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(54) **Adapter for pipes for gas devices**

Zwischenstück für Rohre von Gasvorrichtungen

Piece intermediaire pour tuyaux de dispositifs à gaz

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Description

[0001] The invention relates to an adapter for use in pipes or tubes of gas devices, particularly gas discharge pipes, particularly in combination with combustion air supply pipes, that concentrically engage about the gas discharge pipes in order to form an annular air channel therewith, as described in the preamble of claim 1.

[0002] Such adapters are used to couple supply pipes and discharge pipes of gas devices to the pipes to and from a discharge structure. The location of the adapter may in principle be anywhere between the gas device and the discharge structure in horizontal or vertical pipe portions. The adapter will often be arranged near the gas device, connecting to the supply and discharge passages provided in said gas device.

[0003] Such adapters may also be formed for forming a transition between pipes of different diameters.

[0004] Adapters may furthermore be provided with a condensation interception and condensation drain for condensation that flows along the inner surface of the gas discharge pipe and may not end up in the boiler.

[0005] Known adapters have an inner pipe adapter including condensation interception and condensation drain, to which a connection pipe is integrally formed that axially protrudes a length from an outer pipe adapter, which has the shape of a casing. The condensation interception is an annular channel to which a radially extending drain pipe has been connected, which extends through a hole in the casing and to which a further pipe or tube can be connected. There are at least to embodiments, with connection pipes that are provided with a connection end for accommodation of the gas discharge pipe at the boiler side and with a connection end for accommodation by the gas discharge pipe at the boiler side, respectively. Which one is needed depends on the embodiment of the boiler in question, particularly the gas discharge pipe accommodated therein. Said gas discharge pipe usually ends at a location within the housing of the boiler, which can be reached through a hole in the housing wall onto which the casing can be attached. The hole can be bounded by the material of the housing wall itself, or by a combined flange/collar, in which the flange has been attached to the housing wall and the collar forms a means for connection to the casing. Casing and inner pipe adapter are placed as an assembly, in which the fitter should ensure a good connection of the connection pipe to the gas discharge pipe situated in the boiler, which may be difficult due to lack of a good overview.

[0006] It is an object of the invention to improve on this.

[0007] From one aspect the invention to that end provides an adapter. As described in claim 1.

[0008] In that way the connection pipe is actually uncoupled from the inner pipe adapter and in production and stocking one type of inner pipe adapter will suffice and the connection pipe can be produced separately in

two or more versions, in accordance with a male and female end or length. The fitting is then simplified as well, as the fitter is able to easily place the separate connection pipe on the gas discharge pipe situated in the boiler, and is then able to arrange the adapter with the outer pipe adapter to the boiler wall and the inner pipe adapter over the connection pipe in a controlled way. The inner pipe adapter can furthermore be easily inserted into the outer pipe adapter. The inner wall forming the passage thus having two functions.

[0009] It is noted that from Utility model 29705212 a connection assembly as described in the preamble of claim 1 is known for connection of an outer pipe and an inner pipe concentric therewith to connection pipe stubs in the boiler, said connection pipe stubs having the same diameter as the pipes. The connection for the outer pipe forms a shell provided with two flanges, which shell is put around the pipe stub at the boiler and around the lower end of the outer pipe, after which the flanges are riveted or fastened to each other with bolts. The connection for the inner pipe comprises a piece of pipe that is placed around the lower end of the inner pipe and around the upper end of a connection pipe, which connection pipe itself is accommodated with its lower end in the connection pipe stub on the boiler. Within the connection pipe a piece of pipe is placed that has been formed with a narrowing, a condensation drain pipe being placed at the level of the narrowing of the piece of pipe, said condensation drain pipe being radially extending outwardly through the connection shell for the outer pipe, which condensation drain drains condensation intercepted in the annular space between the narrowing of the piece of pipe and the connection pipe.

[0010] Preferably the passage is situated at the level of the condensation drain means, so that the length of the inner pipe adapter in boiler direction is as small as possible. Such an inner pipe adapter is easier to produce, particularly injection moulding is more feasible.

[0011] The upper end of the inner pipe adapter may form a pipe stub here, that changes into an outer wall of the annular channel.

[0012] In case the condensation drain means comprise a spout, that extends fittingly through an opening in the outer pipe adapter, it is preferred that at its circumference the spout is provided with an accommodation space for a sealing ring for sealing against the opening in the outer pipe adapter, so that suction of air from the direct surroundings of the boiler is counteracted. The accommodation space can be defined in a simple manner by two circumferential ribs on the spout that are consecutive in spout direction.

[0013] For improvement of the accuracy of placing the inner pipe adapter in a plane transverse to the pipe axis, it is preferred that near the spout the inner pipe adapter is provided with stop means for abutment against the inner surface of the outer pipe adapter, which stop means preferably are situated at the lower side of the spout.

