

Title (en)

Airfoil portion of a rotor blade or guide vane of a turbo-machine

Title (de)

Blattprofilabschnitt eines Rotorblattes oder einer Leitschaufel einer Turbomaschine

Title (fr)

Partie de profil aérodynamique d'une pale de rotor ou aube directrice d'une turbomachine

Publication

EP 2921649 A1 20150923 (EN)

Application

EP 14160697 A 20140319

Priority

EP 14160697 A 20140319

Abstract (en)

An airfoil portion (100) having an outer wall that defines a cavity for receiving cooling air. At least one insert disposed within the cavity that is configured to initially receive at least a portion of the cooling air entering the chamber of the insert and direct the cooling air through a plurality of insert apertures to cool the inner surface of the outer wall of the airfoil portion. The insert further comprises a configuration that generally conforms to the contour of the outer wall of the chamber but in spaced relation thereto. A portion of the cooling air exits the airfoil portion through a plurality of film cooling apertures formed through the outer wall. A second insert (200) forms the trailing edge channel at the end of the main insert (106).

IPC 8 full level

F01D 5/18 (2006.01)

CPC (source: EP KR US)

F01D 5/147 (2013.01 - US); **F01D 5/188** (2013.01 - KR); **F01D 5/189** (2013.01 - EP US); **F05D 2220/31** (2013.01 - KR); **F05D 2220/32** (2013.01 - KR); **F05D 2240/12** (2013.01 - KR); **F05D 2240/30** (2013.01 - KR); **F05D 2260/201** (2013.01 - EP KR US); **F05D 2260/205** (2013.01 - KR); **F05D 2260/22141** (2013.01 - EP KR US)

Citation (applicant)

- US 8182203 B2 20120522 - HADA SATOSHI [JP], et al
- EP 2492442 A2 20120829 - ROLLS ROYCE PLC [GB]
- US 8231329 B2 20120731 - BENJAMIN EDWARD D [US], et al
- US 7452182 B2 20081118 - VANCE STEVEN J [US], et al

Citation (search report)

- [X] GB 2097479 A 19821103 - ROLLS ROYCE
- [X] US 4798515 A 19890117 - HSIA EDWARD S [US], et al
- [X] EP 0392664 A2 19901017 - TOSHIBA KK [JP]
- [X] US 4257734 A 19810324 - GUY KENNETH R, et al

Cited by

CN114607471A; CN117489418A; EP3231602A1; FR3094743A1; EP4283094A3; EP3323995A3; EP3170981A1; EP4006303A3; US10302017B2; US10724131B2; US10619949B2; US10335850B2; US10502070B2; WO2017108661A1; WO2017082868A1; US10323325B2; US11795828B2; US10370979B2; US11035236B2; US2017292195A1; US10399117B2; US11040372B2

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

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DOCDB simple family (application)

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