

Title (en)  
MAGNETIC VALVE, PARTICULARLY A FUEL QUANTITY CONTROL VALVE

Publication  
**EP 0195261 A3 19880316 (DE)**

Application  
**EP 86102095 A 19860218**

Priority  
DE 3510222 A 19850321

Abstract (en)  
[origin: US4646976A] A magnetic valve, in particular a fuel metering valve for fuel injection systems of internal combustion engines, is proposed which serves to measure the injection quantity and control the instant of injection. In a valve housing, the magnetic valve has an electromagnet and a valve closing element actuated thereby, which cooperates with a fixed valve seat. To damp the opening movement of the valve closing element against a fixed stop and to keep the hydraulic forces of adhesion between the valve closing element and the stop low, a damping chamber that is open toward the valve closing element is disposed on the stop. As the valve closing element approaches, fluid is positively displaced out of the damping chamber in the form of a squish flow between the stop face and the head element of the valve closing element, so that recoiling is avoided due to thus-generated damping. As the valve closing element lifts, fluid can flow through a throttle bore or a check valve into the damping chamber, so that release of the valve closing element from the stop face can be effected with little force being exerted.

IPC 1-7  
**F02M 59/36**; F16K 31/06; F02M 61/16

IPC 8 full level  
**F02M 51/06** (2006.01); **F02M 51/08** (2006.01); **F02M 59/36** (2006.01); **F02M 59/46** (2006.01); **F02M 61/16** (2006.01); **F16K 31/06** (2006.01); **F02M 63/00** (2006.01)

CPC (source: EP US)  
**F02M 59/366** (2013.01 - EP US); **F02M 59/466** (2013.01 - EP US); **F02M 2200/30** (2013.01 - EP US); **F02M 2200/304** (2013.01 - EP US); **Y10S 239/90** (2013.01 - EP US)

Citation (search report)  
• [YD] DE 3139669 A1 19830421 - BOSCH GMBH ROBERT [DE]  
• [Y] FR 2551170 A1 19850301 - HONEYWELL LUCIFER SA [CH]  
• [A] DE 1301626 B 19690821 - PHILIPS PATENTVERWALTUNG  
• [A] EP 0121300 A2 19841010 - GEN MOTORS CORP [US]  
• [A] GB 1031654 A 19660602 - CONCORDIA MASCH & ELEKT  
• [A] DE 1204485 B 19651104 - DANFOSS AS  
• [A] US 3523676 A 19700811 - BARKER GEORGE E  
• [A] DE 3310021 A1 19840920 - GAMPPER JUN OTTO  
• [A] US 3955795 A 19760511 - NEELY RAYMOND J

Cited by  
EP0321135A1; EP2182199A1; EP0372562A1; EP0604914A1; US5560549A; EP0504806A3; DE3834446A1; EP0372712A1; EP1092863A3; US8651827B2; US9903357B2; WO2016020106A1; WO2005071255A1; WO9825025A1; WO9740272A1

Designated contracting state (EPC)  
AT DE FR GB

DOCDB simple family (publication)  
**EP 0195261 A2 19860924**; **EP 0195261 A3 19880316**; **EP 0195261 B1 19890726**; AT E45011 T1 19890815; DE 3510222 A1 19860925; DE 3664665 D1 19890831; JP H0816514 B2 19960221; JP S61218882 A 19860929; US 4646976 A 19870303

DOCDB simple family (application)  
**EP 86102095 A 19860218**; AT 86102095 T 19860218; DE 3510222 A 19850321; DE 3664665 T 19860218; JP 5962286 A 19860319; US 82881186 A 19860212