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(54) **TRIPLE CROWN GAS BURNER**

GASBRENNER MIT DREI KRÄNZEN

BRULEUR A GAZ A TROIS COURONNES

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EP 1 649 216 B1

Description

FIELD OF THE INVENTION

[0001] The present invention concerns a gas burner, of the type with three crowns of flames, able to be mounted on a frame either of a built-in cooking surface, or hob, or of a cooker.

BACKGROUND OF THE INVENTION

[0002] A gas burner with three crowns of flames is known, for a cooker or a hob, which comprises a base element, also called cup, or collector, attached to a frame of the cooker or hob and on which a gas injector is mounted.

[0003] The known burner also comprises an intermediate body, arranged above the base element, and a flame-dividing head with three crowns, in turn arranged above the intermediate body.

[0004] The intermediate body comprises a central sleeve coaxial with the gas injector in order to convey a mixture of primary air and gas towards the crowns of the flame-dividing head, and four radial supporting arms, made in a single piece with the central sleeve and angularly equidistant from each other.

[0005] The radial arms of the intermediate body define at the lower part, cooperating with corresponding radial arms of the base collector, a plurality of first channels, through which the primary air is introduced and conveyed towards the gas injector. The radial arms of the intermediate body also define at the upper part, cooperating with corresponding radial arms of the flame-dividing head, a plurality of second channels through which the mixture of primary air and gas, arriving from the central sleeve, is conveyed towards an external crown of the flame-dividing head.

[0006] In this known burner, the radial arms of the intermediate body define four open zones which allow the substantially vertical passage of so-called secondary air, which is sucked in upwards by the depression caused by the mixture of gas and air when the flame is lit.

[0007] To be more exact, the secondary air is conveyed mainly towards the intermediate crown of the flame-dividing head, in order to feed, together with the mixture of primary air and gas, the flame of the intermediate crown itself.

[0008] A general problem of the known three crown gas burner is the turbulence to which the air is subject when it is introduced. To be more exact, it is necessary to reduce to a minimum the risk that the air, both primary and secondary, be subjected to continuous variations in its trajectory.

[0009] To be more exact, the known three crown gas burner has the disadvantage that the open zones, located between the radial arms of the intermediate body, cause a considerable irregularity in the trajectory of the secondary air. Consequently, the secondary air is easily subject

to turbulence and sudden changes in direction, with the consequent risk that the flame of the intermediate crown is not constant, or that it is lit with considerable difficulty.

[0010] It is also known from document GB-A-2,233,444 a triple crown gas burner with a single crown structure which, in co-operation with an annular cap, defines a ring-shaped chamber having flame openings both on its inside perimeter and on its outside perimeter. Moreover, the same crown and a second circular cap define a central circular chamber which has flame openings on its outside perimeter.

[0011] A three crown gas burner is also known wherein the intermediate body and the flame-dividing head are shaped so that, before passing into the four upper radial channels towards the external crown, the mixture of primary air and gas passes through a horizontal Venturi chamber which is made above the vertical sleeve of the intermediate body and regulates the trajectory of the mixture, slowing down its speed. Such horizontal Venturi chamber has the disadvantage, however, that it is particularly complex and expensive to make, in order to obtain a regular flow of the mixture of primary air and gas. Moreover the intermediate body comprises a scoop plate to provide secondary air for the inwards directed flames which takes part of the primary air stream supplied to the burner. However, also such scoop plate, which comprises a lower horizontal segment and an upper horizontal segment connected by an intermediate inclined segment has the disadvantage to cause turbulence and considerable irregularity in the trajectory of the secondary air.

[0012] From WO-A-99/11975 it is also known a gas burner which has peripheral flames and central flames burning nearer the centre, obtained by means of a crown and cap structure and by providing secondary air for the inwards directed flames by means of a scoop plate which takes part of the primary air stream supplied to the burner.

[0013] From WO-A-03/069231 it is also known a cooking hob which comprises a supporting surface made of thermodegradable material and which is provided with a hole, within which is housed an atmospheric gas burner, of the type comprising a burner base and a burner head with one flame crown. The burner further comprises a circumferential ring set between the flame crown and the supporting surface.

[0014] The purpose of the present invention is to achieve a burner with three crowns wherein it is possible to regulate the trajectory of the secondary air in the intermediate zones between the radial supporting arms and, in particular, wherein the secondary air is diverted upwards with a substantially laminar motion, and therefore not turbulent.

[0015] Another purpose of the present invention is to achieve a burner with three crowns wherein it is possible to regulate and stabilize the mixing of the primary air and gas without having recourse to making a horizontal Venturi chamber.