[0014] Without diminishing the ease with which the inner pipe adapter can be placed in the outer pipe adapter too much, the short design of the inner pipe adapter makes it possible to provide it with one or more radial spacer means extending away from the spout, for engaging the inner surface of the outer pipe adapter. In this way the position of the inner pipe adapter can in a reliable way be at least almost perfectly concentric with respect to the outer pipe adapter, which facilitates the installation of the pipes.

[0015] It is preferred here that the inner pipe adapter is provided with a spacer member that extends diametrically away from the spout, and which is preferably provided with an inclined edge. As a result the insertion of the inner pipe adapter is facilitated, as well as the stability of the inner pipe adapter after placing.

[0016] Preferably positioning means are provided on the inner wall of the outer pipe adapter for positioning the spacer means in axial direction, so that the inner pipe adapter can also be correctly placed in axial direction in a reliable manner.

[0017] Further reliability in the placing of the inner pipe adapter is obtained when positioning means are provided on the inner wall of the outer pipe adapter for positioning the spacer means in circumferential direction.

[0018] Yet further reliability in the placing of the inner pipe adapter is obtained when the spacer means and the positioning means engage each other over a length in axial direction, so that tilting of the inner pipe adapter is counteracted.

[0019] From a further aspect the invention provides in an adapter having an annular condensation interception channel and connected spout, in which the bottom of the annular channel is inclined with respect to the centre line of the inner pipe adapter, in which the spout connects to the lowest point of the annular channel. The inclined bottom of the annular channel guarantees a smooth condensation drainage, in which it is not objectionable when the adapter is slightly obliquely tilted, in a direction away from the spout.

[0020] In one embodiment the lower ends of the inner pipe adapter and the outer pipe adapter have a diameter of 60 mm and 100 mm, respectively, and/or the upper ends of the inner pipe adapter and the outer pipe adapter have a diameter of 80 mm and 125 mm, respectively.

[0021] In a further embodiment of the adapter according to the invention the outer pipe adapter is provided with a flange member that is formed as a unity therewith, for attachment to a boiler housing.

[0022] Alternatively the outer pipe adapter is provided with a flange member that can be coupled thereto, for attachment to a boiler housing.

[0023] For ease of placing the flange member is provided with a circumferential series of attachment holes.

[0024] It is preferred that the inner pipe adapter and the outer pipe adapter have each been manufactured by means of injection moulding.

[0025] From a further aspect the invention provides an assembly of an adapter according to the invention and a connection pipe at boiler side, that is detachably and fittingly accommodated in the passage in the inner pipe adapter or adapter, respectively.

[0026] The invention will be elucidated on the basis of the exemplary embodiment shown in the attached drawings, in which:

Figure 1 shows a cross-section of an arrangement having an adapter assembly according to the invention;

Figure 2 shows a view in perspective of the adapter assembly of figure 1; and

Figure 3 shows the adapter assembly of figure 2, in exploded view.

[0027] Figure 1 shows the boiler or gas device of the closed type 1, in which a burner has been positioned that has not been further shown. The flue gas discharge and the combustion air supply are concentric with respect to each other here. In the upper wall 3 of the housing a passage has been made for the exchange of the gasses. The combustion air is sucked in downwards through the annular opening by the burner, and the flue gasses are discharged via a boiler-fixed piece of pipe 55, onto which in an indirect manner the adapter 2 has been arranged.

[0028] The adapter 2 comprises an outer casing 6 and an inner member 7 that defines a pipe-shaped passage 10.

[0029] The casing 6 has a lower portion 22, which in this example may have a diameter of 100 mm, which portion 22 changes into a wider upper portion 24 via a conically flaring portion 23, which upper portion 24 in this example may have a diameter of 125 mm.

[0030] The lower portion 22 is provided with a groove 28, which with protrusions 27 on a collar 5 of flange 4 may form a bayonet catch. The flange 4 is provided with holes 32 for attachment, for instance by means of screws, to the upper wall 3 of the boiler housing. In this way the casing 6 can easily be placed and attached on top of the opening in the upper wall 3.

[0031] As can be seen in figure 2 the conical portion 23 is at one location provided with a hole 40 for a condensation drain pipe 14 to be further discussed.

[0032] To the side that is diametrically opposite, just above the transition of the conical portion 23 to the upper portion 24, an accommodation space has been realised by means of two little ribs 20 extending in axial direction, for the edge 21 of a partition 19 yet to be discussed.

[0033] At the top the upper portion 24 is provided with an annular chamber 25 in which a sealing 26 that is known per se, is accommodated, which sealing is provided with an inclined radially inwardly extending lip. Said sealing 26 seals against the outside of an outer

pipe 30, which extends further towards the discharge structure (not further shown).

[0034] The inner part or condensation interception piece 7 has an upper portion 8 that is circle-cylindrical and at the upper end is provided with a radially opening annular chamber 9 for accommodation of a sealing ring 57. In this way an inner pipe is received in a sealing manner, which inner pipe also leads to the discharge structure that is not shown.

