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(54) **A DUAL CIRCUIT BURNER, A GAS BURNER ARRANGEMENT AND A GAS STOVE**

(57) A dual circuit burner (3) for a gas stove (1), the dual circuit burner (3) comprising a burner body (14) having outer gas outlet openings (15) for providing circularly arranged outer flames, inner gas outlet openings (16) for providing circularly arranged inner flames, at least one secondary air outlet opening (17) for providing secondary air (20) at the inner gas outlet openings (16), and a secondary air chamber (25) which is fluidly connected to the at least one secondary air outlet opening (17), wherein the secondary air chamber (25) is at least partially ring-shaped when looking from above.

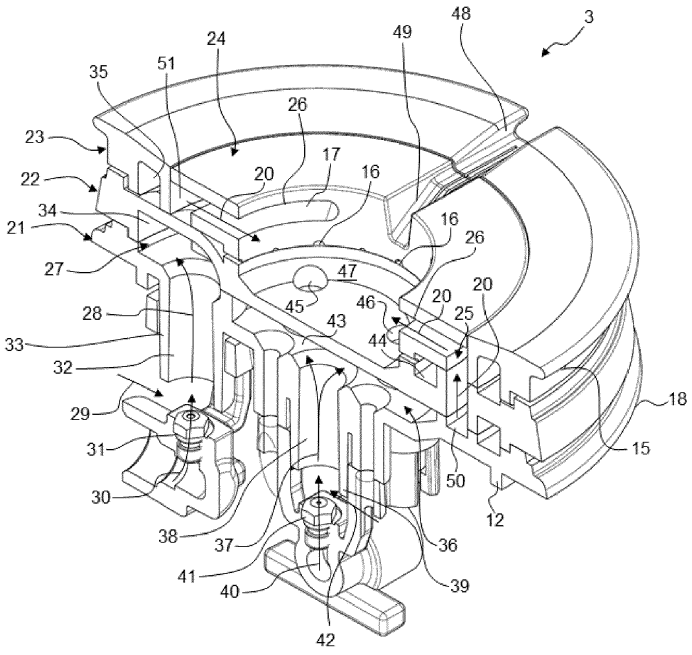

Fig. 5

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Description

[0001] The present invention relates to a dual circuit gas burner for a gas stove, a gas burner arrangement for a gas stove and a gas stove having such a dual circuit burner or such a gas burner arrangement.

[0002] Usually, gas stoves may comprise a top sheet and a gas burner. The top sheet can comprise a through-hole at which the gas burner can be arranged. The gas burner may comprise a gas valve for providing combustible gas from below the top sheet. The combustible gas may be mixed with primary air for providing an inflammable combustion mixture. This may occur in a mixing chamber arranged in the area below the top sheet. The gas burner may comprise gas outlet openings for providing flames by means of the mixture. For facilitating combustion, secondary air may be provided at the gas outlet openings.

[0003] Moreover, the gas burner may be provided as a dual circuit burner. Usually, such a dual circuit burner comprises inner gas outlet openings for providing inner flames and outer gas outlet openings for providing outer flames. However, providing secondary air at the inner gas outlet openings is a challenge, in particular when having size restrictions.

[0004] It is one object of the present invention to provide an improved dual circuit burner.

[0005] Accordingly, a dual circuit burner for a gas stove is provided. The dual circuit burner comprises a burner body having outer gas outlet openings for providing circularly arranged outer flames, inner gas outlet openings for providing circularly arranged inner flames, at least one secondary air outlet opening for providing secondary air at the inner gas outlet openings, and a secondary air chamber which is fluidly connected to the at least one secondary air outlet opening, wherein the secondary air chamber is at least partially ring-shaped when looking from above.

[0006] Thus, secondary air may be guided along an at least partially circular path by means of the secondary air chamber. This has the advantage that a design freedom for arranging the secondary air outlet openings is increased. Therefore, enough secondary air may be provided at the inner gas outlet openings. This is in particular important for small dual circuit burners. Providing enough secondary air at the inner gas outlet openings, further has the advantage that a simmering performance is improved because it is possible to reduce the minimum flow rate of combustible mixture towards the inner gas outlet openings.

[0007] The dual circuit burner is a gas burner. The dual circuit burner can be a double crown burner. The dual circuit burner can be construed as a gas burner configured to provide at least circularly arranged outer flames and circularly arranged inner flames. Circularly arranged outer flames and circularly arranged inner flames can be construed as a double crown. Circularly arranged comprises rectangular, hexagonal, octagonal, elliptical, kidney shapes and the like when looking from above. Preferably, the circularly arranged outer flames and the circularly arranged inner flames are arranged concentrically. In particular, the outer gas outlet openings and the inner gas outlet openings are arranged concentrically.

[0008] In particular, the gas burner body may comprise several parts which are configured to be assembled together. However, the burner body may be also a one-piece body. For example, the burner body or burner body parts can be produced by means of injection molding. In particular, the burner body or burner body parts may be made of a metal or a ceramic. When looking from above relates to a state and orientation of the dual circuit burner in which the dual circuit burner has to be arranged at or on the plate, in particular top sheet, of the gas stove for normal use of the dual circuit burner.

[0009] Primary air is the air which is to be mixed with the gas for providing the combustible mixture before the combustion. In particular, such a mixing may be carried out below a plate, in particular top sheet, of the gas stove. The primary air and the gas may be mixed in a Venturi tube. Secondary air is the air which is provided during combustion for maintaining the combustion. A deficiency of secondary air may lead to a lapse of the flames. For example, the secondary air chamber is formed by means of ring-shaped walls.

[0010] According to one embodiment, the at least one secondary air outlet opening is arranged above the inner gas outlet openings.

