

Title (en)  
MULTIPLE PISTON PUMP

Title (de)  
PUMPE MIT MEHREREN KOLBEN

Title (fr)  
POMPE A PISTONS MULTIPLES

Publication  
**EP 0817916 A4 20000524 (EN)**

Application  
**EP 96910484 A 19960320**

Priority  
• US 9603777 W 19960320  
• US 40639995 A 19950320

Abstract (en)  
[origin: WO9629515A1] A reciprocating piston pump (10) provides pulseless delivery of liquid. It is suitable for use in compact environments or for the delivery of small amounts of liquid. The pump includes two pistons (18, 48) with pumping chambers that are alternately connected to inflow and outflow lines through a control valve (100). The control valve moves between a first position in which inflow is directed to the first piston chamber and outflow to the second piston chamber, and a second position in which outflow is directed to the first piston chamber and inflow is directed to the second piston chamber. A rotating cam (80) moves the pistons of the pump and the control valve between their operating positions described above. The cam rotates around an axis that is parallel to the axis of movement of the piston pumps. A control surface is carried by and rotated by the cam in one embodiment.

IPC 1-7  
**F04B 1/14**; **F04B 1/18**

IPC 8 full level  
**F04B 1/14** (2006.01); **F04B 1/18** (2006.01); **F04B 11/00** (2006.01); **F04B 23/06** (2006.01)

CPC (source: EP)  
**F04B 1/14** (2013.01); **F04B 1/146** (2013.01); **F04B 1/18** (2013.01); **F04B 11/0066** (2013.01)

Citation (search report)  
• [X] DE 515359 C 19310102 - FEINMASCHB G M B H  
• [X] FR 1522530 A 19680426  
• [X] DD 258446 A1 19880720 - ORSTA HYDRAULIK VEB K [DD]  
• [XA] GB 161403 A 19210414 - JOHN FANNING, et al  
• [X] DE 818607 C 19511025 - SCHRADER KARL  
• [XA] US 2969810 A 19610131 - DUDLEY EDWARD C  
• See references of WO 9629515A1

Designated contracting state (EPC)  
DE FR GB IE IT NL SE

DOCDB simple family (publication)  
**WO 9629515 A1 19960926**; CA 2213194 A1 19960926; CA 2213194 C 20040713; EP 0817916 A1 19980114; EP 0817916 A4 20000524; JP H11502581 A 19990302

DOCDB simple family (application)  
**US 9603777 W 19960320**; CA 2213194 A 19960320; EP 96910484 A 19960320; JP 52858196 A 19960320