

Title (en)  
FUEL INJECTION PUMP FOR INTERNAL COMBUSTION ENGINES

Publication  
**EP 0162287 B1 19890830 (DE)**

Application  
**EP 85104654 A 19850417**

Priority  
DE 3418437 A 19840518

Abstract (en)  
[origin: US4622943A] A fuel injection pump is proposed, which is provided with a hydraulically operating injection adjuster device which is acted upon by a pressure which is determined by the feed pressure of a feed pump driven in synchronism with the fuel injection pump and by the control behavior of a pressure control valve. The pressure control valve has a piston controlling a relief line, and the piston is controllable by means of the pressure to be fed in, counter to the restoring force of a spring, and counter to a pressure controlled via a pressure maintenance valve and a switchable relief valve disposed parallel thereto. The valve is also connected to a device for adjusting the biasing of an idling spring of the governor of the fuel injection pump. With the increasing of the set pressure for the injection adjusting device upon closure of the valve, the biasing of the idling spring and thereby the idling rpm are both increased whenever the instant of injection is shifted toward "early" during starting and warmup.

IPC 1-7  
**F02D 1/12; F02D 1/18; F02M 41/12; F02M 59/44**

IPC 8 full level  
**F02D 1/02** (2006.01); **F02D 1/04** (2006.01); **F02D 1/12** (2006.01); **F02D 1/18** (2006.01); **F02M 41/12** (2006.01); **F02M 59/44** (2006.01)

CPC (source: EP US)  
**F02D 1/183** (2013.01 - EP US); **F02M 41/128** (2013.01 - EP US)

Designated contracting state (EPC)  
DE FR GB

DOCDB simple family (publication)  
**EP 0162287 A2 19851127; EP 0162287 A3 19870909; EP 0162287 B1 19890830**; DE 3418437 A1 19851121; DE 3572713 D1 19891005; JP H0476028 B2 19921202; JP S60259762 A 19851221; US 4622943 A 19861118

DOCDB simple family (application)  
**EP 85104654 A 19850417**; DE 3418437 A 19840518; DE 3572713 T 19850417; JP 10166785 A 19850515; US 72571185 A 19850422