

Title (en)
STARTER

Title (de)
STARTER

Title (fr)
DEMARREUR

Publication
EP 1412636 A1 20040428 (DE)

Application
EP 02754345 A 20020711

Priority
• DE 0202533 W 20020711
• DE 10135141 A 20010719

Abstract (en)
[origin: WO03008798A1] The invention relates to a pre-engaged drive starter, for which no relay is required for meshing with the ring gear (47) of an internal combustion engine. A pole element (9), located on the stator (5) of the starter motor (5, 7), induces the advance feed of a driven shaft (33) for the meshing of a pinion (45) with the ring gear (47), said pole element being subjected to a pivoting displacement about the motor axis, when the starter motor (5, 7) is supplied with current. The starter is provided with means (55, 63, 77, 79), which directly convert the pivoting displacement of the pole element (9) into an axial displacement that acts on the driven shaft (33).

IPC 1-7
F02N 15/06

IPC 8 full level
F02N 11/00 (2006.01); **F02N 15/06** (2006.01); **F02N 15/02** (2006.01); **H02K 7/06** (2006.01); **H02K 7/10** (2006.01); **H02K 7/12** (2006.01)

CPC (source: EP KR US)
F02N 11/00 (2013.01 - KR); **F02N 15/066** (2013.01 - EP US); **F02N 15/067** (2013.01 - EP US); **Y10T 74/131** (2015.01 - EP US); **Y10T 74/134** (2015.01 - EP US); **Y10T 74/139** (2015.01 - EP US)

Designated contracting state (EPC)
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LI LU MC NL PT SE SK TR

DOCDB simple family (publication)
WO 03008798 A1 20030130; AT E307284 T1 20051115; AU 2002320966 B2 20070913; BR 0205765 A 20030805; CN 100416089 C 20080903; CN 1653263 A 20050810; DE 10135141 A1 20030130; DE 10293169 D2 20040527; DE 50204622 D1 20051124; EP 1412636 A1 20040428; EP 1412636 B1 20051019; HU 225828 B1 20071029; HU P0302988 A2 20031229; JP 2004521274 A 20040715; JP 4085056 B2 20080430; KR 20040016999 A 20040225; MX PA03002416 A 20040505; PL 202074 B1 20090529; PL 359447 A1 20040823; RU 2296878 C2 20070410; US 2004011151 A1 20040122; US 6935202 B2 20050830; ZA 200302200 B 20040308

DOCDB simple family (application)
DE 0202533 W 20020711; AT 02754345 T 20020711; AU 2002320966 A 20020711; BR 0205765 A 20020711; CN 02802955 A 20020711; DE 10135141 A 20010719; DE 10293169 T 20020711; DE 50204622 T 20020711; EP 02754345 A 20020711; HU P0302988 A 20020711; JP 2003514113 A 20020711; KR 20047000677 A 20020711; MX PA03002416 A 20020711; PL 35944702 A 20020711; RU 2003109434 A 20020711; US 38059503 A 20030801; ZA 200302200 A 20030318