(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 0 829 645 A3

(12) EUROPEAN PATENT APPLICATION

(88) Date of publication A3:
11.11.1998 Bulletin 1998/46

(43) Date of publication A2:
18.03.1998 Bulletin 1998/12

(21) Application number: **97306652.5**

(22) Date of filing: **29.08.1997**

(51) Int Cl.[6]: **F04D 19/04**, F04D 29/32

(84) Designated Contracting States:
AT BE CH DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

(30) Priority: **12.09.1996 JP 263523/96**

(71) Applicant: **SEIKO SEIKI KABUSHIKI KAISHA**
Narashino-shi Chiba (JP)

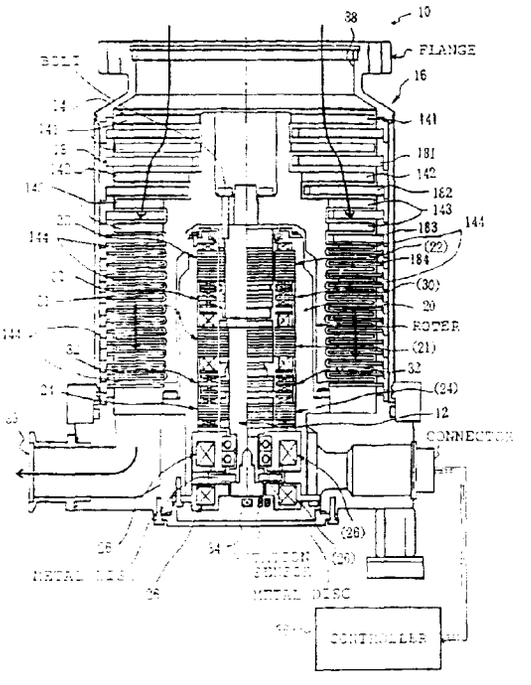
(72) Inventor: **Maejima, Yasushi**
Narashino-shi, Chiba (JP)

(74) Representative: **Sturt, Clifford Mark et al**
Miller Sturt Kenyon
9 John Street
London WC1N 2ES (GB)

(54) Turbomolecular pump

(57) In order to improve the exhaust performance of the turbomolecular pump comprising an exhaust stage, intermediate stage, and compression stage formed in sequence by rotor blades and the stator blades to effect exhaust and compression of gas, and rotor blades 141 to 144 are installed to a rotor shaft 12 supported by a bearing 20, and fixed stator blades 181 to 184 are arranged between the rotor blades, each vane of the rotor blade 144 forming the compression stage is arranged radially in a tilted manner with respect to the rotor shaft 12, and curved in the width direction so as to be convex to the rear side with respect to the vane rotation direction. Therefore, gas flows along the plate surface at the periphery of each vane 144b, so that the gas can be moved from the upper side to the lower side, thereby avoiding turbulence.

FIG. 1



EP 0 829 645 A3

European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 97 30 6652

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.6)
X	US 5 528 618 A (SCHLIE LAVERNE A ET AL) 18 June 1996 * column 3, line 29 - line 30; figure 7 * * column 6, line 8 - line 14 *	1,3	F04D19/04 F04D29/32
Y		2,4,5	
Y	US 3 826 588 A (FRANK R) 30 July 1974 * column 2, line 29 - column 4, line 5; figures 6-8 *	2	
Y	GB 580 806 A (GRIFFITH A.A.) 20 September 1946 * page 2, line 26 - line 85; figure 2 *	4	
Y	DE 72 37 362 U (LEYBOLD-HERAEUS GMBH) 11 January 1973 * the whole document *	5	
X	GB 1 019 272 A (SOCIETÉ NATIONALE D'ETUDE ET DE CONSTRUCTION DE MOTEURS D'AVIATION) 2 February 1966 * page 2, line 11 - line 19; figure 5 *	1	
A	SU 1 252 552 A (NII PRIKLADNOJ MAT KIB PRI GO) 23 August 1986 * abstract *	1	
A	US 4 770 574 A (LOTZ HEINRICH) 13 September 1988 * abstract; figures 5,6 *	1	

TECHNICAL FIELDS SEARCHED (Int.Cl.6)

F04D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	10 September 1998	Ingelbrecht, P

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

EPO FORM 1503 03.82 (P04C01)