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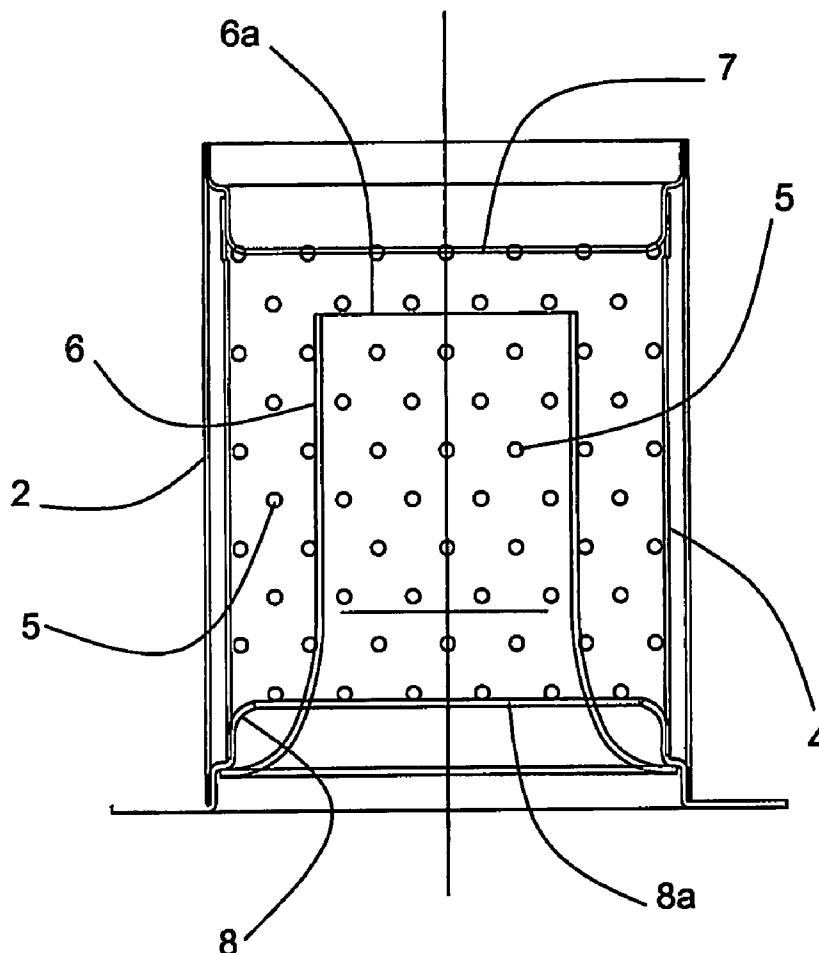
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ABSTRACT

A burner suppliable with a mixture of air and fuel comprises a body of the burner provided with a diffuser in the surface of which openings are made for the exit of said mixture delivered into the body of the burner, a distributing device inserted inside said body of the burner, said distributing device comprises a regulating element provided with further openings for the transit of said mixture, said regulating element being movable within said body of the burner. The body of the burner can be subdivided into a plurality of sectors, each one of which is independently suppliable by the other sectors.



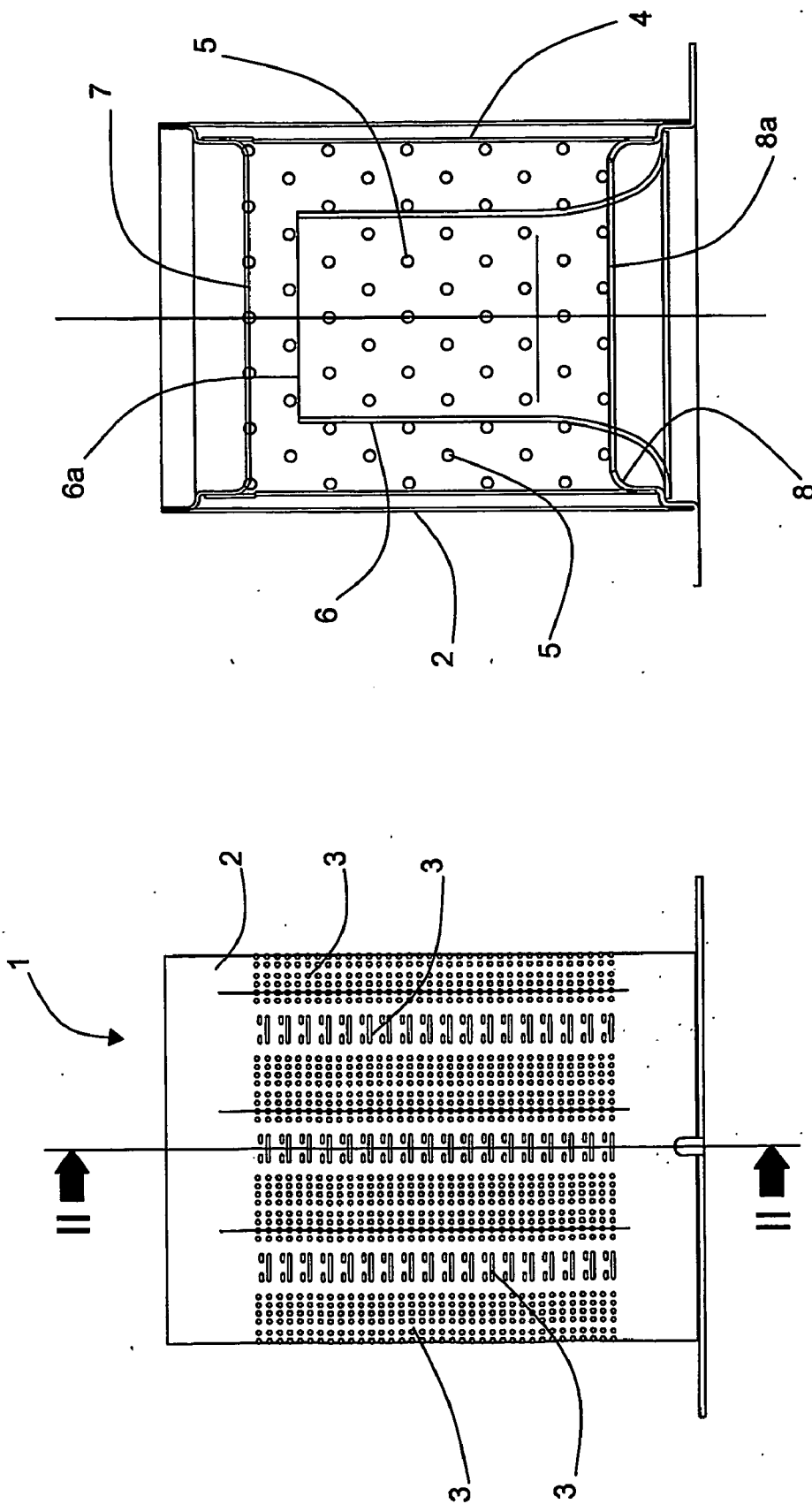
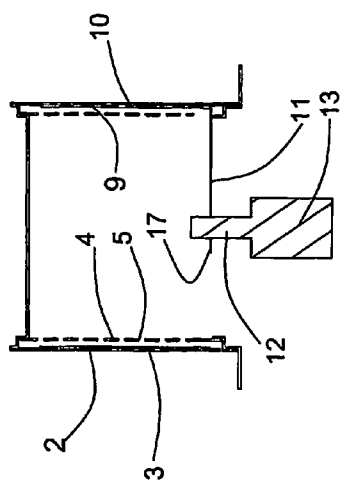
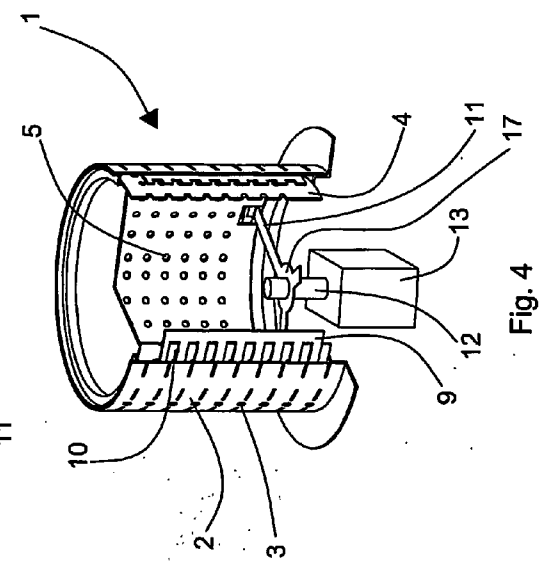
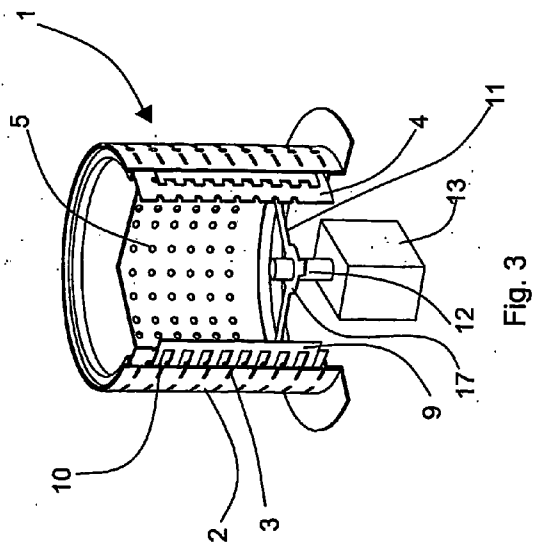


