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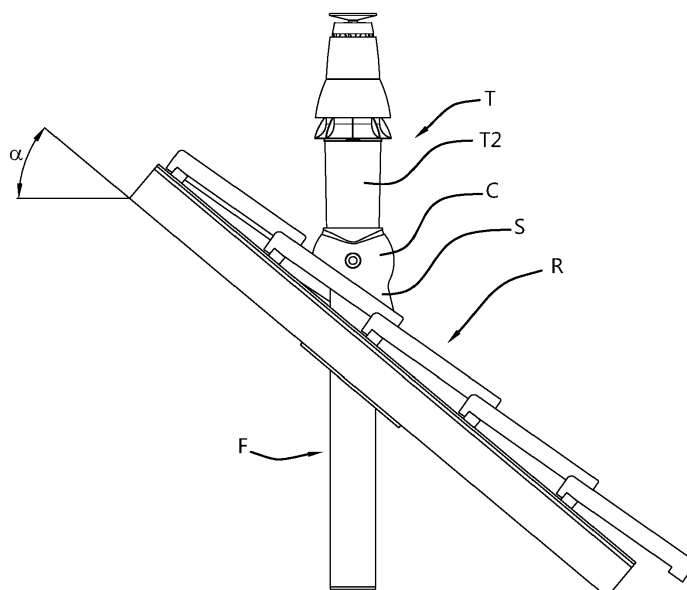
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(54) **ROOF TERMINAL ADAPTER**

(57) A roof terminal adapter (1) for connecting a roof terminal (T) to a flue (F), comprising a double walled tubular body (2) having an outer tubular member (3) and an inner tubular member (4) extending through the outer tubular member (3). The outer tubular member (3) comprises an outer sleeve member (12) having a first end (13) attached to the outer tubular member (3) and a second end (14) that projects away from the outer tubular member (3), and wherein the outer sleeve member (12) is circumferentially arranged around a second outer insert end (11) of the outer tubular member (3) and spaced apart therefrom, wherein a circumferential space (15) is provided between the outer sleeve member (12) and the second outer insert end (11).

ond end (14) that projects away from the outer tubular member (3), and wherein the outer sleeve member (12) is circumferentially arranged around a second outer insert end (11) of the outer tubular member (3) and spaced apart therefrom, wherein a circumferential space (15) is provided between the outer sleeve member (12) and the second outer insert end (11).

Fig. 1



Description

Field of the invention

[0001] The present invention relates to a roof terminal adapter, in particular a roof terminal adapter for connecting a roof terminal to a flue.

Background art

[0002] European patent application EP 3 012 528 A1 relates to a flue gas outlet assembly that allows for a small packaging footprint by allowing its length to be easily adjusted from a retracted configuration to an extended configuration through a pull movement for lengthen the flue gas outlet assembly to a desired length. The flue gas outlet assembly can be shortened for packaging and transportation purposes and easily lengthened in one single movement when it is to be installed. Lengthening the flue gas outlet assembly is accomplished by e.g. pulling a double wall tubular upper member and a double wall tubular lower member apart in longitudinal fashion. Once a desired length of the flue gas assembly has been reached, a relative rotational movement over a predetermined angle interlocks the double wall tubular upper member and double wall tubular lower member in the longitudinal direction.

[0003] Even though the above flue gas outlet assembly allows for a small packaging footprint for transportation and storage purposes prior to installation, a typical installation would require that the flue gas outlet assembly is adjusted to a required length and subsequently inserted through a roof opening. However, inserting a complete flue gas outlet assembly at length through a roof opening may increase complexity of installing the flue gas outlet assembly.

Summary of the invention

[0004] The present invention relates to a roof terminal adapter, in particular a roof terminal adapter for connecting a roof terminal to a flue, wherein the roof terminal adapter allows for a modular flue gas outlet assembly that exhibits a smaller packaging footprint for transportation and storage purposes prior to installation. Further, the roof terminal adapter simplifies the assembly of a flue gas outlet through flat or inclined roof as tubes used for a flue and roof terminal need not be handled and installed simultaneously.

[0005] According to the present invention, a roof terminal adapter for connecting a roof terminal to a flue is provided, comprising a double walled tubular body having an outer tubular member and an inner tubular member extending through the outer tubular member. An annular intake channel extends between the outer and inner tubular members and wherein an exhaust channel extends through the inner tubular member. The inner tubular member comprises an inner sleeve end configured to

receive an inner tube part of the roof terminal, and an inner insert end configured for insertion in an inner tube of the flue.

[0006] The outer tubular member comprises a first outer insert end configured for insertion in an outer tube part of the roof terminal, and a second outer insert end configured for insertion in an outer tube of the flue. The outer tubular member further comprises an outer sleeve member having a first end attached to the outer tubular member and a second end projecting away from the outer tubular member, wherein the outer sleeve member is circumferentially arranged around the second outer insert end and spaced apart therefrom, wherein a circumferential space is provided between the outer sleeve member and the second outer insert end.

[0007] The roof terminal adapter of the present invention allows the inner and outer tubes of the flue and the inner and outer tube parts of the roof terminal to be connected to the roof terminal adapter separately, so that connecting the flue to the roof terminal is simplified. Furthermore, the connection of the inner and outer tube parts of the roof terminal to the roof terminal adapter can be located above the roof and a such provide improved accessibility when installing the roof terminal.

[0008] The first outer insert end allows the outer tube part of the roof terminal to be arranged around the first outer insert end, so that water and dust ingress is minimized as the outer tube part externally overlaps the first outer insert end. A similar advantage is provided by the outer sleeve member, in particular the circumferential space provided thereby, as an insert portion/end of a roof flashing may be received in the circumferential space. In this way the outer sleeve member overlaps or covers the insert portion/end of the roof flashing to provide water and dust protection. Moreover, the outer sleeve member may also be used as a covering for a roof flashing in particular applications.

