

Title (en)
THERMAL ENERGY RECOVERY DEVICE

Title (de)
WÄRMEENERGIERÜCKGEWINNUNGSVORRICHTUNG

Title (fr)
DISPOSITIF DE RÉCUPÉRATION D'ÉNERGIE THERMIQUE

Publication
EP 3358155 A1 20180808 (EN)

Application
EP 17208350 A 20171219

Priority
JP 2017019368 A 20170206

Abstract (en)
Provided is a thermal energy recovery device in which poor lubrication of a bearing can be inhibited when an expander is driven. The thermal energy recovery device includes an evaporator (10), an expander (20), a power recovery machine (30), a condenser (40), a pump (50), a circulation flow path (60), a cooling flow path (70) for supplying working fluid from the pump (50) partially to the power recovery machine (30), an on-off valve (V1) provided in the cooling flow path (70), and a control unit (80), in which the expander (20) has a rotor (21), a bearing (22), and a primary casing (23), and in which the power recovery machine (30) has a power recovery unit (31) and a secondary casing (35), and in which upon reception of a stop signal for stopping power recovery by the power recovery machine (30), the control unit (80) closes the on-off valve (V1).

IPC 8 full level
F01K 13/02 (2006.01); **F01C 21/00** (2006.01)

CPC (source: CN EP KR US)
F01C 1/16 (2013.01 - EP US); **F01C 21/001** (2013.01 - EP US); **F01C 21/02** (2013.01 - EP US); **F01C 21/04** (2013.01 - EP US); **F01C 21/06** (2013.01 - EP US); **F01D 17/145** (2013.01 - KR); **F01D 25/12** (2013.01 - CN KR); **F01D 25/16** (2013.01 - KR); **F01K 9/02** (2013.01 - KR); **F01K 13/00** (2013.01 - CN); **F01K 13/02** (2013.01 - EP KR US); **F01K 23/02** (2013.01 - KR US); **F01C 20/06** (2013.01 - EP US)

Citation (applicant)
JP 2012097725 A 20120524 - KOBE STEEL LTD

Citation (search report)
• [YA] US 2013207396 A1 20130815 - TSUBOI NOBORU [JP]
• [Y] JP 2005264863 A 20050929 - EBARA CORP
• [Y] US 2012235415 A1 20120920 - MADISON JOEL V [US]
• [Y] US 2013134720 A1 20130530 - FUKASAKU HIROSHI [JP], et al
• [A] WO 2014017943 A1 20140130 - SIEMENS AG [DE], et al
• [A] US 2016344258 A1 20161124 - JAPIKSE DAVID [US], et al
• [A] US 2014110939 A1 20140424 - TAKAHASHI TOSHIO [JP], et al

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)
EP 3358155 A1 20180808; CN 108397244 A 20180814; CN 108397244 B 20201204; JP 2018127897 A 20180816; JP 6751031 B2 20200902; KR 102227428 B1 20210312; KR 20180091717 A 20180816; US 10385734 B2 20190820; US 2018223698 A1 20180809

DOCDB simple family (application)
EP 17208350 A 20171219; CN 201810117676 A 20180206; JP 2017019368 A 20170206; KR 20180011105 A 20180130; US 201715855778 A 20171227