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(54) SEALED AIR BOILER AIR INLET CHAMBER

ABGEDICHTETE LUFTKESSEL-LUFTEINLASSKAMMER

CHAMBRE D'ADMISSION D'AIR D'UNE CHAUDIÈRE À AIR ÉTANCHE

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Description

Field of the Invention

[0001] Embodiments of the present invention relate to a sealed air boiler air inlet chamber, a sealed air boiler including the air inlet chamber and a heating system including the sealed air boiler.

Background of the Invention

[0002] Commercial boilers may be used for large scale heating, and may be located in a specifically designated room, e.g. a plant room.

[0003] Air is required for the combustion of fuel (e.g. gas or oil) to produce heat energy.

[0004] In some arrangements, air may be admitted to a boiler from the surrounding environment (e.g. a plant room), for example, through an opening in the housing of the boiler.

[0005] Alternatively, boiler housings may be sealed to the surrounding environment (e.g. a plant room), and instead receive air through an inlet such as a ventilation shaft or other pipe. Such a pipe may be open to outdoor air. Government regulations or other factors may favour boilers that are sealed to the surrounding environment. Such boilers may be known by various names, such as "sealed air boilers" or "room-sealed boilers".

[0006] Outdoor air may be damp, i.e. contain water. Therefore, air entering a sealed air boiler from outdoors may contain a significant fraction of water. It may be advantageous for the air entering the furnace of a boiler to be relatively dry.

[0007] JP2003287287 describes a boiler having an outer case part that prevents rainwater and dust from entering an air supply port. This document discloses a sealed air boiler air inlet chamber according to the preamble of claim 1.

[0008] Accordingly, it is a non-exclusive object of the invention to provide an inlet chamber for a sealed air boiler, which may reduce the amount of water within the air which is fed to the furnace of the boiler.

Summary of the Invention

[0009] There is provided a sealed air boiler air inlet chamber, comprising a casing, defining a volume, an air and water inlet aperture, a first outlet for water, and a second outlet for air, a spacer configured to inhibit an object within the chamber from contacting a surface of the chamber, and a barrier, spaced from the second outlet, demarking a first region of the casing including the first outlet and a second region of the casing including the second outlet, wherein the barrier is configured to inhibit the flow of water from the first region to the second region and to permit the flow of air from the first region to the second region.

[0010] The barrier may extend a height from a plane of the casing including the second outlet.

[0011] The barrier may extend between a first surface and a second surface of the casing.

[0012] A surface of the casing may be inclined towards the first outlet in use.

[0013] The sealed air boiler air inlet chamber may further comprise a connector for connecting the first outlet to a drain.

[0014] The sealed air boiler air inlet chamber may further comprise a connector for connecting the second outlet to a furnace.

[0015] The first outlet and the second outlet may be of different sizes. In particular, the first outlet may be smaller than the second outlet.

[0016] The spacer may be for inhibiting an open end of the pipe from contacting a surface of the chamber, such that the pipe remains open.

[0017] The sealed air boiler air inlet chamber may further comprise a fixing for fitting the air inlet chamber to a sealed-air boiler.

[0018] The chamber may have an outer rim and the fixing may be located on the outer rim of the chamber.

[0019] There is also provided a boiler comprising an air-inlet chamber as described above.

[0020] The boiler may be a sealed air boiler.

[0021] There is also provided a heating system comprising a boiler as described above.

[0022] The heating system may be a central heating system and/or a water heating system.

Brief Description of the Figures

[0023] Embodiments of the present invention are described herein, by way of example only, with reference to the accompanying drawings, in which:

Fig. 1 shows a perspective view of a sealed air boiler air inlet chamber in accordance with embodiments of the invention;

Fig. 2 shows a plan view of the sealed air boiler air inlet chamber of Fig. 1;

Fig. 3 shows a part-sectional side view of the sealed air boiler air inlet chamber of Fig. 1;

Fig. 4 shows a part-sectional front view of the air inlet chamber of Fig. 1;

Fig. 5 shows a part-sectional front view of a boiler including the sealed air boiler air inlet chamber of Fig. 1;

Fig. 6 shows a part-sectional side view of the boiler of Fig. 5; and

Fig. 7 shows a heating system including the boiler of Fig. 5.

Detailed Description

[0024] A sealed air boiler (sometimes referred to as a room sealed boiler) draws in air for combustion from outside the space in which the boiler is located. Accordingly, the air drawn into the boiler may have different characteristics from the air in the space in which the boiler is located (for example, the air drawn into a sealed air boiler may be wetter than air in the immediate surrounds of the boiler).

[0025] In general, boilers can function more effectively when the air used for combustion is drier, that is, not wet. It is therefore a first non-exclusive aim to provide a sealed air boiler air inlet chamber, which can separate water from combustion air.

[0026] Most boilers (including sealed air boilers) require adjustment during commissioning, for example, it may be necessary to adjust a gas valve when commissioning a boiler. For example, during commissioning it may be necessary to adjust maximum load and minimum load adjusters on a gas valve of a boiler when the boiler is in place. Normally, such gas valve adjusters are within the housing of the boiler to hinder unauthorised or inappropriate access. If the adjusters are located inside the housing of the boiler, the housing must be opened to allow access to the adjusters. It is a common feature of prior art sealed air boilers that the housing is used to isolate the combustion air from the surroundings of the boiler. As will be apparent, in such an arrangement the sealed air boiler is not isolated from its surroundings whilst the boiler housing is open. Accordingly, adjustments made whilst the housing is open may not result in the optimum parameters being set for operation whilst the housing is closed.

[0027] It is therefore a second non-exclusive aim to provide a sealed air boiler inlet chamber, which can be used in the provision of a sealed air boiler, which is sealed both when the housing is open (e.g. during adjustment) and whilst the housing is closed (e.g. during normal use).

[0028] Referring firstly to Figs 1 to 4 of the accompanying drawings, a sealed air boiler air inlet chamber indicated generally at 1, comprises a casing, defining a volume, an air and water inlet aperture 101, a first outlet 3 for water, and a second outlet 4 for air.

[0029] There is also a barrier 2, spaced from the second outlet 4. The barrier 2 demarks a first region 30 of the casing which includes the first outlet 3 and a second region 40 of the casing which includes the second outlet 4. The barrier 2 is configured to inhibit the flow of water from the first region 30 to the second region 40 and to permit the flow of air from the first region 30 to the second region 40.

[0030] Such a sealed air boiler air inlet chamber 1 may provide an advantageous high separation of water from feed air (e.g. outside air). In particular, water which may be present as a contaminate in the feed air will predominantly exit through the first outlet 3 in the first region 30 and air will predominantly exit through the second outlet 4 in the second region 40. In this way drier air may be provided to the furnace of a sealed air boiler.

[0031] Additionally, the sealed air boiler air inlet chamber 1 may be used with a sealed air boiler which can still operate as a sealed air boiler even when the housing of the boiler is open, as will be described in more detail below.

