

Title (en)

Injector with inwardly opening valves arranged one behind the other

Title (de)

Injektor mit hintereinandergeschalteten, nach innen öffnenden Ventilen

Title (fr)

Injecteur avec soupapes ouvrantes vers l'intérieur disposées l'une derrière l'autre

Publication

EP 1277952 A3 20040128 (DE)

Application

EP 02014393 A 20020628

Priority

DE 10134529 A 20010716

Abstract (en)

[origin: EP1277952A2] Valves (8,24) are designed to open inwards. The first one (24) of these valves operated by an actuator (4) uses a spring assembly (37,38) to impinge on the second valve (8), which is prestressed by a first spring (19). The valves have valve needles (9,25) each with an aligning piston (16,42) fitted beneath second (14) and fourth (27) chambers.

IPC 1-7

F02M 59/36; **F02M 45/04**; **F02M 45/12**; **F02M 57/02**; **F02M 59/46**

IPC 8 full level

F02M 45/04 (2006.01); **F02M 45/12** (2006.01); **F02M 57/02** (2006.01); **F02M 59/36** (2006.01); **F02M 59/46** (2006.01)

CPC (source: EP US)

F02M 45/04 (2013.01 - EP US); **F02M 45/12** (2013.01 - EP US); **F02M 57/02** (2013.01 - EP US); **F02M 59/366** (2013.01 - EP US); **F02M 59/466** (2013.01 - EP US)

Citation (search report)

- [A] DE 19956598 A1 20010613 - BOSCH GMBH ROBERT [DE]
- [DA] EP 0823549 A2 19980211 - LUCAS IND PLC [GB], et al
- [PA] DE 10062896 A1 20020620 - BOSCH GMBH ROBERT [DE]

Cited by

EP1961953A1; DE102007009167A1

Designated contracting state (EPC)

AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR

DOCDB simple family (publication)

EP 1277952 A2 20030122; **EP 1277952 A3 20040128**; **EP 1277952 B1 20050504**; DE 10134529 A1 20030213; DE 10134529 C2 20030703; DE 50202972 D1 20050609; US 2003019956 A1 20030130; US 6908044 B2 20050621

DOCDB simple family (application)

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