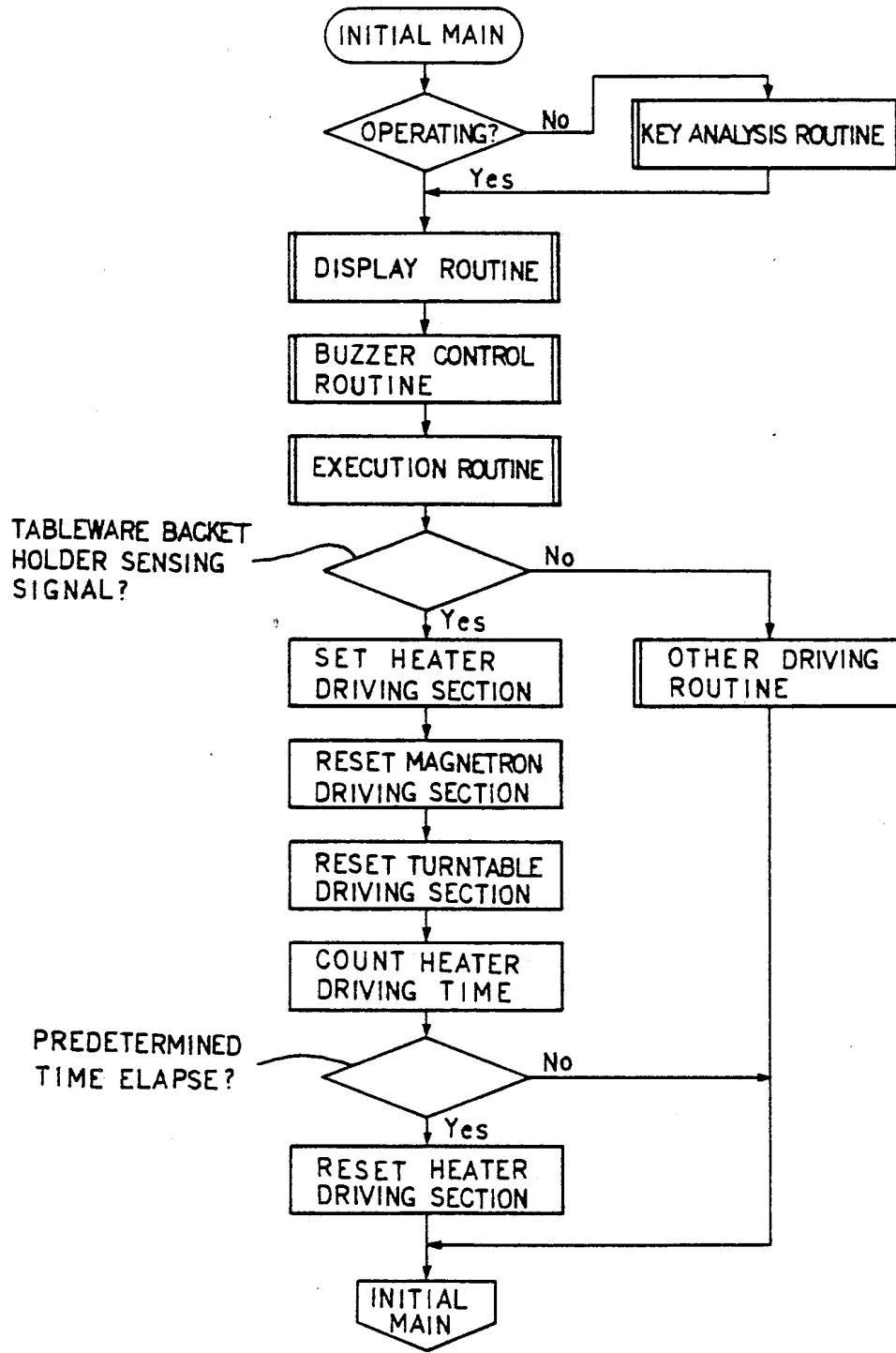


FIG. 5



## MICROWAVE OVEN WITH A FUNCTION FOR DRYING TABLEWARE AND A DRIVE CONTROL METHOD THEREOF

### BACKGROUND OF THE PRESENT INVENTION

#### 1. Field of the Present Invention

The present invention relates to a convention microwave oven and more particularly, to a microwave oven with a function of a tableware dryer and a drive control method thereof for enabling the microwave oven to be used as a tableware dryer.