[0032] As shown, the casing may include side surfaces and/or a base. The side surfaces may be substantially vertical walls 10. Surfaces 100 of the casing may be inclined with respect to the walls 10. In some example embodiments, the walls 10 may include inclined portions 100.

[0033] As shown in Fig. 1, the barrier 2 may extend a height from a plane of the casing including the second outlet 4. Such a construction may be particularly simple, and therefore economic.

[0034] The barrier 3 may extend between a first surface and a second surface of the casing. In particular, the barrier 2 may contact a first surface and a second surface of the chamber 1. The first surface may be a wall 10 or an inclined surface 100. The second surface may be a wall 10 or an inclined surface 100.

[0035] The barrier may contact multiple walls 10. For example, the barrier may extend between opposite walls 10. The barrier may contact multiple points on the same wall 10.

[0036] The barrier 2 may be a substantially straight barrier 2, as shown in Figs 1 to 4. Alternatively, the barrier 2 may define an angle. For example, the barrier 2 may extend between a first wall 10 and a second wall 10 that are substantially perpendicular to one another, such that the barrier 2 defines a right angle. The barrier 2 may extend between a first wall 10 and a second wall 10 at any angle, e.g. any other angle. The barrier 2 may extend between a first wall 10 and a second wall 10 where both walls 10 are on the same side of the casing.

[0037] The barrier 2 may extend a height that is generally level with the top of an inclined surface 100. The barrier 2 may extend a height based on the expected volume of water that may enter the first region 30 of the casing in use. Additionally or alternatively, the barrier 2 may extend a height based on the efficiency with which water leaves the chamber 1 via the first outlet 3.

[0038] The barrier 2 may contact a base of the casing of the chamber 1 such that the contact is air-and-water-tight. Such contact may be achieved by any means apparent to the skilled person, for example, by welding the barrier 2 to the chamber 1. Alternatively, such contact may be achieved by forming the barrier 2 integrally with the chamber 1. Air-and-water-tight contacts between the barrier 2 and a wall 10 and/or a base of the casing of the chamber 1 may be achieved using any means apparent to the skilled person.

[0039] The barrier 2 may also be spaced from the first outlet 3.

[0040] The barrier as described above can provide a particularly distinct second region 40 for the second outlet

4, which in turn can be used to provide good separation of water from the air to be fed to the furnace of the boiler.

[0041] A surface of the casing may be inclined towards the first outlet 3 in use. Such inclined surfaces may contribute to the flow of water towards the first outlet 3 within the first region 30, thereby providing good or increased separation efficiency.

[0042] As shown in Fig. 2, the first outlet 3 may be in a base of the chamber 1. However, the first outlet 3 may be defined in a wall 10 or inclined surface 100 of the chamber 1, within the first region 30 of the casing. For example, the first outlet 3 may be defined in a corner of the chamber 1.

[0043] The sealed air boiler air inlet chamber 1 may further comprise a connector 301 for connecting the first outlet 3 to a drain. The first outlet 3 may be connected to a first connector 301 for connecting the chamber 1 to a pipe. The first connector 301 may extend a length away from the surface defining the first outlet 3. The first connector 301 may form part of the inner surface of the first outlet 3. The first connector 301 may be integrally formed as part of the chamber 1, or may be otherwise attached to the chamber 1. The first connector 301 may be continuous around the circumference of the first outlet 3. The first connector 301 may be another type of connector, designed so as to mesh with the desired exhaust means, such as a pipe. The first connector 301 may provide a water-tight connection between the chamber 1 and an exhaust means. As shown in Fig. 1, the first connector 301 can be seen extending a vertical length from the casing 1.

[0044] The sealed air boiler air inlet chamber 1 may further comprise a second connector 401 for connecting the second outlet 4 to a furnace. The second connector 401 may extend a length away from the surface defining the second outlet 4. The second connector 401 may form part of the inner surface of the second outlet 4. The second connector 401 may be integrally formed as part of the chamber 1, or may be otherwise attached to the chamber 1. The second connector 401 may be continuous around the circumference of the second outlet 4, as shown in figure 1. The second connector 401 may be another type of connector, designed so as to mesh with the desired exhaust means, such as a pipe.

[0045] In Fig. 1 the second connector 401 can be seen extending a vertical length from the circumference of the second outlet 4. In some examples the second connector 401 may extend a horizontal length away from the second outlet 4, and may extend along the outer surface of the chamber 1, in order to connect the chamber 1 to an exhaust means. The second connector 401 may otherwise mate with the chamber 1.

[0046] The sealed air boiler air inlet chamber 1 may have a first outlet 3 and the second outlet 4 of different sizes. In particular, the first outlet 3 may be smaller than the second outlet 4. This may be advantageous, as the volume of air passing through the inlet chamber 1 and out of the second outlet 4 will usually be much larger than the volume of water passing through the inlet chamber 1 and out of the first outlet 3.

[0047] The sealed air boiler air inlet chamber 1 may further comprise a spacer 5. The function of the spacer 5 can be for inhibiting (e.g. for stopping or substantially preventing) an object within the chamber 1 from contacting the base of the casing.

[0048] As shown in the Figs, the spacer 5 may be located within the first region 30 of the casing. The spacer 5 can space an open end of an air (and water) inlet pipe, from the casing of the chamber 1, to inhibit (e.g. substantially prevent) the open end of such a pipe from contacting and therefore being closed off by contacting a surface of the chamber 1. Accordingly, the pipe may remain open.

[0049] Optionally, multiple spacers 5 may be provided. The spacer 5 may extend across a width of the chamber 1.

[0050] The chamber 1 may comprise a fixing 12 for fitting the air inlet chamber 1 to a sealed-air boiler. As shown in Figs 1 to 4, the fixing 12 may be located on an outer rim 11 of the chamber.

[0051] The outer rim 11 may be continuous around the perimeter of the casing of the chamber 1, as shown in figures 1 to 4. Additionally or alternatively, the outer rim 11 may be a continuation of the walls 10, e.g. the top of the walls 10 may be shaped to form the outer rim 11.

[0052] The outer rim 11 may define a plane which may be substantially perpendicular to that of the walls 10 of the chamber 1. The fixing 12 may be a cut-out, for use with a further means of fixing the chamber 1 in place. The cut-out may be of dimensions to fit a screw or another fixing. The outer rim 11 may not define cut-outs 12 and may instead be designed to fit in any other way, as will be apparent to the skilled person. For example, the outer rim 11 may further include hooks or another type of fixing means. For example, rails or another receiving means for the chamber 1 may be positioned in a boiler to allow the chamber 1 to be fixed in place.

[0053] The chamber 1 may be fixed in place within a boiler using an adhesive, e.g. a sealing adhesive or a sealant. For example, an adhesive may be applied to the outer rim 11. The chamber 1 may be removably fixable to a boiler, for example to facilitate servicing of the boiler including removal of the chamber 1.

