

Title (en)
ELECTRIC MOTOR WITH DRIVE

Title (de)
ELEKTRISCHE MASCHINE MIT GETRIEBE

Title (fr)
MOTEUR ELECTRIQUE AVEC ENGRENAGE

Publication
EP 1047874 B1 20040728 (DE)

Application
EP 99963199 A 19991104

Priority

- DE 9903522 W 19991104
- DE 19852607 A 19981114
- DE 19927521 A 19990616

Abstract (en)
[origin: US6409622B1] The synchronous or asynchronous electrical machine for an internal combustion engine can operate alternately in a starter mode during engine starting and a generator mode during engine operation in order to eliminate the need for a separate starter and generator. The electrical machine includes a two-stage planetary gear device coupled to a shaft of the internal combustion engine. The two-stage planetary gear device includes two stages with ring gears and respective braking devices assigned to the two stages that prevent the ring gears of those stages from rotating when engaged therewith. The two-stage planetary gear device operates with different gear ratios in the starter mode and the generator mode. The gear ratio in the starter mode is between 4 and 60 and between 1.6 and 4 in the generator mode. The ratio of the gear ratios in the starter mode and the generator mode must be at least two.

IPC 1-7
F02N 11/04; F16H 3/44

IPC 8 full level
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Designated contracting state (EPC)
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US 60008900 A 20001101; BR 9906923 A 19991104; DE 9903522 W 19991104; EP 99963199 A 19991104; JP 2000582709 A 19991104