



(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
28.02.2007 Bulletin 2007/09

(51) Int Cl.:
F24F 9/00 (2006.01) **F24F 13/08** (2006.01)
F24C 15/20 (2006.01)

(21) Application number: **06001123.6**

(22) Date of filing: **19.01.2006**

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI SK TR
Designated Extension States:
AL BA HR MK YU

(30) Priority: **22.08.2005 KR 2005077007**

(71) Applicant: **LG Electronics Inc.**
Yongdungpo-gu
Seoul (KR)

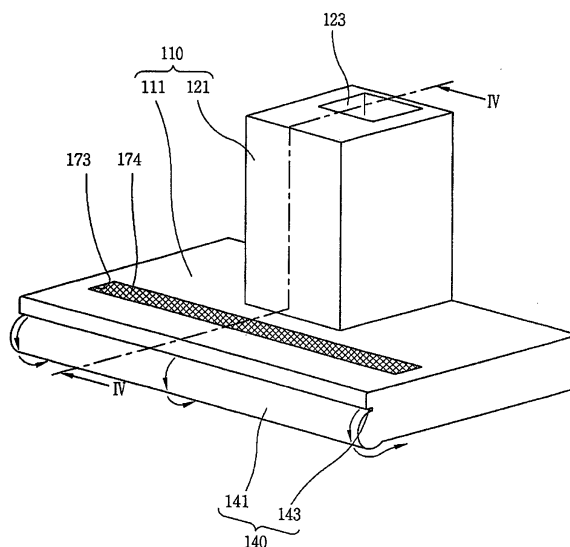
(72) Inventors:
• **Baek, Seung-Jo**
Gwangmyeong
Gyeonggi-Do (KR)
• **Sohn, Sang-Bum**
Seocho-Gu
Seoul (KR)
• **Song, Sung-Bae**
Manan-Gu
Anyang
Gyeonggi-Do (KR)

(74) Representative: **Vossius & Partner**
Siebertstrasse 4
81675 München (DE)

(54) **Exhaust hood**

(57) An exhaust hood comprising: a hood main body 110 including a canopy 111 provided with an inlet 117 and an exhaustion portion 121 connected to the canopy 111 and provided with an exhaustion passage 123; and a nozzle unit 140 disposed at a front side of the hood main body 110 and including a curved shape portion 141 and a nozzle 143 disposed at an upper side of the curved shape portion 141 along a circumferential direction of the curved shape portion 141 for perpendicularly discharging air down, whereby the nozzle unit 140 having the nozzle 143 at the curved shape portion 141 for perpendicularly discharging the air down is provided, and accordingly the contaminated air flowing toward the front portion of the exhaust hood without being sucked therein can effectively be induced toward the inlet 117 to thus be collected, which allows a creating of comfortable cooking circumstance and experimental environment.

FIG. 3



Description

[0001] The present invention relates to an exhaust hood, and particularly, to an exhaust hood having an improved efficiency for collecting contaminated air.

[0002] In general, an exhaust hood is disposed above a cooker such as a gas range or a laboratory table that generate materials causing air pollution like smoke, smells and grease vapor.

[0003] Figure 1 is a side sectional view that illustrates one example of an exhaust hood according to the conventional art. Referring to Figure 1, the conventional exhaust hood includes a canopy 21 installed above a cooker 10 having a plurality of burners 11a and 11b spaced at a predetermined distance therebetween, and an exhaust part 31 communicating with the canopy 21 and upwardly protruding from the canopy 21 to a predetermined height.

[0004] An inlet 23 is formed at the bottom of the canopy 21, through which the polluted air including pollutants like smoke, smells and grease vapor generated from the cooker 10 is drawn in. Also, a grease filter 24 that can collect pollutants is mounted at the inlet 23.

[0005] An exhaust path 33 is formed in the exhaust part 31, through which the polluted air having been introduced through the inlet 23 is exhausted to the outside. An exhaust fan 34 for forcibly taking in the air is installed under the exhaust path 33.

[0006] The polluted air including smoke, smells and grease vapor generated as burners 11a and 11b of the cooker heat food items is in a buoyancy jet form and increases in width as it ascends.

[0007] Thusly, only a portion of the polluted air is exhausted to the outside via the grease filter 24 installed at the inlet 23 and the exhaust path 33, and most of the polluted air is moved to the outside along a bottom surface of the canopy 21, contaminating the ambient air. Such a phenomenon greatly occurs when a food item is heated on the burner 11a disposed at the front side of the cooker 10.

[0008] To prevent the phenomenon, a method of increasing a rotation rate of the exhaust fan 34 and thusly increasing an intake force may be used. However, even though the rotation rate of the exhaust fan 34 is increased to increase the intake force, the intake performance is not improved in proportion to the increased rotation force. For this reason, only the intake force of the exhaust fan 34 used in such a method is not enough to guide the polluted air, which is moved to outside along the bottom surface of the canopy 21, to the inlet 23.

[0009] Consequently, the conventional exhaust hood cannot prevent the polluted air from moving out from the canopy 21, polluting an upper region (A) of the front side of the canopy 21 and spreading to a room to thus pollute a surrounding environment.

[0010] In order to solve the aforementioned problems, an exhaust hood illustrated in Figure 2 has been devised.

[0011] Figure 2 is a side sectional view that illustrates another example of a conventional exhaust hood. Refer-

ring to Figure 2, the conventional exhaust hood in accordance with another example includes a hood body 51 disposed above a cooker 10 at a predetermined distance therebetween, and a nozzle part 81 installed at a front region of the hood body 51 and downwardly discharging the air.

[0012] The hood body 51 includes a canopy 61 installed above the cooker 10, which has a plurality of burners 11a and 11b, at a predetermined distance therebetween, and an exhaust part 71 communicating with the canopy 61 and upwardly protruding from the canopy 61 to a predetermined height.

[0013] The nozzle part 81 is formed at a front region of a bottom surface of the canopy 61 and discharges the air downwardly. An air supply fan 83 for blowing the air to the nozzle part 81 is installed in the canopy 61.

[0014] A curve shape portion 85 having an arc shaped section which is convex downwardly is formed at a lower side of the front surface of the canopy 61, so that a portion of the air discharged through the nozzle part 81 can flow to a region of the inlet 63 by the so-called coanda effect. By the curved shape portion 85, the polluted air cannot be moved outside the canopy 61 but is guided to the inlet 63.

[0015] In the exhaust hood illustrated in Figure 2, the nozzle part 81 is formed at a spot inwardly spaced apart from the front end of the canopy 61 at a predetermined distance. Thusly, the polluted air having ascended inside the canopy 61 can be guided to the inlet 63 by the air discharged through the nozzle part 81. However, the method does not solve the problem that the polluted air ascending to the front end of the canopy 61 is moved out from the front end of the canopy 61 and pollutes an upper region (B).

[0016] Therefore, an object of the present invention is to provide an exhaust hood having an improved collecting efficiency of contaminated air

[0017] To achieve these and other advantages and in accordance with the purpose of the present invention, as embodied and broadly described herein, there is provided an exhaust hood comprising: a hood main body 110 provided with a canopy 111 having an inlet 117 and an exhaustion portion 121 connected to the canopy 111 and having an exhaustion passage 123; and a nozzle unit 140 disposed at a front side of the hood main body 110, and provided with a curved shape portion 141, and a nozzle 143 disposed at an upper side of the curved shape portion 141 along a circumferential direction of the curved shape portion 141 for perpendicularly discharging air down.

[0018] The foregoing and other objects, features, aspects and advantages of the present invention will become more apparent from the following detailed description of the present invention when taken in conjunction with the accompanying drawings.

[0019] The accompanying drawings, which are included to provide a further understanding of the invention and are incorporated in and constitute a part of this specifi-

cation, illustrate embodiments of the invention and together with the description serve to explain the principles of the invention.

[0020] In the drawings:

Fig. 1 is a lateral sectional view illustrating an embodiment of an exhaust hood of the related art;
 Fig. 2 is a lateral sectional view illustrating another embodiment of the exhaust hood of the related art;
 Fig. 3 is a perspective view illustrating an exhaust hood in accordance with a first embodiment of the present invention;
 Fig. 4 is a sectional view taken along a line IV-IV of Fig. 3;
 Fig. 5 is an enlarged view of a part C of Fig. 4;
 Fig. 6 is a lateral sectional view illustrating an exhaust hood in accordance with a second embodiment of the present invention;
 Fig. 7 is a perspective view illustrating an exhaust hood in accordance with a third embodiment of the present invention;
 Fig. 8 is a plane view of the exhaust hood shown in Fig. 7;
 Fig. 9 is a sectional view taken along a line IX-IX of Fig. 8;
 Fig. 10 is a sectional view taken along a line X-X of Fig. 8;
 Fig. 11 is a perspective view illustrating an exhaust hood in accordance with a fourth embodiment of the present invention;
 Fig. 12 is a sectional view taken along a line XII-XI of Fig. 11; and
 Fig. 13 is a lateral sectional view illustrating an exhaust hood in accordance with a fifth embodiment of the present invention.

