

Title (en)
FUEL INJECTION NOZZLE FOR INTERNAL COMBUSTION ENGINES

Title (de)
KRAFTSTOFF-EINSPRITZDÜSE FÜR BRENNKRAFTMASCHINEN

Title (fr)
INJECTEUR DE CARBURANT POUR MOTEURS A COMBUSTION INTERNE

Publication
EP 0696339 A1 19960214 (DE)

Application
EP 95900657 A 19941124

Priority
• DE 9401386 W 19941124
• DE 4340874 A 19931201

Abstract (en)
[origin: WO9515435A1] A fuel pre-injection and main injection nozzle has a nozzle holder (10) in which are coaxially arranged two closure springs (11, 12). One closure spring continuously acts through a central stud (28) on a valve needle (16) and the other closure spring acts on the valve needle (16) through a thrust collar (33) that surrounds the stud only after an advance stroke (hv) of the valve needle (16). An intermediate thrust member (40) in the form of a washer is placed between the valve needle (16) on the one hand and the stud (28) and thrust collar (33) on the other hand. The outer peripheral area of the intermediate thrust member (40) contacts the thrust collar (33) only after the advance stroke (hv) of the valve needle (16). In the closed position of the valve needle (16), the thrust collar (33) is stopped by a shoulder (34) of an intermediate washer (14). Bridging channels (50) are arranged at least in the intermediate thrust member (40) to avoid cutting the connection between the low pressure chamber on the side of the valve needle (16) side and the spring chamber (25) relieved from pressure in the advanced position, when the intermediate thrust member (40) rests axially on the thrust collar (33) supported on the shoulder (34) of the intermediate washer (14).

IPC 1-7
F02M 45/08

IPC 8 full level
F02M 45/08 (2006.01); **F02M 47/00** (2006.01)

CPC (source: EP US)
F02M 45/083 (2013.01 - EP US); **F02M 61/205** (2013.01 - EP US)

Citation (search report)
See references of WO 9515435A1

Designated contracting state (EPC)
DE FR GB IT

DOCDB simple family (publication)
DE 4340874 A1 19950608; DE 4340874 C2 19961024; BR 9406076 A 19960116; CZ 192995 A3 19960515; CZ 285169 B6 19990512; DE 59407014 D1 19981105; EP 0696339 A1 19960214; EP 0696339 B1 19980930; JP H08506641 A 19960716; RU 2121596 C1 19981110; US 5632447 A 19970527; WO 9515435 A1 19950608

DOCDB simple family (application)
DE 4340874 A 19931201; BR 9406076 A 19941124; CZ 192995 A 19941124; DE 59407014 T 19941124; DE 9401386 W 19941124; EP 95900657 A 19941124; JP 51532794 A 19941124; RU 95116671 A 19941124; US 50089895 A 19950801