

Title (en)

Flat tube for heat exchanger with inner fin inserted therein.

Title (de)

Flachrohr für Wärmetauscher mit eingesetzter Rippe.

Title (fr)

Tube plat pour échangeur de chaleur à ailette insérée.

Publication

EP 0283937 A1 19880928 (EN)

Application

EP 88104268 A 19880317

Priority

- JP 4391187 U 19870325
- JP 9779387 U 19870624

Abstract (en)

Aluminum flat tube for heat exchanger with an inner fin inserted therein, comprising a pair of aluminum plate members (20) with both side portions bent like a hook in the same direction to form bends (21), both nose portions formed flat, both the flat portions (22) made opposite on the same horizontal line, and with a brazing material clad at least on the outer surface, an inner fin (30) inserted when the pair of aluminum plate members (20) are put together to a flat tube (10), wherein said pair of aluminum plate members (20) are put together to have the inner fin (30) inserted therein, and then brazed with the flat portions of the bends (21) joined therefor.

IPC 1-7

F28F 3/02; **F28D 1/03**

IPC 8 full level

F28D 1/03 (2006.01); **F28F 3/02** (2006.01)

CPC (source: EP)

F28D 1/0316 (2013.01); **F28D 1/0391** (2013.01); **F28F 3/025** (2013.01); **F28F 2275/04** (2013.01)

Citation (search report)

- [X] US 3212572 A 19651019 - OTTO HOWARD R
- [X] US 2959401 A 19601108 - BURTON JAMES C
- [Y] US 2912749 A 19591117 - BAUERNFEIND NORMAN G, et al
- [Y] GB 780045 A 19570731 - MORRIS MOTORS LTD
- [A] GB 2133525 A 19840725 - NIPPON DENSO CO
- [Y] PATENT ABSTRACTS OF JAPAN, vol. 10, no. 118 (M-475)[2175], 2nd May 1986; & JP-A-60 247 426 (SHIYOUWA ARUMINIUMU K.K.) 07-12-1985
- [A] PATENT ABSTRACTS OF JAPAN, vol. 9, no. 268 (M-424)[1991], 25th October 1985; & JP-A-60 114 698 (NIPPON DENSO K.K.) 21-06-1985

Cited by

US7506681B2; EP0704667A3; EP1065466A3; EP1281923A3; CN102116591A; DE102006006670B4; CN106767093A; EP0795732A3; EP0907062A4; US5931226A; CN111094886A; CN100394134C; DE10201511A1; EA009344B1; US5638897A; US5730215A; US5749144A; EP0490210A1; EP0457470A1; US5386629A; EP1139052A3; US5784776A; US5369883A; US5538077A; US7517501B2; WO2015132482A1; WO2012160267A1; US11421944B2; US8726508B2; WO2004040219A1; EP2635866A2; EP1243884B1

Designated contracting state (EPC)

DE FR GB IT

DOCDB simple family (publication)

EP 0283937 A1 19880928

DOCDB simple family (application)

EP 88104268 A 19880317