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(54) **COOKER HOOD**

KÜCHENHAUBE

HOTTE DE CUISINIÈRE

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Description

BACKGROUND

Technical Field

[0001] The present invention relates to the technical field of kitchen appliances, and specifically relates to a low-noise cooker hood.

Related Art

[0002] In high-rise buildings, cooker hoods used by all families all exhaust smoke to a public pipeline, and a relatively high static pressure is formed inside the public pipeline when a plurality of users uses the cooker hoods at the same time. To ensure an enough air volume, a cooker hood is required to provide a higher static pressure.

[0003] However, a cooker hood generates loud noise when improving the static pressure to provide the enough air volume, and consequently, the comfort of using the cooker hood by a user is affected.

[0004] CN201925993U discloses a range hood with a current-stabilization noise-reduction structure, comprising an enclosure with an air inlet and an air outlet. A volute casing with a front air inlet is arranged in the enclosure. An impeller driven by a motor to rotate is arranged in the volute casing. The range hood is characterized in that: a guiding cover which guides flue gas to the front air inlet of the volute casing from the air inlet of the enclosure is fixed on a front cover plate of the volute casing, and a front flue gas guiding channel with gradually-reduced caliber from top to bottom is formed between the guiding cover and the front end surface of the volute casing.

[0005] CN201242205Y describes a smoke exhaust ventilator which is used to discharge oil with low noise in kitchens. The smoke exhaust ventilator adopts an inner shell structure which is shaped by a micro perforated panel, a fan installation cavity structure which is provided with a transverse micro perforated panel and a vertical micro perforated panel, an inner layer air exhaust pipe knee structure which is shaped by the micro perforated panel and a sound-absorbing layer structure which is attached on the outer surface of a fan shell and is made of sound absorbing materials, a sound-deadening resonant cavity structure which is composed of each micro perforated panel and a corresponding outer shell structure and a resistance noise reduction structure which is formed by the sound-absorbing layer, wherein low, medium and high noise in the whole frequency band which is generated in the working process of the smoke exhaust ventilator can obtain good sound-deadening effect, thereby solving the noise problem which is generated when the smoke exhaust ventilator is used.

[0006] WO 2018/069813 A1 discloses a hood for the suction of cooking fumes comprised of a box-shaped body defining at least one duct for the suction of cooking

fumes, the duct presenting at least one opening facing an external environment and arranged on an inclined plane with respect to the vertical direction, the box-shaped body presenting at least one side wall in contact with the external environment, a suction placed in fluid communication with the duct; a grill panel facing the suction; at least one perforated panel opposite the grill panel and arranged substantially parallel to the side wall to define a plurality of acoustic resonance cavities in cooperation with the side wall.

[0007] CN101457946A discloses a bionic microporous noise-reducing structure which is used for an oil fume extraction system. The structure comprises a shell body. Oil fume passes by the inner cavity of the shell body and contacts with the inner wall of the shell body. The invention is characterized in that the outer side of the shell body is fixedly provided with a noise-reducing box which is enclosed at the periphery. The noise-reducing box is internally provided with at least one layer of porous plate which is distributed with tight millipores, so the noise-reducing box is divided into at least an inner cavity and an outer cavity. Bar-shaped pores are tightly distributed on the shell body. The inner cavity of the shell body is communicated with the inner cavity of the noise-reducing box by the bar-shaped pores.

SUMMARY

[0008] A technical problem that the present invention resolves is how to reduce noise generated when a cooker hood runs.

[0009] To resolve the foregoing technical problem, the present invention provides a cooker hood, including: a housing, and a fan mounted in the housing, where the fan includes an air intake vent and an air exhaust vent; and further including: an air guide pipe mounted in the housing, where the air guide pipe includes an air intake vent and an air exhaust vent, and the air exhaust vent of the air guide pipe is connected to the air intake vent of the fan. A pipe wall of the air guide pipe is provided with acoustic attenuation micro holes. The housing includes: an upper housing, where the upper housing includes an air intake vent and an air exhaust vent, and the fan and the air guide pipe are mounted in the upper housing; and a lower housing, where the lower housing includes left and right air intake openings and an air exhaust opening, and the air intake vent of the upper housing is connected to the air exhaust opening of the lower housing. The cooker hood further includes: a fan separator mounted in the upper housing, where the fan separator separates the fan from the air guide pipe, so that the fan and the air guide pipe are in two chambers of the upper housing.

[0010] Optionally, the fan has a volute, and the surface of the volute is provided with acoustic attenuation micro holes.

[0011] Optionally, the cooker hood further includes: an external air guide pipe, where the external air guide pipe is mounted in the housing and is sleeved outside the air

guide pipe; and a pipe wall of the external air guide pipe is provided with acoustic attenuation micro holes.

[0012] Optionally, the cooker hood further includes: a plurality of flow guide plates, where the flow guide plate is mounted in the air guide pipe; and the surface of the flow guide plates is provided with acoustic attenuation micro holes.

[0013] Optionally, the cooker hood further includes: a plurality of first thin plates, where the first thin plate is mounted in the air guide pipe and is located below the flow guide plate; and the surface of the first thin plate is provided with acoustic attenuation micro holes.

[0014] According to the invention, the housing includes: an upper housing, where the upper housing includes an air intake vent and an air exhaust vent, and the fan and the air guide pipe are mounted in the upper housing; and a lower housing, where the lower housing includes left and right air intake openings and an air exhaust opening, and the air intake vent of the upper housing is connected to the air exhaust opening of the lower housing.

[0015] According to the invention, the cooker hood further includes: a fan separator mounted in the upper housing, where the fan separator separates the fan from the air guide pipe, so that the fan and the air guide pipe are in two chambers of the upper housing.

[0016] Optionally, the lower housing includes: a left air intake portion, where the left air intake portion is provided with the left air intake opening; a right air intake portion, where the right air intake portion is provided with the right air intake opening; and an air exhaust portion, where the air exhaust portion is provided with an air exhaust opening, the air exhaust portion is located between the left air intake portion and the right air intake portion, and a cavity of the air exhaust portion is respectively in communication with a cavity of the left air intake portion and a cavity of the right air intake portion.

[0017] Optionally, the cooker hood further includes: a left air exhaust pipe and a right air exhaust pipe that are mounted in the air exhaust portion, where the left air exhaust pipe is respectively connected to the cavity of the left air intake portion and the air exhaust opening, the right air exhaust pipe is respectively connected to the cavity of the right air intake portion and the air exhaust opening, and pipe walls of the left air exhaust pipe and the right air exhaust pipe are provided with acoustic attenuation micro holes.

[0018] Optionally, a three-way air exhaust pipe is mounted in the cavity of the air exhaust portion; the three-way air exhaust pipe is respectively connected to the cavity of the left air intake portion, the cavity of the right air intake portion, and the air exhaust opening; and a pipe wall of the three-way air exhaust pipe is provided with acoustic attenuation micro holes.

[0019] Optionally, the cooker hood further includes: a plurality of second thin plates, where the second thin plate is mounted in the three-way air exhaust pipe, and the second thin plate is provided with acoustic attenuation

micro holes.

[0020] Optionally, a left air intake pipe is mounted in the left air intake portion, the left air intake pipe is respectively connected to the left air intake opening and the cavity of the air exhaust portion, and a pipe wall of the left air intake pipe is provided with acoustic attenuation micro holes.

[0021] Optionally, a right air intake pipe is mounted in the right air intake portion, the right air intake pipe is respectively connected to the right air intake opening and the cavity of the air exhaust portion, and a pipe wall of the right air intake pipe is provided with acoustic attenuation micro holes.

[0022] Compared with the prior art, the technical solutions of the present invention have the following beneficial effects: a cooker hood is provided, including a housing, a fan and an air guide pipe, where the fan and the air guide pipe are mounted in the housing. The fan and the air guide pipe both have an air intake vent and an air exhaust vent, where the air exhaust vent of the air guide pipe is connected to the air intake vent of the fan. After the fan starts working, smoke enters the air intake vent of the air guide pipe, passes through the air exhaust vent of the air guide pipe and enters the fan, and finally is exhausted to a public pipeline by the fan. Because a pipe wall of the air guide pipe is provided with a plurality of acoustic attenuation micro holes, noise generated when the cooker hood runs leaks out of the acoustic attenuation micro holes on the air guide pipe when passing through the air guide pipe, and the noise is reflected in space between the pipe wall of the air guide pipe and the housing back and forth for a plurality of times and is reduced after being reflected for the plurality of times, thereby achieving an effect of reducing the noise of the cooker hood.