[0011] This has the advantage that a supply of secondary air for the inner flames may be facilitated. The burner body may comprise merely one, two, three, four, five, six or more secondary air outlet openings. In particular, the outer gas outlet openings face radially outwards. For example, the inner gas outlet openings face radially inwards with respect to the burner body.

[0012] According to a further embodiment, the burner body comprises a secondary air inlet opening which is fluidly connected to the secondary air chamber for supplying the secondary air chamber with secondary air, wherein the at least one secondary air outlet opening is arranged above the secondary air inlet opening.

[0013] In particular, merely one secondary air inlet opening is provided. Alternatively, two, three, four, five, six or more secondary air inlet openings may be provided. This has the advantage that an improved design may be provided.

[0014] According to a further embodiment, the secondary air inlet opening faces radially outwards, wherein the at least one secondary air outlet opening faces radially inwards.

[0015] This has the advantage that secondary air may be provided from outside the burner body and guided into the secondary air chamber.

[0016] According to a further embodiment, the burner body comprises a mixture stream chamber which is fluidly connected to the outer gas outlet openings for guiding a mixture stream towards the outer gas outlet openings.

[0017] Thus, one burner body comprises the mixture stream chamber and the secondary air chamber. The mixture stream comprises primary air and gas. Thus, combustible mixture can stream towards the outer gas outlet openings.

[0018] According to a further embodiment, the mixture stream chamber is at least partially ring-shaped when looking from above.

[0019] This has the advantage that circularly arranged outer gas outlet openings can be supplied with combustible mixture. In particular, the mixture stream chamber is formed by means of two ring-shaped walls. In particular, the mixture stream chamber may be arranged along at least 50%, 60%, 70%, 80%, 90%, 95% or more of a circle.

[0020] According to a further embodiment, the burner body comprises a further mixture stream chamber which is fluidly connected to the inner gas outlet openings for guiding a further mixture stream towards the inner gas outlet openings.

[0021] Thus, the secondary air chamber, the mixture stream chamber and the further mixture stream chamber are arranged inside the burner body. Thus, a compact and effective design may be provided. In particular, the further mixture stream chamber is at least partially ring-shaped when looking from above. In particular, the further mixture stream chamber may be arranged along at least 50%, 60%, 70%, 80%, 90%, 95% or more of a circle. The further mixture stream comprises primary air and gas.

[0022] According to a further embodiment, the burner body comprises a vertical channel arranged below and fluidly connected to the mixture stream chamber, and a further vertical channel arranged below and fluidly connected to the further mixture stream chamber.

[0023] Thus, two different mixture streams may be provided for the mixture stream chamber and the further mixture stream chamber. In particular, the vertical channel is formed by means of a Venturi tube. Preferably, the further vertical channel is formed by means of a further Venturi tube. Hence, primary air may stream from below the burner body or the plate, in particular top sheet, of the gas stove. Vertical channel means an element which is configured to guide or conduct a stream in vertical direction.

[0024] According to a further embodiment, the burner body comprises a base portion which is mountable to a plate of the gas stove, an intermediate portion which is arrangeable on the base portion, an outer upper portion which is arrangeable on the intermediate portion, and an inner upper portion which is arrangeable on the intermediate portion and inside the outer upper portion.

[0025] This has the advantage that a multi-part designed burner body may be provided. Thus, a producibility is facilitated. Further, a design freedom for the different chambers is increased. The base portion, the intermediate portion, the outer upper portion and the inner upper portion are configured to be connected together. In particular, the base portion is configured to be connected to the plate of the gas stove. For example, the base portion and/or the intermediate portion and/or the outer upper portion and/or the inner upper portion comprises a circular outer contour when looking from above. For example, the outer gas outlet openings are provided at the outer upper portion. Preferably, the outer upper portion is ring shaped when looking from above such that the inner upper portion can be arranged inside the outer upper portion.

[0026] According to a further embodiment, the mixture stream chamber comprises a lower chamber formed by the base portion and the intermediate portion, and an upper chamber formed by the intermediate portion and the outer upper portion, and wherein the lower chamber and the upper chamber are fluidly connected by means of through-holes in the intermediate portion.

[0027] In particular, the lower chamber is at least partially ring-shaped, when looking from above. Preferable, the upper chamber is at least partially ring-shaped when looking from above. For example, the upper chamber is directly fluidly connected to the outer gas outlet openings. For example, the lower chamber is directly fluidly connected to the vertical channel.

[0028] According to a further embodiment, the further mixture stream chamber comprises a further lower chamber formed by the base portion and the intermediate portion, and a further upper chamber formed by the intermediate portion and the inner upper portion, wherein the further lower chamber and the further upper chamber are fluidly connected by means of further through-holes in the intermediate portion.

[0029] In particular, the further lower chamber is disk-shaped. Preferably, the further upper chamber is at least partially ring-shaped when looking from above. For example, the further upper chamber is directly fluidly connected to the inner gas outlet openings. For example, the further lower chamber is directly fluidly connected to the further vertical channel.

[0030] According to a further embodiment, the secondary air chamber is formed by the base portion, the intermediate portion, the outer upper portion and the inner upper portion.

[0031] In particular, the base portion forms a bottom of the secondary air chamber.

[0032] According to a further embodiment, the burner body is configured to be mounted in an insertion opening of the plate having a diameter between 80 - 110 mm, 85 - 105 mm or 88 - 92 mm, or a diameter of 90,9 mm.

[0033] Alternatively or additionally, the base portion may comprise a ring portion for being fitted into the insertion opening and providing a form-fit connection between the base portion and the plate. In particular, the ring portion comprises an outer diameter between 80-110 mm, 85 - 105 mm or 88 - 92 mm or a diameter of 90,9 mm.

