

(19)



Europäisches Patentamt
European Patent Office
Office européen des brevets



(11)

EP 1 531 235 A3

(12)

EUROPEAN PATENT APPLICATION

(88) Date of publication A3:
18.01.2006 Bulletin 2006/03

(51) Int Cl.:
F01D 9/04 (2006.01) F01D 5/14 (2006.01)

(43) Date of publication A2:
18.05.2005 Bulletin 2005/20

(21) Application number: **04105587.2**

(22) Date of filing: **08.11.2004**

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

(72) Inventors:
• **MARETTO, Luigi**
16146 Genova (IT)
• **TORRE, Alberto**
Genova 16146 (IT)

(30) Priority: **11.11.2003 IT TO20030894**

(74) Representative: **Jorio, Paolo et al**
Studio Torta S.r.l.
Via Viotti, 9
10121 Torino (IT)

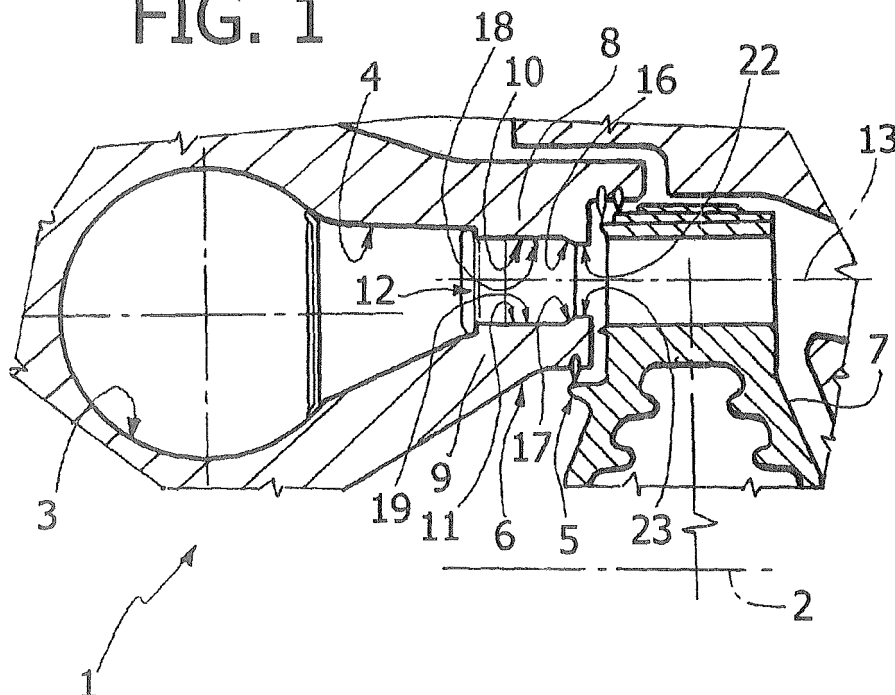
(71) Applicant: **ANSALDO ENERGIA S.P.A.**
16152 Genova (IT)

(54) **Stator for an axial-flow turbine**

(57) A vane stator (6) of an axial-flow turbine (1) has a first and a second surface (10, 11) facing each other and radially defining an annular conduit (12) in which a drive fluid flows in use; the conduit defines, in radial sec-

tion with respect to the axis (2) of the turbine (1), a mean flow direction (13) of the drive fluid; and the first and second surface (10, 11) have respective annular portions (16, 17), which both converge, in the flow direction, towards the mean flow direction (13).

FIG. 1



EP 1 531 235 A3



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 04 10 5587

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 4 778 338 A (BESSAY ET AL) 18 October 1988 (1988-10-18) * column 1, line 25 - line 40 * * column 3, line 43 - column 4, line 4 * * column 7, line 16 - column 9, line 51 * * abstract; figures 7,9,11,13 * -----	1-5	F01D9/04 F01D5/14
X	US 6 368 055 B1 (MATSUDA MINORU) 9 April 2002 (2002-04-09) * column 8, line 2 - line 54 * * column 9, line 66 - column 10, line 7 * * abstract; figures 1-3 * -----	1-4	
X	US 2 447 942 A (IMBERT ROGER JEAN ET AL) 24 August 1948 (1948-08-24) * column 2, line 10 - column 3, line 8 * * figures * -----	1,5	
A	ATKINS M J: "SECONDARY LOSSES AND END-WALL PROFILING IN A TURBINE CASCADE" IMECHE CONFERENCE ON TURBOMACHINERY: EFFICIENCY PREDICTION AND IMPROVEMENT, vol. 6, 1987, pages 29-42, XP001012087 * the whole document * -----	1-5	TECHNICAL FIELDS SEARCHED (IPC) F01D
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 25 November 2005	Examiner O'Shea, G
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			

2

EPO FORM 1503 03 82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 04 10 5587

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

25-11-2005

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
US 4778338	A	18-10-1988	EP	0068002 A1	05-01-1983
			WO	8202418 A1	22-07-1982
			IT	1154402 B	21-01-1987
			JP	2003003 B	22-01-1990
			JP	57502074 T	18-11-1982
			US	4832567 A	23-05-1989
			ZA	8200034 A	24-11-1982

US 6368055	B1	09-04-2002	NONE		

US 2447942	A	24-08-1948	FR	994013 A	09-11-1951
			GB	609220 A	28-09-1948
