

Title (en)

Tubular heat exchanger with bellows compensator

Title (de)

Röhrenwärmetauscher mit Faltenbalg-Kompensator

Title (fr)

Echangeur thermique tubulaire avec compensateur de soufflet

Publication

EP 2299226 A3 20161207 (DE)

Application

EP 10171887 A 20100804

Priority

DE 102009040560 A 20090908

Abstract (en)

[origin: EP2299226A2] The heat exchanger (W) has an inner tube (3) for treating fluid food products. A thermal expansion compensation device (K) is provided for a casing tube (1) and/or the inner tube, and has a surface (12) contactable by the product to be treated. The surface is provided at a bellows (C) that is integrated into the casing- and/or inner tubes and has folds (F) rotating around a tube axis. Each of the folds at the surface is formed with a radial depth and an axial breadth with ratio of 1 or greater than 1.

IPC 8 full level

F28D 7/10 (2006.01); **F28D 7/16** (2006.01); **F28F 1/08** (2006.01)

CPC (source: EP US)

F28D 7/10 (2013.01 - EP US); **F28D 7/16** (2013.01 - EP US); **F28F 1/08** (2013.01 - EP US); **F28D 2021/0042** (2013.01 - EP US); **F28F 2265/26** (2013.01 - EP US)

Citation (search report)

- [Y] DE 3602608 A1 19870730 - WAHLER GMBH & CO GUSTAV [DE]
- [Y] WO 2004092638 A1 20041028 - BELMAN PRODUCTION AS [DK], et al
- [Y] US 4186779 A 19800205 - WAGNER WILLIAM T [US]
- [A] US 3817319 A 19740618 - KAUDER K

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 SE SI SK SM TR

Designated extension state (EPC)

BA ME RS

DOCDB simple family (publication)

EP 2299226 A2 20110323; **EP 2299226 A3 20161207**; **EP 2299226 B1 20191113**; BR PI1003503 A2 20151020; CN 102012178 A 20110413; DE 102009040560 A1 20110310; DK 2299226 T3 20200217; ES 2760913 T3 20200518; US 2011056653 A1 20110310

DOCDB simple family (application)

EP 10171887 A 20100804; BR PI1003503 A 20100906; CN 201010278954 A 20100908; DE 102009040560 A 20090908; DK 10171887 T 20100804; ES 10171887 T 20100804; US 87534110 A 20100903