[0021] Reference will now be made in detail to the preferred embodiments of the present invention, examples of which are illustrated in the accompanying drawings.

[0022] Fig. 3 is a perspective view illustrating an exhaust hood in accordance with a first embodiment of the present invention, Fig. 4 is a sectional view taken along a line IV-IV of Fig. 3, and Fig. 5 is an enlarged view of a part C of Fig. 4.

[0023] As illustrated in Figs. 3 and 4, an exhaust hood in accordance with a first embodiment of the present invention may include a hood main body 110 and a nozzle unit 140 disposed at a front side of the hood main body 110 for discharging air. Each arrow indicates an air flow.

[0024] The hood main body 110 may include a canopy 111 disposed at an upper side of the cookware 10 (refer to Fig. 1) with a particular distance therebetween, and an exhaust portion 121 connected to the canopy 111 and protruding to the upper side of the canopy 111 by a particular height.

[0025] The canopy 111 has a rectangular plate shape, and is provided with an inlet 117 for sucking air at a lower surface of the canopy 111 and a grease filter 118 mount-

ed in the inlet 117 for filtering contaminated materials.

[0026] A partition wall 131 is formed in the canopy 111 to partition an inner space of the canopy 111. A suction hole 133 is formed at the partition wall 131 so as to allow air sucked through the inlet 117 and the grease filter 118 to be partially flowed into an air supply fan 135.

[0027] The air supply fan 135 for blowing air to the nozzle unit 140, and an air supply motor 136 for driving the air supply fan 135, and an negative ion generator 151 for generating a negative ion are all formed at a left side of the partition wall 131.

[0028] An air supply passage 137 is formed at a right side of the air supply fan 135 to thus induce the air blown from the air supply fan 135 to the nozzle unit 140. The negative ion generator 151 may also be disposed at the air supply passage 137.

[0029] An upper inlet 173 for supplying external air to the air supply fan 135 is formed at an upper surface of the canopy 111. A grease filter 174 for removing (filtering) the contaminated materials contained in the air is mounted in the upper inlet 173.

[0030] In the aforementioned construction, air having passed through the suction hole 133 is integrated with air having passed through the upper inlet 173 to thus be supplied to the nozzle unit 140 via the air supply passage 137. If necessary, the suction hole 133 is removed and the air may rather be supplied to the nozzle unit 140 only through the upper inlet 173, or the upper inlet 173 is removed and the air may rather be supplied to the nozzle unit 140 only through the suction hole 133.

[0031] An exhaust passage 123 for discharging air from which the contaminated materials are filtered by the grease filter 118 out of the exhaust hood is formed at an upper side of the exhaust portion 121. An exhaust fan 124 for forcibly sucking air and an exhaust motor 125 for driving the exhaust fan 124 are mounted at a lower side of the exhaust passage 123.

[0032] Referring to Figs. 4 and 5, the nozzle unit 140 may include a curved shape portion 141, and a nozzle 143 disposed at an upper side of the curved shape portion 141 in it circumferential direction for perpendicularly discharging air down.

[0033] The curved shape portion 141 has a cylindrical bar or a cylindrical pipe of which circular section has a diameter of 40 to 65 mm. The curved shape portion 141 is disposed at the front side of the canopy 111 so that a perpendicular distance (h) from a center O of the curved shape portion 141 to a lower plate 111a of the canopy 111 can be 0 to D/2.

[0034] The nozzle 143 is disposed at the upper side of the curved shape portion so that a distance (d) between the nozzle 143 and an upper contact line P contacting with an uppermost surface of the curved shape portion 141 can be 2 to 10 mm. At this time, a speed of air discharged (blown) through the nozzle 143 may preferably be about 3 to 5 m/sec to thus maximize a coanda effect.

[0035] The air supply passage 137 induces the air blown by the air supply fan 135 to the nozzle 143. At this

time, an end of the air supply passage 137 is bent by about 90° toward the upper contact line P of the curved shape portion 141 in order to discharge the air through the nozzle 143 in a direction perpendicular to the upper contact line P.

[0036] Hereinafter, an operation of the exhaust hood in accordance with the first embodiment will now be explained.

[0037] Referring to Figs. 4 and 5, when the exhaust fan 124 rotates, contaminated air is flowed into the inlet 117. At this time, contaminated materials contained in the contaminated air is removed (filtered) by the grease filter 118, and the air from which the contaminated materials are removed is discharged to the exterior through the exhaust passage 123.

[0038] On the other hand, when the air supply fan 135 rotates, the air having passed through the suction hole 133 is integrated with the air having passed through the upper inlet 173 to thus be perpendicularly discharged down from the upper side of the curved shape portion 141 through the nozzle 143 via the air supply passage 137.

[0039] When the air is perpendicularly discharged down from the upper side of the curved shape portion 141, the air forms a so-called injection jet, and thus the discharged air can optimally be integrated with the contaminated air. Also, a speed of air flowing along a surface of the curved shape portion 141 can be faster by the injection jet, and thus probability of occurrence of air separation at a lower side of the curved shape portion 141 may be reduced to maximize a coanda effect. As a result, the contaminated air can be collected more efficiently in the exhaust hood.

[0040] The discharged air flows along the upper surface of the curved shape portion 141 to form a negative pressure region S1 having a minus (-) gauge pressure at the upper surface and the front surface of the curved shape portion 141. Accordingly, a progressive path of the contaminated air which is intended to flow away from the exhaust hood can be curved toward the formed negative pressure region S1, and thus the contaminated air is induced to the inlet 117 again.

[0041] Hereinafter, an exhaust hood in accordance with a second embodiment of the present invention will now be explained. The same reference numerals are provided for the same parts and components as those in the aforementioned and illustrated construction, and the explanation therefor will thus be omitted.

[0042] Fig. 6 is a lateral sectional view illustrating an exhaust hood in accordance with a second embodiment of the present invention.

[0043] Referring to Fig. 6, unlike in the first embodiment in which the air having passed through the suction hole 133 (refer to Fig. 4) is integrated with the air having passed through the upper inlet 173 (refer to Fig. 4) to thus be supplied to the nozzle 143, the air passing through the exhaust passage 123 is partially provided as air to be discharged through the nozzle 143 in the

second embodiment.

[0044] For this, a reflux flow path 161 of which one end is connected to the exhaust passage 123 and the other end is connected to the nozzle 143 is formed within the canopy 111 and the exhaust portion 121. Accordingly, the air supply fan 135 (refer to Fig. 4) and the exhaust motor 136 (refer to Fig. 4) are not required to thus reduce the fabrication cost therefor.

[0045] In the aforementioned construction, when the exhaust fan 124 rotates, the air passing through the exhaust passage 123 is partially discharged through the nozzle 141 via the reflux flow path 161. Afterwards, the operation and effect of the discharged air has already been explained in the first embodiment, and thus the explanation therefor will be omitted.

[0046] Hereinafter, an exhaust hood in accordance with a third embodiment of the present invention will now be explained. The same reference numerals are provided for the same parts and components as those in the aforementioned and illustrated construction, and the explanation therefor will thus be omitted.

[0047] Fig. 7 is a perspective view illustrating an exhaust hood in accordance with a third embodiment of the present invention, Fig. 8 is a plane view of the exhaust hood shown in Fig. 7, Fig. 9 is a sectional view taken along a line IX-IX of Fig. 8, and Fig. 10 is a sectional view taken along a line X-X of Fig. 8.

[0048] Referring to Figs. 7 and 8, the exhaust hood in accordance with the third embodiment may further include supplementary nozzle units 180 for preventing the contaminated air from flowing toward both lateral regions of the canopy 111 without being sucked therein as well as the nozzle unit 140 for preventing the contaminated air from flowing toward the front region of the canopy 111 without being sucked therein. The supplementary nozzle unit 180 can prevent deviating and spreading of the contaminated air which flows toward each lateral region of the canopy 111 without being sucked therein.

[0049] Referring to Figs. 9 and 10, an exhaust passage 137 for inducing air toward the nozzle unit 140 is formed at one side of the air supply fan 135.

[0050] A lateral air supply passage 187 for inducing air toward the supplementary nozzle unit 180 is formed at the other side of the air supply fan 135. The air supply fan 135 blows air to the air supply passage 137 and the lateral air supply passage 187. An exhaust motor 136 for driving the air supply fan 135 is disposed at a lower side of the air supply fan 135.

