

Title (en)  
FLAT TUBE AND PROCESS FOR PRODUCING HEAT EXCHANGER WITH USE OF THE FLAT TUBE

Title (de)  
FLACHROHR UND VERFAHREN ZUR HERSTELLUNG EINES WÄRMETAUSCHERS UNTER VERWENDUNG DES FLACHEN ROHRS

Title (fr)  
TUBE PLAT ET PROCEDE DE PRODUCTION D'UN ECHANGEUR DE CHALEUR COMPRENANT LEDIT TUBE PLAT

Publication  
**EP 1546628 A4 20120111 (EN)**

Application  
**EP 03784642 A 20030811**

Priority  
• JP 0310196 W 20030811  
• JP 2002232854 A 20020809  
• US 40412702 P 20020819

Abstract (en)  
[origin: WO2004015350A1] A flat tube 1 comprises an upper wall 2, a lower wall 3, left and right side walls 4, 5 interconnecting the upper and lower walls 2, 3 at respective left and right side edges thereof, and a plurality of reinforcing walls 6 interconnecting the upper and lower walls 2, 3 and positioned between the left and right side walls 4, 5. The tube 1 has parallel fluid channels 7 inside thereof, and each of the reinforcing walls 6 has communication holes 8 for holding the adjacent fluid channels 7 in communication with each other therethrough. The reinforcing wall 6 is formed from a downward ridge 11 integral with the upper wall 2 and an upward ridge 12 integral with the lower wall 3, by brazing the two ridges to each other. Only one of the downward ridge 11 and the upward ridge 12 forming the reinforcing wall 6 is provided with a plurality of cutouts 13, 14. The openings of the cutouts 13, 14 are closed with the other ridge 11, 12 having no cutouts to thereby form the communication holes 8. The ridges 11, 12 forming the reinforcing wall 6 are brazed with an enhanced strength.

IPC 8 full level  
**F28D 1/03** (2006.01); **F28D 1/053** (2006.01); **F28F 1/02** (2006.01); **F28F 1/04** (2006.01)

CPC (source: EP KR US)  
**F28D 1/0391** (2013.01 - EP US); **F28D 1/053** (2013.01 - KR); **F28F 1/022** (2013.01 - EP US); **F28F 1/045** (2013.01 - EP US); **F28F 2225/04** (2013.01 - EP US); **F28F 2250/04** (2013.01 - EP US)

Citation (search report)  
• [A] US 5749144 A 19980512 - HIRANO HIROSABURO [JP], et al  
• See references of WO 2004015350A1

Designated contracting state (EPC)  
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PT RO SE SI SK TR

DOCDB simple family (publication)  
**WO 2004015350 A1 20040219**; AU 2003253435 A1 20040225; CN 100357697 C 20071226; CN 1682085 A 20051012; EP 1546628 A1 20050629; EP 1546628 A4 20120111; KR 20050061454 A 20050622; US 2006162919 A1 20060727

DOCDB simple family (application)  
**JP 0310196 W 20030811**; AU 2003253435 A 20030811; CN 03821334 A 20030811; EP 03784642 A 20030811; KR 20057002304 A 20050207; US 52339405 A 20050203