[0016] The Applicant has devised, tested and embodied the present invention to achieve these and other pur-

poses, to obtain further advantages and to overcome the shortcomings of the state of the art.

SUMMARY OF THE INVENTION

[0017] The present invention is set forth and characterized in the main claim, while the dependent claims describe other characteristics of the present invention or variants to the main inventive idea.

[0018] In accordance with the aforesaid purposes, a gas burner of the triple crown type, for a cooker or for a hob, comprises: a base element, commonly called cup, or collector, able to be attached to a frame of the cooker or hob and on which a gas injector is mounted; a flame-dividing head with three crowns, arranged above the base element; and an intermediate body comprising a central portion and a plurality of substantially horizontal radial supporting arms. The intermediate body is arranged between the base element and the flame-dividing head with three crowns so as to define, at the lower part, a plurality of first channels to introduce primary air to said gas injector and, at the upper part, a plurality of second channels towards the three crowns of the flame-dividing head. According to the invention, between the intermediate body, between said radial supporting arms, where secondary air transits, is provided with radial connecting portions, starting from said central portion and each having a substantially constant inclination downwards for all its extension, up to its edge, to deflect the secondary air in a substantially oblique direction towards the two more internal crowns of said three crowns.

[0019] Moreover, according to another feature of the present invention, each edge of said radial connecting portions is rounded downwards.

[0020] In this way, the aforesaid inclined connecting portions act as deflectors for the secondary air and allow to control its trajectory, limiting the risk of turbulence, in order to encourage, in particular, the lighting, the inter-lighting and the stability of the flame of an intermediate crown of the flame-dividing head.

[0021] In a preferential form of embodiment, the radial connecting portions are arranged distanced above the frame of the hob or cooker and define, with the frame itself, a channel that communicates with the collector, through which supplementary primary air is introduced. Such supplementary primary air mixes with the greater part of the main primary air arriving from the first channels mentioned above. The supplementary primary air allows to considerably improve the mixing of the primary air with the gas inside the intermediate body, with the advantage that the flow of the mixture is considerably stabilized. This allows to obtain a stable flame even when there is no pan on the burner.

[0022] Moreover, according to a further feature of the present invention, the intermediate body comprises also a vertical sleeve, on which a vertical Venturi tube is formed and which has its lower extremity disposed substantially on a same horizontal plane of, or very near to,

the upper part of the gas injector.

[0023] In a preferential embodiment, to further improve the stability of the flame, the flame-dividing head is provided, in correspondence with a central zone, where the mixture of primary air and gas flows, with slowing means able to slow down the flow of the mixture, encouraging the substantially balanced distribution thereof between the three crowns of the flame-dividing head. The slowing means comprise a holed element, such as a plate, a disk or suchlike, advantageously made in one piece below the central crown of the flame-dividing head, and through which only a part of the mixture of primary air and gas passes in order to feed the central crown itself.

BRIEF DESCRIPTION OF THE DRAWINGS

[0024] These and other characteristics of the present invention will be apparent from the following description of a preferential form of embodiment, given as a non-restrictive example, with reference to the attached drawings wherein:

- fig. 1 is a view from above of a burner with three crowns according to the present invention;
- fig. 2 is a section from II to II of fig. 1;
- fig. 3 is a perspective view of an intermediate body of the burner in fig. 1;
- fig. 4 is a view from above of the intermediate body in fig. 3;
- fig. 5 is a view from below of the intermediate body in fig. 3.

DETAILED DESCRIPTION OF A PREFERENTIAL FORM OF EMBODIMENT OF THE INVENTION

[0025] With reference to figs. 1 and 2, a gas burner 10 for a hob or a cooker according to the present invention comprises a base element, also called cup, or collector 12, for example made of aluminum alloy, mounted on a frame 11 of the hob. The collector 12 comprises a connector 13 which, at an external end 13a, is able to be connected to a gas pipe, not shown in the drawings, and at an internal end 13b, supports a gas injector 14.

[0026] The burner 10 also comprises an intermediate body 18, removably mounted on the collector 12 by means of supporting feet 15, and a flame-dividing head 16 with three concentric crowns, i.e. a central crown 16a, an intermediate crown 16b and an external crown 16c.

[0027] The flame-dividing head 16 and the intermediate body 18 are also made of aluminum alloy.

[0028] A central cover 17 and annular cover 19 rest in removable manner on the flame-dividing head 16.

