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(54) ARRANGEMENT IN A VACUUM CLEANER FOR REDUCING NOISE

VORRICHTUNG IN EINEM STAUBSAUGER ZUR LÄRMVERMINDERUNG

DISPOSITIF POUR SUPPRIMER LE BRUIT DANS UN ASPIRATEUR

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• **KARLSSON, Roger**

S-112 67 Stockholm (SE)

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(74) Representative: **Electrolux Group Patents**

AB Electrolux

Group Patents

105 45 Stockholm (SE)

(73) Proprietor: **Aktiebolaget Electrolux**

105 45 Stockholm (SE)

(56) References cited:

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(72) Inventors:

• **ANDERSSON, Tommy**

S-16455 Kista (SE)

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Description

FIELD OF THE INVENTION

[0001] The present invention relates to an arrangement in a vacuum cleaner for reducing noise emitted from said vacuum cleaner, a filter grille comprised in such an arrangement, and a vacuum cleaner comprising such an arrangement according to the preambles of the independent claims.

BACKGROUND OF THE INVENTION

[0002] Elevated noise levels in general may be disturbing, cause annoyance and may sometimes create stress. For example, in an indoor environment, sound levels even as low as 40 dB(A), about as loud as a refrigerator, may be disturbing.

[0003] An example of a home appliance which affects the sound levels in indoor environment, and which may generate noise levels which may be disturbing, is a vacuum cleaner. In vacuum cleaners, a source of noise is the fan and the motor. Commonly, the bag chamber comprising the dust bag and the fan and motor chamber, comprising a motorized fan, are connected via an intake air passage, such that intake air from the dust bag chamber may pass into the motor and fan chamber. In connection with the intake air passage a filter may be arranged, which is adapted to filter the intake air, and also function as a disaster filter protecting the motor if the dust bag would break.

[0004] Furthermore, the motor chamber comprises an exhaust air outlet through which the exhaust air may travel out from the motor chamber to the ambient air outside the vacuum cleaner. A disadvantage with the intake air passage opening is that noise emitted from the motor and fan chamber may travel out through the intake and the filter, which may cause increased noise levels.

[0005] An example of a bagged vacuum cleaner is disclosed in EP 2374394 A1, which shows a vacuum cleaner which has a holding grid, holding a motor protection filter, arranged between a dust chamber and motor chamber in a swivelable manner. A locking unit locks the holding grid in a swiveling position. The locking unit is arranged in an area in a hinged side of the holding grid. A resting nose and a recess serve as the locking unit for locking the holding grid, where the recess corresponds to the resting nose. The recess has a projection that is contactable by the resting nose. The projection protrudes over a surface, in which the recess is formed.

[0006] Document JPH10211128 discloses a vacuum cleaner with a noise reduction means. The noise reduction means comprises a conical cone with noise absorbing material. The noise is reflected by the side face of the cone and thereby attenuated.

[0007] Today, vacuum cleaners are often designed to be optimized from different points of view e.g. noise. However, since noise levels often are a concern in indoor

environment, e.g. in households, the inventors of the present invention have identified a need for a vacuum cleaner which is further improved with respect to noise levels.

[0008] Thus, an object of the present invention is to provide an arrangement for reducing the noise emitted from a vacuum cleaner, which arrangement is inexpensive, easy and straight forward to manufacture.

[0009] A further object of the present invention is to provide a vacuum cleaner which provides an overall reduced noise level.

SUMMARY OF THE INVENTION

[0010] The above-mentioned objects are achieved by the present invention according to the independent claims.

[0011] Preferred embodiments are set forth in the dependent claims.

[0012] The arrangement in a vacuum cleaner for reducing noise emitted from a motor chamber in said vacuum cleaner, in accordance with the present invention, comprises a dust bag chamber, adapted to enclose a dust bag, and a motor chamber, adapted to comprise at least a motorized fan. The arrangement further comprises an intake air passage opening arranged between said dust bag chamber and said motor chamber, through which intake air is adapted to travel from said dust bag chamber into said motor chamber. The dust bag chamber and said motor chamber being integrated in said vacuum cleaner. A baffle body, adapted to redirect said emitted noise, is arranged in said dust bag chamber such that said baffle body at least partly covers said intake air passage opening.

[0013] In another aspect, the present invention relates to a filter grille for a vacuum cleaner comprised in an arrangement for reducing noise emitted from a motor chamber in said vacuum cleaner.