[0034] Further, a gas burner arrangement for a gas stove is provided. The gas burner arrangement compris-

es such a dual circuit burner, a plate having an upper surface on which the dual circuit burner is mounted, wherein the secondary air inlet opening is arranged above or below the upper surface of the plate or wherein the secondary air inlet opening and the upper surface of the plate are arranged on the same height level.

[0035] In particular, the plate may be a top sheet of the gas stove.

[0036] Furthermore, a gas stove having such a dual circuit burner or such a gas burner arrangement is provided.

[0037] In particular, the gas burner comprises the plate. Preferably, the plate is made of glass or glass ceramic. In particular, the upper surface of the plate is made of glass or glass ceramic. For example, the gas stove has a length between 50 and 70 cm, in particular 60 cm. In particular, the gas stove has a height between 35 and 40 cm, in particular of 37 cm. Further, the gas stove may comprise a pan support having a flat design (i.e. having a low height). This has the advantage that a gas stove may be provided having a premium appearance.

[0038] The embodiments and features described with respect to the dual circuit burner of the present invention apply *mutatis mutandis* to the gas burner arrangement of the present invention and the gas stove of the present invention and vice versa.

[0039] Further possible implementations or alternative solutions of the invention also encompass combinations - that are not explicitly mentioned herein - of features described above or below with regard to the embodiments.

[0040] The person skilled in the art may also add individual or isolated aspects and features of the most basic form of the invention.

[0041] Further embodiments, features and advantages of the present invention will become apparent from the subsequent description and dependent claims, taken in conjunction with the accompanying drawings, in which:

Fig. 1 shows schematically a side view of a gas stove;

Fig. 2 shows schematically a side view of a gas burner arrangement for the gas stove according to Fig. 1;

Fig. 3 shows a perspective view of the gas burner arrangement according to Fig. 2;

Fig. 4 shows an exploded view of a dual circuit burner for the gas burner arrangement according to Fig. 2;

Fig. 5 shows a cross-sectional view V-V from Fig. 3;

Fig. 6 shows a bottom view of an intermediate portion of the dual circuit gas burner according to Fig. 4; and

Fig. 7 shows a top view of the intermediate portion according to Fig. 6.

[0042] In the figures, like reference numerals designate like or functionally equivalent elements, unless otherwise indicated.

[0043] Fig. 1 shows schematically a side view of a gas stove 1. The gas stove 1 comprises a plate 2, in particular a top sheet. The plate 2 may be made of glass or glass ceramics. The gas stove 1 further comprises a dual circuit burner 3. The dual circuit burner 3 is arranged on the plate 2. For example, the dual circuit burner 3 is a wok burner. Furthermore, a pan support 4 is arranged on the plate 2. The pan support 4 is configured to support a cookware (not shown) above the dual circuit burner 3. The dual circuit burner 3 is configured to heat the cookware. For example, the dual circuit burner 3 is a double crown burner. Further, the gas stove 1 may comprise a further gas burner 5 and a further pan support 6.

[0044] For example, the dual circuit burner 3 and the pan support 4 form a first cooking zone 7. In particular, the burner 5 and the pan support 6 form a further cooking zone 8. However, the gas stove 1 may comprise merely one, two, three, four, five or six cooking zones 7, 8. In particular, the gas stove 1 comprises only one dual circuit burner 3. The dual circuit burner 3 and the plate 2 form a gas burner arrangement 9.

[0045] In particular, the gas stove 1 has a height H between 30 and 40 cm, 35 and 40 cm or 36 and 38 cm. The height H is for example a grill height. The height H is in particular 37 cm. The gas stove 1 has a length L between 50 and 70 cm, 55 and 65 cm or exactly of 60 cm. The depth of the gas stove 1 (not shown) is in particular 25 to 35 cm, 28 to 32 cm or exactly 30 cm.

[0046] Fig. 2 shows schematically the gas burner arrangement 9 from Fig. 1. The plate 2 comprises an upper surface 10. The plate 2 further comprises an insertion opening 11. The dual circuit burner 3 is mounted on the upper surface 10 of the plate 2. Further, the dual circuit burner 3 comprises a ring portion 12 which is inserted into the insertion opening 11. The ring portion 12 is adapted to the insertion opening 11 such that a form fit is provided between the dual circuit burner 3 and the plate 2. The diameter D of the insertion opening 11 is preferably between 80 and 110 mm, 90 and 92 mm or exactly 90.9 mm. An outer contour 13 of the ring portion 12 is adapted to the diameter D.

[0047] Fig. 3 shows a perspective view of the gas burner arrangement 9. The dual circuit burner 3 comprises a burner body 14 having outer gas outlet openings 15 for providing circularly arranged outer flames, inner gas outlet openings 16 for providing circularly arranged inner flames, and at least one secondary air outlet opening 17 for providing secondary air 20 at the inner gas outlet openings 16. An outer contour 18 of the burner body 14 is circle-shaped when looking from above. Looking from above relates to a state in which the dual circuit burner is mounted for the purpose of use (cooking and the like). The outer gas outlet openings 15 are arranged along a circle when looking from above. Also the inner gas outlet openings 16 are arranged along a circle when looking

from above. The inner gas outlet openings 16 face radially inwards regarding burner body 14 or the outer contour 18. The outer gas outlet openings 15 face radially outwards. Also, the secondary air outlet openings 17 face radially inwards. The secondary air outlet openings 17 are arranged above the inner gas outlet openings 16.

