

Title (en)
Gas turbine cooled moving blade

Title (de)
Gekühlte Gasturbinenrotorschaukel

Title (fr)
Aube rotorique refroidie de turbine à gaz

Publication
EP 1094200 A1 20010425 (EN)

Application
EP 99120722 A 19991019

Priority
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• CA 2287577 A 19991022
• JP 20318998 A 19980717

Abstract (en)
Gas turbine cooled moving blade is improved to have enhanced cooling efficiency by cooling air and enhanced sealing performance by sealing air. Cooling air 100, 101, 102 enters moving blade 1 from cooling passages 3, 4, 5. The air 100 becomes turbulent by turbulators 9a, 9b to enhance cooling effect for cooling of blade leading edge portion and flows out of blade tip portion. The air 101, 102 enters from blade trailing edge side to flow through serpentine passage having portions 6a, 6b, 6c, 6d, 6e and to become turbulent by turbulators 8 for cooling of the blade and flows out of the blade tip portion. Cooling efficiency is enhanced by the cooling air led into the blade leading edge side and trailing edge side. Sealing air 103, 104 passes through portions formed by knife edges 13, 14 to flow in serpentine form to then flow out into combustion gas flow obliquely upwardly. Sealing performance is enhanced and end portion 2a of platform 2 and inner shroud end portion of rear stage stationary blade are cooled as well by the cooling air which flows out. <IMAGE>

IPC 1-7
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IPC 8 full level
F01D 5/18 (2006.01); **F01D 11/00** (2006.01)

CPC (source: EP)
F01D 5/187 (2013.01); **F01D 11/001** (2013.01); **F05D 2240/81** (2013.01)

Citation (search report)
• [X] EP 0864728 A2 19980916 - MITSUBISHI HEAVY IND LTD [JP]
• [XY] EP 0924383 A2 19990623 - UNITED TECHNOLOGIES CORP [US]
• [Y] DE 19811294 A1 19980924 - MITSUBISHI HEAVY IND LTD [JP]
• [XY] GB 2250548 A 19920610 - ROLLS ROYCE PLC [GB]
• [Y] WO 9950534 A1 19991007 - PRATT & WHITNEY CANADA [CA]
• [XY] US 5738489 A 19980414 - LEE CHING-PANG [US]
• [Y] US 3609057 A 19710928 - RADTKE LELAND J

Cited by
US7690894B1; CN113586251A; CN106481366A; EP1780380A3; CN102187061A; EP3521570A1; US7044710B2; US7939135B2; US7510375B2

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