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(71) Applicant: **Wang, Hua-Chiang**
**La Verne CA 91750 (US)**

(72) Inventor: **Wang, Hua-Chiang**
**La Verne CA 91750 (US)**

(74) Representative: **Viering, Jentschura & Partner**
**Postfach 22 14 43**
**80504 München (DE)**

(54) **Guide device for blowers**

(57) A blower includes an adjusting device connected to the air outlet of the case unit and the adjusting device includes a fixed plate, a rotatable plate which is rotatably connected to the fixed plate. The fixed plate includes two first apertures and the rotatable plate includes two second apertures. The rotatable plate is rotated to adjust a size of communication of the first and second apertures so as to control the volume of air that is sucked into the blower.

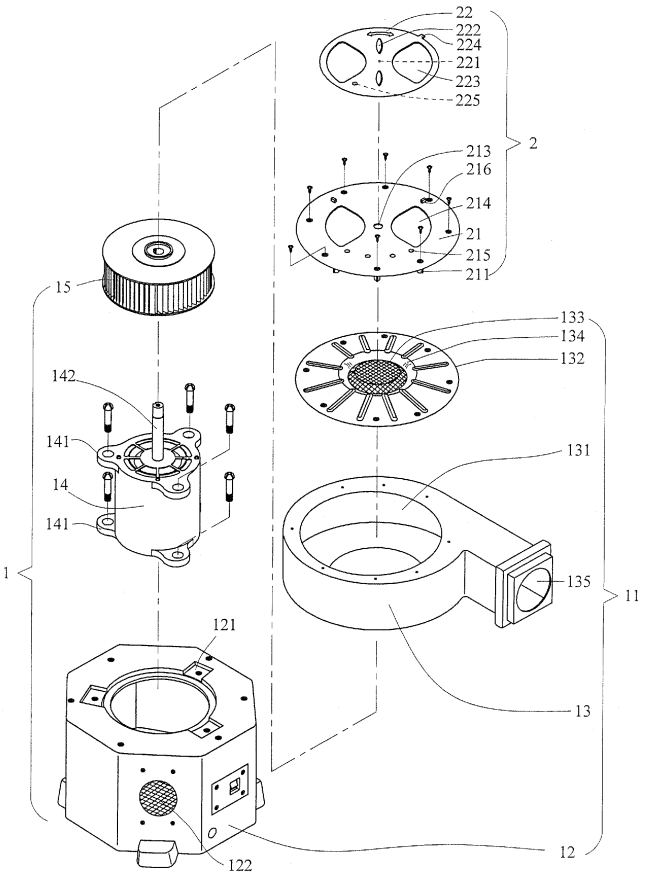


FIG. 1

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## Description

### FIELD OF THE INVENTION

**[0001]** The present invention relates to a blower and more particularly, to a guide device of a blower and the guide device controls the volume of inlet air into the blower.

### BACKGROUND OF THE INVENTION

**[0002]** A conventional blower for inflating inflatable huge kids toys is shown in Figs. 9 and 10, and generally includes a base 3 which has a top hole 32 so that a motor 4 is inserted into the base 3 and fixed on a top of the base 3. The motor 4 drives a blade unit 41 which generates suction force to suck air into a case 5 fixed on the top of the base 3. The case 5 has an outlet 51 which is connected with the inflatable items so as to inflate the inflatable items by air. The base 3 includes at least one inlet 31 defined in a side of the base 3 so as to suck air into the base 3 and sends the air to the inflatable items. However, the conventional blower cannot adjust the volume that is to be sent into the inflatable items and wastes a lot of energy to keep the motor 4 to run so as to maintain the inflatable items in good shapes. Besides, the base 3 generally sits on the ground and dust, pebbles, or even small garbage is sucked into the inflatable items.

**[0003]** The present invention intends to provide a blower having an adjustable guide device which is able to adjust the volume of air that is sucked into the blower so that the blower can be used to inflate inflatable items of different sizes.

### SUMMARY OF THE INVENTION

**[0004]** The present invention relates to a blower that comprises a main part including a case unit, a motor and a blade unit. The case unit includes an air inlet and an air outlet. An adjusting device is connected to the air outlet of the case unit and includes a fixed plate, a rotatable plate which is rotatably connected to the fixed plate. The fixed plate has two first apertures and the rotatable plate has two second apertures. The users rotate the rotatable plate to adjust a size of communication of the first and second apertures to control the volume of air into the blower.

**[0005]** The present invention will become more obvious from the following description when taken in connection with the accompanying drawings which show, for purposes of illustration only, a preferred embodiment in accordance with the present invention.

### BRIEF DESCRIPTION OF THE DRAWINGS

**[0006]**

Fig. 1 is an exploded view to show the blower and the guide device of the present invention;

Fig. 2 is a perspective view to show the blower with the guide device of the present invention;

Fig. 3 is a cross sectional view to show the blower with the guide device of the present invention;

Fig. 4 shows that the first and second apertures are fully opened;

Fig. 5 shows that the first and second apertures are partially opened;

Fig. 6 shows that the first and second apertures are completely closed;

Fig. 7 shows the other embodiment of the blower wherein the adjusting device is connected to a side of the main part of the blower;

Fig. 8 is a cross sectional view to show the blower in Fig. 7;

Fig. 9 is an exploded view to show a conventional blower, and

Fig. 10 is a perspective view to show the conventional blower.

### DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

**[0007]** Referring to Figs. 1 to 4, the blower of the present invention comprises a main part 1 which includes a case unit 11, a motor 14 and a blade unit 15. The case unit 11 includes a base 12 and a case 13. The base 12 includes a plurality of recesses 121 defined in a top thereof and the motor 14 includes plurality of lugs 141 which are engaged with the recesses 121 and fixed to the base 12 by bolts. The motor 14 is securely received in the base 12 and includes an output shaft 142 which is connected to the blade unit 15. At least one heat dispensing hole 122 is defined through a wall of the base 12 so as to cool the motor 14. The case 13 includes a through hole 131 and a cover plate 132 is connected to the through hole 131 of the case 13 and the air inlet 133 is defined through the cover plate 132. An inward and inclined guide surface 134 is defined around the air inlet 133 so that air can be guided and concentrated to enter into the case 13. The cover plate 132 has a curved top surface which includes a higher central portion and a lower periphery. The case 13 includes the air outlet 135 which is connected to an inflatable item (not shown) to introduce air into the inflatable item via the air outlet 135.

