Title (en)

FILM COOLING HOLE CONSTRUCTION IN GAS TURBINE MOVING-VANES

Title (de)

KONFIGURATION VON FILMKÜHLUNGSBOHRUNGEN IN GASTURBINENSCHAUFELN

Title (fr)

CONFIGURATION A TROUS DE REFROIDISSEMENT POUR PELLICULE D'AIR DANS LES AUBES MOBILES D'UNE TURBINE A GAZ

Publication

EP 1132575 A4 20020410 (EN)

Application

EP 99943365 A 19990916

Priority

JP 9905047 W 19990916

Abstract (en)

[origin: WO0120133A1] A moving vane (20) is formed with cooling passages (22, 23) partitioned by a rib (51), wherein cooling air (41) flows in through the cooling passage (22) and into the cooling passage (23) as indicated by an arrow (41e). A stagnant region (53) is formed in the corner at the front end of the cooling passage (22) where there is no cooling hole (50); however, a flow (41i) goes out of the vane through a cooling hole (2), so that a flow of cooling air is formed in this region. Further, at the front end of a rib (51) there is formed a peel region (52) due to the peeling of the flow, but the cooling air (41h) flows out of the vane through a cooling hole (1) and a flow of cooling air is produced in this region. Further, a film cooling hole construction is also disclosed wherein in a gas turbine moving-vane having multi-stage turbulators (28) formed on the inner wall surface (60) of the cooling passage, the peeling of the cooling air taking place between the turbulators (28) is eliminated.

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IPC 8 full level

F01D 5/18 (2006.01)

CPC (source: EP)

F01D 5/188 (2013.01); F05D 2260/201 (2013.01); F05D 2260/202 (2013.01); F05D 2260/221 (2013.01); F05D 2260/22141 (2013.01)

Citation (search report)

- [XY] GB 1350424 A 19740418 - ROLLS ROYCE
- [XY] US 4992026 A 19910212 - OHTOMO FUMIO [JP], et al
- [A] EP 0383046 A1 19900822 - WESTINGHOUSE ELECTRIC CORP [US]
- See references of WO 0120133A1

Cited by

EP1362982A1; CN104791020A

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WO 0120133 A1 20010322; **WO 0120133 A8 20010726**; CA 2347888 A1 20010322; EP 1132575 A1 20010912; EP 1132575 A4 20020410

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