[0051] The supplementary nozzle unit 180 may include a lateral curved shape portion 181 and a lateral nozzle 183 disposed at an upper side of the lateral curved shape portion 181 along a circumferential direction of the lateral curved shape portion 181 for perpendicularly discharging air down.

[0052] The construction and operation of the lateral curved shape portion 181 and the lateral nozzle 183 of the supplementary nozzle unit 180 are the same as the curved shape portion 141 and the nozzle 143 of the noz-

zle unit 140 and thus the explanation therefor will be omitted.

[0053] In the aforementioned construction, when the air supply fan 135 rotates, the air having passed through the upper inlet 173 and the grease filter 174 moves toward the nozzle unit 140 and the supplementary nozzle unit 180 via the air supply passage 137 and the lateral air supply passage 187.

[0054] The air having moved along the air supply passage 137 is discharged down through the nozzle 143 by being perpendicular to the curved shape portion 141. The air having moved along the lateral air supply passage 187 is discharged down through the lateral nozzle 183 by being perpendicular to the lateral curved shape portion 181. The nozzle unit 140 and the supplementary nozzle unit 180 can prevent deviating and spreading of the contaminated air flowing toward the front region and the lateral region of the canopy 111 without being sucked therein.

[0055] On the other hand, the suction hole 133 is formed at the partition wall 131 for dividing the inner space of the canopy 111 as shown in the first embodiment. Accordingly, the air having passed through the suction hole is integrated with the air having passed through the upper inlet 173 to be supplied to the nozzle unit 140 and the supplementary nozzle unit 180.

[0056] Also, as shown in the second embodiment, the reflux flow path 161 is formed within the canopy 111 and the exhaust portion 121 and thus the air passing through the exhaust passage 123 can partially be supplied to the nozzle unit 140 and the supplementary nozzle unit 180.

[0057] Hereinafter, an exhaust hood in accordance with a fourth embodiment of the present invention will now be explained. The same reference numerals are provided for the same parts and components as those in the aforementioned and illustrated construction, and the explanation therefor will thus be omitted.

[0058] Fig. 11 is a perspective view illustrating an exhaust hood in accordance with a fourth embodiment of the present invention, and Fig. 12 is a sectional view taken along the line XII-XII of Fig. 11.

[0059] As illustrated in the fourth embodiment of Figs. 11 and 12, a curved shape portion 191 of a nozzle unit 190 may be divided into a front curved shape portion 191 a and a lower curved shape portion 191 b. The other parts of the exhaust hood except the curved shape portion 191 are the same as those in the first embodiment and thus the explanation therefor will be omitted.

[0060] Referring to Fig. 12, the front curved shape portion 191 a has a section with a convex circular shape at the front side of the canopy 111, while the lower curved shape portion 191 b has a section with a convex circular shape at a lower side of the canopy 111. The front and lower curved shape portions 191 a and 191 b have the same diameter D, and overlap with each other.

[0061] Hereinafter, an operation of the exhaust hood according to the fourth embodiment will now be explained.

plained.

[0062] As illustrated in Figs. 11 and 12, when the exhaust fan 124 rotates, air flows into the inlet 117. At this time, contaminated materials contained in the air is filtered by the grease filter 118, and the air from which the contaminated materials are filtered is discharged to the exterior through the exhaust passage 123.

[0063] When the air supply fan 135 rotates, on the other side, the air having passed through the suction hole 133 is integrated with the air having passed through the upper inlet 173, to thus be perpendicularly discharged down from the upper side of the front curved shape portion 191a through the nozzle 193 via the air supply passage 137.

[0064] The discharged air flows along an outer circumferential surface of the front curved shape portion 191a to form a first negative pressure region S1 having the minus (-) gauge pressure at upper and front surfaces of the front curved shape portion 191 a. Accordingly, the progressive path of the contaminated air which is intended to pass through the exhaust hood can be curved toward the first negative pressure region S1, and thus the contaminated air is induced to the inlet 117 again.

[0065] Afterwards, the air flowing along the outer circumferential surface of the lower curved shape portion 191b via the front curved shape portion 191 a forms a second negative pressure region S2 having a minus (-) gauge pressure at the front and lower surfaces of the lower curved shape portion 191 b. Accordingly, the progressive path of the contaminated air which is intended to pass through the exhaust hood can be curved toward the second negative pressure region S2, and thus the contaminated air is induced to the inlet 117 again.

[0066] Thus, the curved shape portion 191 is constructed with the front and lower curved shape portions 191 a and 191b to form the second negative pressure region S2 as well as the first negative pressure region S1. Accordingly, the progressive path of the contaminated air can more effectively be induced to the inlet 117 and a collecting efficiency of the exhaust hood can thus be improved.

[0067] Hereinafter, an exhaust hood in accordance with a fifth embodiment of the present invention will now be explained. The same reference numerals are provided for the same parts and components as those in the aforementioned and illustrated construction, and the explanation therefor will thus be omitted. Fig. 13 is a lateral sectional view illustrating an exhaust hood according to a fifth embodiment of the present invention.

[0068] As illustrated in the fifth embodiment of Fig. 13, a perpendicular passage 195 through which the air discharged through the nozzle 193 perpendicularly passes is formed at the front curved shape portion 191a. Other parts in this construction except the perpendicular passage 195 are the same as those in the fourth embodiment and thus the explanation therefor will be omitted.

[0069] Hereinafter, an operation of the exhaust hood according to the fifth embodiment will now be explained.

[0070] As illustrated in Fig. 13, when the exhaust fan 124 rotates, air flows into the inlet 117. At this time, contaminated materials contained in the air is filtered by the grease filter 118. The air from which the contaminated air is filtered is discharged to the exterior through the exhaust passage 123.

[0071] When the air supply fan 135 rotates, the air having passed through the suction hole 133 is integrated with the air having passed through the upper inlet 173 and then perpendicularly discharged down from the upper side of the front curved shape portion 191 a through the nozzle 193 via the air supply passage 137.

[0072] The discharged air partially flows along the outer circumferential surface of the front curved shape portion 191a to form the first negative pressure region S1 having the minus (-) gauge pressure at upper and front surfaces of the front curved shape portion 191a. Accordingly, the progressive path of the contaminated air which is intended to pass through the exhaust hood can be curved toward the first negative pressure region S1, and thus the contaminated air is induced to the inlet 117 again.

[0073] Afterwards, the air flowing along the outer circumferential surface of the lower curved shape portion 191 b via the front curved shape portion 191 a forms the second negative pressure region S2 having the minus (-) gauge pressure at the front and lower surfaces of the lower curved shape portion 191b. Accordingly, the progressive path of the contaminated air which is intended to pass through the exhaust hood can be curved toward the second negative pressure region S2, and thus the contaminated air is induced to the inlet 117 again. Also, the second negative pressure region S2 may function as an air curtain by which hot air generated while cooking can be prevented from flowing toward a person who cooks.

[0074] The discharged air partially moves downwardly to a lower side of the front curved shape portion 191a along the perpendicular passage 195. The air injected through the perpendicular passage 195 may function as an air curtain by which hot air generated while cooking can be prevented from flowing toward the person who cooks.

[0075] If necessary, on the other hand, as shown in the fourth and fifth embodiments, the air having passed through the suction hole 133 may be integrated with the air having passed through the upper inlet 173 and then supplied to the nozzle 193. Also, as shown in the second embodiment, the reflux flow path 161(refer to FIG. 6) may be formed within the canopy 111 and the exhaust portion 121 to supply the air partially passing through the exhaust passage 123 to the nozzle unit 140.

[0076] The exhaust hood in accordance with the embodiments of the present invention may have the following effect.

[0077] First, the nozzle unit having the nozzle at the curved shape portion for perpendicularly discharging the air down is provided. Accordingly, the contaminated air

flowing toward the front portion of the exhaust hood without being sucked therein can effectively be induced toward the inlet to thus be collected. Therefore, comfortable cooking circumstance and experimental environment can be created.

[0078] Second, when the supplementary nozzle unit is additionally provided, the contaminated air flowing toward the lateral portion of the exhaust hood without being sucked therein can effectively be induced to the inlet for collecting. Accordingly, more comfortable cooking circumstance and experimental environment can be created.

[0079] Third, when the curved shape portion is divided into the front curved shape portion and the lower curved shape portion, the second negative pressure region is formed as well as the first negative pressure region, and accordingly the contaminated air can effectively be induced to the inlet. Therefore, the collecting efficiency of the exhaust hood can be improved.