[0014] In a further aspect, the present invention relates to a vacuum cleaner comprising an arrangement for reducing noise emitted from a motor chamber in said vacuum cleaner.

SHORT DESCRIPTION OF THE APPENDED DRAWINGS

[0015]

Figure 1 shows a bagged vacuum cleaner comprising an arrangement for reducing noise emitted from a motor chamber in said vacuum cleaner, according to one embodiment of the present invention.

Figure 2 shows a filter grille comprised in an arrangement for reducing noise emitted from a motor chamber in said vacuum cleaner, said filter grille comprising a baffle body, according to one embodiment of the present invention.

Figure 3 shows a side view of the filter grille shown in Figure 2, according to one embodiment of the present invention.

Figure 4 shows a dust bag chamber and a filter grille covering an intake air passage in a partition wall arranged between the dust bag chamber and the motor chamber, according to one embodiment of the present invention.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS OF THE INVENTION

[0016] Throughout the application, the word upper refers to the part located furthest away from a supporting surface, e.g. a floor, when the vacuum cleaner is placed horizontally on the floor (as shown in Figure 1). The word lower refers to the part located closest to the supporting surface.

[0017] Figure 1 shows a partially cutaway view, of the arrangement 1 in a vacuum cleaner 2 for reducing noise emitted from a motor chamber 3 in the vacuum cleaner 2, according to one embodiment of the present invention. The arrangement 1 comprises a dust bag chamber 4, adapted to enclose a dust bag, and a motor chamber 3, adapted to comprise at least a motorized fan (not shown). An intake air passage opening 5 is arranged between the dust bag chamber 4 and the motor chamber 3, through which intake air is adapted to travel from the dust bag chamber 4 into the motor chamber 3. The dust bag chamber 4 and the motor chamber 3 are integrated in the vacuum cleaner 2. A baffle body 6, adapted to redirect the emitted noise, is arranged in the dust bag chamber 4 such that the baffle body 6 at least partly covers the intake air passage opening 5. The baffle body 6 is arranged such that it is adapted to redirect the emitted noise travelling through the air passage opening 5, and as a consequence, the baffle body 6 reduces the propagation of sound waves in the vacuum cleaner 2.

[0018] In one embodiment, as shown in Figure 1, the baffle body 6 is adapted to cover at least an upper portion 7 of the air passage opening 5. The baffle body 6 is adapted to redirect the noise partly in a direction towards a lower portion 8 of the air passage opening 5 and partly in a direction back into the motor chamber 3. Advantageously, redirecting the emitted noise prevents or at least reduces the propagation of sound waves in the vacuum cleaner 2, wherein the emitted noise from the vacuum cleaner is reduced. Approximately, the baffle body reduces the noise level emitted from the vacuum cleaner about 0,3-0,5 dB(A).

[0019] According to one embodiment, as illustrated in Figure 1, the air passage opening 5 has an area, and the baffle body 6 covers approximately 5 - 50% of the area. The area is approximately 1300-4500 mm². Furthermore, the intake air passage opening 5 may have any shape, such as an elongated square-shape, or a circular shape, or any other suitable shape.

[0020] In one embodiment, as shown in Figure 1, the baffle body 6 is hollow and forms a passageway 9, through which passageway 9 the intake air is adapted to travel. The passageway 9 ensures that the intake air may freely travel from the dust bag chamber 4 into the motor chamber. Furthermore, the sound waves are reflected inside the passageway, wherein the emitted noise is re-directed, and advantageously reduces the noise level. Naturally, the intake air also travels through the intake air passage opening 5 through other portions of the opening 5 not being covered by the baffle body 6.

[0021] According to one embodiment, as also shown in Figure 1, the baffle body 6 is arranged such that it extends from an upper edge 10 of the air passage opening 5 and downwards in a direction towards an opposite lower portion 8 of the air passage opening 5. The baffle body 6 is preferably made from any hard plastic, or any other similar material, suitable for redirecting emitted sound.

[0022] In one embodiment, shown in Figure 1, the baffle body 6 comprises an attachment portion 11 attached at least along the upper edge 10. The baffle body 6 may be detachable, or may be integrated with any other suitable feature, such as the partition wall 18 between the dust bag chamber 4 and the motor chamber 3. The baffle body 6 is preferably tightly attached to the partition wall 18 or a filter grille 13, such that emitted noise, at least partially, is restricted from entering the dust bag chamber 4. Advantageously, a detachable baffle body 6 provides more flexibility for the user and facilitates cleaning of the inside of the vacuum cleaner 2.

