

Title (en)
Engine starting system

Title (de)
Motoranlassersystem

Title (fr)
Système de démarrage d'un moteur

Publication
EP 1491764 A3 20080806 (EN)

Application
EP 04012462 A 20040526

Priority
• JP 2003179420 A 20030624
• JP 2004021252 A 20040129

Abstract (en)
[origin: EP1491764A2] A silent start that does not require complicated electrical control and does not hinder downsizing of an engine, and a quick start that does not increase energy consumption can be realized. To accomplish this, in an engine starting system for rotating a crankshaft by meshing an idle gear (17) driven by a pinion (16) of a starter motor with a ring gear (5) of the crankshaft, the idle gear (17) is provided to be movable with respect to the ring gear (5) in a radial direction (V, W) of the ring gear (5). The idle gear (17) is moved by an actuator from outside the ring gear (5) in the radial direction (V), so that the idle gear (17) meshes with the ring gear (5). Tooth collision occurs at a lower probability than in a conventional case wherein the pinion is moved in the axial direction and is meshed with the ring gear. The impact of collision decreases, so that collision noise decreases. Complicated electrical control of the starter motor (11) is not needed.
[origin: EP1491764A2] The system has a starter motor with a pinion fixed stationarily. An idle gear (17) driven by the pinion has two coaxial parallel gears supported by a shaft projecting from a swing arm. The gear (17) moves along an arcuate path around the pinion rotation center when meshed with the pinion. An actuator moves the gear (17) from outside a ring gear of a crank shaft, in a radial direction, to mesh the gear (17) with the ring gear.

IPC 8 full level
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CPC (source: EP)
F02N 11/0855 (2013.01); **F02N 15/04** (2013.01); **F02N 11/0814** (2013.01)

Citation (search report)
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