BRIEF DESCRIPTION OF THE DRAWINGS

[0023]

FIG. 1 is a three-dimensional perspective view of a cooker hood according to a first embodiment of the present invention;

FIG. 2 is a side perspective view of an upper housing of the cooker hood in FIG. 1;

FIG. 3 is a schematic diagram of mounting in an upper housing of the cooker hood in FIG. 1;

FIG. 4 is a schematic three-dimensional view of a lower housing of the cooker hood in FIG. 1;

FIG. 5 is a three-dimensional perspective view of a cooker hood according to a second embodiment of the present invention;

FIG. 6 is a side perspective view of the cooker hood

in FIG. 5;

FIG. 7 is a schematic diagram of mounting of a connector in an upper housing of the cooker hood in FIG. 5;

FIG. 8 is a front perspective view of a cooker hood according to a third embodiment of the present invention; and

FIG. 9 is a schematic three-dimensional view of a lower housing of the cooker hood in FIG. 8.

[0024] 1: Cooker hood; 10: Upper housing; 101: First part of the upper housing; 102: Second part of the upper housing; 10a: Air inlet of the upper housing; 10b: Air outlet of the upper housing; 11: Fan; 111: Volute; 11a: Air intake vent of the fan; 11b: Air exhaust vent of the fan; 12: Air guide pipe; 12a: Air intake vent of the air guide pipe; 12b: Air exhaust vent of the air guide pipe; 13: External air guide pipe; 14: Flow guide plate; 15: First thin plate; 16: Fan separator; 161: Opening of the fan separator; 17: Annular sealing plate; 17a: Lower opening of the annular sealing plate; 17b: Upper opening of the annular sealing plate; 18: Third thin plate; 20: Lower housing; 20a: Air intake surface; 20b: Air exhaust surface; 201: Left air intake portion; 202: Right air intake portion; 203: Air exhaust portion; 21: Left air intake pipe; 22: Right air intake pipe; 231: Left air exhaust pipe; 232: Right air exhaust pipe; 23: Three-way air exhaust pipe; 24: Second thin plate; 201a: Left air intake opening; 202a: Right air exhaust opening; 203b: Air exhaust opening; 21c: Left middle hole; 22c: Right middle hole; 30: Housing; 31: First separator; and 32: Second separator.

DETAILED DESCRIPTION

[0025] To make the objectives, features, and beneficial effects of the present invention more obvious and easier to understand, the following describes specific embodiments of the present invention in detail with reference to the accompanying drawings.

First embodiment

[0026] Referring to FIG. 1 to FIG. 3, a low-noise cooker hood 1 is provided, which includes a housing 30, a fan 11 and an air guide pipe 12. The housing 30 includes an upper housing 10 and a lower housing 20, and a first separator 31 is mounted between the upper housing 10 and the lower housing 20. In this embodiment, the fan 11 and the air guide pipe 12 are both mounted in the upper housing 10 of the housing 30. However, the fan and the air guide pipe are not limited to be mounted only in the upper housing, and may be mounted in the lower housing. A first part 101 and a second part 102 are included in the upper housing 10 in FIG. 3 to better present a mounting structure in the upper housing 10.

[0027] The upper housing 10 has an air inlet 10a and an air outlet 10b. The fan 11 has an air intake vent 11a and an air exhaust vent 11b, where the air exhaust vent 11b of the fan is aligned with the air outlet 10b of the upper housing 10. The air guide pipe 12 has an air intake vent 12a and an air exhaust vent 12b, where the air intake vent 12a of the air guide pipe 12 is aligned with the air inlet 10a of the upper housing 10, and the air exhaust vent 12b of the air guide pipe 12 is connected to the air intake vent 11a of the fan 11. Sucked smoke enters the air guide pipe 12 through the air intake vent 12a of the air guide pipe 12 when the fan 11 of the cooker hood 1 works, enters the fan 11 through the air guide pipe 12, and is finally exhausted outside the upper housing 10 through the air exhaust vent 11b of the fan 11.

[0028] A pipe wall of the air guide pipe 12 is provided with a plurality of acoustic attenuation micro holes. When the cooker hood 1 runs, and when noise of the smoke passes through the air guide pipe 12, the noise leaks out of the acoustic attenuation micro holes on the air guide pipe 12, and the noise is reflected in space between the pipe wall of the air guide pipe 12 and the upper housing 10 back and forth for a plurality of times and is reduced after being reflected for the plurality of times, thereby achieving an effect of reducing the noise of the cooker hood 1.

[0029] Referring to FIG. 2 and FIG. 3, the cooker hood 1 further includes a fan separator 16 mounted in the upper housing 10, the fan separator 16 separates the upper housing 10 into two chambers, and the fan 11 and the air guide pipe 12 are in the two chambers separately. The fan separator 16 has an opening 161, and an air intake vent 11a of the fan 11 and an air exhaust vent 12b of the air guide pipe 12 are respectively aligned with the opening 161 on the fan separator 16.

[0030] Referring to FIG. 3, the fan 11 has a volute 111, and the surface of the volute 111 is provided with a plurality of acoustic attenuation micro holes. Noise generated when the fan 11 works leaks out of the acoustic attenuation micro holes on the surface of the volute 111, is reflected in space between the volute 111 and the upper housing 10 back and forth, and is reduced after being reflected for a plurality of times, thereby achieving an effect of reducing the noise.

[0031] An external air guide pipe 13 is further mounted in the upper housing 10, and the external air guide pipe 13 is sleeved outside the air guide pipe 12. A pipe wall of the external air guide pipe 13 is provided with a plurality of acoustic attenuation micro holes. After the noise of the smoke leaks out of the acoustic attenuation micro holes of the air guide pipe 12, a part of the noise is reflected in space between the air guide pipe 12 and the external air guide pipe 13 back and forth, and the other part of the noise leaks out of the acoustic attenuation micro holes of the external air guide pipe 13 and is reflected back and forth in space between the external air guide pipe 13 and the upper housing 10. Compared with using a single air guide pipe, using two layers of air guide pipes can im-

prove a noise reduction effect.

[0032] Flow guide plates 14 are mounted in the air guide pipe 12, and the flow guide plates 14 dispersedly suck the smoke in the air guide pipe 12, to avoid that the smoke centers on a middle part of the air guide pipe 12 and is rare on two sides of the air guide pipe 12, so that the smoke generates an even pressure to the air guide pipe 12. The surface of each flow guide plate 14 is provided with a plurality of acoustic attenuation micro holes. When passing through the flow guide plate 14, the noise of the smoke leaks out of the acoustic attenuation micro holes of the flow guide plate 14 and is reflected between neighboring flow guide plates 14 back and forth. In this embodiment, three flow guide plates 14 are mounted in the air guide pipe 12, and more flow guide plates may be used in an air guide pipe in another embodiment.

[0033] First thin plates 15 are further mounted in the air guide pipe 12, and the first thin plates 15 are located below the flow guide plate 14. When entering the air guide pipe 12 from the air intake vent 12a of the air guide pipe 12, the smoke first passes through a narrow gap formed between neighboring first thin plates 15, so that a speed of the smoke can be reduced, to prevent the smoke from striking the air guide pipe 12. The surface of each first thin plate 15 is provided with a plurality of attenuation micro holes. When passing through the first thin plate 15, the noise of the smoke leaks out of the acoustic attenuation micro holes of the first thin plate 15 and is reflected between neighboring first thin plates 15 back and forth. In this embodiment, the neighboring first thin plates 15 are parallel to each other, and the surface of the first thin plate 15 is a curved surface and a cross-section thereof is "S" shaped. The noise is reflected on the "S" shaped surface for a plurality of times when passing through the first thin plate 15 having the "S" shaped cross-section, thereby achieving a better noise reduction effect. In another embodiment, first thin plates may not be parallel to each other, and the surface of the first thin plate may be a plane.

[0034] Referring to FIG. 2 and FIG. 4, the housing 30 is divided into two parts, and includes an upper housing 10 and a lower housing 20. The upper housing 10 has an air inlet 10a and an air outlet 10b. The lower housing 20 has an air intake surface 20a and an air exhaust surface 20b, and the air intake surface 20a is used for facing a cooktop that generates smoke, and the air exhaust surface 20b is used for connecting to the upper housing 10. The air intake surface 20a has a left air intake opening 201a and a right air exhaust opening 202a, the air exhaust surface 20b has an air exhaust opening 203b, and the air inlet 10a of the upper housing 10 is connected to the air exhaust opening 203b of the lower housing 20. In this embodiment, the air exhaust surface 20b of the lower housing 20 is parallel to the horizontal plane, and an angle is formed between the air intake surface 20a and the horizontal plane.