[0029] The intermediate body 18 (figs. 2, 3, 4 and 5) comprises in a single piece a central portion 28, substantially plane and circular, and a vertical sleeve 29, which close the collector 12 at the upper part and define a central chamber 26, shaped substantially like a truncated cone, tapering upwards, which forms a vertical Venturi

tube which extends towards the central zone of the flame-dividing head 16 and in which the gas and the primary air AP are mixed. In particular, the lower extremity 29a of the vertical sleeve 29 and the upper part of the gas injector 14 are disposed substantially on a same horizontal plane (fig. 2), or very near one to the other.

[0030] The intermediate body 18 also comprises four radial arms 30, substantially horizontal, which define at the lower part with the frame 11 of the hob or cooker, four radial channels 27 (figs. 2, 3 and 5), through which most of the primary air AP is conveyed, due to depression in the central sleeve 29 when gas is delivered by the injector 14.

[0031] The four radial arms 30 are associated at the upper part with corresponding radial arms 31 (figs. 1 and 2) of the flame-dividing head 16 in order to define four channels 33 where part of the mixture of gas and primary air AP is conveyed, at outlet from the central chamber 26. The four channels 33 convey the mixture mainly towards the external crown 16c, and partly towards the intermediate crown 16b of the flame-dividing head 16.

[0032] Consequently, from the vertical sleeve 29 the mixture of primary air and gas is conveyed partly towards the central crown 16a of the flame-dividing head 16 and partly towards the more external crowns 16b and 16c.

[0033] According to the invention, the intermediate body 18 comprises, between the four radial arms 30, four connecting portions 36, which extend radially with a substantially constant inclination downwards, starting from the central portion 28 to below the external crown 16c of the flame-dividing head 16, to deflect without turbulence the secondary air AS in a substantially oblique direction towards the two more internal crowns 16a and 16b.

[0034] Advantageously, each radial connecting portions 36 end with an edge 36a rounded downwards.

[0035] The connecting portions 36 are inclined downwards and are arranged in this case in an intermediate position and distanced between the frame 11 and the flame-dividing head 16, so as to divide substantially into two channels, an upper channel 38 and a lower channel 40 (fig. 2), each intermediate zone between two adjacent radial arms 30.

[0036] To be more exact, secondary air AS, able to feed mainly the flame of the intermediate crown 16b, conveys through the upper channel 38 from the bottom upwards, due to depression.

[0037] Thanks to the inclination of the connecting portions 36, the secondary air AS is deflected in a substantially oblique direction and is directed in a targeted manner towards an intermediate zone between the central crown 16a and the intermediate crown 16b.

[0038] In this way the trajectory of the secondary air AS is controlled and regulated, so that it assumes a substantially laminar motion and eliminate the risk of turbulence; this allows to facilitate lighting the flame of the intermediate crown 16c, especially when the burner 10 is already hot.

[0039] In the embodiment shown here, the connecting

portions 36 have a substantially plane upper surface in order to convey the secondary air AS in a substantially linear direction.

[0040] According to a variant not shown in the drawings, the upper surface of each connecting portion 36 is shaped concave, with its concavity facing upwards.

[0041] The aforesaid lower channel 40, on the contrary, communicates with the collector 12 so as to allow the supplementary primary air APc to be introduced, which is conveyed into the central chamber 26 of the vertical sleeve 29, to be mixed with the main primary air AP arriving from the radial pipes 27.

[0042] When the burner 10 is lit, the supplementary primary air APc, which has a more tortuous path to follow, is introduced with a slight temporal delay and at a slower speed with respect to the primary air AP arriving from the radial pipes 27. The supplementary primary air APc improves the mixing of air and gas in the vertical sleeve 29, so as to obtain a stable trajectory of the mixture, so that it is not necessary to include a horizontal Venturi chamber.

[0043] The inclination of the connecting portions 36 thus encourages and improves both the introduction of primary air AP, and also the introduction of secondary air AS.

[0044] Moreover, the connecting portions 36 allow to reflect the heat produced by the flames upwards, protecting the intermediate body 18 and further encouraging the lighting of the burner 10 even when it is hot.

[0045] Another advantage of the burner 10 according to the invention is that the extension towards the outside of the connecting portions 36 of the intermediate body 18 allows to protect the collector 12 peripherally, from solid or liquid foods that might fall.

[0046] According to another characteristic of the present invention, in order to further improve the flow of the mixture of primary air AP and gas, the flame-dividing head 16 is provided, below the central crown 16a and above the vertical sleeve 29, with a holed disk 50 (fig. 2), which is able to slow down, to an optimum outlet speed, the introduction of the mixture of primary air AP and gas into the central crown 16a, favouring the distribution of the mixture into the channels 33 towards the peripheral crowns 16b, 16c.

