

Title (en)
HEAT EXCHANGERS

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Application
EP 86308754 A 19861111

Priority
GB 8528806 A 19851122

Abstract (en)
[origin: EP0223534A2] A heat exchanger tube (Figure 9) has an insert to increase the heat exchange surface area made from a strip of metal foil, which is first transversely corrugated, is then modified to provide an outward bulge on each flank of each corrugation, and is then rolled transversely to a generally star shape and inserted axially into the tube. A series of such inserts are posted into the tube one after the other.

IPC 1-7
B21C 37/22; B21D 53/08

IPC 8 full level
B21C 37/22 (2006.01); **B21C 37/24** (2006.01); **F28F 1/10** (2006.01)

CPC (source: EP)
B21C 37/22 (2013.01); **B21C 37/24** (2013.01); **F28F 1/105** (2013.01)

Citation (search report)
• [X] US 3158122 A 19641124 - DE GIVE LOUIS P
• [X] US 4163474 A 19790807 - MACDONALD ROBERT D [US], et al
• [XD] US 3831247 A 19740827 - DEGROOTE R
• [A] US 4419802 A 19831213 - RIESE W A [US]
• [A] US 3474513 A 19691028 - ALLINGHAM WILLIAM D
• [A] CH 309256 A 19550831 - ESCHER WYSS AG [CH]

Cited by
WO2009042274A1; WO9850693A1; US8376034B2

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