

Title (en)
FUEL INJECTING DEVICE WORKING ACCORDING TO THE SOLID ENERGY ACCUMULATOR PRINCIPLE, FOR INTERNAL COMBUSTION ENGINES

Title (de)
KRAFTSTOFF-EINSPRITZVORRICHTUNG NACH DEM FESTKÖRPER-ENERGIESPEICHER-PRINZIP FÜR BRENNKRAFTMASCHINEN

Title (fr)
DISPOSITIF D'INJECTION DE CARBURANT FONCTIONNANT SELON LE PRINCIPE DE L'ACCUMULATEUR D'ENERGIE A SOLIDE POUR MOTEURS A COMBUSTION INTERNE

Publication
EP 0629265 B1 19970604 (DE)

Application
EP 93905299 A 19930304

Priority
• DE 4206817 A 19920304
• EP 9300495 W 19930304

Abstract (en)
[origin: WO9318297A1] A fuel injection device works according to the solid energy accumulator principle. A reciprocating piston (10, 14) guided in the cylinder of a reciprocating piston pump (1) driven by an electromagnet (9) delivers portions of the fuel to be injected to the pump area during a practically resistance-free acceleration phase that precedes injection and during which the reciprocating piston (10, 14) accumulates kinetic energy. Fuel delivery is then suddenly stopped by delivery interrupting means (6), so that a pressure shock is generated in the fuel located in a closed pressure chamber, by direct transmission of the accumulated kinetic energy of the reciprocating piston (10, 14) to the fuel located in the pressure chamber. The pressure shock is used to inject fuel through an injection nozzle device (3). The pressure shock generating means that interrupt fuel delivery are located out of the guiding, liquid-tight contact area between the reciprocating piston (10, 14) and the cylinder of the reciprocating piston pump (1).

IPC 1-7
F02M 51/04; F02M 63/06

IPC 8 full level
F02M 37/20 (2006.01); **F01M 1/02** (2006.01); **F02D 33/00** (2006.01); **F02D 41/06** (2006.01); **F02D 41/20** (2006.01); **F02M 37/00** (2006.01); **F02M 37/08** (2006.01); **F02M 39/00** (2006.01); **F02M 51/00** (2006.01); **F02M 51/04** (2006.01); **F02M 51/06** (2006.01); **F02M 55/00** (2006.01); **F02M 55/02** (2006.01); **F02M 57/02** (2006.01); **F02M 59/38** (2006.01); **F02M 61/02** (2006.01); **F02M 61/04** (2006.01); **F02M 61/08** (2006.01); **F02M 63/00** (2006.01); **F02M 63/06** (2006.01); **F02M 69/00** (2006.01); **F02M 69/24** (2006.01); **F02M 69/34** (2006.01); **F02M 69/46** (2006.01); **F02N 19/00** (2010.01); **F04B 17/04** (2006.01)

CPC (source: EP US)
F01M 1/02 (2013.01 - EP US); **F02D 33/006** (2013.01 - EP US); **F02D 41/20** (2013.01 - EP US); **F02M 37/0047** (2013.01 - EP US); **F02M 37/08** (2013.01 - EP US); **F02M 39/005** (2013.01 - EP US); **F02M 51/04** (2013.01 - EP US); **F02M 55/00** (2013.01 - EP US); **F02M 55/007** (2013.01 - EP US); **F02M 55/02** (2013.01 - EP US); **F02M 57/02** (2013.01 - EP US); **F02M 57/027** (2013.01 - EP US); **F02M 59/38** (2013.01 - EP US); **F02M 61/047** (2013.01 - EP US); **F02M 61/08** (2013.01 - EP US); **F02M 63/06** (2013.01 - EP US); **F02M 69/24** (2013.01 - EP US); **F02M 69/34** (2013.01 - EP US); **F02M 69/46** (2013.01 - EP US); **F02M 69/462** (2013.01 - EP US); **F02D 2041/2058** (2013.01 - EP US); **F02D 2041/2075** (2013.01 - EP US); **F02M 2037/085** (2013.01 - EP US); **F02M 2200/24** (2013.01 - EP US); **F02M 2200/40** (2013.01 - EP US)

Cited by
DE19515774C2

Designated contracting state (EPC)
AT BE DE FR GB IT SE

DOCDB simple family (publication)
WO 9318297 A1 19930916; AT E140768 T1 19960815; AT E146851 T1 19970115; AT E154100 T1 19970615; AT E169376 T1 19980815; AT E193753 T1 20000615; AU 3630593 A 19931005; AU 3630793 A 19931005; AU 3630893 A 19931005; AU 3790995 A 19960307; AU 5627396 A 19961003; AU 664739 B2 19951130; AU 667345 B2 19960321; AU 671100 B2 19960815; AU 679648 B2 19970703; AU 681827 B2 19970904; CA 2127799 A1 19930916; CA 2127799 C 19990629; CA 2127800 A1 19930916; CA 2127800 C 19990629; CA 2127801 A1 19930916; CA 2127801 C 19990615; DE 59303326 D1 19960829; DE 59304903 D1 19970206; DE 59306679 D1 19970710; DE 59308851 D1 19980910; DE 59310057 D1 20000713; EP 0629264 A1 19941221; EP 0629264 B1 19960724; EP 0629265 A1 19941221; EP 0629265 B1 19970604; EP 0630442 A1 19941228; EP 0630442 B1 19961227; EP 0725215 A2 19960807; EP 0725215 A3 19960821; EP 0725215 B1 19980805; EP 0733798 A2 19960925; EP 0733798 A3 19961211; EP 0733798 B1 20000607; HK 1013676 A1 19990903; JP 2002089413 A 20020327; JP 2626677 B2 19970702; JP 2626678 B2 19970702; JP 2867334 B2 19990308; JP 3282711 B2 20020520; JP 3330544 B2 20020930; JP H07504475 A 19950518; JP H07504476 A 19950518; JP H07504954 A 19950601; JP H09170519 A 19970630; JP H09177636 A 19970711; JP H11101169 A 19990413; JP H11107883 A 19990420; US 5469828 A 19951128; US 5520154 A 19960528; US 6188561 B1 20010213; WO 9318290 A1 19930916; WO 9318296 A1 19930916

DOCDB simple family (application)
EP 9300495 W 19930304; AT 93905295 T 19930304; AT 93905298 T 19930304; AT 93905299 T 19930304; AT 96101218 T 19930304; AT 96109438 T 19930304; AU 3630593 A 19930304; AU 3630793 A 19930304; AU 3630893 A 19930304; AU 3790995 A 19951116; AU 5627396 A 19960702; CA 2127799 A 19930304; CA 2127800 A 19930304; CA 2127801 A 19930304; DE 59303326 T 19930304; DE 59304903 T 19930304; DE 59306679 T 19930304; DE 59308851 T 19930304; DE 59310057 T 19930304; EP 9300491 W 19930304; EP 9300494 W 19930304; EP 93905295 A 19930304; EP 93905298 A 19930304; EP 93905299 A 19930304; EP 96101218 A 19930304; EP 96109438 A 19930304; HK 98114992 A 19981223; JP 2001207051 A 20010706; JP 21204598 A 19980713; JP 21204698 A 19980713; JP 28149296 A 19961002; JP 28149396 A 19961002; JP 51532193 A 19930304; JP 51532393 A 19930304; JP 51532493 A 19930304; US 29580794 A 19940902; US 29581194 A 19940902; US 67690796 A 19960708