

Title (en)
TUBE CONFIGURATION FOR A HEAT EXCHANGER, HEAT EXCHANGER INCLUDING THE TUBE CONFIGURATION, FLUID HEATING SYSTEM INCLUDING THE SAME, AND METHODS OF MANUFACTURE THEREOF

Title (de)
ROHRKONFIGURATION FÜR EINEN WÄRMETAUSCHER, WÄRMETAUSCHER MIT DER ROHRKONFIGURATION, FLÜSSIGKEITERHITZUNGSSYSTEM DAMIT UND VERFAHREN ZUR HERSTELLUNG DAVON

Title (fr)
CONFIGURATION TUBULAIRE POUR ÉCHANGEUR DE CHALEUR, ÉCHANGEUR DE CHALEUR COMPORTANT LA CONFIGURATION TUBULAIRE, SYSTÈME DE CHAUFFAGE DE FLUIDE COMPORTANT LEDIT ÉCHANGEUR, ET LEURS PROCÉDÉS DE FABRICATION

Publication
EP 3405731 A4 20191106 (EN)

Application
EP 17742012 A 20170120

Priority
• US 201662286099 P 20160122
• US 201662360711 P 20160711
• US 2017014340 W 20170120

Abstract (en)
[origin: WO2017127681A1] A heat exchanger tube assembly comprising a first tube sheet, a second tube sheet opposite the first sheet, a plurality of heat exchanger tubes, each independently connects the first tube sheet and the second tube sheet, wherein the tubes are in a staggered ring configuration that comprises a concentric sequence of rings of decreasing diameter wherein adjacent tubes on the same ring are separated by a fixed radial separation angle and adjacent tubes on adjacent rings are staggered by rotating all the tubes within an inner ring by a fixed radial index angle, IA, relative to the next outermost tube ring.

IPC 8 full level
F28D 7/16 (2006.01); **F28F 9/013** (2006.01); **F28F 9/02** (2006.01); **F28F 9/22** (2006.01)

CPC (source: EP)
F24H 1/287 (2013.01); **F24H 9/0015** (2013.01); **F28D 7/16** (2013.01); **F28D 7/163** (2013.01); **F28D 21/0007** (2013.01); **F28D 2021/0024** (2013.01); **F28F 2009/226** (2013.01)

Citation (search report)
• [X1] US 5653282 A 19970805 - HACKMESSER LARRY GENE [US], et al
• [X1] US 2007023173 A1 20070201 - NELSON JOHN A [CA], et al
• [X1] US 4357991 A 19821109 - CAMERON GORDON M
• [X1] WO 0043721 A1 20000727 - COUCH HAROLD T [US], et al
• [X1] EP 1813346 A1 20070801 - SUMITOMO CHEMICAL CO [JP]
• [X1] CN 104949552 A 20150930 - ZHONGSHAN YAXI ENVIRONMENTAL PROT TECHNOLOGY CO LTD
• See references of WO 2017127681A1

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)
WO 2017127681 A1 20170727; CN 109312987 A 20190205; CN 109312987 B 20211015; EP 3405731 A1 20181128; EP 3405731 A4 20191106

DOCDB simple family (application)
US 2017014340 W 20170120; CN 201780019354 A 20170120; EP 17742012 A 20170120