Short description of drawings

[0009] The present invention will be discussed in more detail below, with reference to the attached drawings, in which

Figure 1 depicts a side view of a flue gas outlet assembly comprising a roof terminal and a flue;

Figure 2 depicts a cross section of a roof terminal and a flue that are connected by means of a roof terminal adapter according to a first embodiment of the present invention;

Figure 3 shows a three dimensional view of a roof terminal adapter according to a second embodiment of the present invention;

Figure 4 shows a cross section of a roof terminal adapter according to the second embodiment of the present invention;

Figure 5 shows a three dimensional view of a roof terminal adapter according to a third embodiment of

the present invention;

Figure 6 shows a cross section of a roof terminal adapter according to the third embodiment of the present invention;

Figure 7 shows a cross section of a roof terminal adapter connected to a flue and a roof terminal according to a fourth embodiment of the present invention; and wherein

Figure 8 shows a cross section of a tubular reducer connected to a roof terminal adapter according to a fifth embodiment of the present invention.

Description of embodiments

[0010] Figure 1 depicts a side view of a flue gas outlet assembly comprising a roof terminal T arranged above a roof R and a flue F for arranged below the roof R. The roof R may be a flat or inclined roof as indicated by the roof angle α , which may range from 0° to e.g. 60° or even higher.

[0011] Figure 2 shows a cross section of a roof terminal T and a flue F that are connected by means of a roof terminal adapter 1 according to an embodiment of the present invention. The roof R is not shown for clarity purposes.

[0012] As depicted, the flue F comprises a double walled arrangement of an inner tube F1 for connection to an exhaust of a heating system, which is not shown, and an outer tube F2 for connected to an air intake of the heating system. The roof terminal T comprises a double walled arrangement of an inner tube part T1 used for venting flue gases and an outer tube part T2 used for air intake for the heating system.

[0013] The roof terminal adapter 1 is arranged for connecting the roof terminal T to the flue F and as such acts as an intermediate component that allows the flue gas outlet assembly to be assembled in stages and not as a single unit. This increasing flexibility and ease of installation considerably.

[0014] Further details of the roof terminal adapter 1 are depicted in Figure 3 and 4, showing a three dimensional view of a roof terminal adapter 1 and a cross section thereof respectively.

[0015] The roof terminal adapter 1 as shown comprises a double walled tubular body 2 having an outer tubular member 3 and an inner tubular member 4 extending through the outer tubular member 3. An annular intake channel 6 extends between the outer and inner tubular members 3, 4 and wherein an exhaust channel 7 extends through the inner tubular member 4.

[0016] The inner tubular member 4 comprises an inner sleeve end 8 configured to receive the inner tube part T1 of the roof terminal T, and an inner insert end 9 configured for insertion in the inner tube F1 of the flue F.

[0017] The outer tubular member 3 comprises a first outer insert end 10 configured for insertion in the outer tube part T2 of the roof terminal T, and a second outer insert end 11 configured for insertion in the outer tube

F2 of the flue F.

[0018] The outer tubular member 3 further comprises an outer sleeve member 12 having a first end 13 attached to the outer tubular member 3 and a second end 14 that projects away from the outer tubular member 3. The outer sleeve member 12 is circumferentially arranged around the second outer insert end 11 and spaced apart therefrom, wherein a circumferential space 15 is provided between the outer sleeve member 12 and the second outer insert end 11.

[0019] The roof terminal adapter 1 of the present invention allows the inner and outer tubes F1, F2 of the flue F, and the inner and outer tube parts T1, T2 of the roof terminal T, to be connected to the roof terminal adapter 1 separately. As a result, the assembly of the flue F and roof terminal T is simplified. The connection of the inner tube part T1 to the inner sleeve end 8 as well as the connection of the outer tube part T2 to the first outer insert end 10 can be achieved above the roof R, thereby increasing accessibility and ease of installation of the roof terminal T.

[0020] The first outer insert end 10 allows the outer tube part T2 of the roof terminal T to act as a sleeve and as such can be arranged around the first outer insert end 10. This minimises water and dust ingress as the outer tube part T2 of the roof terminal T covers or overlaps the first outer insert end 10. A similar advantage is provided by the outer sleeve member 12 and in particular the circumferential space 15, which allows insertion of, for example, an insert portion/end C1 of a cover C for a roof flashing S as depicted in Figure 1 and 2.

[0021] As will be mentioned in further detail later, the circumferential space 15 also allows for direct insertion of an insert portion/end S1 of a roof flashing S as exemplified in e.g. Figure 8.

[0022] In an exemplary embodiment s depicted in Figure 3 and 4, the outer tubular member 3 and the inner tubular member 4 may be cylindrical for engagement with cylindrical inner and outer tube parts T1, T2 of the roof terminal T and cylindrical inner and outer tubes F1, F2 of the flue F. In light of this, Figure 3 and 4 show an embodiment wherein the outer sleeve member 12 is a cylindrical outer sleeve member 12 extending (substantially) parallel along the second outer insert end 11. In this embodiment the cylindrical outer sleeve member 12 allows for a large variety of covers C from external suppliers to be used as many of such third-party covers C comprise cylindrical insert portions/ends C1.

[0023] As further depicted in Figure 4, in an embodiment the first outer insert end 10 has an outer diameter D1 which is smaller than an outer diameter D2 of the outer sleeve member 12. When the outer diameter D1 is smaller than the outer diameter D2, it is possible to allow the outer tube part T2 to have an outer diameter substantially equal to the outer diameter D2 of the outer sleeve member 12 for improved downward water drainage along the outer tube part T2 toward and along the outer sleeve member 12.

[0024] In an embodiment, the first outer insert end 10 extends beyond the inner sleeve end 8, e.g. by a height h_1 . This embodiment may simplify insertion and alignment of the first outer insert end 10 into the outer tube part T2 without having to simultaneously insert the inner tube part T1 in the inner sleeve end 8, thereby making it easier to connect the roof terminal T to the roof terminal adapter 1. In another embodiment, the inner insert end 9 may extend beyond the second outer insert end 11, e.g. by a height h_2 . Here, the inner tube F1 may be aligned and connected to the inner insert end 9 first without the need to simultaneously align and connect the outer tube F2 to the second outer insert end 11.

