Title (en)

MULTI-STAGE VOLUMETRIC FLUID EXPANSION DEVICE

Title (de)

MEHRSTUFIGE VOLUMETRISCHE FLÜSSIGKEITSAUSDEHNUNGSVORRICHTUNG

Title (fr)

DISPOSITIF DE DÉTENTE DE FLUIDE VOLUMÉTRIQUE À PLUSIEURS ÉTAGES

Publication

EP 2981684 A1 20160210 (EN)

Application

EP 14703515 A 20140128

Priority

- US 201361757533 P 20130128
- US 201361810579 P 20130410
- US 201361816143 P 20130425
- US 2014013401 W 20140128

Abstract (en)

[origin: WO2014117152A1] A method for generating mechanical work via a closed-loop Rankine cycle includes heating a working fluid to at least a partial vapor state, generating useful work at a first expansion stage by expanding the working fluid as the working fluid passes through the first expansion stage, generating useful work at a second expansion stage by expanding the working fluid as the working fluid passes through the second expansion stage, generating useful work at a third expansion stage by expanding the working fluid as the working fluid passes through the third expansion stage, and condensing the working fluid to a liquid state.

IPC 8 full level

F01K 7/26 (2006.01)

CPC (source: EP US)

F01D 13/003 (2013.01 - US); **F01D 25/00** (2013.01 - US); **F01K 7/02** (2013.01 - US); **F01K 7/16** (2013.01 - US); **F01K 7/22** (2013.01 - US); **F01K 7/36** (2013.01 - US); **F01K 9/02** (2013.01 - US); **F01K 23/10** (2013.01 - EP); **F01K 23/16** (2013.01 - US)

Citation (search report)

See references of WO 2014117159A1

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

DOCDB simple family (publication)

WO 2014117152 A1 20140731; **WO 2014117152 A4 20140912**; CN 105051329 A 20151111; CN 105209724 A 20151230; EP 2948647 A1 20151202; EP 2948647 B1 20161116; EP 2981684 A1 20160210; US 2015330257 A1 20151119; US 2015330258 A1 20151119; WO 2014117159 A1 20140731

DOCDB simple family (application)

US 2014013393 W 20140128; CN 201480017829 A 20140128; CN 201480017926 A 20140128; EP 14703515 A 20140128; EP 14704724 A 20140128; US 2014013401 W 20140128; US 201514810712 A 20150728; US 201514810726 A 20150728