alternatively it can be by means of clipping or snap joining points.

Moreover, the cover (9) is defined such that it has a concave side for covering the components (8) of the extractor assembly disposed along the second face (3.2) and a convex side for guiding the air. Accordingly, said covering (9) has a perimeter edge (9.1) dimensioned such that it is equal to or smaller, in terms of a radial measurement, than the geometric shape of the internal wall (3.3). See Figure 9.

Preferably, the cover (9) is joined to the support (3) such that the perimeter edge (9.1) is disposed such that it determines a continuation of the internal wall (3.3), according to the direction longitudinal and parallel to the imaginary central longitudinal axis (X) of the extractor assembly. Thus, the generation of turbulence is prevented in the air flow generated by the impeller (1) in the movement thereof along the end of the internal wall (3.3) according to the movement or advance direction of said air flow. This arrangement or configuration is clearly visible in Figure 9.

Moreover, the cover (9) is defined such that it has a convex side to guide the air. In other words, it smooths the directing of the air flow after the advance thereof through the passage (7) towards a more radial and internal area in order to exit the extractor assembly.

Accordingly, said cover (9) has a curved edge (9.2) on said convex side dimensioned such that it determines a reduction in the radial measurement, or with respect to said imaginary central longitudinal axis (X), of the cover (9) in a progressive manner, in other words, devoid of abruptness. In this manner, the cover (9) prevents the formation of turbulence or pressure changes which hinder or reduce the fluidity of the air when leaving the extractor assembly, or at least in the directing thereof towards a more radial and internal area after the advance thereof through the passage (7) in order to exit the extractor assembly.

As previously mentioned, the case (4) comprises the first portion (4.1) and the second portion (4.2). Preferably, said portions (4.1, 4.2) are available joined together, each determining a longitudinal end of the extractor assembly, as can be clearly seen, for example, in Figure 2, although alternatively they can be available joined together, each one determining a longitudinal half of said assembly.

The first portion (4.1) and the second portion (4.2) are joined together according to a joining area (U) located along the external wall (3.4). More

specifically, the external wall (3.4) is disposed in contact with the first portion (4.1) and with the second portion (4.2), both in proximity to the joining area (U) between both of them and along the joining area (U) itself, which is formed by an overlap between said portions (4.1, 4.2).

According to the aforementioned preferred option according to which each of the portions (4.1, 4.2) determines one of the longitudinal ends of the extractor assembly, the joining area (U) is completely located along and in contact with the external wall (3.4), in other words, in its entirety, which can be derived from Figures 2 and 9. In this manner, it contributes to an airtight joint or a seal between the aforementioned portions (4.1, 4.2) of the case (4) such that a leak or outlet of air through said joining area (U) is prevented.

The first portion (4.1) and the second portion (4.2) have a first step (4.1', 4.2') in a longitudinal portion parallel, or substantially parallel, to the imaginary central longitudinal axis (X) for a longitudinally adjusted arrangement of the external wall (3.4). Additionally, said first steps (4.1', 4.2') are defined such that an internal face, opposite from the one in contact with the case (4), of the external wall (3.4) is aligned or gives continuity to an internal surface of the case (4), in other words, of the portions (4.1, 4.2). See Figure 9.

Thus, the generation of turbulence is prevented in the air flow generated by the impeller (1) in the movement thereof along both the beginning of the external wall (3.4) and the end of said wall (3.4) according to the movement or advance direction of said air flow.

Additionally, one of the portions (4.1, 4.2) has a second step (10) to overlap with the corresponding longitudinal end of the other portion (4.2, 4.1) in order to improve the tightness, in other words, to prevent the outlet of air and noise. In this case, the one joining area (U) is determined or defined according to this overlap, as has also been previously described.

The case (4) has an inlet mouth (11) and an outlet mouth (12). Preferably, the inlet mouth (11) is entirely located in the first portion (4.1) and the outlet mouth (12) is entirely located in the second portion (4.2). Likewise, the inlet mouth (11) determines the inlet of the air sucked into the extractor assembly by the impeller (1) and the outlet mouth (12) determines the outlet of the air flow driven or generated by the impeller (1) of the extractor assembly.

These mouths (11, 12) are configured to be connected to an air duct, not object of the present invention. Likewise, the portions (4.1, 4.2) of the case (4)

have smaller dimensions in said mouths (11, 12), in other words, a smaller internal diameter.

In this manner, therefore, the case (4) has diameter change sections (4'). Accordingly, the case (4) has one of the diameter change sections (4') immediately after the inlet mouth (10) and another of the diameter change sections (4') immediately before the outlet mouth (11), according to the advance or movement direction of the air flow which can be generated by the impeller (1).

Optionally, the external wall (3.4) of the support (3) extends such that it radially and internally covers the case (4) also along the diameter change section (4') located immediately before the outlet mouth (12).