[0025] Referring to Figure 2 and 4, in an embodiment the first outer insert end 10 may have a length L_1 of at least 5 cm. Doing so allows for a sufficiently reliable connection between the outer tube part T2 and the roof terminal adapter 1 as well as to increase accessibility and simplify installation of the roof terminal T. In exemplary embodiments, the length L_1 may at least be 10, 15, 20, 25 or 30 cm.

[0026] As depicted in Figure 3 and 4, in an embodiment the outer tubular member 3 and the inner tubular member 4 are connected by a plurality of radially extending walls 5 extending between the outer tubular member 3 and inner tubular member 4, and wherein the outer tubular member 3, the inner tubular member 4, and the plurality of radially extending walls 5 are integrally formed as a single unitary piece. This embodiment provides the roof terminal adapter 1 as a single component that is easily handled and connected to the flue F and the roof terminal T without the need for further components. In an embodiment, the plurality of radially extending walls 5 are evenly spaced around the inner tubular member 4 and arranged in lengthwise direction of the roof terminal adapter 1 (e.g. in upward/downward direction as shown in Figure 4) to minimize air flow resistance in the annular intake channel 6.

[0027] It is worth noting that the outer sleeve member 12 need not be cylindrical as mentioned in view of Figures 3 and 4. For example, Figure 5 and 6 show a three dimensional view and a cross section, respectively, of a roof terminal adapter 1 according to another embodiment. In the embodiment shown, the outer sleeve member 12 may be arched or convex shaped expanding outward in a direction from the first end 13 to the second end 14. In this embodiment the outer sleeve member 12 may be seen as being dome shaped and having a larger circumference (i.e. being wider) at the second end 14 than the first end 13. The outer sleeve member 12 can be utilized as a covering C for a roof flashing S, which is also arched or convex shaped to be received in a congruent concave circumferential space 15. The convex roof flashing S as depicted in Figure 6 may be advantageous for an inclined roof as indicated by the roof angle α . In particular, since the outer sleeve member 12 may be convex or dome shaped as shown, congruent engagement between the outer sleeve member 12 and the con-

vex or dome shaped roof flashing S allows the roof terminal adapter 1 to be aligned at an upright or vertical position whereas the roof flashing S may be arranged on an inclined roof. Therefore, the convex outer sleeve member 12 allows the roof terminal adapter 1 to be adjustable through rotation about a pivot point O as shown in Figure 6, so that a required vertical alignment of the roof terminal adapter 1 can be achieved for an arbitrary roof angle α .

[0028] The aforementioned adjustability of the roof terminal adapter 1 may be further facilitated in an embodiment wherein the second end 14 of the outer sleeve member 12 comprises a pivot hole 12a. The pivot hole 12a may be configured to receive a pivot pin (not shown) of a roof flashing S. In this embodiment it is possible to pivotally connect the outer sleeve member 12 to a roof flashing S by virtue of the pivot hole 12a. This greatly simplifies installation of the roof terminal adapter 1 as a user can easily rotate the roof terminal adapter 1 to achieve a required upright position given a particular roof angle α .

[0029] Returning to Figure 2, it was mentioned earlier that the first outer insert end 10 may have a length L_1 of at least the length L_2 of the inner tubular member 4. This allows the first outer insert end 10 to act or function as an extension of the outer tube part T2 of the roof terminal T. The embodiment shown in Figure 2 may thus be seen as a "long" version of the roof terminal adapter 1. In contrast to such a "long" version of the roof terminal adapter 1, a "short" version is provided as exemplified in Figure 7, showing a cross section of the roof terminal adapter 1 connected to the inner and outer tube F1, F2 of the flue F and the inner and outer tube parts T1, T2 of the roof terminal T. In this depicted embodiment it is seen that the length L_1 of the first outer insert end 10 is shorter than the length L_2 of the inner tubular member 4. For this "short" version of the roof terminal adapter 1, the outer tube part T2 may connect to the roof terminal adapter 1, i.e. to the first outer insert end 10, closer to the roof R.

[0030] In Figure 7 it is further shown that the first outer insert end 10 may be received in an inner circumferential collar portion Tc of the outer tube part T2, wherein the collar portion Tc provides improved drainage of water (e.g. condensation) on an inside of the outer tube part T2.

[0031] It is worth noting that the roof terminal adapter 1 of the present invention is configured to connect to the roof terminal T and the flue F in a retaining manner so that spontaneous separation of the roof terminal adapter 1 and the flue F and roof terminal T is prevented. For example, in a group of embodiments, the inner sleeve end 8 and the first outer insert end 10 may be configured to connect to the inner tube part T1 and the outer tube part T2, respectively, by means of a clamped, snap-fit, bayonet or threaded connection. In a similar embodiment, the inner insert end 9 and the second outer inserted end 11 are configured to connect to the inner tube F1 and the outer tube F2, respectively, by means of a clamped, snap-fit, bayonet or threaded connection to pre-

vent. In an exemplary embodiment depicted in Figure 7, the inner sleeve end 8 may comprise a sealing or clamping ring 8a for clamped engagement around the inner tube part T1 of the roof terminal T. The sealing or clamping ring 8a is arranged to clamp the inner tube part T1 such that a sufficiently strong connection is achieved to prevent spontaneous separation of the inner tube part T1 and the inner sleeve end 8.

[0032] It was mentioned earlier that the roof terminal adapter 1 allows for a modular flue gas outlet assembly having a small packaging footprint for transportation and storage purposes prior to installation. It is further noted that the roof terminal adapter 1 may be readily used with different sizes for the inner and outer tubes F1, F2 when necessary for a particular application. In view of this, the present invention also relates to a roof terminal adapter set or kit for connecting the roof terminal T to a flue F, wherein the set allows connection of the roof terminal adapter 1 to different sizes of inner and outer tubes F1, F2 of the flue F.

