

Title (en)

Air and steam-cooled turbine blade and method for cooling a turbine blade

Title (de)

Luft- und dampfgekühlte Turbinenschaufel und ein Verfahren zum Kühlen einer Turbinenschaufel

Title (fr)

Aube de turbine à refroidissement à air et à vapeur et procédé de refroidissement

Publication

**EP 1321627 A1 20030625 (DE)**

Application

**EP 01130727 A 20011221**

Priority

EP 01130727 A 20011221

Abstract (en)

Air- and steam-cooled turbine blade (1), especially a gas turbine blade, with an edge (10) comprises a blade wall, at least one steam chamber (16, 17) for steam cooling, and at least one air chamber (18) for air cooling. The steam chamber and the air chamber are separated from each other. The edge is at least partly cooled with air. <??>Independent claims are also included for an alternative air- and steam-cooled turbine blade, and for processes for cooling the above turbine blades. Preferred Features: The steam chamber is completely surrounded by the blade wall.

Abstract (de)

Die Erfindung betrifft eine Gasturbinenschaufel (1), die in getrennten Hohlräumen (16,17,18) sowohl mit Luft als auch mit Dampf gekühlt wird. Insbesondere die Anstreifkante (10) wird luftgekühlt, wobei die Anstreifkante (10) aerodynamisch günstig dünn ausführbar ist. Der größte Teil der Gasturbinenschaufel (1) wird verdichterluftsparend dampfgekühlt. <IMAGE>

IPC 1-7

**F01D 5/18**

IPC 8 full level

**F01D 5/18** (2006.01)

CPC (source: EP)

**F01D 5/187** (2013.01); **F05D 2260/232** (2013.01); **F05D 2260/2322** (2013.01)

Citation (search report)

- [XY] US 6019579 A 20000201 - FUKUNO HIROKI [JP], et al
- [X] US 6033181 A 20000307 - ENDRES WILHELM [CH], et al
- [Y] EP 0302810 A2 19890208 - UNITED TECHNOLOGIES CORP [US]
- [Y] FR 2798421 A1 20010316 - UNITED TECHNOLOGIES CORP [US]
- [Y] EP 0939196 A2 19990901 - TOSHIBA KK [JP]
- [DY] EP 1126134 A1 20010822 - SIEMENS AG [DE]

Designated contracting state (EPC)

AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR

DOCDB simple family (publication)

**EP 1321627 A1 20030625**; WO 03054357 A2 20030703; WO 03054357 A3 20030925

DOCDB simple family (application)

**EP 01130727 A 20011221**; EP 0213619 W 20021202