Title (en)

Counter-vortex, paired film cooling hole design

Title (de)

Gegenwirbel-Doppel-Filmkühlbohrungsdesign

Title (fr)

Conception d'un trou de refroidissement à film en paire, à vortex inversé

Publication

EP 2131109 A2 20091209 (EN)

Application

EP 09251512 A 20090608

Priority

US 15711508 A 20080606

Abstract (en)

An apparatus for use in a gas turbine engine includes a wall (30) defining an exterior face (32), a first film cooling passage (36A) extending through the wall for providing film cooling to the exterior face of the wall, and a second film cooling passage (36B) extending through the wall adjacent to the first film cooling passage for providing film cooling to the exterior face of the wall. The first film passage includes a first vortex-generating structure (40A) for inducing a vortex in a first rotational direction in a cooling fluid passing therethrough, and the second film passage includes a second vortex-generating structure (40B) for inducing a vortex in a second rotational direction in a cooling fluid passing therethrough. The first and second rotational directions are substantially opposite one another.

IPC 8 full level

F23R 3/04 (2006.01)

CPC (source: EP US)

F01D 5/186 (2013.01 - EP US); **F23R 3/04** (2013.01 - EP US); F05D 2240/121 (2013.01 - EP US); F05D 2240/303 (2013.01 - EP US); F05D 2250/11 (2013.01 - EP US); F05D 2250/12 (2013.01 - EP US); F05D 2250/141 (2013.01 - EP US); F05D 2250/25 (2013.01 - EP US); F05D 2260/2212 (2013.01 - EP US); F23R 2900/03042 (2013.01 - EP US)

Cited by

EP2918782A1; EP2971671A4; US10378362B2; EP3156597B1

Designated contracting state (EPC)

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 SE SI SK TR

Designated extension state (EPC)

AL BA RS

DOCDB simple family (publication)

EP 2131109 A2 20091209; **EP 2131109 A3 20140101**; US 2009304494 A1 20091210

DOCDB simple family (application)

EP 09251512 A 20090608; US 15711508 A 20080606