[0033] The roof terminal adapter set according to the invention comprises the roof terminal adapter 1 as outlined in various embodiments above and a tubular reducer with which the roof terminal adapter 1 be connected to different sizes (diameters) of the inner and outer tubes F1, F2 of the flue F.

[0034] Figure 8 shows a cross section of a tubular reducer 16 as used in combination with the roof terminal adapter 1. As shown the roof terminal adapter set/kit comprises the roof terminal adapter 1 and a tubular reducer 16 (or reducer connector 16), wherein the tubular reducer 16 comprises an outer tubular reducer 17 and an inner tubular reducer 18 extending through the outer tubular reducer 17. An annular reducer intake channel 19 extends between the outer and inner tubular reducer 17, 18 and wherein a reducer exhaust channel 20 extends through the inner tubular reducer 18.

[0035] The inner tubular reducer 18 comprises an inner reducer sleeve end 21 configured to receive the inner insert end 9 of the roof terminal adapter 1, and wherein the outer tubular reducer 17 comprises an outer reducer sleeve end 22 configured to receive the second outer insert end 11 of the roof terminal adapter 1. The inner tubular reducer 18 further comprises an inner reducer insert end 23 configured for insertion in the inner tube F1 of the flue F, and wherein the outer tubular reducer 17 further comprises an outer reducer insert end 24 configured for insertion in the outer tube F2 of the flue F.

[0036] From Figure 8 it can be inferred that the tubular reducer 16 may be used to connect the roof terminal adapter 1 to an inner tube F1 and an outer tube F2 each having a smaller diameter than a diameter of the inner sleeve end 9 and the second outer insert end 11. By using the tubular reducer 16 allows the roof terminal adapter 1 to be used with two sized of flues F, e.g. two sizes of inner and outer tubes F1, F2.

[0037] In particular, when the tubular reducer 16 is not used, then the roof terminal adapter 1 can be connected

to the largest of the two sizes of the inner and outer tubes F1, F2. In case the tubular reducer 16 is connected to the roof terminal adapter 1, then the smallest of the two sizes of the inner and outer tubes F1, F2 can be used.

[0038] In an embodiment, the outer tubular reducer 17 and the inner tubular reducer 18 are connected by a plurality of radially extending reducer walls 25 extending between the outer tubular reducer 17 and inner tubular reducer 18, and wherein the outer tubular reducer 17, the inner tubular reducer 18, and the plurality of reducer walls 25 are integrally formed as a single unitary piece. This embodiment provides the tubular reduced 16 as a single component that is easily handled and connected to the roof terminal adapter 1 without the need for further components. In an advantageous embodiment, the plurality of radially extending reducer walls 25 are evenly spaced around the inner tubular reducer 18 and arranged in lengthwise direction of the tubular reducer 16 (e.g. in upward/downward direction as shown in Figure 8) to minimize air flow resistance in the annular reducer intake channel 19.

[0039] From the above it is clear that the roof terminal adapter set or kit of the present invention provides flexibility to the user as there is no need for a specific roof terminal adapter 1 for each size of flue F, thereby lowering manufacturing costs and increase the number flue gas applications in which the roof terminal adapter 1 can be used.

[0040] In view of the above, the present invention can now be summarized by the following embodiments:

Embodiment 1. A roof terminal adapter (1) for connecting a roof terminal (T) to a flue (F), comprising

35 a double walled tubular body (2) having an outer tubular member (3) and an inner tubular member (4) extending through the outer tubular member (3), wherein an annular intake channel (6) extends between the outer and inner tubular members (3, 4) and wherein an exhaust channel (7) extends through the inner tubular member (4);
 40 wherein the inner tubular member (4) comprises an inner sleeve end (8) configured to receive an inner tube part (T1) of the roof terminal (T), and an inner insert end (9) configured for insertion in an inner tube (F1) of the flue (F);
 45 wherein the outer tubular member (3) comprises a first outer insert end (10) configured for insertion into an outer tube part (T2) of the roof terminal (T), and a second outer insert end (11) configured for insertion in an outer tube (F2) of the flue (F), and wherein
 50 the outer tubular member (3) further comprises an outer sleeve member (12) having a first end (13) attached to the outer tubular member (3) and a second end (14) projecting away from the outer tubular member (3), and wherein the outer sleeve member (12) is circumferentially ar-

ranged around the second outer insert end (11) and spaced apart therefrom, wherein a circumferential space (15) is provided between the outer sleeve member (12) and the second outer insert end (11).

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Embodiment 2. The roof terminal adapter according to embodiment 1, wherein the outer sleeve member (12) is a cylindrical outer sleeve member (12) extending parallel along the second outer insert end (11).

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Embodiment 3. The roof terminal adapter according to embodiment 1 or 2, wherein the first outer insert end (10) comprises an outer diameter (D1) which is smaller than an outer diameter (D2) of the outer sleeve member (12).

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Embodiment 4. The roof terminal adapter according to embodiment 1, wherein the outer sleeve member (12) is convex shaped expanding outward in a direction from the first end (13) to the second end (14) of the outer sleeve member (12).

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Embodiment 5. The roof terminal adapter according to embodiment 4, wherein the second end (14) of the outer sleeve member (12) comprises a pivot hole (12a).

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Embodiment 6. The roof terminal adapter according to any one of embodiments 1-5, wherein the first outer insert end (10) extends beyond the inner sleeve end (8).

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Embodiment 7. The roof terminal adapter according to any one of embodiments 1-6, wherein the inner insert end (9) extends beyond the second outer insert end (11).

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Embodiment 8. The roof terminal adapter according to any one of embodiments 1-7, wherein the first outer insert end (10) has a length (L1) of at least 5 cm.

