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(71) Applicant: **Vestel Elektronik Sanayi ve Ticaret A.S.**
45030 Manisa (TR)

(72) Inventor: **TÜFEKCI, Burak**
45030 Manisa (TR)

(74) Representative: **Ascherl, Andreas et al**
KEHL, ASCHERL, LIEBHOFF & ETTMAYR
Patentanwälte - Partnerschaft
Emil-Riedel-Strasse 18
80538 München (DE)

(54) **AN ADJUSTABLE GAS BURNER**

(57) The present invention refers to an adjustable gas burner assembly comprising of a gas burner (107), an input mechanism (101), a central controller (102) and a gas intake unit (103). The gas burner assembly includes a plurality of outlets (105) and a plurality gas flow control mechanism (104). Further, the gas flow control mechanism (104) is connected to each outlet (105). The input mechanism (101) is configured to allow the user to provide

input for adjusting gas flow rate around the gas burner (106). The central controller (102) is configured to provide control signal to the gas flow control mechanisms (104) based on the input mechanism (101). Further, the gas flow control mechanism (104) is configured to adjust the gas flow rates through the outlet (105) thereby adjusting gas flow rate around the gas burner (106).

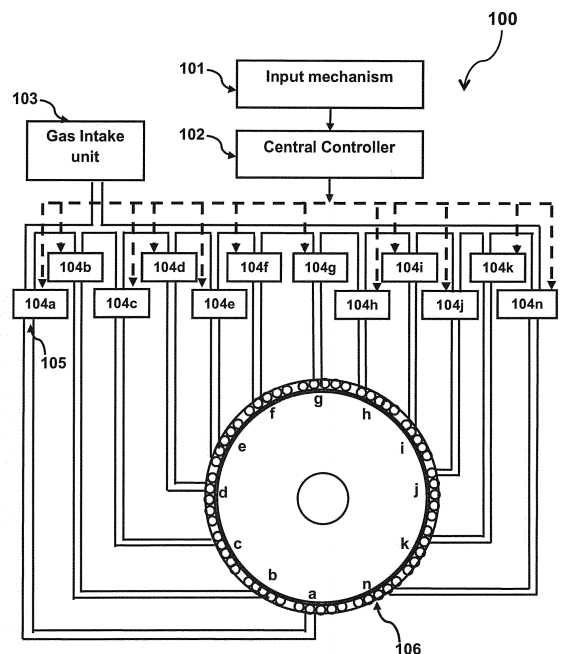


Fig. 1

Description

[0001] This invention refers to an adjustable gas burner according to claim 1.

Background of the Invention

[0002] In recent times, the use of gas stove is increased in order to preserve a ploution free environment and to cook efficiently at lesser time. Consequently, the demand for gas stove also increased. Hence, there is a need for a gas stove that can be utilised in an efficient manner in order to supress the frequent demand for a gas cylinder. The main component of a gas stove is a gas burner and that requires a modification according to the requirement.

[0003] In the market, there are different types of gas burners available. Corresponding gas burners are having a unique design. But all of the gas burners has a similar function, that is, when the gas burner is turned ON, after igniting the gas burner, the user can adjust the heat intensity either by making it to a higher level or lower level. According to the usage or requirement, the user can not adjust the flame level of the gas burner. For example, if the user wants to fry a steak in a pan, then the actual heat is required at the place where the steak is placed. But in general, the user cannot get the required heat at a part of the pan.

[0004] The prior art US20110151385 A1 describes a triple flame section burner. Particularly burners used in household appliances, such as stoves. The burner has two outer section and one inner section. Hence the burner has two outer sections, each section with two segments is capable to produce longer and more inclined flames. Further, the burner has combustion ports with straight or heliocoid arrangements to produce longer and more inclined flames. In addition to that, a central controller is provided to select the burner region, which allow the gas intake and create flame in the selected burner region. But, the heating intensity cannot be varied partially around the burner.

[0005] The subject-matter of US20110151385 A1 controls the inner and outer regions of the gas burner, whereas the level of flames around each part of the gas burner is still homogenous. That is, there is no partial control around the gas burner.

Object of the Invention

[0006] It is therefore the object of the present invention to provide a gas burner, in particular an adjustable gas burner that has a higher level of efficiency compared to known gas burners and methods.