[0054] As shown in Figs 5 and 6, there is also provided a boiler 6 including an air-inlet chamber 1 as described above.

[0055] The boiler 6 may be a sealed air boiler 6. Inclusion of the air inlet chamber 1 in a sealed air boiler 6, may be particularly advantageous as it can help to provide a sealed air boiler which is sealed both when the housing of the boiler is open (e.g. during adjustment) and whilst the housing of the boiler is closed (e.g. during normal use). Accordingly, a sealed air boiler 6 which is more easily correctly commissioned can be provided.

[0056] The chamber 1 may be positioned at the top of the boiler 6, as shown.

[0057] A surface of the boiler 6 may close-off a top of

the chamber 1 that is open when not installed within the boiler 6. Alternatively, the chamber 1 may be closed-off or contained in some other way, as would be apparent to the skilled person.

[0058] The chamber 1 is for use between the air and water inlet (for example the air and water inlet aperture 101) of a boiler 6 and the rest of the boiler system.

[0059] The boiler 6 may include an air and water inlet pipe. The air and water inlet aperture 101 of the chamber 1 may receive an air and water inlet pipe in use. Accordingly, water may drip from the air and water inlet pipe. Any water admitted to the inlet chamber 1, is admitted in the first region 30 of the casing, accordingly, the water can exit the first outlet 3. The air and water inlet aperture 101 should not open directly into the second region 40 of the casing, as the barrier 2 would not then be able to fulfil its function of substantially preventing or inhibiting water from entering the second region 40 of the casing and exiting the second outlet 4.

[0060] Air from the air and water inlet aperture 101 is passable over the barrier 2 into the second region 40 of the casing, such that air may exit the chamber 1 via the second outlet 4 and may be drawn beyond the chamber 1 further into the boiler 6 for combustion.

[0061] As will be appreciated, air is the useful part of the intake into the chamber 1 and may be drawn into the boiler 6 from the second outlet 4 in any suitable way. The sealed air boiler air inlet chamber 1 can be suitable for use with any suitable suction means known in the art of boilers. The term 'drawn' does not exclude the free flow of air into the boiler 6 without the use of any particular suction means or other means of inciting air flow.

[0062] With reference to Figs 5 and 6 in particular, a first pipe 302 is shown, which can connect the first outlet 3 of the chamber 1, for example using a first connector 301, to part of the boiler 6. For example the first outlet 3 may be connected to a drain 303.

[0063] The drain 303 may be external to the boiler 6 such that the first pipe 302 traverses the boiler 6. The drain 303 may be external to the boiler 6 such that water from the first outlet 3 does not interact with any other part of the interior of the boiler 6 except for the first pipe 302. The drain 303 may otherwise be a drainage component inside the boiler 6 that includes a reservoir or a similar water collecting receptacle. In some embodiments, where the boiler 6 is a condensing boiler, the drain 303 may be the same drain as is used for condensate from the boiler.

[0064] With reference to Figs 5 and 6 in particular, a second pipe 402 is shown, which connects the chamber 1 at the second outlet 4, by the second connector 401, to a further part of the boiler 6. In particular, the second outlet 4 may be connected directly or indirectly to a furnace. The second pipe 402 may have a diameter corresponding to that of the second outlet 4.

[0065] The second pipe 402 may be connected in an air-tight manner to the second outlet 4. An air tight connection may be advantageous as it can allow the boiler to be air sealed even when a cover of the boiler is not in place.

[0066] The chamber 1 may be shaped to fit to the shape of part of the boiler 6.

[0067] As shown in Fig. 7, there is also provided a heating system 8, comprising a boiler 6 as described above, including the inlet 1 described above.

[0068] The heating system 8 may be a central heating system. Additionally or alternatively, the heating system 8 may be a water heating system.

[0069] The heating system 8 may comprise a heating element 7, which is in communication with the boiler 6. The heating element 7 may be a wall-mounted radiator. The heating element 7 may be a water heater.

[0070] A single heating system 8 may comprise multiple heating elements 7 and may comprise different types of heating elements 7.

[0071] The heating system 8 may include a single boiler 6. The heating system 8 may include multiple boilers 6 if the heating system 8 is large-scale. The heating system 8 may include one or more boilers 6 that include a sealed air boiler air inlet chamber 1 and one or more boilers 6 without a chamber 1, i.e. the heating system 8 may comprise a combination of sealed air boilers and open boilers.

[0072] Accordingly, the passage of water, which is a waste product in an air and water intake, into the parts of a boiler 6 that use air and that work more efficiently with drier air, is satisfactorily prevented by the sealed air boiler air inlet chamber 1 provided.

[0073] When used in this specification and claims, the terms "comprises" and "comprising" and variations thereof mean that the specified features, steps or integers are included. The terms are not to be interpreted to exclude the presence of other features, steps or components.

Claims

1. A sealed air boiler air inlet chamber (1), comprising:

a casing, defining a volume, an air and water inlet aperture (101), a first outlet (3) for water, and a second outlet (4) for air;

a barrier (2), spaced from the second outlet (4), demarking a first region (30) of the casing including the first outlet (3) and a second region (40) of the casing including the second outlet (4), wherein the barrier (2) is configured to inhibit the flow of water from the first region (30) to the second region (40) and to permit the flow of air from the first region (30) to the second region (40).

characterized in that the sealed air boiler air inlet chamber further comprises a spacer (5) configured to inhibit an object within the chamber (1) from contacting the surface of the chamber.

2. A sealed air boiler air inlet chamber (1) according to claim 1, wherein the barrier (2) extends a height from a plane of the casing including the second outlet (4).

3. A sealed air boiler air inlet chamber (1) according to claim 1 or claim 2, wherein the barrier (2) extends between a first surface and a second surface of the casing.

4. A sealed air boiler air inlet chamber (1) according to claim 1, claim 2 or claim 3, wherein a surface (100) of the casing is inclined towards the first outlet (3) in use.

5. A sealed air boiler air inlet chamber (1) according to any preceding claim, further comprising a connector (301) for connecting the first outlet (3) to a drain.

6. A sealed air boiler air inlet chamber (1) according to any preceding claim, further comprising a connector (401) for connecting the second outlet (4) to a furnace.

7. A sealed air boiler air inlet chamber (1) according to any preceding claim, wherein the first outlet (3) and the second outlet (4) are of different sizes.

8. A sealed air boiler air inlet chamber (1) according to claim 7, wherein the first outlet (3) is smaller than the second outlet (4).

9. A sealed air boiler air inlet chamber (1) according to claim 1, wherein the object is an air inlet pipe, and wherein the spacer (5) is for inhibiting an open end of the pipe from contacting a surface of the chamber, such that the pipe remains open.

10. A sealed air boiler air inlet chamber (1) according to any preceding claim, wherein the chamber (1) comprises a fixing (12) for fitting the air inlet chamber (1) to a sealed-air boiler (6).

11. A sealed air boiler air inlet chamber (1) according to claim 10, comprising an outer rim (11) such that the fixing (12) is located on the outer rim (11) of the chamber (1).