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Embodiment 9. The roof terminal adapter according to any one of embodiments 1-8, wherein the outer tubular member (3) and the inner tubular member (4) are connected by a plurality of radially extending walls (5) extending between the outer tubular member (3) and inner tubular member (4), and wherein the outer tubular member (3), the inner tubular member (4), and the plurality of radially extending walls (5) are integrally formed as a single unitary piece.

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Embodiment 10. A roof terminal adapter set for connecting a roof terminal (T) to a flue (F), comprising a roof terminal adapter (1) according to any of embodiments 1-9, and a tubular reducer (16),

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wherein the tubular reducer (16) comprises an outer tubular reducer (17) and an inner tubular reducer (18) extending through the outer tubular reducer (17), wherein an annular reducer intake channel (19) extends between the outer and inner tubular reducer (17, 18) and wherein a reducer exhaust channel (20) extends through the inner tubular reducer (18);

wherein the inner tubular reducer (18) comprises an inner reducer sleeve end (21) configured to receive the inner insert end (9) of the roof terminal adapter (1), and wherein the outer tubular reducer (17) comprises an outer reducer sleeve end (22) configured to receive the second outer insert end (11) of the roof terminal adapter (1);

wherein the inner tubular reducer (18) comprises an inner reducer insert end (23) configured for insertion in an inner tube (F1) of the flue (F), and wherein the outer tubular reducer (17) comprises an outer reducer insert end (24) configured for insertion in an outer tube (F2) of the flue (F).

Embodiment 11. The roof terminal adapter set according to embodiment 10, wherein the outer tubular reducer (17) and the inner tubular reducer (18) are connected by a plurality of radially extending reducer walls (25) extending between the outer tubular reducer (17) and inner tubular reducer (18), and wherein the outer tubular reducer (17), the inner tubular reducer (18), and the plurality of reducer walls (25) are integrally formed as a single unitary piece.

[0041] The present invention has been described above with reference to a number of exemplary embodiments as shown in the drawings. Modifications and alternative implementations of some parts or elements are possible, and are included in the scope of protection as defined in the appended claims.

Claims

1. A roof terminal adapter (1) for connecting a roof terminal (T) to a flue (F), comprising

a double walled tubular body (2) having an outer tubular member (3) and an inner tubular member (4) extending through the outer tubular member (3), wherein an annular intake channel (6) extends between the outer and inner tubular members (3, 4) and wherein an exhaust channel (7) extends through the inner tubular member (4); wherein the inner tubular member (4) comprises an inner sleeve end (8) configured to receive an inner tube part (T1) of the roof terminal (T), and an inner insert end (9) configured for insertion

in an inner tube (F1) of the flue (F);
 wherein the outer tubular member (3) comprises a first outer insert end (10) configured for insertion into an outer tube part (T2) of the roof terminal (T), and a second outer insert end (11) configured for insertion in an outer tube (F2) of the flue (F), and
 wherein the outer tubular member (3) further comprises an outer sleeve member (12) having a first end (13) attached to the outer tubular member (3) and a second end (14) projecting away from the outer tubular member (3), and wherein the outer sleeve member (12) is circumferentially arranged around the second outer insert end (11) and spaced apart therefrom, wherein a circumferential space (15) is provided between the outer sleeve member (12) and the second outer insert end (11).

- 2. The roof terminal adapter according to claim 1, wherein the outer sleeve member (12) is a cylindrical outer sleeve member (12) extending parallel along the second outer insert end (11).
- 3. The roof terminal adapter according to claim 1 or 2, wherein the first outer insert end (10) comprises an outer diameter (D1) which is smaller than an outer diameter (D2) of the outer sleeve member (12).
- 4. The roof terminal adapter according to claim 1, wherein the outer sleeve member (12) is convex shaped expanding outward in a direction from the first end (13) to the second end (14) of the outer sleeve member (12).
- 5. The roof terminal adapter according to claim 4, wherein the second end (14) of the outer sleeve member (12) comprises a pivot hole (12a).
- 6. The roof terminal adapter according to any one of claims 1-5, wherein the first outer insert end (10) extends beyond the inner sleeve end (8).
- 7. The roof terminal adapter according to any one of claims 1-6, wherein the inner insert end (9) extends beyond the second outer insert end (11).
- 8. The roof terminal adapter according to any one of claims 1-7, wherein the first outer insert end (10) has a length (L1) of at least 5 cm.
- 9. The roof terminal adapter according to any one of claims 1-8, wherein the outer tubular member (3) and the inner tubular member (4) are connected by a plurality of radially extending walls (5) extending between the outer tubular member (3) and inner tubular member (4), and wherein the outer tubular member (3), the inner tubular member (4), and the

plurality of radially extending walls (5) are integrally formed as a single unitary piece.

- 10. A roof terminal adapter set for connecting a roof terminal (T) to a flue (F), comprising a roof terminal adapter (1) according to any of claims 1-9, and a tubular reducer (16),

wherein the tubular reducer (16) comprises an outer tubular reducer (17) and an inner tubular reducer (18) extending through the outer tubular reducer (17), wherein an annular reducer intake channel (19) extends between the outer and inner tubular reducer (17, 18) and wherein a reducer exhaust channel (20) extends through the inner tubular reducer (18);

wherein the inner tubular reducer (18) comprises an inner reducer sleeve end (21) configured to receive the inner insert end (9) of the roof terminal adapter (1), and wherein the outer tubular reducer (17) comprises an outer reducer sleeve end (22) configured to receive the second outer insert end (11) of the roof terminal adapter (1);

wherein the inner tubular reducer (18) comprises an inner reducer insert end (23) configured for insertion in an inner tube (F1) of the flue (F), and wherein the outer tubular reducer (17) comprises an outer reducer insert end (24) configured for insertion in an outer tube (F2) of the flue (F).

- 11. The roof terminal adapter set according to claim 10, wherein the outer tubular reducer (17) and the inner tubular reducer (18) are connected by a plurality of radially extending reducer walls (25) extending between the outer tubular reducer (17) and inner tubular reducer (18), and wherein the outer tubular reducer (17), the inner tubular reducer (18), and the plurality of reducer walls (25) are integrally formed as a single unitary piece.