Description of the Invention

[0007] The aforementioned object is achieved by an adjustable gas burner assembly which is controlled by a central controller and a gas flow control mechanism ac-

cording to claim 1. The adjustable gas burner assembly comprises of a gas burner, an input mechanism, a central controller and a gas intake unit. The gas burner assembly further includes a plurality of outlets and a plurality gas flow control mechanism. The gas flow control mechanism is connected to each outlet. The input mechanism is configured to allow the user to select input for adjusting gas flow rate around the gas burner. The central controller is configured to provide control signal to the gas flow control mechanisms based on the input mechanism. Further, the gas flow control mechanism is configured to adjust the gas flow rates through the outlet thereby adjusting gas flow rate around the gas burner.

[0008] Further preferred embodiments are subject-matter of dependent claims and/or of the following specification parts.

[0009] According to an exemplary embodiment, the central controller is further configured to receive signal from the input mechanism and to provide control signal to each gas flow control mechanism separately. In addition to that, the gas flow control mechanism is further configured to adjust the gas flow rates of outlets based on the control signal received from the central controller. The input mechanism can be activated by means of either mechanical or electronic control. The input mechanism is further configured to allow the user to either increase or decrease the gas flow rate for the gas burner region. The input mechanism is further configured to allow the user to either ON or OFF the gas flow rate for the gas burner region.

[0010] According to another exemplary embodiment, the outlets are connected to the gas burner region. The gas flow control mechanism is capable to open the outlet or close the outlet completely. Further, the gas flow control mechanism is capable to adjust the gas flow rate in the outlet partially. The gas burner is divided into a plurality of regions and each outlet is connected to each region. The number of outlets can be selected based on the number of regions required in the gas burner.

[0011] Further benefits, goals and features of the present invention will be described by the following specification of the attached figures, in which components of the invention are exemplarily illustrated. Components of the devices and method according to the inventions, which match at least essentially with respect to their function can be marked with the same reference sign, wherein such components do not have to be marked or described in all figures.

[0012] The invention is just exemplarily described with respect to the attached figures in the following.

Brief Description of the Drawings

[0013]

Fig. 1 illustrates the schematic block diagram of adjustable gas burner assembly, in accordance with an exemplary embodiment of the present

invention;

- Fig. 2 illustrates a lateral view of the adjustable gas burner, in accordance with an exemplary embodiment of the present invention;
- Fig. 3 illustrates an outlet of the adjustable gas burner, in accordance with an exemplary embodiment of the present invention; and
- Fig. 4 illustrates an ignition method of the adjustable gas burner, in accordance with an exemplary embodiment of the present invention.

Detailed Description of the Drawings

[0014] Fig. 1 illustrates the schematic block diagram of adjustable gas burner assembly 100, in accordance with an exemplary embodiment of the present invention. The adjustable gas burner assembly comprises a gas burner 106, an input mechanism 101, a central controller 102 and a gas intake unit 103. The gas burner assembly includes a plurality of outlets 105 and a plurality gas flow control mechanism 104. Further, the gas flow control mechanism 104 is connected to each outlet 105. That is, a separate gas flow control mechanism 104 is provided for each outlet 105. For example, for 12 gas outlets 12 separate gas flow control mechanism (104a - 104k & 104n) is provided. The input mechanism 101 is configured to allow the user to select input for adjusting gas flow rate around the gas burner 106. The central controller 102 is configured to provide control signal to the gas flow control mechanisms 104 based on the input mechanism 101. The gas flow control mechanism 104 is configured to adjust the gas flow rates through the outlet thereby adjusting gas flow rate around the gas burner 106.

[0015] In accordance with an exemplary embodiment, the gas burner 106 is divided into a plurality of regions (a-k, & n) and each outlet (105a-105k & 105n) is connected to each region (a-k, & n). The outlets 105 are connected to the gas burner region (a-k & n). Further, the number of outlets 105 selected based on the number of regions (a-k & n) required in the gas burner 106. Further, each outlet 105 from the gas flow control mechanism 104 is connected to the gas burner region / region (a-k, & n).

