Title (en)

    TURBINE COMPRISING AT LEAST ONE ROTOR THAT CONSISTS OF ROTOR DISKS AND A TIE BOLT

Title (de)

    TURBINE MIT MINDESTENS EINEM ROTOR BESTEHEND AUS ROTORSCHEIBEN UND EINEM ZUGANKER

Title (fr)

    TURBINE ÉQUIPÉE D'UN ROTOR COMPOSÉ DE DISQUES ROTORIQUES ET D'UN HAUBAN

Publication

    EP 2118446 A1 20091118 (DE)

Application

    EP 08716885 A 20080215

Priority

- EP 2008051880 W 20080215
- EP 07005082 A 20070312
- EP 08716885 A 20080215

Abstract (en)

    [origin: EP1970533A1] The turbine (1) has a rotor (2) with blades (4) arranged on a periphery of disks (5) in radial planes (3), and a tie rod (6) extending along slots (7) in the disks. An annular spacer (15, 15') fixes a position of the tie rod relative to a center line (M) of the disks, and is arranged in a channel (10, 11). The spacer has through-openings, which are arranged radially relative to the tie rod or to its center line, and extend coaxially. The channel carries cooling medium and is limited by a separating pipe (13, 14) radially outwards, and the through-openings serve for flow of the medium.

IPC 8 full level

    F01D 5/06 (2006.01)

CPC (source: EP US)

    F01D 5/066 (2013.01 - EP US); **F01D 5/10** (2013.01 - EP US); F05D 2230/64 (2013.01 - EP US); F05D 2250/182 (2013.01 - EP US); F05D 2250/311 (2013.01 - EP US); F05D 2260/30 (2013.01 - EP US); F05D 2260/96 (2013.01 - EP US)

Citation (search report)

    See references of WO 2008110430A1

Cited by

    WO2022049064A1; US12037919B2

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 MT NL NO PL PT RO SE SI SK TR

DOCDB simple family (publication)

    EP 1970533 A1 20080917; AT E472670 T1 20100715; CN 101631931 A 20100120; CN 101631931 B 20130213; DE 502008000876 D1 20100812; EP 2118446 A1 20091118; EP 2118446 B1 20100630; ES 2348110 T3 20101130; JP 2010520968 A 20100617; JP 4954299 B2 20120613; PL 2118446 T3 20101130; RU 2009137599 A 20110420; RU 2429350 C2 20110920; US 2010143149 A1 20100610; US 8506239 B2 20130813; WO 2008110430 A1 20080918

DOCDB simple family (application)

    EP 07005082 A 20070312; AT 08716885 T 20080215; CN 200880008307 A 20080215; DE 502008000876 T 20080215; EP 08716885 A 20080215; EP 2008051880 W 20080215; ES 08716885 T 20080215; JP 2009553094 A 20080215; PL 08716885 T 20080215; RU 2009137599 A 20080215; US 53047308 A 20080215