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

(11) **EP 2 466 201 B1**

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention of the grant of the patent:
06.03.2019 Bulletin 2019/10

(51) Int Cl.:
F23D 14/06 *(2006.01)*

(21) Application number: **11386024.1**

(22) Date of filing: **08.12.2011**

(54) **Gas burner**

Gasbrenner

Brûleur à gaz

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

(30) Priority: **15.12.2010 GR 2010100727**

(43) Date of publication of application:
20.06.2012 Bulletin 2012/25

(73) Proprietor: **Lazaridis D. Georgios & Co Evee**
54013 Thessaloniki (GR)

(72) Inventor: **Lazaridis, Georgios**
54623 Thessaloniki (GR)

(56) References cited:
GB-A- 1 370 326
US-A- 1 923 393
US-A- 4 518 346
US-A1- 2006 051 718

Note: Within nine months of the publication of the mention of the grant of the European patent in the European Patent Bulletin, any person may give notice to the European Patent Office of opposition to that patent, in accordance with the Implementing Regulations. Notice of opposition shall not be deemed to have been filed until the opposition fee has been paid. (Art. 99(1) European Patent Convention).

EP 2 466 201 B1

Printed by Jouve, 75001 PARIS (FR)

Description

Field of the Invention

[0001] The present invention relates to a gas burner consisting of a body with a grooved diffuser-ring and a grooved diffuser-cap.

Background of the Invention

[0002] Single diffuser-cap burners are already known in the field, for example from prior art patent documents GB 1370326, US 4518346, US 2006/051718, and US 1923393.

[0003] The diffuser-cap is placed on the upper part of the gas burner body, thus, creating a chamber where the gas enters after having been mixed with oxygen. This air-gas mixture exits evenly through the burner via the diffuser-cap, where it is ignited, providing an equally distributed temperature at the bottom of the cookware that comes in contact with it.

[0004] The maximum capacity of the burner is fixed and cannot be altered. Therefore, should the user need to modify the capacity of the appliance that is comprised of such burners, they are unable to do so. For example, if the maximum firing capacity of the burner has to be increased or reduced, the user is obliged to change the whole appliance, an option that proves to be uneconomical. Furthermore, a highly efficient gas burner has a large diameter burner body and a large diameter diffuser. Consequently, when used with cookware of smaller diameters and for a smaller quantity of food, it is insufficient to only reduce the flow of gas by adjusting the gas control system, as the disproportionate size of the cookware will result in energy losses and an uneven temperature distribution inside the pot.

[0005] The advantage of this invention is that even after the purchase and use of an appliance that is comprised of the proposed gas burners, the maximum capacity of each burner can be changed economically or without energy losses, according to the user' s needs.

[0006] The key feature of the gas burner in the present invention is that its grooved diffuser consists of two separate parts: the grooved diffuser-ring and the grooved diffuser-cap. Hence, it is possible - by removing or adding the grooved diffuser-ring, by changing the gas injector and by regulating the primary air- to adjust the maximum capacity of the burner. The grooves of the diffuser enable to control the angle that shapes the flame around the burner, thus determining the final diameter of the heating zone and consequently that of the cookware. At the same time, their making is easy and does not need special processes so as to achieve the accuracy required for perfect combustion. The diameter of the body and of the grooved diffuser may be relatively small, so that, when only the grooved diffuser-cap is used, a small heating zone is created around the burner for smaller cookware, while when the second grooved diffuser-ring is added, the rise of the flame will create a wider heating zone for bigger pots. Moreover, the cleaning and maintenance of such a burner is very easy, because its main parts, which affect its proper operation, can be controlled most effectively.

Brief description of the drawings

[0007]

Fig. 1 shows a general perspective view of the gas burner as well as an exploded view of its parts.

Fig. 2 shows a plan view of the body, the grooved diffuser-ring and the grooved diffuser-cap.

Fig. 3 shows a side view and a cross-section of the body, the grooved diffuser-ring and the grooved diffuser-cap.

[0008] One way of applying this invention is described in relation to the drawings.

[0009] The gas burner is comprised of a body (1), the grooved diffuser-ring (2) and the second grooved diffuser-cap (3). The air-gas mixture enters from point (4), while the chamber of the burner is seen in point (5). The angle in combination with the number of grooves (6) helps to control efficiency as well as the shape of the flame around the burner, thus determining the final diameter of the heating zone and, consequently, that of the respective cookware.

[0010] In the present drawings the gas burner is provided with only one grooved diffuser-ring, yet it is possible to produce a burner with more than one grooved diffuser-rings.

Claims

1. Gas burner, comprising a body (1), a gas injector, means for regulating primary air supply, and a grooved diffuser (2,3) consisting of a grooved diffuser-cap (3) and a grooved diffuser-ring (2), **characterized in that** the maximum capacity of the burner can be adjusted by removing or adding said diffuser ring (2), by changing the gas injector, and by regulating the primary air.

