

Title (en)

COOLING TUBES, AND PROCESS AND DEVICE FOR THEIR MANUFACTURE

Publication

**EP 0248222 A3 19880127 (DE)**

Application

**EP 87106508 A 19870505**

Priority

DE 3615300 A 19860506

Abstract (en)

[origin: EP0248222A2] Extruded or drawn cooling tubes for countercurrent, parallel-flow and/or cross-flow coolers having continuous and half webs associated with the formation of smooth channels between the continuous webs for the passage of a medium, the cross-section of the passage channels being varied by means of the knobs applied from the outside to the cooling tube jacket (2). <IMAGE>

IPC 1-7

**F28F 1/10; F28F 1/16; F28F 1/02; B21C 23/10**

IPC 8 full level

**F28F 1/40** (2006.01); **B21D 53/06** (2006.01); **F28F 1/02** (2006.01); **F28F 1/42** (2006.01); **F28F 3/04** (2006.01)

CPC (source: EP)

**F28F 1/022** (2013.01); **F28F 3/044** (2013.01); **F28F 3/048** (2013.01); **F28D 2021/0049** (2013.01); **F28D 2021/0082** (2013.01);  
**F28F 2255/16** (2013.01)

Citation (search report)

- [X] US 3596495 A 19710803 - HUGGINS HOMER D
- [Y] GB 2090651 A 19820714 - PENTAGON RADIATOR STAFFORD LTD
- [Y] DE 3406122 A1 19850822 - WILKE HARRI WERKZEUGBAU [DE]
- [Y] US 3635614 A 19720118 - LONG ALFRED R, et al
- [Y] DE 8530313 U1 19851205
- [Y] GB 2159265 A 19851127 - SMITH ERIC
- [A] FR 1488032 A 19670707 - GLACIER CO LTD
- [A] PATENT ABSTRACTS OF JAPAN, Band 7, Nr. 227 (M-248)[1372], 7. Oktober 1983; & JP-A-58 119 842 (INA SEITOU K.K.) 16-07-1983

Cited by

EP2336697A3; EP0622602A3; EP0907061A3; GB2284471A; GB2284471B; EP1253391A1; EP3553449A1; EP0693171A4; EP3553447A1;  
US11391523B2; WO0045102A1; WO2018019484A1; WO2007027318A1; WO2006135942A3

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