

Title (en)
Turbulator

Title (de)
Turbulenzerzeuger

Title (fr)
Turbulateur

Publication
EP 1486749 B1 20120606 (DE)

Application
EP 04013531 A 20040608

Priority
DE 10326381 A 20030612

Abstract (en)
[origin: EP1486749A2] In a process to heat and homogenise the temperature of a single- or two-phase fluid, the fluid passes through a tube containing a bank of vortex generators. The bank of vortex generators is a comb-like sheet metal array inclined (10-80) to the oncoming fluid flow. Also claimed is a commensurate automotive radiator or heat exchanger, and a commensurate heat exchanger or flash heat exchanger.

IPC 8 full level
F28F 13/12 (2006.01)

CPC (source: EP US)
F28F 13/12 (2013.01 - EP US); **F28D 1/05366** (2013.01 - EP US); **F28D 2021/0098** (2013.01 - EP US)

Cited by
DE102012216945A1; DE102017131418A1; WO2019129665A1; US8692016B2; EP1995545A3; US7614389B2; DE102008001435A1; WO2006100072A1; WO2010099884A1; US8696193B2; US11879694B2

Designated contracting state (EPC)
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DOCDB simple family (publication)
EP 1486749 A2 20041215; EP 1486749 A3 20090325; EP 1486749 B1 20120606; CA 2470785 A1 20041212; CN 1573274 A 20050202; DE 10326381 A1 20050105; DE 10326381 B4 20050922; JP 2005003355 A 20050106; US 2005189092 A1 20050901

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EP 04013531 A 20040608; CA 2470785 A 20040609; CN 200410071453 A 20040612; DE 10326381 A 20030612; JP 2004173797 A 20040611; US 86354904 A 20040608