[0048] Further, the burner body 14 comprises a secondary air inlet opening 19 which is fluidly connected to the secondary air outlet openings 17. The burner body 14 comprises three, four, five or six secondary air outlet openings 17. The secondary air inlet opening 19 faces radially outwards. The secondary air inlet opening 19 is arranged above the plate 2. Thus, the secondary air 20 (see arrows) may be guided from above the plate 2 towards the secondary air outlet openings 17.

[0049] Fig. 4 shows an explosive view of the dual circuit burner 3 from Fig 2. The burner body 14 comprises a disc-shaped base portion 21 which is mounted to the plate 2 of the gas stove 1, a disk-shaped intermediate portion 22 which is arrangeable on the base portion 21, an outer upper portion 23 which is arrangeable on the intermediate portion 22 and an inner upper portion 24 which is arrangeable on the intermediate portion 22 and inside the outer upper portion 23. The outer upper portion 23 is circular ring-shaped when looking from above such that the inner upper portion 24 can be arranged inside the outer upper portion 23. The inner upper portion 24 is also circular ring-shaped when looking from above. The inner upper portion 24 surrounds an inner volume 47.

[0050] In particular, the base portion 21 and the intermediate portion 22 are connected together by means of a form fit connection. Preferably, the intermediate portion 22 and the outer upper portion 23 are connected together by means of a form-fit connection. The inner upper portion 24 is preferably connected to the outer upper portion 23 and the intermediate portion 22 by means of a form fit connection. Thus, in particular twists between the portions 21, 22, 23, 24 are prevented.

[0051] Fig. 5 shows in a perspective view cross-sectional view V-V from Fig. 3 of the dual circuit burner 3. The section shown in Fig. 5 runs through a center of the dual circuit burner 3. The burner body 14 comprises a secondary air chamber 25 which is fluidly connected to the secondary air outlet openings 17, wherein the secondary air chamber 25 is at least partially ring-shaped when looking from above. After entering the secondary air inlet opening 19 (see Fig. 3), the secondary air 20 streams upwards and subsequently radially inwards towards the secondary air outlet openings 17. The inner upper portion 24 comprises recesses 26 which are part of the secondary air chamber 25. The recesses 26 guide the secondary air 20 radially inwards.

[0052] Further, the burner body 14 comprises a mixture stream chamber 27 which is fluidly connected to the outer gas outlet openings 15 for guiding a mixture stream 28 towards the outer gas outlet openings 15. The mixture stream 28 is generated by means of primary air 29 from below the plate 2 and gas 30 from a gas nozzle 31. Further, a vertical channel 32 is provided for receiving the primary air 29 and the gas 30. The vertical channel 32 may be formed by means of a Venturi tube 33. The vertical channel 32 is directly fluidly connected to the mixture stream chamber 27. Further, the mixture stream chamber 27 is at least partially ring-shaped when looking from above.

[0053] Furthermore, the mixture stream chamber 27 comprises a lower chamber 34 formed by the base portion 21 and the intermediate portion 22 and an upper chamber 35 formed by the intermediate portion 22 and the outer upper portion 23. The burner body 14 comprises a further mixture stream chamber 36 which is fluidly connected to the inner gas outlet openings 16 for guiding a further mixture stream 37 towards the inner gas outlet openings 16. A further vertical channel 38 is provided for guiding the further mixture stream 37 towards the further mixture stream chamber 36. The further vertical channel 38 is formed by means of a further Venturi tube 39. The further mixture stream 37 is a mixture of gas 40 from a further gas nozzle 41 and further primary air 42. The mixture streams 28, 37 run parallel through vertical channels 32, 38.

[0054] The further mixture stream chamber 36 comprises a further lower chamber 43 formed by the base portion 21 and the intermediate portion 22 and a further upper chamber 44 formed by the intermediate portion 22 and the inner upper portion 24. The further vertical channel 38 is directly fluidly connected to the further lower chamber 43. The further lower chamber 43 is circular disk-shaped. The further upper chamber 44 has an at least partially circular shape when looking from above. The further mixture stream chamber 36 is partitioned into the further lower chamber 43 and the further upper chamber 44 by means of the intermediate portion 22.

[0055] Furthermore, a thermocouple and/or spark plug 45 is provided. Moreover, a thermocouple and/or spark plug 46 may be provided. The plugs 45, 46 are provided at the intermediate portion 22 and face towards the volume 47 surrounded by the inner upper portion 24. Furthermore, the outer upper portion 23 comprises an upper recess 48 and the inner upper portion 24 comprises an upper recess 49. The recesses 48, 49 align radially and form a cross-lightning area between the outer gas outlet openings 15 and the inner gas outlet openings 16.

[0056] The secondary air chamber 25 comprises a lower secondary air chamber 50 and an upper secondary air chamber 51 which are fluidly connected together. The secondary air chamber 25 is divided into the upper secondary air chamber 51 and lower secondary air chamber 50 by means of the intermediate portion 22. The lower and/or the upper secondary air chamber 50, 51 is at least partially ring-shaped when looking from above.

[0057] Fig. 6 shows a bottom view of the intermediate portion 22. The lower secondary air chamber 50 forms at least 50%, 60%, 70%, 80%, 90%, 95%, 98% or more of a circle. The lower secondary air chamber 50 is in particular C-shaped when looking from above. The lower

secondary air chamber 50 and the upper secondary air chamber 51 (see Fig. 7) are fluidly connected by means of through-holes 52. The through-holes 52 run vertically through the intermediate portion 22. Four through-holes 52 are provided at the intermediate portion 22. The secondary air chamber 25 is formed at least by means of an inner radial wall 53 and an outer radial wall 54. The radial walls 53, 54 are ring-shaped when looking from above. The lower chamber 34 and the upper chamber 35 (see Fig. 7) are fluidly connected by means of through-holes 55.

