

Title (en)  
HEAT EXCHANGER

Title (de)  
WÄRMETAUSCHER

Title (fr)  
ÉCHANGEUR THERMIQUE

Publication  
**EP 2294350 A1 20110316 (DE)**

Application  
**EP 09761401 A 20090529**

Priority  
• EP 2009003847 W 20090529  
• DE 102008027551 A 20080610  
• DE 102008052590 A 20081021

Abstract (en)  
[origin: WO2009149838A1] The invention relates to a heat exchanger, especially to a heat exchanger for a motor vehicle, comprising a plurality of tubes (2), at least one collecting tube (3) with a wall (8) and openings (13) in the wall (8), supports (7) protruding from the wall (8) in the axial direction of the openings (13) being formed at the openings (13), wherein the tubes (2) in the region of one end (11) of the tubes (2) are disposed partly at the supports (7) and a fluid-tight connection exists between the supports (7) and the tubes (2), so that a fluid can be passed through the tubes (2) and the at least one collecting tube (3), and at least one inlet opening (5) for passing the fluid in and at least one outlet opening (6) for passing the fluid out. The mechanical stability between the tubes (2) and the at least one collecting tube (3) is to be improved. This objective is accomplished owing to the fact that the thickness (16) of the supports (7) is less than the thickness (17) of the wall (8), especially in the region of the openings (13) of the collecting tube (3).

IPC 8 full level  
**F28F 9/04** (2006.01); **F28F 9/18** (2006.01)

CPC (source: EP US)  
**F28F 9/04** (2013.01 - EP US); **F28F 9/18** (2013.01 - EP US); **Y10T 29/49389** (2015.01 - EP US)

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

Designated extension state (EPC)  
AL BA RS

DOCDB simple family (publication)  
**DE 102009022983 A1 20091217**; BR PI0915002 A2 20151027; CN 102057245 A 20110511; EP 2294350 A1 20110316; EP 2294350 B1 20210331; JP 2011523998 A 20110825; RU 2010153607 A 20120720; US 2011139424 A1 20110616; WO 2009149838 A1 20091217

DOCDB simple family (application)  
**DE 102009022983 A 20090528**; BR PI0915002 A 20090529; CN 200980121990 A 20090529; EP 09761401 A 20090529; EP 2009003847 W 20090529; JP 2011512861 A 20090529; RU 2010153607 A 20090529; US 96546110 A 20101210