(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 0 945 683 A2

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
29.09.1999 Bulletin 1999/39

(51) Int Cl.[6]: **F24C 15/10**

(21) Application number: **99830123.8**

(22) Date of filing: **08.03.1999**

(84) Designated Contracting States:
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE
Designated Extension States:
AL LT LV MK RO SI

(30) Priority: **25.03.1998 IT MI980619**

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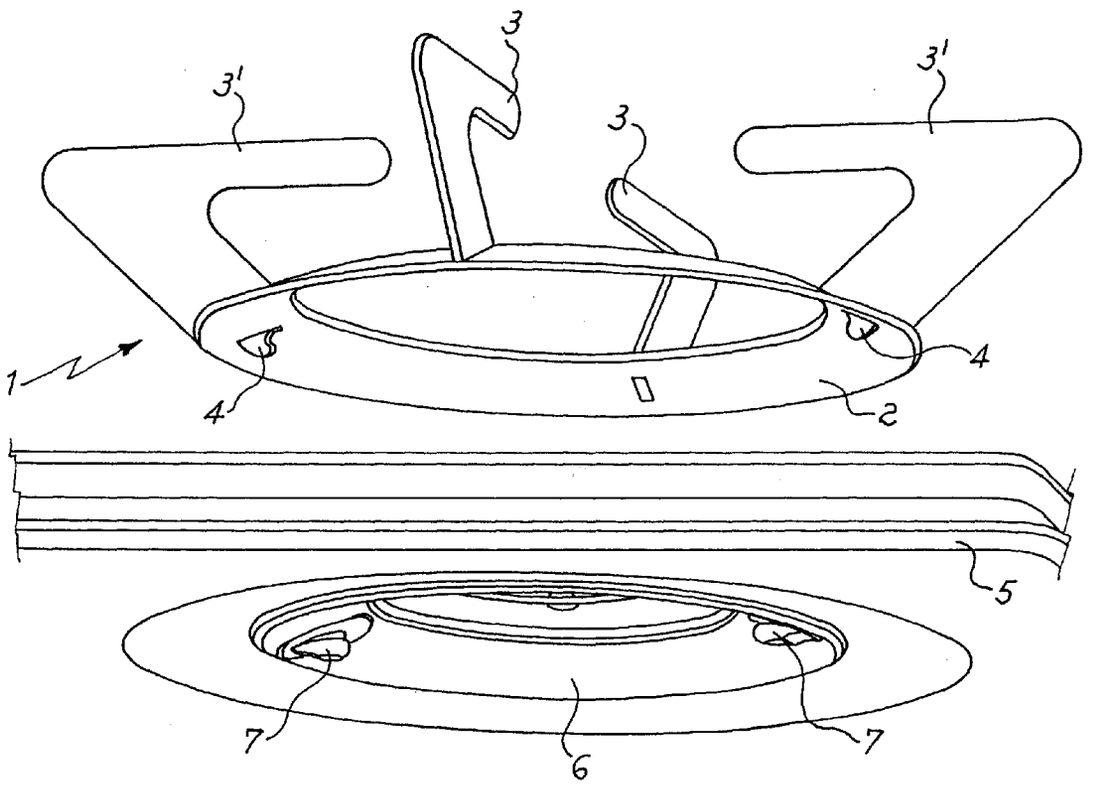
(54) Cooking hob with snap-on supporting grates

(57) A cooking hob includes one or more burners arranged on a plate (5) and one or more supporting grates (1) to support the pots over the burners, each grate (1) being provided with two opposite bottom lugs (4) suitable for snap-engagement with corresponding recesses (7) formed in the plate (5).

Fig. 3



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Description

[0001] The present invention relates to cooking hobs, and in particular to a cooking hob with snap-on supporting grates.

[0002] It is known that a cooking hob of any shape and size, be it integrated in a gas cooker or built-in into a top, is provided with supporting grates to support the pots over the burners. These grates may be individual, i.e. one for each burner, or more commonly double and there can even be only a single grate for all the burners.

[0003] An essential feature of a grate is its stability, i. e. the capacity of effectively supporting any type of cooking vessel even when it is placed in an off-center position. To this purpose, conventional grates have a substantially rectangular shape and usually cover the whole surface of the plate, on which they abut through feet received in suitable seats for reference and centering. This solution makes the grate removal for cleaning the cooking hob very easy, but it poses stringent shape and size obligations to the grates in order to assure a proper stability. Moreover, their weight and size makes them difficult to handle during the cleaning operations.

[0004] A less common alternative is that of fixing the grates to the plate of the cooking hob by means of screws engaged in threaded bores formed in the plate. This solution allows for grates less obliged in shape but implies other drawbacks stemming from the use of the screws, starting from higher costs for manufacture and assembly. In particular, the removal of the grates for cleaning the cooking hob, which takes place almost daily, becomes quite inconvenient. In fact, it is necessary to unscrew the grates from the plate and subsequently screw them back at the end of the operations, which not only implies a certain waste of time but also the risk that some screws be very difficult to unscrew. This is a result of the difficult operating conditions of the screws, which undergo repeated heating and cooling cycles and are exposed to liquids, vapors and the accumulation of various types of dirt. As a consequence, the possibility of seizure is not remote and can be a significant problem during the dismounting of the grates.