[0058] The through-holes 55 run vertically through the intermediate portion 22. Four through-holes 55 are provided at the intermediate portion 22. The further lower chamber 43 is fluidly connected to the further upper chamber 44 (see Fig. 7) by means of through-holes 56. The through-holes 56 run vertically through intermediate portion 22. Four through-holes 56 are provided at the intermediate portion 22. The through-holes 52 and/or through-holes 55 and/or the through-holes 56 are arc-shaped when looking from above.

[0059] Fig. 7 shows a top view of the intermediate portion 22. As shown in Fig. 7, the upper chamber 35 is circular-shaped when looking from above. Also, the upper secondary air chamber 51 is at least partially ring-shaped when looking from above.

Reference Numerals:

[0060]

1 gas stove
2 plate
3 dual circuit burner
4 pan support
5 gas burner
6 pan support
7 cooking zone
8 cooking zone
9 gas burner arrangement
10 upper surface
11 insertion opening
12 ring portion
13 outer contour
14 burner body
15 outer gas outlet opening
16 inner gas outlet opening
17 secondary air outlet opening
18 outer contour
19 secondary air inlet opening
20 secondary air
21 base portion
22 intermediate portion
23 outer upper portion
24 inner upper portion
25 secondary air chamber
26 recess
27 mixture stream chamber
28 mixtures stream
29 primary air
30 gas
31 gas nozzle
32 vertical channel
33 Venturi tube
34 lower chamber
35 upper chamber
36 further mixture stream chamber
37 further mixture stream
38 further vertical channel
39 further Venturi tube
40 gas
41 further nozzle
42 further primary air
43 further lower chamber
44 further upper chamber
45 plug
46 plug
47 volume
48 recess
49 recess
50 lower secondary air chamber
51 upper secondary air chamber
52 through-hole
53 radially inner wall
54 radially outer wall
55 through-hole
56 further through-hole

L length
D diameter
H height

Claims

1. A dual circuit burner (3) for a gas stove (1), the dual circuit burner (3) comprising
a burner body (14) having outer gas outlet openings (15) for providing circularly arranged outer flames, inner gas outlet openings (16) for providing circularly arranged inner flames, at least one secondary air outlet opening (17) for providing secondary air (20) at the inner gas outlet openings (16), and
a secondary air chamber (25) which is fluidly connected to the at least one secondary air outlet opening (17), wherein the secondary air chamber (25) is at least partially ring-shaped when looking from above.

2. The dual circuit burner according to claim 1, wherein the at least one secondary air outlet opening (17) is arranged above the inner gas outlet openings (16).

3. The dual circuit burner according to claim 1 or 2, wherein the burner body (14) comprises a secondary air inlet opening (19) which is fluidly connected to

the secondary air chamber (25) for supplying the secondary air chamber (25) with secondary air (20), wherein the at least one secondary air outlet opening (17) is arranged above the secondary air inlet opening (19).

4. The dual circuit burner according to claim 3, wherein the secondary air inlet opening (19) faces radially outwards, and wherein the at least one secondary air outlet opening (17) faces radially inwards.

5. The dual circuit burner according to one of claims 1 - 4, wherein the burner body (14) comprises a mixture stream chamber (27) which is fluidly connected to the outer gas outlet openings (15) for guiding a mixture stream (28) towards the outer gas outlet openings (15).

6. The dual circuit burner according to claim 5, wherein the mixture stream chamber (27) is at least partially ring-shaped when looking from above.

7. The dual circuit burner according to claim 5 or 6, wherein the burner body (14) comprises a further mixture stream chamber (36) which is fluidly connected to the inner gas outlet openings (16) for guiding a further mixture stream (37) towards the inner gas outlet openings (16).

8. The dual circuit burner according to claim 7, wherein the burner body (14) comprises a vertical channel (32) arranged below and fluidly connected to the mixture stream chamber (27), and a further vertical channel (38) arranged below and fluidly connected to the further mixture stream chamber (36).

9. The dual circuit burner according to one of claims 1 - 8, wherein the burner body (14) comprises a base portion (21) which is mountable to a plate (2) of the gas stove (1), an intermediate portion (22) which is arrangeable on the base portion (21), an outer upper portion (23) which is arrangeable on the intermediate portion (22), and an inner upper portion (24) which is arrangeable on the intermediate portion (22) and inside the outer upper portion (23).

10. The dual circuit burner according to claims 5 and 9, wherein the mixture stream chamber (27) comprises a lower chamber (34) formed by the base portion (21) and the intermediate portion (22), and an upper chamber (35) formed by the intermediate portion (22) and the outer upper portion (23), and wherein the lower chamber (34) and the upper chamber (35) are fluidly connected by means of through-holes (55) in the intermediate portion (22).

11. The dual circuit burner according to claims 7 and 9, wherein the further mixture stream chamber (36) comprises a further lower chamber (43) formed by the base portion (21) and the intermediate portion (22), and a further upper chamber (44) formed by the intermediate portion (22) and the inner upper portion (24), and wherein the further lower chamber (43) and the further upper chamber (44) are fluidly connected by means of further through-holes (56) in the intermediate portion (22).

12. The dual circuit burner according to one of claims 9 - 11, wherein the secondary air chamber (25) is formed by the base portion (21), the intermediate portion (22), the outer upper portion (23) and the inner upper portion (24).

13. The dual circuit burner according to one of claims 1 - 12, wherein the burner body (14) is configured to be mounted in an insertion opening (11) of the plate (2) having a diameter (D) between 80 - 110 mm, 85 - 105 mm or 88 - 92 mm, or a diameter (D) of 90,9 mm.