[0016] According to an exemplary embodiment, the central controller 102 is further configured to receive signal from the input mechanism 101 and to provide control signal to each gas flow control mechanism 104 separately. In addition to that, the gas flow control mechanism 104 is further configured to adjust the gas flow rates of outlets based on the control signal received from the central controller 102. The input mechanism 101 can be activated by means of either mechanical or electronic control. The input mechanism 101 is further configured to allow the user to either increase or decrease the gas flow

rate for the gas burner region (a-k & n). The input mechanism 101 is further configured to allow the user to either ON or OFF the gas flow rate for the gas burner region (a-k & n). The gas flow control mechanism 104 is capable to open the outlet or close the outlet completely. Further, the gas flow control mechanism 104 is capable to adjust the gas flow rate in the outlet partially.

[0017] Fig. 2 illustrates a lateral view 106 of the adjustable gas burner, in accordance with an exemplary embodiment of the present invention. The gas burner 106 includes a burner cap 203, a burner support 201 and a burner base that includes a plurality of flame outlet 204. The flame level of the gas burner 106 can be adjusted by adjusting gas flow rate in the outlet 105 that is connected to the gas flow control mechanism 104. Hence the gas flow control mechanism 104 is separately provided for each gas burner region (a-k & n), the flame level can be adjusted separately for each region (a-k & n). That is for example, the flame level can be made higher 202f at gas burner region 'f'. At the same time, the flame level of the region 'a' and region 'i' can be adjusted to moderate flame level 202a and lesser flame level 202i. Further, the flame level of other gas burner regions except regions 'a', 'i' & 'f' can be turned off. That is the gas flow through the outlet is null for the rest of the region except regions 'a', 'i' & 'f'.

[0018] Fig. 3 illustrates an outlet 105 of the adjustable gas burner, in accordance with an exemplary embodiment of the present invention. The outlet 105 of the adjustable gas burner is provided separately for each region (a-k & n). The number of outlets 105 is decided based on the number of gas burner region (a-k & n) required. The outlet 105 is a tube like structure with a bun barrel appearance inside the tube. The design of bun barrel appearance inside the tube allows the gas to flow in a revolving movement to attain efficient heat intensity.

[0019] Fig. 4 illustrates an ignition method 400 of the adjustable gas burner assembly, in accordance with an exemplary embodiment of the present invention. The ignition method adapted in the adjustable gas burner assembly comprising the steps of, allowing the user to select the region of the burner 401, accepting input signal from the input mechanism 402, sending signal to the central controller 403, providing signal to the gas flow control mechanism from the central controller 404, that is the central controller provides a control signal to the gas flow control mechanism based on the input signal from the input mechanism and allowing the gas flow control mechanism to adjust the outlet 405 that is connected to the gas burner region. The method of individual gas flow control mechanism for the gas burner region increases the efficient utilization of the resource.

[0020] Thus, the present invention refers to an adjustable gas burner assembly comprising of a gas burner 107, an input mechanism 101, a central controller 102 and a gas intake unit 103. The gas burner assembly includes a plurality of outlets 105 and a plurality gas flow control mechanism 104. Further, the gas flow control

mechanism 104 is connected to each outlet 105. The input mechanism 101 is configured to allow the user to provide input for adjusting gas flow rate around the gas burner 106. The central controller 102 is configured to provide control signal to the gas flow control mechanisms 104 based on the input mechanism 101. Further, the gas flow control mechanism 104 is configured to adjust the gas flow rates through the outlet 105 thereby adjusting gas flow rate around the gas burner 106.

List of reference numbers

[0021]

100	Block diagram of an adjustable gas burner	15
101	Input mechanism	
102	Central controller	
103	Gas intake	
104	Gas flow control mechanism	
104a	Gas flow control mechanism 1	20
104b	Gas flow control mechanism 2	
104c	Gas flow control mechanism 3	
104d	Gas flow control mechanism 4	
104e	Gas flow control mechanism 5	
104f	Gas flow control mechanism 6	25
104g	Gas flow control mechanism 7	
104h	Gas flow control mechanism 8	
104i	Gas flow control mechanism 9	
104j	Gas flow control mechanism 10	
104k	Gas flow control mechanism 11	30
104n	Gas flow control mechanism n	
a-b & n	gas burner region from a to k and n	
105	an outlet of the adjustable gas burner	
105a-105k	an outlet a-k (not shown in figure)	
105n	an outlet n (not shown in figure)	35
106	a gas burner	
201	burner support	
202f	higher flame level of the adjustable gas burner	
202a	moderate flame level of the adjustable gas burner	40
202i	lesser flame level of the adjustable gas burner	
203	burner cap	
204	Flame outlet	45
400	an ignition method of the adjustable gas burner	
401	allowing the user to select the region of the burner	
402	accepting input signal from the input mechanism	50
403	sending signal to the central controller	
404	providing signal to the gas flow control mechanism from the central controller	
405	allowing the gas flow control mechanism to adjust the outlet	55