[0047] In the embodiment shown, in the holed disk 50 there are three holes 52, radially equidistant from each other and offset by 120°.

[0048] The reduction in speed of the mixture of primary air AP and gas improves the stability of the mixture itself and has the advantage of reducing to a minimum the risk that the flame might become detached in correspondence with the central crown 16a, or return to the central chamber 26, or that the flames of the central crown 16a and the intermediate crown 16b might possibly join up. Moreover, the position of the holes 52 allows an easy intervention thereon, in order to clean them or restore them in the event that, during use, they should become dirty or blocked, simply by temporarily removing the cen-

tral cover 17.

[0049] It is clear, however, that modifications and/or additions of parts can be made to the burner 10 with three crowns as described heretofore, without departing from the scope of the present invention as defined by the claims.

[0050] It is also clear that, although the present invention has been described with reference to specific examples, a person of skill in the art shall certainly be able to achieve many other forms of burner with three crowns, all of which shall come within the scope of the present invention as defined by the claims.

Claims

1. Gas burner of the triple crown type for a cooker or hob, comprising a base element (12) able to be attached to a frame (11) of said cooker or said hob, and on which a gas injector (14) is mounted, a flame-dividing head (16) with three crowns (16a, 16b, 16c), arranged above said base element (12), and an intermediate body (18) comprising a central portion (28) and a plurality of substantially horizontal radial supporting arms (30), and arranged between said base element (12) and said flame-dividing head (16), in order to define at the lower part a plurality of first channels (27) to introduce primary air (AP) towards said gas injector (14) and, at the upper part, a plurality of second channels (33) able to convey a mixture of said primary air (AP) and said gas towards the three crowns (16a, 16b, 16c) of said flame-dividing head (16), **characterized in that** said intermediate body (18), between said radial supporting arms (30), where secondary air (AS) transits, is provided with radial connecting portions (36), starting from said central portion (28) and each having a substantially constant inclination downwards for all its extension, up to its edge (36a), to deflect the secondary air (AS) in a substantially oblique direction towards the two more internal crowns (16a, 16b) of said three crowns (16a, 16b, 16c).
2. Gas burner as in claim 1, **characterized in that** each edge (36a) of said radial connecting portions (36) is rounded downwards.
3. Gas burner as in claim 1 or 2, **characterized in that** said radial connecting portions (36) extend at least as far as below an intermediate crown (16b) of said flame-dividing head (16), forming with said intermediate crown (16b) a first channel (38) through which said secondary air (AS) is able to be conveyed.
4. Gas burner as in any claim hereinbefore, **characterized in that** said radial connecting portions (36) are arranged distanced above said frame (11) and define with said frame (11) a second channel (40)

communicating with said base element (12), and through which supplementary primary air (APc), able to mix with said primary air (AP), is able to be introduced.

5. Gas burner as in claim 4, wherein said central portion (28) of said intermediate body (18) comprises at least a vertical sleeve (29) aligned with said gas injector (14), into which said mixture of primary air (AP) and gas flows, **characterized in that** said supplementary primary air (APc) is able to be introduced with said mixture of primary air (AP) and gas inside a central chamber (26) made inside said vertical sleeve (29).
6. Gas burner as in claim 5, **characterized in that** the lower extremity (29a) of said vertical sleeve (29) and the upper part of said gas injector (14) are disposed substantially on a same horizontal plane, or very near one to the other.
7. Gas burner as in any claim hereinbefore, **characterized in that** it comprises slowing means (50) to slow down the flow, arranged during use below a central crown (16a) of said flame-dividing head (16), and able to slow down the flow of said mixture, encouraging the substantially balanced distribution thereof between said three crowns (16a, 16b, 16c) of said flame-dividing head (16).
8. Gas burner as in claims 5 and 7, **characterized in that** said slowing means comprise a holed element (50) made on said flame-dividing head (16) in correspondence of said vertical sleeve (29).
9. Gas burner as in claim 8, **characterized in that** said holed element (50) comprises a plurality of holes (52) arranged radially equidistant between them.