[0080] Fourth, for forming the perpendicular passage perpendicularly penetrating the front curved shape portion, the air passing through the perpendicular passage can function as an air curtain by which the hot air generated while cooking can be prevented from flowing toward the person who cooks, as the second negative pressure region does. Therefore, more comfortable cooking circumstance can be created.

[0081] As the present invention may be embodied in several forms without departing from the spirit or essential characteristics thereof, it should also be understood that the above-described embodiments are not limited by any of the details of the foregoing description, unless otherwise specified, but rather should be construed broadly within its spirit and scope as defined in the appended claims, and therefore all changes and modifications that fall within the metes and bounds of the claims, or equivalence of such metes and bounds are therefore intended to be embraced by the appended claims.

Claims

1. An exhaust hood comprising:

a hood main body (110) including a canopy (111) provided with an inlet (117) and an exhaust portion (121) connected to the canopy (111) and provided with an exhaust passage (123); and a nozzle unit (140) disposed at a front side of the hood main body (110) and including a curved shape portion (141) and a nozzle (143) disposed at an upper side of the curved shape portion (141) along a circumferential direction of the curved shape portion (141) for perpendicularly discharging air down.

2. The exhaust hood of claim 2, further comprising:

- an air supply passage (137) for inducing air to the nozzle (143);
 an air supply fan (135) for blowing air to the air supply passage (137);
 an air supply motor (136) for driving the air supply fan (135); and
 a partition wall (131) connected to the air supply passage (137), and provided with a suction hole (133) for inducing air sucked through the inlet (117) to the air supply fan (135). 5 10
3. The exhaust hood of claim 2, further comprising a negative ion generator (151) for generating a negative ion in order to contain the negative ion in the air to be blown to the air supply passage (137). 15
4. The exhaust hood of claim 1, further comprising:
 an air supply passage (137) for inducing air to the nozzle (143); 20
 an air supply fan (135) for blowing air to the air supply passage (137);
 an air supply motor (136) for driving the air supply fan (135); and
 an upper inlet (173) connected to the air supply passage (137) and formed at an upper surface of the canopy (111) to thus induce external air to the air supply fan (135). 25
5. The exhaust hood of any of claims 2 to 4, further comprising a reflux flow path (161) connected to the air supply passage (137) to supply the air passing through the exhaust passage (123) to the nozzle unit (140). 30 35
6. The exhaust hood of claim 1, wherein a perpendicular distance (h) between a center of the curved shape portion (141) and a lower plate (111a) of the canopy (111) is 0 to D (Diameter)/2. 40
7. The exhaust hood of claim 1, wherein the curved shape portion (141) has a cylindrical bar or cylindrical pipe of which circular section has a diameter of 40 to 65 mm. 45
8. The exhaust hood of claim 1, wherein the nozzle (143) is disposed at the upper side of the curved shape portion (141) and thus a distance (d) between the nozzle (143) and an upper contact line (P) in contact with an uppermost surface of the curved shape portion (141) is 2 to 10 mm. 50
9. The exhaust hood of claim 1, wherein the a speed of air discharged (blown) through the nozzle (143) is 3 to 5 m/sec. 55
10. An exhaust hood comprising:
- a hood main body (110) including a canopy (111) provided with an inlet (117) and an exhaust portion (121) connected to the canopy (111) and provided with an exhaust passage (123); and a nozzle unit (140) disposed at a front side of the hood main body (110) and including a curved shape portion (141) and a nozzle (143) disposed at an upper side of the curved shape portion (141) along a circumferential direction of the curved shape portion (141) for perpendicularly discharging air down; and supplementary nozzle units (180) disposed at both sides of the hood main body (110), and each of which has a lateral curved shape portion (181) and a lateral nozzle (183) disposed at an upper side of the lateral curved shape portion (181) along a circumferential direction of the lateral curved shape portion (181) to perpendicularly discharge air down.
11. The exhaust hood of claim 10, further comprising:
 an air supply passage (137) for inducing air to the nozzle (143);
 a lateral air supply passage (187) for inducing air to the lateral nozzle (183);
 and an air supply fan (135) disposed at the canopy for blowing air to the air supply passage (137) and the lateral air supply passage (187).
12. An exhaust hood comprising:
 a hood main body (110) including a canopy (111) provided with an inlet (117) and an exhaust portion (121) connected to the canopy (111) and provided with an exhaust passage (123); and a nozzle unit (190) disposed at a front side of the hood main body (110), and provided with a curved shape portion (191), and a nozzle (193) disposed at an upper side of the curved shape portion (191) along a circumferential direction of the curved shape portion (191) for perpendicularly discharging air down, wherein, the curved shape portion (191) includes:
 a front curved shape portion (191a) disposed at a front side of the canopy (111) and having a section with a convex circular shape; and
 a lower curved shape portion (191b) disposed at a lower side of the canopy (111) and having a section with the convex circular shape.
13. The exhaust hood of claim 12, wherein the front curved shape portion (191a) and the lower curved shape portion (191b) have the same diameter, and

overlap with each other.

14. The exhaust hood of claim 12 or 13, wherein a perpendicular passage (195) through which the air discharged through the nozzle (193) perpendicularly passes is formed at the front curved shape portion (191a).