Claims

1. An adjustable gas burner assembly comprising a gas burner (106), an input mechanism (101), a central controller (102) and a gas intake unit (103); **characterized in that** the gas burner assembly includes a plurality of outlets (105) and a plurality gas flow control mechanism (104); wherein the gas flow control mechanism (104) is connected to each outlet (105); wherein the input mechanism (101) is configured to allow the user to provide input for adjusting gas flow rate around a gas burner region (a-k & n); wherein the central controller (102) is configured to provide control signal to the gas flow control mechanisms (104) based on the input mechanism (101) signal; and wherein the gas flow control mechanisms (104) is configured to adjust the gas flow rates in the outlets (105) thereby adjusting gas flow rate around the gas burner region (a-k & n).
2. The adjustable gas burner assembly as claimed in claim 1, wherein the central controller (102) further configured to receive signal from the input mechanism (101) and to provide control signal to individual gas flow control mechanism (104).
3. The adjustable gas burner assembly as claimed in claim 1, wherein the gas flow control mechanism (104) is capable to adjust the gas flow rate in the outlet (105).
4. The adjustable gas burner assembly as claimed in claim 1, wherein the gas flow control mechanism (104) is further configured to adjust the gas flow rates of outlets (105) based on the control signal received from the central controller (102).
5. The adjustable gas burner assembly as claimed in claim 1, wherein the input mechanism (101) can be activated by means of either mechanical or electronic control.
6. The adjustable gas burner assembly as claimed in claim 1, wherein the input mechanism (101) further configured to allow the user to either increase or decrease the gas flow rate for the gas burner region (a-k & n).
7. The adjustable gas burner assembly as claimed in claim 1, wherein the input mechanism (101) further configured to allow the user to either ON or OFF the gas flow rate for the gas burner region (a-k & n).
8. The adjustable gas burner assembly as claimed in claim 1, wherein the gas flow control mechanism (104) is capable to open the outlet or close the outlet (105) completely.

9. The adjustable gas burner assembly as claimed in claim 1, wherein the gas burner (106) is divided into a plurality of regions (a-k & n).
10. The adjustable gas burner assembly as claimed in claim 1, wherein the outlets (105) are connected to the gas burner region (a-k & n). 5
11. The adjustable gas burner assembly as claimed in claim 1, wherein the number of outlets (105) is selected based on the number of regions (a-k & n) required in the gas burner (106). 10

