

Title (en)
DUPLEX HEAT EXCHANGER

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Application
EP 90308921 A 19900814

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JP 21795989 A 19890823

Abstract (en)
[origin: EP0643278A2] An evaporator comprising a plurality of unit heat exchangers (A, B) each of which has a circuit formed therethrough for a heat exchanging medium and a connecting means (220, 230) for connecting the circuits in fluid communication with each other, each of the unit heat exchangers comprising a plurality of tubes (1) arranged in parallel with each other, a plurality of fins (2) each interposed between the two adjacent tubes (1) and a pair of hollow headers (3, 23 and 4, 24) to which both ends of each tube (1) are connected in fluid communication. The unit heat exchangers (A, B) are arranged fore and aft in a direction of air flow so that one of them faces windward, with the other lying leeward and unit air flow paths are defined between the adjacent tubes (1) and separated by the fins (2), such that a cross-sectional area of each unit air flow path in the leeward unit heat exchanger is larger than that in the windward one, whereby an amount of condensed water on the leeward unit heat exchanger is prevented from being scattered therefrom. <IMAGE>

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Citation (search report)
• JP S6334466 A 19880215 - SHOWA ALUMINUM CORP
• US 4190105 A 19800226 - DANKOWSKI GERHARD [US]
• US 3229760 A 19660118 - ANDREW HURTER DONALD, et al
• DE 2423440 A1 19751120 - SUEDDEUTSCHE KUEHLER BEHR
• US 4531574 A 19850730 - HOCH JOHN J [US]
• EP 0401752 A2 19901212 - THERMAL WAERME KÄLTE KLIMA [DE]

Cited by
EP0563471A1; CN103471439A; EP1568960A3; DE10241635A1; DE9400687U1; CN107036465A; DE19719252A1; DE19719252C2;
FR2681419A1; EP1331463A3; EP1881288A1; FR2682160A1; EP0702200A3; US5622219A; US5685366A; US5901782A; CN12664323A;
EP3141859A1; EP3572743A4; DE102005040607A1; EP0657315A1; EP0516413A1; US5379834A; DE1975886B4; EP0754579A3;
EP0769665A3; US2017347526A1; US1047771B2; EP4092369A1; US7392837B2; WO9850745A1; US7650934B2; US11274838B2;
WO2012041441A2; WO2004053411A1; WO03040640A1; WO2005050115A1; WO0161263A1; WO2005066565A1; WO2005075913A1;
EP1070929A2; DE202010000951U1; US11280551B2; US11624564B2; US8091617B2; EP2430385B1; EP0677716B1

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