Fig. 1

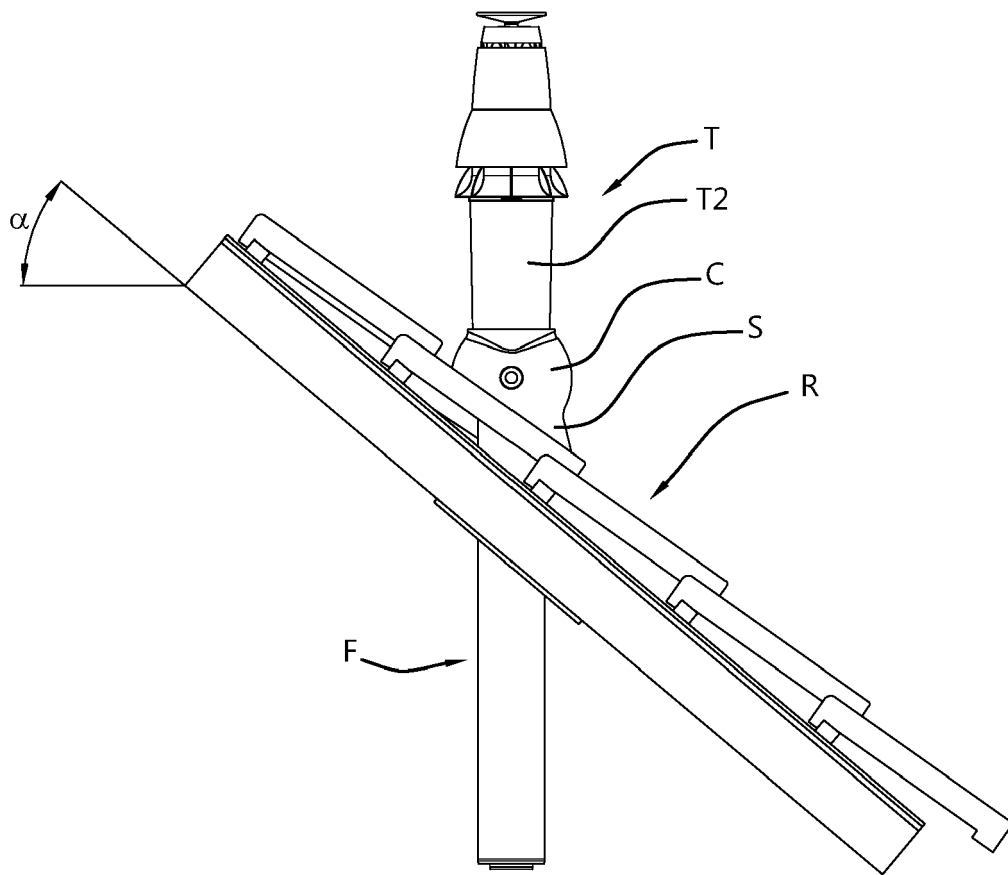


Fig. 2

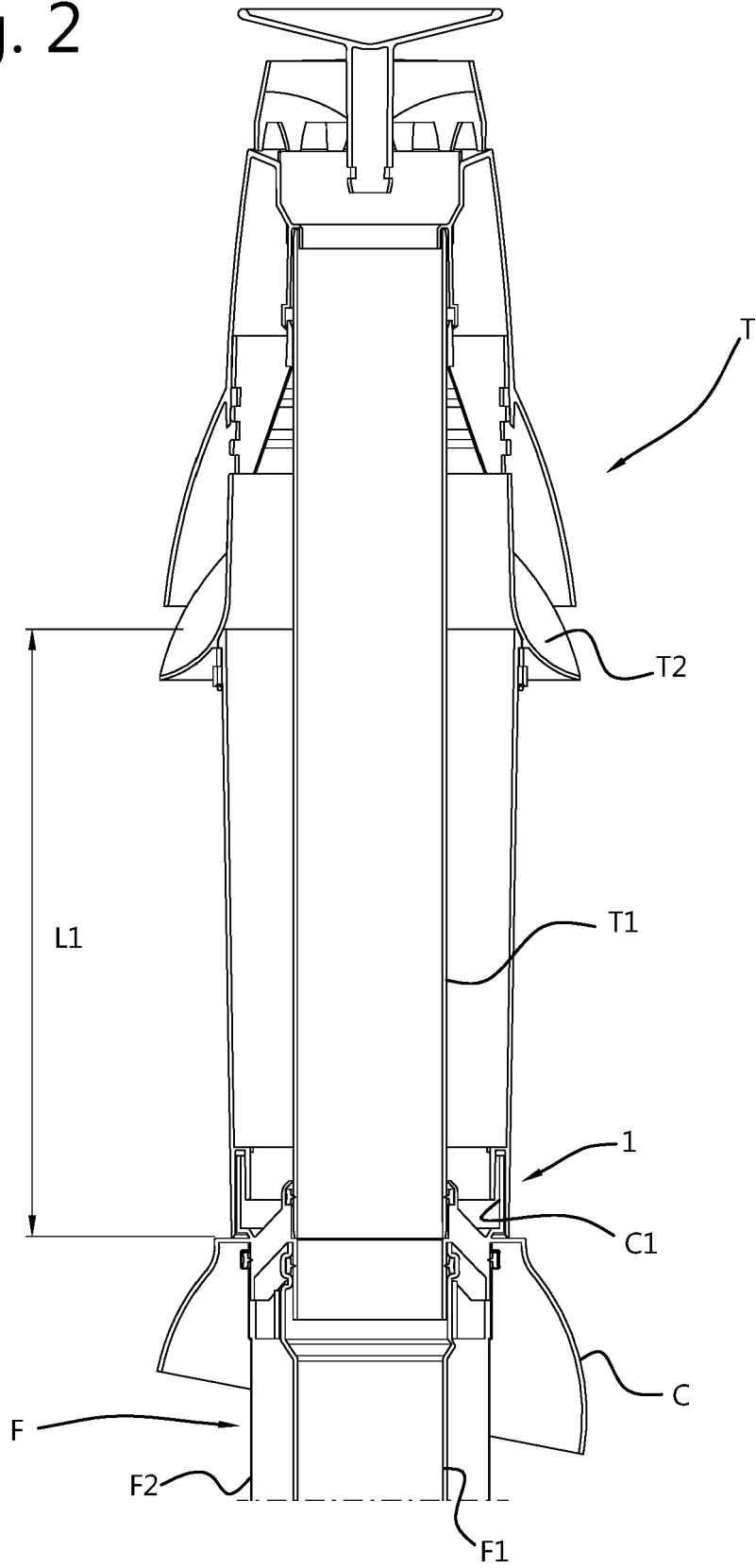


Fig. 3

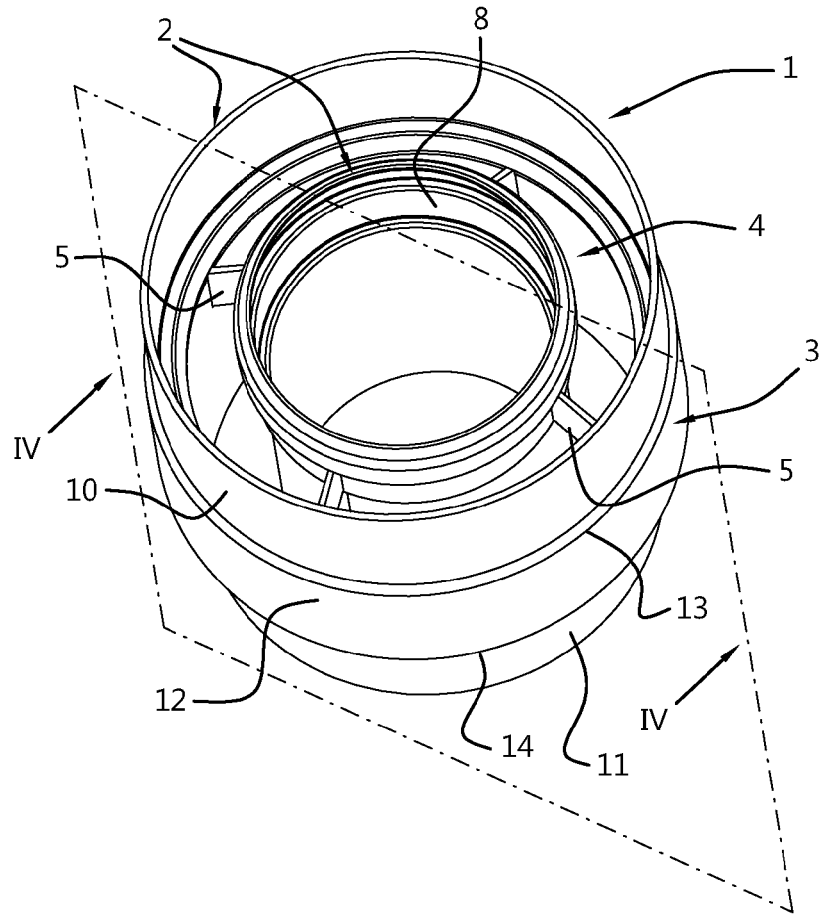


Fig. 4

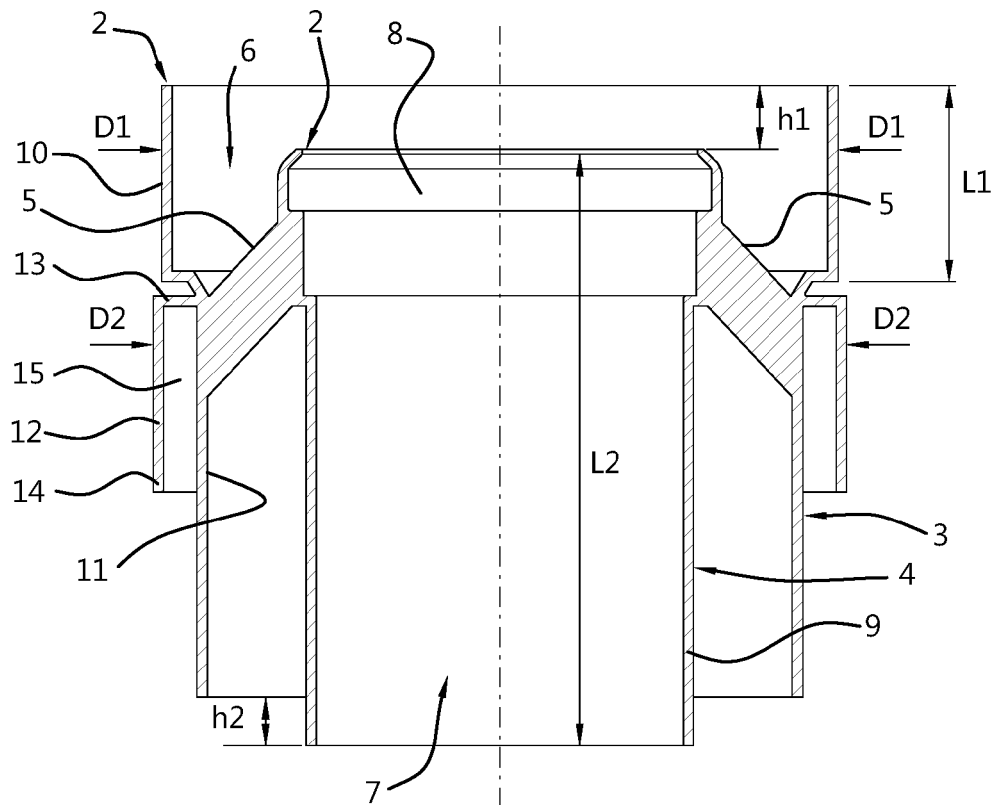


Fig. 7

