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(54) Rotable grid.

(57) A rotatable grid, particularly for a domestic cooking range comprising an oven cavity and at least one conventional planar grid shelf supported by guides affixed to the lateral walls of the oven cavity comprises a disk-shaped grid and a support ring located therebelow in a concentric arrangement and connected thereto for rotation about a vertical axle. Upper and lower end portions of the axle are received in a freely rotatable fit in a hub member of the disk-shaped grid and a bearing support member removably secured to the planar grid shelf, a disk of a low-friction material being preferably interposed between the hub member and the bearing support member. The rotatable grid does not require any modification of the conventional design of the oven cavity and is adapted to be readily dismounted from the bearing support member for use of the grid shelf and facilitating cleaning of the oven cavity and its accessories.

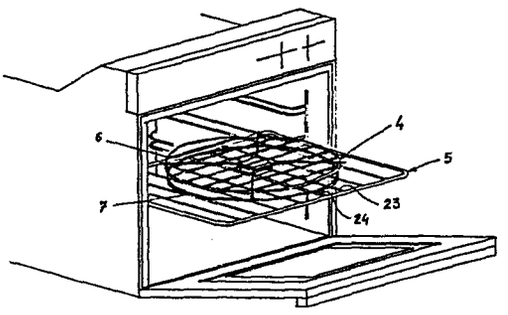

Fig. 1

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Rotatable Grid

Description

The present invention relates to a rotatable grid for use particularly in a domestic cooking range comprising an oven cavity and at least one conventional planar grid shelf supported by guides fixedly attached to the lateral walls of the oven cavity.

Conventional cooking ranges of the above-noted type are usually provided with grid shelves supported in a non-rotatable manner in the oven cavity. In an arrangement of this type, it is rather difficult for the user to inspect foods carried on the rearward, innermost portion of the grid shelves, particularly if the shelves cannot be pulled out of the oven cavity for cantilevered support outside thereof.

This inconvenience is particularly obnoxious if the entire support surface of the grid shelf is occupied by a number of pots or by a particularly voluminous single pot. The progress of the cooking operation can consequently be observed only by repeatedly extracting the grid shelf and by shifting the pots carried thereon around, with the risk of burns caused by the elevated cooking temperatures inside the oven cavity.

On the other hand, there exist domestic cooking ranges, for instance microwave ovens, provided with grids or shelves for the support of the food to be cooked which are adapted to be rotated about a vertical axis by the action of electric drive means.

An arrangement of this type, however, requires considerable modifications of the conventional construction of the oven as well as the employ of accessories of complicated construction, the disassembly of which presents considerable difficulties, so that cleaning and maintenance of the oven as a whole becomes extremely cumbersome.

It is therefore an object of the present invention to provide a rotatable grid which may be used in a conventional domestic cooking range of

traditional construction so as to facilitate the use thereof without subtracting from its structural simplicity.

A further object of the invention is to provide a rotatable grid of the described type which is of simple construction and adapted to be installed in and removed from the oven cavity in a simple manner, so as to permit the use of the conventional grid shelf supported in a non-rotatable manner and to facilitate cleaning and maintenance of the oven cavity.

These objects are attained in a cooking range, particularly of the domestic type, comprising an oven cavity and at least one conventional planar grid shelf supported by guides affixed to the lateral walls of the oven cavity.

The characteristic feature of the invention is the provision of a circular grid comprising a disk-shaped grid member and a support ring concentric therewith and fixedly connected thereto in a superposed arrangement so as to be jointly rotatable about a vertical axle having its upper and lower ends received respectively for free rotation in a central hub member of said disk-shaped grid above and in a bearing support removably affixed to horizontal transverse members of said conventional planar grid shelf.

Said vertical axle is in addition provided with a central disk adapted to space the hub member of the disk-shaped grid from the bearing support affixed to the planar grid shelf and to reduce the friction between surfaces rotatable relative to one another.

Further characteristics and advantages of the invention will become evident from the following description of an exemplary embodiment with reference to the accompanying drawings, wherein:

fig. 1 shows a perspective view of a domestic cooking range provided with a rotatable grid according to the invention,

fig. 2 shows a top plan view of the rotatable grid of fig. 1, and

fig. 3 shows a longitudinal sectional view of the rotatable grid taken along the line III-III in fig. 2.

With reference to fig. 1 of the drawings, a rotatable grid 4 according to the invention is adapted to be mounted on a conventional metal grid shelf supported by horizontal guides affixed to the side walls of the oven cavity as provided in most of the conventional domestic cooking ranges.

