

Title (en)  
Heat exchanger

Title (de)  
Wärmetauscher

Title (fr)  
Echangeur de chaleur

Publication  
**EP 0823610 A1 19980211 (EN)**

Application  
**EP 96202233 A 19960808**

Priority  
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Abstract (en)

Heat exchanger, comprising a group of tubes secured to a pack of fins by means of mechanical expansion of the tubes following their insertion in holes aligned in the fins, the tubes having an oblong cross-section without any flat walls, wherein a first ratio between the maximum dimension (b) and the minimum dimension (a) of the cross-section, is of between 2.80 and 5.20 and a second ratio between the maximum dimension (b) of the cross-section and the thickness (s) of the tube is between 15 and 38; and wherein the wall thickness of the tube fulfils the equation <MATH> wherein S3 and S4 are the wall thickness in the area of the tube with the smallest radius, and S1 and S2 are the wall thickness in the area of the tube with the largest radius. <IMAGE>

IPC 1-7  
**F28F 1/32; F28F 1/02**

IPC 8 full level  
**F28F 1/02** (2006.01); **F28F 1/32** (2006.01)

CPC (source: EP)  
**F28F 1/02** (2013.01); **F28F 1/32** (2013.01); **F28F 2275/125** (2013.01)

Citation (search report)

- [A] US 3239002 A 19660308 - MATTHEW YOUNG FRED
- [DA] EP 0633435 A1 19950111 - BORLETTI CLIMATIZZAZIONE [IT]
- [A] FR 2269053 A1 19751121 - CHAUSSON USINES SA [FR]
- [A] FR 2406794 A1 19790518 - VOLKSWAGENWERK AG [DE]

Cited by  
WO9853265A1

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**EP 0823610 A1 19980211**; AU 3768697 A 19980306; WO 9806995 A1 19980219

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