**[0008]** An adjusting device 2 is connected to the air outlet 135 of the case unit 11 and includes a fixed plate 21, a rotatable plate 22 which is rotatably connected to the fixed plate 21. The fixed plate 21 includes a plurality of positioning pins 211 extending from an underside thereof so as to be inserted into holes in the top surface of the curved cover plate 132. A plurality of suction gaps 212 are defined between the fixed plate 21 and the cover plate 132 such that air can be sucked into the case 13 via the suction gaps 212. The fixed plate 21 includes a central hole 213 and a plurality of positioning holes 215, two stops 216 extend from a top of the fixed plate 21 and

located beside the two first apertures 214. The rotatable plate 22 includes a pivot 221 on an underside thereof and the pivot 221 is rotatably inserted into the central hole 213. Two handles 222 extend from a top of the rotatable plate 22 so that the user may rotate the rotatable plate 22 by the handles 222. An extension 224 extends radially outward from a periphery of the rotatable plate 22 and can be stopped by one of the stops 216 when rotating the rotatable plate 22 relative to the fixed plate 21. A protrusion 225 extends from an underside of the rotatable plate 22 and is removably engaged with one of the positioning holes 215 to set the rotatable plate 22 relative to the fixed plate 21.

**[0009]** The fixed plate 21 has two first apertures 214 and the rotatable plate 22 having two second apertures 223. When rotating the rotatable plate 22, the second apertures 223 can be adjusted to communicate the first apertures 214 so as to adjust the size of communication of the first and second apertures 214, 223.

**[0010]** When the motor 14 is activated, the air is sucked into the case 13 via the suction gaps 212 and the air inlet 133 via the communicated first and second apertures 214, 223. It is noted that the air sucked into the case 13 is from a certain height from the ground so that less dust, pebbles and garbage is involved.

**[0011]** As shown in Fig. 5, if a smaller amount of air is needed to be sucked into the case 13, the user can rotate the rotatable plate 22 to partially cover the first and second apertures 214, 223. Fig. 6 shows that the first and second apertures 214, 223 can also be completely closed and air can only be sucked from the suction gaps 212 when needed.

**[0012]** Figs. 7 and 8 show that the case 13 can be connected to a side of the main part 1 so that the air outlet 135 is located on a side of the blower and the air inlet 133 is defined in an end of the case 11. The adjusting device 2 is connected to the end of the case 11 and the first and second apertures 214, 223 are located on the same end with the air inlet 133.

**[0013]** While we have shown and described the embodiment in accordance with the present invention, it should be clear to those skilled in the art that further embodiments may be made without departing from the scope of the present invention.

## Claims

**1.** A blower comprising:

a main part (1) including a case unit (11), a motor (14) and a blade unit (15), the case unit (11) including an air inlet (133) and an air outlet (135); an adjusting device (2) connected to the air outlet (135) of the case unit (11) and including a fixed plate (21), a rotatable plate (22) which is rotatably connected to the fixed plate (21), the fixed plate (21) having two first apertures (214) and the rotatable plate (22) having two second apertures (223), the rotatable plate (22) being rotated to adjust a size of communication of the first and second apertures (214, 223).

**2.** The blower as claimed in claim 1, wherein the fixed plate (21) includes a central hole (213) and a plurality of positioning holes (215), two stops (216) extend from a top of the fixed plate (21) and located beside the two first apertures (214).

**3.** The blower as claimed in claim 1, wherein the rotatable plate (22) includes a pivot (221) on an underside thereof and the pivot (221) is rotatably inserted into the central hole (213), two handles (222) extend from a top of the rotatable plate (22), an extension (224) extends radially outward from a periphery of the rotatable plate (22 and a protrusion (225) extends from an underside of the rotatable plate (22).

**4.** The blower as claimed in claim 1, wherein the case unit (11) includes a base (12) and a case (13), the motor (14) is securely received in the base (12) and includes an output shaft (142) which is connected to the blade unit (15), the case (13) includes a through hole (131).

**5.** The blower as claimed in claim 4, wherein at least one heat dispensing hole (122) is defined through a wall of the base (12) so as to cool the motor (14).

**6.** The blower as claimed in claim 4, wherein a cover plate (132) is connected to the through hole (131) of the case (13) and the air inlet (133) is defined through the cover plate (132), an inward and inclined guide surface (134) is defined around the air inlet (133), the cover plate (132) has a curved top surface which includes a higher central portion and a lower periphery, the case (13) includes the air outlet (135).

**7.** The blower as claimed in claim 6, wherein the fixed plate (21) includes a plurality of positioning pins (211) extending from an underside thereof so as to fixedly connected to the top surface of the curved cover plate (132), a plurality of suction gaps (212) are defined between the fixed plate (21) and the cover plate (132).

**8.** The blower as claimed in claim 1, wherein the air inlet (133) is defined in an end of the case (11) and the air outlet (135) is defined in a side of a top of the case (11), the adjusting device (2) is connected to the end of the case (11), the first and second apertures (214, 223) are located on the same end with the air inlet (133).