Fig. 2

Fig. 1



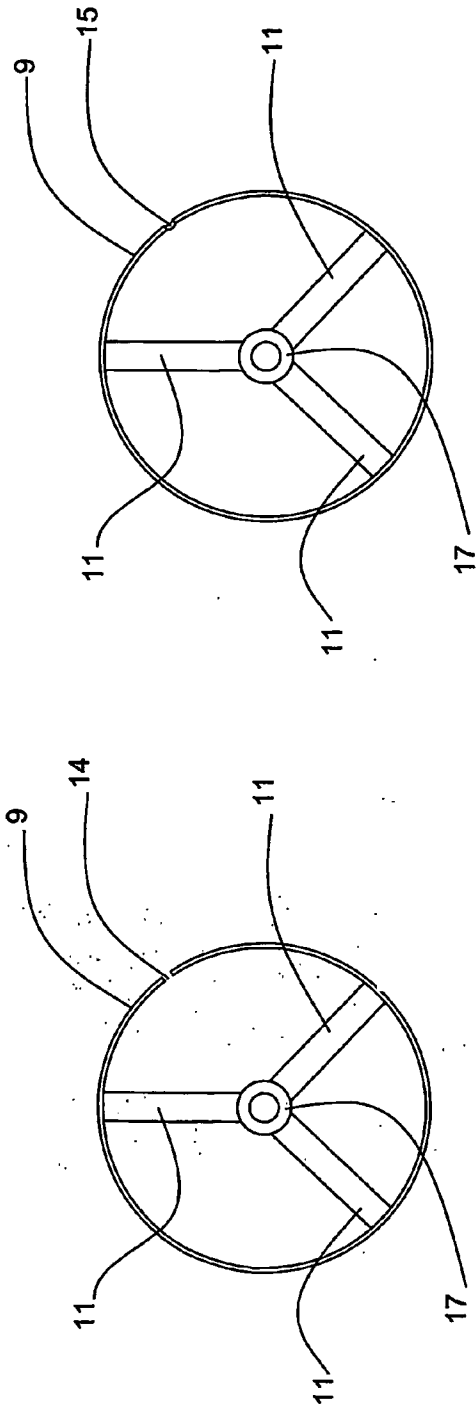


Fig. 7

Fig. 6

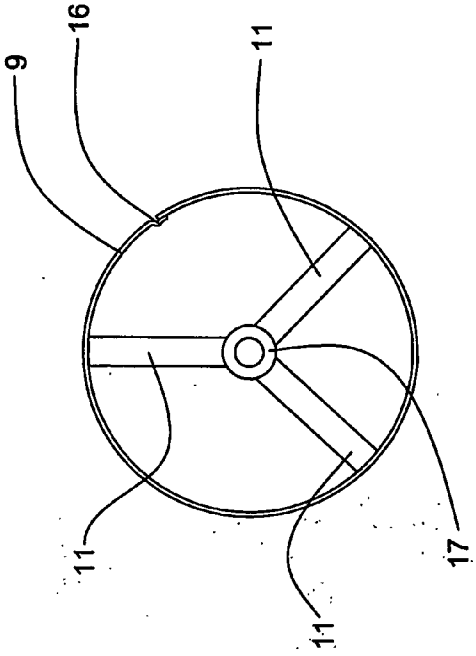


Fig. 8

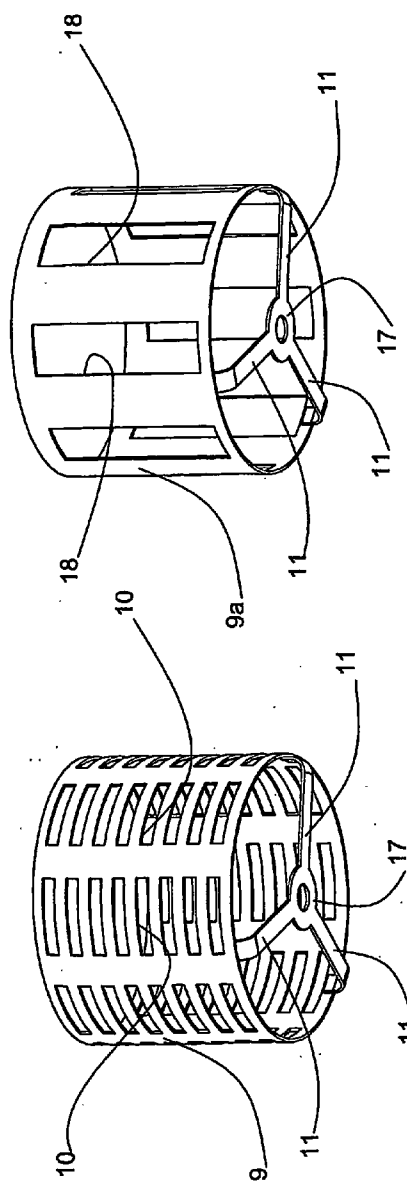


Fig. 9

Fig. 10

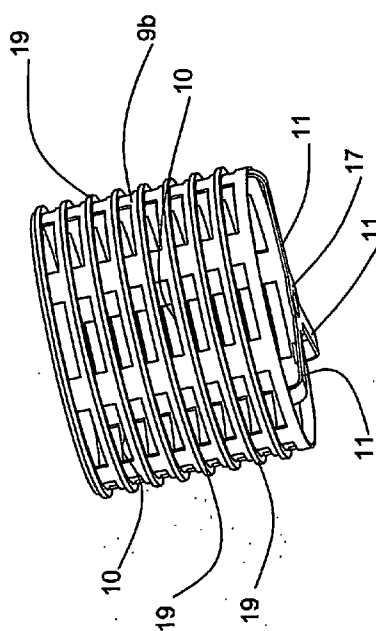


Fig. 11

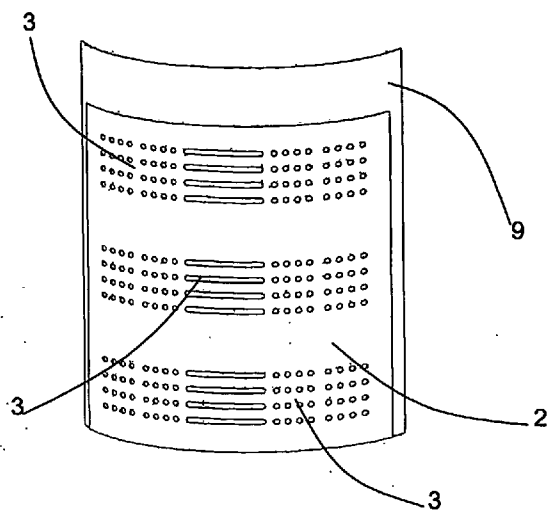


Fig. 9A

