

Title (en)

Turbine bucket tip cover comprising a plurality of depressions

Title (de)

Deckband einer Turbinenschaufel mit einer Vielzahl von Vertiefungen

Title (fr)

Plateforme de tête d'une aube de turbine à gaz comprenant une pluralité de dépressions

Publication

EP 2275644 A2 20110119 (EN)

Application

EP 10168660 A 20100707

Priority

US 50485009 A 20090717

Abstract (en)

A blade 20 with a surface depressions 80 on the tip cover 25 for reducing leakage flows, minimizing tip vortex size and penetration into main flow that will improve turbine efficiency. The surface treatment for the airfoil tip covers includes a series of concave shapes, such as grooves 85 or holes 125. These grooves 85 and holes 125 will channel elements of a tip leakage flow 90 into separate flow vortex paths 110 within the depressions and generate more resistance to leakage flows through the airfoil tip clearance 100, thereby reducing the leakage mass flow and weakening tip vortex and its interaction with turbine main flows. The material removed from the tip cover provides the additional benefit of reducing the weight of the tip cover, thereby enhancing blade reliability.

IPC 8 full level

F01D 5/20 (2006.01)

CPC (source: EP US)

F01D 5/22 (2013.01 - US); **F01D 5/225** (2013.01 - EP US); **F05D 2260/2212** (2013.01 - EP US); **Y10T 29/49336** (2015.01 - EP US)

Cited by

EP4317676A3; WO2020169986A1

Designated contracting state (EPC)

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Designated extension state (EPC)

BA ME RS

DOCDB simple family (publication)

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