14. A gas burner arrangement (9) for a gas stove (1) comprising a dual circuit burner (3) according to one of claims 1 - 13, a plate (2) having an upper surface (10) on which the dual circuit burner (3) is mounted, wherein the secondary air inlet opening (19) is arranged above the upper surface (10) of the plate (2).

15. A gas stove (1) having a dual circuit burner (3) according to one of claims 1 - 13 or a gas burner arrangement (9) according to claim 14.

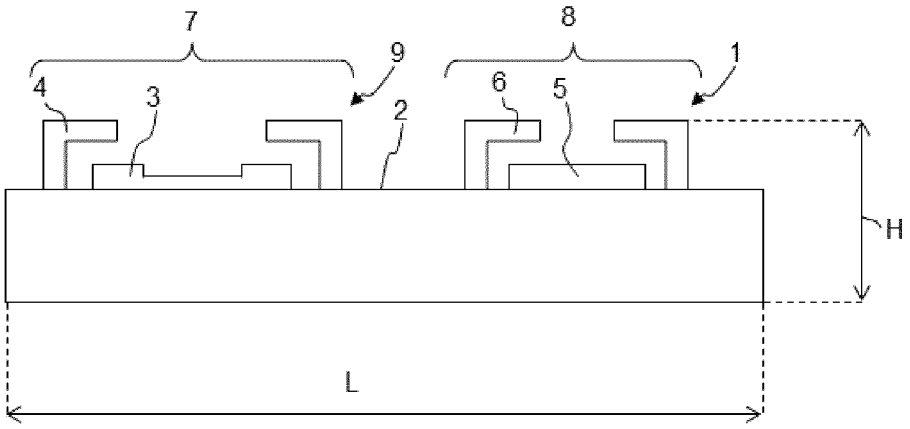

Fig. 1

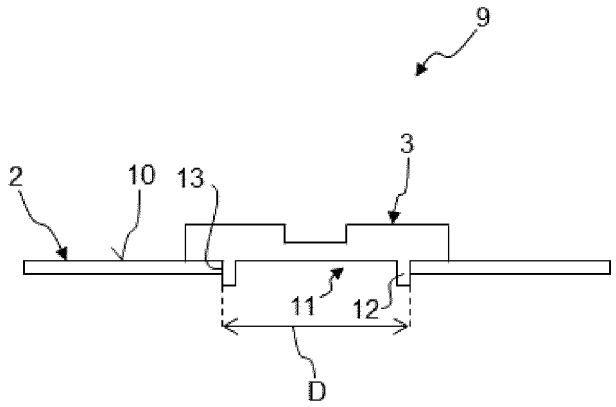

Fig. 2

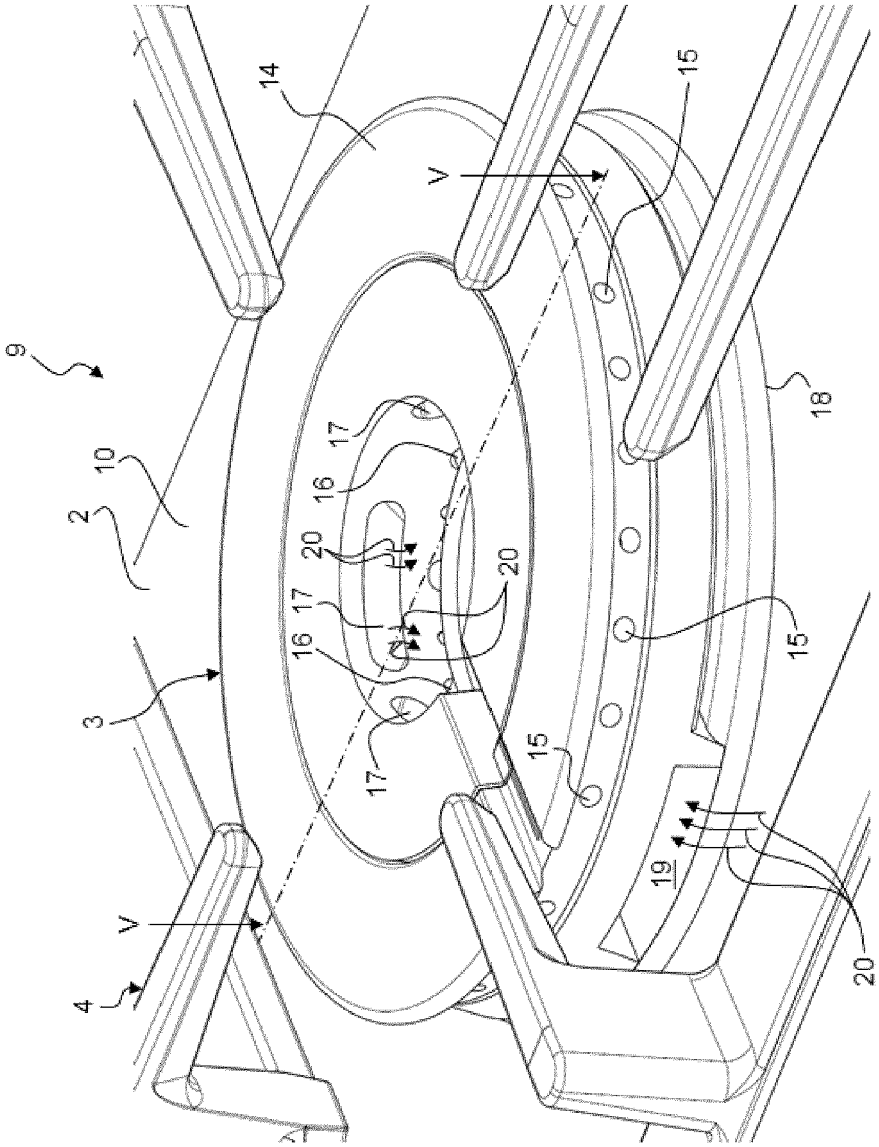

Fig. 3

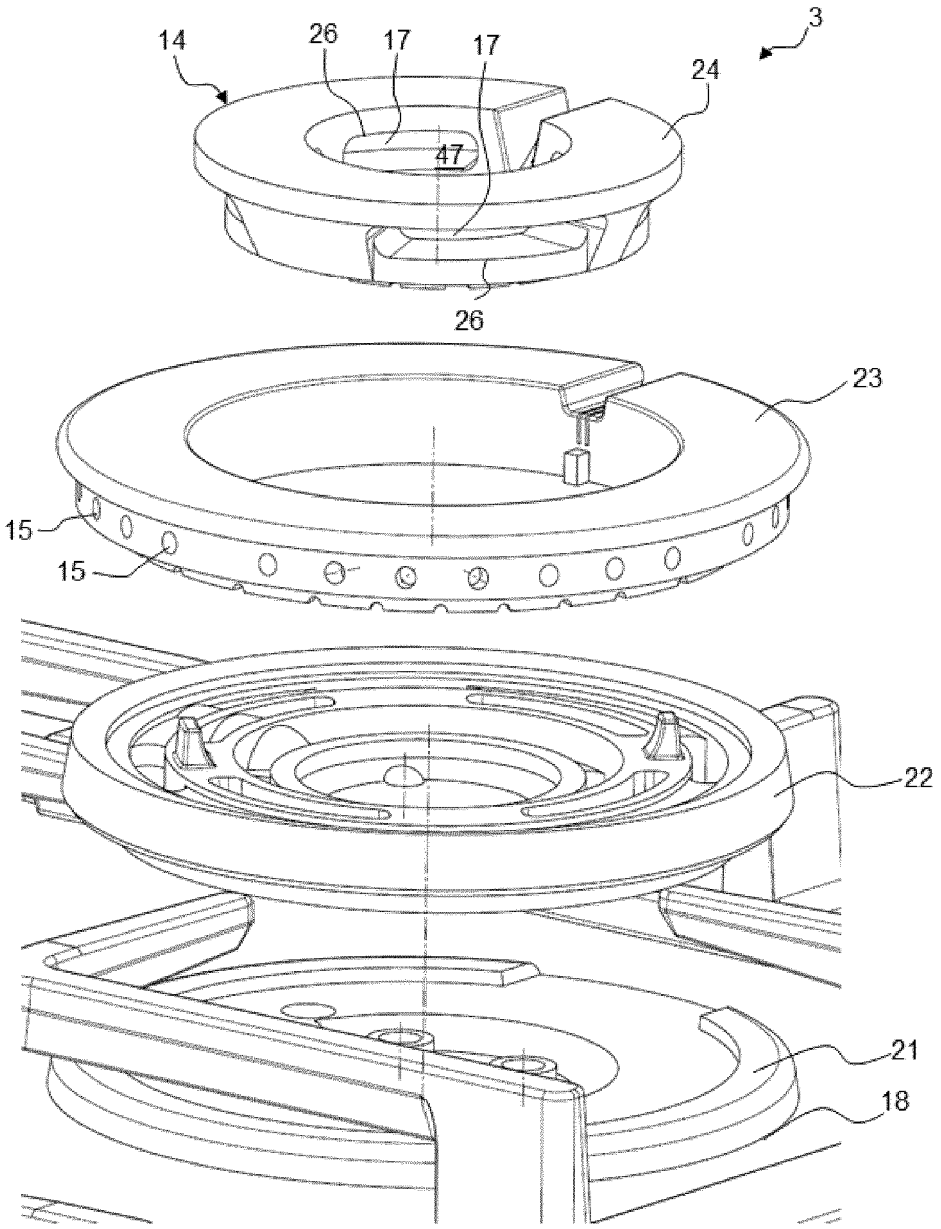

Fig. 4

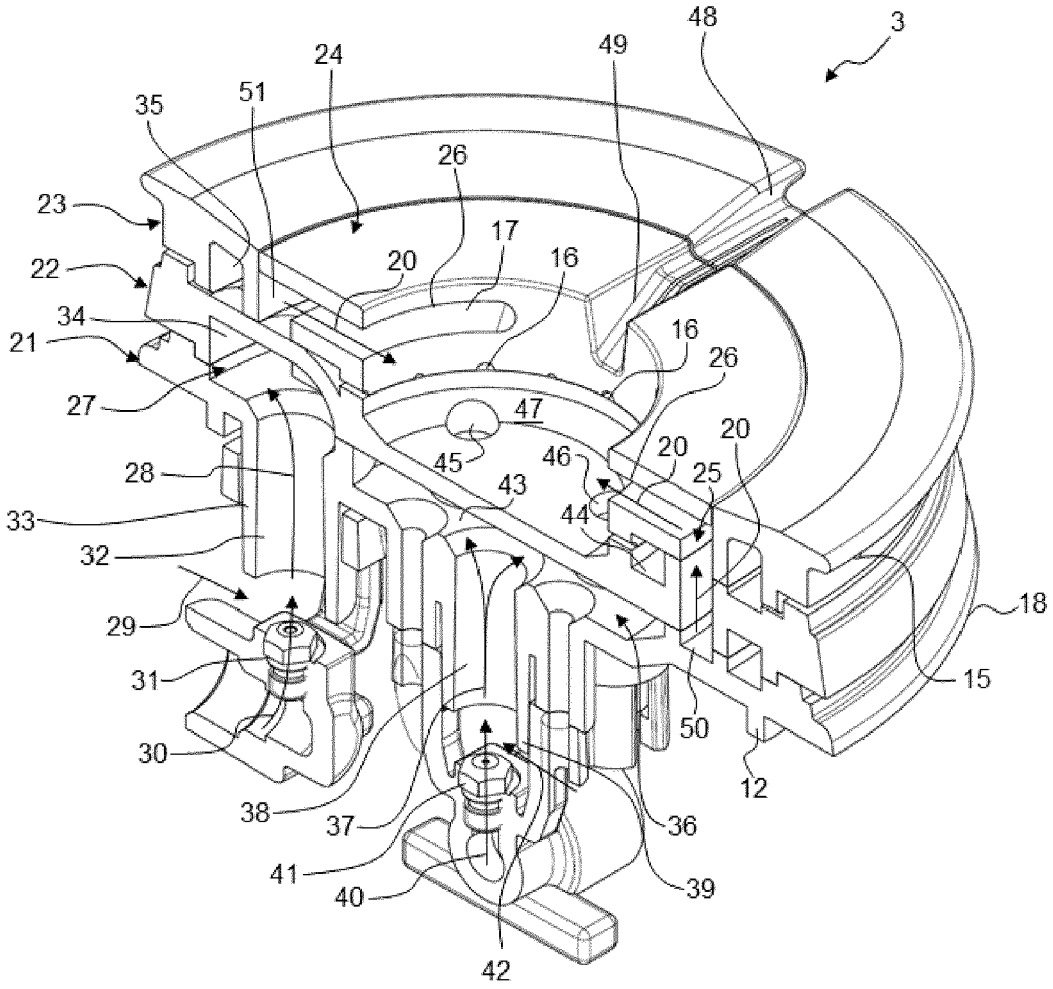
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Fig. 5