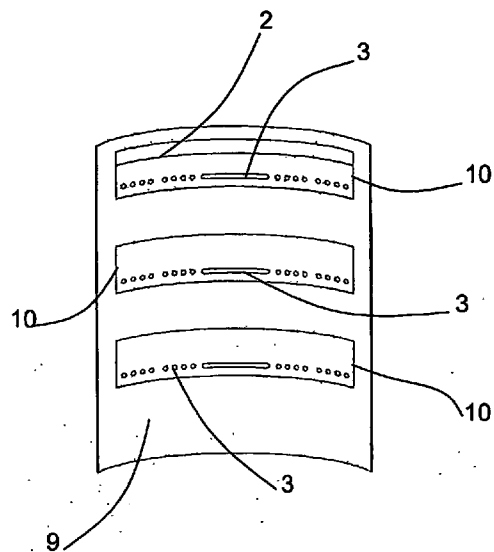


Fig. 9B

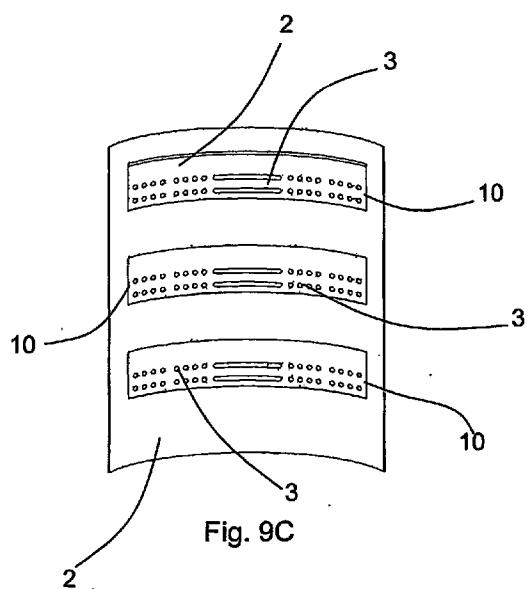


Fig. 9C

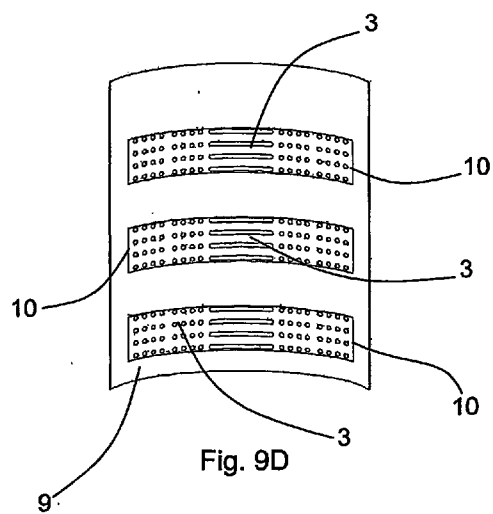


Fig. 9D

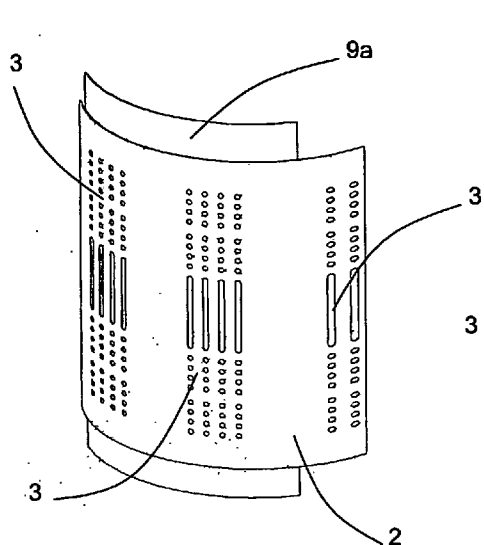


Fig. 10A

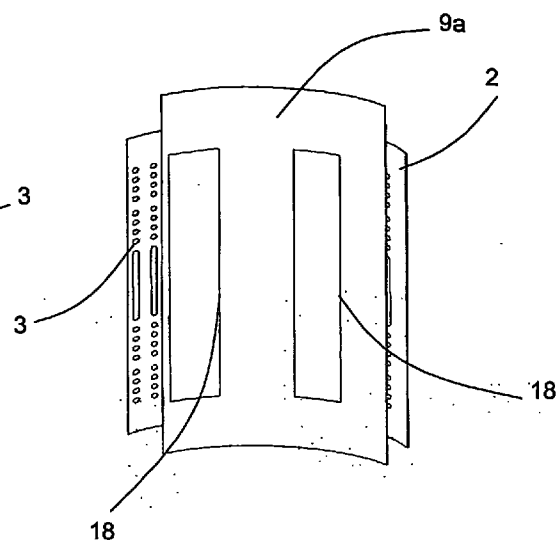


Fig. 10B

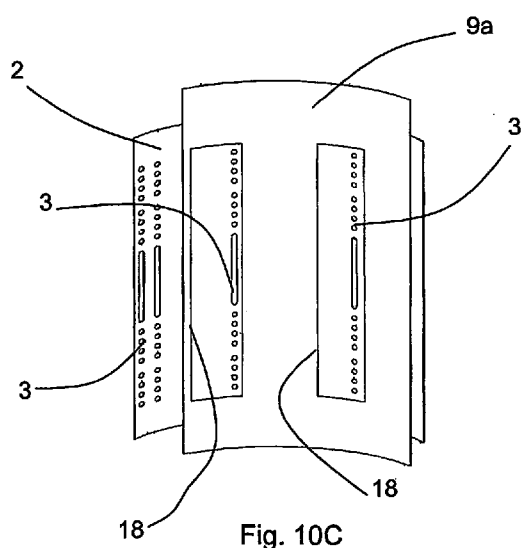