[0023] In one embodiment, as shown in Figure 1, the baffle body 6 is provided with a bend 12 and wherein a bending angle α of the bend 12 is approximately 10 - 90°. The bent baffle body 6 reflects the sound waves in a desired direction, and thus redirects the emitted noise, wherein the noise level is reduced.

[0024] According to one embodiment, as shown in Figure 1, the bending angle α is approximately 90°. This is advantageous in that parts of the emitted noise, i.e. parts of the sound waves, is reflected back into the motor chamber and parts of the noise is reflected such that it is directed in a direction towards a lower part 17 of the dust bag chamber 4.

[0025] According to one embodiment (see Figure 3), the baffle body 6 has an inner side 15, directed towards the passageway 9, and wherein the inner side 15 is provided with a sound absorbing material (not shown). The material may be any sound absorbing plastic material, e.g. T-Plasztik Item number 30301 with 100% PES fibers. The thickness of the material is preferably 4 - 6 mm. The sound absorbing material is advantageous in that it reduces propagation of sound waves and thus further reduces the noise levels from the vacuum cleaner 2.

[0026] In another aspect, as shown in Figure 2, the present invention relates to a filter grille 13 for a vacuum cleaner 2 comprised in an arrangement 1 as described above. In the embodiment shown in Figure 2, the filter

grille 13 is adapted to be arranged in the dust bag chamber 4 such that it essentially covers the intake air passage opening 5 arranged between the dust bag chamber 4 and the motor chamber 3. The baffle body 6 is attached to the filter grille 13 along at least one filter grille edge 14 of the filter grille 13, such that the baffle body 6, which is adapted to redirect the emitted noise, at least partly covers the intake air passage opening 5. The baffle body 6 being attached to a filter grille 13 is advantageous in that a conventional filter grille 13, arranged in a conventional filter grille holder, may easily be changed into a filter grille 13 provided with a baffle body 6, according to the present invention. Thus, the baffle body 6 being attached to a filter grille 13 facilitates mounting of the baffle body 6 in the vacuum cleaner 2.

[0027] In the embodiment shown in Figure 2, the baffle body 6 is integrated with the filter grille 13. The filter grille 13 has a filter grille area, and the baffle body 6 covers approximately 5-50% of the filter grille area.

[0028] Figure 3, shows a side view of the filter grille 13 comprising a baffle body 6 shown in Figure 2. As also mentioned above, the baffle body 6 has an inner side 15, directed towards the passageway 9, and the inner side 15 may be provided with a sound absorbing material, adapted to absorb the emitted noise. Thus, the inner side 15 of the baffle body 6 and the front side 19 of the filter grille 13 are arranged at a distance D from each other. The distance D is preferably between 10-30 mm, and more preferably 15 mm. The baffle body 6 redirects the emitted noise partly in a direction towards an opposite filter grille edge 16, and partly back into the motor chamber 3.

[0029] In a further aspect, the present invention relates to a vacuum cleaner 2 comprising an arrangement 1 as described above, and as illustrated in Figure 1.

[0030] In one embodiment, the vacuum cleaner 2 comprises a dust bag chamber 4, adapted to enclose a dust bag, and a motor chamber 3 comprising at least a motorized fan (not shown). The vacuum cleaner 2 further comprises an intake air passage opening 5, through which intake air is adapted to travel from the dust bag chamber 4 to the motor chamber 3. The chambers 3, 4 are integrated in the vacuum cleaner 2. The baffle body 6, being adapted to redirect the emitted noise, is arranged in the dust bag chamber 4 such that the baffle body 6 at least partly covers the intake air passage opening 5. The vacuum cleaner 2 being provided with such an arrangement provides an overall reduced noise level emitted from the vacuum cleaner 2, since the overall reduced noise level emitted from the vacuum cleaner 2, since the arrangement redirects the emitted noise such that less noise reaches the outside of the vacuum cleaner 2.

[0031] In one embodiment, as illustrated in Figure 4, the vacuum cleaner 2 comprises a partition wall 18 arranged between the dust bag chamber 4 and the motor chamber 3, the partition wall 18 comprising the intake air passage opening 5. The dust bag chamber 4 is adapted to comprise a dust bag (not shown).

[0032] In the embodiment shown in Figure 4, the filter grille 13 comprising the baffle body 6 is attached to the partition wall 18, the filter grille 13 is arranged such that the filter grille 13 essentially covers the intake air passage opening 5. The baffle body 6 is integrated with the filter grille 13.