[0035] The smoke is sucked from the left air intake opening 201a or the right air intake opening 202a after

the fan 11 starts working, flows out of the air exhaust opening 203b to enter the air guide pipe 12 of the upper housing 10, then enters the fan 11 through the air guide pipe 12, and finally is exhausted outside the cooker hood 1 by the fan 11 through the air exhaust vent 11b of the fan 11.

[0036] Still referring to FIG. 1 and with reference to FIG. 4, the lower housing 20 includes a left air intake portion 201, a right air intake portion 202 and an air exhaust portion 203. The left air intake portion 201 is provided with the left air intake opening 201a; the right air intake portion 202 is provided with the right air intake opening 202a; the air exhaust portion 203 is located between the left air intake portion 201 and the right air intake portion 202, a cavity of the air exhaust portion 203 is in communication with a cavity of the left air intake portion 201 through a left middle hole 21c and in communication with a cavity of the right air intake portion 202 through a right middle hole 22c, and the air exhaust portion 203 is provided with the air exhaust opening 203b.

[0037] The air exhaust portion 203 is further mounted with a left air exhaust pipe 231 and a right air exhaust pipe 232, one end of the left air exhaust pipe 231 is connected to the left middle hole 21c between the left air intake portion 201 and the air exhaust portion 203, the other end is connected to the air exhaust opening 203b of the air exhaust portion 203, and the smoke enters from the left middle hole 21c and flows out to the upper housing 10 through the air exhaust opening 203b. Correspondingly, two ends of the right air exhaust pipe 232 are respectively connected to the right middle hole 22c between the right air intake portion 202 and the air exhaust portion 203 and the air exhaust opening 203b of the air exhaust vent 203, and the smoke enters from the right middle hole 22c and flows out to the upper housing 10 through the air exhaust opening 203b.

[0038] A pipe wall of the left air exhaust pipe 231 and a pipe wall of the right air exhaust pipe 232 are provided with a plurality of acoustic attenuation micro holes. When the noise of the smoke passes through the left air exhaust pipe 231 and the right air exhaust pipe 232 after entering the air exhaust portion 203, the noise leaks out of the acoustic attenuation micro holes of the left air exhaust pipe 231 and the right air exhaust pipe 232 and is reflected in space between the pipe wall of the left air exhaust pipe 231, the pipe wall of the right air exhaust pipe 232 and the air exhaust portion 203 back and forth for a plurality of times, to achieve an effect of reducing the noise.

[0039] In addition, the left air intake portion 201 is mounted with a left air intake pipe 21, and two ends of the left air intake pipe 21 are respectively connected to the left air intake opening 201a and the left middle 21c between the left air intake portion 201 and the air exhaust portion 203. The right air intake portion 202 is mounted with a right air intake pipe 22, and two ends of the right air intake pipe 22 are respectively in communication with the right air intake opening 202a and the right middle hole 22c between the right air intake portion 202 and the air

exhaust portion 203.

[0040] Pipe walls of the left air intake pipe 21 and the right air intake pipe 22 are provided with a plurality of acoustic attenuation micro holes. When the noise of the smoke passes through the left intake pipe 21 or the right air intake pipe 22 after entering the left air intake portion 201 or the right air intake portion 202, the noise leaks out of the acoustic attenuation micro holes of the left air intake pipe 21 or the right air intake pipe 22 and is reflected in space between the left intake pipe 21 and the left air intake portion 201 or space between the right air intake pipe 22 and the right air intake portion 202 back and forth for a plurality of times, to achieve an effect of reducing the noise.

Second embodiment

[0041] Referring to FIG. 5 and FIG. 6, in this embodiment, a lower housing 20 of a low-noise cooker hood 2 includes a left air intake portion 201, a right air intake portion 202 and an air exhaust portion 203. The air exhaust portion 203 is mounted with a three-way air exhaust pipe 23, a first air intake port of the three-way air exhaust pipe 23 is connected to a left middle hole 21c between the left air intake portion 201 and the air exhaust portion 203, a second air intake port is connected to a right middle hole 22c between the right air intake portion 202 and the air exhaust portion 203, and an air exhaust port is connected to an air exhaust opening 203b of the air exhaust portion 203. Smoke enters the three-way air exhaust pipe 23 from the left middle hole 21c or the right middle hole 22c, and flows to the upper housing 10 through the air exhaust opening 203b of the air exhaust portion 203.

[0042] In addition, the three-way air exhaust pipe 23 is further mounted with second thin plates 24, where the surface of each second thin plate 24 is provided with a plurality of acoustic attenuation micro holes. When passing through the second thin plate 24, the noise of the smoke leaks out of the acoustic attenuation micro holes on the second thin plate 24 and is reflected between neighboring second thin plates 24 back and forth. In this embodiment, the neighboring second thin plates 24 are parallel to each other, and the surface of the second thin plate 24 is a flat surface. In another embodiment, the second thin plates may not be parallel to each other, and the surface of the second thin plate may be a curved surface of which a cross-section is "S" shaped.

[0043] Referring to FIG. 7 and with reference to FIG. 5, a connector is mounted between the air exhaust port of the three-way air exhaust pipe 23 and the air exhaust opening 203b, and the connector includes a second separator 32, an annular sealing plate 17 and a plurality of third thin plates 18. The second separator 32 is mounted between the air exhaust port of the three-way air exhaust pipe 23 and the annular sealing plate 17. The second separator 32 has an opening 32a that is made to be aligned with the air exhaust port of the three-way air exhaust pipe 23. The annular sealing plate 17 has an upper

opening 17b and a lower opening 17a, the lower opening 17a thereof is aligned with the opening 32a of the second separator 32, and the upper opening 17b thereof is aligned with an air inlet 10a of the upper housing 10. The third thin plates 18 are mounted parallel to each other in the annular sealing plate 17. Peripheral walls of the annular sealing plate 17 and the surface of the third thin plate 18 are all provided with a plurality of acoustic attenuation micro holes. When passing through the annular sealing plate 17 and the third thin plate 18, the noise leaks out of the acoustic attenuation micro holes of the annular sealing plate 17 and the third thin plate 18 and is reflected in space of the annular sealing plate 17 back and forth for a plurality of times, thereby achieving an effect of reducing the noise.

Third embodiment

[0044] Referring to FIG. 8 and FIG. 9, in this embodiment, a housing 30 of a low-noise cooker hood 3 is divided into two parts, and includes an upper housing 10 and a lower housing 20. The lower housing 20 has an air intake surface 20a and an air exhaust surface 20b, and the air intake surface 20a is used for facing a cooktop that generates smoke, and the air exhaust surface 20b is used for connecting to the upper housing 10. The air intake surface 20a has a left air intake opening 201a and a right air exhaust opening 202a, the air exhaust surface 20b has an air exhaust opening 203b, and an air inlet 10a of the upper housing 10 is connected to the air exhaust opening 203b of the lower housing 20. In this embodiment, the air exhaust surface 20b of the lower housing 20 is parallel to the horizontal plane, and the air intake surface 20a is also parallel to the horizontal plane.

[0045] In the present invention, all the embodiments use a progressive writing method and emphasize differences from a foregoing embodiment. For same parts of the embodiments, refer to the foregoing embodiment.

[0046] Although the present invention is disclosed above, the present invention is not limited thereto. Any person skilled in the art may make various changes and modifications without departing from the scope of the present invention, as defined in the appended claims.

Claims

1. A cooker hood (1), comprising:

a housing (30); and
a fan (11) mounted in the housing (30), wherein the fan (11) comprises an air intake vent (11a) and an air exhaust vent (11b),
wherein
the cooker hood (1) further comprises an air guide pipe (12) mounted in the housing (30), wherein the air guide pipe (12) comprises an air intake vent (12a) and an air exhaust vent (12b),

and the air exhaust vent (12b) of the air guide pipe is connected to the air intake vent (11a) of the fan;

a pipe wall of the air guide pipe (12) is provided with acoustic attenuation micro holes **characterized in that**

the housing (30) comprises:

an upper housing (10), wherein the upper housing (10) comprises an air inlet (10a) and an air outlet (10b), and the fan (11) and the air guide pipe (12) are mounted in the upper housing (10); and

a lower housing (20), wherein the lower housing (20) comprises left and right air intake openings (201a and 202a) and an air exhaust opening (203b), and the air inlet (10a) of the upper housing is connected to the air exhaust opening (203b) of the lower housing, and

the cooker hood (1) further includes: a fan separator (16) mounted in the upper housing (10), where the fan separator (16) separates the fan (11) from the air guide pipe (12), so that the fan (11) and the air guide pipe (12) are in two chambers of the upper housing (10).

