

Title (en)  
FUEL INJECTION DEVICE

Title (de)  
KRAFTSTOFFEINSPRITZVORRICHTUNG

Title (fr)  
DISPOSITIF D'INJECTION DE CARBURANT

Publication  
**EP 1651855 B1 20100127 (DE)**

Application  
**EP 04738649 A 20040609**

Priority  
• DE 2004001197 W 20040609  
• DE 10333697 A 20030724

Abstract (en)  
[origin: WO2005010340A1] The invention concerns a fuel injection device (1) comprising an injection valve (9); a conduit (5) transporting high pressure fuel to the injection valve (9), when the device is operational; and a regulating valve (41) which regulates the pressure in a control chamber (43) of the injection valve, communicating with said conduit (5). The mobile part (51) of said regulating valve can be actuated by an actuator (31) via a hydraulic coupler (39). The pistons (39, 40) are nested in parallel. A multiplying chamber (72) is located at the ends of the pistons facing the actuator (31). A filling chamber (71-2) is located inside the outer piston (39) and communicates with said conduit (5). The direction of the closing movement of the mobile part (51) of the valve coincides with the direction in which the fuel exits from the control chamber (43), such that the force exerted on the regulating valve is at least partly compensated due to the pressure exerted on the other piston (40) in the filling chamber (71-2).

IPC 8 full level  
**F02M 47/02** (2006.01); **F02M 63/00** (2006.01)

CPC (source: EP KR US)  
**F02M 47/02** (2013.01 - KR); **F02M 47/027** (2013.01 - EP US); **F02M 63/00** (2013.01 - KR); **F02M 63/0026** (2013.01 - EP US); **F02M 63/004** (2013.01 - EP US); **F02M 63/0043** (2013.01 - EP US); **F02M 2200/703** (2013.01 - EP US)

Designated contracting state (EPC)  
DE FR GB IT

DOCDB simple family (publication)  
**WO 2005010340 A1 20050203**; DE 10333697 A1 20050224; DE 502004010708 D1 20100318; EP 1651855 A1 20060503; EP 1651855 B1 20100127; JP 2007506888 A 20070322; KR 20060041263 A 20060511; TW 200504281 A 20050201; US 2006219805 A1 20061005; US 7275520 B2 20071002

DOCDB simple family (application)  
**DE 2004001197 W 20040609**; DE 10333697 A 20030724; DE 502004010708 T 20040609; EP 04738649 A 20040609; JP 2006515275 A 20040609; KR 20067001487 A 20060123; TW 93117152 A 20040615; US 56555904 A 20040609