[0033] In another embodiment, the baffle body 6 is attached to the partition wall 18, i.e. the baffle body 6 is attached directly to the partition wall 18 and a separate filter grille is arranged to essentially cover the intake air passage opening 5. The baffle body 6 is arranged such that it covers approximately 5-50% of the intake air passage opening 5. Consequently, the baffle body 6 then also partly covers the filter grille. In a similar manner, as in the case where the baffle body 6 is integrated with the filter grille 13, the baffle body 6 is hollow and forms a passageway 9, through which passageway 9 the intake air is adapted to travel.

Claims

1. Arrangement (1) in a vacuum cleaner (2) for reducing noise emitted from a motor chamber (3) in said vacuum cleaner (2), said arrangement comprising:

- a dust bag chamber (4), adapted to enclose a dust bag;
- a motor chamber (3), adapted to comprise at least a motorized fan;
- an intake air passage opening (5) arranged between said dust bag (4) chamber and said motor chamber (3), through which intake air is adapted to travel from said dust bag chamber (4) into said motor chamber (3);

said dust bag chamber (4) and said motor chamber (3) being integrated in said vacuum cleaner (2), **characterised in** the arrangement comprising a baffle body (6), adapted to redirect said emitted noise, is arranged in said dust bag chamber (4) such that said baffle body (6) at least partly covers said intake air passage opening (5) and is adapted to cover at least an upper portion (7) of said air passage opening (5).

2. Arrangement according to claim 1, wherein said air passage opening (5) has an area, and wherein said baffle body (6) covers approximately 5-50 % of said area.
3. Arrangement according to any of claims 1-2, wherein said baffle body (6) is hollow and forms a passageway (9), through which passageway (9) said intake air is adapted to travel.
4. Arrangement according to any of claims 1-3, wherein said baffle body (6) is arranged such that it extends

from an upper edge (10) of said air passage opening (5) and downwards in a direction towards an opposite lower portion (8) of said air passage opening (5).

5. Arrangement according to claim 4, wherein said baffle body (6) comprises an attachment portion (11) attached at least along said upper edge (10). 5
6. Arrangement according to any of claims 1-5, wherein said baffle body (6) is provided with a bend (12) and wherein a bending angle α of said bend is approximately 10-90°. 10
7. Arrangement according to claim 6, wherein said bending angle α is approximately 90°. 15
8. Arrangement according to any of claims 1-7, wherein said baffle body (6) has an inner side (15), directed towards said passageway (9), and wherein said inner side (15) is provided with a sound absorbing material. 20
9. Filter grille (13) for vacuum cleaner (2), comprised in an arrangement (1) according to any of the preceding claims, said filter grille (13) being adapted to be arranged in said dust bag chamber (4) such that it essentially covers said intake air passage opening (5), arranged between said dust bag chamber (4) and said motor chamber (3), wherein said baffle body (6) is attached to said filter grille (13) along at least one filter grille edge (14) of said filter grille (13), such that said baffle body (6), being adapted to redirect said emitted noise, at least partly covers said intake air passage opening (5). 25
10. Filter grille according to claim 9, wherein said baffle body (6) is integrated with said filter grille (13). 30
11. Filter grille according to any of claims 9-10, wherein said filter grille (13) has a filter grille area, and wherein said baffle body (6) covers 5-50% of said filter grille area. 35
12. Vacuum cleaner (2) comprising an arrangement according to claims 1-8, wherein said vacuum cleaner (2) comprises: 40
 - a dust bag chamber (4), adapted to enclose a dust bag;
 - a motor chamber (3) comprising at least a motorized fan; 50
 - an intake air passage opening (5), through which intake air is adapted to travel from said dust bag chamber (4) to said motor chamber (3), and wherein said chambers (3, 4) are integrated in said vacuum cleaner (2), wherein said baffle body (6), being adapted to redirect said emitted noise, is arranged in said dust bag chamber (4) 55

such that said baffle body (6) at least partly covers said intake air passage opening (5).

13. Vacuum cleaner according to claim 12, wherein said vacuum cleaner (2) comprises a partition wall (18) arranged between said dust bag chamber (4) and said motor chamber (3), said partition wall comprising said intake air passage opening (5), and wherein said baffle body (6) is attached to said partition wall.
14. Vacuum cleaner according to claim 12, wherein said vacuum cleaner (2) comprises a filter grille (13) essentially covering said intake air passage opening (5) and wherein said baffle body (6) is integrated with said filter grille (13).

