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- **Costa, Filippo**  
**21025 Comerio (IT)**
- **Hammes, Valerio S**  
**21025 Comerio (IT)**
- **Franchi, Daniele**  
**21025 Comerio (IT)**

(71) Applicant: **Whirlpool Corporation**  
**Benton Harbor, MI 49022 (US)**

(74) Representative: **Guerici, Alessandro**  
**Whirlpool Europe S.r.l.**  
**Patent Department**  
**Viale G. Borghi 27**  
**21025 Comerio (VA) (IT)**

(72) Inventors:  
• **Martins, Eduardo S**  
**21025 Comerio (IT)**

(54) **A grate to improve the simmering on a gas hob**

(57) A cooking gas hob provided with a grate for supporting cooking utensils which integrates a protection for preventing the flame of a burner from being extinguished

from a wind blow when operating around the minimum level.  
Simmering performance of such gas hob is improved.

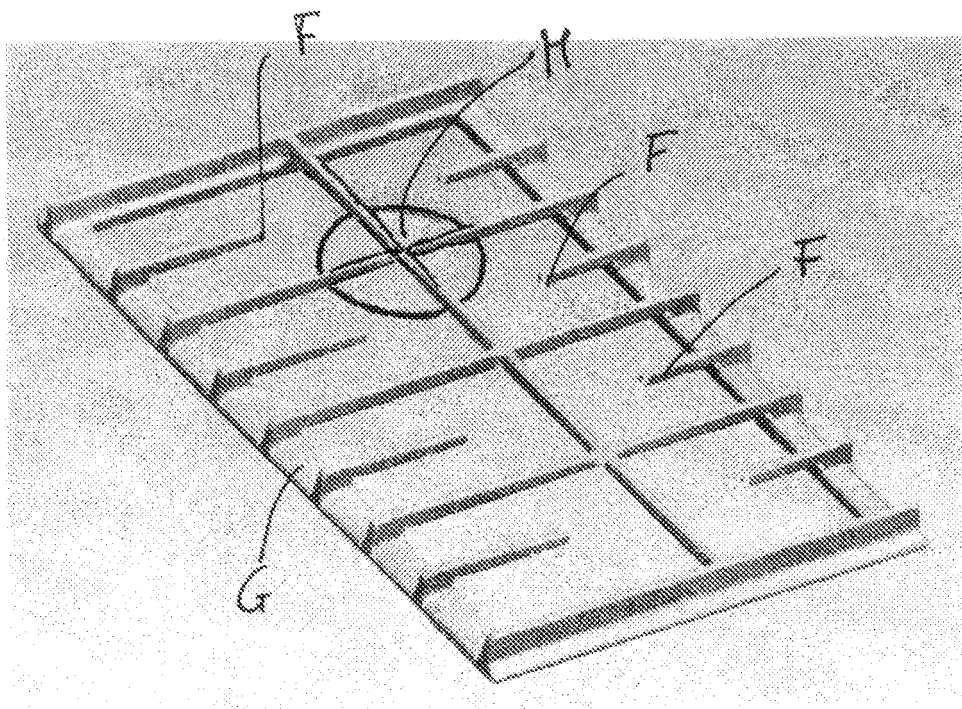


Fig. 2

## Description

[0001] With the terms gas hob it is normally indicated either a gas built-in cooktop or a gas cooktop integrated within a cooking range. For the purpose of the present invention we extend this definition by including all the cooking gas hobs provides with at least one burner fed with any type of combustible gas.

[0002] Cooking gas hobs are normally provided with grates placed above the gas burners. Grates normally present "fingers" for supporting pots, pans, casseroles or any other cooking utensil that has to be heated by the gas hob.

[0003] "Fingers" are required to position, in a centered and stable way, cooking utensils above the gas burners.

[0004] Normally gas hob appliances are designed to prevent the flame from being extinguished by a wind blow caused for instance by a slammed door, especially with regard to the low power burners. This design is particularly important for the countries in which it the door slam test is a safety requirement to be passed for obtain the approval of the product.

[0005] It is known in the art that, especially for the small burners, whenever the test is not likely to be passed, that an easy way to obtain the product approval is to modify the product by increasing the minimum power level of the interested burner. This change has a consequent disadvantages of decreasing the performance of the product when using the same burner at the minimum level. This effect is particularly undesirable when the burner is used for simmering, especially when needed to supply good melting and good sauce results. In fact, a burner with increased power is not good enough for this purpose.

[0006] Moreover, it is known in the art that after having increased the power, to avoid that an increased power could affect the hob temperatures, the combustion results and other safety performances required for the product approval, a change the aesthetic design of grates is most of the time necessary. This change normally has an impact on metal top design, and on other components including the "fingers". As a consequence the overall grate design is changed, and this change can compromise the overall stability of the cooking utensils, jeopardizing the overall aesthetic design.

