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- (71) Applicant (for all designated States except US): **BORG-WARNER INC.** [US/US]; Patent Department, 3850 Hamlin Road, Auburn Hills, MI 48326 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **STAGG, Jonathan, Bradley** [US/US]; 6981 Keyes Road, Bellevue, MI 49021 (US). **BAILEY, James, W.** [US/US]; 734 Ventura Way, Marshall, MI 49068 (US).
- (74) Agents: **WARN, Philip, R.** et al.; Warn Partners, P.C., P.O. Box 70098, Rochester Hills, MI 48307 (US).

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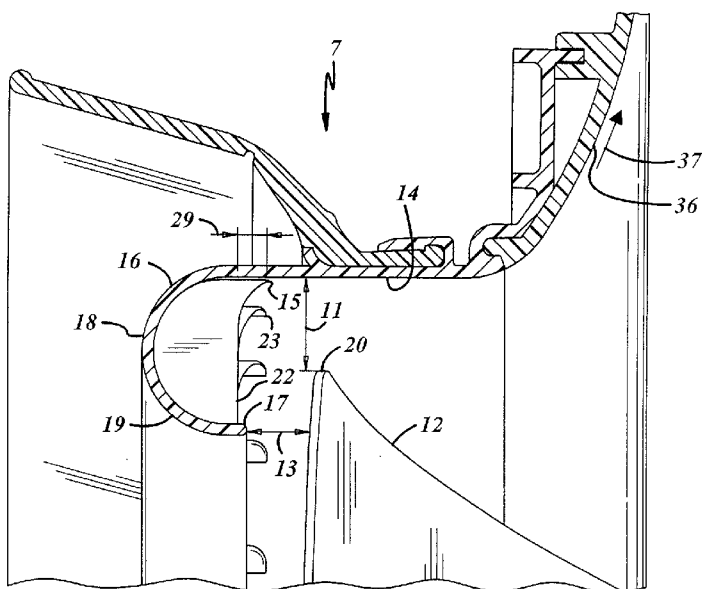
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**Declarations under Rule 4.17:**

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

[Continued on next page]

(54) Title: OPEN-BLADE ENGINE-COOLING FAN SHROUD GUIDE VANES



**FIG. 1**

(57) Abstract: To make manifest the above noted desire, a revelation of the present invention is brought forth. A fan assembly (7) is provided including a hub (10) with a plurality of projecting fan blades (12). A recirculating flow element (18) is provided which is generally forward adjacent an outer diameter of the fan blades (12). A plurality of guide vanes (22) are positioned within the recirculating flow element (18). The guide vanes (22) have an inlet angle (24) that is nearly tangential with an outer diameter surface (15) of the recirculating flow element (18). The guide vanes (22) have an outlet angle (26) which is nearly radial along an inner diameter surface (17) of the recirculating flow element (18).

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— *of inventorship (Rule 4.17(iv))*

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**A. CLASSIFICATION OF SUBJECT MATTER***F04D 29/24(2006.01)i, F04D 29/44(2006.01)i, F04D 29/54(2006.01)i, F01P 5/02(2006.01)i*

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

IPC : F04D 29/00 - F04D 29/52, F04D 29/54, F04D 29/56 - F04D 29/70

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean Utility models and applications for Utility models since 1975

Japanese Utility models and applications for Utility models since 1975

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKIPASS(KIPO internal) &amp; keyword : "fan", "blade", "guide vane"

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 1995/006822 A1 ( AIRFLOW RESEARCH MANUFACTURING CORPORATION ) 09 March 1995 See Figures 1A-15.	1-24
A	WO 2002/038962 A2 ( ROBERT BOSCH CORPORATION ) 16 May 2002 See Figure 6.	1-24
A	KR 20-0248773 Y1 ( HALLA CLIMATE CONTROL CORP. ) 28 December 2001 See Figure 3.	1-24
A	KR 10-2004-0057357 A ( HALLA CLIMATE CONTROL CORP. ) 02 July 2004 See Figures 1-6.	1-24
A	KR 10-2003-0070945 A ( HALLA CLIMATE CONTROL CORP. ) 03 September 2003 See Figures 1-13.	1-24

 Further documents are listed in the continuation of Box C. See patent family annex.

\* Special categories of cited documents:

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"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&amp;" document member of the same patent family


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 gu, Daejeon 302-701, Republic of Korea

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Authorized officer

LEE, JUNG HYE

Telephone No. 82-42-481-8437



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Information on patent family members

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