

Title (en)
Starting device

Title (de)
Startereinrichtung

Title (fr)
Dispositif de démarrage

Publication
EP 1355062 A3 20031126 (DE)

Application
EP 03008517 A 20030412

Priority
US 12512602 A 20020418

Abstract (en)
[origin: EP1355062A2] The device has a flywheel (16), a starter gear rim (18), an integrated starter generator (30) with a rotor (36) connected to the flywheel and a starter motor with a drive wheel (24) that can selectively interact with the gear rim. An electronic control or regulating unit (40) connected to both the motor and generator activates the generator alone or both the starter generator and motor together depending on the prevailing starting conditions.

IPC 1-7
F02N 11/04; **F02N 11/08**; **F02N 5/04**

IPC 8 full level
F02D 45/00 (2006.01); **F02N 5/04** (2006.01); **F02N 11/00** (2006.01); **F02N 11/04** (2006.01); **F02N 11/08** (2006.01); **H02P 5/00** (2016.01)

CPC (source: EP US)
F02N 5/04 (2013.01 - EP US); **F02N 11/006** (2013.01 - EP US); **F02N 11/04** (2013.01 - EP US); **F02N 11/08** (2013.01 - EP US);
F02N 2300/104 (2013.01 - EP US)

Citation (search report)

- [XY] DE 19705610 A1 19971204 - BOSCH GMBH ROBERT [DE]
- [Y] US 2002014872 A1 20020207 - MORIMOTO KAZUHIKO [JP], et al
- [A] EP 1046811 A1 20001025 - DAIMLER CHRYSLER AG [DE]
- [DA] GB 2047816 A 19801203 - LUK LAMELLEN & KUPPLUNGSBAU
- [A] US 6018199 A 20000125 - SHIROYAMA SHIGERU [JP], et al

Cited by
DE102018210540A1; EP2946960A1; CN105089898A; EP2952731A1; EP3009666A1; CN105526036A; RU2700808C2

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

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EP 03008517 A 20030412; BR 0300857 A 20030331; JP 2003094802 A 20030331; US 12512602 A 20020418