

Title (en)

MULTI-MODAL HYBRID VEHICLE AND CONNECTION DEVICE IN A HYBRID POWERTRAIN SYSTEM

Title (de)

MULTIMODALES HYBRIDFAHRZEUG UND ANSCHLUSSVORRICHTUNG IN EINEM HYBRIDEN ANTRIEBSSTRANGSYSTEM

Title (fr)

VÉHICULE HYBRIDE MULTIMODAL ET DISPOSITIF DE CONNEXION DANS UN SYSTÈME DE GROUPE MOTOPROPULSEUR HYBRIDE

Publication

**EP 2694311 A1 20140212 (EN)**

Application

**EP 12722516 A 20120404**

Priority

- IT MI20110555 A 20110405
- IB 2012051666 W 20120404

Abstract (en)

[origin: WO2012137151A1] The present invention relates to a connection device (13) in a hybrid powertrain system (1), wherein the hybrid powertrain system (1) comprises a combustion engine (2, 27), a drivetrain transmission (4, 40) and an electric motor (10), wherein the drivetrain transmission (4, 40) comprises a gearbox (7, 24) and is adapted to transfer mechanical power from the combustion engine (2, 27) to a final drive unit (6, 33) through the gearbox (7, 24), the gearbox (7, 24) comprising a main shaft (22) connected through a first end (26) to the combustion engine (2, 27) and further comprising a secondary shaft (23) connected to the final drive unit (6, 33), wherein the gearbox (7, 24) further comprises a gearbox housing (25) and a plurality of gearpairs (24) respectively mounted on said main shaft (22) and on said secondary shaft (23) and adapted to change the transmission ratio between the main shaft (22) and the secondary shaft (23), wherein the connection device (13) is adapted to transfer drive power from the electric motor (10) to the drivetrain transmission (4, 40) by connecting the electric motor (10) to a second end (29) of the main shaft (22), opposite to the first end (26); at least one outermost gearpair (30a, 30b) of the gearpairs (24) is positioned externally to the gearbox housing (25), and the connection device (13) comprises a transmission wheel (43) adapted to rotate integrally with a transfer element (52) mechanically connected to a selector (50a, 50b, 51), which is adapted to engage that gear (30a) of the outermost gearpair (30a, 30b) which is mounted on the main shaft (22). The present invention further relates to a hybrid powertrain system and to a hybrid vehicle.

IPC 8 full level

**B60K 6/48** (2007.10); **B60K 6/40** (2007.10); **F16H 3/089** (2006.01)

CPC (source: EP)

**B60K 6/40** (2013.01); **B60K 6/48** (2013.01); **B60L 1/003** (2013.01); **B60L 15/2054** (2013.01); **B60L 50/16** (2019.01); **B60K 2006/4825** (2013.01); **B60K 2006/4833** (2013.01); **B60L 2210/10** (2013.01); **B60L 2210/40** (2013.01); **B60L 2240/36** (2013.01); **B60L 2240/421** (2013.01); **B60L 2240/423** (2013.01); **B60L 2240/486** (2013.01); **B60L 2260/26** (2013.01); **B60Y 2400/421** (2013.01); **F16H 3/089** (2013.01); **Y02T 10/62** (2013.01); **Y02T 10/64** (2013.01); **Y02T 10/7072** (2013.01); **Y02T 10/72** (2013.01)

Citation (search report)

See references of WO 2012137151A1

Citation (examination)

FR 2689821 A1 19931015 - PEUGEOT [FR], 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

DOCDB simple family (publication)

**WO 2012137151 A1 20121011**; BR 112013025494 A2 20180925; EP 2694311 A1 20140212; IT MI20110555 A1 20121006

DOCDB simple family (application)

**IB 2012051666 W 20120404**; BR 112013025494 A 20120404; EP 12722516 A 20120404; IT MI20110555 A 20110405