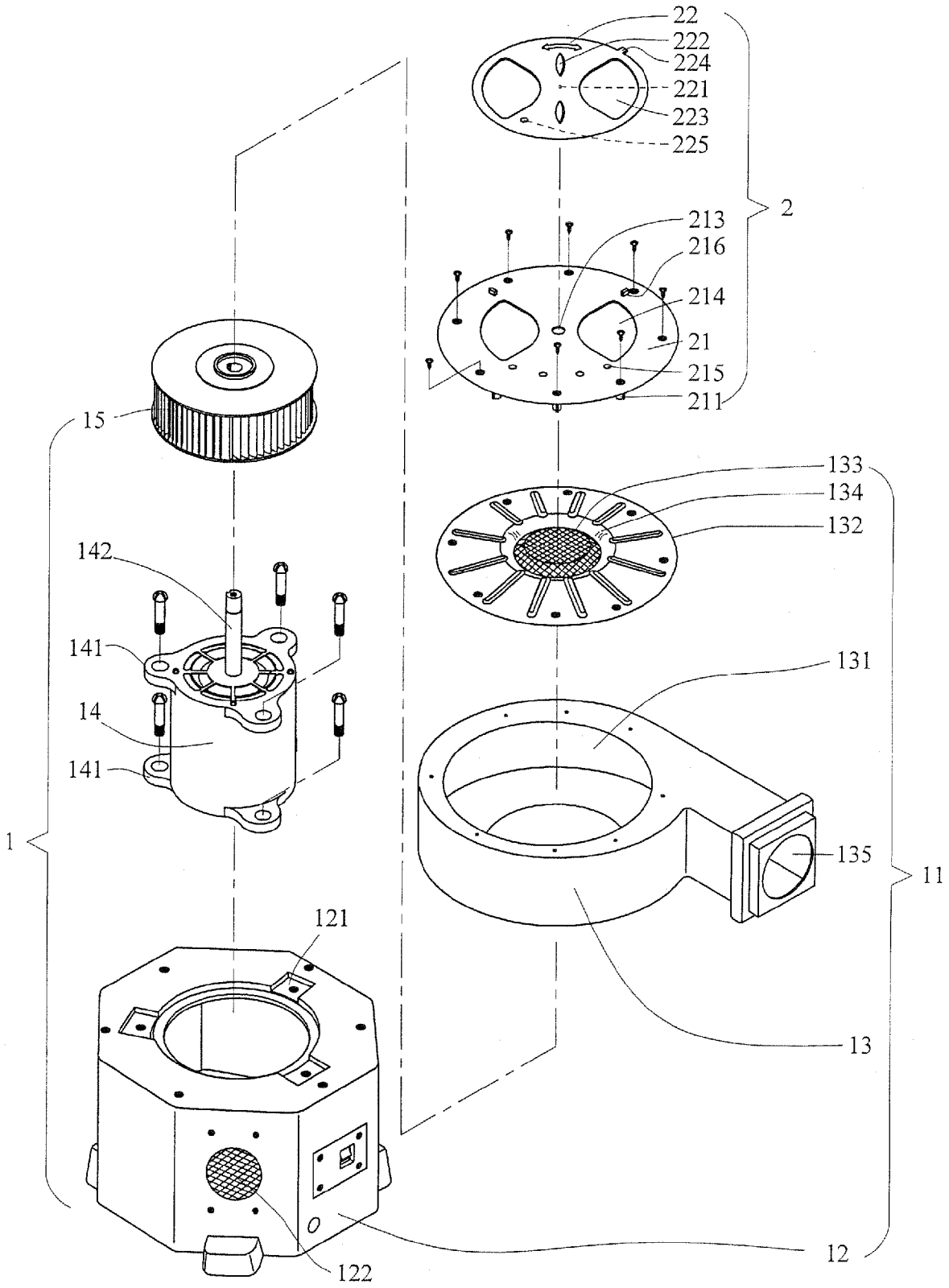
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FIG. 1

