

Title (en)

INJECTION DEVICE FOR INTRODUCING FUELS IN THE COMBUSTION CHAMBER OF AN INTERNAL COMBUSTION ENGINE

Publication

EP 0316331 B1 19910522 (DE)

Application

EP 87904836 A 19870724

Priority

DE 3625716 A 19860730

Abstract (en)

[origin: WO8801019A1] The high-pressure end of fuel injection pumps and injection nozzles of diesel engines stands only cyclically under high pressure. During most of the time, the high-pressure line (4) is relieved from pressure. During this time, a second fuel can be introduced in the high-pressure end via an additional fitting (7), inasmuch as the fuel already contained therein yields without opening the nozzle (6, 3, 12). The following high-pressure cycles gradually convey the second fuel to the nozzle opening.

IPC 1-7

F02M 43/00

IPC 8 full level

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CPC (source: EP US)

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Citation (examination)

- EP 0104368 A1 19840404 - BARANESCU GEORGE STAN
- DE 2922682 A1 19801204 - DAIMLER BENZ AG
- DE 3012418 A1 19811008 - KLOECKNER HUMBOLDT DEUTZ AG [DE]
- DE 3117796 A1 19821125 - KLOECKNER HUMBOLDT DEUTZ AG [DE]
- Patent Abstracts of Japan, Bd.9, Nr.238 (M-416)(1961), 25.09.1985
- Patent Abstracts of Japan, Bd.10, Nr.163 (M-487)(2219), 11.06.1986

Cited by

DE19823335A1; DE19823335C2

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DOCDB simple family (publication)

WO 8801019 A1 19880211; AU 7753987 A 19880224; BR 8704171 A 19880412; DE 3770275 D1 19910627; EP 0316331 A1 19890524; EP 0316331 B1 19910522; MX 161561 A 19901106; RU 1838658 C 19930830; US 4825830 A 19890502

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