Fig. 10C

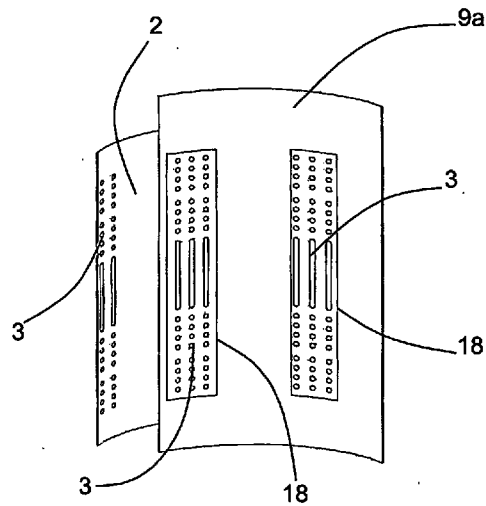


Fig. 10D

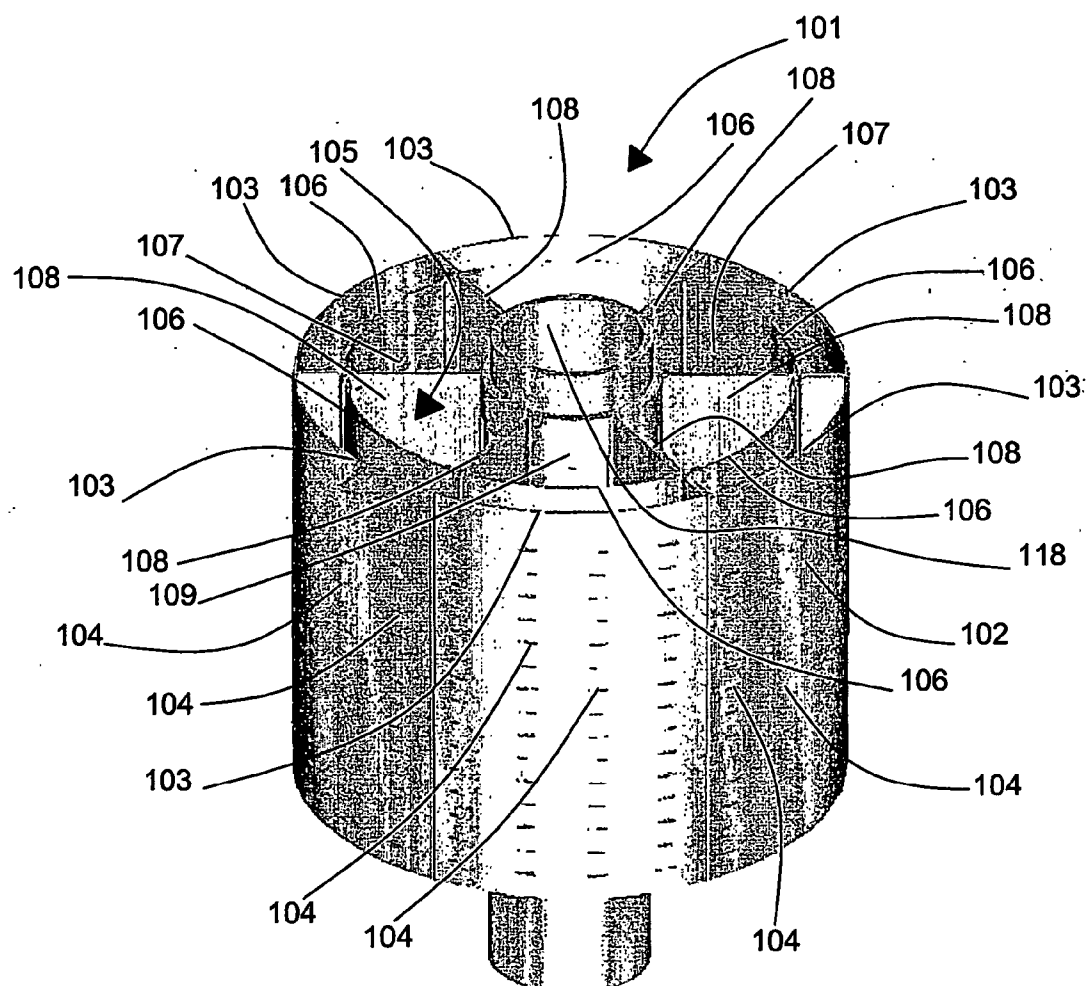


Fig. 12

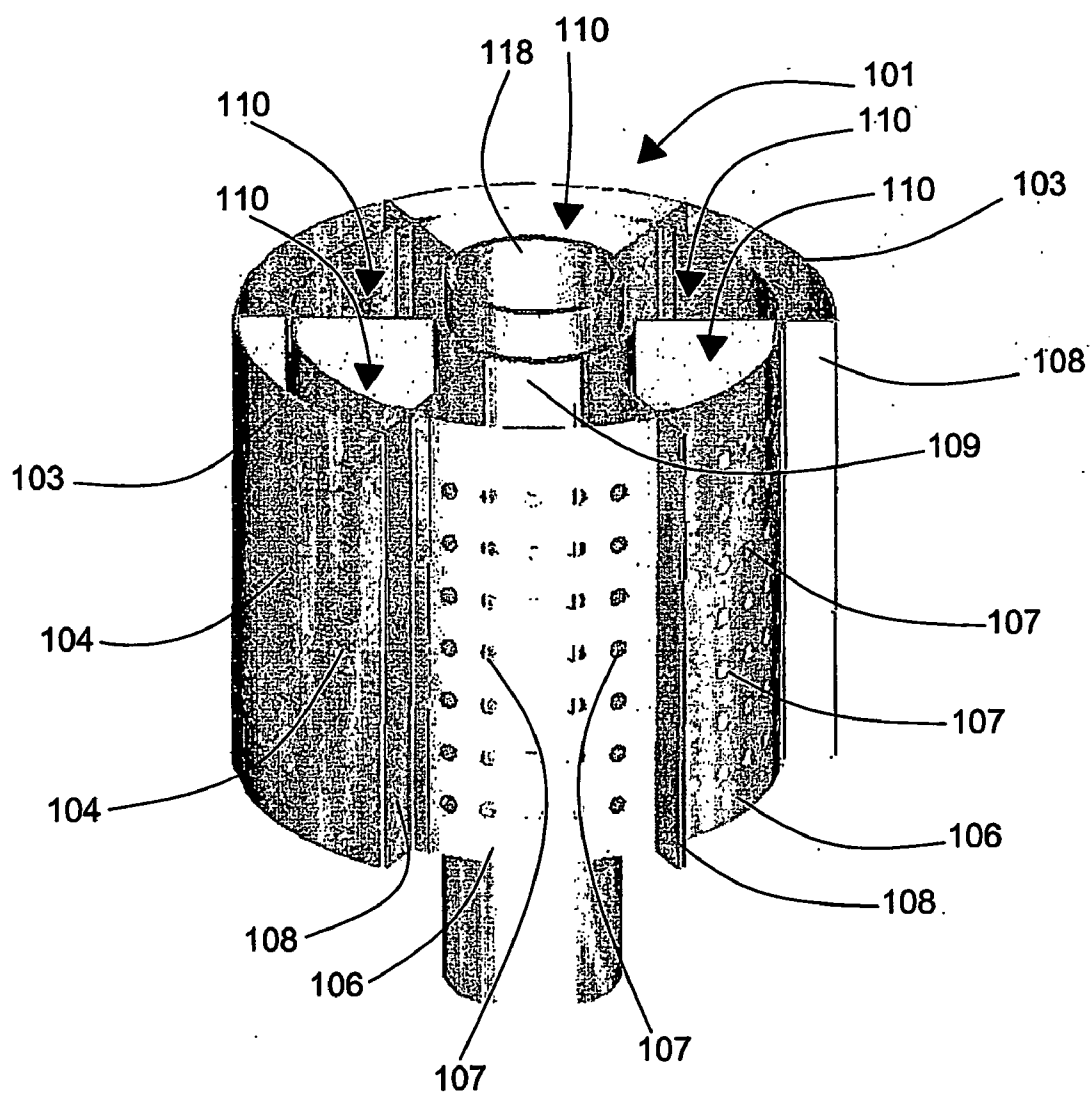
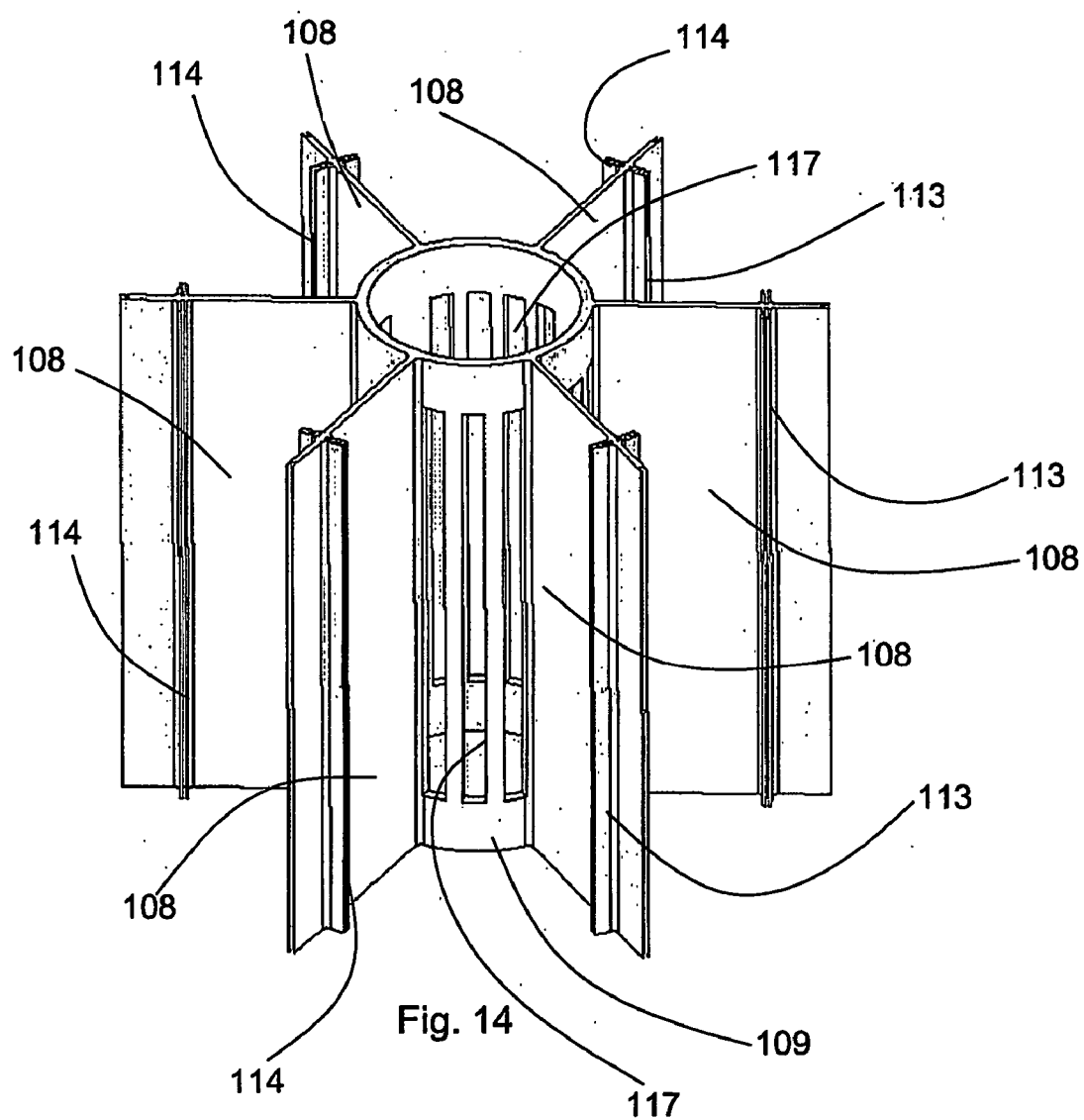
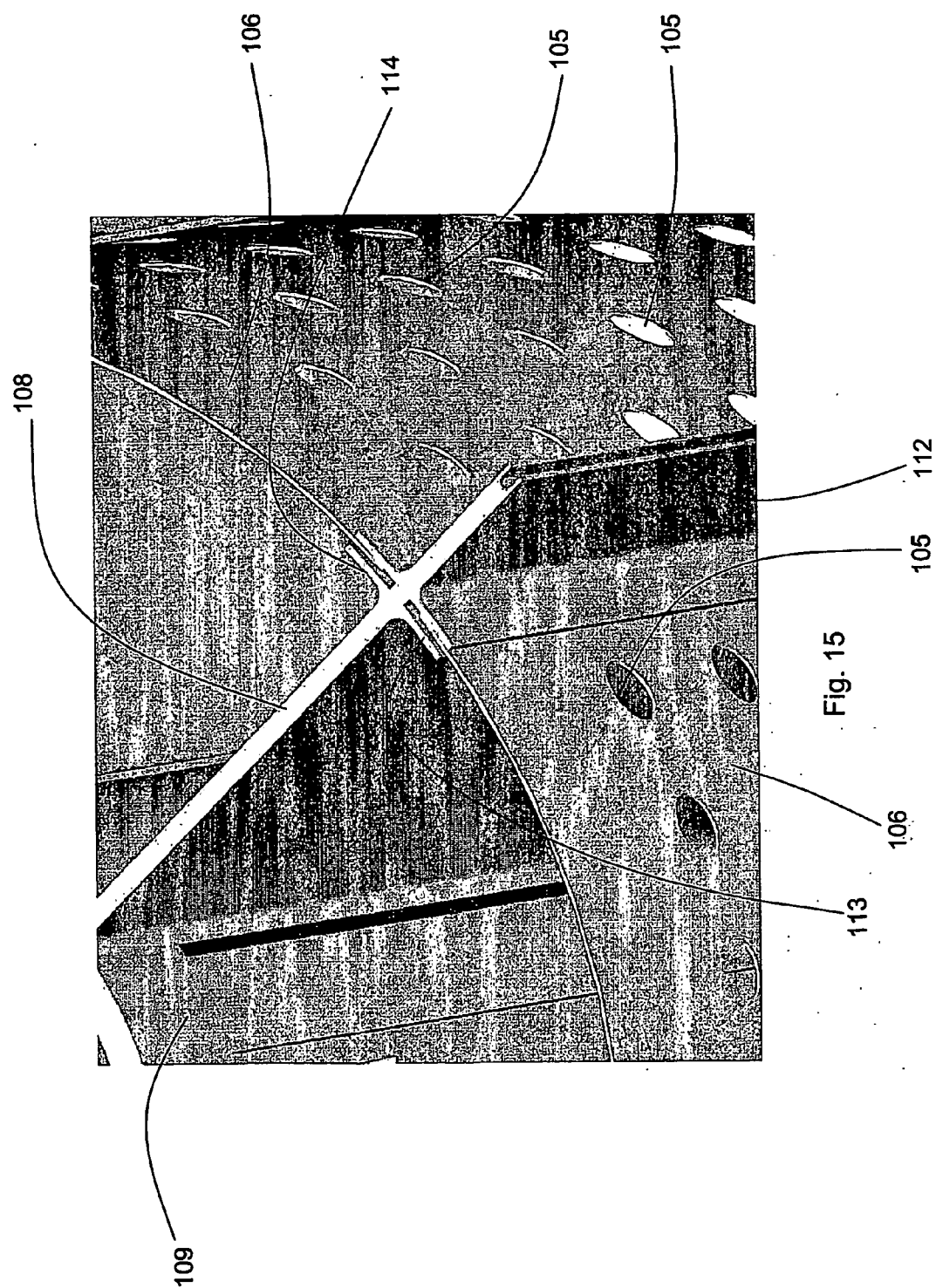
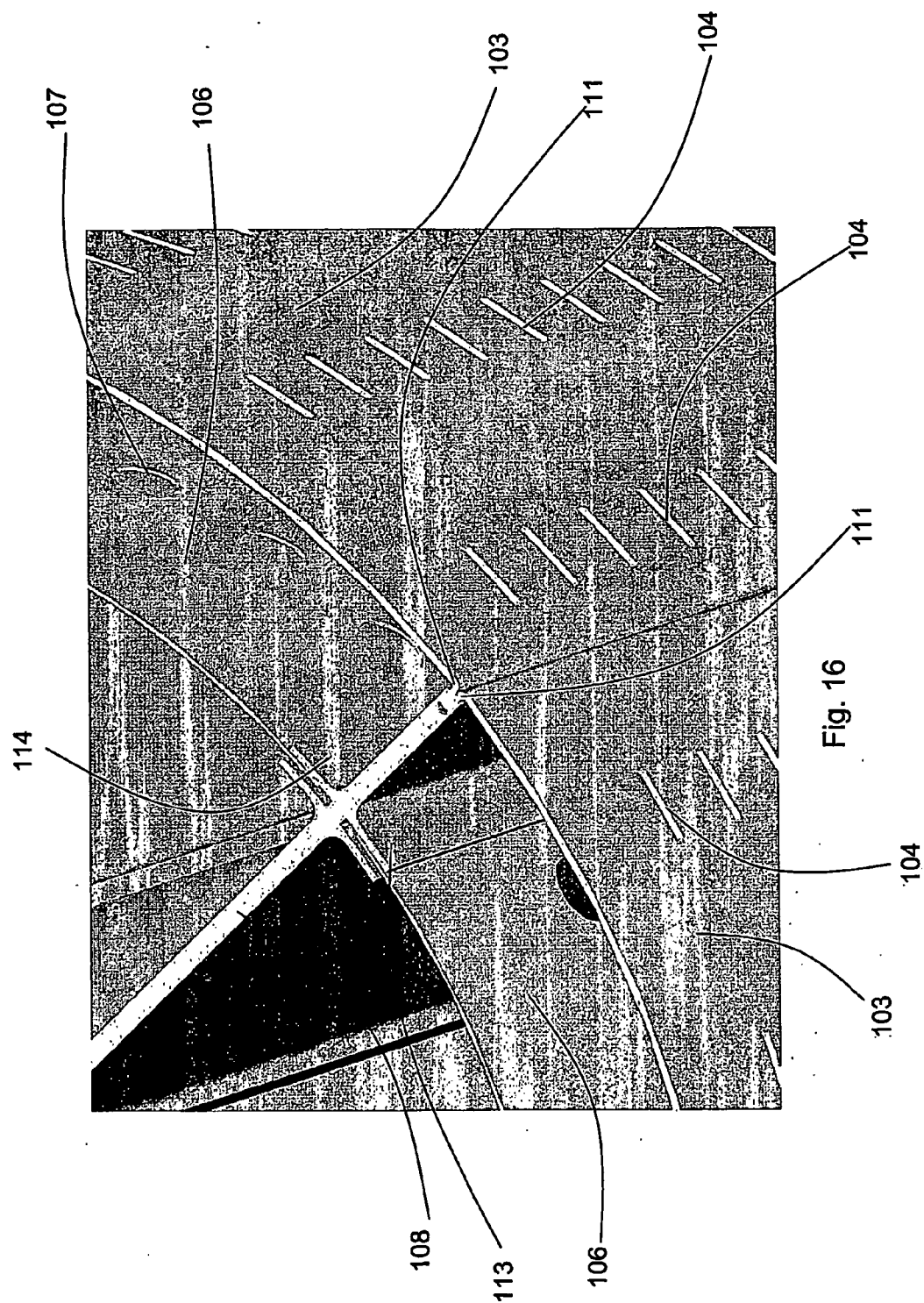


