

Title (en)
GROOVED TUBES FOR HEAT EXCHANGERS USED IN AIR CONDITIONING AND COOLING APPARATUSES, AND CORRESPONDING EXCHANGERS

Title (de)
RIPPENRÖHRE FÜR WÄRMETAUSCHER FÜR KLIMA UND KÜHLUNGSANLAGEN UND ENTSPRECHENDE WÄRMETAUSCHER

Title (fr)
TUBES RAINURES POUR ECHANGEURS THERMIQUES D'APPAREILS DE CONDITIONNEMENT D'AIR ET DE REFRIGERATION, ET ECHANGEURS CORRESPONDANTS

Publication
EP 0701680 B1 19970108 (FR)

Application
EP 94917707 A 19940602

Priority
• FR 9400646 W 19940602
• FR 9307021 A 19930607

Abstract (en)
[origin: US5692560A] PCT No. PCT/FR94/00646 Sec. 371 Date Jan. 5, 1996 Sec. 102(e) Date Jan. 5, 1996 PCT Filed Jun. 2, 1994 PCT Pub. No. WO94/29661 PCT Pub. Date Dec. 22, 1994 Tube (1) internally grooved by helicoidal ribs (2) having a helix angle of 5 DEG to 50 DEG , an apex angle (alpha) of 30 DEG to 60 DEG . The tube is characterized in that the ribs (2) form a periodic profile comprising at least two ribs of different heights, one designated high (2h) of a height Hh, and the other designated low (2b) of a height Hb, with a ratio Hb/Hh of 0.40 to 0.97, each high rib being bordered by a flat-bottomed groove (3).

IPC 1-7
F28F 1/42

IPC 8 full level
F28F 1/40 (2006.01); **F28F 1/42** (2006.01)

CPC (source: EP KR US)
F28F 1/40 (2013.01 - EP US); **F28F 1/42** (2013.01 - EP KR US); **F28F 1/422** (2013.01 - EP US); **Y10S 165/525** (2013.01 - EP US)

Cited by
US7267166B2; FR2837270A1; FR2855601A1

Designated contracting state (EPC)
BE DE ES GB GR IE IT LU NL SE

DOCDB simple family (publication)
US 5692560 A 19971202; AU 677850 B2 19970508; AU 6932194 A 19950103; BR 9406753 A 19960227; CA 2164515 A1 19941222; CA 2164515 C 19990907; CN 1065044 C 20010425; CN 1125000 A 19960619; DE 69401434 D1 19970220; DE 69401434 T2 19970528; EP 0701680 A1 19960320; EP 0701680 B1 19970108; ES 2096473 T3 19970301; FR 2706197 A1 19941216; FR 2706197 B1 19950728; GR 3022274 T3 19970430; IL 109752 A0 19940826; IL 109752 A 19981030; KR 100300237 B1 20011122; KR 960702900 A 19960523; MY 110604 A 19980829; SA 94150259 B1 20051226; WO 9429661 A1 19941222

DOCDB simple family (application)
US 54980896 A 19960105; AU 6932194 A 19940602; BR 9406753 A 19940602; CA 2164515 A 19940602; CN 94192366 A 19940602; DE 69401434 T 19940602; EP 94917707 A 19940602; ES 94917707 T 19940602; FR 9307021 A 19930607; FR 9400646 W 19940602; GR 970400045 T 19970115; IL 10975294 A 19940524; KR 19950705417 A 19951201; MY PI19941390 A 19940602; SA 94150259 A 19941023