10

15

20

25

30

35

40

45

50

55

FIG. 1

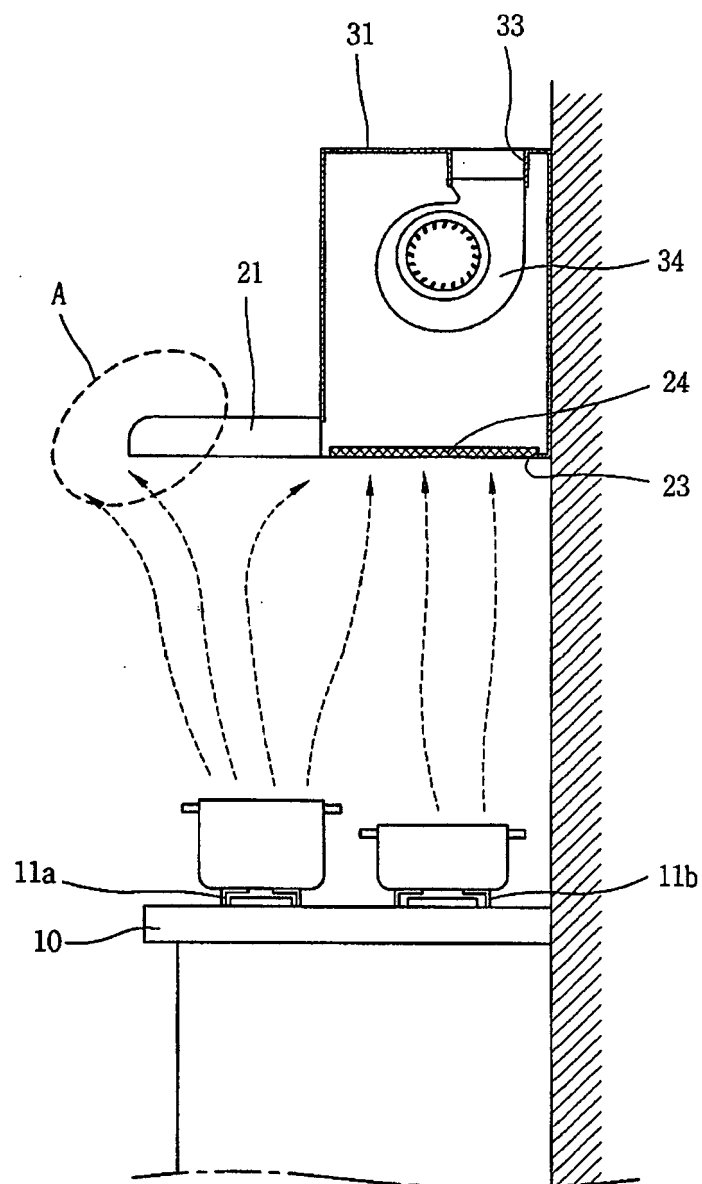


FIG. 2

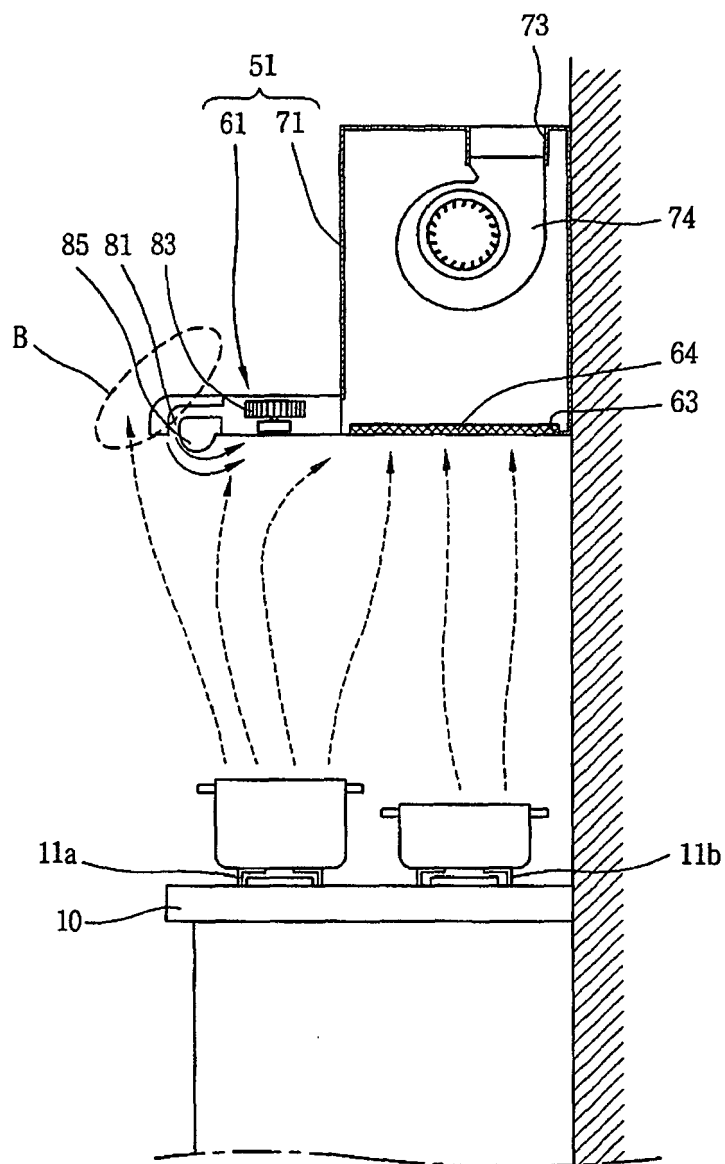


FIG. 3