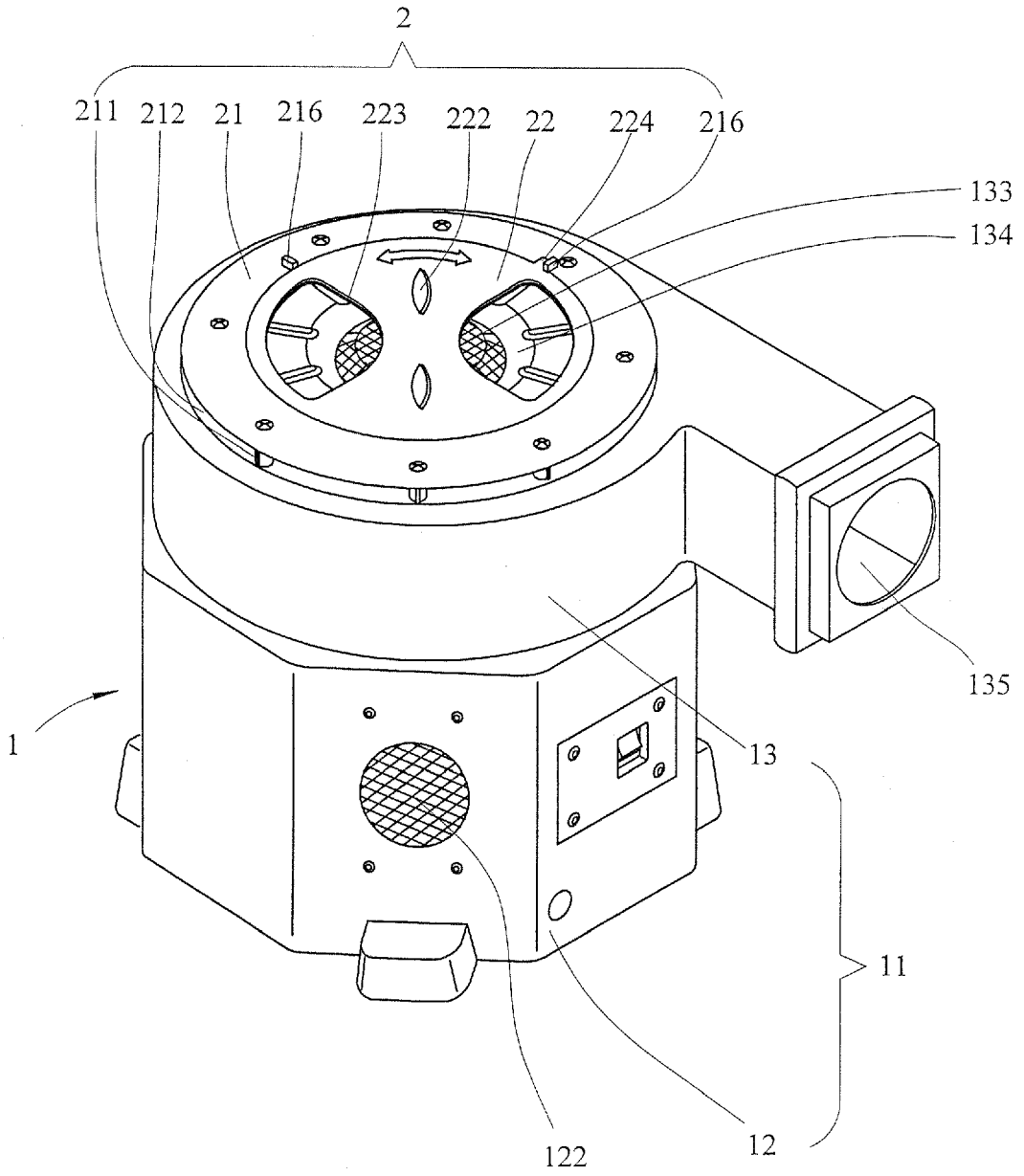


FIG. 2

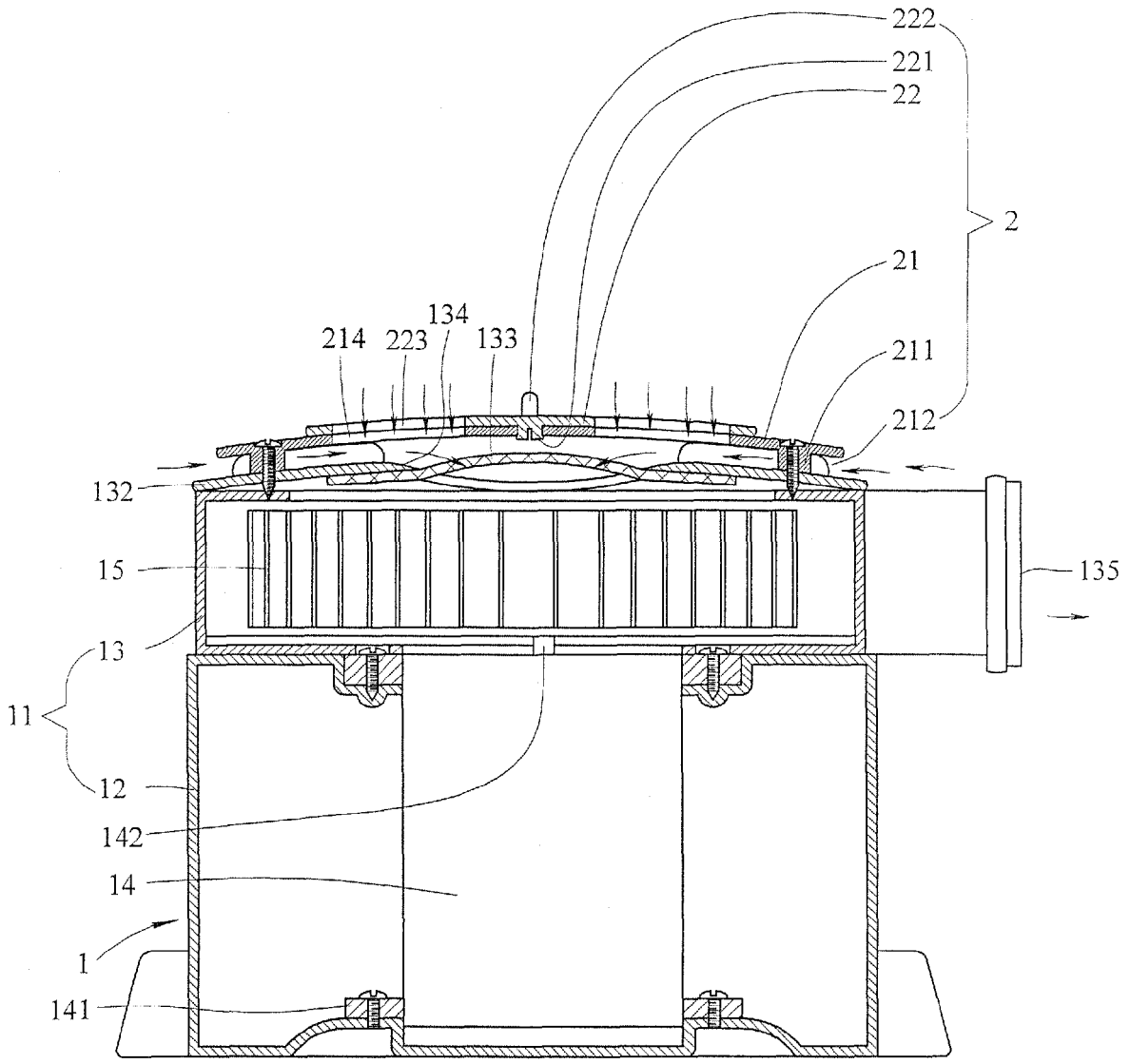
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FIG. 3