12. A boiler (6), comprising an air-inlet chamber (1) according to any preceding claim.

13. A heating system (8), comprising a boiler (6) according to claim 12.

Patentansprüche

1. Lufteintrittskammer (1) für versiegelten Luftkessel, umfassend:

Ein Gehäuse, das ein Volumen definiert, eine Luft- und Wassereintrittsöffnung (101), einen ersten Auslass (3) für Wasser und einen zweiten Auslass (4) für Luft;
eine Barriere (2), die vom zweiten Auslass (4) beabstandet ist, die einen ersten Bereich (30) des Gehäuses, der den ersten Auslass (3) einschließt und einen zweiten Bereich (40) des Gehäuses demarkiert, der den zweiten Auslass (4) einschließt,
wobei die Barriere (2) konfiguriert ist, den Wasserfluss vom ersten Bereich (30) zum zweiten Bereich (40) zu hindern und den Luftstrom vom ersten Bereich (30) zum zweiten Bereich (40) zuzulassen, **dadurch gekennzeichnet, dass** die Lufteintrittskammer für versiegelten Luftkessel ferner einen Abstandshalter (5), der konfiguriert ist, ein Objekt innerhalb der Kammer (1) daran zu hindern die Oberfläche der Kammer zu kontaktieren.

2. Lufteintrittskammer (1) für versiegelten Luftkessel nach Anspruch 1, wobei sich die Barriere (2) eine Höhe ab einer Ebene des Gehäuses erstreckt, die den zweiten Auslass (4) einschließt.

3. Lufteintrittskammer (1) für versiegelten Luftkessel nach Anspruch 1 oder Anspruch 2, wobei sich die Barriere (2) zwischen einer ersten Oberfläche und einer zweiten Oberfläche des Gehäuses erstreckt.

4. Lufteintrittskammer (1) für versiegelten Luftkessel nach Anspruch 1, Anspruch 2 oder Anspruch 3, wobei eine Oberfläche (100) des Gehäuses in Richtung des ersten Auslasses (3) gebräuchlich geneigt ist.

5. Lufteintrittskammer (1) für versiegelten Luftkessel nach einem vorhergehenden Anspruch, die ferner einen Verbinder (301) zur Verbindung des ersten Auslasses (3) mit einem Ablauf umfasst.

6. Lufteintrittskammer (1) für versiegelten Luftkessel nach einem vorhergehenden Anspruch, die ferner einen Verbinder (401) zur Verbindung des zweiten Auslasses (4) mit einem Ofen umfasst.

7. Lufteintrittskammer (1) für versiegelten Luftkessel nach einem vorhergehenden Anspruch, wobei der erste Auslass (3) und der zweite Auslass (4) verschiedener Größen sind.

8. Lufteintrittskammer (1) für versiegelten Luftkessel nach Anspruch 7, wobei der erste Auslass (3) kleiner als der zweite Auslass (4) ist.

9. Lufteintrittskammer (1) für versiegelten Luftkessel nach Anspruch 1, wobei das Objekt ein Lufteintrittsrohr ist, und wobei der Abstandshalter (5) dazu dient,

ein offenes Ende des Rohrs daran zu hindern, eine Oberfläche der Kammer zu berühren, derartig, dass das Rohr offenbleibt.

10. Lufteintrittskammer (1) für versiegelten Luftkessel nach einem vorhergehenden Anspruch, wobei die Kammer (1) eine Fixierung (12) zum Anbringen der Lufteintrittskammer (1) an einen versiegelten Luftkessel (6) umfasst.

11. Lufteintrittskammer (1) für versiegelten Luftkessel nach Anspruch 10, die einen Außenrand (11) umfasst, derartig, dass sich die Fixierung (12) am Außenrand (11) der Kammer (1) befindet.

12. Kessel (6), der eine Lufteintrittskammer (1) nach einem vorhergehenden Anspruch umfasst.

13. Heizsystem (8), das einen Kessel (6) nach Anspruch 12 umfasst.

Revendications

1. Une chambre d'admission d'air d'une chaudière à air étanche (1), comprenant :

une enveloppe, délimitant un volume, une ouverture d'admission d'air et d'eau (101), une première sortie (3) pour l'eau, et une deuxième sortie (4) pour l'air ;
une barrière (2), espacée de la deuxième sortie (4), démarquant une première région (30) de l'enveloppe comprenant la première sortie (3) et une deuxième région (40) de l'enveloppe comprenant la deuxième sortie (4),
dans laquelle la barrière (2) est configurée pour empêcher l'écoulement de l'eau depuis la première région (30) jusqu'à la deuxième région (40) et pour permettre l'écoulement de l'air depuis la première région (30) jusqu'à la deuxième région (40),
caractérisée en ce que la chambre d'admission d'air de la chaudière à air étanche comprend en sus un espaceur (5) configuré pour empêcher un objet situé à l'intérieur de la chambre (1) d'entrer en contact avec la surface de la chambre.

2. Une chambre d'admission d'air d'une chaudière à air étanche (1) selon la revendication 1, dans laquelle la barrière (2) s'étend sur une hauteur depuis un plan de l'enveloppe comprenant la deuxième sortie (4).

3. Une chambre d'admission d'air d'une chaudière à air étanche (1) selon la revendication 1 ou la revendication 2, dans laquelle la barrière (2) s'étend entre une première surface et une deuxième surface de l'enveloppe.

4. Une chambre d'admission d'air d'une chaudière à air étanche (1) selon la revendication 1, la revendication 2 ou la revendication 3, dans laquelle une surface (100) de l'enveloppe est inclinée vers la première sortie (3) en cours d'utilisation.

5. Une chambre d'admission d'air d'une chaudière à air étanche (1) selon une quelconque revendication précédente, comprenant en sus un raccord (301) pour raccorder la première sortie (3) à un drain.

6. Une chambre d'admission d'air d'une chaudière à air étanche (1) selon une quelconque revendication précédente, comprenant en sus un raccord (401) pour raccorder la deuxième sortie (4) à un foyer.

7. Une chambre d'admission d'air d'une chaudière à air étanche (1) selon une quelconque revendication précédente, dans laquelle la première sortie (3) et la deuxième sortie (4) sont de tailles différentes.

8. Une chambre d'admission d'air d'une chaudière à air étanche (1) selon la revendication 7, dans laquelle la première sortie (3) est plus petite que la deuxième sortie (4).

9. Une chambre d'admission d'air d'une chaudière à air étanche (1) selon la revendication 1, dans laquelle l'objet est une conduite d'admission d'air, et dans laquelle l'espaceur (5) sert à empêcher une extrémité ouverte de la conduite d'entrer en contact avec une surface de la chambre, de sorte que la conduite reste ouverte.

10. Une chambre d'admission d'air d'une chaudière à air étanche (1) selon une quelconque revendication précédente, dans laquelle la chambre (1) comprend une fixation (12) pour monter la chambre d'admission d'air (1) sur une chaudière à air étanche (6).

