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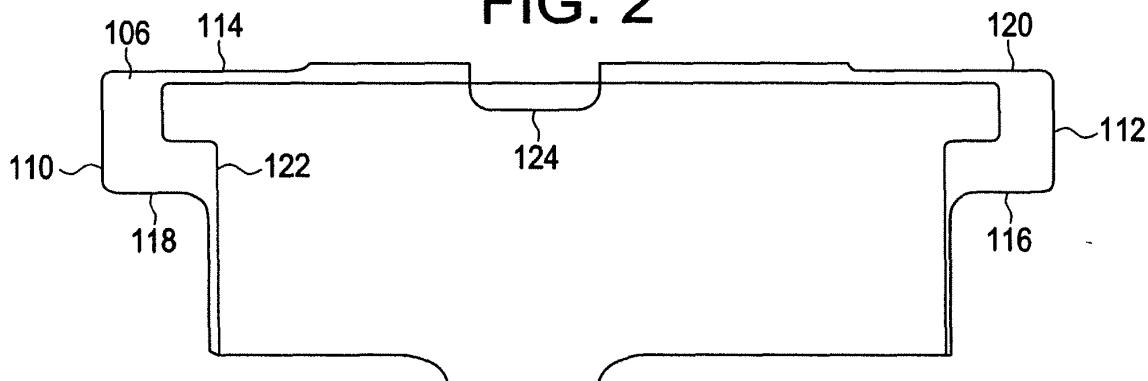
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(54) Gas turbine vane attachment

(57) Base hooks (110, 112) of a vane (106) includes an approximate two times thicker radial geometry, with dimensioning and tolerancing that results in a line-line to loose fit on the forward OD hook surface (114) and the aft ID hook surface (116). Tolerances thus stack up on the opposite, non-critical surfaces of the hooks (the forward ID hook surface (118) and the aft OD hook surface (120)). The base of the vane (106) is curved to match

that of the casing (102). An interface between the vane base and the casing groove (102) includes a metal alloy liner (140). Also, a wear coating is provided on the vane attachment hooks (110, 112). The liner (140) protects the casing groove (102) from wear damage, while the hook coating and the liner (140) provide a wear coupling between the vane bases and the casing (102) that provides a barrier between the vane bases and the casing (102) to decrease the wear rate.

FIG. 2





EUROPEAN SEARCH REPORT

 Application Number
 EP 09 16 9441

DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (IPC)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
X	EP 1 653 049 A1 (ALSTOM TECHNOLOGY LTD [CH]) 3 May 2006 (2006-05-03) * the whole document *	1-3	INV. F01D25/24
Y	-----	4-12	
X	EP 1 840 337 A1 (SIEMENS AG [DE]) 3 October 2007 (2007-10-03) * paragraph [0022]; figure 3 *	13-15	
Y	-----	4-12	
			TECHNICAL FIELDS SEARCHED (IPC)
			F01D
The present search report has been drawn up for all claims			
1	Place of search Munich	Date of completion of the search 27 September 2012	Examiner Raspo, Fabrice
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	

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

EP 09 16 9441

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Patent document cited in search report		Publication date		Patent family member(s)		Publication date
EP 1653049	A1	03-05-2006	AT EP US	460564 T 1653049 A1 2006251519 A1		15-03-2010 03-05-2006 09-11-2006
EP 1840337	A1	03-10-2007		NONE		