

Title (en)  
HEAT EXCHANGER

Title (de)  
WÄRMETAUSCHER

Title (fr)  
ECHANGEUR DE CHALEUR

Publication  
**EP 1420222 A4 20090805 (EN)**

Application  
**EP 02749323 A 20020719**

Priority  
• JP 0207351 W 20020719  
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• US 30884801 P 20010801

Abstract (en)  
[origin: WO03008891A1] A heat exchanger, comprising a pair of hollow headers (1) and (1), a large number of tubes (3) communicably connected to the headers (1) and (1), corrugated fins (4) disposed between the tubes (3) and on the outer sides of the outermost tubes (3), and side plates (5) disposed on the outer sides of the outermost corrugated fins (4), wherein the outer peripheral shape of the cross sections of the end parts of the side plates (5) is formed in the same shape or generally in the same shape as the outer peripheral shape of the end parts of the tubes (3), and side plate fitting holes (7) and the tube fitting holes (6) provided in the headers (1) are formed in the same shape or generally in the same shape, whereby any special fitting shape must not be formed at the end parts of the side plates (5), a workability for forming the side plate fitting holes (7) and the tube fitting holes (6) in the headers (1) can be increased, a productivity can be increased, and a cost can be reduced.

IPC 8 full level  
**F28D 1/053** (2006.01); **F28F 9/00** (2006.01)

CPC (source: EP)  
**F28D 1/05391** (2013.01); **F28F 9/001** (2013.01)

Citation (search report)  
• [XY] US 5265672 A 19931130 - AOKI HISAO [JP]  
• [X] GB 2356923 A 20010606 - DELPHI TECH INC [US]  
• [Y] US 5732767 A 19980331 - SAPERSTEIN ZALMAN PHILIP [US]  
• [YA] EP 0882940 A2 19981209 - MITSUBISHI HEAVY IND LTD [JP]  
• [Y] JP H0387063 U 19910904  
• [A] JP H04340093 A 19921126 - NIPPON DENSO CO  
• See references of WO 03008891A1

Cited by  
US10401097B2

Designated contracting state (EPC)  
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DOCDB simple family (publication)  
**WO 03008891 A1 20030130**; AU 2002320794 B2 20070830; CN 1531641 A 20040922; EP 1420222 A1 20040519; EP 1420222 A4 20090805; JP 4272055 B2 20090603; JP WO2003008891 A1 20041111

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**JP 0207351 W 20020719**; AU 2002320794 A 20020719; CN 02814358 A 20020719; EP 02749323 A 20020719; JP 2003514191 A 20020719