11. Une chambre d'admission d'air d'une chaudière à air étanche (1) selon la revendication 10, comprenant un rebord extérieur (11) de sorte que la fixation (12) est située sur le rebord extérieur (11) de la chambre (1).

12. Une chaudière (6), comprenant une chambre d'admission d'air (1) selon une quelconque revendication précédente.

13. Un système de chauffage (8), comprenant une chaudière (6) selon la revendication 12.

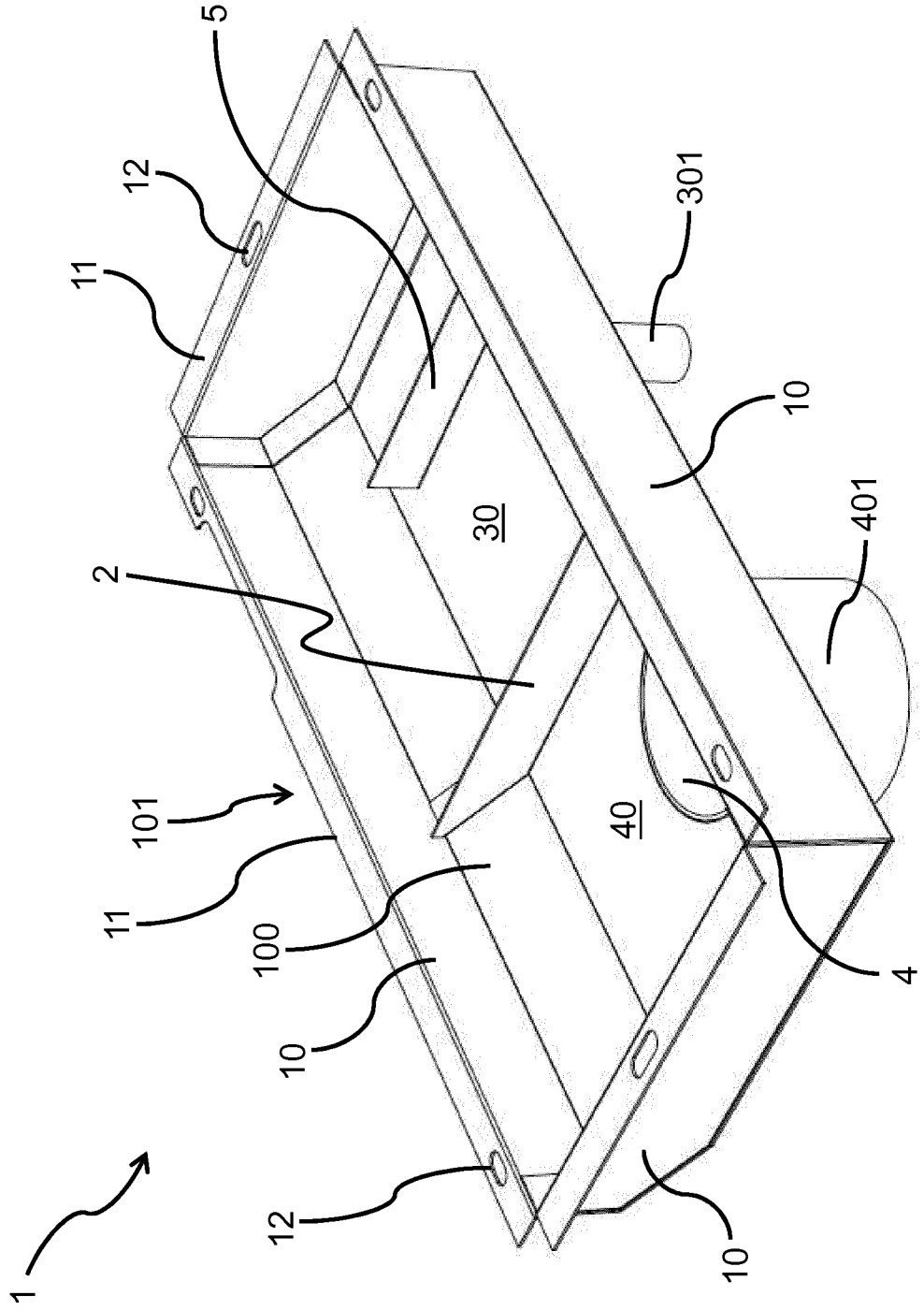

Fig.1

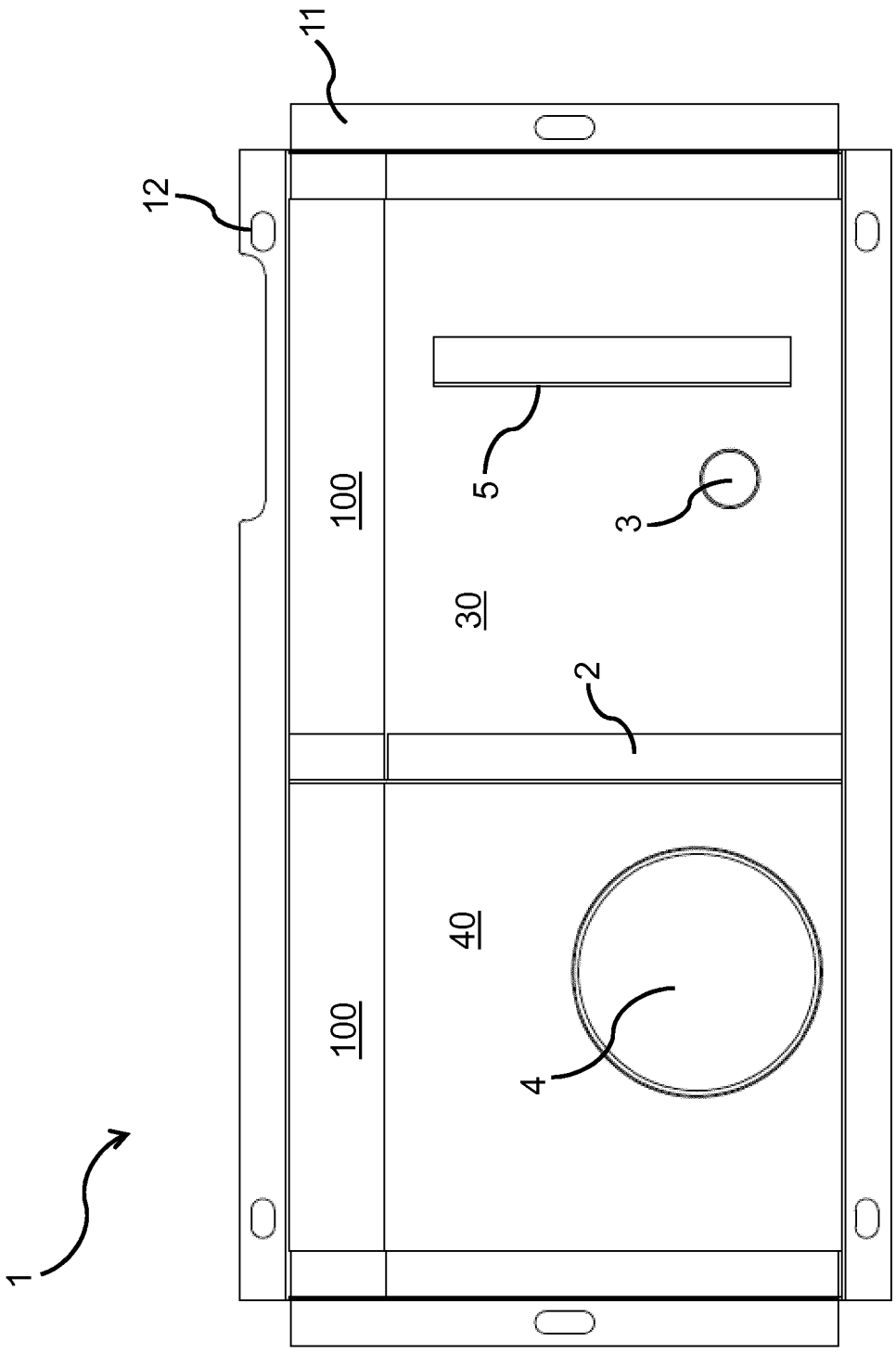

Fig.2

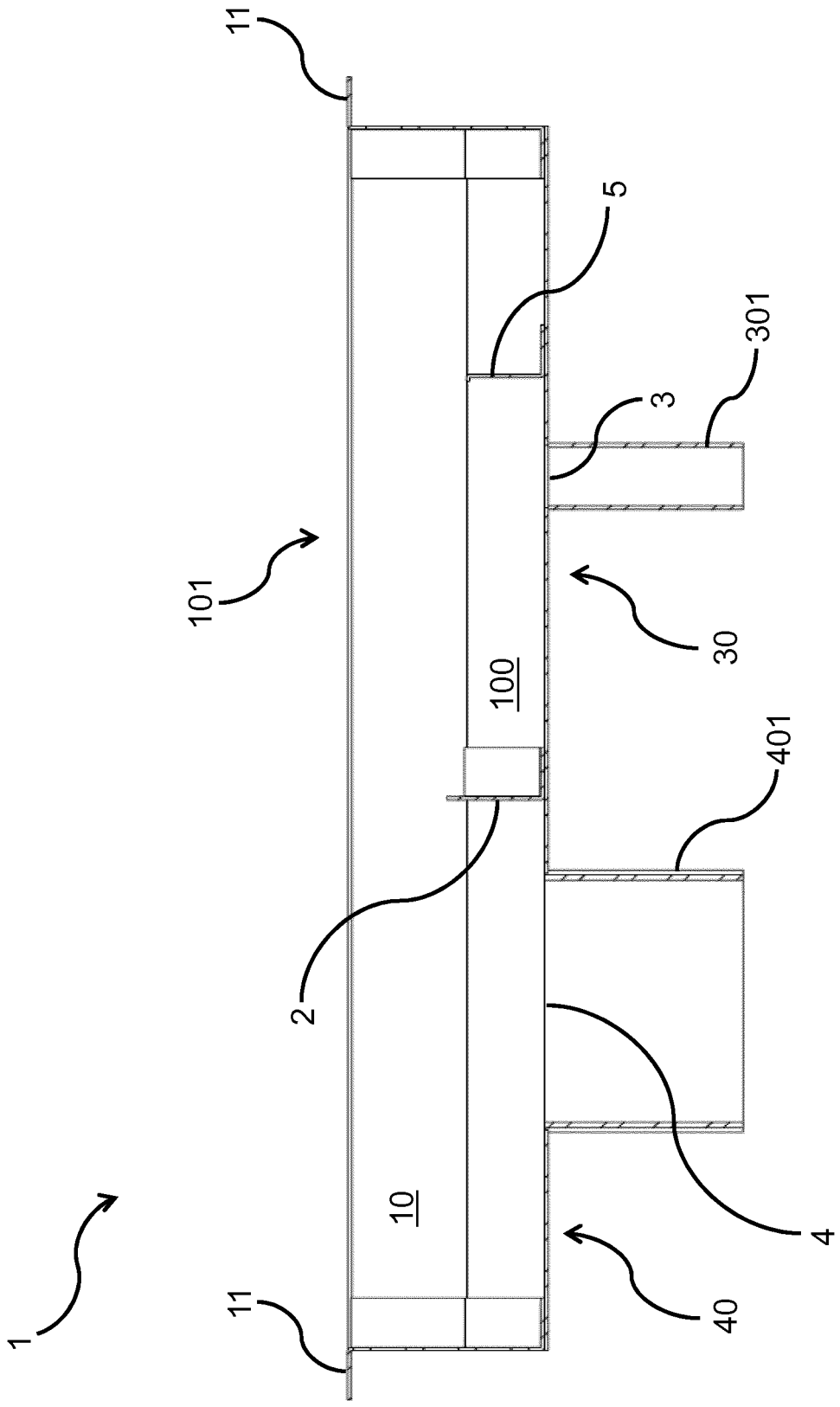

Fig.3

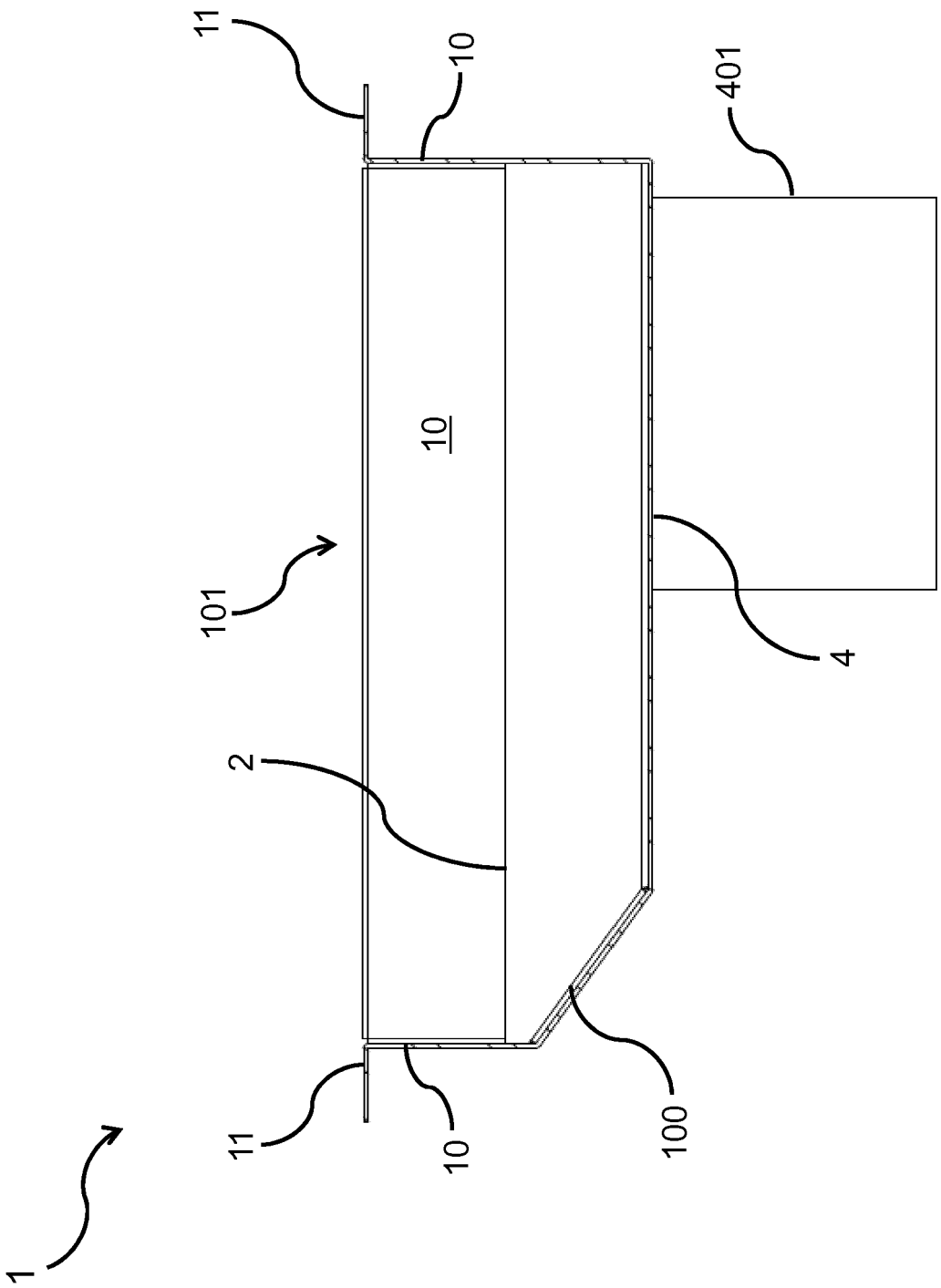

Fig.4

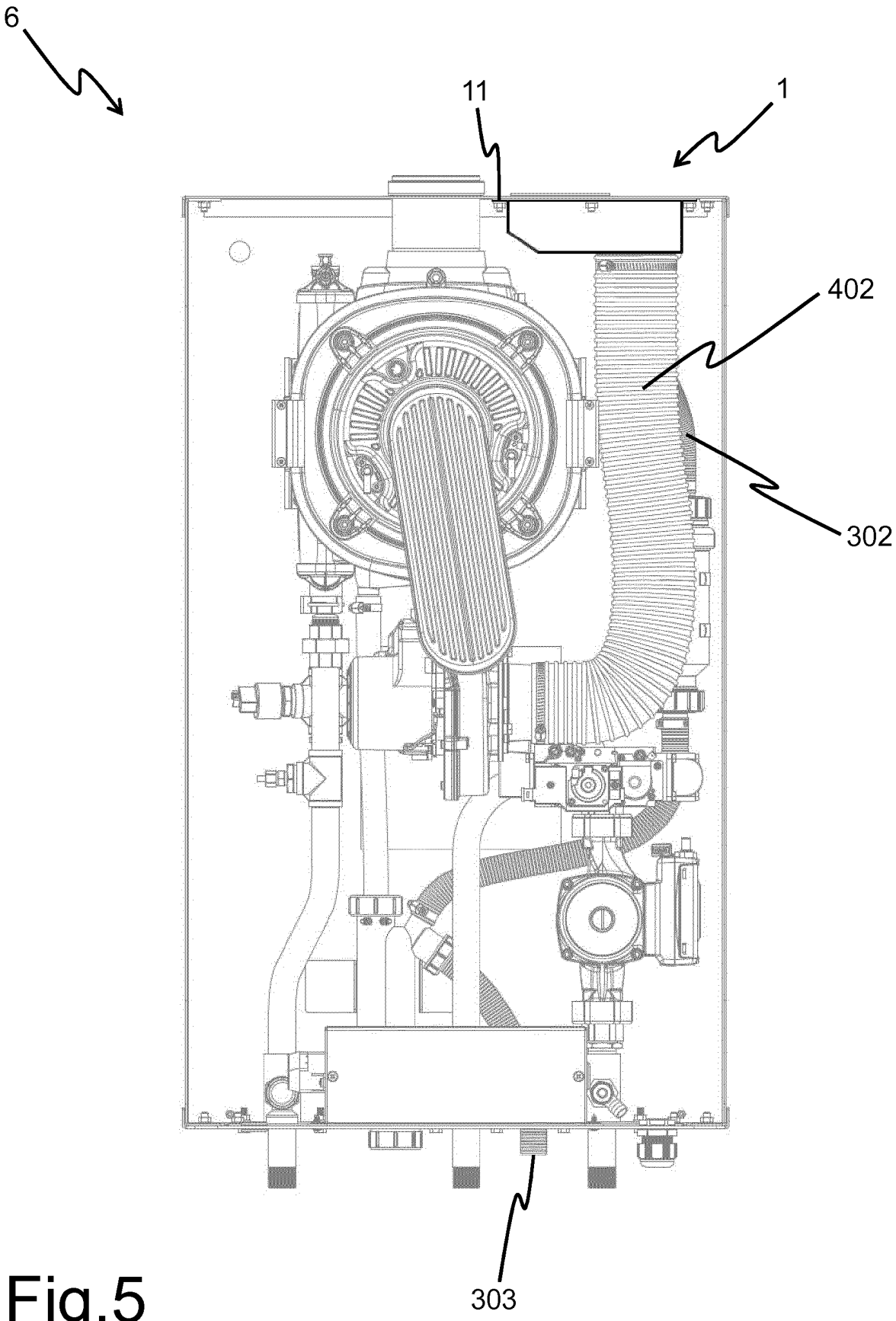

