

Title (en)  
Evaporator

Title (de)  
Verdampfer

Title (fr)  
Evaporateur

Publication  
**EP 0838641 A2 19980429 (EN)**

Application  
**EP 97118435 A 19971023**

Priority  
JP 28235996 A 19961024

Abstract (en)  
An evaporator (1) comprises at least one evaporator unit (1A) including a pair of headers (2,3) arranged one above the other in parallel and spaced apart by a distance, and parallel refrigerant tubes (4) having a width oriented in a front-rear direction and opposite ends joined to the respect headers (2,3). The refrigerant tubes (4) are each in the form of a flat tube (17) comprising flat left and right walls (11,12), front and rear walls (13,14) positioned between and joined to front and rear side edges of the left and right walls (11,12), and a plurality of reinforcing walls (15) positioned between and joined to the left and right walls (11,12), extending longitudinally thereof and arranged at a predetermined interval between the front and rear walls (13,14), the flat tube (17) having parallel refrigerant channels (16) inside thereof. The reinforcing walls (15) are formed with a plurality of communication holes (19) for causing the parallel refrigerant channels (16) to communicate with one another. The flat tube (17) is formed by a platelike left component (21) having a left wall forming portion (23) and a platelike right component (22) having a right wall forming portion (28). The front and rear walls (13,14) of the flat tube (17) comprise rightward projecting walls (24) projecting rightward from the respective front and rear side edges of the left component (21) integrally therewith and brazed to the right component (22) and leftward projecting walls (29) projecting leftward from the respective front and rear side edges of the right component (22) integrally therewith and brazed to the left component (20). The reinforcing walls (15) of the flat tube each comprise a reinforcing wall forming portion (25) projecting inward from the left wall forming portion (23) of the left component (21) and having an outer end brazed to the right wall (28) forming portion of the other component (22).

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IPC 8 full level  
**F24F 1/028** (2019.01); **B60H 1/00** (2006.01); **F24F 1/02** (2011.01); **F25B 39/02** (2006.01); **F28D 1/03** (2006.01); **F28F 3/04** (2006.01); **F28F 9/26** (2006.01)

CPC (source: EP KR)  
**F25B 5/02** (2013.01 - KR); **F25B 39/022** (2013.01 - EP); **F28D 1/0316** (2013.01 - EP); **F28F 3/048** (2013.01 - EP); **F28F 9/262** (2013.01 - EP)

Citation (applicant)  
JP H03230064 A 19911014 - SHOWA ALUMINUM CORP

Cited by  
FR3076604A1; EP3279599A4; CN103221773A; AU740183B2; CN104335000A; DE10220533B4; DE102009021796A1; EP2253493A3; US2016298886A1; EP3021064A4; FR2793013A1; FR3126763A1; US6938685B2; US6523606B1; WO2009043288A1; WO2019134967A1; WO0006964A1; WO2012068200A1; WO2007037670A1; CN113167512A; EP3901536A4; US11885512B2; TWI631308B; WO2023030974A1

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