2. The cooker hood according to claim 1, **characterized in that** the fan (11) comprises a volute (111), and the surface of the volute (111) is provided with acoustic attenuation micro holes.
3. The cooker hood according to claim 1 or 2, **characterized by** further comprising an external air guide pipe (13), wherein the external air guide pipe (13) is mounted in the housing (30) and is sleeved outside the air guide pipe (12), and a pipe wall of the external air guide pipe (13) is provided with acoustic attenuation micro holes.
4. The cooker hood according to any of the preceding claims, **characterized by** further comprising a plurality of flow guide plates (14), wherein the flow guide plate (14) is mounted in the air guide pipe (12), and the surface of the flow guide plate (14) is provided with acoustic attenuation micro holes.
5. The cooker hood according to claim 4, **characterized by** further comprising a plurality of first thin plates (15), wherein the first thin plate (15) is mounted in the air guide pipe (12) and is located below the flow guide plate (14), and the surface of the first thin plate (15) is provided with acoustic attenuation micro holes.
6. The cooker hood according to anyone of claims 1 to 5, **characterized in that** the lower housing (20) com-

prises:

a left air intake portion (201), wherein the left air intake portion is provided with the left air intake opening (201a);

a right air intake portion (202), wherein the right air intake portion is provided with the right air intake opening (202a); and

an air exhaust portion (203), wherein the air exhaust portion (203) is provided with an air exhaust opening (203b), the air exhaust portion (203) is located between the left air intake portion (201) and the right air intake portion (202), and a cavity of the air exhaust portion (203) is respectively in communication with a cavity of the left air intake portion (201) and a cavity of the right air intake portion (202).

7. The cooker hood according to claim 6, **characterized by** further comprising a left air exhaust pipe (231) and a right air exhaust pipe (232) that are mounted in the air exhaust portion (203), wherein the left air exhaust pipe (231) is respectively connected to the cavity of the left air intake portion (201) and the air exhaust opening (203b), the right air exhaust pipe (232) is respectively connected to the cavity of the right air intake portion (202) and the air exhaust opening (203b), and pipe walls of the left air exhaust pipe (231) and the right air exhaust pipe (232) are provided with acoustic attenuation micro holes.
8. The cooker hood according to claim 6, **characterized in that** a three-way air exhaust pipe (23) is mounted in the cavity of the air exhaust portion (203); the three-way air exhaust pipe (23) is respectively connected to the cavity of the left air intake portion (201), the cavity of the right air intake portion (202), and the air exhaust opening (203b); and a pipe wall of the three-way air exhaust pipe (23) is provided with acoustic attenuation micro holes.
9. The cooker hood according to claim 8, **characterized by** further comprising a plurality of second thin plates (24), wherein the second thin plate (24) is mounted in the three-way air exhaust pipe (23), and the second thin plate (24) is provided with acoustic attenuation micro holes.
10. The cooker hood according to any one of claims 7 to 9, **characterized in that** a left air intake pipe (21) is mounted in the left air intake portion (201), the left air intake pipe (21) is respectively connected to the left air intake opening (201a) and the cavity of the air exhaust portion (203), and a pipe wall of the left air intake pipe (21) is provided with acoustic attenuation micro holes.

11. The cooker hood according to any one of claims 7 to 10, **characterized in that** a right air intake pipe (22) is mounted in the right air intake portion (202), the right air intake pipe (22) is respectively connected to the right air intake opening (202a) and the cavity of the air exhaust portion (203), and a pipe wall of the right air intake pipe (22) is provided with acoustic attenuation micro holes.

Patentansprüche

1. Dunstabzugshaube (1), die Folgendes umfasst:

ein Gehäuse (30) und
ein Gebläse (11), das in dem Gehäuse (30) installiert ist, wobei das Gebläse (11) einen Luftansaugstutzen (11a) und einen Luftablassstutzen (11b) umfasst,
wobei
die Dunstabzugshaube (1) ferner ein in dem Gehäuse (30) installiertes Luftleitrohr (12) umfasst, das einen Luftansaugstutzen (12a) und einen Luftablassstutzen (12b) umfasst, und der Luftablassstutzen (12b) des Luftleitrohrs mit dem Luftansaugstutzen (11a) des Gebläses verbunden ist,
eine Rohrwand des Luftleitrohrs (12) mit schalldämpfenden Mikrolöchern versehen ist,
dadurch gekennzeichnet,
dass das Gehäuse (30) Folgendes umfasst:

ein oberes Gehäuse (10), wobei das obere Gehäuse (10) einen Lufteinlass (10a) und einen Luftauslass (10b) umfasst und das Gebläse (11) und das Luftleitrohr (12) in dem oberen Gehäuse (10) installiert sind, und
ein unteres Gehäuse (20), wobei das untere Gehäuse (20) eine linke und eine rechte Luftansaugöffnung (201a und 202a) und eine Luftauslassöffnung (203b) umfasst und der Lufteinlass (10a) des oberen Gehäuses mit der Luftauslassöffnung (203b) des unteren Gehäuses verbunden ist, und
die Dunstabzugshaube (1) ferner Folgendes aufweist: eine Gebläsetrennwand (16), die in dem oberen Gehäuse (10) installiert ist, wobei die Gebläsetrennwand (16) das Gebläse (11) von dem Luftleitrohr (12) trennt, so dass sich das Gebläse (11) und das Luftleitrohr (12) in zwei Kammern des oberen Gehäuses (10) befinden.

2. Dunstabzugshaube nach Anspruch 1, **dadurch gekennzeichnet, dass** das Gebläse (11) ein Spiralgehäuse (111) umfasst und die Oberfläche des Spiralgehäuses (111) mit schalldämpfenden Mikrolöchern

versehen ist.

3. Dunstabzugshaube nach Anspruch 1 oder 2, **dadurch gekennzeichnet, dass** sie ferner ein externes Luftleitrohr (13) umfasst, wobei das externe Luftleitrohr (13) in dem Gehäuse (30) installiert und auf das Luftleitrohr (12) aufgesteckt und eine Rohrwand des externen Luftleitrohrs (13) mit schalldämpfenden Mikrolöchern versehen ist.

4. Dunstabzugshaube nach einem der vorherigen Ansprüche, **dadurch gekennzeichnet, dass** sie ferner mehrere Strömungsführungsbleche (14) umfasst, wobei das Strömungsführungsblech (14) in dem Luftleitrohr (12) installiert und die Oberfläche des Strömungsführungsblechs (14) mit schalldämpfenden Mikrolöchern versehen ist.

5. Dunstabzugshaube nach Anspruch 4, **dadurch gekennzeichnet, dass** sie ferner mehrere erste dünne Bleche (15) umfasst, wobei das erste dünne Blech (15) in dem Luftleitrohr (12) installiert ist und sich unterhalb des Strömungsführungsblechs (14) befindet und die Oberfläche des ersten dünnen Blechs (15) mit schalldämpfenden Mikrolöchern versehen ist.

6. Dunstabzugshaube nach einem der Ansprüche 1 bis 5, **dadurch gekennzeichnet, dass** das untere Gehäuse (20) Folgendes umfasst:

einen linken Luftansaugabschnitt (201), der mit der linken Luftansaugöffnung (201a) versehen ist,
einen rechten Luftansaugabschnitt (202), der mit der rechten Luftansaugöffnung (202a) versehen ist, und
einen Luftauslassabschnitt (203), der mit einer Luftauslassöffnung (203b) versehen ist, wobei sich der Luftauslassabschnitt (203) zwischen dem linken Luftansaugabschnitt (201) und dem rechten Luftansaugabschnitt (202) befindet und ein Hohlraum des Luftauslassabschnitts (203) mit einem Hohlraum des linken Luftansaugabschnitts (201) beziehungsweise einem Hohlraum des rechten Luftansaugabschnitts (202) in Verbindung steht.

7. Dunstabzugshaube nach Anspruch 6, **dadurch gekennzeichnet, dass** sie ferner ein linkes Luftauslassrohr (231) und ein rechtes Luftauslassrohr (232) umfasst, die in dem Luftauslassabschnitt (203) installiert sind, wobei das linke Luftauslassrohr (231) mit dem Hohlraum des linken Luftansaugabschnitts (201) beziehungsweise der Luftauslassöffnung (203b) verbunden ist, das rechte Luftauslassrohr (232) mit dem Hohlraum des rechten Luftansaugabschnitts (202) beziehungsweise der Luftauslassöff-

nung (203b) verbunden ist und Rohrwände des linken Luftauslassrohrs (231) und des rechten Luftauslassrohrs (232) mit schalldämpfenden Mikrolöchern versehen sind.

