

Title (en)  
TURBINE BLADE AND CORRESPONDING METHOD OF MACHINING

Title (de)  
TURBINENSCHAUFEL UND ZUGEHÖRIGES HERSTELLUNGSVERFAHREN

Title (fr)  
AUBE DE TURBINE ET PROCÉDÉ D'USINAGE ASSOCIÉ

Publication  
**EP 4136323 B1 20240529 (DE)**

Application  
**EP 21731686 A 20210521**

Priority  
• DE 102020207646 A 20200622  
• EP 2021063617 W 20210521

Abstract (en)  
[origin: WO2021259569A1] The invention relates to a turbine blade (1) for a gas turbine, having a blade root (2) and an aerodynamically curved blade airfoil (3) arranged above the blade root (2), wherein the blade airfoil (3) has a pressure-side blade wall (4) and a suction-side blade wall (5), which together extend from a leading edge (7), that can receive a flow of working medium, of the blade airfoil (3) to a trailing edge (8) of the blade airfoil (3), wherein a multiplicity of cooling air outlet openings (9) are formed on the pressure-side blade wall (4), which openings in each case extend upstream from the trailing edge (8) with respect to the flow direction of a working medium flowing around the blade airfoil (3), and through these openings cooling air that is conveyed through the interior of the blade airfoil (3) can exit, wherein at least one of the cooling air outlet openings (9) has a substantially rectangular or trapezoidal shape with rounded corners (10), which preferably widens in the direction of exit of the cooling air, characterized in that at least the lower corner, pointing towards the leading edge (7), of this at least one cooling air outlet opening (9) forms a relief notch (11), which projects outwardly from the rectangular shape, with a rounded notch bottom (12). The invention furthermore relates to a method for machining a turbine blade (1).

IPC 8 full level  
**F01D 5/18** (2006.01)

CPC (source: EP KR US)  
**F01D 5/18** (2013.01 - US); **F01D 5/185** (2013.01 - EP KR); **F01D 5/186** (2013.01 - EP KR); **F01D 5/187** (2013.01 - EP KR);  
**F01D 5/30** (2013.01 - US); **F05D 2220/32** (2013.01 - EP KR US); **F05D 2230/20** (2013.01 - EP); **F05D 2230/21** (2013.01 - EP KR);  
**F05D 2240/304** (2013.01 - EP KR US); **F05D 2240/305** (2013.01 - EP KR US); **F05D 2250/12** (2013.01 - EP KR);  
**F05D 2250/13** (2013.01 - EP KR); **F05D 2260/202** (2013.01 - US)

Citation (examination)  
• EP 2685049 B1 20180523 - IHI CORP [JP]  
• EP 1555390 B1 20061122 - SNECMA [FR]  
• EP 1318274 B1 20040922 - SNECMA MOTEURS [FR]

Designated contracting state (EPC)  
AL 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 RS SE SI SK SM TR

DOCDB simple family (publication)  
**DE 102020207646 A1 20211223**; EP 4136323 A1 20230222; EP 4136323 B1 20240529; KR 20230027211 A 20230227;  
US 11867083 B2 20240109; US 2023220778 A1 20230713; WO 2021259569 A1 20211230

DOCDB simple family (application)  
**DE 102020207646 A 20200622**; EP 2021063617 W 20210521; EP 21731686 A 20210521; KR 20237002086 A 20210521;  
US 202118009402 A 20210521