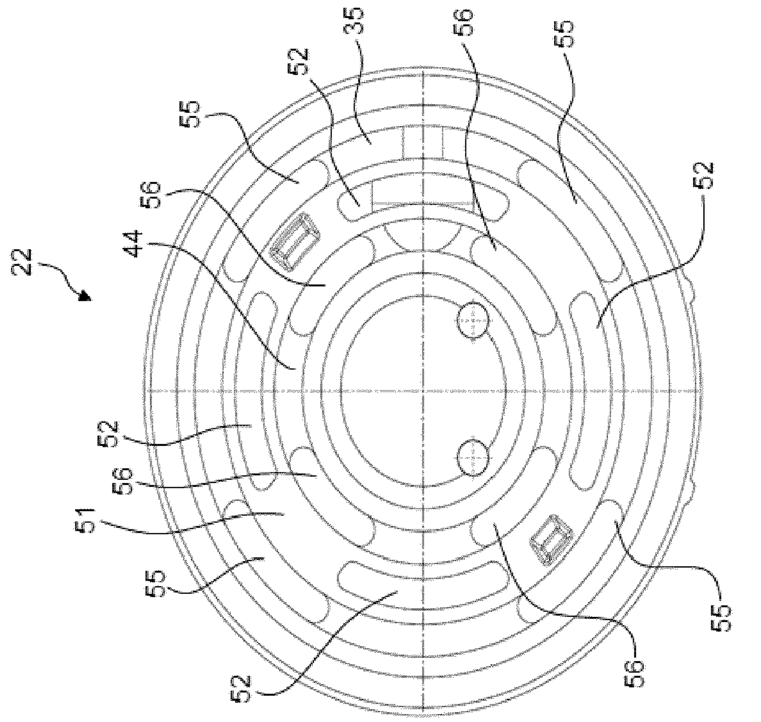
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Fig. 7

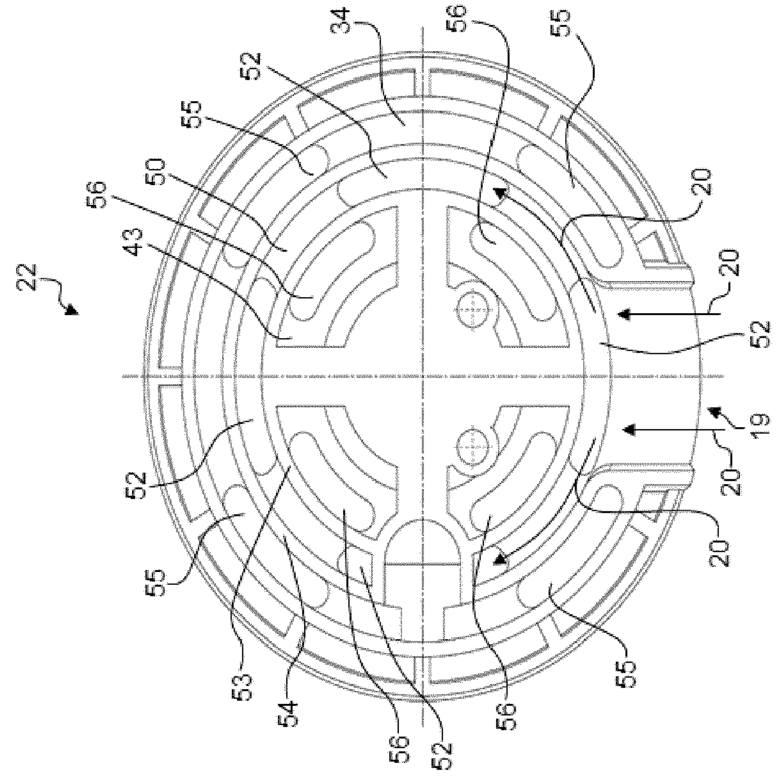
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Fig. 6

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EUROPEAN SEARCH REPORT

Application Number
EP 19 18 2852

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F23D
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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	4 November 2019	Theis, Gilbert

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