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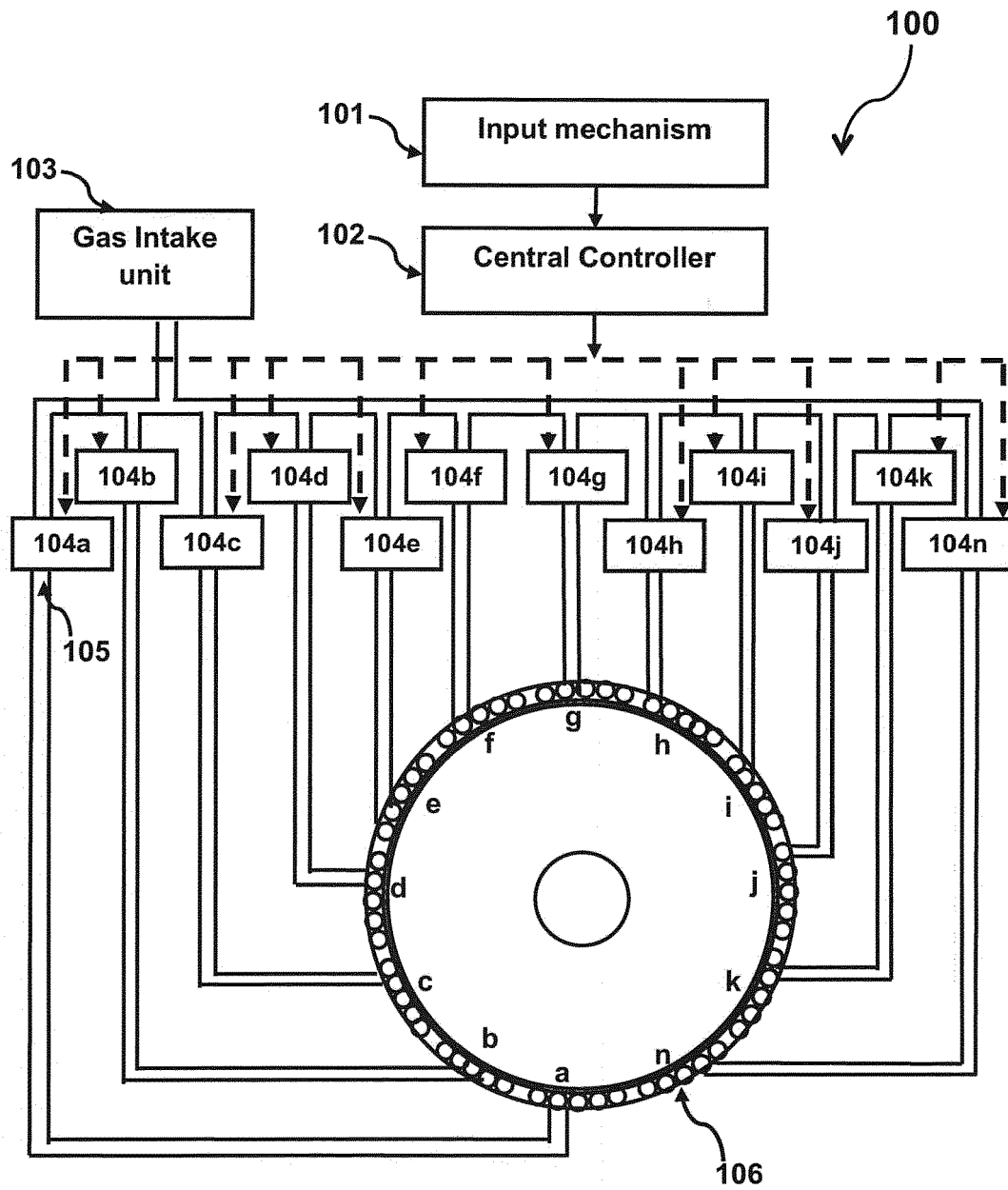


