

Title (en)

Starter with improved pinion drive and return structure

Title (de)

Anlasser mit einer verbesserten Antriebs- und Rückstellvorrichtung des Ritzels

Title (fr)

Démarreur muni d'une structure améliorée pour l'entraînement et le retour du pignon

Publication

EP 0819847 A1 19980121 (EN)

Application

EP 97108393 A 19970523

Priority

JP 18568096 A 19960716

Abstract (en)

A pinion moving member (4) on an output shaft (3) is pushed forward by a pinion pushing member (90; 6) such as a lever which is driven by a plunger (40) of an electromagnet switch (5). After a pinion gear (7) of the pinion moving member (4) abuts a ring gear (8), reaction force is stored in a spring (90; 50) as the plunger (40) of the electromagnet switch (5) moves further. When the pinion gear (7) comes into meshing engagement with the ring gear (8) by the reaction force of the spring (90; 50), a retreat restricting member (3c, 81; 9) restricts retreat of the pinion moving member (4). The retreat restricting member (3c, 81; 9) are provided separately from the pinion pushing member (90; 6) so that the the pinion pushing member (90; 6) driven by the electromagnet switch (5) need not restrict the retreat of the pinion moving member (4). <IMAGE>

IPC 1-7

F02N 15/06

IPC 8 full level

F02N 15/02 (2006.01); **F02N 11/00** (2006.01); **F02N 15/06** (2006.01)

CPC (source: EP)

F02N 15/065 (2013.01); **F02N 15/023** (2013.01)

Citation (search report)

- [X] PATENT ABSTRACTS OF JAPAN vol. 008, no. 020 (M - 271) 27 January 1984 (1984-01-27)
- [DA] PATENT ABSTRACTS OF JAPAN vol. 008, no. 020 (M - 271) 27 January 1984 (1984-01-27)

Cited by

CN104251176A; DE102009027859A1; DE102009027859B4; WO2011009823A2; WO0026533A1

Designated contracting state (EPC)

DE FR GB IT

DOCDB simple family (publication)

EP 0819847 A1 19980121; **EP 0819847 B1 20010221**; DE 69704094 D1 20010329; DE 69704094 T2 20010927; JP 3603486 B2 20041222; JP H1030533 A 19980203

DOCDB simple family (application)

EP 97108393 A 19970523; DE 69704094 T 19970523; JP 18568096 A 19960716