The rotatable grid 4, itself preferably made of metal rods of circular cross-section, comprises a disk-shaped grid 6 mounted above a support ring 7 in substantially concentric relation thereto.

Upper disk-shaped grid 6 is constructed in the same manner as a conventional grid shelf and comprises a circular frame 8 and a plurality of transverse support members 9 welded thereto for carrying foods to be cooked. Disk-shaped grid 6 and support ring 7 therebelow are connected to one another by two arcuate rods 10, 11 disposed in symmetric relationship with respect the the center axis X-X of grid 4 and by two horizontal rods 12, 13 disposed along the orthogonal diameter with respect to said center axis X-X of grid 4.

The two arcuate rods 10, 11 are formed to a substantially V-shaped configuration so as to present a rectilinear central portion downwardly offset with respect to two divergent lateral portions terminating in downwardly angled end portions welded to support ring 7. In addition to performing the function of forming a connection between disk-shaped grid 6 and support ring 7, the two horizontal rods 12, 13 form two of the support members of grid 6 (fig. 3).

Each one of rods 12, 13 comprises a central portion of rectilinear configuration having an outer end portion bent downwards and welded to support ring 7, and an inner end portion also bent downwards into contact with the rectilinear center portions of arcuate rods 10 and 11, respectively, to the free side of which they are welded.

The center portion of rotatable grid 4 is provided with a hub member 14 of substantially square shape having two of its opposite side

surfaces formed with horizontally extending grooves 15, 16 for receiving the rectilinear center portions of arcuate rods 10, 11 therein.

Formed in the lower surface of hub member 14 is a cylindrical recess 17 adapted to receive in a freely rotatable relationship the upper end of a vertical rotational axle 18 (fig. 3).

The lower end of axle 18 is received in a freely rotatable manner in a corresponding cylindrical recess 19 formed in the upper surface of a bearing support member 20 having the same shape as hub member 14 of rotatable grid 4, with a pair of opposite horizontal grooves 21 and 22.

Bearing support member 20 is mounted on grid shelf 5 by resiliently spreading two adjacent transverse support rods 23, 24 thereof and inserting bearing support member 20 therebetween, so that corresponding portions of rods 23, 24 are received in horizontal grooves 21, 22 on resilient return to their original shape.

The configuration of bearing support member 20, and in particular of its horizontal grooves 21, 22 should be such as to prevent the accidental disengagement of the horizontal rods 23, 24 therefrom. This may be accomplished in various manners, for instance by extending the upper rims of the gooves so as to form a stop seat for the two horizontal rods 23 and 24.

Vertical axle 18 is preferably surrounded by a removable disk 25 preferably formed of a low-friction material and serving the purpose of reducing the friction surface areas and of spacing the support ring 7 of rotatable grid 4 from the horizontal transverse members 9 of grid shelf 5 inserted in a non-rotatable manner in the oven cavity.

In this manner, rotatable grid 4 is adapted to be rotated about vertical axle 18 by gripping the extensions 26, 27, 28, 29 of two peripherally located transverse rods 30, 31 of upper disk-shaped grid 6, said extensions being bent at a suitable angle and preferably coated with a heat-insulating material.

The functions of disk 25 may alternatively be performed by hub member 14 of disk-shaped grid 6 itself by increasing the height thereof and coating its lower surface with a low-friction material for engagement with the upper surface of bearing support member 20.

In the described manner the rotatable grid 4 according to the invention is adapted to be readily mounted on the planar grid shelf 5 of a conventionally designed domestic cooking range without requiring any modification of the latter's simple construction. On the other hand, the invention advantageously achieves the objective of providing a rotatable grid 4 of simple design adapted to be readily mounted on and dismounted from the vertical rotational axle 18 and thus in and from, respectively, the oven cavity of a cooking range, so as to permit the unincumbered use of the planar grid shelf carrying it and to facilitate cleaning and maintenance of the oven cavity.

The described embodiment of a rotatable grid according to the invention may of course be modified in various manners within the scope of the invention as defined by the appended claims.

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Rotatable Grid

Patent Claims

1. A rotatable grid, particularly for a domestic cooking range comprising an oven cavity and at least one conventional planar grid shelf supported by guides secured to or formed on the lateral walls of the oven cavity, characterized in that it comprises a disk-shaped grid (6) and a support ring (7) both of circular shape and fixedly connected to one another in a superposed concentric arrangement so as to be jointly rotatable about a vertical axle (18), the upper and lower ends of which are inserted in a freely rotatable manner in a central hub member (14) of the disk-shaped grid (6) thereabove and in a bearing support (20) removably secured to horizontal transverse members (23-24) of the planar grid shelf (5), respectively.

