

Title (en)

FUEL INJECTION NOZZLE FOR AN INTERNAL-COMBUSTION ENGINE WITH A CONTROLLABLE FUEL-SPRAY CHARACTERISTIC

Publication

EP 0361480 B1 19920520 (DE)

Application

EP 89117969 A 19890928

Priority

DE 3833093 A 19880929

Abstract (en)

[origin: WO9003512A1] An injection nozzle has a bore (13) and a needle (11) and a drive (91) with electric input parameters as well as a drive device (96) for an alternating lifting movement of the nozzle part (12), said lifting movement being overridden by the open state of the injection nozzle. The drive device (96) can be activated by electrical input parameters and is constructed so that at least one small time-interval which is many times smaller than the predetermined minimum opening time of the injection nozzle is available for the reversal of the lifting movement.

IPC 1-7

F02M 45/10; **F02M 51/08**; **F02M 69/04**

IPC 8 full level

F02M 45/10 (2006.01); **F02M 51/06** (2006.01); **F02M 51/08** (2006.01); **F02M 69/00** (2006.01); **F02M 69/04** (2006.01); **F02B 1/04** (2006.01); **F02M 63/00** (2006.01)

CPC (source: EP US)

F02M 45/10 (2013.01 - EP US); **F02M 45/12** (2013.01 - EP US); **F02M 51/0603** (2013.01 - EP US); **F02M 51/061** (2013.01 - EP US); **F02M 51/0696** (2013.01 - EP US); **F02M 51/08** (2019.01 - EP US); **F02M 69/041** (2013.01 - EP US); **F02B 1/04** (2013.01 - EP US)

Cited by

FR2929656A1; FR2916810A1; FR2918122A1; NL1037570C2; EP1860317A1; FR2762648A1; EP0568936A1; US8746213B2; US7744015B2; US7080624B2; US7918211B2; US8191732B2; WO2009007595A3; WO9849443A1; WO2009136027A1; WO2008122530A1; US7735751B2; US7963458B2; US7810743B2; US7819335B2; US6765337B1; US8028930B2; US8230840B2; WO2009083877A3; WO2008152314A3; WO03027473A1; WO0111224A1; WO2011074970A1

Designated contracting state (EPC)

ES

DOCDB simple family (publication)

EP 0361480 A1 19900404; **EP 0361480 B1 19920520**; DE 3833093 A1 19900412; DE 58902915 D1 19930114; EP 0436586 A1 19910717; EP 0436586 B1 19921202; ES 2015816 A6 19900901; ES 2031331 T3 19921201; JP H04501153 A 19920227; US 5199641 A 19930406; WO 9003512 A1 19900405

DOCDB simple family (application)

EP 89117969 A 19890928; DE 3833093 A 19880929; DE 58902915 T 19890928; DE 8900610 W 19890928; EP 89910599 A 19890928; ES 8903305 A 19890929; ES 89117969 T 19890928; JP 50992989 A 19890928; US 67188191 A 19910517