Patentansprüche

1. Vorrichtung (1) in einem Staubsauger (2) zur Verminderung des von einer Motorkammer (3) in dem Staubsauger (2) abgegebenen Lärms, wobei die Vorrichtung Folgendes umfasst:
 - eine Staubbeutelkammer (4), die dazu eingerichtet ist, einen Staubbeutel zu umschließen;
 - eine Motorkammer (3), die dazu eingerichtet ist, mindestens ein motorisiertes Gebläse zu umfassen;
 - eine Ansaugluftdurchlassöffnung (5), die zwischen der Staubbeutelkammer (4) und der Motorkammer (3) angeordnet ist, durch die Ansaugluft von der Staubbeutelkammer (4) zur Motorkammer (3) strömt;
 wobei die Staubbeutelkammer (4) und die Motorkammer (3) in den Staubsauger (2) integriert sind, **dadurch gekennzeichnet, dass** die Vorrichtung einen Schallwandkörper (6) umfasst, der dazu eingerichtet ist, den abgegebenen Lärm umzuleiten, der in der Staubbeutelkammer (4) angeordnet ist, so dass der Schallwandkörper (6) die Ansaugluftdurchlassöffnung (5) zumindest teilweise bedeckt und der dazu eingerichtet ist, zumindest einen oberen Abschnitt (7) der Luftdurchlassöffnung (5) zu bedecken.
2. Vorrichtung nach Anspruch 1, wobei die Luftdurchlassöffnung (5) eine Fläche aufweist und wobei der Schallwandkörper (6) etwa 5-50 % der Fläche bedeckt.
3. Vorrichtung nach einem der Ansprüche 1-2, wobei der Schallwandkörper (6) hohl ist und einen Durchlass (9) ausbildet, wobei die Ansaugluft durch den Durchlass (9) strömt.
4. Vorrichtung nach einem der Ansprüche 1-3, wobei der Schallwandkörper (6) derart angeordnet ist, dass

er sich von einer oberen Kante (10) der Luftdurchlassöffnung (5) und nach unten zu einem entgegengesetzten unteren Abschnitt (8) der Luftdurchlassöffnung (5) erstreckt.

5. Vorrichtung nach Anspruch 4, wobei der Schallwandkörper (6) einen Befestigungsabschnitt (11) umfasst, der zumindest entlang der oberen Kante (10) befestigt ist.

6. Vorrichtung nach einem der Ansprüche 1-5, wobei der Schallwandkörper (6) mit einer Krümmung (12) versehen ist und wobei ein Krümmungswinkel α der Krümmung etwa 10-90° beträgt.

7. Vorrichtung nach Anspruch 6, wobei der Krümmungswinkel α etwa 90° beträgt.

8. Vorrichtung nach einem der Ansprüche 1-7, wobei der Schallwandkörper (6) eine Innenseite (15) aufweist, die in Richtung des Durchlasses (9) ausgerichtet ist, und wobei die Innenseite (15) mit einem schallabsorbierenden Material versehen ist.

9. Filtergitter (13) für einen Staubsauger (2), das in einer Vorrichtung (1) nach einem der vorstehenden Ansprüche umfasst ist, wobei das Filtergitter (13) dazu eingerichtet ist, derart in der Staubbeutelkammer (4) angeordnet zu sein, dass es im Wesentlichen die Ansaugluftdurchlassöffnung (5), die zwischen der Staubbeutelkammer (4) und der Motorkammer (3) angeordnet ist, bedeckt, wobei der Schallwandkörper (6) entlang mindestens einer Filtergitterkante (14) des Filtergitters (13) am Filtergitter (13) befestigt ist, sodass der Schallwandkörper (6), der dazu eingerichtet ist, den abgegebenen Lärm umzuleiten, zumindest teilweise die Ansaugluftdurchlassöffnung (5) bedeckt.

10. Filtergitter nach Anspruch 9, wobei der Schallwandkörper (6) in das Filtergitter (13) integriert ist.

11. Filtergitter nach einem der Ansprüche 9-10, wobei das Filtergitter (13) eine Filtergitterfläche aufweist und wobei der Schallwandkörper (6) 5-50 % der Filtergitterfläche bedeckt.