[0035] In the passage 10 an annular chamber 11 is also provided, in which a simple O-sealing ring 56 is accommodated. In it a separate piece of pipe 50 -adapted to the installation in question- can be accommodated in a sealing manner, adjustable in axial direction. This piece of pipe 50 has a widened lower portion 52, in which an annular chamber 53 is provided that opens radially to the inside, for a sealing ring 54. In this way the boiler-fixed piece of pipe 55 can be received in a sealing manner.

[0036] The condensation interception piece has a collar 12 which is a continuation of the passage 10. Said collar together with the wall portion 8 defines an annular channel 13 for the interception of condensation that flows downwards along the inner surface of the inner pipe 29 and may not end up in the boiler 1. The bottom 31 of the annular channel runs inclined, and such that the highest point is shown in figure 1 at the left-hand side, and the lowest point is shown at the location of the entrance of the spout 14. The inclined bottom is schematically shown by means of a dotted line S.

[0037] At its circumference the spout 14 is provided with double circumferential ribs 15a, 15b which define an accommodation space for a sealing ring 16. With this ring 16 the sealing takes place in the hole 50 in the casing 6.

[0038] Below the spout 14 the condensation drain piece is provided with two shoulders 18a and 18b which may abut the inner surfaces present there in casing 6, as shown in figure 1. In this way the location of the spout 14 in the direction to the right as seen in the drawing is secured. Shoulder 18a changes into a widened lower edge 17 of the passage 10 and of the inner part 7. The lower edge 17 is situated at the location of the transition of the portions 22 and 23 of the casing 6.

[0039] At the diametrically opposite side, a partition 19 is integrally formed on the condensation interception piece, which partition 19 with the end edge 21 fits in the accommodation space between the said ribs 20 and is provided with an inclined lower edge 19a.

[0040] During mounting the fitter may first, with overview, arrange the piece of pipe 50 on piece of pipe 55. Subsequently he takes the assembly of casing 6 and including the condensation interception piece 7 that has already been inserted into it from the top in the factory, and that is accommodated in it in a press fitting manner. During said insertion in the factory, the spout 14 will be kept slightly downwardly inclined, so that it may pass through the opening 50. When the sealing ring 16 has

ended up at the opening 50, tilting of the condensation interception piece 7 will be able to take place in the direction M, in which the edge 21 comes to lie fittingly between the ribs 20. The inclined lower edge 19a facilitates the said tilting movement. When the lower edge of the partition 19 at the location of the transition to the edge 21 has arrived at the indicated location of the transition in the wall of casing 6, the shoulder 18b will also abut. The condensation interception piece 7 is then retained against displacement to the left or to the right, as seen in the drawing, but by means of the ribs 20 also retained against tilting about a line that is transverse to the discharge centre line.

[0041] The fitter places the adapter assembly 2 with the flange 4 on the upper wall 3 of the boiler 1. Here the passage 10 and the collar 12 are simply slid over the narrowed upper portion of the piece of pipe 50. Finally the flange 4 is secured to the upper wall 3 of the housing of the boiler 1 by means of screws, and the entire adapter 2 is secured in that way. After that the inner pipe 29 and the outer pipe 30 can be placed in a simple manner.

[0042] It is noted that it is also an option to attach the flange 4 beforehand on the upper wall 3, and then later on to attach the adapter 2, with the casing 6, to the collar 5 of the flange 4 by means of the said bayonet coupling 27, 28.

[0043] Both casing 6 and condensation interception piece 7 may each be injection moulded as an element forming one unit, for instance from cast aluminium.

Claims

1. Adapter (2) for two concentric pipes for gas devices, particularly an inner pipe for discharge of flue gases of a boiler (1) to the outside and an outer casing which, together with the inner pipe, defines an annular outer duct for supply of combustion air to the boiler, comprising an inner pipe adapter (7) and an outer pipe adapter (6), which each have a lower end and an upper end, that can each respectively be coupled to further first pipes leading to the boiler and to second pipes (29,30) leading away from the boiler and to a discharge structure, in which the inner pipe adapter (7) is provided with condensation interception means (13) and with condensation drain means (14), **characterized in that** the inner pipe adapter (7) is provided with an inner wall (12) integral with the rest of the inner adapter (7) and inwardly delimiting a passage (10) for fitting accommodation of an inner pipe (50) at boiler side, said passage being located above the lower end of the outer pipe adapter (6), wherein said inner wall also forms an annular inner wall for an annular channel (13) defined by the condensation interception means (13).
2. Adapter according to claim 1, in which the passage

(10) is situated at the level of the condensation drain means (14).

