

Title (en)
HEAT RECOVERY DEVICE

Title (de)
WÄRMERÜCKGEWINNUNGSVORRICHTUNG

Title (fr)
DISPOSITIF DE RÉCUPÉRATION DE CHALEUR

Publication
EP 3594569 A1 20200115 (EN)

Application
EP 18382522 A 20180712

Priority
EP 18382522 A 20180712

Abstract (en)
The present invention relates to a heat recovery device particularly conceived for an internal combustion engine, and in particular for a vehicle including said internal combustion engine. The heat recovery device is based on a Rankine cycle in which the high-pressure stage has been modified. The invention is characterized by the use of a tank in the high-pressure region of the Rankine cycle for storing the fluid before entering the turbine or expander maintaining said fluid in the liquid phase so as to drastically reduce the specific volume, and an expansion valve arranged between the tank and the inlet of the turbine or expander for causing the liquid-to-vapor phase change of the fluid right at the inlet, which prevents that the high specific volume in the vapor phase leads to large-sized devices.

IPC 8 full level
F22B 3/04 (2006.01); **F01K 23/06** (2006.01)

CPC (source: EP)
F01K 23/065 (2013.01); **F22B 3/04** (2013.01)

Citation (search report)
• [XAI] US 2011259010 A1 20111027 - BRONICKI LUCIEN Y [IL], et al
• [XI] US 2014060519 A1 20140306 - BENT DAVID [GB], et al
• [XI] US 2017081982 A1 20170323 - KOLLMEIER HANS-PETER [DE], et al
• [A] US 5241817 A 19930907 - GEORGE JR LESLIE C [US]
• [A] WO 2014065397 A1 20140501 - MITSUBISHI HEAVY IND LTD [JP]

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 3594569 A1 20200115

DOCDB simple family (application)
EP 18382522 A 20180712