Fig. 13







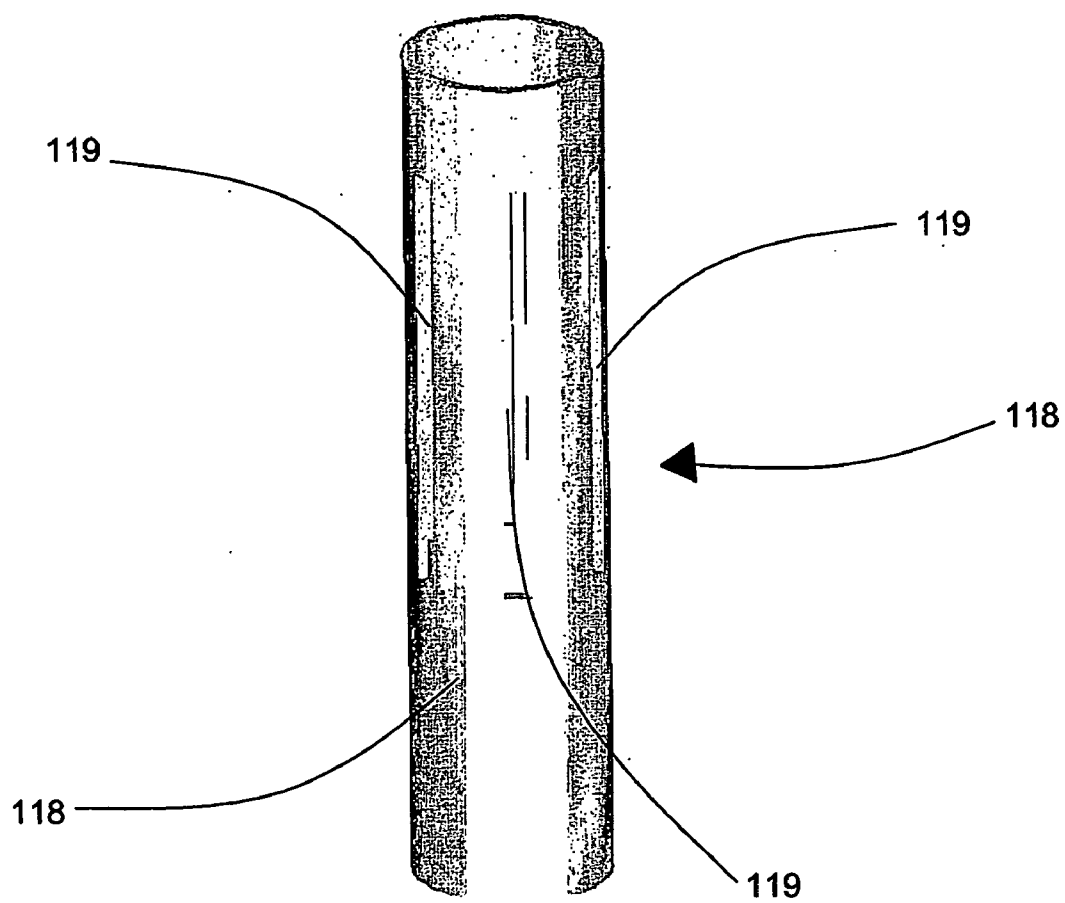


Fig. 17

ADJUSTABLE BURNER

[0001] The present invention relates to an adjustable burner, in other words a burner wherein the power supplied during operation can be varied within wide limits.