Along each of the mouths (11, 12), radially and externally to them (11, 12), the extractor assembly comprises a gasket (13) to provide a tightness such that an air leak with respect to the air duct and the extractor assembly itself is prevented.

When the extractor assembly is mounted, or at least the portions (4.1, 4.2) of the case (4) are joined together according to the joining area (U) along the external wall (3.4) of the support (3), the mouths (11, 12) are disposed in a concentric manner with respect to the imaginary central longitudinal axis (X) and according to a smaller diameter with respect to said external wall (3.4), in addition to preferably with respect to the internal wall (3.3). In this manner, both the air inlet into the extractor assembly and the air outlet from it are favoured.

Preferably, and as can be clearly observed in Figures 10A and 10B, the impeller (1) additionally has a panel (1.3). This panel (1.3) has an extension in the longitudinal direction such that, at each point along it, it corresponds to a different diametral measurement. In other words, the panel (1.3) has open longitudinal ends, each of these with a different diameter from the other according to a preferably progressive variation.

The open longitudinal end disposed facing the inlet mouth (11) has a smaller diameter than the open longitudinal end disposed facing the actuating element (2). According to a progressive, and preferably linear, change in the diameter of said panel (1.3), the latter (1.3) is configured to be disposed parallel, or substantially parallel, to the case (4) along the corresponding diameter change section (4').

When the extractor assembly is mounted, for example according to the

CLAIMS

1. An extractor assembly to be installed inside an air duct, the extractor assembly comprising:

- an impeller (1) having a base (1.1) and blades (1.2), the blades (1.2) projecting from the base (1.1);
- an actuating element (2) for imparting rotational momentum to the impeller (1) such that it generates an air flow by means of the blades (1.2);
- a support (3) having a first face (3.1) and a second face (3.2), the first face (3.1) being for fixed arrangement of the actuating element (2);
- a case (4) comprising a first portion (4.1) and a second portion (4.2) for surrounding the impeller (1), actuating element (2) and support (3);

characterised in that the support (3) comprises:

- an internal wall (3.3) that determines, with a first face (3.1), a housing (6) for accommodating the actuating element (2); and
- an external wall (3.4), which is disposed radially and externally with respect to the internal wall (3.3), such that the walls (3.3, 3.4) define a passage (7) for the movement of air;

wherein, when the extractor assembly is mounted in a use position, the external wall (3.4) makes radial and internal contact against the first portion (4.1) and the second portion (4.2), as well as against a joining area (U) of the first portion (4.1) and the second portion (4.2) with each other, such that an air outlet along the external wall (3.4) remains blocked, and wherein the joining area (U) is formed by an overlap between the first portion (4.1) and the second portion (4.2).

2. The extractor assembly according to claim 1, characterised in that the external wall (3.4) is disposed in contact against the entire joining area (U).

3. The extractor assembly according to any one of claims 1 to 2, characterised in that the support (3) comprises fins (3.5) in the passage (7) to direct the air flow.

4. The extractor assembly according to claim 3, characterised in that the fins (3.5) are curved in order to eliminate a tangential component of the air flow

generated by the blades (1.2) such that the air flow can be directed according to a rectilinear path.

5. The extractor assembly according to any one of claims 1 to 3, characterised in that, when the actuating element (2) is disposed fixed in the support (3) and the impeller (1) is joined to the actuating element (2), a separating gap (S) is disposed between the base (1.1) and the internal wall (3.3) for an air inlet into the actuating element (2).

6. The extractor assembly according to any one of claims 1 to 4, characterised in that it additionally comprises a cover (9) disposed along the second face (3.2) of the support (3) such that it determines a continuation of the passage (7).

7. The extractor assembly according to claim 6, characterised in that the cover (9) has a concave side for covering components (8) of the extractor assembly and a convex side for guiding the air.

8. The extractor assembly according to any one of claims 1 to 7, characterised in that it additionally comprises a conduit (15) disposed communicating an external portion of the case (4) with the housing (6).

9. The extractor assembly according to claim 8, characterised in that the conduit (15) has a first section (15.1) externally projecting with respect to the external wall (3.4) and each of the portions (4.1, 4.2) of the case (4) has a slot (17) to jointly define a gap for receiving the first section (15.1).

10. The extractor assembly according to any one of claims 1 to 9, characterised in that the impeller (1) additionally has a panel (1.3) to prevent contact of the air with the case (4) along the blades (1.2).

11. The extractor assembly according to claim 10, characterised in that it additionally comprises a blocking element (14) disposed to prevent air from moving between the case (4) and the panel (1.3), such that the air entering the case (4) is guided between the panel (1.3) and the base (1.1).

12. The extractor assembly according to any one of claims 1 to 11, characterised in that the case (4) comprises a metal material.

13. The extractor assembly according to any one of claims 1 to 12, characterised in that the support (3) comprises a plastic material.

14. The extractor assembly according to any one of claims 1 to 13, characterised in that the impeller (1) comprises a plastic material.