



(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
09.01.2002 Bulletin 2002/02

(51) Int Cl.7: **F01D 21/04**, F01D 11/12,
F01D 25/24

(43) Date of publication A2:
28.06.2000 Bulletin 2000/26

(21) Application number: **99310555.0**

(22) Date of filing: **23.12.1999**

(84) Designated Contracting States:
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU
MC NL PT SE
Designated Extension States:
AL LT LV MK RO SI

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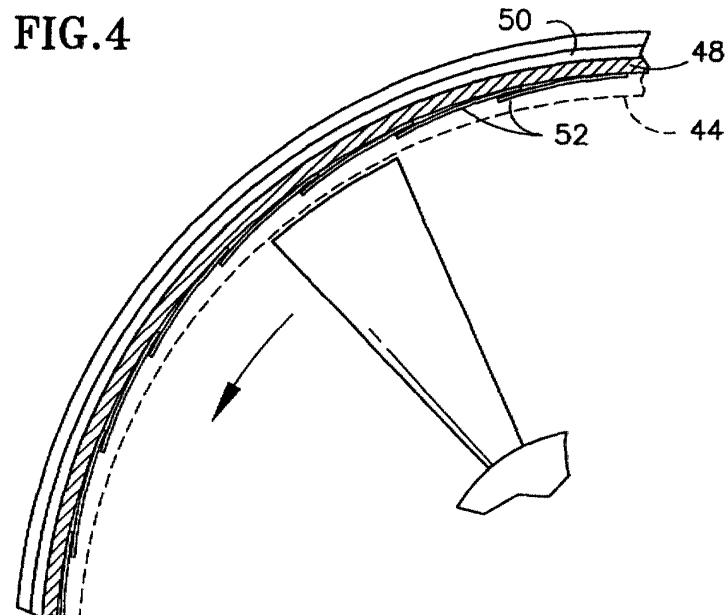
(30) Priority: **23.12.1998 US 220544**

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(54) **Fan case liner**

(57) A fan case 48 in a gas turbine engine has a radial zone of interaction 60 bounded outwardly by a fan case surface 53. Hardened structure 42 such as overlapping shingles is disposed in the zone 60. The zone 60 is less than one hundredth of the fan case diameter as measured from the blade tips 38 in a non-operative,

zero speed engine condition and is such that during a high rotor imbalance condition, the blade tips 38 skid on the hardened structure 42 and reduce the destructive cutting away of the fan case, and reduce torque and imbalance loads transmitted to the interface of the engine and the aircraft.





European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 99 31 0555

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.7)
A	US 5 403 148 A (FORRESTER JAMES M) 4 April 1995 (1995-04-04) * column 2, line 55 - column 3, line 11; figure 3 *	1-10	F01D21/04 F01D11/12 F01D25/24
A	US 4 547 122 A (LEECH JOHN W) 15 October 1985 (1985-10-15)		
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			F01D
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 16 November 2001	Examiner Raspo, F
<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 & : member of the same patent family, corresponding document</p>			

EPO FORM 1503 03 82 (P04001)

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

EP 99 31 0555

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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16-11-2001

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US 5403148	A	04-04-1995	NONE	
US 4547122	A	15-10-1985	NONE	

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82