3. Adapter according to claim 2, in which the bottom (31) of the annular channel is inclined with respect to the centre line of the inner pipe adapter (7), in which a spout connects to the lowest point of the annular channel (13). 5
4. Adapter according to claim 3, in which the upper end of the inner pipe adapter forms a pipe stub (8), that changes into an outer wall of the annular channel (13). 10
5. Adapter according to any one of the preceding claims, in which the condensation drain means comprise a spout (14), that extends fittingly through an opening (40) in the outer pipe adapter (6), wherein the spout preferably is formed integral with the inner adapter (7). 15
6. Adapter according to claim 5, in which at its circumference the spout (14) is provided with an accommodation space for a sealing ring (16) for sealing against the opening in the outer pipe adapter (6), which accommodation space preferably is defined by two circumferential ribs (15a,15b) on the spout (14) that are consecutive in spout direction. 20
7. Adapter according to claim 5 or 6, in which the inner pipe adapter (7) near the spout is provided with stop means (18a,18b) for abutment against the inner surface of the outer pipe adapter (6), which stop means preferably are situated at the lower side of the spout (14). 25
8. Adapter according to any one of the claims 5-7, in which the inner pipe adapter (7) is provided with one or more radial spacer means (19) for engaging the inner surface of the outer pipe adapter (6) which means extend away from the spout (14), in which the inner pipe adapter preferably is provided with a spacer member (19) that extends diametrically away from the spout, and which is preferably provided with an inclined edge (19a). 30
9. Adapter according to claim 8, in which positioning means (20) are provided on the inner wall of the outer pipe adapter (6) for positioning the spacer means (19) in axial direction. 35
10. Adapter according to claim 8 or 9, in which positioning means (20) are provided on the inner wall of the outer pipe adapter for positioning the spacer means (19) in circumferential direction. 40
11. Adapter according to any one of the claims 8-10, in which the spacer means (19) and the positioning 45

means (20) engage each other over a length in axial direction.

12. Adapter according to any one of the preceding claims, in which the lower ends of the inner pipe adapter (7) and the outer pipe adapter (6) are different in diameter with respect to the upper ends of the inner pipe adapter and the outer pipe adapter.
13. Adapter according to any one of the preceding claims, in which the lower ends of the inner pipe adapter (7) and the outer pipe adapter (6) have a diameter of 60 mm and 100 mm, respectively.
14. Adapter according to any one of the preceding claims, in which the upper ends of the inner pipe adapter (7) and the outer pipe adapter (6) have a diameter of 80 mm and 125 mm, respectively.
15. Adapter according to any one of the preceding claims, in which the outer pipe adapter (6) is provided with a flange member that is formed as a unity therewith, for attachment to a boiler housing.
16. Adapter according to any one of the claims 1-14, in which the outer pipe adapter (6) is provided with a flange member (4) that can be coupled thereto, for attachment to a boiler housing (3).
17. Adapter according to claim 15 or 16, in which the flange member (4) is provided with a circumferential series of attachment holes (32).
18. Adapter according to any one of the preceding claims, in which the inner pipe adapter (7) and the outer pipe adapter (6) have each been manufactured as one piece by means of injection moulding.
19. Assembly of an adapter (2) according to any one of the preceding claims and a connection pipe (50) at boiler side, that is detachably and fittingly accommodated in the passage (110) in the inner pipe adapter (7). 45

Patentansprüche

1. Adapter (2) für zwei konzentrische Rohre für Gasvorrichtungen, insbesondere ein Innenrohr für Abfluß von Verbrennungsgasen eines Kessels (1) nach außen und ein äußerer Mantel, der, zusammen mit dem Innenrohr, ein ringförmiges Außenleitung für Zufuhr von Verbrennungsluft zum Kessel bestimmt, umfassend einen Innenrohradapter (7) und einen Außenrohradapter (6), die jeder ein Unterende und ein oberes Ende haben, die jedes beziehungsweise mit zum Kessel führenden weiteren ersten Rohren und vom Kessel ab, zu einer Aus-

mündungskonstruktion führenden zweiten Rohren (29, 30) zu koppeln sind, wobei der Innenrohradapter (7) mit Kondens auffangmitteln (13) und mit Kondensabflußmitteln (14) versehen ist, **dadurch gekennzeichnet, daß** der Innenrohradapter (7) mit einer integral mit dem Rest des Innenadapters (7) gebildeten Innenwand (12), die einwärts einen Durchgang (10) für passende Aufnahme eines kesselseitigen Innenrohrs (50) begrenzt, versehen ist, wobei der Durchgang über dem Unterende des Außenrohradapters (6) gelegen ist, wobei die Innenwand auch eine ringförmige Innenwand für einen ringförmigen durch die Kondens auffangmittel (13) bestimmten Kanal (13) bildet.