Fig. 1

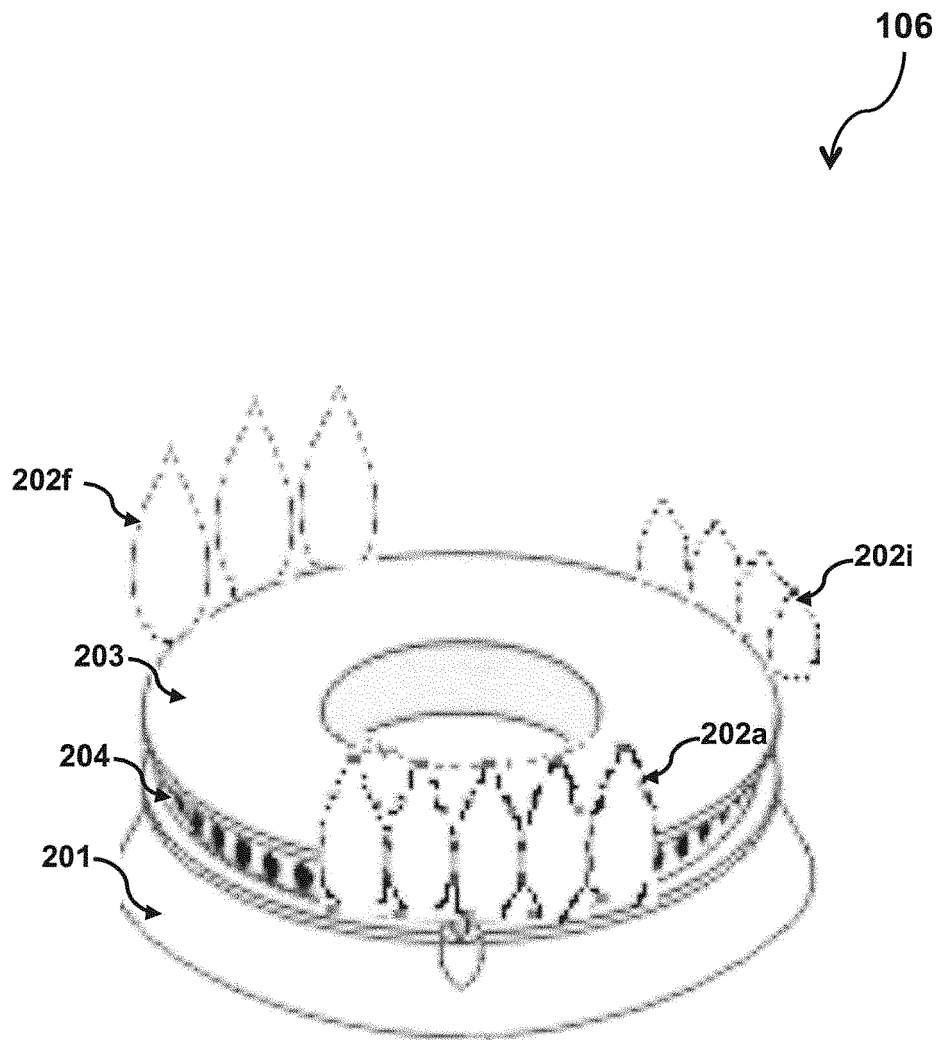


Fig. 2

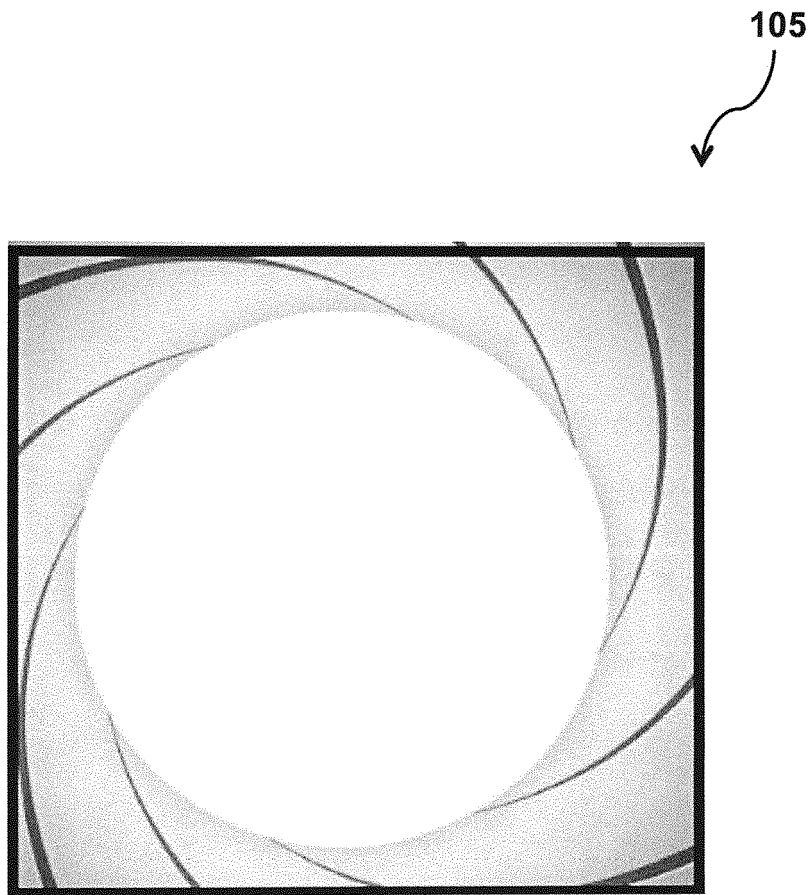


Fig. 3

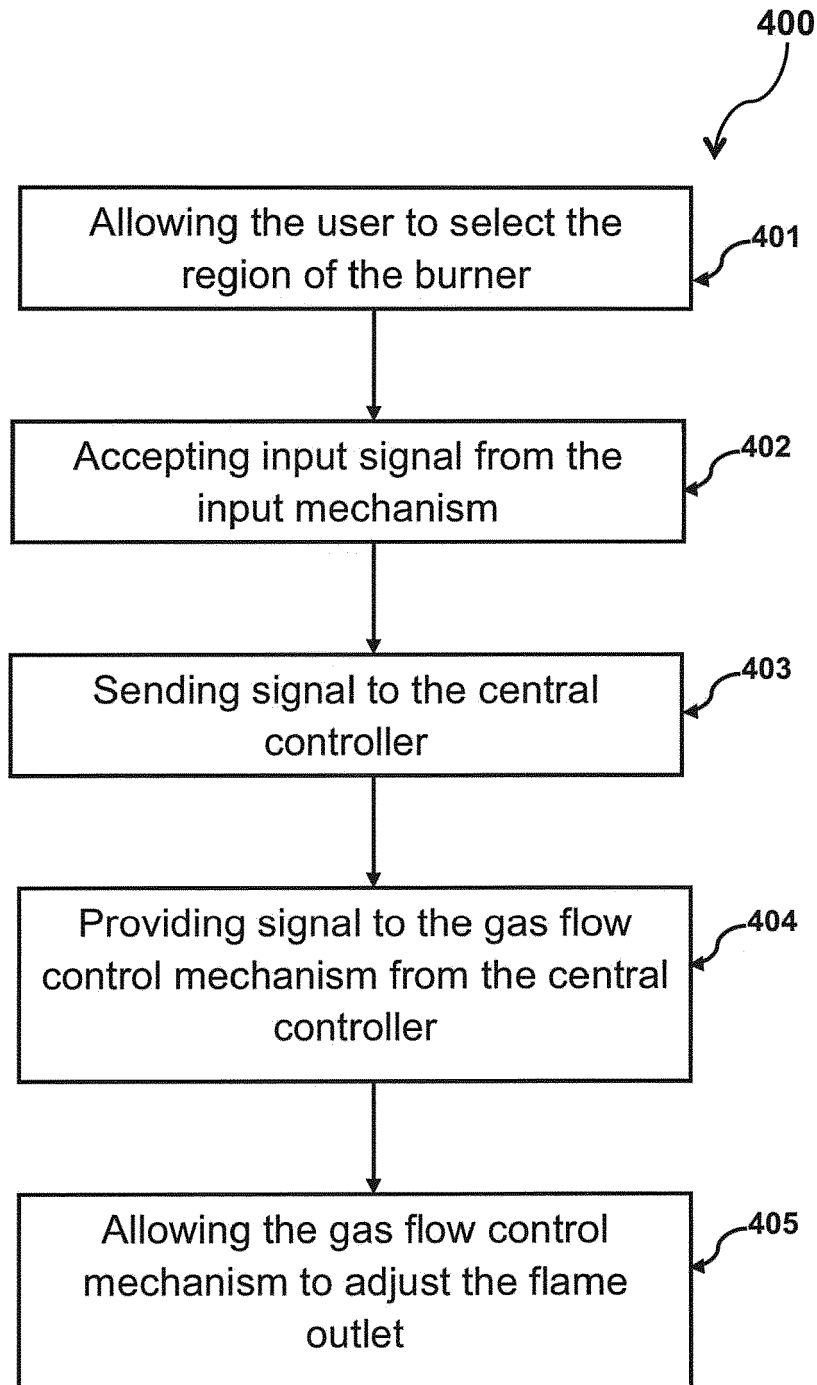


Fig. 4



EUROPEAN SEARCH REPORT

 Application Number
 EP 17 16 1313

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DOCUMENTS CONSIDERED TO BE RELEVANT			
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A	EP 2 473 784 A1 (BSH BOSCH SIEMENS HAUSGERAETE [DE]) 11 July 2012 (2012-07-11) * the whole document *	1	TECHNICAL FIELDS SEARCHED (IPC) F23D F24C
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 18 August 2017	Examiner Hauck, Gunther
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			

EPO FORM 1503 03.82 (P04C01)

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

EP 17 16 1313

5 This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
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18-08-2017

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