8. Dunstabzugshaube nach Anspruch 6, **dadurch gekennzeichnet, dass** ein Dreiwegeluftauslassrohr (23) in dem Hohlraum des Luftauslassabschnitts (203) installiert ist, das Dreiwegeluftauslassrohr (23) mit dem Hohlraum des linken Luftansaugabschnitts (201), dem Hohlraum des rechten Luftansaugabschnitts (202) beziehungsweise der Luftauslassöffnung (203b) verbunden und eine Rohrwand des Dreiwegeluftauslassrohrs (23) mit schalldämpfenden Mikrolöchern versehen ist.

9. Dunstabzugshaube nach Anspruch 8, **dadurch gekennzeichnet, dass** sie ferner mehrere zweite dünne Bleche (24) umfasst, wobei das zweite dünne Blech (24) in dem Dreiwegeluftauslassrohr (23) installiert und mit schalldämpfenden Mikrolöchern versehen ist.

10. Dunstabzugshaube nach einem der Ansprüche 7 bis 9, **dadurch gekennzeichnet, dass** ein linkes Luftansaugrohr (21) in dem linken Luftansaugabschnitt (201) installiert, das linke Luftansaugrohr (21) mit der linken Luftansaugöffnung (201a) beziehungsweise dem Hohlraum des Luftauslassabschnitts (203) verbunden und eine Rohrwand des linken Luftansaugrohrs (21) mit schalldämpfenden Mikrolöchern versehen ist.

11. Dunstabzugshaube nach einem der Ansprüche 7 bis 10, **dadurch gekennzeichnet, dass** ein rechtes Luftansaugrohr (22) in dem rechten Luftansaugabschnitt (202) installiert, das rechte Luftansaugrohr (22) mit der rechten Luftansaugöffnung (202a) beziehungsweise dem Hohlraum des Luftauslassabschnitts (203) verbunden und eine Rohrwand des rechten Luftansaugrohrs (22) mit schalldämpfenden Mikrolöchern versehen ist.

Revendications

1. Hotte de cuisine (1), comprenant :

un boîtier (30) ; et
un ventilateur (11) monté dans le boîtier (30), dans laquelle le ventilateur (11) comprend une bouche d'admission d'air (11a) et une bouche d'évacuation d'air (11b), dans laquelle
la hotte de cuisine (1) comprend en outre un tuyau de guidage d'air (12) monté dans le boîtier (30), dans laquelle le tuyau de guidage d'air (12) comprend une bouche d'admission d'air (12a)

et une bouche d'évacuation d'air (12b), et la bouche d'évacuation d'air (12b) du tuyau de guidage d'air est reliée à la bouche d'admission d'air (11a) du ventilateur ;

une paroi de tuyau du tuyau de guidage d'air (12) est pourvue de micro-trous d'atténuation acoustique,

caractérisée en ce que

le boîtier (30) comprend :

un boîtier supérieur (10), dans laquelle le boîtier supérieur (10) comprend une entrée d'air (10a) et une sortie d'air (10b), et le ventilateur (11) et le tuyau de guidage d'air (12) sont montés dans le boîtier supérieur (10) ; et

un boîtier inférieur (20), dans laquelle le boîtier inférieur (20) comprend des ouvertures d'admission d'air gauche et droite (201a et 202a) et une ouverture d'évacuation d'air (203b), et l'entrée d'air (10a) du boîtier supérieur est reliée à l'ouverture d'évacuation d'air (203b) du boîtier inférieur, et

la hotte de cuisine (1) inclut en outre : un séparateur de ventilateur (16) monté dans le boîtier supérieur (10), où le séparateur de ventilateur (16) sépare le ventilateur (11) du tuyau de guidage d'air (12), de telle sorte que le ventilateur (11) et le tuyau de guidage d'air (12) se trouvent dans deux chambres du boîtier supérieur (10).

2. Hotte de cuisine selon la revendication 1, **caractérisée en ce que** le ventilateur (11) comprend une volute (111), et la surface de la volute (111) est pourvue de micro-trous d'atténuation acoustique.

3. Hotte de cuisine selon la revendication 1 ou 2, **caractérisée en ce qu'elle** comprend en outre un tuyau de guidage d'air externe (13), dans laquelle le tuyau de guidage d'air externe (13) est monté dans le boîtier (30) et emmanché à l'extérieur du tuyau de guidage d'air (12), et une paroi de tuyau du tuyau de guidage d'air externe (13) est pourvue de micro-trous d'atténuation acoustique.

4. Hotte de cuisine selon l'une quelconque des revendications précédentes, **caractérisée en ce qu'elle** comprend en outre une pluralité de plaques de guidage de flux (14), dans laquelle la plaque de guidage de flux (14) est montée dans le tuyau de guidage d'air (12), et la surface de la plaque de guidage de flux (14) est pourvue de micro-trous d'atténuation acoustique.

5. Hotte de cuisine selon la revendication 4, **caractérisée en ce qu'elle** comprend en outre une pluralité de premières plaques minces (15), dans laquelle la

première plaque mince (15) est montée dans le tuyau de guidage d'air (12) et située sous la plaque de guidage de flux (14), et la surface de la première plaque mince (15) est pourvue de micro-trous d'atténuation acoustique.

6. Hotte de cuisine selon l'une quelconque des revendications 1 à 5, **caractérisée en ce que** le boîtier inférieur (20) comprend :

une partie d'admission d'air gauche (201), dans laquelle la partie d'admission d'air gauche est pourvue de l'ouverture d'admission d'air gauche (201a) ;

une partie d'admission d'air droite (202), dans laquelle la partie d'admission d'air droite est pourvue de l'ouverture d'admission d'air droite (202a) ; et

une partie d'évacuation d'air (203), dans laquelle la partie d'évacuation d'air (203) est pourvue d'une ouverture d'évacuation d'air (203b), la partie d'évacuation d'air (203) est située entre la partie d'admission d'air gauche (201) et la partie d'admission d'air droite (202), et une cavité de la partie d'évacuation d'air (203) est respectivement en communication avec une cavité de la partie d'admission d'air gauche (201) et une cavité de la partie d'admission d'air droite (202).

7. Hotte de cuisine selon la revendication 6, **caractérisée en ce qu'elle** comprend en outre un tuyau d'évacuation d'air gauche (231) et un tuyau d'évacuation d'air droit (232) qui sont montés dans la partie d'évacuation d'air (203), dans laquelle le tuyau d'évacuation d'air gauche (231) est respectivement relié à la cavité de la partie d'admission d'air gauche (201) et à l'ouverture d'évacuation d'air (203b), le tuyau d'évacuation d'air droit (232) est respectivement relié à la cavité de la partie d'admission d'air droite (202) et à l'ouverture d'évacuation d'air (203b), et des parois du tuyau d'évacuation d'air gauche (231) et du tuyau d'évacuation d'air droit (232) sont pourvues de micro-trous d'atténuation acoustique.

8. Hotte de cuisine selon la revendication 6, **caractérisée en ce qu'un** tuyau d'évacuation d'air à trois voies (23) est monté dans la cavité de la partie d'évacuation d'air (203) ; le tuyau d'évacuation d'air à trois voies (23) est respectivement relié à la cavité de la partie d'admission d'air gauche (201), à la cavité de la partie d'admission d'air droite (202) et à l'ouverture d'évacuation d'air (203b) ; et une paroi de tuyau du tuyau d'évacuation d'air à trois voies (23) est pourvue de micro-trous d'atténuation acoustique.

9. Hotte de cuisine selon la revendication 8, **caractérisée en ce qu'elle** comprend en outre une pluralité de secondes plaques minces (24), dans laquelle la

seconde plaque mince (24) est montée dans le tuyau d'évacuation d'air à trois voies (23), et la seconde plaque mince (24) est pourvue de micro-trous d'atténuation acoustique.

10. Hotte de cuisine selon l'une quelconque des revendications 7 à 9, **caractérisée en ce qu'un** tuyau d'admission d'air gauche (21) est monté dans la partie d'admission d'air gauche (201), le tuyau d'admission d'air gauche (21) est respectivement relié à l'ouverture d'admission d'air gauche (201a) et à la cavité de la partie d'évacuation d'air (203), et une paroi de tuyau du tuyau d'admission d'air gauche (21) est pourvue de micro-trous d'atténuation acoustique.

11. Hotte de cuisine selon l'une des revendications 7 à 10, **caractérisée en ce qu'un** tuyau d'admission d'air droit (22) est monté dans la partie d'admission d'air droite (202), le tuyau d'admission d'air droit (22) est respectivement relié à l'ouverture d'admission d'air droite (202a) et à la cavité de la partie d'évacuation d'air (203), et une paroi de tuyau du tuyau d'admission d'air droit (22) est pourvue de micro-trous d'atténuation acoustique.

