

Title (en)

ENERGY EXCHANGE DEVICE BETWEEN MEDIA WITH IMPROVED STRUCTURE AND PERFORMANCES

Title (de)

ENERGIEAUSTAUSCHVORRICHTUNG ZWISCHEN MEDIEN MIT VERBESSERTER STRUKTUR UND LEISTUNG

Title (fr)

DISPOSITIF D'ÉCHANGE D'ÉNERGIE ENTRE MILIEUX À STRUCTURE ET PERFORMANCES AMÉLIORÉES

Publication

EP 4090901 A1 20221123 (EN)

Application

EP 21702712 A 20210111

Priority

- RS P20200036 A 20200113
- IB 2021050174 W 20210111

Abstract (en)

[origin: WO2021144682A1] The present invention provides a design solution for a heat exchanger device that improves thermal performances, easily controls essential parameters of the working fluids, is easy to manufacture, use and maintain, suitable for application in a variety of commercial, residential premises, and various industries. The present invention is characterized by the structure of the counterflow and crossflow heat exchanger, made by winding helical coil tubes (201,202,203,204,205,206,207,208,289,290) successively through structural reinforcements (300,301,302,303,304, 305,306,307,308,389,390), that are an integral part of the heat exchanger core (200) and that enable a stepwise/zigzag arrangement of coils, and the arrangement of tubes of each coil exactly in the middle position and at the same distance (320) between the tubes of adjacent coils, and together they make the heat exchanger surface. Structural reinforcements (300,301,302,303,304,305,306,307,308,389,390) are made so that their inner (291) and outer edge (292) correspond to the required coil pitch (600), and that their inner edge (291) additionally follows the thread angle of the coil on which they are placed (292), and the outer edge follows the thread angle of the next coil.

IPC 8 full level

F28D 7/04 (2006.01); **F28F 9/02** (2006.01); **F28F 13/06** (2006.01)

CPC (source: EP)

F28D 7/04 (2013.01); **F28F 9/0243** (2013.01); **F28F 9/0265** (2013.01); **F28F 13/06** (2013.01); **F28F 2225/04** (2013.01)

Citation (search report)

See references of WO 2021144682A1

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

Designated validation state (EPC)

KH MA MD TN

DOCDB simple family (publication)

WO 2021144682 A1 20210722; EP 4090901 A1 20221123; RS 20200036 A1 20210730

DOCDB simple family (application)

IB 2021050174 W 20210111; EP 21702712 A 20210111; RS P20200036 A 20200113