#### 2. Description of the Prior Art

Various types of microwave ovens are well known in the art. Such microwave ovens do not have a function of a tableware dryer. Such microwave ovens have only a function of heating food. As shown in FIGS. 1A and 1B, a conventional microwave oven of such microwave ovens comprises a magnetron 4 for generating a high frequency, a waveguide 5 for transferring to a cavity 1 the high frequency generated from the magnetron 4, a turntable 3 mounted on the bottom of the cavity for turning food, a roller 9 for supporting and smoothly driving the turntable 3, a turn table motor 2 for driving the turntable 3, a heater 6 mounted on the rear portion of the cavity 1 for generating heat, and a ventilator 7 for blowing into the cavity 1 the heat generated from the heater 6.

The microwave oven, after placing food on the turntable 3, is switched on, and a high frequency is generated out of the magnetron 4. The frequency is conducted to the cavity 1 through the waveguide 6, and thus, the food on the turntable 3 is evenly heated while the turntable 3 is turned by the turntable motor 2.

Meantime, in order to cook the food on the turntable 3 with heat, the magnetron 4 is not driven. The heater 6 and the ventilator 7 are driven so that the food on the turntable 3 is heated since the heat generated from the heater 6 is transferred into the cavity 1 by the ventilator 7.

And also, a conventional stirrer fan type microwave oven heats the food on the glass dish evenly therein since the stirrer fan evenly spreads the high frequency into the cavity thereof.

As mentioned above, the conventional microwave ovens do not have a function for drying tableware, but only the function of heating food.

However, when metal tableware is put in the cavity of the microwave oven for drying, sparks are created due to the high frequency. Therefore, such conventional microwave ovens have a drawback in that they cannot be used as a tableware dryer.

#### SUMMARY OF THE PRESENT INVENTION

Accordingly, it is an object of the present invention to provide a microwave oven with a function for drying tableware dryer wherein the function can be changed from food heating to tableware drying.

Another object of the present invention is to provide a microwave oven which performs a food heating function in case that the tableware basket holder is not in the cavity of the microwave oven so that to dry the tableware in the tableware basket, heat is generated from a heater and a ventilator is driven for a predetermined time while a magnetron is not driven. The tableware basket holder can be easily put in the cavity of the microwave oven.

Other objects and further scope of applicability of the present invention will become apparent from the detailed description given below. It should be understood, however, that the detailed description and specific examples, while indicating preferred embodiments of the present invention, are given by way of illustration only, since various changes and modifications within the spirit and scope of the present invention will become apparent to those skilled in the art from this detailed description.

Briefly described, the present invention relates to a microwave oven with a function for drying tableware in a microwave oven which includes a heater and a magnetron controlled by a microcomputer, a tableware basket holder detachably equipped with a tableware basket, a water bucket and a plate, and a tableware basket holder sensing section mounted to sense the tableware basket holder which is inserted in a cavity thereof, whereby a tableware drying function is performed by driving the heater with control of the microcomputer when a tableware basket holder sensing signal is generated from the tableware basket holder sensing section.

#### BRIEF DESCRIPTION OF THE DRAWINGS

The present invention will become more fully understood from the detailed description given below and the accompanying drawings which are given by way of illustration only, and thus are not limitative of the present invention, and wherein:

FIGS. 1(A) and 1(B) are front sectional view and left side views of a conventional microwave oven to which the present invention is applied;

FIG. 2 is a prospective view of a tableware basket holder according to the present invention;

FIG. 3 is a control block diagram according to the present invention;

FIG. 4 shows detailed circuits for driving sections of FIG. 3; and

FIG. 5 is a flow chart for microcomputer signals of FIG. 3.

#### DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring now in detail to the drawings for the purpose of illustrating preferred embodiments of the present invention, the microwave oven with a function for drying tableware and a drive control method thereof as shown in FIGS. 1A, 1B, 2, and 3 comprises a microwave oven equipped with a heater 6 and a magnetron 4, a tableware basket holder 10 built with an upper supporter 11 and a lower supporter 14 in a rectangular shape. Corners of the tableware basket holder 10 are fixed at support bars 12. Hooks 13 are formed on the middle point of each of the support bars 12. A tableware basket 16 is equipped with a plural number of compartments 15 and is able to be hung from the hooks 13. A water bucket 17 is supported by the lower supporter 14, and a plate 18 is attached to one bar of the supporter 11.

The tableware basket holder 10 made of plastic is formed in a suitable size in order to be put in a cavity 1 (FIG. 1) and the tableware basket 16 is constructed with a net shape for a good air flow. And also, a tableware basket holder sensing section 25 is mounted on an upper part of the left wall of the cavity 1, which is opposite of a plate 18 when the tableware basket holder 10 is put in the cavity 1.

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