12. Staubsauger (2), der eine Vorrichtung nach einem der Ansprüche 1-8 umfasst, wobei der Staubsauger (2) Folgendes umfasst:

- eine Staubbeutelkammer (4), die dazu eingerichtet ist, einen Staubbeutel zu umschließen;
- eine Motorkammer (3), die mindestens ein motorisiertes Gebläse umfasst;
- eine Ansaugluftdurchlassöffnung (5), durch die Ansaugluft von der Staubbeutelkammer (4) zur Motorkammer (3) strömt, und wobei die Kam-

mern (3, 4) in den Staubsauger (2) integriert sind, wobei der Schallwandkörper (6), der dazu eingerichtet ist, den abgegebenen Lärm umzuleiten, in der Staubbeutelkammer (4) angeordnet ist, sodass der Schallwandkörper (6) die Ansaugluftdurchlassöffnung (5) zumindest teilweise bedeckt.

13. Staubsauger nach Anspruch 12, wobei der Staubsauger (2) eine Trennwand (18) umfasst, die zwischen der Staubbeutelkammer (4) und der Motorkammer (3) angeordnet ist, wobei die Trennwand die Ansaugluftdurchlassöffnung (5) umfasst und wobei der Schallwandkörper (6) an der Trennwand befestigt ist.

14. Staubsauger nach Anspruch 12, wobei der Staubsauger (2) ein Filtergitter (13) umfasst, das im Wesentlichen die Ansaugluftdurchlassöffnung (5) bedeckt, und wobei der Schallwandkörper (6) in das Filtergitter (13) integriert ist.

Revendications

1. Dispositif (1) dans un aspirateur (2) destiné à réduire le bruit émis par une chambre de moteur (3) dans ledit aspirateur (2), ledit dispositif comprenant :

une chambre (4) de sac à poussière conçue pour renfermer un sac à poussière ;
une chambre de moteur (3) conçue pour comprendre au moins un ventilateur motorisé ;
une ouverture de passage d'air d'admission (5) disposée entre ladite chambre (4) de sac à poussière et ladite chambre (3) de moteur, depuis laquelle de l'air d'admission peut se déplacer de ladite chambre (4) de sac à poussière dans ladite chambre (3) de moteur ;
ladite chambre (4) de sac à poussière et ladite chambre (3) de moteur étant intégrées dans ledit aspirateur (2), **caractérisé en ce que** le dispositif comprend un corps formant un écran acoustique (6) conçu pour rediriger ledit bruit émis, disposé dans ladite chambre (4) de sac à poussière de sorte que ledit corps formant un écran acoustique (6) couvre au moins en partie ladite ouverture de passage d'air d'admission (5) et soit conçu pour couvrir au moins une partie supérieure (7) de ladite ouverture de passage d'air (5).

2. Dispositif selon la revendication 1, dans lequel ladite ouverture de passage d'air (5) possède une surface, et dans lequel ledit corps formant un écran acoustique (6) couvre approximativement 5 à 50 % de ladite surface.