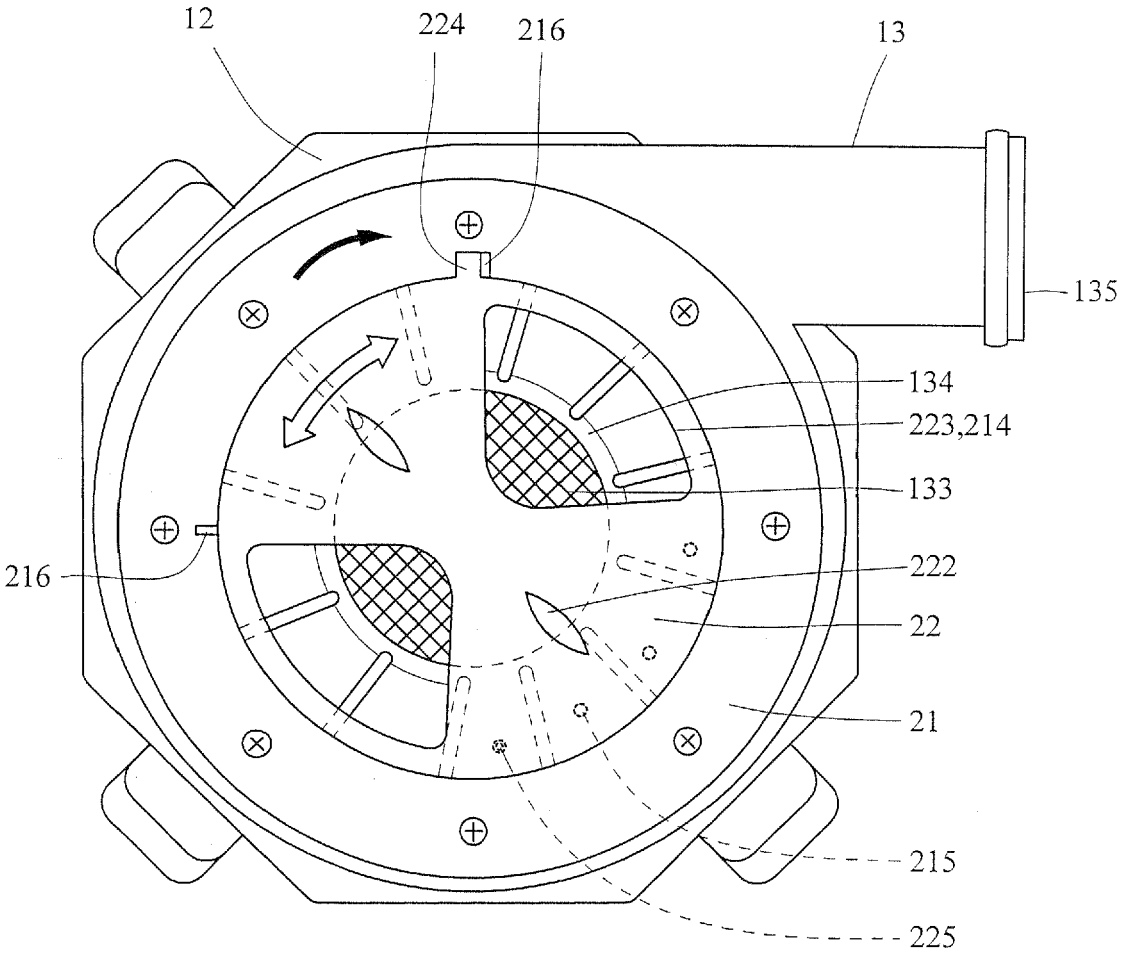


FIG. 4

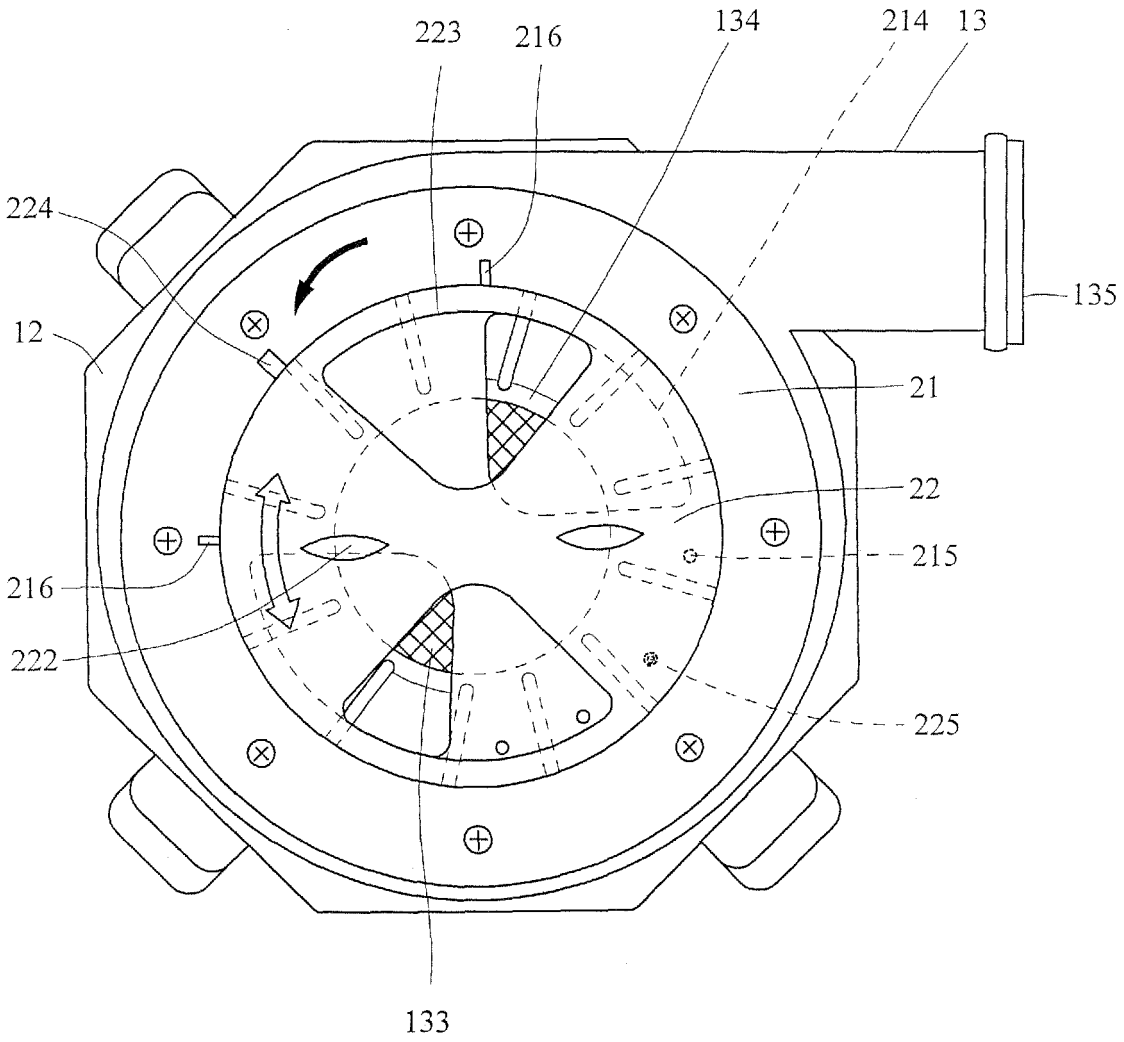


FIG. 5

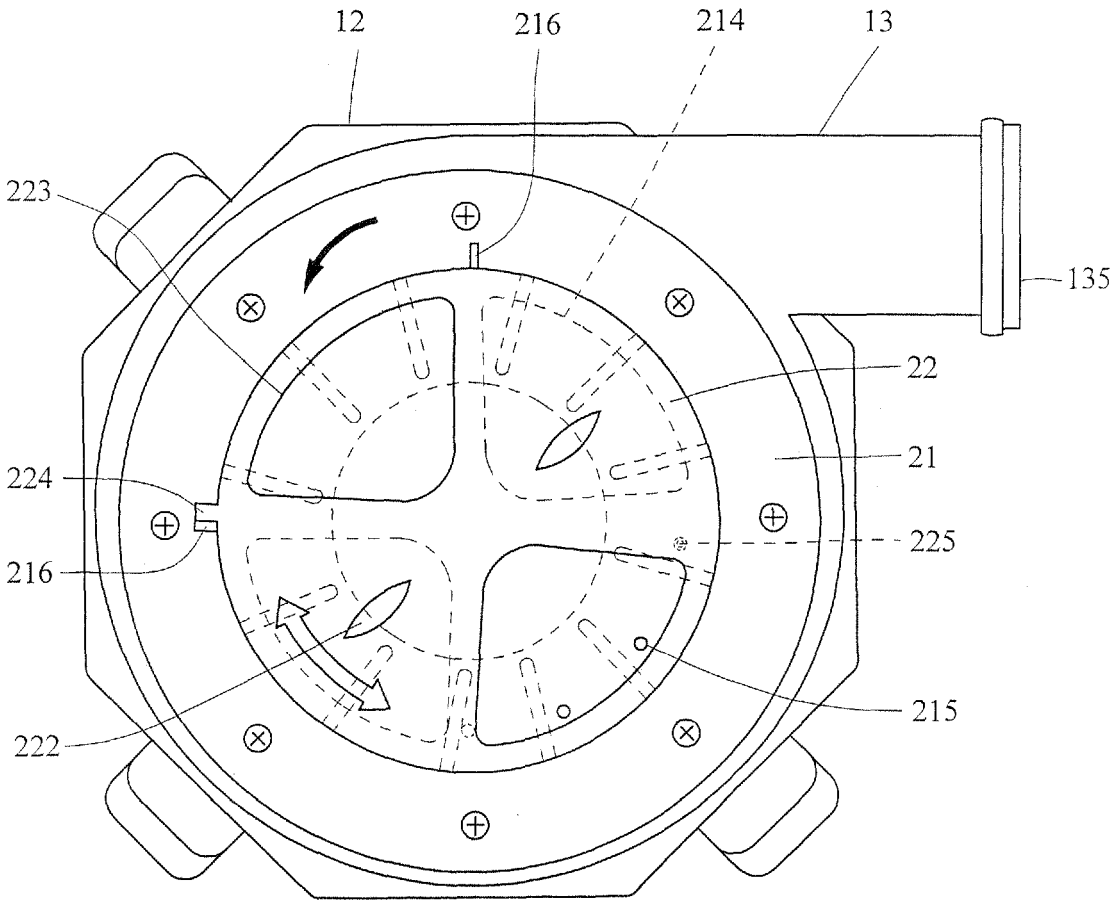


FIG. 6

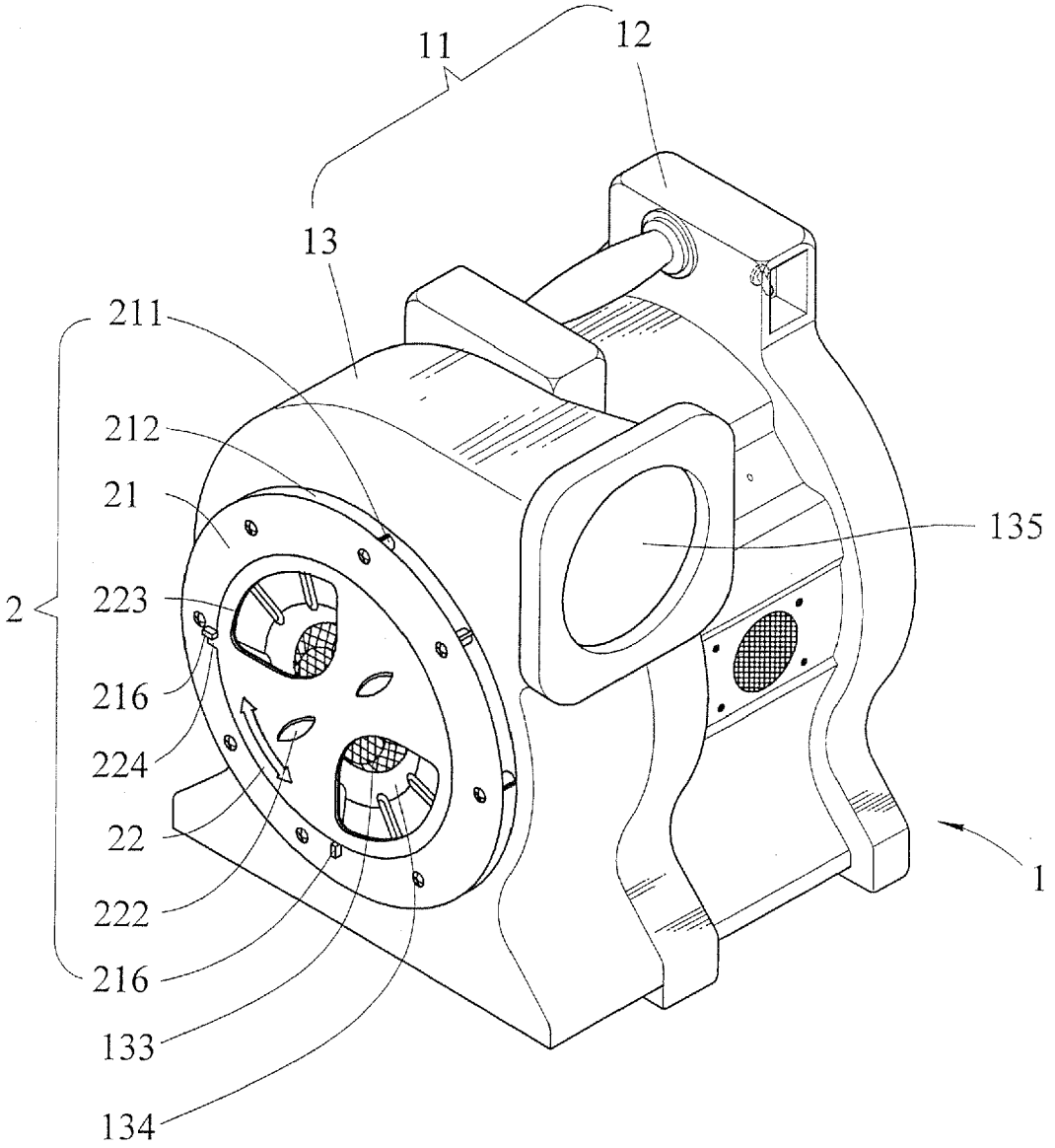


FIG. 7

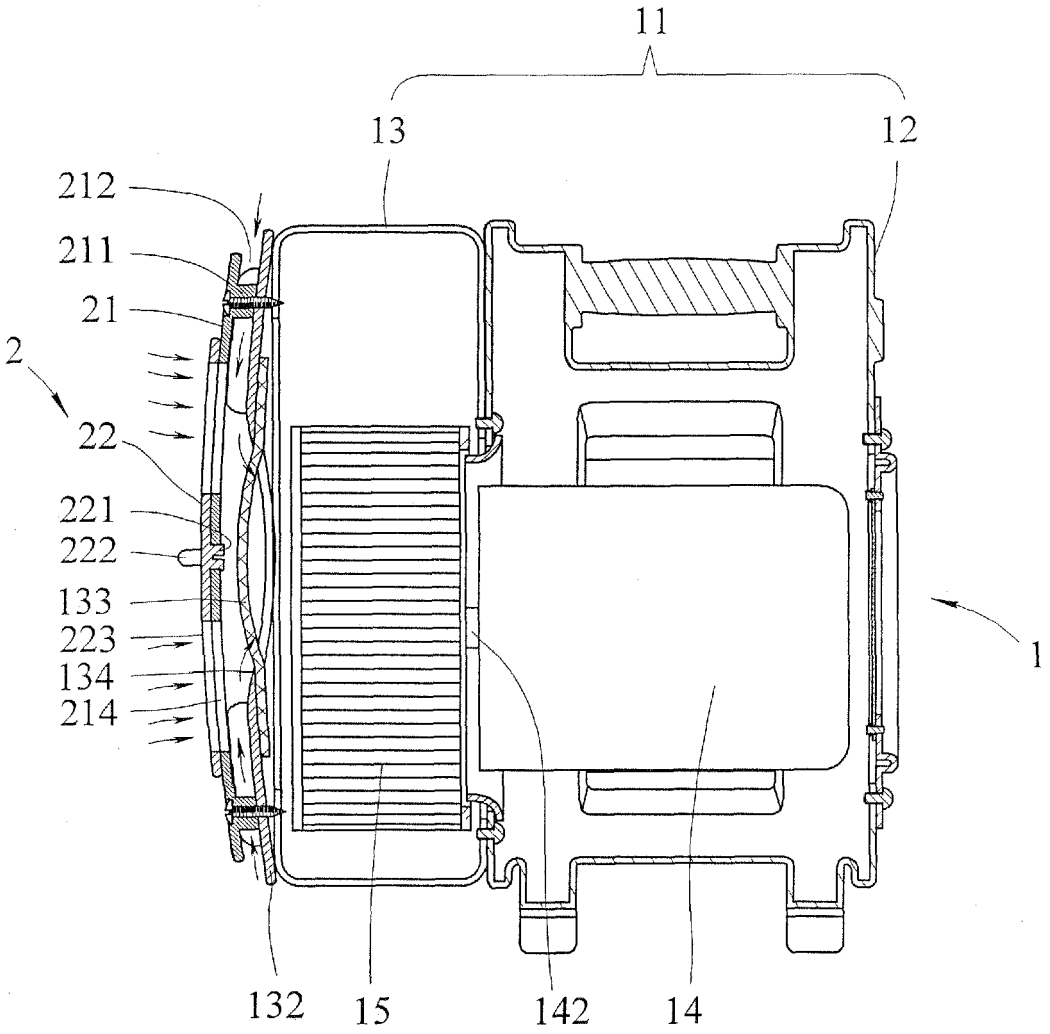


FIG. 8

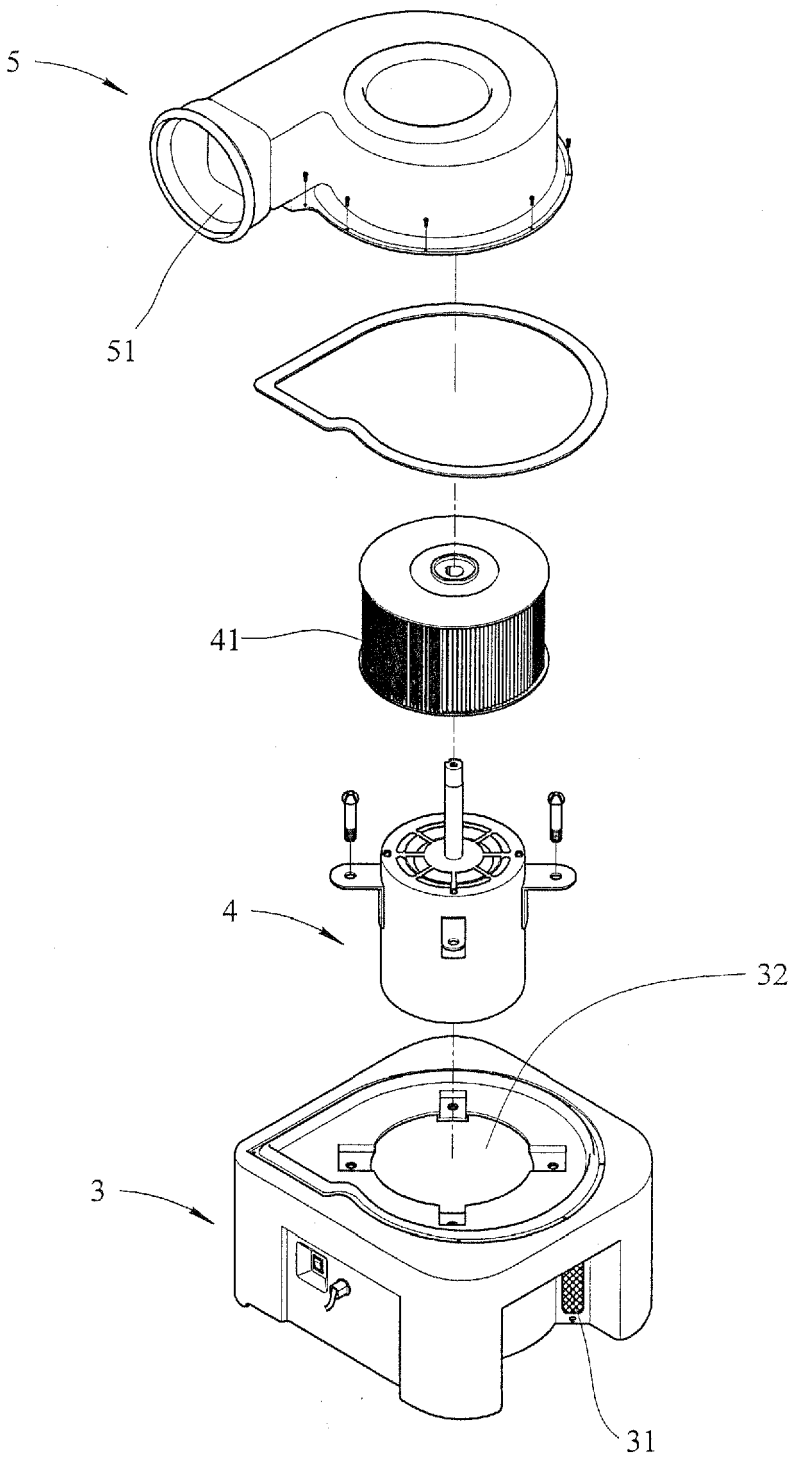