[0002] In adjustable burners known from the prior art there is the problem that during operation at power noticeably below nominal maximum power the flames generated by combustion of the mixture of air and fuel conveyed to the burner tend to flatten out on the surface of the diffuser with consequent overheating of the diffuser.

[0003] To overcome this drawback, in the prior art the diffuser of an adjustable burner is made from materials suitable for withstanding particularly high temperatures without getting damaged, which however has the consequence of significantly increasing the cost of the burner.

[0004] Another problem that occurs in burners known from the prior art is unequal distribution of the flow of mixture of air and fuel at the outlet openings of the mixture that are made in the diffuser of the burner. In fact, the flow of mixture tends to be greater at the openings that are nearest the outlet of the Venturi tube and less at the openings that are more distant from the outlet. This gives rise to the risk of unstable flames and adjustment difficulties.

[0005] In the prior art this drawback is remedied by providing the burner with a distributing element of the flow of mixture arranged inside the body of the burner and interposed between the Venturi tube and the body of the burner. This flow-distributing element is also provided with openings, generally distributed along its entire surface. The mixture that leaves the Venturi tube, before reaching the outlet openings made in the diffuser of the burner, must pass through the openings of the diffusing element. This causes redistribution of the flow of mixture, which is thus substantially uniform at the outlet openings.

[0006] The distributing elements known from the prior art are connected to the body of the burner by means of welding and are positioned by means of an aligning pivot. Fixing by means of welding and positioning by means of an aligning pivot give rise to a noticeable increase of time and cost in producing the burner.

[0007] The object of the present invention is to provide an adjustable burner in which the phenomenon of flattening of the flames on the diffuser is absent or at least greatly reduced in such a way as to make it possible to make the diffuser without using materials that are highly resistant to temperature.

[0008] A further object of the present invention is to provide a burner in which there is a substantially uniform distribution of the flow of mixture at the outlet openings thereof that are made in the diffuser of the burner, achieving all this with moderate outlay of cost and time.

[0009] According to the present invention a burner is provided that may be fed with a mixture of air and fuel, comprising a burner body provided with a diffuser in the surface of which openings are made for the exit of the mixture delivered into the body of the burner, distributing means for distributing the flow of mixture, said distributing means being inserted inside the body of the burner characterized in that the distributing means comprises a regulating element for regulating the flow of said mixture, said regu-

lating element being provided with further openings for the transit of the mixture, said regulating element being movable inside the body of the burner.

[0010] Owing to the fact that the regulating element is movable inside the body of the burner, it is possible to vary the reciprocal position of the openings made in the diffuser of the burner and of the further openings made in the body of the regulating element. This enables the overall section of the outlet placed at the disposal of the mixture to be varied in such a way that as the power supplied by the burner varies, i.e. as flow of mixture to the burner varies, it is possible to maintain an outflow speed of the mixture that prevents flattening on the diffuser of the burner of the flames produced by the combustion of the mixture.

[0011] This condition can be maintained within a wide power range, for example between 20% and 100% of the nominal power of the burner.

[0012] Owing to the invention it is thus possible to create an adjustable burner within a wide power range without having to resort to materials that are highly resistant to heat, thereby noticeably reducing manufacturing costs.

[0013] According to a further aspect of the present invention, there is provided a burner that may be fed with a mixture of air and fuel, comprising a burner body provided with a diffuser in the surface of which openings are made for the exit of the mixture delivered into the body of the burner, distributing means inserted inside the body of the burner, said distributing means comprising a distributing element provided with further openings for the transit of the mixture, characterized in that the distributing element is connected to the body of the burner by means of mechanical interference fit.

[0014] The mechanical interference fit between the distributing element and the body of the burner enables rapid, simple and cheap assembly of the burner, with noticeable time and production cost savings.

[0015] According to a yet further aspect of the present invention there is provided a burner that may be fed with a mixture of air and fuel, comprising a burner body in the surface of which openings are made for the exit of the mixture delivered into the body, characterized in that the burner body is subdivided into a plurality of sections, each one of which may be fed independently of the others.

[0016] The invention will now be disclosed by way of non-limiting example with reference to the attached drawings, in which:

[0017] FIG. 1 is an elevation view of a burner according to the invention;

[0018] FIG. 2 is the section II-II in FIG. 1;

[0019] FIG. 3 is a partially fragmentary perspective view of a first version of a burner according to the invention;

[0020] FIG. 4 is a view of the burner in FIG. 3, slightly rotated in relation to the view in FIG. 3;

[0021] FIG. 5 is a schematic section of the burner in FIGS. 3 and 4;

[0022] FIG. 6 is a plan view of a detail of the burner in FIGS. 3 to 5;

[0023] FIG. 7, is a plan view of a first variation of the detail in FIG. 6;

[0024] FIG. 8 is a plan view of a second variation of the detail in FIG. 6;

[0025] FIG. 9 is a perspective view of a first embodiment of the regulating element of the first variation of a burner according to the invention;

[0026] FIGS. 9a-9d schematically illustrate the operation of the regulating element in FIG. 9;

[0027] FIG. 10 is a perspective view of a second embodiment of the regulating element of the first variation of a burner according to the invention;

[0028] FIGS. 10a-10d schematically illustrate the operation of the regulating element in: FIG. 10;

[0029] FIG. 11 is a perspective view of a third embodiment of the regulating element of the first variation of a distributor according to the invention;

[0030] FIG. 12 is a perspective view of a second variation of a burner according to the invention;

[0031] FIG. 13 is a partially fragmentary view like the one in FIG. 12;

[0032] FIG. 14 is a perspective view of the internal part of the burner in FIGS. 12 and 13;

[0033] FIG. 15 is an enlarged detail of FIG. 13;

[0034] FIG. 16 is an enlarged detail of FIG. 12;

[0035] FIG. 17 is a perspective view of a distributing element of the burner in FIGS. 12 and 13.

[0036] In FIGS. 1 and 2 there is illustrated a burner 1 according to the invention comprising a burner body 2 in the surface of which openings 3 are made through which a mixture of air and fuel can exit that was delivered into the body 2 of the burner 1 by means of a Venturi tube 6.

[0037] Inside the body 2 of the burner 1 a distributing element 4 is arranged, for example having a cylindrical shape, interposed between the Venturi tube 6 and the body 2 of the burner 1. The distributing element 4 is provided with a series of further openings 5 through which the mixture of air and fuel delivered into the burner 1 by means of the Venturi tube can pass before exiting from the openings 3 made in the body 2 of the burner 1.

[0038] The distributing element 4 is used to level the flow of mixture that reaches the openings 3 of the body 2 of the burner 1, which, in the absence of the distributor, would be greater at the openings 3 that are nearer the outlet 6a of the Venturi tube 4 and less at the openings that are further from the outlet 6a.

[0039] The distributing element 4 is centered inside the body 2 of the burner 1 on two projections: an upper projection 7 and a lower projection 8 that protrude inside the body 2 of the burner 1 and respectively form an upper and a lower base of the body 2. The lower base 8 is provided with a central opening 8a for the passage of the Venturi tube 6.

[0040] For secure alignment and positioning of the distributing element 4 inside the body 2 of the burner 1 the coupling between the distributing element 4 and at least one

of the projections 7, or 8, is a mechanical interference fit, the other projection 7, or 8, acting as an centering element.

[0041] FIGS. 3 to 9D illustrate a second embodiment of a burner 1 according to the invention, in which between the distributing element 4 and the body 2 of the burner 1 there is interposed a regulating element 9 equipped with openings 10 distributed along its entire surface, the function of the regulating element 9 is to vary the transit section of the mixture between the inside and the outside of the body 2, to adjust the speed of flow of the mixture conveyed to the openings 3 made on the diffuser of the burner 1. The regulating element 9 is associated with moving means 12, 13 suitable for causing a shift of the regulating element 9 in relation to the body 2 of the burner 1 and to the distributing element 4.

[0042] The shift comprises a translation of the regulating element 9 in relation to the body 2 of the burner 1 and to the distributing element 4, in a direction parallel to a longitudinal axis of the body 2 of the burner.

