

Title (en)
Starter relay for a starting device

Title (de)
Starterrelais für eine Startvorrichtung

Title (fr)
Relais de démarrage pour un dispositif de démarrage

Publication
EP 2677161 A3 20171206 (DE)

Application
EP 13168772 A 20130522

Priority
DE 102012210517 A 20120621

Abstract (en)
[origin: EP2677161A2] The electromagnetic starter relay (6) has a reciprocating armature (8) and a pull-in winding (7), to which a current is applied. A switch-on device (16) switches on an electric starter motor. The current is applied to an additional winding that acts on an axially adjustable switching armature (23) of the switch-on device as a switching winding (15). The reciprocating armature is acted on by a reciprocating armature return spring (20) that is supported against the switching armature. A separating web (22) is produced from a magnetically permeable material. An independent claim is included for a method for operating a starting apparatus for an internal combustion engine.

IPC 8 full level
F02N 11/08 (2006.01); **F02N 15/06** (2006.01)

CPC (source: EP US)
F02N 11/087 (2013.01 - EP US); **F02N 15/067** (2013.01 - EP US); **H01H 50/00** (2013.01 - US)

Citation (search report)

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- [XY] US 2011095852 A1 20110428 - NIIMI MASAMI [JP], et al
- [Y] JP 2001132594 A 20010515 - DENSO CORP
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EP3617494A1; CN110867345A; US11495426B2

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)
EP 2677161 A2 20131225; EP 2677161 A3 20171206; EP 2677161 B1 20191030; CN 103511152 A 20140115; CN 103511152 B 20160120; DE 102012210517 A1 20131224; HU E046720 T2 20200330; US 2013342291 A1 20131226; US 9082574 B2 20150714

DOCDB simple family (application)
EP 13168772 A 20130522; CN 201310248219 A 20130618; DE 102012210517 A 20120621; HU E13168772 A 20130522; US 201313924229 A 20130621