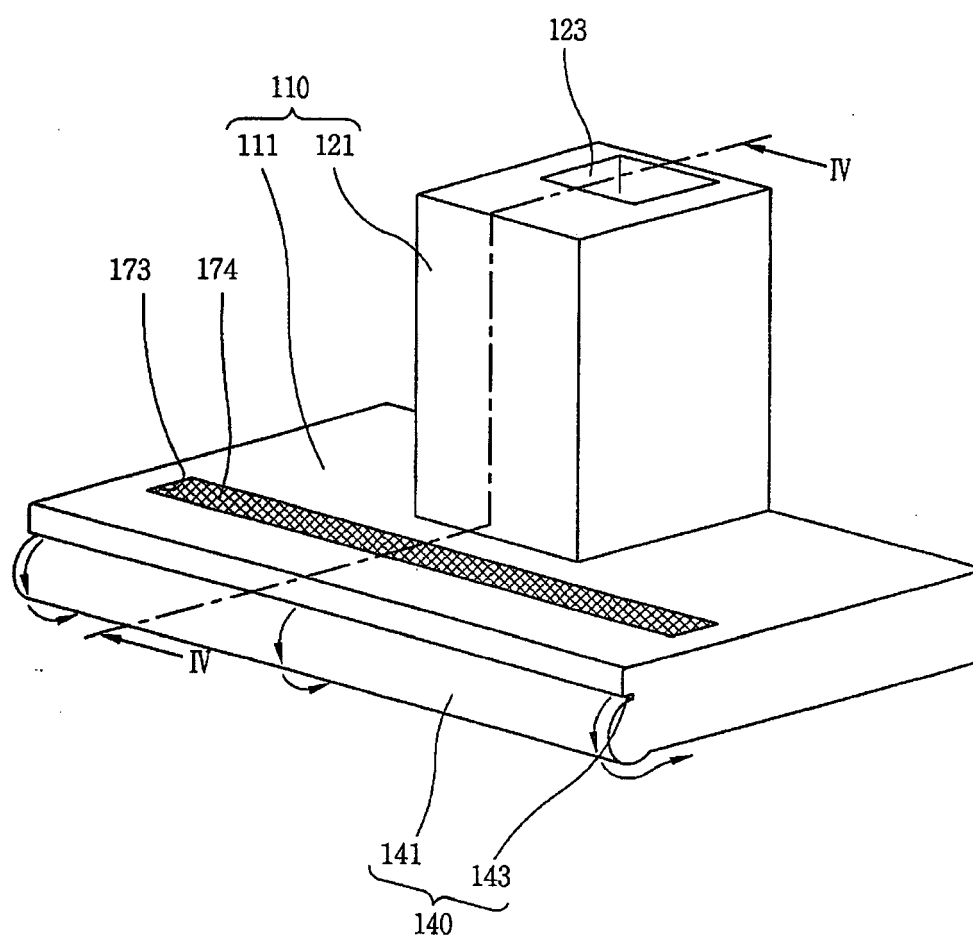


FIG. 4

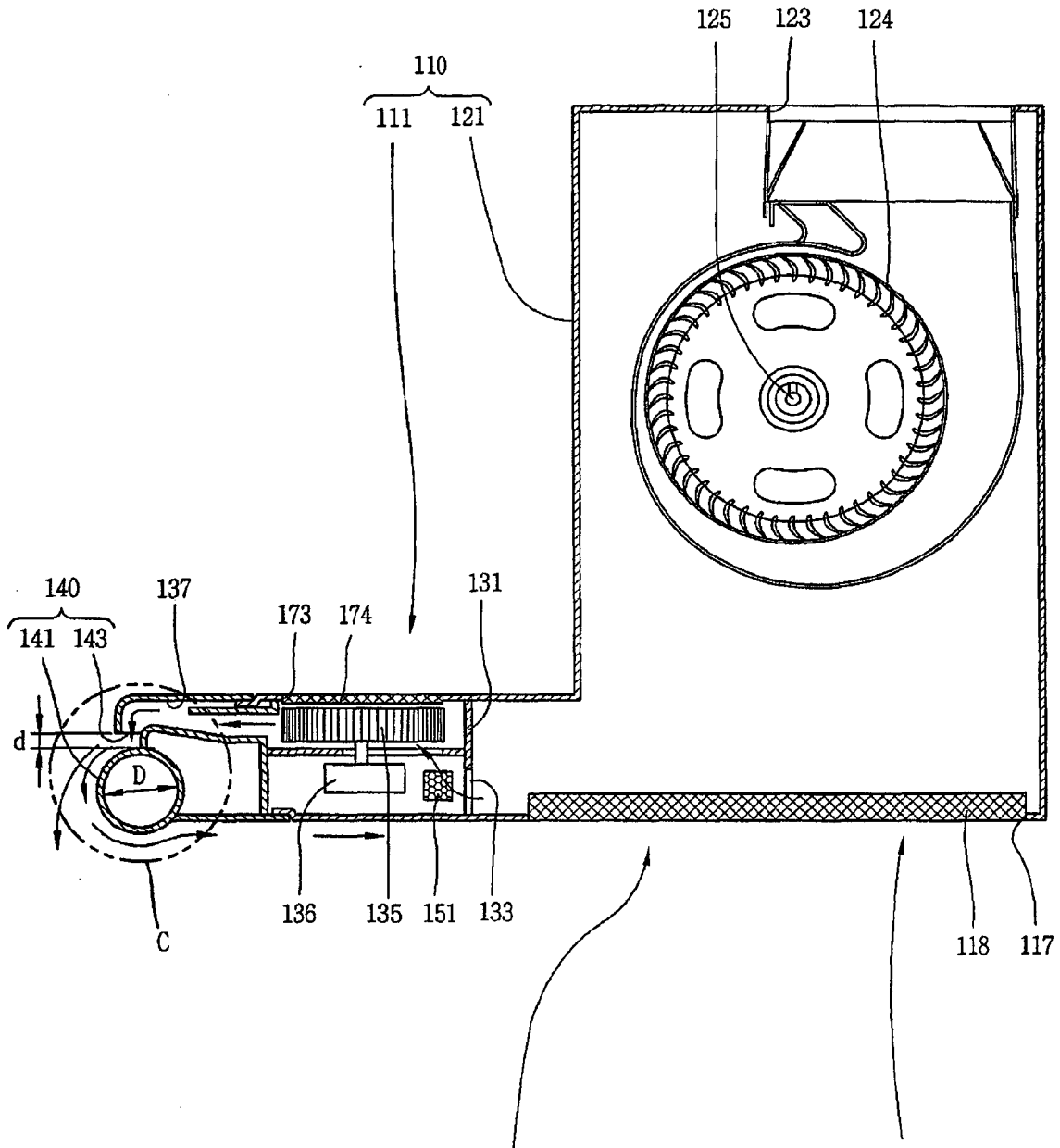


FIG. 5

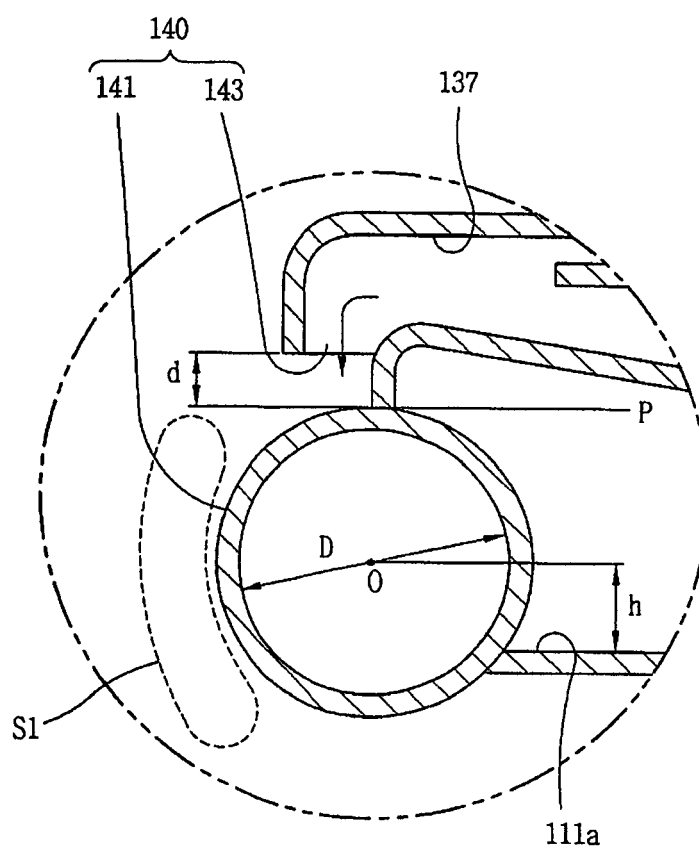


FIG. 6

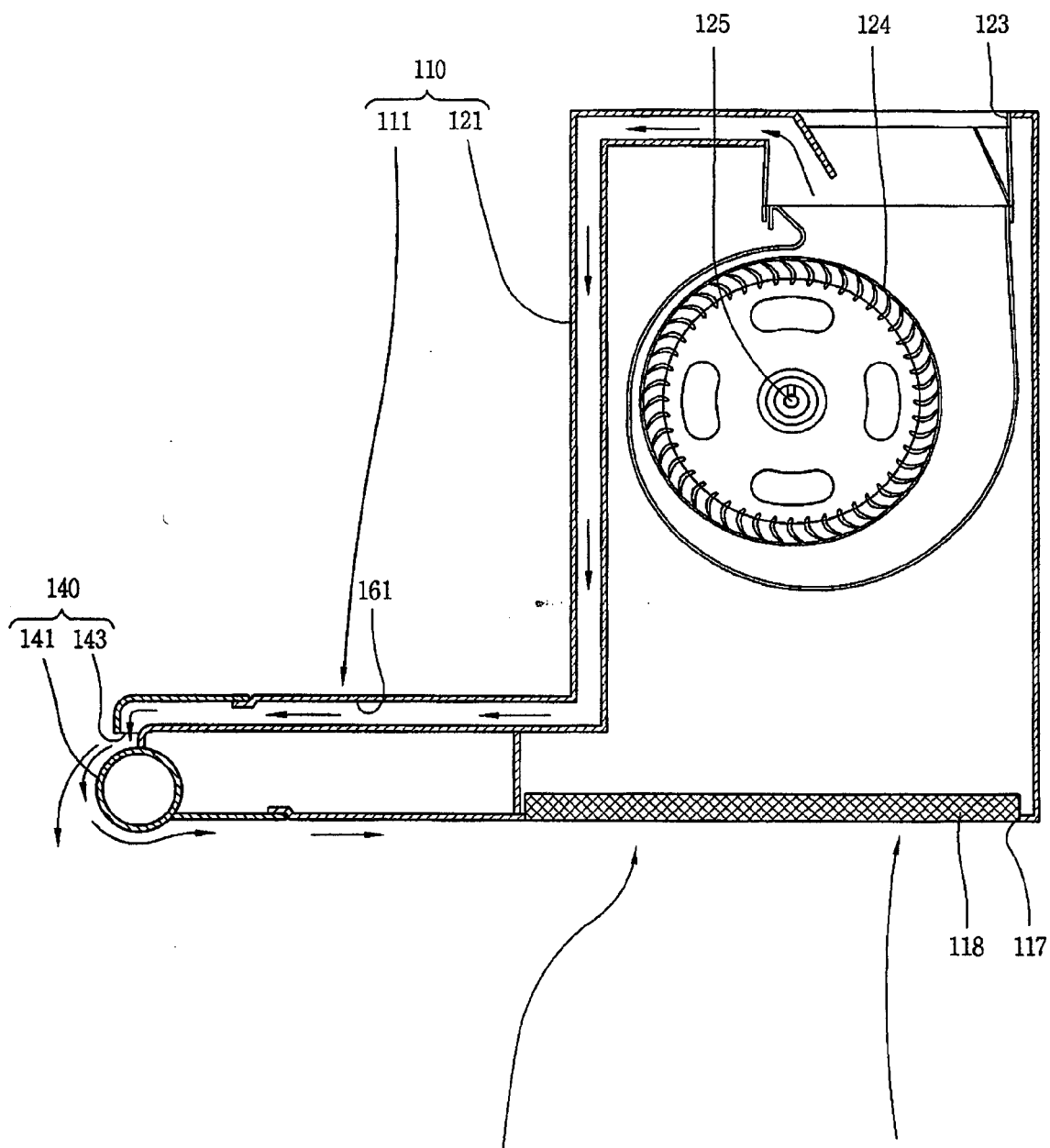


