

Title (en)

COMPONENT HAVING COOLING CHANNEL WITH HOURGLASS CROSS SECTION AND CORRESPONDING TURBINE AIRFOIL COMPONENT

Title (de)

BAUELEMENT MIT KÜHLKANAL MIT SANDUHRFÖRMIGEM QUERSCHNITT UND ENTSPRECHENDES TURBINENSCHAUFELBAUTEIL

Title (fr)

COMPOSANT POSSÉDANT UN CANAL DE REFROIDISSEMENT DOTÉ D'UNE SECTION TRANSVERSALE EN SABLIER ET COMPOSANT DE SURFACE AÉRODYNAMIQUE DE TURBINE CORRESPONDANT

Publication

EP 2954169 A1 20151216 (EN)

Application

EP 14706400 A 20140205

Priority

- US 201313760107 A 20130206
- US 2014014858 W 20140205

Abstract (en)

[origin: WO2014123994A1] A cooling channel (36, 36B, 63-66) cools inner surfaces (48, 50) of exterior walls (41, 43) of a component (20, 60). Interior side surfaces (52, 54) of the channel converge to a waist (W2), forming an hourglass shaped transverse profile (46). The inner surfaces (48, 50) may have fins (44) aligned with the coolant flow (22). The fins may have a transverse profile (56A, 56B) highest at mid-width of the inner surfaces (48, 50). Turbulators (92) may be provided on the side surfaces (52, 54) of the channel, and may urge the coolant flow toward the inner surfaces (48, 50). Each turbulator (92) may have a peak (97) that defines the waist of the cooling channel. Each turbulator may have a convex upstream side (93). These elements increase coolant flow in the corners (C) of the channel to more uniformly and efficiently cool the exterior walls (41, 43).

IPC 8 full level

F01D 5/18 (2006.01)

CPC (source: EP RU)

F01D 5/187 (2013.01 - EP); **F01D 5/18** (2013.01 - RU); **F05D 2250/131** (2013.01 - EP); **F05D 2260/2214** (2013.01 - EP); **F05D 2260/22141** (2013.01 - EP)

Citation (search report)

See references of WO 2014123994A1

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Designated extension state (EPC)

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DOCDB simple family (publication)

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