

Title (en)

MULTI-SPEED GEARBOX

Title (de)

MEHRSTUFENGETRIEBE

Title (fr)

BOÎTE DE VITESSES MULTI-ÉTAGÉE

Publication

**EP 2841803 A1 20150304 (DE)**

Application

**EP 13709878 A 20130313**

Priority

- DE 102012206808 A 20120425
- EP 2013055066 W 20130313

Abstract (en)

[origin: WO2013159996A1] The invention relates to a multi-speed gearbox having nine forward gears and one reverse gear, comprising four planetary gear sets (P1, P2, P3, P4), eight rotatable shafts (1, 2, 3, 4, 5, 6, 7, 8) and six shift elements (03, 04, 05, 14, 17, 18), wherein the sun gear of the first planetary gear set (P1) is connected to the fifth shaft (5) which is connected to the sun gear of the second planetary gear set (P2) and can be coupled to the housing (G) by means of a third brake (05). The drive shaft (1) can be detachably connected to the fourth shaft (4) by means of a first clutch (14), which is connected to the planet carrier of the second planetary gear set (P2) and can be coupled to the housing (G) by means of a second brake (04). The drive shaft (1) can be detachably connected to the seventh shaft (7) which is connected to the ring gear of the second planetary gear set (P2) and to the sun gear of the third planetary gear set (P3) by means of a second clutch (17), and can be detachably connected to the eighth shaft (8) which is connected to the ring gear of the fourth planetary gear set (P4) and to the planet carrier of the third planetary gear set (P3) by means of a third clutch (18), the sixth shaft (6) is connected to the ring gear of the third planetary gear set (P3) and to the planet carrier of the first planetary gear set (P1), the third shaft (3) is connected to the sun gear of the fourth planetary gear set (P4) and can be coupled to the housing (G) by means of a first brake (03). The output shaft (2) is connected to the planet carrier of the fourth planetary gear set (P4) and to the ring gear of the first planetary gear set (P1).

IPC 8 full level

**F16H 3/66** (2006.01)

CPC (source: CN EP US)

**F16H 3/66** (2013.01 - CN EP US); **F16H 2003/445** (2013.01 - CN EP US); **F16H 2200/0065** (2013.01 - CN EP US);

**F16H 2200/0082** (2013.01 - EP US); **F16H 2200/2012** (2013.01 - CN EP US); **F16H 2200/2046** (2013.01 - CN EP US);

**F16H 2200/2094** (2013.01 - CN EP US)

Citation (search report)

See references of WO 2013159996A1

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 201315996 A1 20131031**; CN 104246297 A 20141224; CN 104246297 B 20170301; DE 102012206808 A1 20131031;  
DE 102012206808 B4 20210311; EP 2841803 A1 20150304; US 2015087471 A1 20150326; US 9182014 B2 20151110

DOCDB simple family (application)

**EP 2013055066 W 20130313**; CN 201380021767 A 20130313; DE 102012206808 A 20120425; EP 13709878 A 20130313;  
US 201314396069 A 20130313