2. Gas burner as in Claim 1 **characterized in that,** the grooved diffuser-ring (2) is a single grooved diffuser-ring.

3. Gas burner as in Claims 1 and 2 **characterized in that** the grooved diffuser-cap and the grooved diffuser-ring have a single groove angle and a fixed number of grooves that shape the flame around the burner, hence, determining the final diameter of the heating zone and, consequently, that of the respec-

tive cookware.

Patentansprüche

1. Gasbrenner der umfasst: ein Gehäuseelement (1), einen Gasinjektor, Mittel zur Regulierung der Primärluftzufuhr und einen gerillten Diffusor (2, 3), der aus einer gerillten Diffusor-Kappe (3) und einem gerillten Diffusor-Ring (2) besteht, **dadurch gekennzeichnet, dass** die maximale Kapazität des Brenners durch Entfernen oder Hinzufügen des Diffusor-Rings (2), durch Auswechseln des Gasinjektors und durch Regulieren der Primärluft eingestellt werden kann.

2. Gasbrenner nach Patentanspruch 1, **dadurch gekennzeichnet, dass** der gerillte Diffusor-Ring (2) ein einzelner Diffusor-Ring ist.

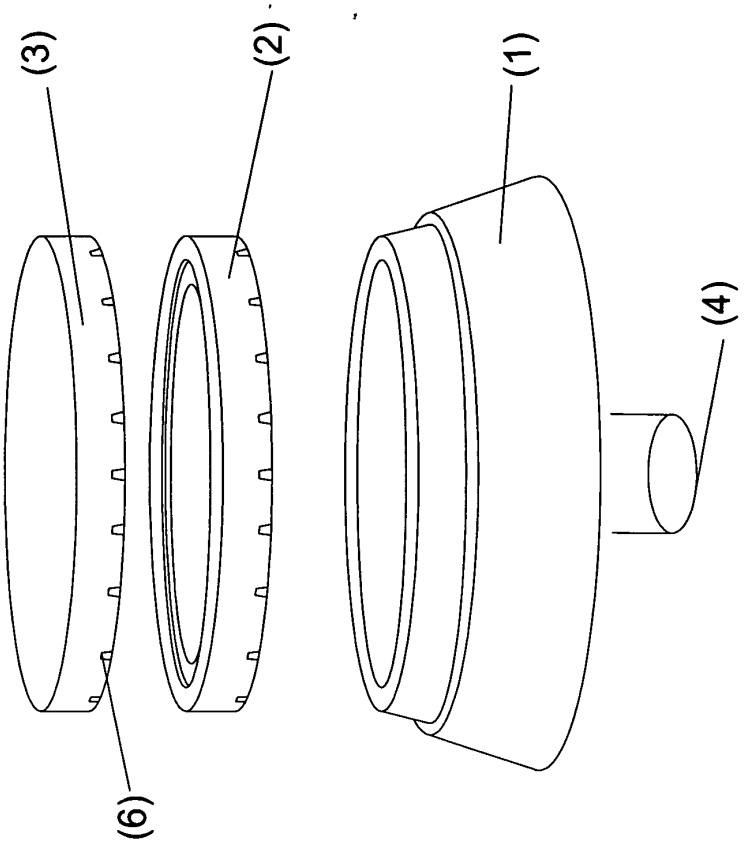
3. Gasbrenner nach Patentansprüchen 1 und 2, **dadurch gekennzeichnet, dass** die gerillte Diffusor-Kappe und der gerillte Diffusor-Ring einen einzigen Rillen-Öffnungswinkel und eine feste Anzahl von Rillen haben, die die Flamme rund um den Brenner formen und somit den Enddurchmesser der Heizzone und folglich des jeweiligen Kochtopfs determinieren.

Revendications

1. Brûleur à gaz comprenant un corps (1), un injecteur de gaz, des moyens de régulation de l'alimentation en air primaire et un diffuseur cannelé (2,3) composé d'un capuchon diffuseur cannelé (3) et d'un anneau diffuseur cannelé (2), **caractérisé en ce que** la capacité maximale du brûleur peut être ajustée en retirant ou en ajoutant ledit anneau diffuseur (2), en changeant l'injecteur de gaz et en régulant l'air primaire.

2. Brûleur à gaz selon la revendication 1, **caractérisé en ce que** l'anneau de diffusion cannelé (2) est un anneau de diffusion cannelé unique.