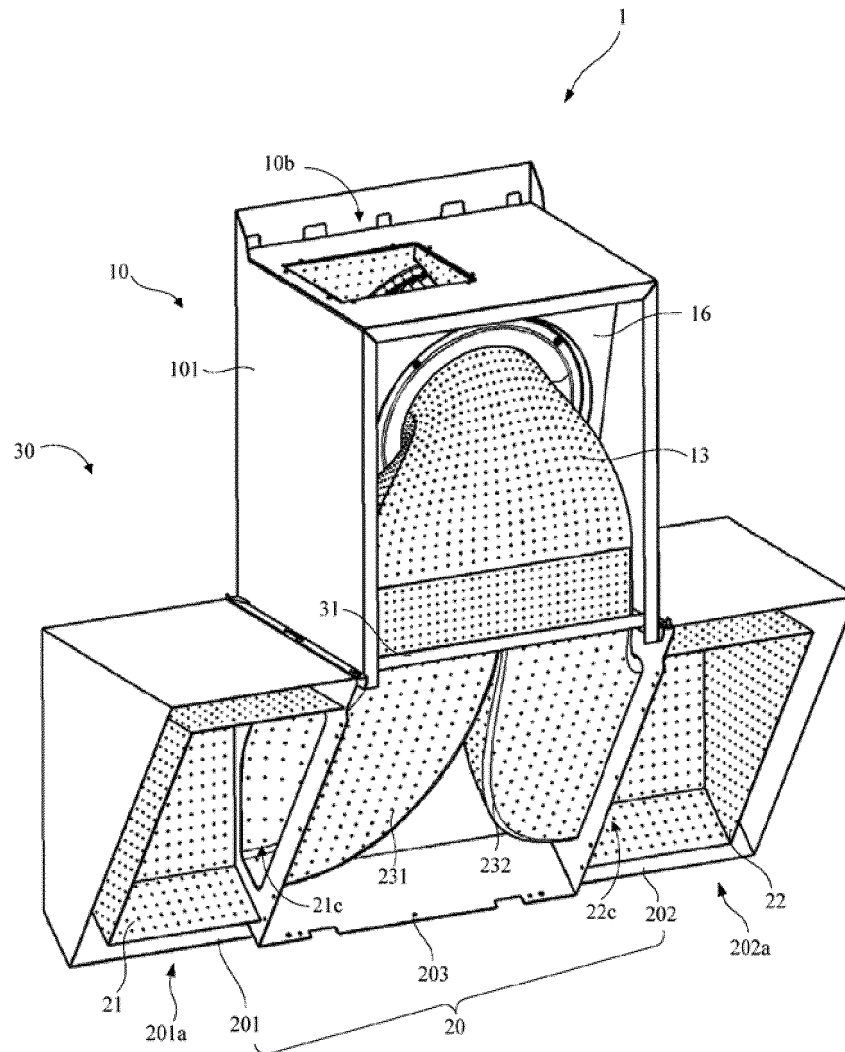


FIG. 1

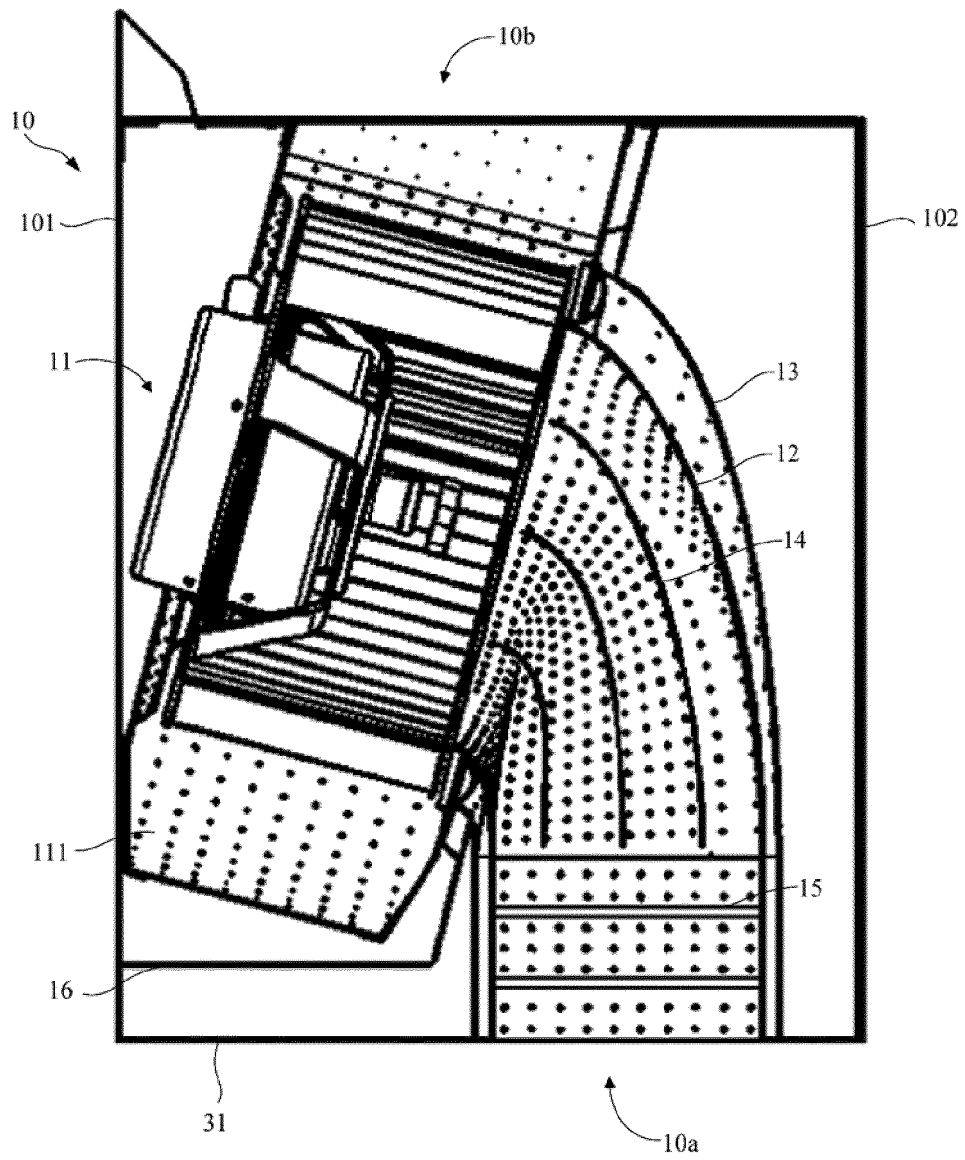


FIG. 2

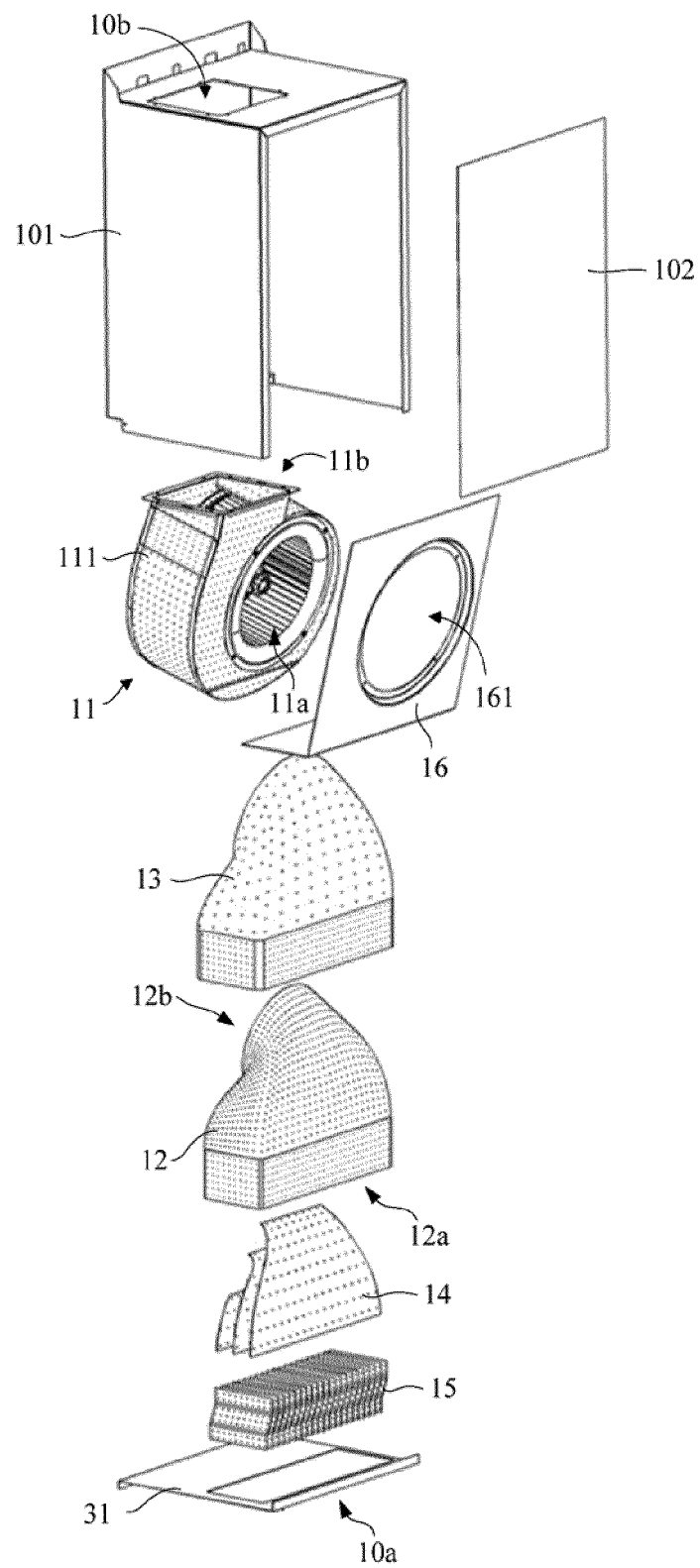


FIG. 3

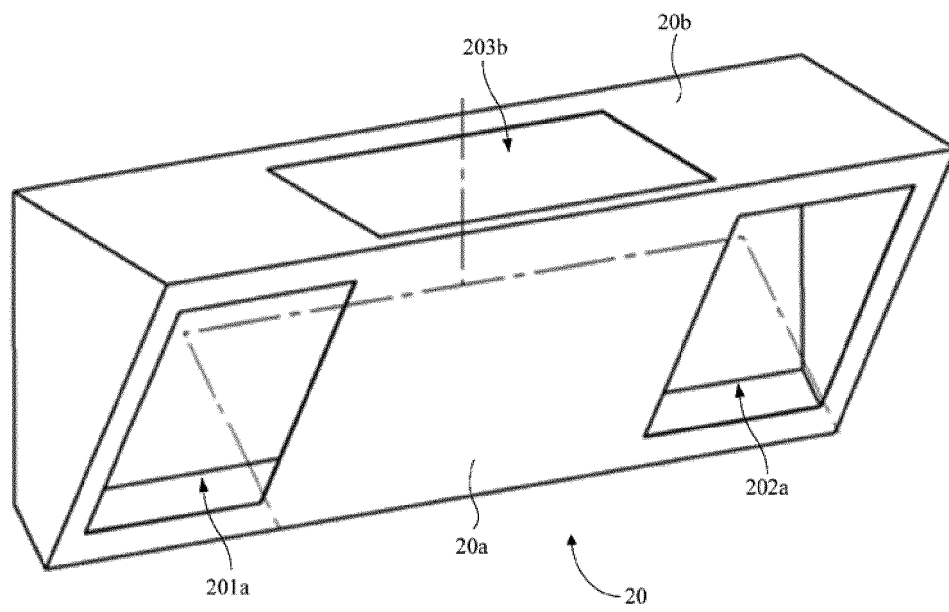


