

Title (en)  
HYDROGEN FUEL ASSIST DEVICE FOR AN INTERNAL COMBUSTION ENGINE AND RELATED METHODS

Title (de)  
WASSERSTOFFBRENNSTOFF-UNTERSTÜTZUNGSVORRICHTUNG FÜR EINEN VERBRENNUNGSMOTOR UND ZUGEHÖRIGE VERFAHREN

Title (fr)  
DISPOSITIF D'ASSISTANCE À COMBUSTIBLE À BASE D'HYDROGÈNE POUR UN MOTEUR À COMBUSTION INTERNE ET PROCÉDÉS ASSOCIÉS

Publication  
**EP 2872754 A1 20150520 (EN)**

Application  
**EP 12880511 A 20120702**

Priority  
US 2012045279 W 20120702

Abstract (en)  
[origin: WO2014007802A1] A hydrogen fuel system (10) for an internal combustion engine comprises a water reservoir (20) and a fuel cell (30) formed from a plurality of fuel cell stacks (150) in fluid communication with the water reservoir. Each fuel cell stack has at least one cathode (32), at least one anode (34) and a proton exchange membrane (36) for separating water from the water reservoir into hydrogen and oxygen when an electrical current is applied across the at least one cathode and at least one anode. Each fuel cell stack includes at least one gasket (380) disposed between two components of the fuel cell stack, the gasket including: a through hole (374) formed therein for passage of hydrogen or oxygen through the gasket; and a plurality of channels (372) formed in the gasket adjacent the through hole, each of the plurality of channels extending from an edge of the through hole to an edge of the gasket, the channels being sized and shaped to allow passage of hydrogen or oxygen to or from the through hole to or from the edge of the gasket.

IPC 8 full level  
**F02B 43/10** (2006.01); **C25B 1/04** (2006.01); **C25B 1/08** (2006.01); **C25B 9/20** (2006.01); **F02M 25/10** (2006.01); **F02M 25/12** (2006.01); **H01M 8/02** (2006.01); **H01M 8/04** (2006.01); **H01M 8/18** (2006.01); **H01M 8/24** (2006.01)

CPC (source: EP US)  
**C25B 1/04** (2013.01 - EP); **C25B 9/73** (2021.01 - EP); **F02M 25/12** (2013.01 - EP); **H01M 8/0271** (2013.01 - US); **H01M 8/04082** (2013.01 - EP); **H01M 8/2465** (2013.01 - EP); **H01M 8/186** (2013.01 - EP); **H01M 2250/20** (2013.01 - EP); **Y02E 60/36** (2013.01 - EP); **Y02E 60/50** (2013.01 - EP); **Y02T 10/12** (2013.01 - EP); **Y02T 90/40** (2013.01 - EP)

Cited by  
CN113302387A; WO2021008098A1

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 2014007802 A1 20140109**; EP 2872754 A1 20150520; EP 2872754 A4 20160302

DOCDB simple family (application)  
**US 2012045279 W 20120702**; EP 12880511 A 20120702