

Title (en)

Leading edge cooling of a gas turbine component using staggered turbulator strips

Title (de)

Kühlung der Leitkante einer Gasturbinenkomponente mittels gestaffelt angeordneten Turbulatoren

Title (fr)

Refroidissement du bord d'attaque d'un composant de turbine à gaz par générateurs de turbulence

Publication

**EP 1870561 B1 20170405 (EN)**

Application

**EP 07252545 A 20070622**

Priority

US 47389306 A 20060622

Abstract (en)

[origin: EP1870561A2] A turbine engine component has an airfoil portion (32) having a leading edge, a suction side (46), a pressure side (42) and a radial flow leading edge cavity (34) through which a cooling fluid flows for cooling the leading edge. The turbine engine component further has a staggered arrangement of trip strips (40; 44) for generating a vortex (49) in the leading edge cavity (34) which impinges on a nose portion (36) of the leading edge cavity (34).

IPC 8 full level

**F01D 5/18** (2006.01); **F01D 25/12** (2006.01)

CPC (source: EP US)

**F01D 5/187** (2013.01 - EP US); **F05D 2240/12** (2013.01 - EP US); **F05D 2240/121** (2013.01 - EP US); **F05D 2240/303** (2013.01 - EP US); **F05D 2260/2212** (2013.01 - EP US); **F05D 2260/22141** (2013.01 - EP US)

Citation (opposition)

Opponent : Brevalex

- US 6068445 A 20000530 - BEECK ALEXANDER [DE], et al
- EP 0907005 A1 19990407 - MITSUBISHI HEAVY IND LTD [JP]
- US 5232343 A 19930803 - BUTTS DON [US]
- WO 9528243 A1 19951026 - UNITED TECHNOLOGIES CORP [US]
- EP 1469164 A2 20041020 - GEN ELECTRIC [US]
- US 5700132 A 19971223 - LAMPES ELIAS HARRY [US], et al
- EP 1473439 A2 20041103 - GEN ELECTRIC [US]
- EP 1503038 A1 20050202 - SNECMA MOTEURS [FR]
- US 5681144 A 19971028 - SPRING SAMUEL DALE [US], et al
- US 6406260 B1 20020618 - TRINDADE RICARDO [CA], et al
- US 5052889 A 19911001 - ABDEL-MESSEH WILLIAM [CA]
- US 4775296 A 19881004 - SCHWARZMANN RUSSELL A [US], et al

Cited by

EP3181817A1; EP1873354A3; EP2236751A3; US10337334B2; US10422233B2; US10577947B2; US8348613B2; US10280841B2

Designated contracting state (EPC)

DE GB

DOCDB simple family (publication)

**EP 1870561 A2 20071226; EP 1870561 A3 20101222; EP 1870561 B1 20170405**; JP 2008002464 A 20080110; US 2007297916 A1 20071227

DOCDB simple family (application)

**EP 07252545 A 20070622**; JP 2007160904 A 20070619; US 47389306 A 20060622