



(11) **EP 1 764 559 A1**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
21.03.2007 Bulletin 2007/12

(51) Int Cl.:
F24C 15/10^(2006.01) A47J 36/34^(2006.01)

(21) Application number: **05108436.6**

(22) Date of filing: **14.09.2005**

(84) Designated Contracting States:
**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR
HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI
SK TR**
Designated Extension States:
AL BA HR MK YU

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Remarks:

Amended claims in accordance with Rule 86 (2) EPC.

(54) **Cooking grate assembly**

(57) The present invention relates to a cooking grate assembly (1) and more particularly to a burner grate assembly used in gas cooking appliances.

The cooking grate assembly (1) according to the present invention is characterised by comprising a frame (2) adapted to be displaced around one or more heating elements (14) of a cooktop (4) and at least one support

element (10, 110, 210, 310) removably received in said frame (2) for defining a cooking vessel supporting surface (11, 111, 311).

A cooktop (4) comprising one or more cooking grate assemblies (1) according to invention is also disclosed.

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Description

[0001] The present invention relates to a cooking grate assembly and more particularly to a burner grate assembly used in gas cooking appliances.

[0002] Utensil supporting grates are typically employed with heat sources for cooking purposes. Meal preparations are placed into various cooking utensils, such as pots and pans, which, in turn, are conventionally positioned on supporting grates above the heat source to cook the meal preparations. In electric and gas-fired appliance cooktops, a plurality of burner grates are typically employed to cook multiple food preparations at selectively different heating levels at the same time. Since the cooking vessels can have bottom portions of different shape, it is important that the cooking grates have a complementarily shaped supporting surface able to guarantee a stable and safe support of the cooking vessels. In this view conventional cooking grates are satisfactory when used with flat bottomed cooking vessels, but they are incompatible with other types of cooking utensils, such as vessels with curved bottom surfaces.

[0003] Some cooking appliances of known type have been provided with special heating elements to accommodate curved cooking utensils and vessels, such as a wok. An example is disclosed in US Patent No. 4,435,638. However, specially designed burners for curved cooking vessels has the drawback that they are not generally compatible with flat-bottomed cooking elements which are also desirable to use.

[0004] Similarly, cooktops commercially available at present can be provided with heating element having cooking grates dedicated exclusively to receive vessels with curved bottom surfaces. This arrangement poses the problem that such heating elements cannot be used in combination with flat bottomed cooking elements and therefore the cooktop is not fully versatile.

[0005] The aim of the present invention is therefore to solve the noted problems, eliminating the drawbacks of the cited known art and thus providing a cooking grate assembly able to receive different kinds of cooking vessels.

[0006] A further object of the present invention is to provide a cooking grate assembly that can be easily removed from the cooktop and cleaned.

[0007] Another object of the present invention is to provide a cooking grate assembly that can be quickly changed to suit the choice of different cooking styles and techniques.

[0008] Advantages, objects, and features of the invention will be set forth in part in the description which follows and in part will become apparent to those having ordinary skill in the art upon examination of the following or may be learned from practice of the invention. The objects and advantages of the invention may be realised and attained as particularly pointed out in the appended claims.

[0009] The accompanying drawings, which are includ-

ed to provide a further understanding of the invention and are incorporated in and constitute a part of this specification, illustrate possible embodiments of the invention and together with the description serve to explain the principles of the invention.

[0010] In the drawings:

[0011] Figure 1 shows a perspective view of the cooking grate assembly according to the present invention;

[0012] Figure 2 shows a gas range provided with the cooking grate assembly of Fig. 1;

[0013] Figures 3 to 5 shows different embodiments of cooking vessels supporting elements.

[0014] With reference to figures 1 and 2 the cooking grate assembly 1 according to the present invention comprises a frame 2 having footing elements 3 for stably displacing said frame 2 on a cooktop surface 4 of a gas range 5, in particular a free standing gas range. The frame 2 is formed by four mutually perpendicular and coplanar bars 6, 6', 7, 7' and it can removably receive one or more support elements 10 that define a cooking vessel supporting surface 11 where meal preparations can be cooked. When each support element 10 is received on the frame 2 and the latter is disposed on a cooktop 4, the frame 2 surrounds one or more heating elements 14 and the support element 10 results placed over such elements 14.