[0005] Therefore the object of the present invention is to provide a cooking hob suitable to overcome the above-mentioned drawbacks.

[0006] This object is achieved by means of a cooking hob provided with recesses, formed by drawing of the plate, for the engagement of the grates through corresponding bottom lugs.

[0007] The main advantage of this cooking hob is that of having stable grates which can be easily mounted and removed, while being free from specific shape and size obligations.

[0008] A further advantage of this cooking hob is the fact that this enhanced functionality does not involve changes so dramatic as to cause an increase in the manufacture and assembly costs.

[0009] These and other advantages and characteristics of the cooking hob according to the present invention will be clear to those skilled in the art from the following detailed description of an embodiment thereof with reference to the annexed drawings wherein:

Fig.1 is a diagrammatic vertical sectional view of a grate and a portion of plate with the relevant coupling area;

Fig.2 is a view similar to the preceding one of the grate mounted on the plate; and

Fig.3 is a diagrammatic perspective bottom view of the situation illustrated in fig.1.

[0010] With reference to said figures, there is seen that a cooking hob according to the invention includes for each burner an individual grate 1 (only one illustrated) consisting of a frustoconical ring 2 carrying four braces 3, 3' which are evenly spaced and V-shaped so as to have an upper horizontal supporting edge. Two opposite braces 3' have a bottom lug 4 projecting through the ring 2, whereas the other two braces 3 are fixed to the ring 2 level therewith.

[0011] At each burner, the plate 5 of the cooking hob has a raised and shaped portion so as to receive the grate 1. In particular, there is formed a circular depressed seat 6 suitable to receive the ring 2, as well as two specular recesses 7 located at opposite positions along said seat 6 and suitable to receive the lugs 4 (fig. 2). The snap-on coupling of the grate 1 into its seat takes place easily through deformation of the upper edge of the recess 7, by exploiting the elasticity of the material. The removal takes place through a reverse movement by levering on one of the engaged braces 3'.

[0012] Once the lugs 4 are engaged with the relevant recesses 7, even the presence of a substantially off-centered load P does not jeopardize the stability of the grate, as illustrated in fig. 1 In fact, the load P which tends to overturn the grate 1 by rotating it around the fulcrum F, corresponding to the lower abutment of the seat 6, has a small arm C with respect to said fulcrum F. On the contrary, the reaction forces R_1 and R_2 of the couplings, respectively on the same side and on the opposite side with respect to the load P, have respective arms B and A+B which allow to compensate for the action of the load P even with little reactions.

[0013] The component, if any, of the load P acting in the plane perpendicular to the plane of fig. 1 is compensated for by the reactions of the lugs 4 on the side walls of the recesses 7, which receive them with a very small transverse play. In other words, also for disengaging the grate 1 the movement is always a rotation in the plane of the braces 3', whereas the rotation in the plane perpendicular thereto is substantially prevented.

[0014] It is clear that the above-described and illustrated embodiment of the cooking hob according to the invention is just an example susceptible of various modifications. In particular, the precise shape and size of the grates 1 can be freely changed according to the needs,

by changing the number of braces 3, 3' and also the position of the lugs 4 which can even be not at the braces. In fact, the illustrated type of solution could be applied also to multiple rectangular grates, by forming the recesses 7 not close to the burners but along the edges of the plate 5. Furthermore, the lugs 4 could be located in positions which are not exactly opposite and/or their number could be greater than two.

Claims

1. A cooking hob including one or more burners arranged on a plate (5), as well as one or more supporting grates (1) to support the pots over said burners, characterized in that each of said one or more grates (1) is provided with at least two lugs (4) suitable for snap-engagement with corresponding recesses (7) formed in said plate (5).

2. A cooking hob according to claim 1, characterized in that the lugs (4) and the corresponding recesses (7) are two and are located at opposite positions.

3. A cooking hob according to claim 1 or 2, characterized in that each burner has a corresponding individual grate (1) engaged with recesses (7) formed close to the burner.

4. A cooking hob according to claim 3, characterized in that each grate (1) consists of a frustoconical ring (2) carrying four braces (3, 3') which are evenly spaced and V-shaped so as to have an upper horizontal supporting edge, the engagement lugs (4) being formed at the bottom end of two of said braces (3') so as to project downwards through said ring (2).

5. A cooking hob according to claim 4, characterized in that at each burner the plate (5) has a raised portion wherein there is formed a circular depressed seat (6) suitable to receive the ring (2), the recesses (7) being located along said seat (6).

6. A cooking hob according to one or more of the preceding claims, characterized in that the recesses (7) are formed by drawing of the plate (5) with a very small play with respect to the engagement lugs (4) they are intended to receive.

