Title (en)

Method for reducing water drop erosion in steam turbines by controlling the drop size and corresponding steam turbine

Title (de)

Verfahren zur Reduzierung der Tropfenschlagerosion in Dampfturbinen durch Kontrolle der Tropfengröße und zugehörige Dampfturbine

Title (fr)

Procédé de réduction de l'érosion par impact de gouttes dans des turbines à vapeur par contrôle de la taille des gouttes et turbine à vapeur associée

Publication

EP 2128386 A3 20101215 (DE)

Application

EP 09161199 A 20090527

Priority

DE 102008026031 A 20080530

Abstract (en)

[origin: EP2128386A2] The method involves producing electrical fields i.e. alternating fields, in an environment of guide vanes (3) by applying electrical voltages to electrode structures in a steam turbine (1). A secondary drop size is directly controlled by the fields in a guide vane surface and in a steam chamber by electrostatic dipole forces. A frequency of the electrical fields is selected for exciting resonant vibrations of a water drop of certain size, where the guide vanes are isolated in a housing of the turbine. An independent claim is also included for a steam turbine including guide vanes.

IPC 8 full level

F01D 5/28 (2006.01); **F01D 25/32** (2006.01); **F01K 21/06** (2006.01); **F28F 13/16** (2006.01)

CPC (source: EP)

F01D 25/32 (2013.01); F05D 2220/31 (2013.01); F05D 2240/122 (2013.01); F05D 2240/304 (2013.01); F05D 2270/114 (2013.01); F05D 2270/172 (2013.01); F05D 2270/62 (2013.01)

Citation (search report)

- [XY] US 2005207880 A1 20050922 - TARELIN ANATOLY O [UA], et al
- [XY] US 3859005 A 19750107 - HUEBNER ALBERT L
- [Y] US 2002174655 A1 20021128 - TARELIN ANATOLY OLEKSIOVYCH [UA], et al

Cited by

CN103133065A; CN114776390A; IT202200000209A1; WO2015112075A1; US10082030B2

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 MK MT NL NO PL PT RO SE SI SK TR

DOCDB simple family (publication)

EP 2128386 A2 20091202; **EP 2128386 A3 20101215**; **EP 2128386 B1 20140402**; DE 102008026031 A1 20091203

DOCDB simple family (application)

EP 09161199 A 20090527; DE 102008026031 A 20080530