2. Adapter nach Anspruch 1, wobei der Durchgang (10) auf der Höhe der Kondensabflußmittel (14) gelegen ist.
3. Adapter nach Anspruch 2, wobei der Boden (31) des ringförmigen Kanals schräg ist bezüglich der Herzlinie des Innenrohradapters (7), wobei eine Auslauffülle an dem tiefsten Punkt des ringförmigen Kanals (13) anschließt.
4. Adapter nach Anspruch 3, wobei das Oberende des Innenrohradapters einen Rohrstumpf (8) bildet, der in eine Außenwand des ringförmigen Kanals (13) übergeht.
5. Adapter nach irgendeinem der vorhergehenden Ansprüche, wobei die Kondensabflußmittel eine Auslauffülle (14) umfassen, die passend durch eine Öffnung (40) in den Außenrohradapter (6) reicht, wobei die Auslauffülle vorzugsweise integral mit dem Innenadapter (7) gebildet ist.
6. Adapter nach Anspruch 5, wobei die Auslauffülle (14) an seinem Umfang mit einem Aufnahmeaum für einen Dichtungsring (16) zur Dichtung gegen die Öffnung in dem Außenrohradapter (6) versehen ist, welcher Aufnahmeaum vorzugsweise durch zwei in Tüllenrichtung aufeinanderfolgende Umfangsrippen (15a, 15b) an der Auslauffülle (14) bestimmt ist.
7. Adapter nach Anspruch 5 oder 6, wobei der Innenrohradapter (7) nahe der Auslauffülle mit Anschlagmitteln (18a, 18b) für Anschlag gegen die Innenfläche des Außenrohradapters (6) versehen ist, welche Anschlagmittel vorzugsweise an der Unterseite der Auslauffülle (14) gelegen sind.
8. Adapter nach einem der Ansprüche 5-7, wobei der Innenrohradapter (7) mit einem oder mehreren von der Auslauffülle (14) ab reichenden radialen Abstandsmitteln (19) versehen ist, für Angriff der Innenfläche des Außenrohradapters (6), wobei der Innenrohradapter vorzugsweise mit einem diame-

tral von der Auslauffülle ab reichenden Abstandsteil (19) versehen ist, das vorzugsweise mit einem schrägen Rand (19a) versehen ist.

- 5 9. Adapter nach Anspruch 8, wobei an der Innenwand des Außenrohradapters (6) Positionierungsmittel (20) vorgesehen sind zum Positionieren der Abstandsmittel (19) in Axialrichtung.
- 10 10. Adapter nach Anspruch 8 oder 9, wobei an der Innenwand des Außenrohradapters Positionierungsmittel (20) vorgesehen sind zum Positionieren der Abstandsmittel (19) in Umlaufrichtung.
- 15 11. Adapter nach einem der Ansprüche 8-10, wobei die Abstandsmittel (19) und die Positionierungsmittel (20) einander über eine Länge in Axialrichtung angreifen.
- 20 12. Adapter nach irgendeinem der vorhergehenden Ansprüche, wobei die Unterenden des Innenrohradapters (7) und des Außenrohradapters (6) bezüglich der Oberenden des Innenrohradapters und des Außenadapters verschieden in Diameter sind.
- 25 13. Adapter nach irgendeinem der vorhergehenden Ansprüche, wobei die Unterenden des Innenrohradapters (7) und des Außenrohradapters (6) einen Diameter von beziehungsweise 60 und 100 mm haben.
- 30 14. Adapter nach irgendeinem der vorhergehenden Ansprüche, wobei die Oberenden des Innenrohradapters (7) und des Außenrohradapters (6) einen Diameter von beziehungsweise 80 und 125 mm haben.
- 35 15. Adapter nach irgendeinem der vorhergehenden Ansprüche, wobei der Außenrohradapter (6) mit einem damit als eine Einheit gebildeten Flanschteil versehen ist, zur Befestigung an einem Kesselgehäuse.
- 40 16. Adapter nach einem der Ansprüche 1-14, wobei der Außenrohradapter (6) mit einem daran zu koppelnden Flanschteil (4) versehen ist, zur Befestigung an einem Kesselgehäuse (3).
- 45 17. Adapter nach Anspruch 15 oder 16, wobei das Flanschteil (4) mit einer Umfangsreihe Befestigungslöcher (32) versehen ist.
- 50 18. Adapter nach irgendeinem der vorhergehenden Ansprüche, wobei der Innenrohradapter (7) und der Außenrohradapter (6) mittels Spritzgießen als ein Stück hergestellt sind.
- 55 19. System eines Adapters (2) nach irgendeinem der vorhergehenden Ansprüche und ein Verbindungs-

rohr (50) an der Seite des Kessels, das abnehmbar und passend in dem Durchgang (10) des Innenrohr-adapters (7) aufgenommen ist.