[0015] In order to avoid longitudinal and transversal movement of the supporting elements 10 when they are placed on the frame 2, parallel and spaced apart bars 7, 7' are provided with retaining members 8, 8' formed as rims 12 projecting upwards from said bars 7, 7' and bars 6, 6' comprise edges 9, 9' having an L-shaped transversal section. A corresponding complementarily L-shaped transversal section is formed on the lateral side bars 13, 13' of each support element 10, such that when each supporting element 10 is received by the frame 2 the edges 9, 9' and the lateral side bars 13, 13' abut forming a stable coupling.

[0016] The frame 2 can extend along the whole perimeter of the cooktop 4 so as to surround all the heating elements 14, and it can have a shape other than rectangular depending on the shape of the cooktop 4. If the heating elements 14 are arranged in sectors, as shown in Fig. 2, each sector can comprise a frame 2 and one or more supporting elements 10.

[0017] In Fig. 3 it is shown a first embodiment of a support element 110 made in the form of a grate specially adapted for supporting fish-kettle pans. Said element 110 comprises four mutually perpendicular and coplanar side bars 113, 113', 117, 117' forming a substantially rectangular structure. A plurality of spaced apart arms 115 extends coplanarly from the side bars 113, 113', 117, 117' so as to form a cooking vessel supporting surface 111. Even if such surface 111 has been shown as being a plane, the arms 115 can be arranged and shaped so as to be adapted to receive vessels with curved bottom surfaces, like a wok.

[0018] In Fig. 4 a second embodiment of a support

element 210 is shown. In this case the support element 210 is in the form of a plate provided with a plurality of ribs 218. Lateral side bars 213, 213' have a L-shaped transversal section in order to be stably received by the frame 2.

[0019] In Fig. 5 a third embodiment of a support element 310 is shown. Now the supporting element is in the form of a smooth plate 319. In such form the element 310 can be used not only as supporting surface 311 for receiving cooking vessels but also as cooking surface. If preferred the supporting surface 311 can be curved.

[0020] The supporting elements 10, 110, 210, 310 can be easily removed from the frame 2 and interchanged for adapting the cooktop 4 to receive different types of cooking vessel so as to allow the user to perform different cooking styles and techniques. Elements 10, 110, 210, 310 can be of the type washable in a dishwashing machine.

[0021] Conclusively it can be stated that a cooktop provided with a cooking grate assembly according to the present invention is fully versatile and can be easily and quickly adapted to many different cooking styles.

[0022] As the present invention may be embodied in several forms without departing from the spirit or essential characteristics thereof, it should also be understood that the above-described embodiments are not limited by any of the details of the foregoing description, but rather should be construed broadly within its spirit and scope as defined in the appended claims, and therefore all changes and modifications that fall within the meets and bounds of the claims, or equivalence of such meets and bounds are therefore intended to be embraced by the appended claims.

Claims

1. A cooking grate assembly (1) **characterised by** comprising a frame (2) adapted to be displaced around one or more heating elements (14) of a cooktop (4) and at least one support element (10, 110, 210, 310) removably received in said frame (2) for defining a cooking vessel supporting surface (11, 111, 311).
2. A cooking grate assembly according to claim 1 wherein said at least one support element (11) is in the form of a grate having a plurality of supporting arms (115).
3. A cooking grate assembly according to claim 1 wherein said at least one support element (210) is in the form of a plate provided with a plurality of ribs (218).
4. A cooking grate assembly according to claim 1 wherein said at least one support element (310) is in the form of a plate (319).

5. A cooking grate assembly according to any preceding claim wherein said vessel supporting surface (11, 111, 311) is curved.

6. A cooking grate assembly according to any preceding claim wherein said frame (2) comprises edges (9, 9') having an L-shaped transversal section and retaining members (8, 8') for holding in place said at least one support element (10, 110, 210, 310).

