

Title (en)

Turbine airfoil and corresponding method of cooling

Title (de)

Turbinenschaufel und zugehöriges Kühlverfahren

Title (fr)

Aube de turbine et procédé associé de refroidissement

Publication

**EP 2620593 A1 20130731 (EN)**

Application

**EP 13152580 A 20130124**

Priority

US 201213359691 A 20120127

Abstract (en)

A turbine airfoil includes a blade (10) having a leading (16) and trailing (18) edges and an internal cooling circuit (20), and a plurality of film holes (22) extending between the internal cooling circuit (20) and an exterior of the blade (10). The plurality of film holes (22) are shaped to generate a swirling flow exiting the film holes (22) adjacent the leading edge (16) to thereby enhance local convection and provide an insulating barrier to gaspath flow. A corresponding of film cooling a turbine airfoil is also provided.

IPC 8 full level

**F01D 5/18** (2006.01)

CPC (source: EP US)

**F01D 5/187** (2013.01 - EP US); **F05D 2240/303** (2013.01 - EP US); **F05D 2250/25** (2013.01 - EP US); **F05D 2260/202** (2013.01 - EP US)

Citation (search report)

- [XYI] US 7789626 B1 20100907 - LIANG GEORGE [US]
- [XYI] US 2010119377 A1 20100513 - TIBBOTT IAN [GB], et al
- [XY] EP 1847684 A1 20071024 - SIEMENS AG [DE]
- [X] US 7785071 B1 20100831 - LIANG GEORGE [US]
- [X] EP 0641917 A1 19950308 - UNITED TECHNOLOGIES CORP [US]
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- [X] EP 1013877 A2 20000628 - UNITED TECHNOLOGIES CORP [US]
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Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

**EP 2620593 A1 20130731**; CN 103225517 A 20130731; JP 2013155733 A 20130815; RU 2013103432 A 20140727;  
US 2013195650 A1 20130801

DOCDB simple family (application)

**EP 13152580 A 20130124**; CN 201310029642 A 20130125; JP 2013010707 A 20130124; RU 2013103432 A 20130125;  
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