Revendications

1. Adaptateur (2) pour deux canalisations concentriques pour dispositifs à gaz, en particulier une canalisation interne pour décharger des gaz d'évacuation d'une chaudière (1) vers l'extérieur et une chemise externe qui, avec la canalisation interne, définit une conduite externe annulaire pour amener de l'air de combustion vers la chaudière, comprenant un adaptateur de canalisation interne (7) et un adaptateur de canalisation externe (6), chacun ayant une extrémité inférieure et une extrémité supérieure, chacun pouvant être respectivement couplé à d'autres premières canalisations menant à la chaudière et à des secondes canalisations (29, 30) menant hors de la chaudière et vers une structure de décharge, l'adaptateur de canalisation interne (7) étant muni d'un moyen d'interception de la condensation (13) et d'un moyen de vidange de la condensation (14), **caractérisé en ce que** l'adaptateur de canalisation interne (7) est muni d'une paroi interne (12) d'un seul tenant avec le reste de l'adaptateur interne (7) et délimitant vers l'intérieur un passage (10) permettant de loger une canalisation interne (50) côté chaudière, ledit passage étant situé au-dessus de l'extrémité inférieure de l'adaptateur de canalisation externe (6), où ladite paroi interne forme aussi une paroi interne annulaire pour un canal annulaire (13) défini par le moyen d'interception de la condensation (13).
2. Adaptateur selon la revendication 1, dans lequel le passage (10) est situé au niveau du moyen de vidange de la condensation (14).
3. Adaptateur selon la revendication 2, dans lequel le bas (31) du canal annulaire est incliné par rapport à la ligne centrale de l'adaptateur de canalisation interne (7), une goulotte se connectant au point le plus bas du canal annulaire (13).
4. Adaptateur selon la revendication 3, dans lequel l'extrémité supérieure de l'adaptateur de canalisation interne forme une embase de canalisation (8) qui se modifie en une paroi externe du canal annulaire (13).
5. Adaptateur selon l'une quelconque des revendications précédentes, dans lequel le moyen de vidange de la condensation comprend une goulotte (14) qui s'étend de façon à s'adapter par une ouverture (40) dans l'adaptateur de canalisation externe (6), la goulotte étant de préférence formée d'un seul te-

nant avec l'adaptateur interne (7).

6. Adaptateur selon la revendication 5, dans lequel au niveau de sa circonférence, la goulotte (14) est munie d'un espace de logement pour un joint d'étanchéité (16) permettant l'étanchéité contre l'ouverture dans l'adaptateur de canalisation extérieur (6), ledit espace de logement étant de préférence défini par deux nervures circonférentielles (15a, 15b) sur la goulotte (14) qui sont consécutives dans la direction de la goulotte.
7. Adaptateur selon la revendication 5 ou 6, dans lequel l'adaptateur de canalisation interne (7) près de la goulotte est muni de moyens d'arrêt (18a, 18b) pour butter contre la surface interne de l'adaptateur de canalisation externe (6), ledit moyen d'arrêt étant de préférence situé au niveau du côté inférieur de la goulotte (14).
8. Adaptateur selon l'une quelconque des revendications 5 à 7, dans lequel l'adaptateur de canalisation interne (7) est muni d'un ou de plusieurs moyens d'espacement radiaux (19) pour mettre en prise la surface interne de l'adaptateur de canalisation externe (6), lesdits moyens s'étendant à l'opposé de la goulotte (14), où l'adaptateur de canalisation interne est de préférence muni d'un élément d'espacement (19) qui s'étend diamétralement opposé à la goulotte, et qui est de préférence muni d'un bord incliné (19a).
9. Adaptateur selon la revendication 8, dans lequel des moyens de positionnement (20) sont prévus sur la paroi interne de l'adaptateur de canalisation externe (6) pour positionner les moyens d'espacement (19) dans la direction axiale.
10. Adaptateur selon la revendication 8 ou 9, dans lequel des moyens de positionnement (20) sont prévus sur la paroi interne de l'adaptateur de canalisation externe pour positionner les moyens d'espacement (19) dans la direction circonférentielle.
11. Adaptateur selon l'une quelconque des revendications 8 à 10, dans lequel le moyen d'espacement (19) et le moyen de positionnement (20) viennent en prise l'un avec l'autre sur une longueur dans la direction axiale.
12. Adaptateur selon l'une quelconque des revendications précédentes, dans lequel les extrémités inférieures de l'adaptateur de canalisation interne (7) et de l'adaptateur de canalisation externe (6) ont un diamètre différent par rapport aux extrémités supérieures de l'adaptateur de canalisation interne et de l'adaptateur de canalisation externe.

