

Title (en)

TUBE BUNDLE FOR SHELL-AND-TUBE HEAT EXCHANGER AND A METHOD OF USE

Title (de)

ROHRBÜNDEL FÜR RÖHRENWÄRMEAUSTAUSCHER SOWIE VERFAHREN ZUR VERWENDUNG

Title (fr)

FAISCEAU TUBULAIRE POUR ÉCHANGEUR DE CHALEUR À ENVELOPPE ET TUBE ET PROCÉDÉ D'UTILISATION

Publication

EP 2972041 A4 20170201 (EN)

Application

EP 14763903 A 20140131

Priority

- US 201313828422 A 20130314
- US 2014014239 W 20140131

Abstract (en)

[origin: US2014262172A1] A tube bundle is provided for a shell-and-tube heat exchanger. The tube bundle includes a plurality of elongated tubes, each of which has an intermediate portion that has a cross section in the form of a flattened circle with at least one axis of symmetry. The tubes are arranged in concentric circles with the axis of symmetry extending tangentially to the circle to facilitate rotational flow of a shell-side fluid.

IPC 8 full level

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

CPC (source: EP US)

F28D 7/1684 (2013.01 - EP US); **F28F 1/025** (2013.01 - EP US); **F28F 2009/222** (2013.01 - EP US); **F28F 2009/224** (2013.01 - EP US); **F28F 2009/226** (2013.01 - EP US)

Citation (search report)

- [XY] US 3400758 A 19680910 - SUK LEE MAN
- [Y] US 4836276 A 19890606 - YAMANAKA YASUTOSHI [JP], et al
- [A] US 5644842 A 19970708 - COLEMAN RICK L [US]
- See references of WO 2014143435A1

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

DOCDB simple family (publication)

US 2014262172 A1 20140918; CA 2904471 A1 20140918; CN 105431702 A 20160323; EP 2972041 A1 20160120; EP 2972041 A4 20170201; HK 1216661 A1 20161125; KR 20150126677 A 20151112; WO 2014143435 A1 20140918

DOCDB simple family (application)

US 201313828422 A 20130314; CA 2904471 A 20140131; CN 201480014929 A 20140131; EP 14763903 A 20140131; HK 16104482 A 20160419; KR 20157028145 A 20140131; US 2014014239 W 20140131