[0007] Good results on performance tests, like Tomato Sauce and Melting Chocolate and a nice appearance based on a design which provides stability the cooking utensils, are very important for the brand to build a good image on the market, and are very important to transmit a good impression to the customer.

[0008] An object of the present invention is therefore to provide a convection oven that does not present the limitations of the prior art.

[0009] More specifically, an object of the present invention is a cooking gas hob provided with a grid presenting some characteristics capable to solve the problem of the flame extinguishing due to wind blows and which also doesn't need to change the disposition of the

fingers, compromising the stability of the cooking utensils supported by the grates.

[0010] Other features and advantages of the present invention will become readily apparent to the skilled artisan from the following detailed description when read in light of the accompanying drawings, in which:

- Figure 1 shows a cooking gas hob provided with a grid according to the present invention;
- Figure 2 shows a detailed view of a preferred embodiment of grid according to the present invention.

[0011] With reference to the drawings a gas hob 100 presents five burners having different sizes, adapted for being coupled with different pans and for supply different powers. In particular the gas hob presents an auxiliary burner A having a small size, i.e. rated 1.5 kW and rapid burner R rated, for instance, 4.4 kW. Three grates G are positioned above the burners, each of them presenting "fingers" F to support cooking utensils (cookware) of different sizes.

[0012] According to the present invention, the grate G above the auxiliary burner A, which is the burner that first extinguishes it flame when set at its lower (minimum) power level during the door slam test, present a flat surface metal area M, a plate, which avoids the flame be directly in contact with the pan at low power level, and which prevent an excessive warming when the customer is using the burner of the product on the simmer function.

[0013] The same configuration is applicable also to the grates over standing the rapid burner R or any other burner which can also affected by the same problem.

[0014] This flat surface metal area M is integrated with the grids and obtained by a metal casting process.

[0015] With a grid G according to the present invention it is possible to improve the simmer function of the product and to prevent the flame extinguishing in case of a wind blow. The results are particularly appreciable when the burner is operated at its minimum level, whenever the flame of the burner is retained underneath the flat surface metal area M.

[0016] The presence of the flat surface metal area/s prevent to a modification of the "fingers" F and so of the stability of the cooking utensils used with the hob. As a further consequence the overall original nice appearance of the product is maintained together with the product performances.

## Claims

1. Cooking gas hob provided with a gas burner (A,R) and with a grate (G) lying above the gas burner (A, R) adapted to support a cookware, **characterized in that** the gas hob presents a plate (M) in correspondence with said gas burner (A, R), said plate (M) being integral with said grate (G) and being displaced at a predetermined distance from the gas

burner and adapted to retain the flame of the gas burner below said grate when the gas burner is operated at its minimum level.

2. Cooking gas hob according to claim 1 **characterized in that** the plate (M) is integral with the grate (G). 5
3. Cooking gas hob according to any of the preceding claims **characterized in that** the plate (M) is flat and parallel with a worktop in which the hob is installed. 10
4. Cooking gas hob according to any of the preceding claims **characterized in that** the plate (M) and the grate (G) are obtained by a metal casting process. 15
5. Method for preventing the extinguishing of a gas burner flame from accidental air blows in a cooking gas hob according to claim 1 **characterized in that** the method comprises the step of setting the burner to operate to a predetermined minimum power level retaining the flame underneath said plate. 20

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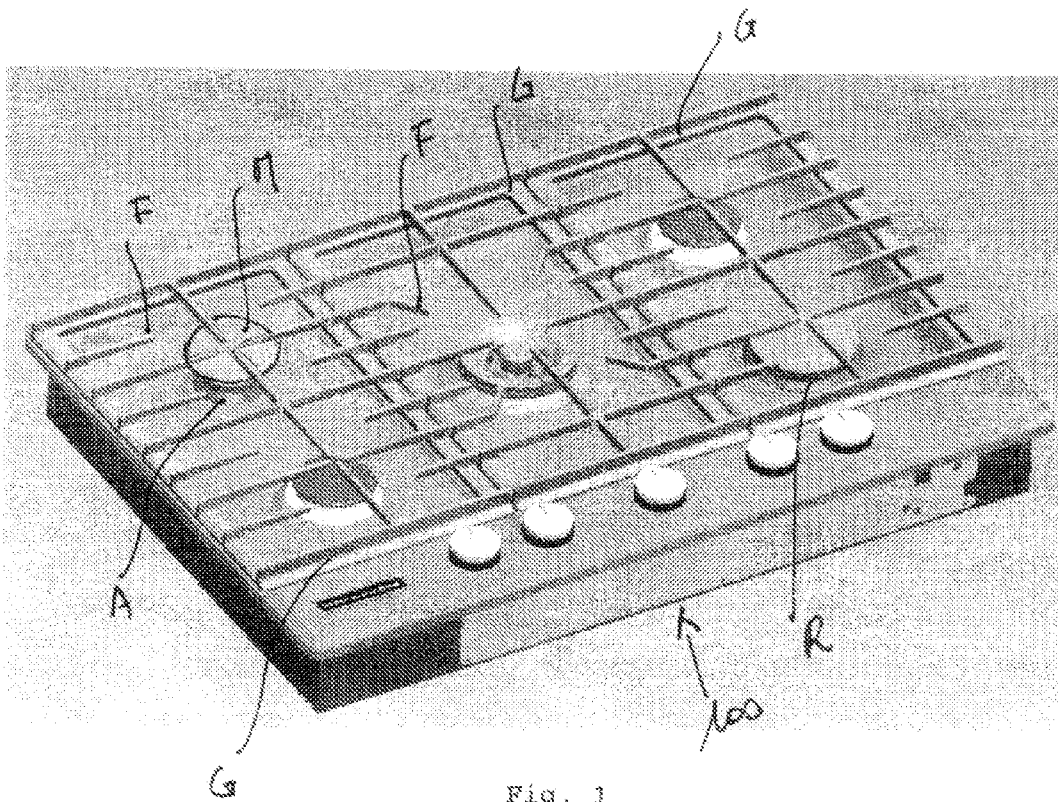