FIG. 4

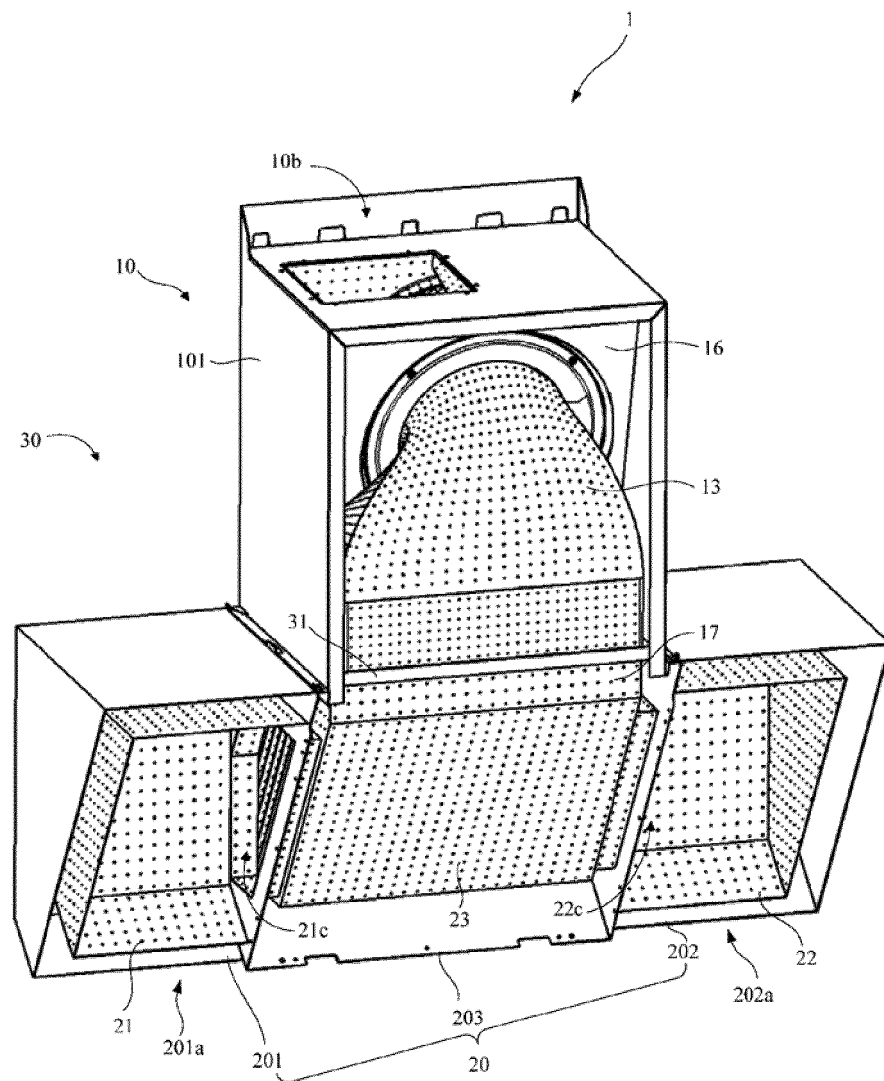


FIG. 5

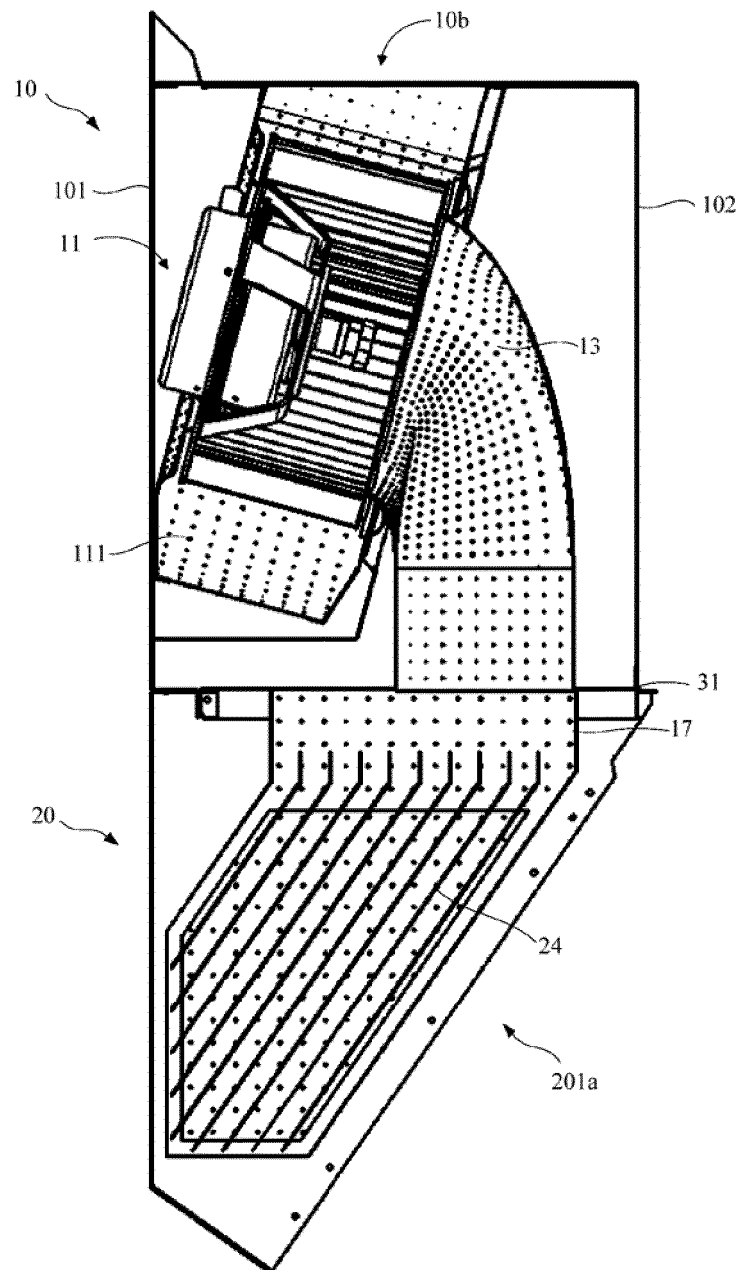


FIG. 6

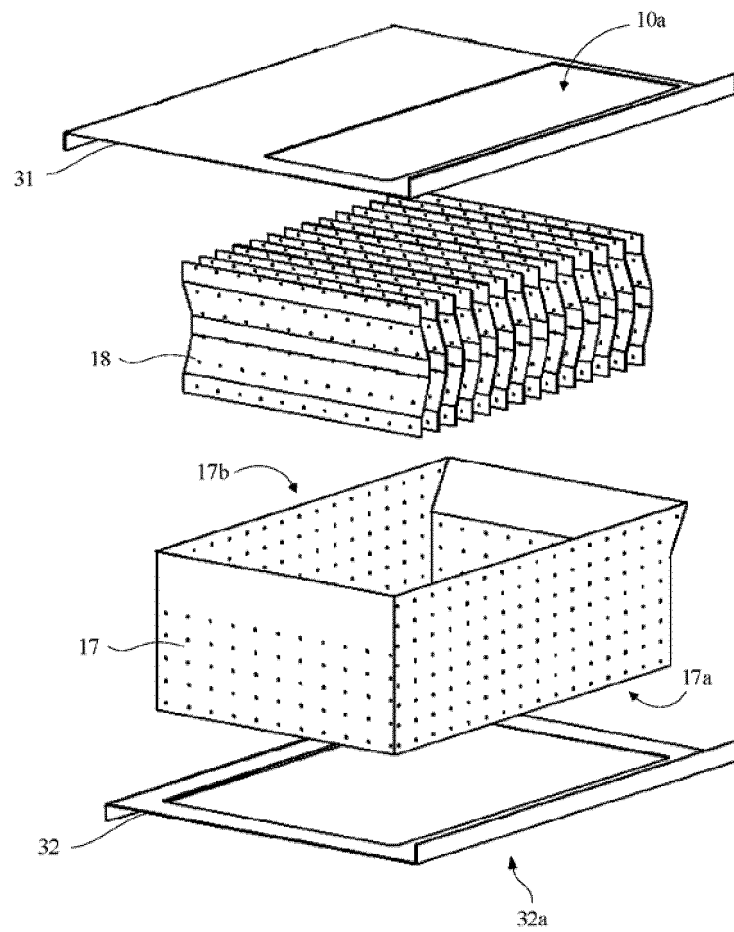


FIG. 7