3. Dispositif selon l'une quelconque des revendications 1 et 2, dans lequel ledit corps formant un écran acoustique (6) est creux et forme un passage (9), passage (9) à travers lequel l'air d'admission peut se déplacer.
4. Dispositif selon l'une quelconque des revendications 1 à 3, dans lequel ledit corps formant un écran acoustique (6) est disposé de façon à s'étendre depuis un bord supérieur (10) de ladite ouverture de passage d'air (5) et vers le bas en direction d'une partie inférieure opposée (8) de ladite ouverture de passage d'air (5).
5. Dispositif selon la revendication 4, dans lequel ledit corps formant un écran acoustique (6) comprend une partie de fixation (11) fixée au moins le long dudit bord supérieur (10).
6. Dispositif selon l'une quelconque des revendications 1 à 5, dans lequel ledit corps formant un écran acoustique (6) est muni d'un coude (12) et dans lequel un angle de courbure α dudit coude est approximativement compris entre 10 et 90°.
7. Dispositif selon la revendication 6, dans lequel ledit angle de courbure α est approximativement égal à 90°.
8. Dispositif selon l'une quelconque des revendications 1 à 7, dans lequel ledit corps formant un écran acoustique (6) possède un côté intérieur (15) dirigé vers ledit passage (9), et dans lequel ledit côté intérieur (15) est muni d'un matériau absorbant les sons.
9. Grille de filtrage (13) pour un aspirateur (2), comprise dans un dispositif (1) selon l'une quelconque des revendications précédentes, ladite grille de filtrage (13) étant conçue pour être disposée dans ladite chambre (4) de sac à poussière de façon à couvrir essentiellement ladite ouverture de passage d'air d'admission (5), disposée entre ladite chambre (4) de sac à poussière et ladite chambre (3) de moteur, dans laquelle ledit corps formant un écran acoustique (6) est fixé à ladite grille de filtrage (13) le long d'au moins un bord (14) de grille de filtrage de ladite grille de filtrage (13), afin que ledit corps formant un écran acoustique (6), conçu pour rediriger ledit bruit émis, couvre au moins en partie ladite ouverture de passage d'air d'admission (5).
10. Grille de filtrage selon la revendication 9, dans laquelle ledit corps formant un écran acoustique (6) est intégré à ladite grille de filtrage (13).
11. Grille de filtrage selon l'une quelconque des revendications 9 et 10, dans laquelle ladite grille de filtrage (13) possède une surface de grille de filtrage, et dans laquelle ledit corps formant un écran acoustique (6) couvre 5 à 50 % de ladite surface de grille de filtrage.
12. Aspirateur (2) comprenant un dispositif selon les revendications 1 à 8, dans lequel ledit aspirateur (2) comprend :
 - une chambre de sac à poussière (4) conçue pour renfermer un sac à poussière ;
 - une chambre de moteur (3) conçue pour comprendre au moins un ventilateur motorisé ;
 - une ouverture de passage d'air d'admission (5) depuis laquelle de l'air d'admission peut se déplacer de ladite chambre (4) de sac à poussière dans ladite chambre (3) de moteur, et dans lequel lesdites chambres (3, 4) sont intégrées dans ledit aspirateur (2), dans lequel ledit corps formant un écran acoustique (6), conçu pour rediriger ledit bruit émis, est disposé dans ladite chambre (4) de sac à poussière de sorte que ledit corps formant un écran acoustique (6) couvre au moins en partie ladite ouverture de passage d'air d'admission (5).
13. Aspirateur selon la revendication 12, dans lequel ledit aspirateur (2) comprend une paroi de séparation (18) disposée entre ladite chambre (4) de sac à poussière et ladite chambre (3) de moteur, ladite paroi de séparation comprenant ladite ouverture de passage d'air d'admission (5), et dans lequel ledit corps formant un écran acoustique (6) est fixé à ladite paroi de séparation.
14. Aspirateur selon la revendication 12, dans lequel ledit aspirateur (2) comprend une grille de filtrage (13) couvrant essentiellement ladite ouverture de passage d'air d'admission (5) et dans lequel ledit corps formant un écran acoustique (6) est intégré à ladite grille de filtrage (13).

