

Title (en)  
FUEL INJECTION PUMPING APPARATUS

Publication  
**EP 0402014 B1 19930721 (EN)**

Application  
**EP 90305692 A 19900525**

Priority  
GB 8912823 A 19890603

Abstract (en)  
[origin: EP0402014A2] A fuel pumping apparatus for supplying fuel to an internal combustion engine has an injection pump 10 supplied with fuel by a low pressure feed pump 14 through an adjustable throttle 16. A fluid pressure operable piston 12 is movable against the action of a spring 13 to control the timing of delivery of fuel by the injection pump. Fuel under pressure is applied to the piston through a first fixed orifice 20 from the feed pump. A second fixed orifice 22 and a variable orifice 23 are connected in series between a drain and the downstream side of the first fixed orifice. In parallel with the first fixed orifice is a constant pressure drop valve 26 which maintains the pressure drops across the first fixed orifice substantially constant when the pressure drop has risen to a predetermined value.

IPC 1-7  
**F02D 1/18**; **F02M 41/14**

IPC 8 full level  
**F02M 59/00** (2006.01); **F02D 1/18** (2006.01); **F02M 41/14** (2006.01); **F04B 23/04** (2006.01)

CPC (source: EP)  
**F02D 1/183** (2013.01); **F02M 41/1416** (2013.01)

Cited by  
EP1300568A3

Designated contracting state (EPC)  
DE ES FR GB IT

DOCDB simple family (publication)  
**EP 0402014 A2 19901212**; **EP 0402014 A3 19901219**; **EP 0402014 B1 19930721**; DE 69002282 D1 19930826; DE 69002282 T2 19931118; ES 2043278 T3 19931216; GB 8912823 D0 19890719; JP H0378561 A 19910403

DOCDB simple family (application)  
**EP 90305692 A 19900525**; DE 69002282 T 19900525; ES 90305692 T 19900525; GB 8912823 A 19890603; JP 14424290 A 19900601