

## Title (en)

High temperature components with thermal barrier coatings for gas turbine

## Title (de)

Hochtemperaturbauteile mit Wärmedämmschichten für Gasturbine

## Title (fr)

Composants à haute température avec des revêtements de barrière thermique pour turbine à gaz

## Publication

**EP 2725120 A1 20140430 (EN)**

## Application

**EP 13189647 A 20131022**

## Priority

JP 2012234278 A 20121024

## Abstract (en)

The most principal feature of the present invention is as follows: Namely, in the gas-turbine-use high-temperature component including the thermal barrier coating and a cooling structure, micro passages are provided inside an alloy bond-coat layer (2) and a thermal-barrier ceramic top-coat layer (3) of the thermal barrier coating, the micro passages being in communication from the substrate side to the surface side. Moreover, a partial amount of coolant of a coolant (8) for cooling the high-temperature component is caused to flow out to the outside of the high-temperature component via these micro passages. The employment of the structure like this makes it possible to expect the implementation of a high-temperature component's heat-resistant-temperature enhancement effect based on the transpiration cooling effect.

## IPC 8 full level

**C23C 24/08** (2006.01); **C23C 4/08** (2006.01); **C23C 28/00** (2006.01); **F01D 5/18** (2006.01); **F01D 5/28** (2006.01)

## CPC (source: EP US)

**C23C 4/073** (2016.01 - EP US); **C23C 4/08** (2013.01 - EP US); **C23C 24/04** (2013.01 - EP US); **C23C 28/3215** (2013.01 - EP US); **C23C 28/3455** (2013.01 - EP US); **F01D 5/183** (2013.01 - EP US); **F01D 5/186** (2013.01 - EP US); **F01D 5/288** (2013.01 - EP US)

## Citation (applicant)

- JP S62211387 A 19870917 - HITACHI LTD
- JP H10231704 A 19980902 - ISHIKAWAJIMA HARIMA HEAVY IND
- JP 2010065634 A 20100325 - HITACHI LTD
- JP 2005350341 A 20051222 - UNITED TECHNOLOGIES CORP

## Citation (search report)

- [XY] US 6511762 B1 20030128 - LEE CHING-PANG [US], et al
- [IY] US 2002102360 A1 20020801 - SUBRAMANIAN RAMESH [US], et al
- [Y] EP 2072634 A2 20090624 - UNITED TECHNOLOGIES CORP [US]
- [X] US 6617003 B1 20030909 - LEE CHING-PANG [US], et al
- [X] EP 1496140 A1 20050112 - SIEMENS AG [DE]
- [A] EP 1903127 A1 20080326 - SIEMENS AG [DE]
- [A] EP 1398394 A1 20040317 - HOWMET RES CORP [US]

## 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 2725120 A1 20140430**; **EP 2725120 B1 20160727**; CN 103774134 A 20140507; JP 2014084791 A 20140512; JP 6054137 B2 20161227; US 2014112758 A1 20140424

## DOCDB simple family (application)

**EP 13189647 A 20131022**; CN 201310508420 A 20131024; JP 2012234278 A 20121024; US 201314061306 A 20131023