



(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:  
**19.05.2010 Bulletin 2010/20**

(51) Int Cl.:  
**F01D 5/22 (2006.01)**

(43) Date of publication A2:  
**19.08.2009 Bulletin 2009/34**

(21) Application number: **09152448.8**

(22) Date of filing: **10.02.2009**

(84) Designated Contracting States:  
**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO SE SI SK TR**  
Designated Extension States:  
**AL BA RS**

(30) Priority: **13.02.2008 US 30317**

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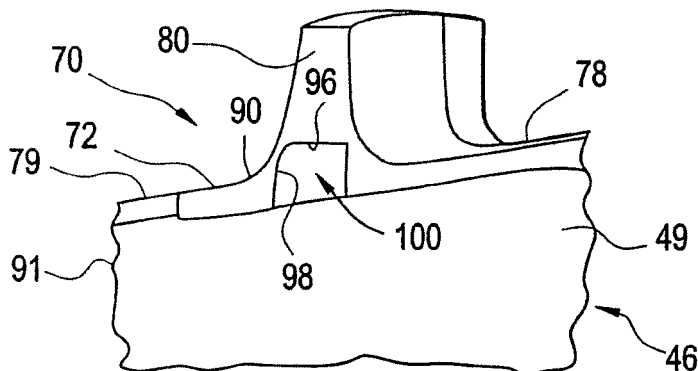
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(54) **Shroud assembly for a turbomachine**

(57) A rotating assembly (31) for a turbomachine (2) includes a plurality of rotating members (46) that extend radially outward from a central hub (47). Each of the plurality of rotating members (46) includes a base portion (48) detachably mounted to the central hub (47), a tip portion (49), a mid-span portion (50) that extends between the base portion (48) and the tip portion (49), and a shroud portion (60, 70) positioned at one of the tip por-

tion (49) and the mid-span portion (50). The shroud portion (60, 70) includes a pressure side (73) and a suction side (72). At least one hard face interface member (100, 120) is secured to at least one of the suction side (72) and the pressure side (73) of the shroud portion (60, 70). The at least one hard face interface member (100, 120) is both mechanically interlocked with, and metallurgically bonded to, the shroud portion (60, 70).

**FIG. 4**





## EUROPEAN SEARCH REPORT

Application Number  
EP 09 15 2448

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 5 083 903 A (ERDMANN OMER D [US]) 28 January 1992 (1992-01-28) * figures *	1-4,7-14	INV. F01D5/22
A	US 6 164 916 A (FROST AARON TODD [US] ET AL) 26 December 2000 (2000-12-26) * figures *	1-15	
			TECHNICAL FIELDS SEARCHED (IPC)
			F01D
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 7 April 2010	Examiner Raspo, Fabrice
<p>CATEGORY OF CITED DOCUMENTS</p> <p>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</p> <p>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 &amp; : member of the same patent family, corresponding document</p>			

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EPO FORM 1503 03.02 (P04C01)

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

EP 09 15 2448

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  
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07-04-2010

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5083903	A	28-01-1992	NONE	
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US 6164916	A	26-12-2000	DE 69925796 D1	21-07-2005
			DE 69925796 T2	04-05-2006
			EP 0999009 A1	10-05-2000
			JP 2000225475 A	15-08-2000
			KR 20000035121 A	26-06-2000
			TW 445191 B	11-07-2001
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