

Title (en)
STEAM GENERATOR AND METHOD OF SECURING TUBES WITHIN A STEAM GENERATOR AGAINST VIBRATION

Title (de)
DAMPFERZEUGER UND VERFAHREN ZUM BEFESTIGEN VON ROHREN IN EINEM DAMPFERZEUGER GEGEN SCHWINGUNGEN

Title (fr)
GÉNÉRATEUR DE VAPEUR ET PROCÉDÉ DE PROTECTION DE TUBES CONTRE DES VIBRATIONS À L'INTÉRIEUR D'UN GÉNÉRATEUR DE VAPEUR

Publication
EP 3050063 A4 20170607 (EN)

Application
EP 14849704 A 20140604

Priority
• US 201314036636 A 20130925
• US 2014040804 W 20140604

Abstract (en)
[origin: US2015083365A1] A steam generator includes a tube bundle having a plurality of tubes, arranged in rows and columns. The first column of tubes includes a first tube having a curved center line disposed in a first plane. The second column of tubes includes a second tube having a curved center line disposed in a second plane, the second plane being parallel to and spaced a distance from the first plane. The steam generator further includes a first number of solid anti-vibration bars disposed between the first column of tubes and the second column of tubes; wherein each of the tubes has a tube outer diameter; and wherein each of the first number of anti-vibration bars has a thickness generally transverse to the first and second planes, the thickness being greater than the distance between the first and second planes minus the tube outer diameter.

IPC 8 full level
G21D 5/12 (2006.01); **F22B 1/02** (2006.01); **F22B 37/20** (2006.01)

CPC (source: EP US)
F22B 1/025 (2013.01 - EP US); **F22B 37/206** (2013.01 - EP US); **F28F 9/0132** (2013.01 - EP US); **F28F 2265/30** (2013.01 - EP US)

Citation (search report)
• [XYI] US 4893671 A 19900116 - LAGALLY HERMANN O [US], et al
• [Y] US 4204570 A 19800527 - EISINGER FRANTISEK L [US]
• [Y] CH 367842 A 19630315 - URECH KARL DIPL ING [CH]
• [A] US 3326282 A 19670620 - JENSSEN SVERRE K
• [A] US 4702311 A 19871027 - BIZARD ANDRE [FR]
• [A] GB 1188564 A 19700422 - HICK HARGREAVES AND COMPANY LT, et al
• [A] US 3837397 A 19740924 - PETTIGREW M
• [A] GB 1532100 A 19781115 - ASS ELECT IND
• See references of WO 2015047463A1

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 2015083365 A1 20150326; CN 105580087 A 20160511; CN 105580087 B 20170905; EP 3050063 A1 20160803; EP 3050063 A4 20170607; EP 3050063 B1 20200715; ES 2821909 T3 20210428; JP 2016540955 A 20161228; KR 102277764 B1 20210714; KR 20160060134 A 20160527; WO 2015047463 A1 20150402

DOCDB simple family (application)
US 201314036636 A 20130925; CN 201480052893 A 20140604; EP 14849704 A 20140604; ES 14849704 T 20140604; JP 2016545728 A 20140604; KR 20167010613 A 20140604; US 2014040804 W 20140604