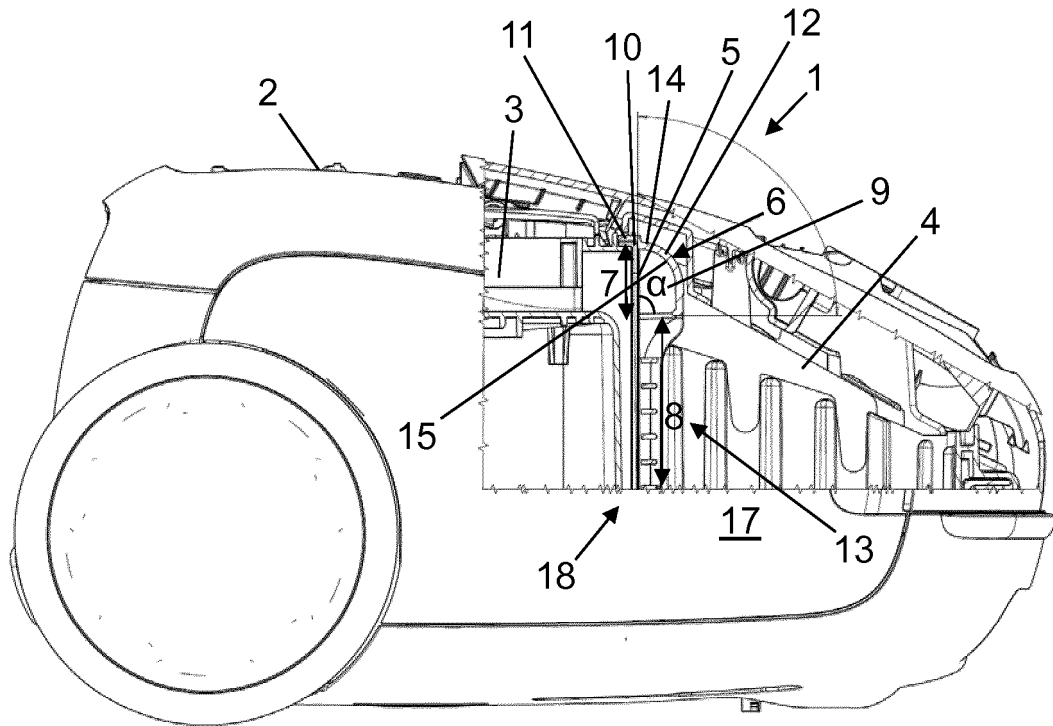


Figure 1

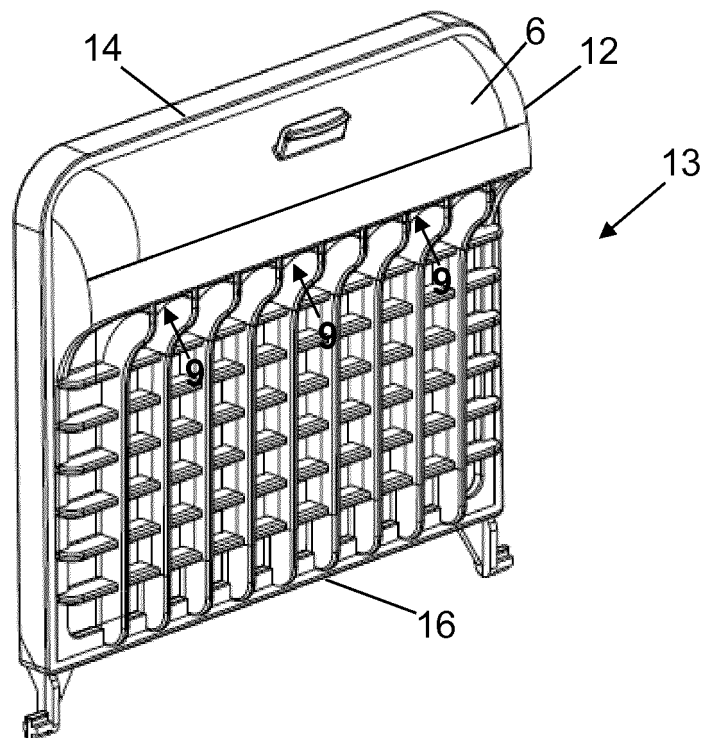


Figure 2

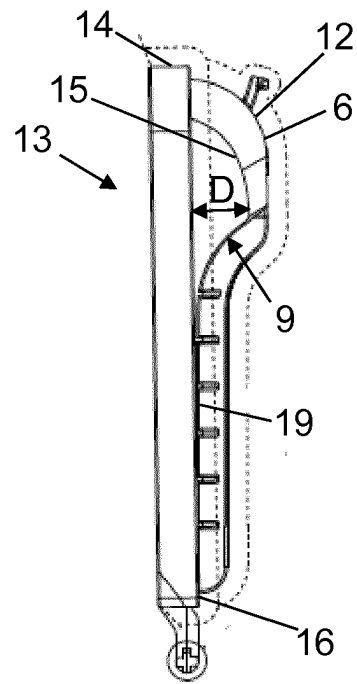


Figure 3

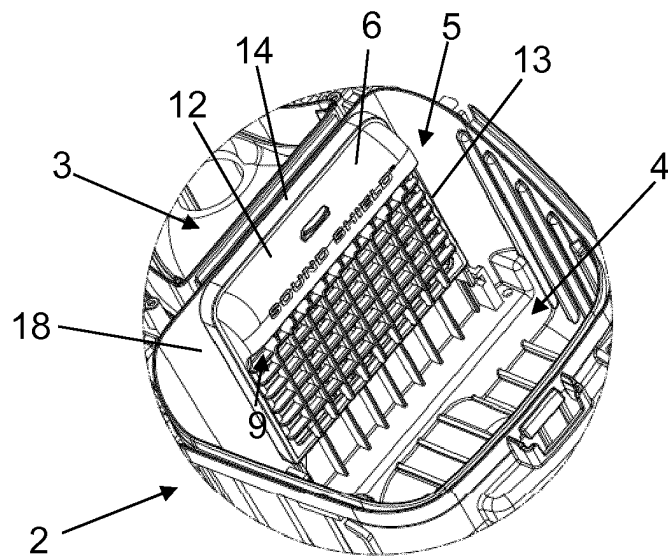


Figure 4

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

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