3. Brûleur à gaz selon les revendications 1 et 2, **caractérisé en ce que** le capuchon de diffuseur cannelé et l'anneau de diffusion cannelé ont un angle de cannelure unique et un nombre fixe de cannelures qui forment la flamme autour du brûleur, déterminant ainsi le diamètre final de la zone de chauffage et, par conséquent, celle de la batterie de cuisine correspondante



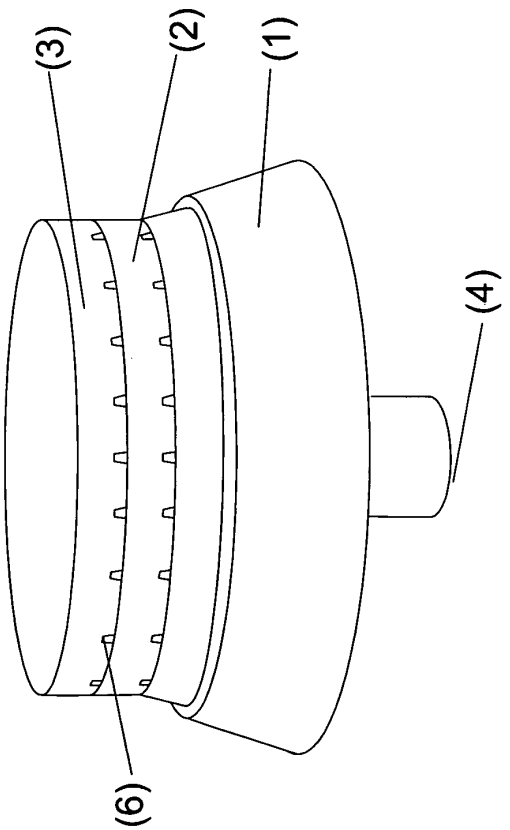


Figure 1

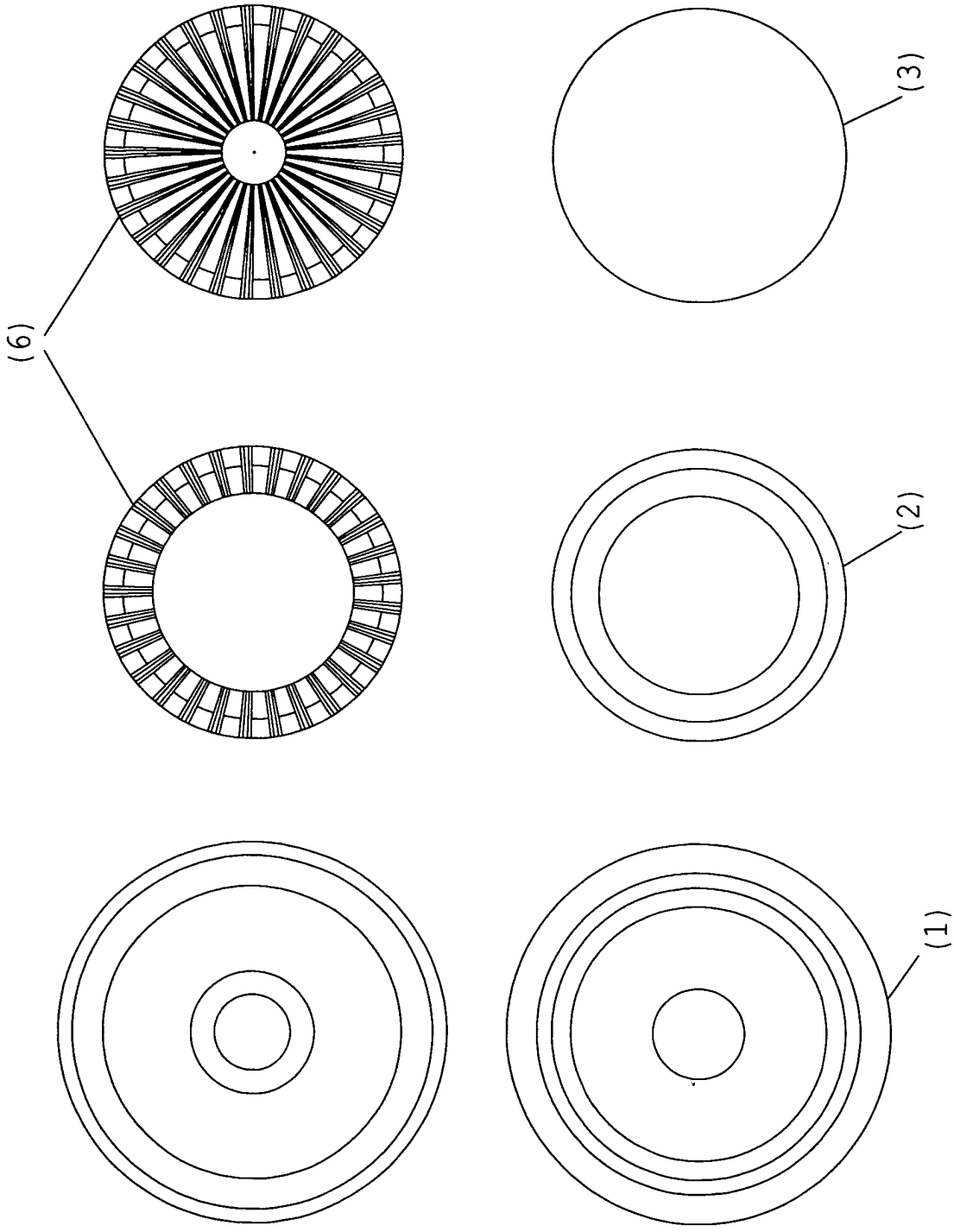


Figure 2

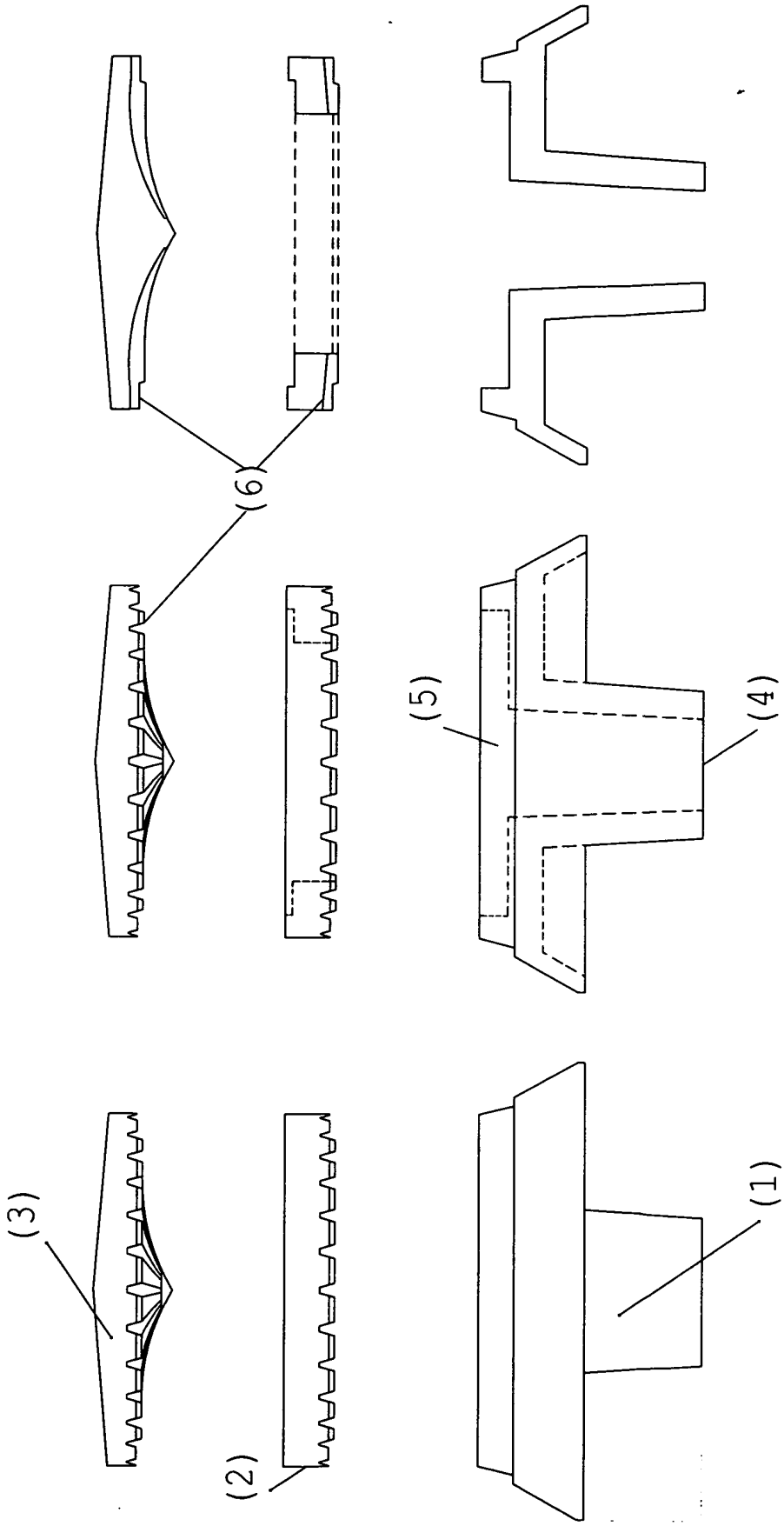


Figure 3

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- GB 1370326 A **[0002]**
- US 4518346 A **[0002]**
- US 2006051718 A **[0002]**
- US 1923393 A **[0002]**