[0043] For this purpose, the regulating element 9 is connected by means of a plurality of arms 11, for example three arms 11 staggered by 120° in relation to one another, to an annular element 17 fixed to the shaft 12 of a linear actuator 13, that controls translation of the regulating element 9.

[0044] The shift of the regulating element 9 causes a variation in the relative positions of the openings 3 of the body 2 of the burner 1, of the openings 5 of the distributing element 4 and of the openings 10 of the regulating element 9, thus varying the transit section available for the exit of the mixture of air and fuel delivered into the burner 1.

[0045] In particular, this transit section will decrease as the operating power of the burner decreases, in such a way that the speed of exit of the mixtures is maintained at a value that is sufficient to prevent flattening of the flames on the surface of the body 2 of the burner, and will increase as operating power increases in such a way as to maintain the speed of exit of the mixture below the value that causes separation of the flames from the surface of the body 2 of the burner 1.

[0046] FIGS. 9A-9D illustrate the operation of the further distributing element 9. In particular, FIGS. 9B, 9C and 9D illustrate three different positions of the regulating element 9 in relation to the body 2 of the burner. FIG. 9B refers to a position of the regulating element 9 in relation to a condition of low-power operation of the burner 1, FIG. 9C refers to a position of the regulating element 9 in relation to a condition of medium-power operation of the burner 1 and FIG. 9D refers to a position of the regulating element 9 in relation to a condition of maximum-power operation of the burner 1.

[0047] FIGS. 6, 7 and 8 are plan views of the regulating element 9, in three different embodiments, wherein the regulating element 9 is provided with anti-stopping means 14, 15, 16, suitable for preventing the regulating element 9 from stopping during its translation against the internal surface of the body 2 of the burner 1.

[0048] In fact, the body 2 of the burner 1 normally consists of a metal sheet curved into a cylindrical shape, with a joint, for example a weld, along a generatrix of the cylindrical body 2 of the burner 1. The joint, even if it has been made with precision, inevitably always protrudes inside the body

2 of the burner 1. On the other hand, the radial play between the body 2 of the burner 1 and the regulating element 9 must be very small to prevent, or minimise, leaks of mixture, which would make it impossible or at least very difficult to adjust the speed of exit of the mixture to variations of the space for the transit of the mixture.

[0049] The value of this play is as great as the protrusion towards the inside of the body 2 of the burner 1 of the joint line, which could thus interfere with translation of the regulating element 9.

[0050] To avoid the risk of stopping, the regulating element 9 is provided with said anti-stopping means 14, 15, 16 that is suitable for preventing contact between the external surface of the regulating element 9 and the joint during movement of the regulating element.

[0051] FIGS. 6, 7 and 8 show some examples of embodiments of the anti-stopping means 14, 15, 16.

[0052] In FIG. 6 the anti-stopping means takes the form of an opening 14 along a generatrix of the further regulating element 9, which is positioned at the junction of the body 2 of the burner 1, in such a way that during movement of the regulating element 9 there is no interference with the joint.

[0053] In FIG. 7 the anti-stopping means take the form of a recess 15 that in turn extends along a generatrix of the regulating element 9 and is positioned at the junction of the body 2 of the burner 1.

[0054] In FIG. 8 the anti-stopping means take the form of a joint that extends along a generator of the regulating element 9 and is provided with a recess 16, which is positioned at the junction of the body 2 of the burner 1.

[0055] FIG. 10 shows a second embodiment of the further distributing element according to the invention.

[0056] In this second embodiment, the regulating element 9a is provided with slits 18 arranged in a direction parallel to the generatrices of the surface of the regulating element 9a. In this case, the corresponding movement of the regulating element 9a in relation to the body 2 of the burner will be a rotation movement around a longitudinal axis of the body 2, rather than a translation movement.

[0057] FIGS. 10A-10D show the operation of the regulating element 9a. In particular, FIGS. 10B, 10C and 10D show three different positions of the regulating element 9a in relation to the body 2 of the burner. FIG. 10B refers to a position of the regulating element 9a in relation to a low-power operating condition of the burner 1, FIG. 10C refers to a position of the regulating element 9a in relation to a medium-power operating condition of the burner 1 and FIG. 10D refers to a position of the regulating element 9a in relation to a maximum-power operating condition of the burner 1.

[0058] A third embodiment 9b of the regulating element is shown in FIG. 11. This third embodiment is similar, in terms of the arrangement and distribution of the slits 10, to the embodiment shown in FIG. 9, but differs from the latter inasmuch as it is provided with a series of seal rings 19, which are distributed at a substantially constant pitch along the entire length of the regulating element 9b and serve to prevent leaks of mixture between the regulating element 9b and the internal surface of the body 2 of the burner 1.

[0059] FIGS. 12 to 17 show a third embodiment of a burner 101 according to the invention comprising a body 102 with a cylindrical shape, subdivided into a plurality of sections 103 each one of which comprises a sector of a cylindrical surface. In each of the sections 103 openings 104 are made, for example in the form of slits, through which a mixture of air and fuel delivered into the body 102 of the burner 101 can exit.

[0060] Inside the body 102 of the burner 101 a distributing element 105 is arranged, having a function that is similar to that of the distributing element 4 disclosed above. The distributing element 105 also has a cylindrical shape and is arranged concentrically in relation to the cylindrical body 102 of the burner 101. Also the distributing element 105 is subdivided into a plurality of sections 106, each of which comprises a sector of a cylindrical surface and corresponds to one of the sections 103 of the body 102 of the burner 101. In each of the sections 106 of the distributing element 105 openings 107 are made for the transit of the mixture of air and fuel.

[0061] The sections 103 of the body 102 of the burner and the sections 106 of the distributing element 105 are fixed to a series of radial baffles 108, that lead away from a central hollow cylindrical support 109. The radial baffles 108 are preferably distributed at a substantially constant angular pitch.

[0062] The radial baffles 108, the sections 106 of the distributing element 105 and the sections 103 of the body 102 of the burner 101 define a plurality of burner sectors 110, separated from one another.

[0063] The sections 103 of the body 102 of the burner 101 are provided at their ends with edges 111 folded towards the inside of the body 102 (FIG. 16). Pairs of edges 111 of adjacent sections 103 are inserted into grooves 112 made at the external end of each radial baffle 108 to fix the sections 103 of the body 102 to the radial baffles 108. The grooves 112 extend in a direction substantially parallel to the longitudinal axis of the hollow cylindrical support 109.

[0064] Each radial baffle 108 (FIG. 15) is furthermore provided on both its sides, at a certain distance from its external end, with a pair of fins 113, 114 protruding in a substantially perpendicular direction from the baffle 108 and defining between them a corresponding groove 115, 116, in which an end of a section 106 of the distributing element 105 is insertable and immobilisable. In this way, the sections 106 of the distributing element 105 are fixed to the baffles 108. The fins 113, 114 and the grooves 115, 116 extend in a direction substantially parallel to the longitudinal axis of the hollow cylindrical support 109.

[0065] The central hollow cylindrical support 109 is provided with groups of openings 117, for the transit of the mixture of air and fuel. Each group of openings 117 communicates with one of the burner sectors 110: the number of groups of openings 117 therefore coincides with the number of sectors 110 in which the body 102 of the burner 101 is subdivided. The openings 117 have for example the shape of slits, the greater side of which extends in a direction parallel to the generatrices of the cylindrical support 109.

[0066] Inside the cylindrical support 109 there is inserted a regulating element 118 through which the mixture of air and fuel is delivered into the body 102 of the burner 101.

The regulating element **118** comprises a hollow cylindrical body, in the surface of which openings **119** are made, for example in the shape of slits, the greater side of which extends in a direction substantially parallel to the generatrices of the regulating element **118**.

[0067] The regulating element **118** may rotate in relation to the cylindrical support **109**, the rotation of the regulating element **118** in relation to the cylindrical body **109** being achieved by rotating actuating means that is not shown.

[0068] The slits **119** of the regulating element **118** are arranged in such a way that, depending on the angular position of the regulating element **118** in relation to the cylindrical support **109**, they coincide with one or more groups of slits **117** of the cylindrical support **109**. In this way, the mixture delivered into the regulating element **118** supplies one or more sectors **110** of the body **102** of the burner. The operating power of the burner **101** can therefore be adjusted by varying the number of the sectors **110** supplied by the mixture of air and fuel.

[0069] At maximum nominal operating power, the angular position of the distributing element **118** in relation to the cylindrical support **109** will be chosen in such a way that all the sectors **110** of the burner **101** are supplied whilst at operating power below nominal maximum power the angular position of the distributing element **118** will be chosen in such a way that only one part of the sectors **110** of the burner **101** is supplied.