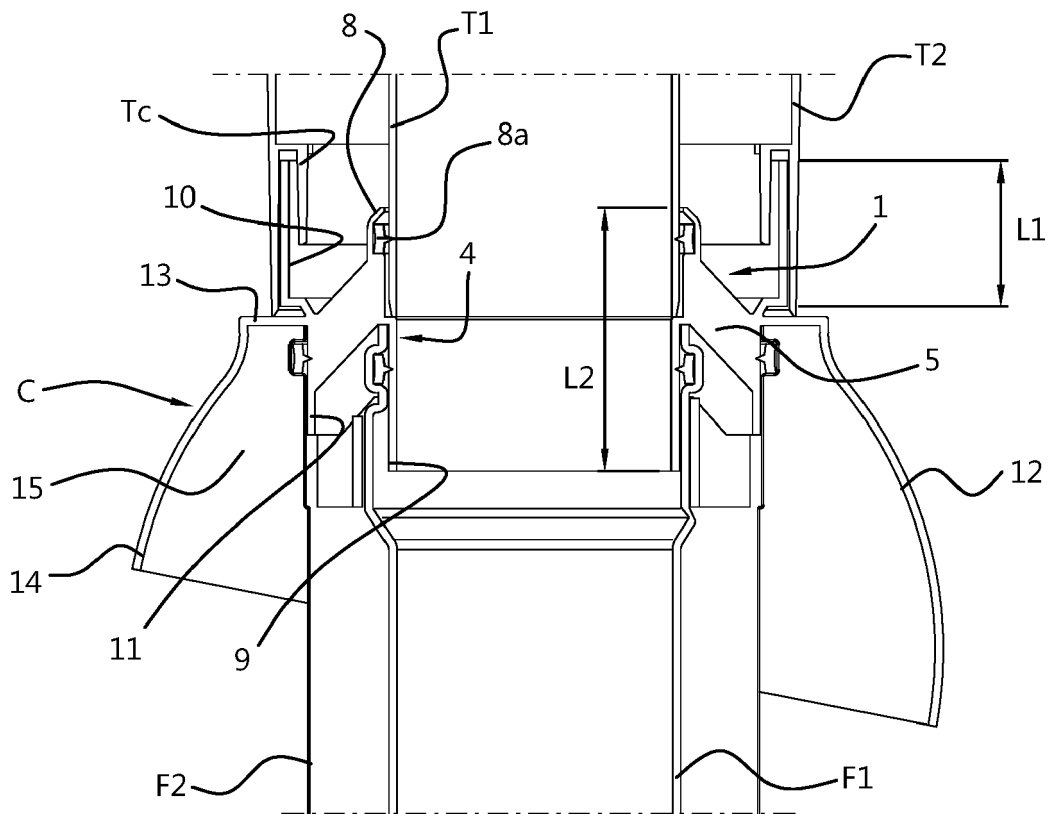
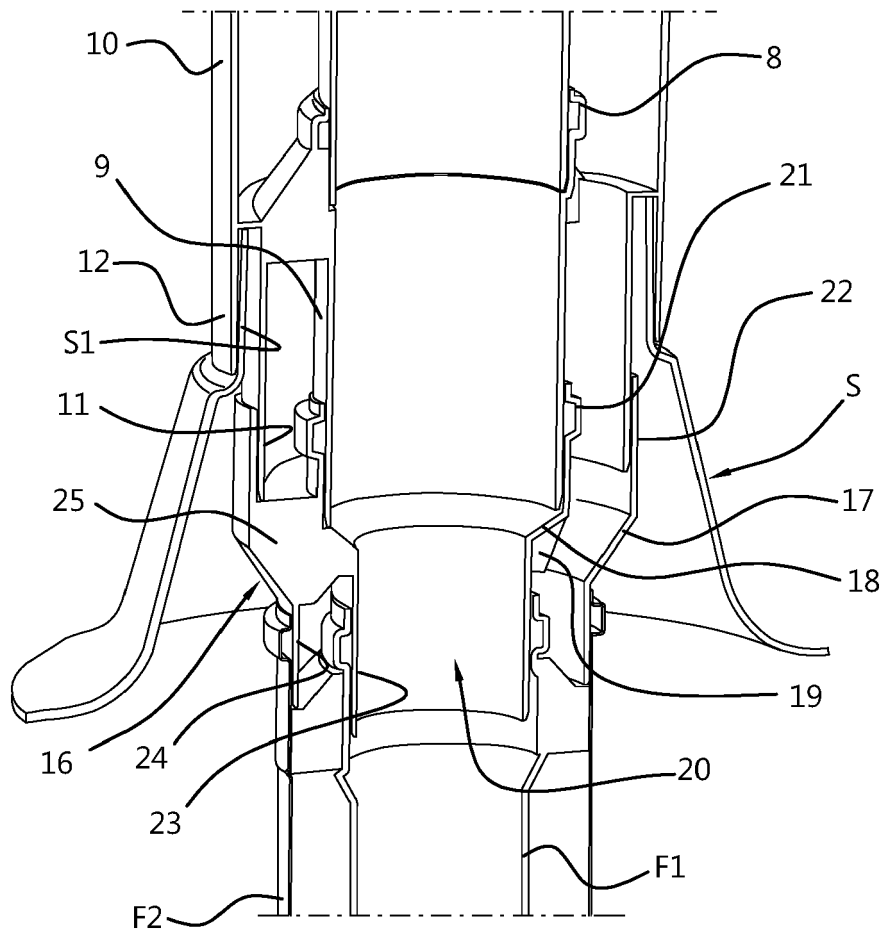


Fig. 8





EUROPEAN SEARCH REPORT

Application Number

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Place of search		Date of completion of the search	Examiner
Munich		1 December 2023	Hauck, Gunther
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REFERENCES CITED IN THE DESCRIPTION

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