

Title (en)

Starter device for combustion engine

Title (de)

Startvorrichtung für Brennkraftmotor

Title (fr)

Dispositif de démarrage pour un moteur à combustion interne

Publication

EP 2290222 B1 20141112 (DE)

Application

EP 10173584 A 20100820

Priority

- DE 202009011430 U 20090825
- DE 202009011429 U 20090825

Abstract (en)

[origin: EP2290222A2] The device (100) has a rope pulley or rope drum (17) rotatably supported in a housing (10). The pulley or the drum is displaceable during rotation for producing drive torque for an engine shaft by an actuating ratchet or a push-pull ratchet, and is connected with a driver i.e. ratchet driver (25). An elastic coupling member i.e. three-dimensional spiral spring (26), has an end engaged with the driver and another end engaged with the pulley or drum. The spring is wound from wires, where cross-sectional area of the spring is reduced from the latter end to the former end of the spring.

IPC 8 full level

F02N 3/02 (2006.01); **F02N 5/02** (2006.01)

CPC (source: EP US)

F02N 3/02 (2013.01 - EP US); **F02N 5/02** (2013.01 - EP US)

Cited by

EP2500559A1; US9163599B2

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 SE SI SK SM TR

DOCDB simple family (publication)

EP 2290222 A2 20110302; EP 2290222 A3 20120111; EP 2290222 B1 20141112; CN 101994624 A 20110330; CN 101994624 B 20150701; CN 101994625 A 20110330; CN 101994625 B 20150318; EP 2299104 A2 20110323; EP 2299104 A3 20120111; EP 2299104 B1 20141112; US 2011048359 A1 20110303; US 2011048360 A1 20110303; US 8215279 B2 20120710; US 8770167 B2 20140708

DOCDB simple family (application)

EP 10173584 A 20100820; CN 201010263635 A 20100825; CN 201010263643 A 20100825; EP 10173587 A 20100820; US 86114310 A 20100823; US 86245310 A 20100824