FIG. 9
PRIOR ART

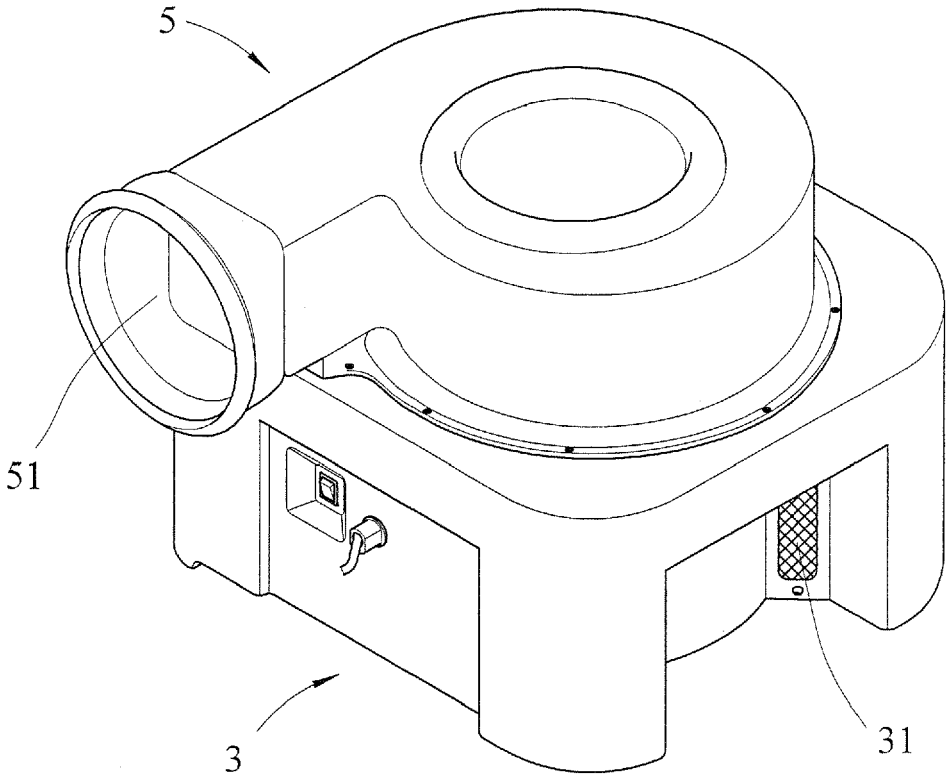


FIG. 10
PRIOR ART

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# EUROPEAN SEARCH REPORT

Application Number
EP 07 11 8858

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| Category | Citation of document with indication, where appropriate, of relevant passages | Relevant to claim | CLASSIFICATION OF THE APPLICATION (IPC) |
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The present search report has been drawn up for all claims

| Place of search | Date of completion of the search | Examiner |
|---|---|---|
| Munich | 4 April 2008 | Giorgini, Gabriele |

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## ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 07 11 8858

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