

Title (en)

HEAT EXCHANGER HAVING HELICALLY COILED TUBES PROVIDED WITH MEANS FOR TUBE SUPPORTING

Publication

**EP 0197812 B1 19890111 (FR)**

Application

**EP 86400497 A 19860310**

Priority

FR 8503756 A 19850314

Abstract (en)

[origin: EP0197812A1] 1. Heat exchanger having tubes (18), support plates (30) with perforations (32, 132) traversed by the tubes and frustum-shaped securing bushes (24, 124), at least one of these bushes being placed around each tube in a perforation (32, 132) formed in a corresponding support plate (30) and crimped on said support plate, characterized in that the tubes (18) are helically wound in successive layers about a common axis (x, x'), each layer of tubes (18) traversing a row of perforations (32, 132) formed in a different support plate (30), the said perforations (32, 132) being radially open (31) with respect to said axis (x, x') over a width slightly exceeding the external diameter of the tubes (18), connecting parts (38, 138, 238) being placed between the support plates of two layers of successive tubes, said parts allowing a relative displacement between the plates in a radial direction (y, y') with respect to said axis (x, x') whilst still providing a relative securing effect between the plates in a transverse direction (z, z') orthogonal to said axis (x, x') and to said radial direction (y, y').

IPC 1-7

**F28F 9/00**; **F28D 7/00**

IPC 8 full level

**F28D 7/02** (2006.01); **F28D 7/16** (2006.01); **F28F 9/00** (2006.01); **F28F 9/013** (2006.01)

CPC (source: EP)

**F28D 7/028** (2013.01); **F28F 9/0132** (2013.01); **F28D 2021/0054** (2013.01)

Cited by

CN106767105A; GB2456628A; GB2456628B; US2020263937A1; US11047631B2

Designated contracting state (EPC)

BE CH DE FR GB IT LI NL

DOCDB simple family (publication)

**EP 0197812 A1 19861015**; **EP 0197812 B1 19890111**; DE 3661777 D1 19890216; FR 2578967 A1 19860919; FR 2578967 B1 19890707; JP S61213496 A 19860922

DOCDB simple family (application)

**EP 86400497 A 19860310**; DE 3661777 T 19860310; FR 8503756 A 19850314; JP 5514586 A 19860314