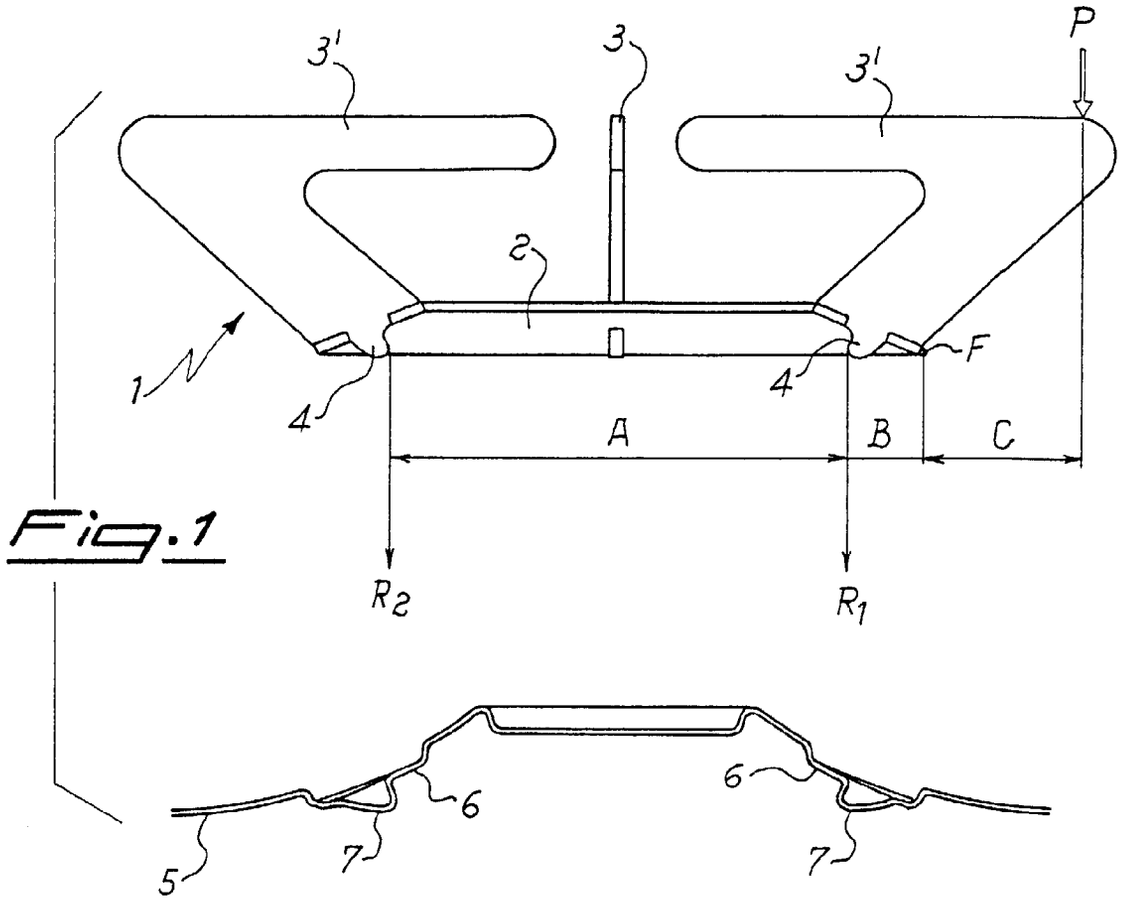

Fig.1

Fig.2

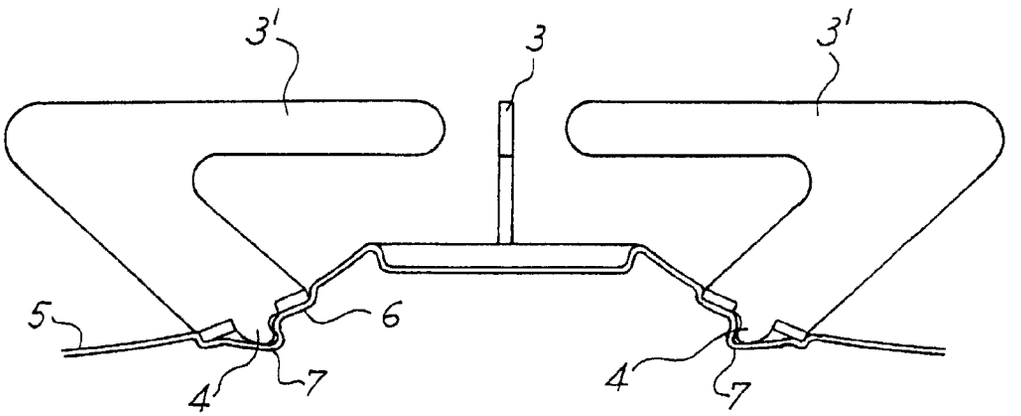

Fig.3