Patentansprüche

1. Gasbrenner des Typs mit drei Kränzen für einen Kocher oder ein Kochfeld, enthaltend ein Basiselement (12), das an einem Rahmen (11) des Kochers oder des Kochfeldes angebracht werden kann und an dem eine Gasdüse (14) angebracht ist, einen Flammteilkopf (16) mit drei Kränzen (16a, 16b, 16c), der über dem Basiselement (12) angeordnet ist, und einen Zwischenkörper (18), der einen zentralen Abschnitt (28) und eine Vielzahl im wesentlichen horizontaler, radialer Haltearme (39) enthält und zwischen dem Basiselement (12) und dem Flammteilkopf (16) angebracht ist, um am unteren Teil eine Vielzahl von ersten Kanälen (27), um Primärluft (AP) zur Gasdüse (14) einzuleiten, und am oberen Teil eine Vielzahl von zweiten Kanälen (33) zubilden, die in der Lage sind, ein Gemisch aus der Primärluft (AP)

- und dem Gas zu den drei Kränzen (16a, 16b, 16c) des Flammteilkopfes (16) zu leiten, **dadurch gekennzeichnet, dass** der Zwischenkörper (18) zwischen den radialen Haltearmen (30) an der Stelle, an der Sekundärluft (AS) quert, mit radialen Verbindungsabschnitten (36) versehen ist, die am zentralen Abschnitt (28) beginnen und jeweils eine im wesentlichen konstante Neigung für seine gesamte Ausdehnung bis zu seinem Rand (36a) haben, um die Sekundärluft (AS) in einer im wesentlichen schrägen Richtung zu den beiden weiter innen liegenden Kränzen (16a, 16b) der drei Kränze (16a, 16b, 16c) abzulenken.
2. Gasbrenner nach Anspruch 1, **dadurch gekennzeichnet, dass** jeder Rand (36a) der radialen Verbindungsabschnitte (36) nach unten abgerundet ist.
 3. Gasbrenner nach Anspruch 1 oder 2, **dadurch gekennzeichnet, dass** sich die radialen Verbindungsabschnitte (36) wenigstens bis unter einen Zwischenkranz (16b) des Flammteilkopfes (16) erstrecken, wobei sie mit dem Zwischenkranz (16b) einen ersten Kanal (38) ausbilden, durch den Sekundärluft (AS) geleitet werden kann.
 4. Gasbrenner nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** die radialen Verbindungsabschnitte (36) in einem Abstand über dem Rahmen (11) angeordnet sind und mit dem Rahmen (11) einen zweiten Kanal (40) bilden, der mit dem Basiselement (12) in Verbindung steht und durch den zusätzliche Primärluft (APc), die sich mit der Primärluft (AP) mischen kann, eingeleitet werden kann.
 5. Gasbrenner nach Anspruch 4, bei dem der zentrale Abschnitt (28) des Zwischenkörpers (18) wenigstens eine vertikale Manschette (29) enthält, die mit der Gasdüse (14) ausgerichtet ist und in die das Gemisch aus Primärluft (AP) und Gas strömt, **dadurch gekennzeichnet, dass** die zusätzliche Primärluft (APc) in der Lage ist, mit dem Gemisch aus Primärluft (AP) und Gas innerhalb einer zentralen Kammer (26) eingeleitet zu werden, die innerhalb der vertikalen Manschette (29) ausgebildet ist.
 6. Gasbrenner nach Anspruch 5, **dadurch gekennzeichnet, dass** der untere Endpunkt (29a) der vertikalen Manschette (29) und der obere Teil der Gasdüse (14) im wesentlichen in derselben horizontalen Ebene oder sehr dicht aneinander angeordnet sind.
 7. Gasbrenner nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** er eine Bremseinrichtung (50) enthält, die den Fluss bremst und während der Benutzung unter dem zentralen Kranz (16a) des Flammteilkopfes (16) angeordnet

und in der Lage ist, den Fluss des Gemisches zu bremsen, wodurch die im wesentlichen ausgewogene Verteilung desselben zwischen den drei Kränzen (16a, 16b, 16c) des Flammteilkopfes (16) unterstützt wird.

8. Gasbrenner nach Anspruch 5 und 7, **dadurch gekennzeichnet, dass** die Bremseinrichtung ein mit Löchern versehenes Element (50) enthält, das am Flammteilkopf (16) in Entsprechung der vertikalen Manschette (29) ausgebildet ist.
9. Gasbrenner nach Anspruch 8, **dadurch gekennzeichnet, dass** das mit Löchern versehene Element (50) eine Vielzahl von Löchern (52) enthält die radial mit gleichem Abstand zwischen ihnen angeordnet sind.