2. A rotatable grid according to claim 1, characterized in that said vertical rotation axle (18) is surrounded by a removable disk (25) of an antifriction material disposed between the hub member (14) and thebearing support (20) of said rotatable grid (4) for reducing the friction between surfaces rotatable relative to one another and for spacing the lower support ring (7) from the transverse support members (9) of the planar grid (5).

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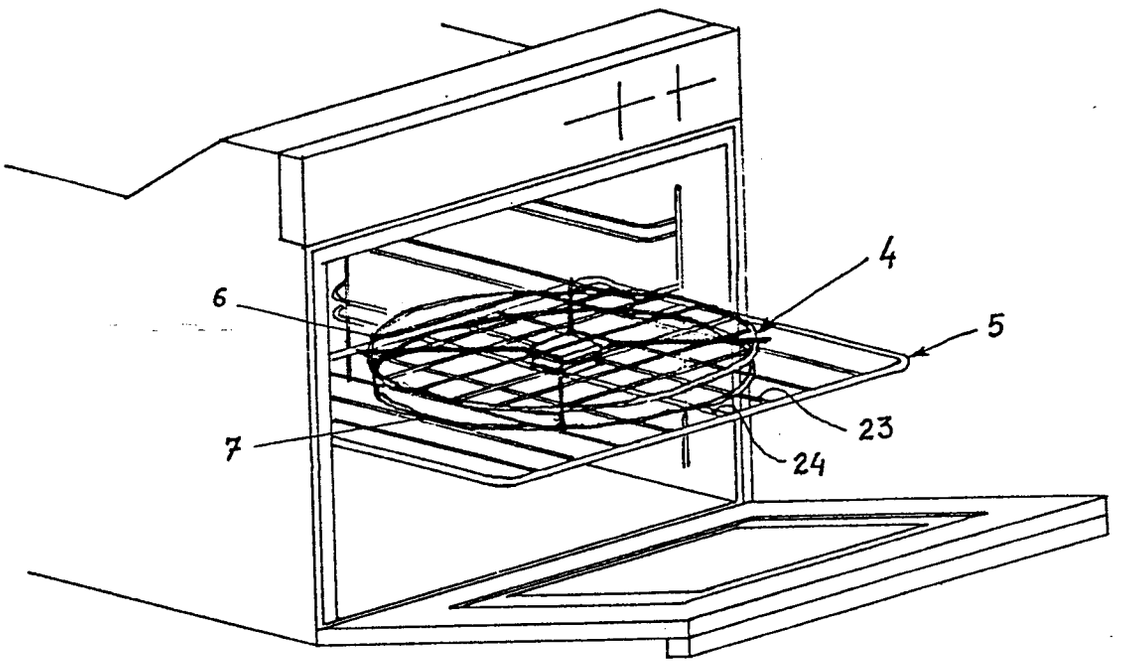