Fig. 1

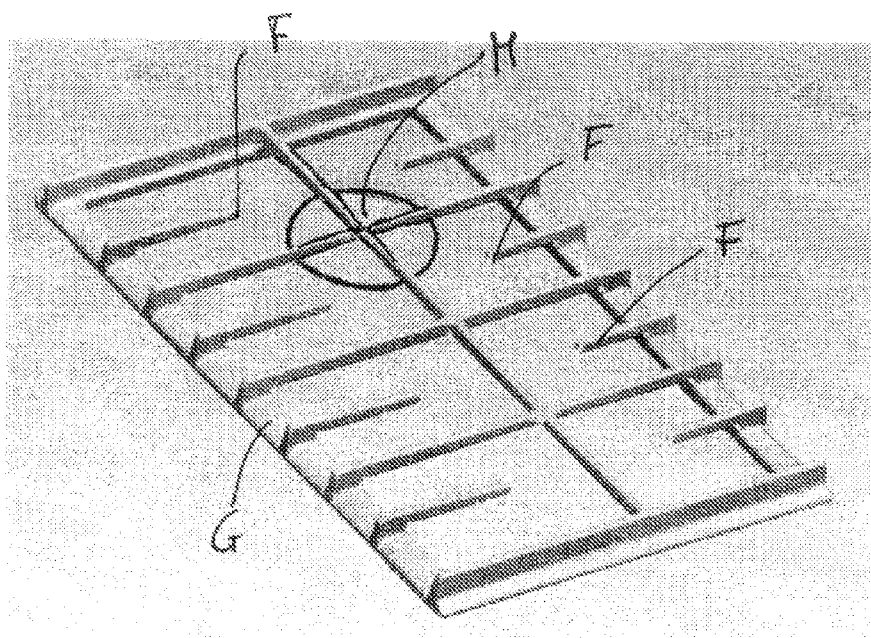


Fig. 2



## EUROPEAN SEARCH REPORT

Application Number  
EP 08 16 3476

| DOCUMENTS CONSIDERED TO BE RELEVANT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                          |                                                  |                                         |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|-----------------------------------------|
| Category                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Citation of document with indication, where appropriate, of relevant passages                                                                            | Relevant to claim                                | CLASSIFICATION OF THE APPLICATION (IPC) |
| X                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | US 2006/207588 A1 (STAEBLER MANFRED W [US] ET AL) 21 September 2006 (2006-09-21)<br>* paragraphs [0010] - [0013], [0021], [0022]; figures 1-7 *<br>----- | 1-5                                              | INV.<br>F24C15/10                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                          |                                                  | TECHNICAL FIELDS SEARCHED (IPC)         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                          |                                                  | F24C                                    |
| The present search report has been drawn up for all claims                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                          |                                                  |                                         |
| Place of search<br>Munich                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                          | Date of completion of the search<br>9 April 2009 | Examiner<br>Blot, Pierre-Edouard        |
| <p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone<br/>Y : particularly relevant if combined with another document of the same category<br/>A : technological background<br/>O : non-written disclosure<br/>P : intermediate document</p> <p>T : theory or principle underlying the invention<br/>E : earlier patent document, but published on, or after the filing date<br/>D : document cited in the application<br/>L : document cited for other reasons<br/>.....<br/>&amp; : member of the same patent family, corresponding document</p> |                                                                                                                                                          |                                                  |                                         |

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EPO FORM 1503 03.82 (P04C01)

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

EP 08 16 3476

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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09-04-2009

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82