7. A cooktop (4) comprising one or more cooking grate assemblies (1) according to any preceding claim.

Amended claims in accordance with Rule 86(2) EPC.

1. A cooking grate assembly (1) comprising a frame (2) adapted to be displaced around one or more heating elements (14) of a cooktop (4) and at least one support element (10, 110, 210, 310) provided with side members (13, 13', 113, 113', 213, 213') removably received in said frame (2) for defining a cooking vessel supporting surface (11, 111, 311), the frame (2) being formed by mutually perpendicular first and a second couple of parallel and spaced apart bars (6, 6', 7, 7'), **characterised in that** the first couple of bars (7, 7') is provided with retaining members (8, 8') formed as rims (12) projecting upwards from said bars (7, 7') and the second couple of bars (6, 6') comprises edges (9, 9') having L-shaped transversal section and **in that** a corresponding complementarily L-shaped transversal section is formed on the side members (13, 13', 113, 113', 213, 213') of each support element (10) so as to abut with said edges (9, 9') forming a stable coupling when each support element (10, 110, 210, 310) is received by the frame (2).

2. A cooking grate assembly according to claim 1 wherein said at least one support element (11) is in the form of a grate having a plurality of supporting arms (115).

3. A cooking grate assembly according to claim 1 wherein said at least one support element (210) is in the form of a plate provided with a plurality of ribs (218).

4. A cooking grate assembly according to claim 1 wherein said at least one support element (310) is in the form of a plate (319).

5. A cooking grate assembly according to any preceding claim wherein said vessel supporting surface (11, 111, 311) is curved.