Fig. 1

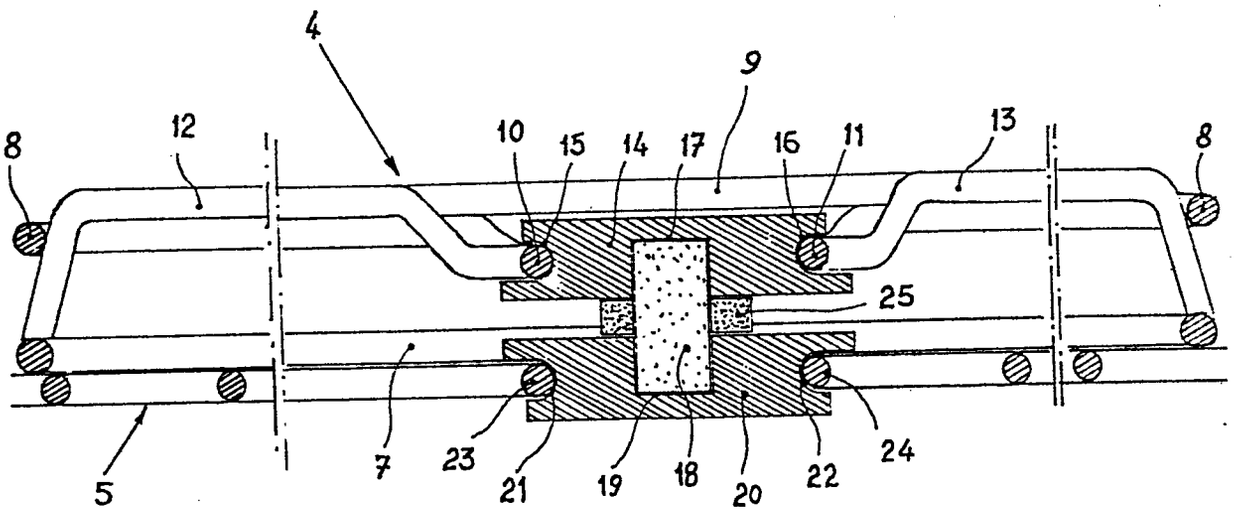

Fig. 3

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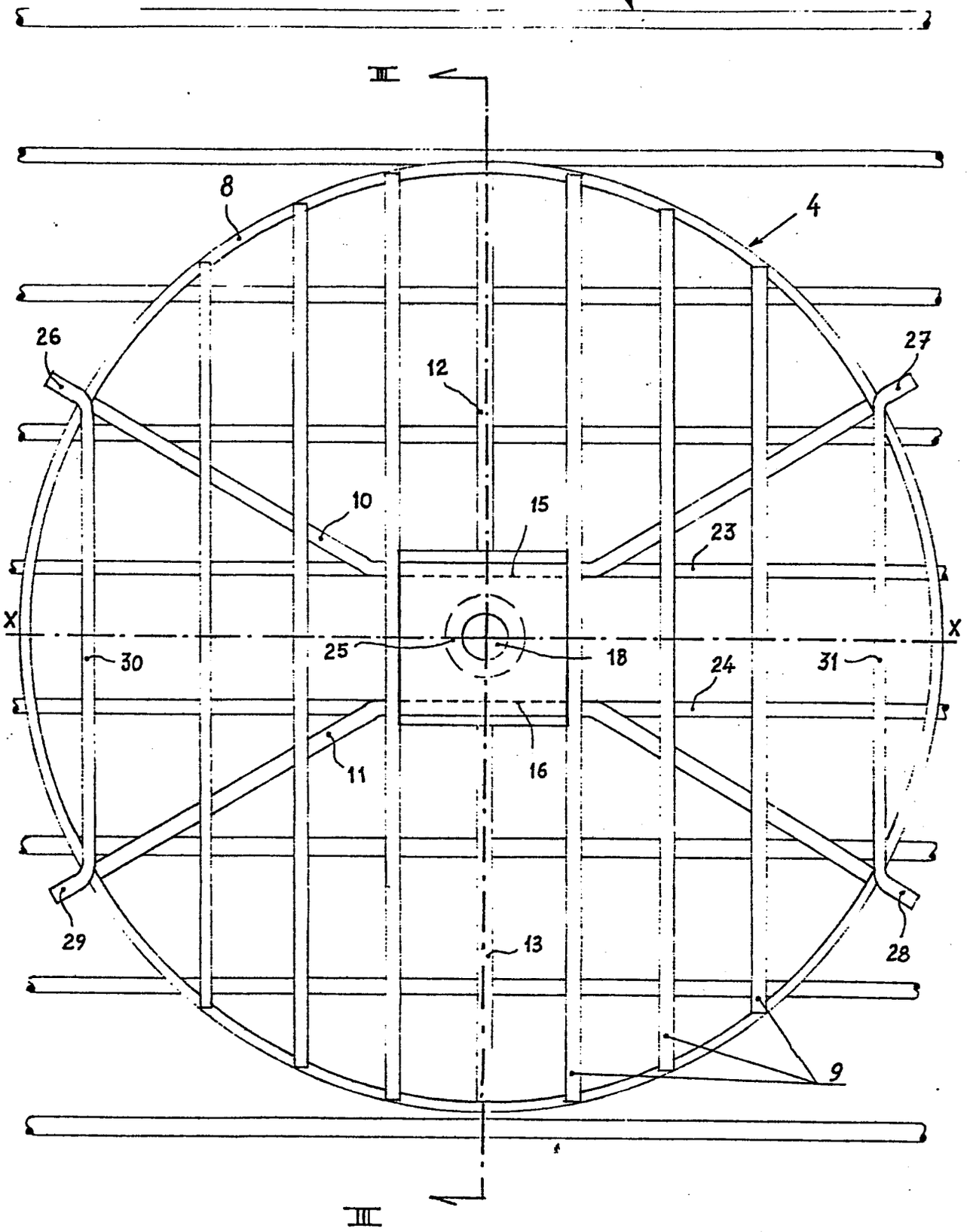

Fig. 2