Revendications

1. Brûleur à gaz de type à trois couronnes pour cuisinière ou table de cuisson, comprenant un élément de base (12) pouvant être fixé à un cadre (11) de ladite cuisinière ou table de cuisson, et sur lequel est monté un injecteur de gaz (14), une tête à diviser la flamme (16) dotée de trois couronnes (16a, 16b, 16c) installées au-dessus dudit élément de base (12), et un corps intermédiaire (18) comprenant une partie centrale (28) et une pluralité de bras porteurs radiaux sensiblement horizontaux (30), installés entre ledit élément de base (12) et ladite tête à diviser la flamme (16), pour définir en partie inférieure une pluralité de premiers canaux (27) destinés à introduire l'air primaire (AP) vers ledit injecteur de gaz (14) et, en partie supérieure, une pluralité de seconds canaux (33) aptes à acheminer un mélange dudit air primaire (AP) et dudit gaz vers les trois couronnes (16a, 16b, 16c) de ladite tête à diviser la flamme (16), **caractérisé en ce que** ledit corps intermédiaire (18), entre lesdits bras porteurs radiaux (30) où transite l'air secondaire (AS), est pourvu de parties radiales de liaison (36), partant de ladite partie centrale (28) et présentant chacune une inclinaison sensiblement constante vers le bas sur toute leur longueur jusqu'à leur bord (36a), afin de dévier l'air secondaire (AS) dans un sens sensiblement oblique vers les deux couronnes internes (16a, 16b) desdites trois couronnes (16a, 16b, 16c).
2. Brûleur à gaz selon la revendication 1, **caractérisé en ce que** chaque bord (36a) desdites parties radiales de liaison (36) est arrondi vers le bas.
3. Brûleur à gaz selon la revendication 1 ou 2, **caractérisé en ce que** lesdites parties radiales de liaison (36) s'étirent au moins jusqu'en dessous d'une couronne intermédiaire (16) de ladite tête à diviser la

flamme (16), en formant avec ladite couronne intermédiaire (16b) un premier canal (38) par lequel peut être acheminé ledit air secondaire (AS).

4. Brûleur à gaz selon l'une quelconque des revendications précédentes, **caractérisé en ce que** lesdites parties radiales de liaison (36) sont installées à distance au-dessus dudit cadre (11) et définissent avec ledit cadre (11) un second canal (40) communiquant avec ledit élément de base (12), et par lequel peut être introduit de l'air primaire complémentaire (APc) pouvant être mélangé audit air primaire (AP). 5
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5. Brûleur à gaz selon la revendication 4, dans lequel ladite partie centrale (28) dudit corps intermédiaire (18) comprend au moins un manchon vertical (29) aligné sur ledit injecteur à gaz (14), dans lequel circule ledit mélange d'air primaire (AP) et de gaz, **caractérisé en ce que** ledit air primaire complémentaire (APc) peut être introduit avec ledit mélange d'air primaire (AP) et de gaz à l'intérieur d'une chambre centrale (26) ménagée dans ledit manchon vertical (29). 15
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6. Brûleur à gaz selon la revendication 5, **caractérisé en ce que** l'extrémité inférieure (29a) dudit manchon vertical (29) et la partie supérieure dudit injecteur de gaz (14) sont disposés sensiblement sur un même plan horizontal, ou très près l'un de l'autre. 25
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7. Brûleur à gaz selon l'une quelconque des revendications précédentes, **caractérisé en ce qu'il** comprend un moyen ralentisseur (50) destiné à ralentir la circulation, installé à l'utilisation sous une couronne centrale (16a) de ladite tête à diviser la flamme (16), et apte à ralentir la circulation dudit mélange, en favorisant la répartition sensiblement équilibrée de celui-ci entre lesdites trois couronnes (16a, 16b, 16c) de ladite tête à diviser la flamme (16). 35
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8. Brûleur à gaz selon les revendications 5 et 7, **caractérisé en ce que** ledit moyen ralentisseur comprend un élément perforé (50) ménagé sur ladite tête à diviser la flamme (16), au niveau dudit manchon vertical (29). 45

9. Brûleur à gaz selon la revendication 8, **caractérisé en ce que** ledit élément perforé (50) comprend une pluralité de trous (52) placés en position radiale à équidistance les uns des autres. 50