6. A cooktop (4) comprising one or more cooking grate assemblies (1) according to any preceding claim.

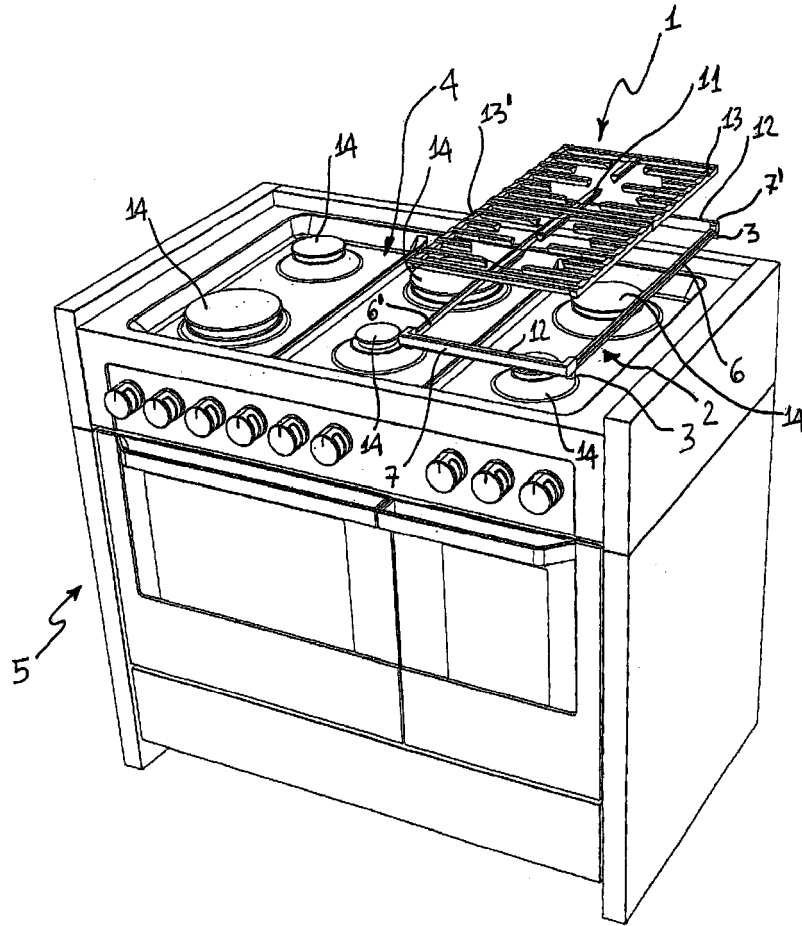


Fig. 1

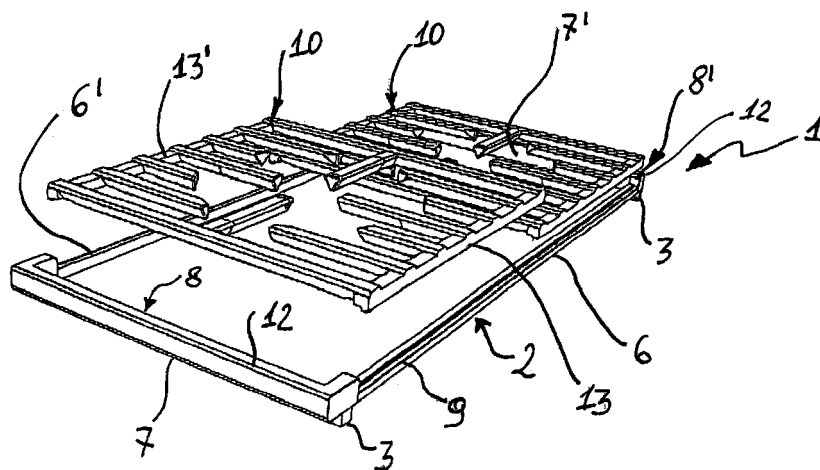


Fig. 2

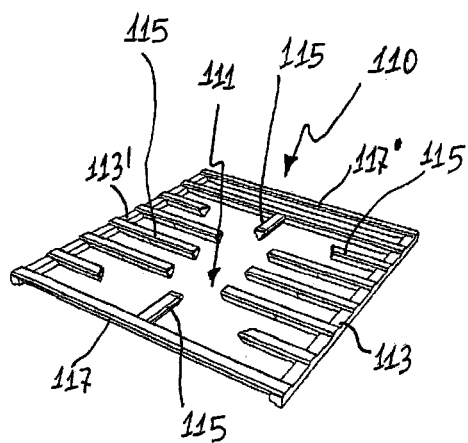


Fig. 3

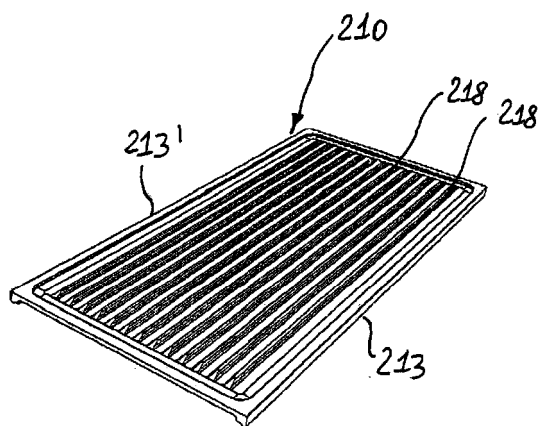


Fig. 4

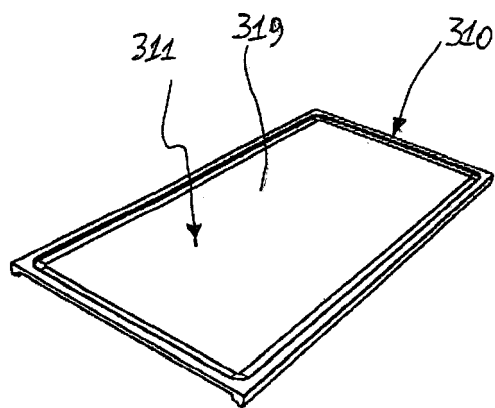


Fig. 5



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 05 10 8436

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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	* figure 7 *		

A	GB 989 700 A (PARKINSON COWAN LIMITED) 22 April 1965 (1965-04-22)	6	TECHNICAL FIELDS SEARCHED (IPC)
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The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
Munich		20 December 2005	von Mittelstaedt, A
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 05 10 8436

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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20-12-2005

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REFERENCES CITED IN THE DESCRIPTION

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