13. Adaptateur selon l'une quelconque des revendications précédentes, dans lequel les extrémités inférieures de l'adaptateur de canalisation interne (7) et de l'adaptateur de canalisation externe (6) ont un diamètre de 60 mm et de 100 mm respectivement. 5
14. Adaptateur selon l'une quelconque des revendications précédentes, dans lequel les extrémités supérieures de l'adaptateur de canalisation interne (7) et de l'adaptateur de canalisation externe (6) ont un diamètre de 80 mm et de 125 mm, respectivement. 10
15. Adaptateur selon l'une quelconque des revendications précédentes, dans lequel l'adaptateur de canalisation externe (6) est muni d'un élément à bride qui est formé en tant qu'unité avec celui-ci, pour être raccordé à un logement de chaudière. 15
16. Adaptateur selon l'une quelconque des revendications 1 à 14, dans lequel l'adaptateur de canalisation externe (6) est muni d'un élément à bride (4) qui peut être couplé à celui-ci, pour être raccordé à un logement de chaudière (3). 20
17. Adaptateur selon la revendication 15 ou 16, dans lequel l'élément à bride (4) est muni d'une série circconférentielle de trous de fixation (32). 25
18. Adaptateur selon l'une quelconque des revendications précédentes, dans lequel l'adaptateur de canalisation interne (7) et l'adaptateur de canalisation externe (6) sont chacun fabriqués en une pièce au moyen d'un moulage par injection. 30
19. Ensemble d'un adaptateur (2) selon l'une quelconque des revendications précédentes et d'une canalisation de raccordement (50) côté chaudière, qui est logée de façon amovible et ajustée dans le passage (10) de l'adaptateur de canalisation interne (7). 35
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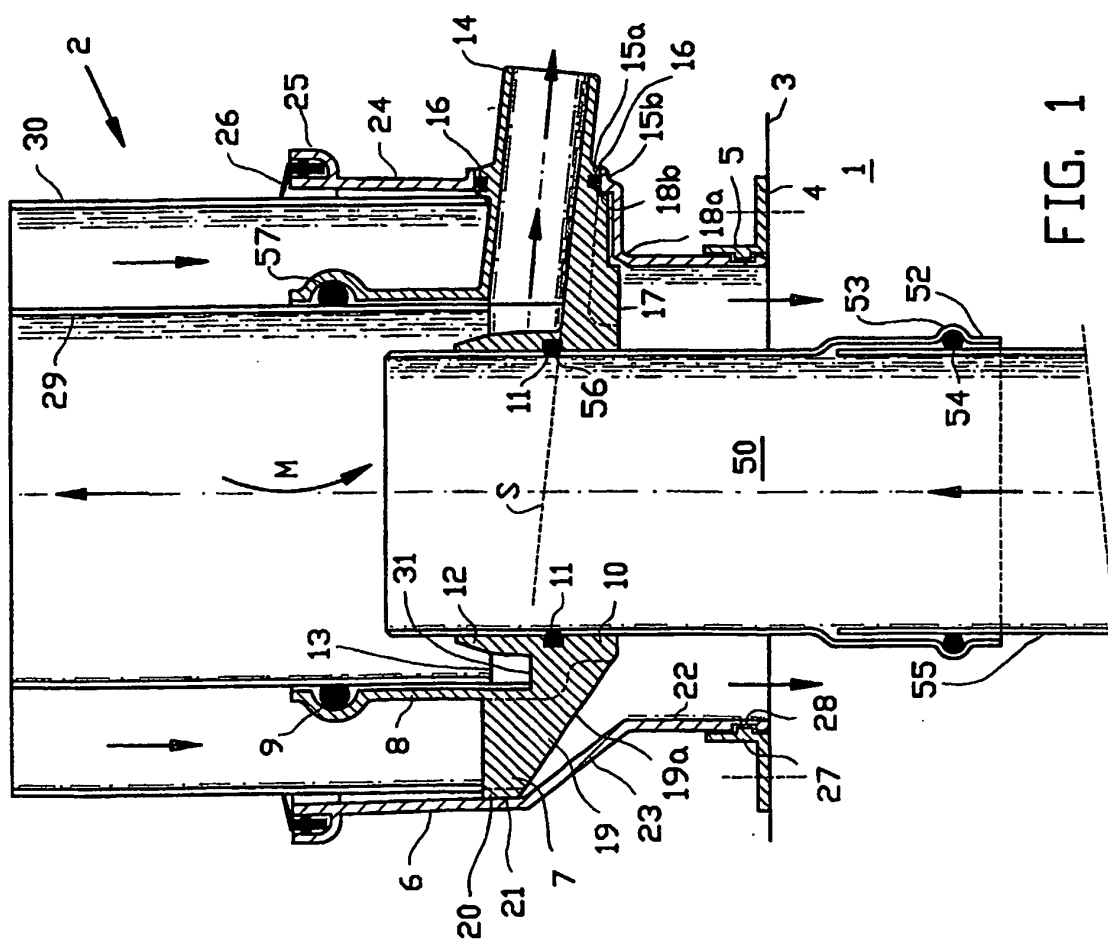