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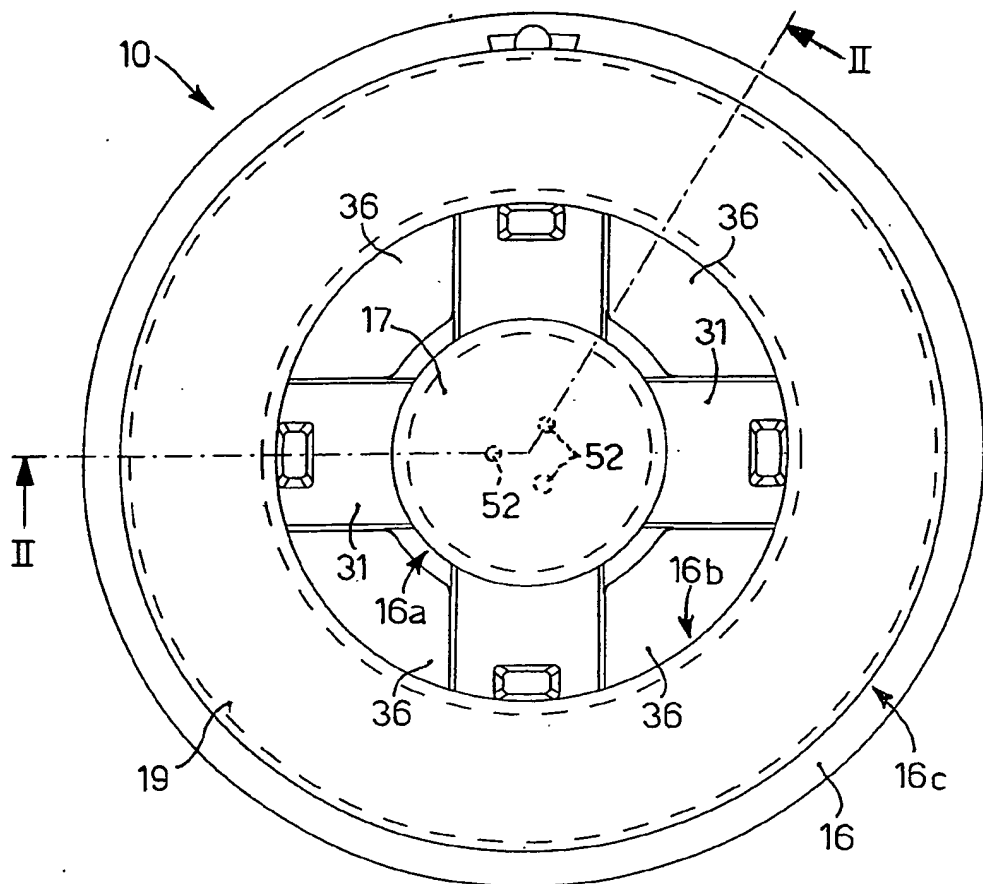