Fig.5

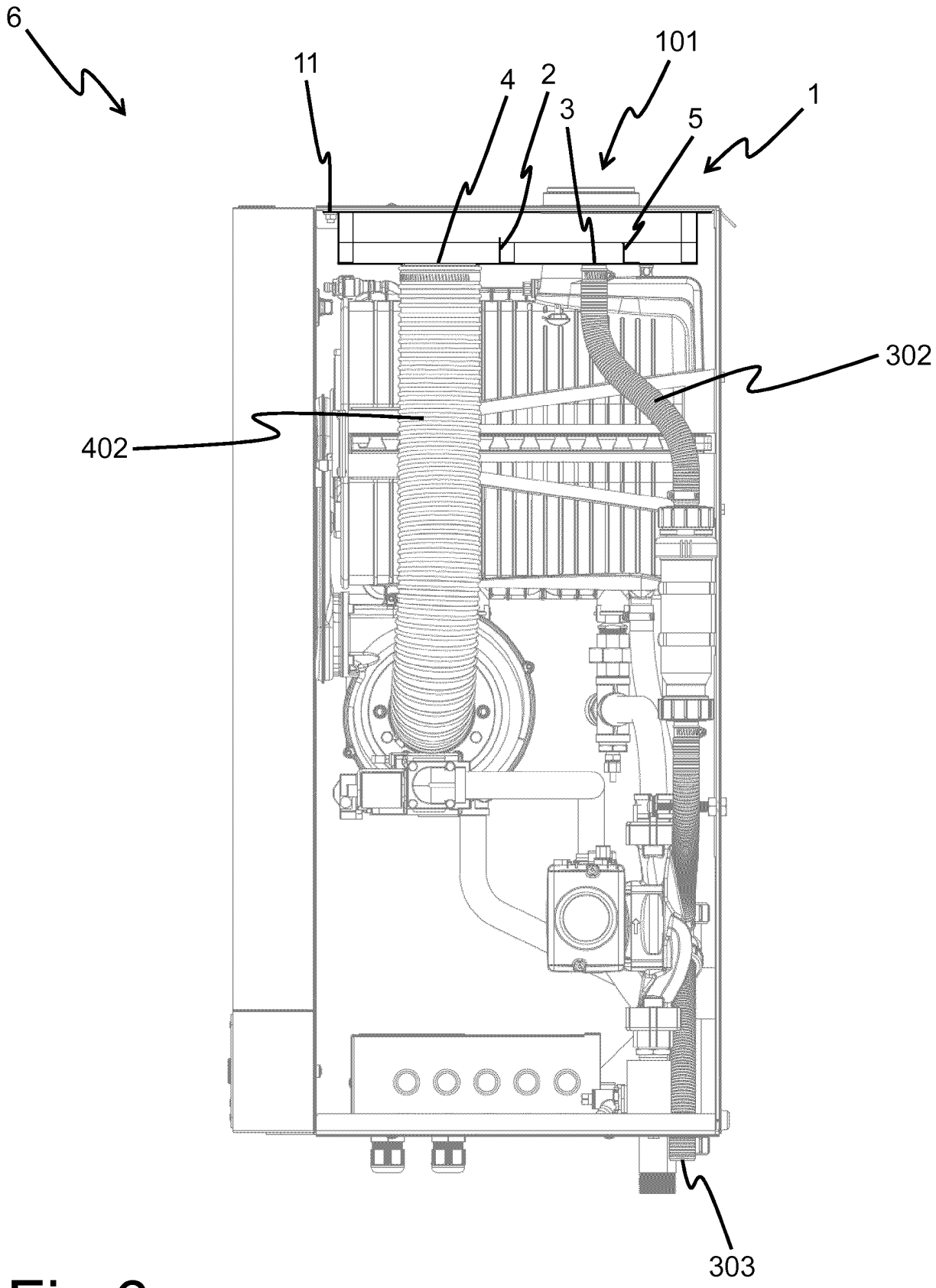

Fig.6

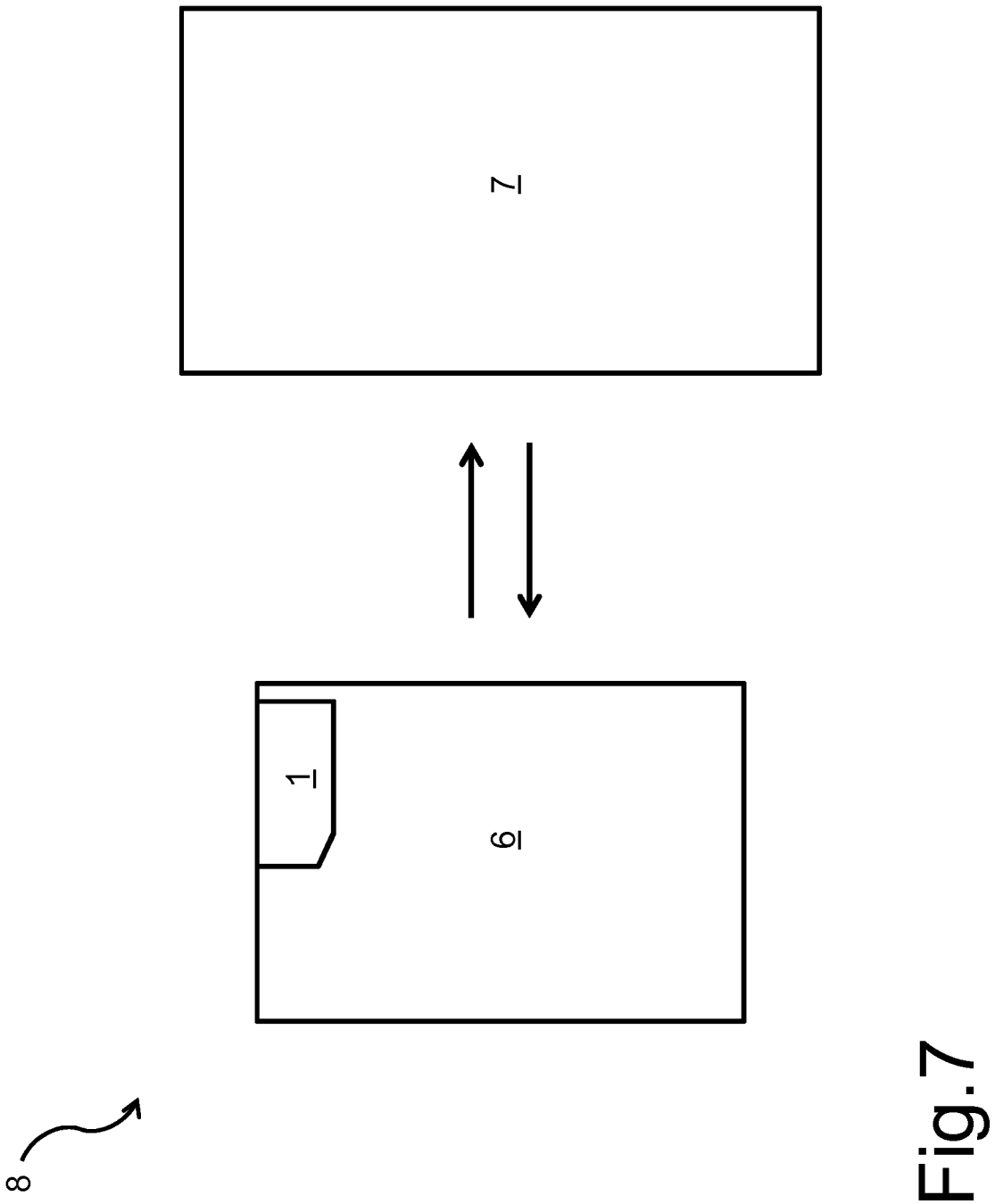

Fig.7

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

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