FIG. 7

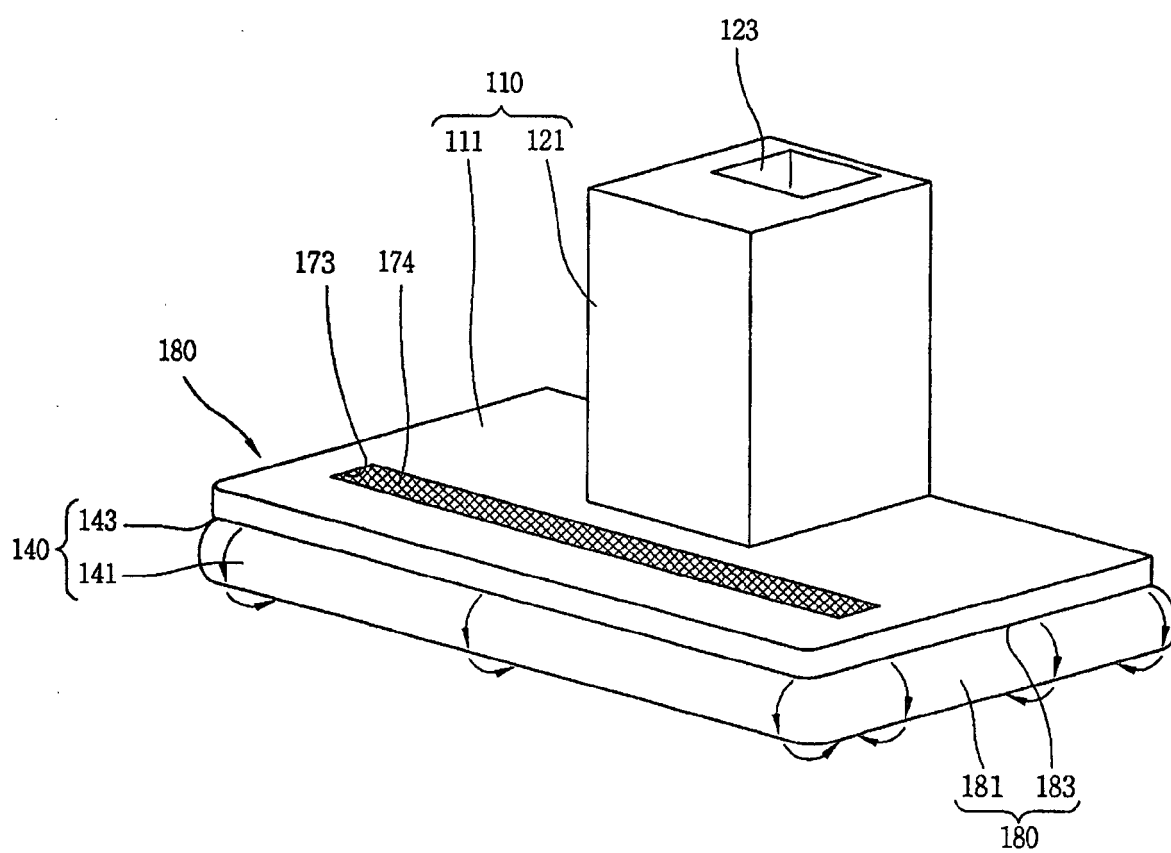


FIG. 8

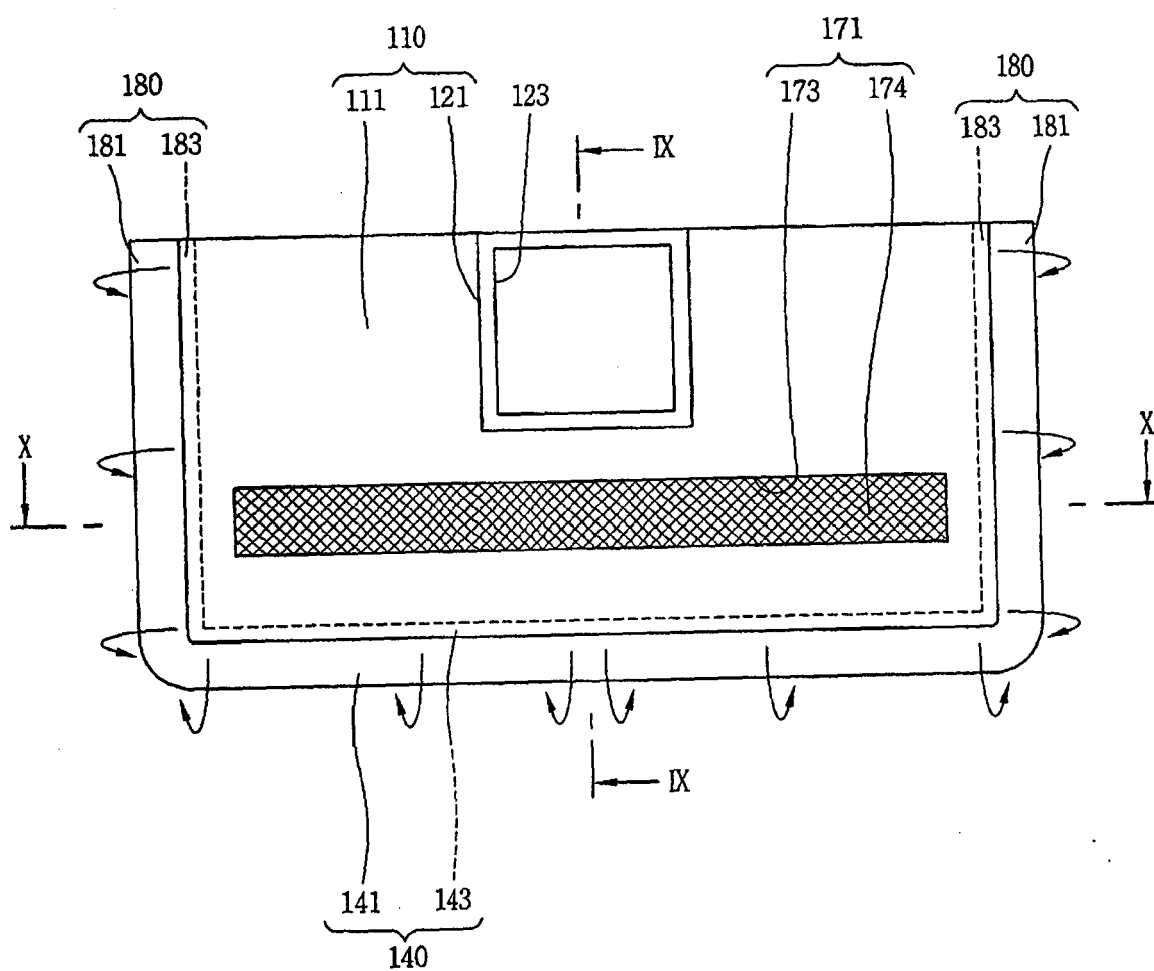


FIG. 9

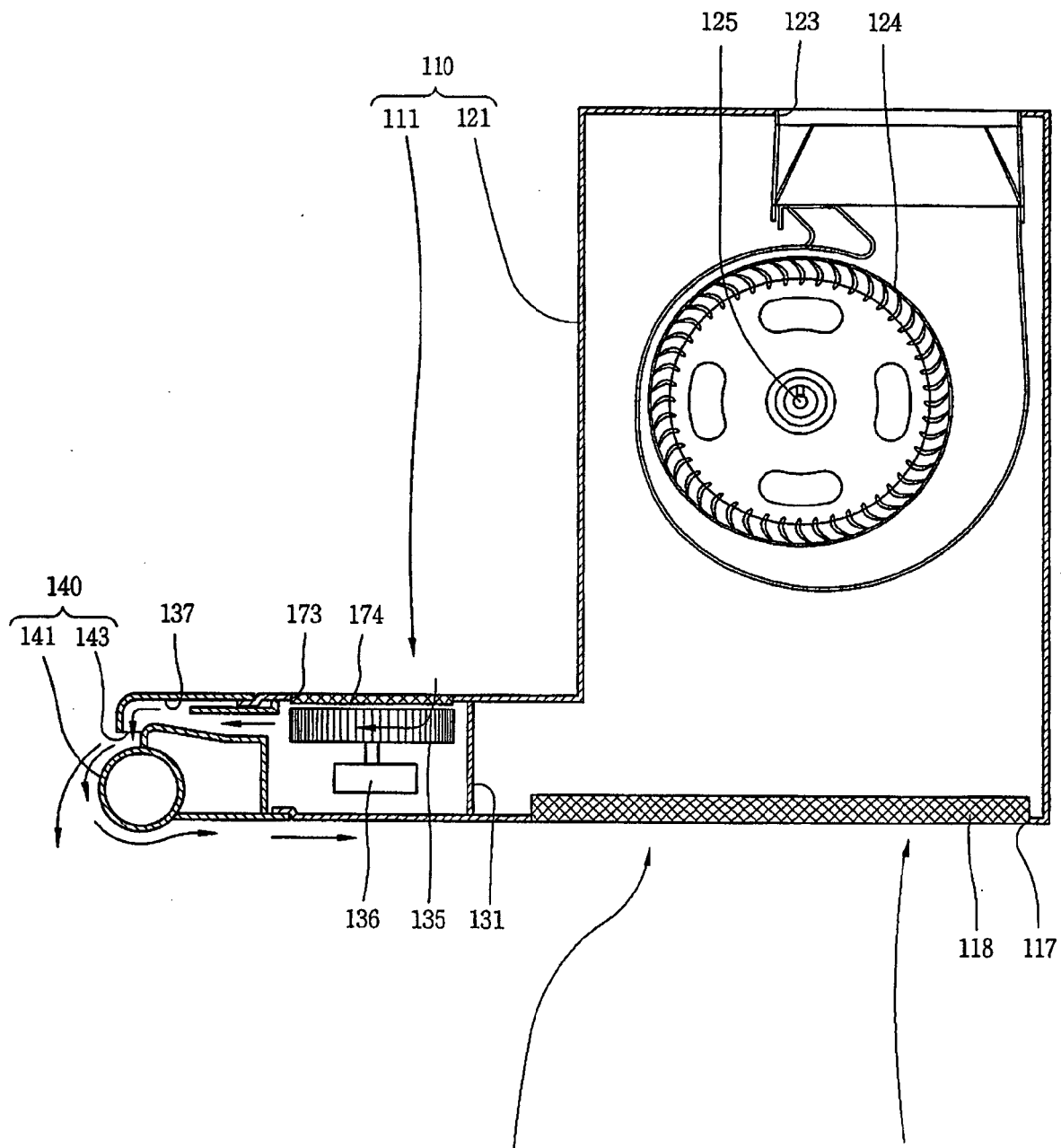