[0070] For example, if the body **102** of the burner **101** is subdivided into six sectors, as shown in FIGS. **12** to **14**, it is possible to provide three basic operating conditions: a first condition with maximum power deliverable by the burner **101** the same as the nominal power of the burner, in which all six sectors **110** are supplied, a second condition with maximum deliverable power corresponding to $\frac{2}{3}$ of nominal power, in which four sectors **110** are supplied, whilst the remaining two sectors **110** are not supplied, and a third condition, with maximum deliverable power corresponding to $\frac{1}{3}$ of nominal power, in which only two sectors **110** are supplied, whilst the other four sectors **110** are not supplied. Within these operating conditions, the power delivered by the burner **101** can be modulated by adjusting the fuel supply until the power delivered is reduced to about half the maximum power deliverable by the burner **101** in that condition, i.e. without the risk that flattening of the flames on the surface of the body **102** of the burner **101** occurs.

[0071] In this way, owing to the invention, it is possible to modulate the power delivered by the burner **101** from nominal maximum power to about $\frac{1}{6}$ of nominal maximum power without this involving the risk of flattening of the flames on the surface of the body **102** of the burner with consequent overheating thereof.

[0072] In one version that is not shown of the third embodiment of the burner according to the invention disclosed above the sections **110** are supplied independently of one another with the mixture of air and fuel, by respective supply means. This mixture of air and fuel is delivered into each of the sections **110** in the space defined between the hollow cylindrical support **109**, a pair of radial baffles **108**, a respective section **106** of the distributing element **105** and a respective section **103** of the body **102**.

[0073] In the practical embodiment, the materials, dimensions and parts may be different from those shown but be

technically equivalent to them without thereby falling outside the legal scope of the present invention.

1-48. (canceled)

49. A burner supplyable with a mixture of air and fuel, comprising a burner body provided with a diffuser in the surface of which openings are made for the exit of said mixture delivered into the body of the burner, a distributing device inserted inside said body of the burner, said distributing device comprising a distributing element centered inside said burner body, wherein said distributing device further comprises a regulating element interposed between said distributing element and said diffuser, said regulating element being provided with further openings for the transit of said mixture and being movable inside said body of the burner.

50. The burner according to claim 49, wherein said body of the burner has a substantially cylindrical shape and said regulating element has a substantially cylindrical shape and is provided, on its side surface, with said further openings.

51. The burner according to claim 49 wherein said regulating element is movable in an axial direction with respect to said body of the burner.

52. The burner according to claim 49, wherein said regulating element is angularly movable with respect to said body of the burner.

53. The burner according to claim 49, wherein said regulating element is associated with a moving device.

54. The burner according to claim 51, wherein said regulating element is connected by means of a plurality of arms to a shaft of a linear actuator.

55. The burner according to claim 52, wherein said regulating element is connected by means of a plurality of arms to a shaft of a rotating actuator.

56. The burner according to claim 54, wherein said linear actuator is driven by a stepping motor.

57. The burner according to claim 55, wherein said rotating actuator is driven by a stepping motor.

58. The burner, according claim 50, wherein said further openings have the shape of slits with a greater side placed in a direction substantially perpendicular to generatrices of said substantially cylindrical regulating element.

59. The burner, according to claim 50, wherein said further openings have the shape of slits with a greater side placed in a direction substantially parallel to generatrices of said substantially cylindrical regulating element.

60. The burner according to claim 50, wherein said substantially cylindrical regulating element is provided with seal elements.

61. The burner according to claim 60, wherein said seal elements comprises seal rings arranged on the side surface of said regulating element.

62. The burner according to claim 50, wherein said regulating element is provided with an anti-stopping element.

63. The burner according to claim 62, wherein said anti-stopping element comprises an opening that extends along a generatrix of said regulating element.

64. The burner according to claim 62, wherein said anti-stopping element comprises a recess of the side surface of said regulating element, said recess extending along a generatrix of said side surface.

65. The burner according to claim 62, wherein said anti-stopping element comprises a joint, which extends along a generatrix of said regulating element and is provided with a recess.

66. The burner according to claim 49, wherein said distributing element is coupled with the body of the burner by means of mechanical interference fit.

67. The burner according to claim 66, wherein the body of the burner comprises an upper projection and a lower projection that protrude inside the body and respectively constitute an upper base and a lower base of the body, said lower projection is provided with a central opening for the passage of a Venturi tube.

68. The burner according to claim 67, wherein said distributing element is coupled mechanically with interference with one of said two lower or upper projections, the other of said two projections acting as a centering element for said distributing element.

69. A burner suppliable with a mixture of air and fuel, comprising a burner body in the surface of which openings are made for the exit of said mixture delivered into said body, wherein said body is subdivided into a plurality of sectors, each one of which is suppliable independently of the other sectors.

70. The burner according to claim 69, wherein the sectors of said body are supplied independently of one another with said mixture of air and fuel, by respective supply devices.

71. The burner according to claim 69, wherein said body has a substantially cylindrical shape and said sectors each have substantially the shape of a cylindrical sector.

72. The burner according to claim 71, wherein said sectors all have substantially the same angular width.

73. The burner according to claim 69, wherein said body comprises a plurality of sections, each one of which corresponds to a respective sector.

74. The burner according to claim 73, wherein each of said sections is provided with openings for the transit of said mixture of air and fuel.

75. The burner according to claim 69, further comprising a distributing element arranged within said body.

76. The burner according to claim 75, wherein said distributing element has a substantially cylindrical shape and is substantially concentric to said body.

77. The burner according to claim 75, wherein said distributing element comprises a plurality of sections, each one of which corresponds to a respective sector of said body.

78. The burner according to claim 77, wherein each of said sections is provided with openings for the transit of said mixture of air and fuel.

79. The burner according to claim 77, wherein said sections of the body and said sections of the distributing element are fixed to a series of radial baffles, that lead away from a central hollow cylindrical support.

80. The burner according to claim 79, wherein said radial baffles are distributed at a substantially constant angular pitch.

81. The burner according to claim 79, wherein each of said radial baffles is provided at its external end with a groove extending in a direction substantially parallel to a longitudinal axis of said hollow cylindrical support.

82. The burner according to claim 81, wherein each of said sections of said body is provided with edges folded towards the inside of the body, said edges being insertable into said grooves.

83. The burner according to claim 79, wherein each radial baffle is provided on both sides, at a certain distance from its external end, with a pair of fins protruding in a substantially perpendicular direction from the baffle and defining between them a corresponding groove.

84. The burner according to claim 83, wherein said fins and said grooves extend in a direction substantially parallel to the longitudinal axis of the hollow cylindrical support.

85. The burner according to claim 83, wherein said grooves are suitable for receiving an end of a respective section of the distributing element.

86. The burner according to claim 79, wherein each of said sectors is defined by a pair of adjacent radial baffles, by a respective section of the body fixed to said pair of radial baffles and by a respective section of the distributing element also fixed to said pair of radial baffles.

87. The burner according to claim 79, wherein said hollow cylindrical support is provided with groups of openings for the transit of said mixture of air and fuel, each group of openings corresponding to one of said sectors of the body.

88. The burner according to claim 87, wherein said openings have the shape of slits a greater side of which extends in a direction parallel to generatrices of the cylindrical support.

89. The burner according to claim 87, wherein inside said cylindrical support there is inserted a regulating element through which said mixture of air and fuel is delivered into said body, said regulating element being provided with openings for the transit of said mixture.

90. The burner according to claim 89, wherein said regulating element comprises a hollow cylindrical body, in the surface of which said openings are made, said hollow cylindrical body being able to rotate in relation to said hollow cylindrical support.

91. The burner according to claim 90, wherein said openings have the shape of slits, a greater side of which extends in a direction substantially parallel to generatrices of the regulating element.

92. The burner according to claim 90, wherein said openings are arranged in such a way that, depending on the angular position of the regulating element in relation to the hollow cylindrical support, they come to coincide with one or more groups of openings of the cylindrical support.

93. The burner according to claim 89, wherein the angular position of said regulating element in relation to said hollow cylindrical support determines the number of sections of the body that are supplied with said mixture of air and fuel.

94. The burner according to claim 89, wherein the sections of said body are supplied independently of one another with said mixture of air and fuel, by respective supply devices.

95. The burner according to claim 94, wherein said mixture of air and fuel is delivered into each of said sections in a space defined between said hollow cylindrical support, a pair of radial baffles, a respective section of the distributing element and a respective section of the body.

96. A burner suppliable with a mixture of air and fuel, comprising a burner body provided with a diffuser in the surface of which openings are made for the exit of said

mixture delivered into the body of the burner, a distributing element inserted inside said body of the burner, said distributing element being provided with further openings for the transit of said mixture, wherein said distributing element is coupled with the body of the burner by means of a mechanical interference fit.

97. The burner according to claim 96, wherein said body comprises an upper projection and a lower projection that protrude inside the body and respectively constitute an upper

base and a lower base of the body, said lower projection is provided with a central opening for the passage of a Venturi tube.

98. The burner according to claim 97, wherein said distributing element is mechanically coupled by means of an interference fit with one of said two lower or upper projections, the other of said two projections acting as an aligning element for said distributing element.

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