

Title (en)
DOUBLE INJECTION METHOD FOR SELF-IGNITING COMBUSTION ENGINES

Publication
EP 0259708 A3 19900502 (DE)

Application
EP 87112454 A 19870827

Priority
DE 3630439 A 19860906

Abstract (en)
[origin: US4787350A] Apparatus and method for injecting fuel into at least one self-igniting internal combustion engine (1), wherein the injection process is divided into a preliminary injection and a primary injection. The total length of time of the injection is relatively brief in spite of the dual injection. In order to accomplish this, the preliminary pressure generated by a preliminary pressure pump is at least 10 bar and the ratio of the high pressure to the preliminary pressure is less than 80.

IPC 1-7
F02M 45/06; **F02M 59/16**

IPC 8 full level
F02M 39/00 (2006.01); **F02M 45/04** (2006.01); **F02M 45/06** (2006.01); **F02M 55/04** (2006.01); **F02M 59/16** (2006.01)

CPC (source: EP US)
F02M 39/005 (2013.01 - EP US); **F02M 45/04** (2013.01 - EP US); **F02M 55/04** (2013.01 - EP US); **F02M 59/16** (2013.01 - EP US)

Citation (search report)

- [AD] EP 0024803 A1 19810311 - CATERPILLAR TRACTOR CO [US]
- [A] US 3435811 A 19690401 - GUERTLER RUDOLF W
- [A] US 3818882 A 19740625 - LEONOV O, et al
- [A] PATENT ABSTRACTS OF JAPAN, vol. 9, no. 220 (E-341)[1943], 6th September 1985; & JP-A-60 79 157 (MITSUBISHI) 04-05-1985

Cited by
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EP 0259708 A2 19880316; **EP 0259708 A3 19900502**; **EP 0259708 B1 19920401**; DE 3630439 A1 19880310; DE 3777921 D1 19920507; JP S63186959 A 19880802; US 4787350 A 19881129

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