

Title (en)
HOT GAS PATH SUBASSEMBLY OF A GAS TURBINE

Title (de)
HEISSGASPFAD-BAUGRUPPE EINER GASTURBINE

Title (fr)
SOUS-GROUPE DE PARCOURS DE GAZ CHAUDS DE TURBINE A GAZ

Publication
EP 1456508 A1 20040915 (DE)

Application
EP 02805240 A 20021212

Priority
• CH 0200686 W 20021212
• CH 22792001 A 20011213

Abstract (en)
[origin: WO03054360A1] The invention relates to a hot gas path subassembly, in particular that is suitable for use in the hot gas path of a gas turbine, comprising an impingement-cooled gas-impermeable element (8) and a transpiration-cooled gas-permeable element (2), which constitute a hot gas channel wall. The gas-permeable element constitutes in particular an impact covering for a sealing tip (7a) and the gas-impermeable element constitutes a blade foot (16) of a turbine blade. Coolant (4) is conducted in sequence, first through an impingement cooling element (17) in order to cool the gas-impermeable element (8) by impingement, then flows through the gas-permeable element in order to cool it by transpiration, before optionally cooling the sealing tip (7a). The coolant is thus used in a particularly effective manner. The subassembly is also provided with partitioning walls (24) for the lateral partitioning of the coolant path (9), in particular in the peripheral direction, said walls being arranged in segments (26). As a result of said partitioning, if the gas-permeable element in one segment is damaged, the other segments remain essentially unaffected. In a preferred embodiment, redundant coolant orifices (18) guarantee the coolant flow, even if the flow resistance increases in a transpiration-cooled element.

IPC 1-7
F01D 11/12; **F01D 11/10**; **F01D 25/12**

IPC 8 full level
F01D 9/02 (2006.01); **F01D 9/04** (2006.01); **F01D 11/02** (2006.01); **F01D 11/10** (2006.01); **F01D 11/12** (2006.01); **F01D 25/12** (2006.01); **F02C 7/18** (2006.01)

CPC (source: EP US)
F01D 11/10 (2013.01 - EP US); **F01D 11/127** (2013.01 - EP US); **F01D 25/12** (2013.01 - EP US); **F05D 2260/201** (2013.01 - EP US); **F05D 2300/612** (2013.01 - EP US)

Citation (search report)
See references of WO 03054360A1

Cited by
DE102014217832A1

Designated contracting state (EPC)
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LI LU MC NL PT SE SI SK TR

DOCDB simple family (publication)
WO 03054360 A1 20030703; AU 2002366846 A1 20030709; DE 50204128 D1 20051006; EP 1456508 A1 20040915; EP 1456508 B1 20050831; JP 2005513330 A 20050512; US 2004258517 A1 20041223; US 7104751 B2 20060912

DOCDB simple family (application)
CH 0200686 W 20021212; AU 2002366846 A 20021212; DE 50204128 T 20021212; EP 02805240 A 20021212; JP 2003555048 A 20021212; US 86574904 A 20040614