FIG. 10

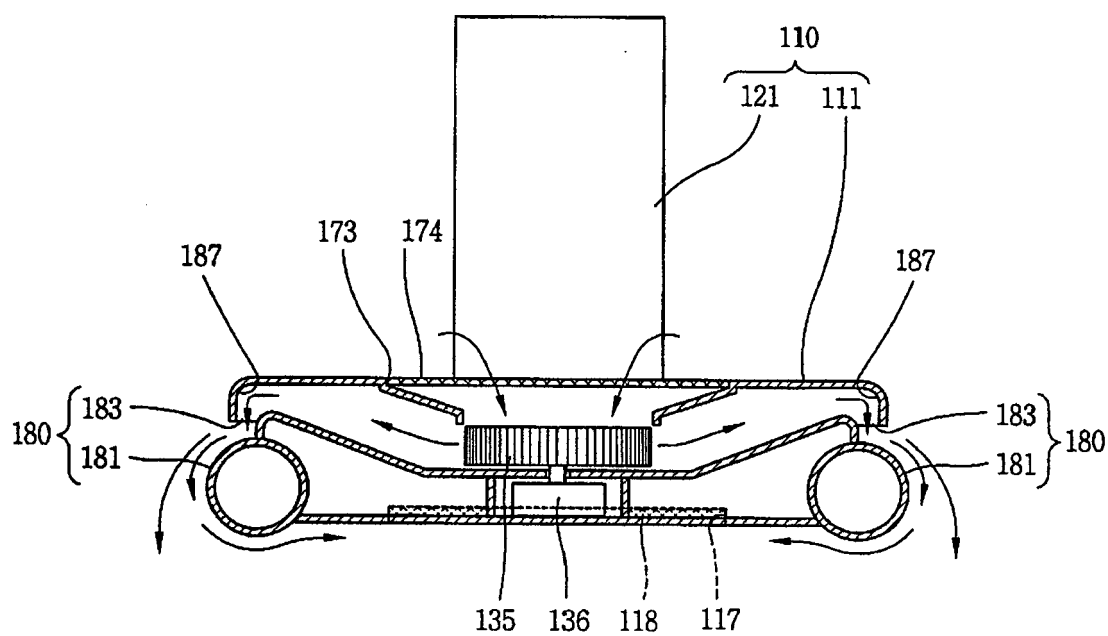


FIG. 11

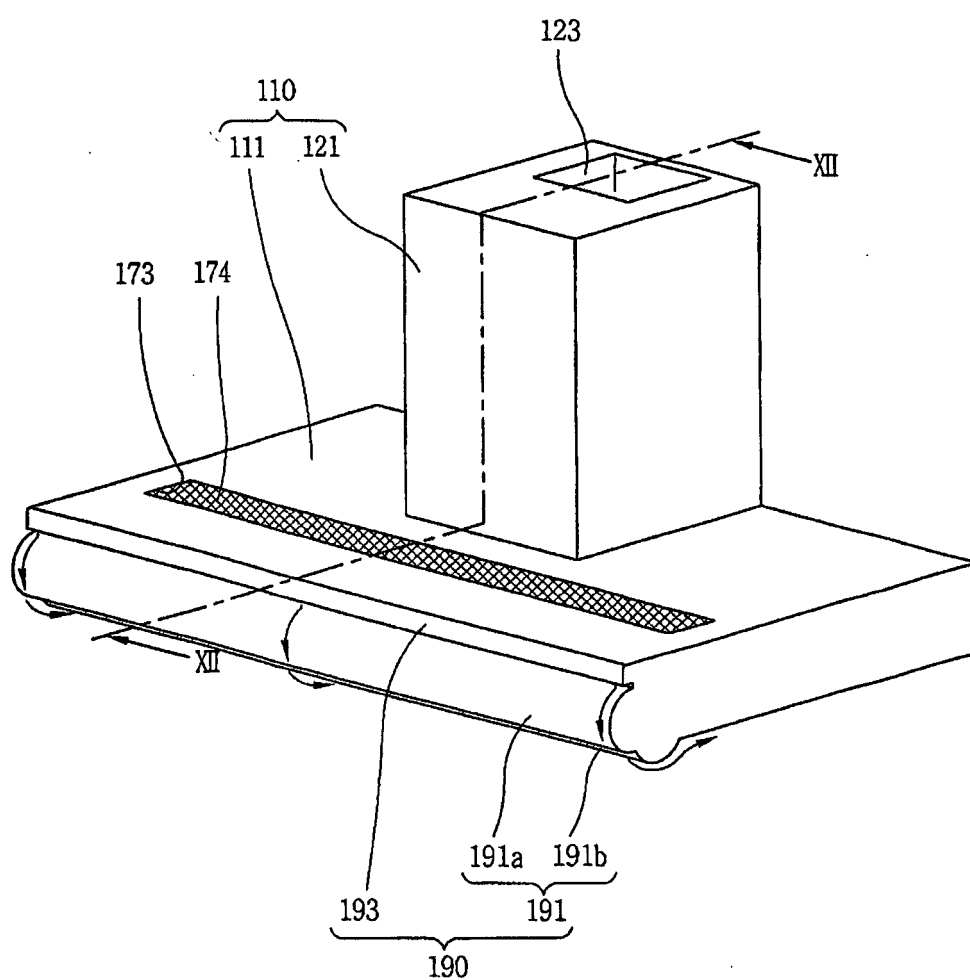


FIG. 12

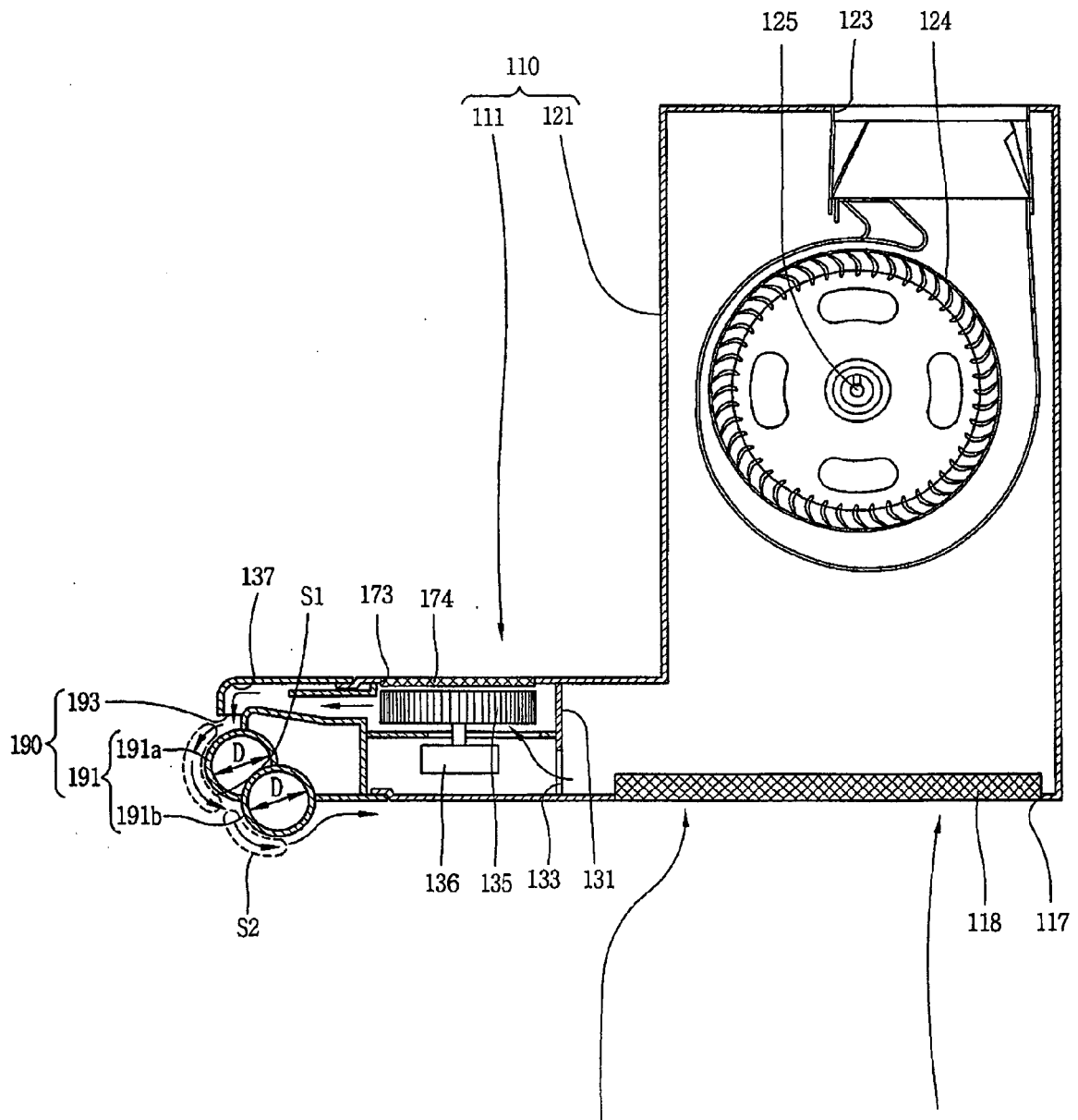


FIG. 13