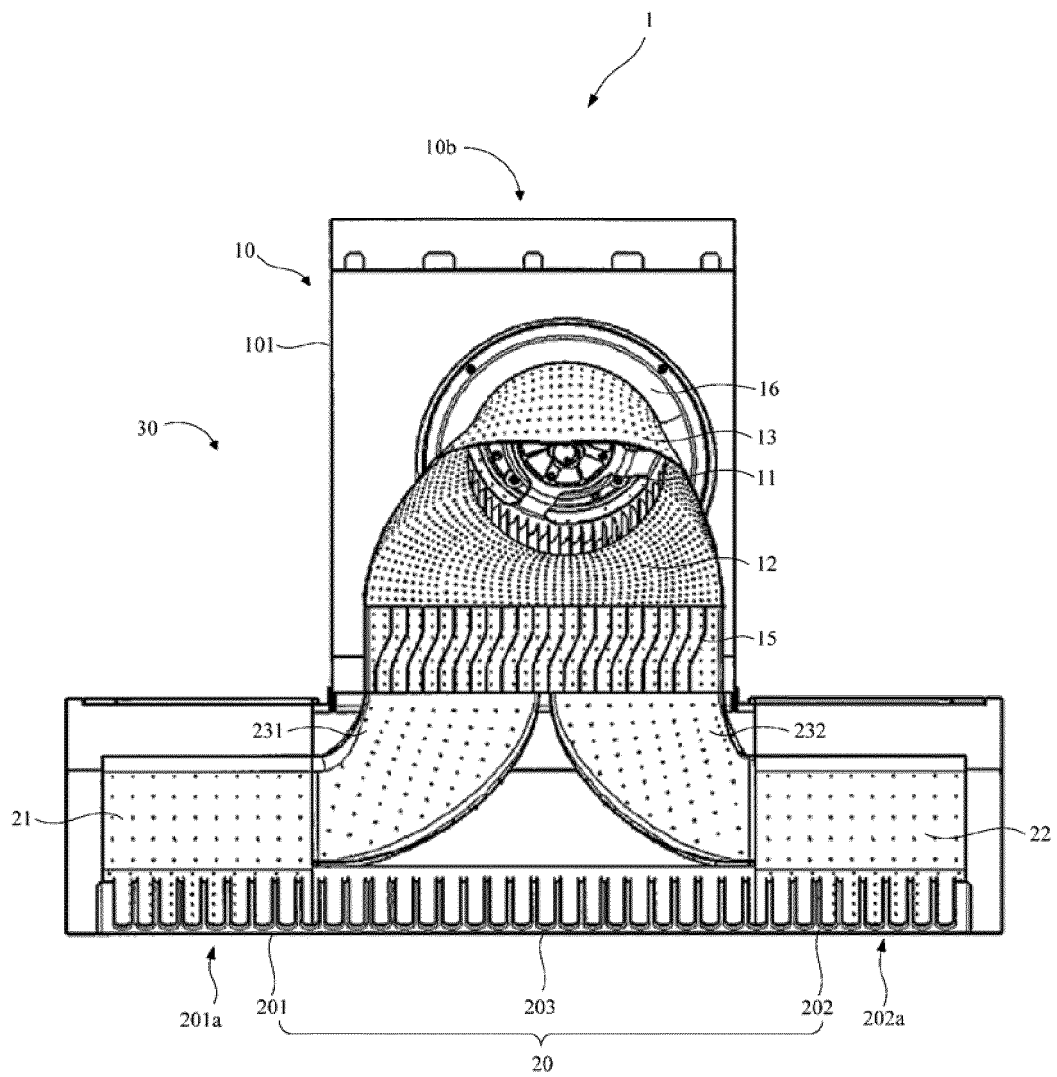


FIG. 8

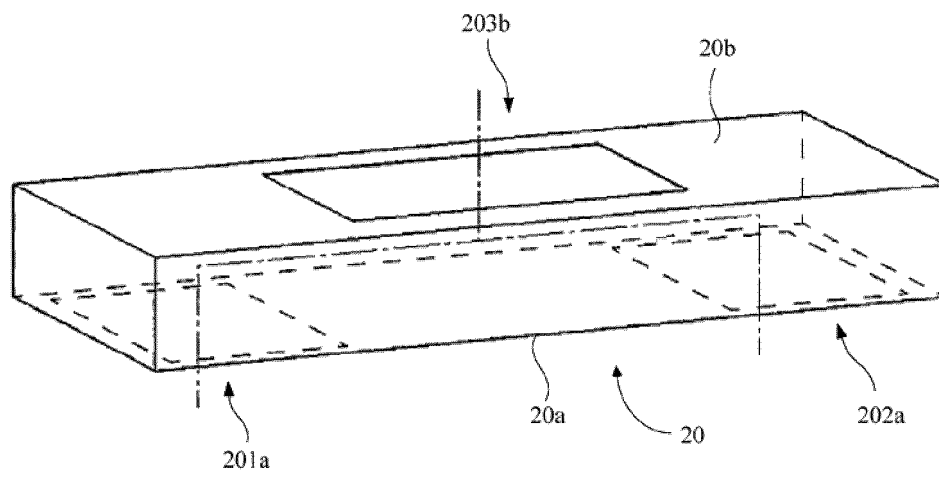


FIG. 9

REFERENCES CITED IN THE DESCRIPTION

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