

Title (en)  
FUEL INJECTION DEVICE FOR INTERNAL-COMBUSTION ENGINES.

Title (de)  
BRENNSTOFFEINSPRITZEINRICHTUNG FÜR BRENNKRAFTMASCHINEN.

Title (fr)  
DISPOSITIF D'INJECTION DE CARBURANT POUR MOTEURS A COMBUSTION INTERNE.

Publication  
**EP 0485545 B1 19950712 (DE)**

Application  
**EP 91908413 A 19910425**

Priority  
• DE 9100343 W 19910425  
• DE 4017875 A 19900602

Abstract (en)  
[origin: WO9119091A1] The fuel-injection device proposed has a fuel distributor (10) with a multiplicity of connection tubes (11) having radially projecting locking elements (13, 30) and with a multiplicity of so-called top-feed injection valves (12) which are fitted in the connection pipes (11) to form a liquid-tight seal. To hold the injection valves (12) in the longitudinal direction and to secure the valves (12) against rotation in the circumferential direction, each valve has a connection piece (16) which engages in a peripheral groove (14) in the valve housing (15) and extends out beyond the locking elements (13, 30). In addition, the connection piece (16) has an attachment element (29) which surrounds, at least in the circumferential direction, a shaped element (32) mounted on the valve housing (15) at a defined position.

IPC 1-7  
**F02M 61/14**; **F02M 55/02**; **F16L 37/12**

IPC 8 full level  
**F02M 55/02** (2006.01); **F02M 55/00** (2006.01); **F02M 61/14** (2006.01); **F02M 61/16** (2006.01); **F02M 69/46** (2006.01); **F16L 37/12** (2006.01)

CPC (source: EP US)  
**F02M 61/145** (2013.01 - EP US); **F02M 61/168** (2013.01 - EP US); **F02M 69/465** (2013.01 - EP US); **F02M 2200/16** (2013.01 - EP US); **F02M 2200/803** (2013.01 - EP US); **F02M 2200/853** (2013.01 - EP US); **F02M 2200/856** (2013.01 - EP US)

Designated contracting state (EPC)  
DE ES FR GB IT

DOCDB simple family (publication)  
**DE 4017875 A1 19911205**; **DE 4017875 C2 19990204**; AU 629478 B2 19921001; AU 7746191 A 19911231; BR 9105777 A 19920602; DE 59105977 D1 19950817; EP 0485545 A1 19920520; EP 0485545 B1 19950712; ES 2075446 T3 19951001; JP 3251284 B2 20020128; JP H05500258 A 19930121; KR 0185733 B1 19990320; KR 927002465 A 19920904; RU 2066393 C1 19960910; US 5167213 A 19921201; WO 9119091 A1 19911212

DOCDB simple family (application)  
**DE 4017875 A 19900602**; AU 7746191 A 19910425; BR 9105777 A 19910425; DE 59105977 T 19910425; DE 9100343 W 19910425; EP 91908413 A 19910425; ES 91908413 T 19910425; JP 50791591 A 19910425; KR 920700217 A 19920130; SU 5011133 A 19910425; US 82889692 A 19920131