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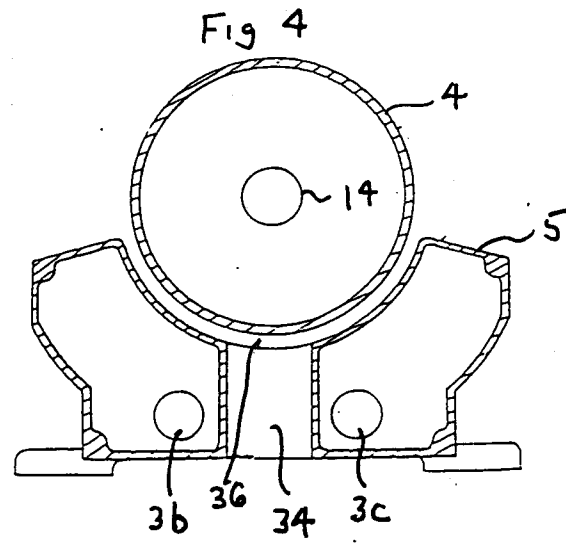
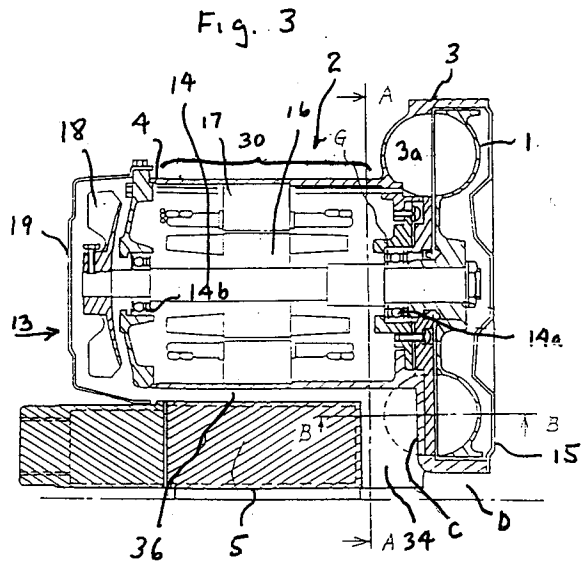
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(54) **Vortex flow blower.**

(57) A vortex flow blower includes a blower casing (3) having an annular flow passageway (3a) extending from an inlet port (3b) for receiving fluid to an outlet port (3c) for discharging the fluid, the outlet port (3c) being disposed adjacent to the inlet port (3b), an impeller (1) accommodated in the blower casing (3) for producing a vortex flow of the fluid in the annular flow passageway (3a), and a driver (30) for driving the impeller (1). Further, the vortex flow blower includes a member and/or a configuration thereof for enabling at least one of a reduction of temperature of the fluid discharged from the vortex flow blower,

an increase in at least one of flow rate and pressure of the discharge fluid, a reduction in noise level of the vortex flow blower, and a compact configuration of the vortex flow blower.

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EUROPEAN SEARCH REPORT

Application Number

EP 91 11 5274

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. 5)
X	US-A-4 483 656 (ABE) * Column 3, line 25 - column 4, line 20; figure 1 * ---	1	F 04 D 23/00 F 04 D 29/04 F 04 D 29/66 F 04 D 29/58 F 04 D 5/00
X	DE-A-2 021 159 (ETUDES TECHNIQUES ET REPRESENTATIONS INDUSTRIELLES) * Page 5, line 10 - page 6, line 26; figures 1-6 * ---	1-3	
Y	---	5,6	
X	DE-A-2 001 395 (WERNER RIETSCHLE MASCHINEN-u. APPARATEBAU) * Page 6, line 3 - page 7, line 17; figure 1 * ---	1	
Y	---	5,6	
X	FR-A-2 384 975 (SIEMENS) * Page 2, line 26 - page 3, line 27; figures 1,2 * ---	1-3,5	
X	PATENT ABSTRACTS OF JAPAN, vol. 43, no. 289 (M-845)(3637), 5th July 1989; & JP-A-1 83 882 (FUJI ELECTRIC) 29-03-1989 * Abstract * -----	1,2	TECHNICAL FIELDS SEARCHED (Int. Cl.5) F 04 D
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 04-12-1991	Examiner TEERLING J.H.
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ----- & : member of the same patent family, corresponding document			



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CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims.

- ☐ All claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for all claims.
- ☐ Only part of the claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid, namely claims:
- ☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirement of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet -B-

- ☐ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.
- ☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:
- ☒ None of the further search fees has been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims,

namely claims: 1-6



LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirement of unity of invention and relates to several inventions or groups of inventions, namely:

1. Claims 1-6: Vortex blower comprising cooling means to reduce the discharge temperature.
2. Claims 7-11: Vortex blower comprising facilities for cooling the bearing closest to the impeller.
3. Claims 12-18: Vortex blower comprising noise attenuation means
4. Claims 19-26: Vortex blower and the configuration of the working chamber.
5. Claims 27-43: Details of a silencer for a vortex blower
6. Claims 44-48: Details of the outside configuration of the vortex blower, related to the improvement of the grip on the unit.