FIG. 1

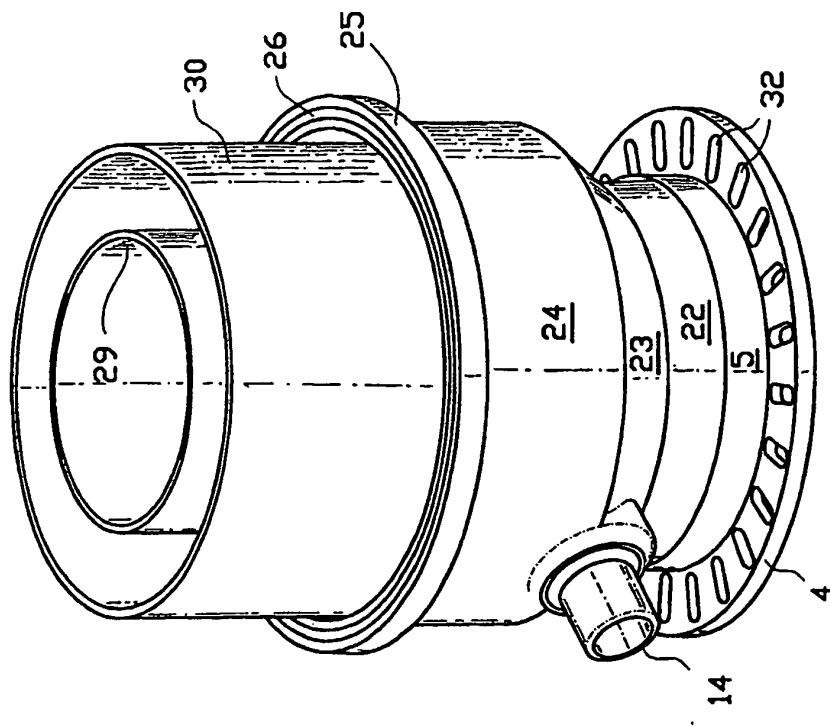


FIG. 2

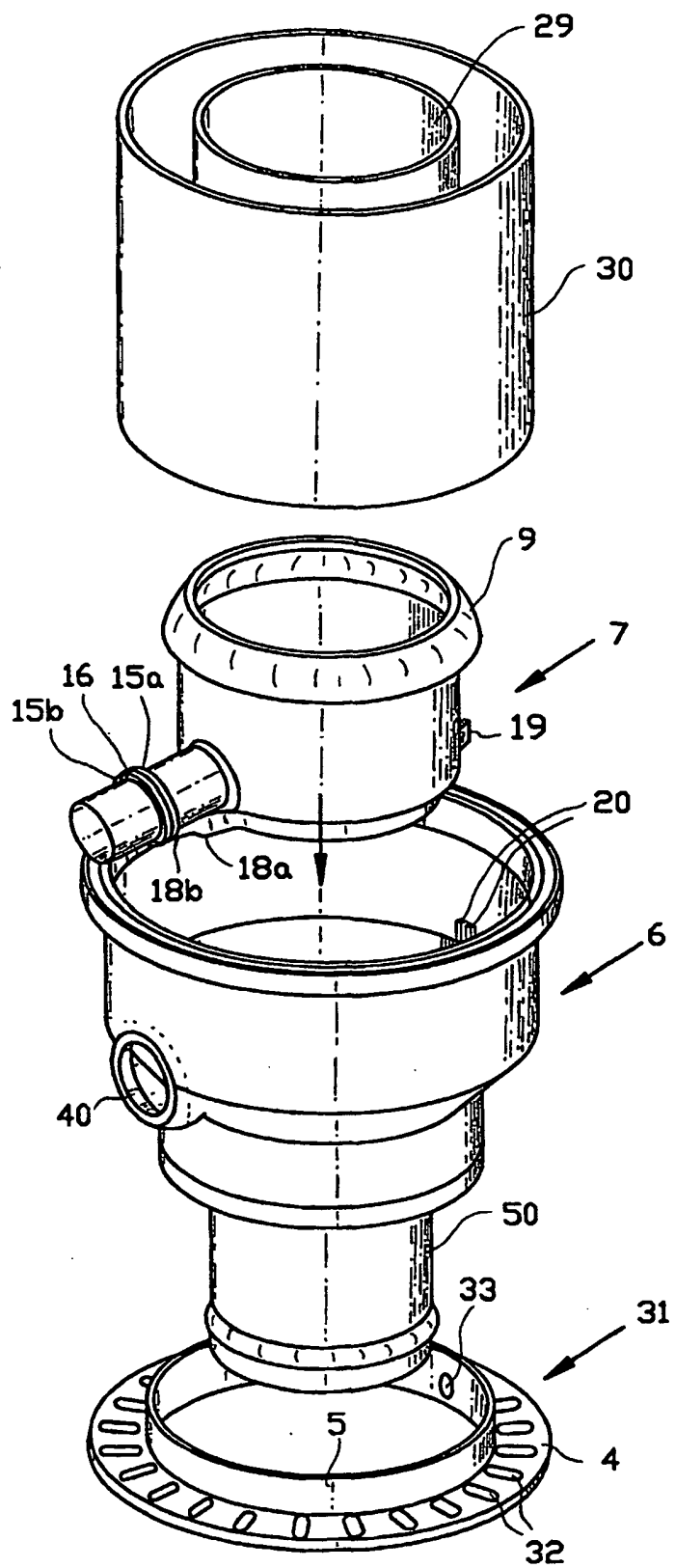


FIG. 3