Title (en)
Heat exchange tube with twisted inner fins

Title (de)
Wärmeübertragungsrohr mit gedrallten Innenrippen

Title (fr)
Tube d'échange de chaleur avec ailettes intérieures tordues

Publication
EP 1178278 A3 20040107 (DE)

Application
EP 01117802 A 20010721

Priority
DE 10038624 A 20000803

Abstract (en)
[origin: EP1178278A2] The heat transfer pipe (1), with a number of internal spiral ribs (2) in a symmetrical twist around the longitudinal axis (5), has a gap between the free ends (2c) of the ribs and the axis. The ratio of the gap to the inner diameter of the pipe is 1:12 to 1:3. The spiral ribs all have a twist in the same direction (6) and have the same twist length (L). The ribs have the shape of an equilateral triangle or a tooth. The pipe is of metal or plastics.

IPC 1-7
F28F 1/40

IPC 8 full level
F28F 1/40 (2006.01); F28F 13/12 (2006.01)

CPC (source: EP US)
F28F 1/40 (2013.01 - EP US); F28F 13/12 (2013.01 - EP US); F28F 2255/16 (2013.01 - EP US); Y10S 165/524 (2013.01 - EP US)

Citation (search report)
- [XY] DE 9203670 U1 19920521
- [X] US 4154296 A 19790515 - FIJAS DAVID F [US]
- [X] US 5655599 A 19970812 - KASPRZYK MARTIN R [US]
- [X] DE 2232079 A1 19730111 - ATOMIC ENERGY AUTHORITY UK
- [Y] PATENT ABSTRACTS OF JAPAN vol. 1999, no. 01 29 January 1999 (1999-01-29)
- [A] PATENT ABSTRACTS OF JAPAN vol. 014, no. 545 (M - 1054) 4 December 1990 (1990-12-04)

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CN111256211A; CN112948970A

Designated contracting state (EPC)
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR

DOCDB simple family (publication)
EP 1178278 A2 20020206; EP 1178278 A3 20040107; EP 1178278 B1 20051130; AT E311581 T1 20051215; DE 10038624 A1 20020221; DE 10038624 C2 20021121; DE 50108221 D1 20060105; DK 1178278 T3 20060403; US 2002014328 A1 20020207; US 6533030 B2 20030318

DOCDB simple family (application)
EP 01117802 A 20010721; AT 01117802 T 20010721; DE 10038624 A 20000803; DE 50108221 T 20010721; DK 01117802 T 20010721; US 91124801 A 20010723