

Title (en)  
HEAT EXCHANGER

Title (de)  
WÄRMETAUSCHER

Title (fr)  
ÉCHANGEUR THERMIQUE

Publication  
**EP 2119995 A4 20140514 (EN)**

Application  
**EP 08721492 A 20080306**

Priority  
• JP 2008054072 W 20080306  
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• JP 2008050600 A 20080229

Abstract (en)  
[origin: EP2119995A1] The heat exchanger includes heat transfer tubes 12, heat transfer fins 13a, which are arranged along a direction perpendicular to axes of the heat transfer tubes 12, cut-and-raised pieces 14, which are provided on a heat transfer surface of each heat transfer fin 13a. A cut, which extends along the lengthwise direction, is provided at the lower end or at the upper and lower ends of each cut-and-raised piece 14. The cuts guide condensed water generated on the surfaces of the heat transfer fins.

IPC 8 full level  
**F28F 1/32** (2006.01); **F24F 1/0063** (2019.01); **F24F 1/0067** (2019.01); **F24F 13/30** (2006.01); **F28F 9/02** (2006.01); **F28F 17/00** (2006.01)

CPC (source: EP KR US)  
**F24F 1/00** (2013.01 - KR); **F24F 1/0063** (2019.01 - EP US); **F24F 1/0067** (2019.01 - EP US); **F24F 13/30** (2013.01 - EP KR US); **F28F 1/32** (2013.01 - KR); **F28F 1/325** (2013.01 - EP US); **F28F 17/005** (2013.01 - EP US)

Citation (search report)  
• [X] JP 2001116488 A 20010427 - TOYO RADIATOR CO LTD  
• [X] JP H10332291 A 19981215 - MITSUBISHI HEAVY IND LTD  
• [X] US 5887649 A 19990330 - KIM YOUNG-SAENG [KR]  
• [X] EP 1500894 A2 20050126 - DELPHI TECH INC [US]  
• [A] JP 2001296095 A 20011026 - DAIKIN IND LTD  
• See references of WO 2008108437A1

Cited by  
DE102018131026A1

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 2119995 A1 20091118; EP 2119995 A4 20140514; EP 2119995 B1 20180502**; AU 2008221874 A1 20080912; AU 2008221874 B2 20110120; CN 101622512 A 20100106; CN 101622512 B 20130313; JP 2008249320 A 20081016; JP 5417718 B2 20140219; KR 20090122229 A 20091126; US 2010089562 A1 20100415; WO 2008108437 A1 20080912

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