fig. 1

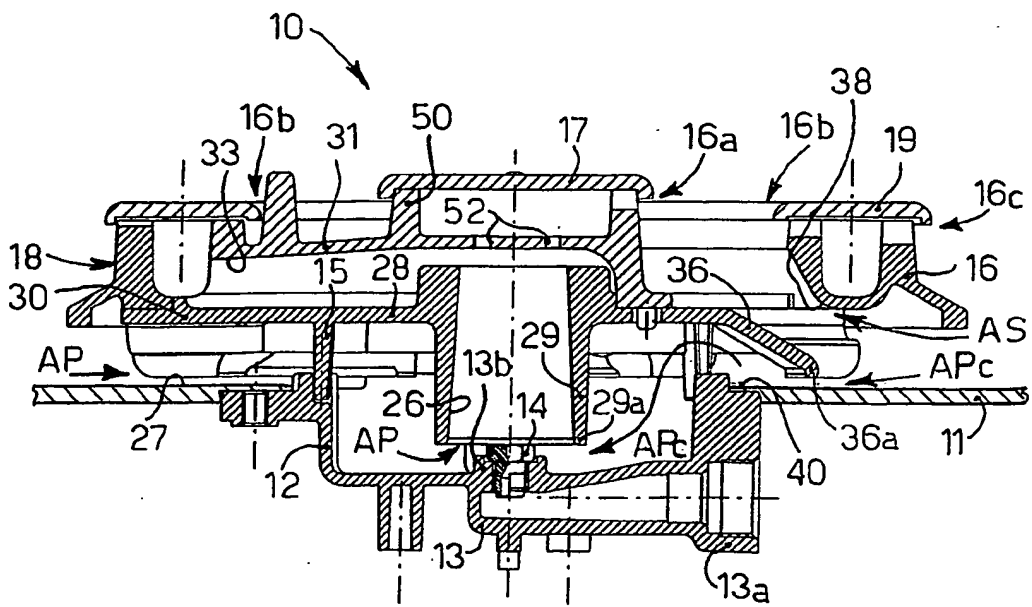
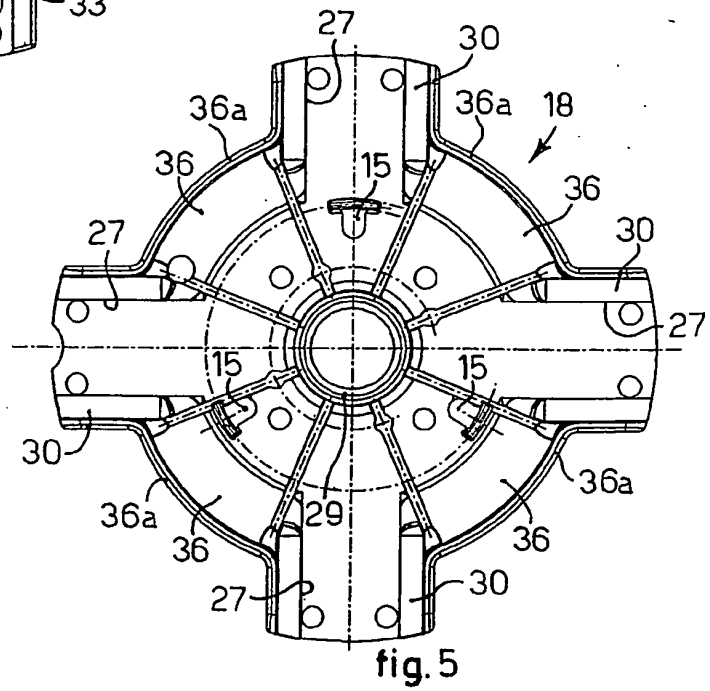
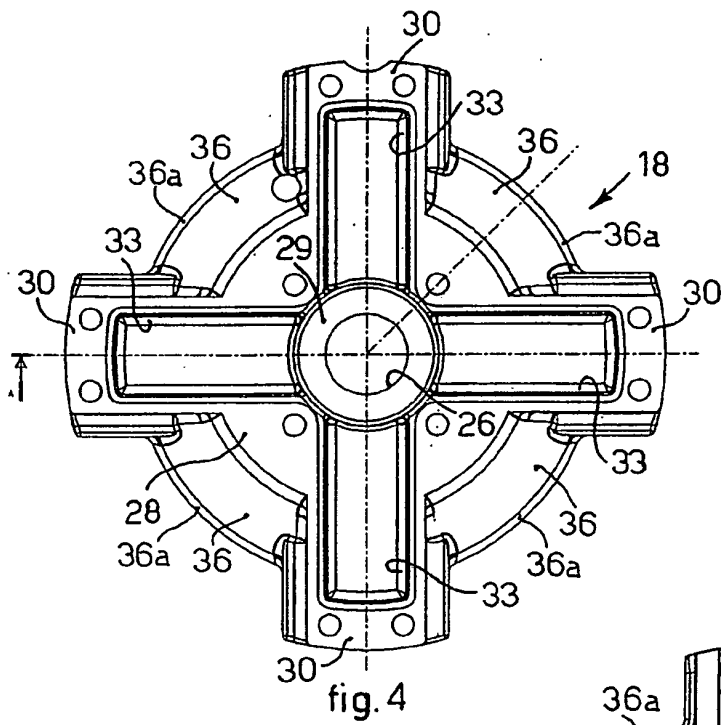
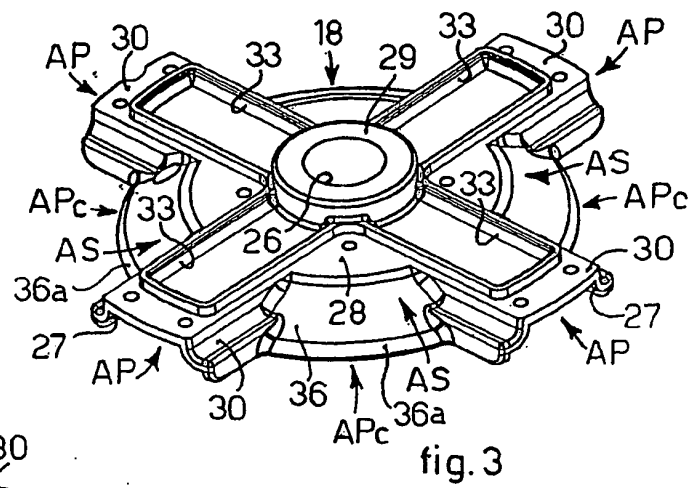


fig. 2



REFERENCES CITED IN THE DESCRIPTION

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