

Title (en)  
FUEL INJECTION DEVICE WITH TWO COAXIAL VALVE ELEMENTS

Title (de)  
KRAFTSTOFF-EINSPRITZVORRICHTUNG MIT ZWEI KOAXIALEN VENTILELEMENTEN

Title (fr)  
DISPOSITIF D'INJECTION DE CARBURANT COMPRENANT DEUX ELEMENTS DE SOUPAPE COAXIAUX

Publication  
**EP 1381774 A1 20040121 (DE)**

Application  
**EP 02729851 A 20020404**

Priority  
• DE 0201234 W 20020404  
• DE 10118699 A 20010417

Abstract (en)  
[origin: WO02084110A1] The invention relates to a fuel injection device (10) for internal combustion engines, comprising an elongated housing (12) with a closed injection end (28). A recess (34) extends within said housing (12) in the longitudinal direction thereof and can be linked with a fuel inlet (20). At least two axially spaced apart outlet openings (30, 32) are provided on the injection end (28). At least two coaxially and axially movable valve elements (40, 42) are disposed in the recess (34) and cooperate with valve seats in the area of the outlet openings (30, 32). In order to allow for a fuel injection device (10) that is as simple and small as possible in design, the valve elements (40, 42) comprise a driving connection (52, 72) which allows the one valve element (40; 42), when travelling a certain path (S1), to axially contact the other valve element (42; 40), thereby taking it along.

IPC 1-7  
**F02M 61/18**; **F02M 61/10**; **F02M 45/08**

IPC 8 full level  
**F02M 45/08** (2006.01); **F02M 61/10** (2006.01); **F02M 61/16** (2006.01); **F02M 61/18** (2006.01); **F02M 63/00** (2006.01)

CPC (source: EP)  
**F02M 45/086** (2013.01); **F02M 61/10** (2013.01); **F02M 61/182** (2013.01); **F02M 2200/46** (2013.01)

Citation (search report)  
See references of WO 02084110A1

Designated contracting state (EPC)  
DE FR GB IT

DOCDB simple family (publication)  
**WO 02084110 A1 20021024**; BR 0204830 A 20030429; DE 10118699 A1 20021031; DE 50207439 D1 20060817; EP 1381774 A1 20040121; EP 1381774 B1 20060705; JP 2004518907 A 20040624; JP 4076142 B2 20080416; PL 358121 A1 20040809

DOCDB simple family (application)  
**DE 0201234 W 20020404**; BR 0204830 A 20020404; DE 10118699 A 20010417; DE 50207439 T 20020404; EP 02729851 A 20020404; JP 2002581829 A 20020404; PL 35812102 A 20020404