

Title (en)
HEAT EXCHANGER

Publication
EP 0328414 A3 19890927 (EN)

Application
EP 89301310 A 19890210

Priority
• GB 8803300 A 19880212
• GB 8810796 A 19880506

Abstract (en)
[origin: EP0328414A2] A heat exchanger (1), e.g. an evaporator for a vehicle air conditioning system, comprises a plurality of finned U-shaped tubes (3) having free ends (3a, 3b) permanently fixed, e.g. adhesively bonded, to an end plate assembly formed of a number of end plate means (6-9) defining connecting channels (10) connecting together pairs of free ends of the tubes (3) to provide at least one flow channel for heat exchange fluid. The end plate means (6-9) are permanently united, e.g. adhesively bonded, together to form with the end portions of the U-shaped tubes (3) a permanently united integral end plate assembly.

IPC 1-7
F28F 9/02; **F28F 9/26**; **F25B 39/02**

IPC 8 full level
F25B 39/02 (2006.01); **F28F 9/02** (2006.01); **F28F 9/16** (2006.01); **F28F 9/26** (2006.01)

CPC (source: EP)
F25B 39/028 (2013.01); **F28F 9/0202** (2013.01); **F28F 9/0229** (2013.01); **F28F 9/162** (2013.01); **F28F 9/26** (2013.01); **F28D 2021/0085** (2013.01)

Citation (search report)
• [X] EP 0228330 A1 19870708 - CHAUSSON USINES SA [FR]
• [X] US 4114397 A 19780919 - TAKAHASHI REIJIRO, et al
• [Y] EP 0140069 A2 19850508 - AKZO GMBH [DE]
• [Y] DE 3310236 A1 19840927 - AUTOKUEHLER GES MBH [DE]
• [X] FR 2573190 A1 19860516 - CHAUSSON USINES SA [FR]
• [X] DE 2300881 A1 19730906 - MODINE MFG CO
• [Y] US 3151676 A 19641006 - OTTO HOWARD R, et al
• [A] DE 1077681 B 19600317 - IDEAL STANDARD
• [A] US 2310234 A 19430209 - HAUG JOHN S
• [A] EP 0172659 A1 19860226 - GEN MOTORS CORP [US]
• [A] US 4421160 A 19831220 - STAFFORD DONALD C [US], et al
• [A] US 4698904 A 19871013 - NOZAWA YOSHIO [JP], et al

Cited by
US6273180B1; NL1025784C2; FR2898405A1; GB2258722A; EP2026028A3; FR2794227A1; CN109027432A; EP0421955A1; US5245843A; EP0497339A3; EP1014026A3; US8590607B2; WO2007101817A1

Designated contracting state (EPC)
AT BE DE ES FR GB IT NL SE

DOCDB simple family (publication)
EP 0328414 A2 19890816; **EP 0328414 A3 19890927**

DOCDB simple family (application)
EP 89301310 A 19890210