

Title (en)
Fluid pump apparatus and valve device.

Title (de)
Flüssigkeitspumpe und Ventilvorrichtung.

Title (fr)
Pompe pour fluide et dispositif de clapet.

Publication
EP 0343773 B1 19931118 (EN)

Application
EP 89302606 A 19890316

Priority
• JP 6888288 A 19880323
• JP 7707688 A 19880330
• JP 10323288 A 19880426

Abstract (en)
[origin: EP0343773A1] In a pump apparatus in which the action of a piston (3) draws fluid into and pumps fluid from a valve chamber (1), a partition is provided between the piston cylinder (21) and the valve chamber (1). The partition is able to transmit the force of the piston action, and for this purpose the cylinder (21) side (A) of the partition contains a suitable liquid medium that transmits the actuation of the piston (3). A screening (19) means is provided in a passage between the partition (18) and the valve chamber (1) to screen out particles in the fluid that exceed a prescribed size. The overall effect is to eliminate wear to working parts of the valve caused by entrained particles. In addition there is a valve device (8,9) which prevents bounce or vibration of valve-pieces during high pressure/high speed pumping operations.

IPC 1-7
F04B 43/06; **F04B 21/04**; **F04B 21/02**

IPC 8 full level
F04B 43/067 (2006.01); **F04B 43/06** (2006.01); **F04B 53/00** (2006.01); **F04B 53/10** (2006.01); **F04B 53/14** (2006.01)

CPC (source: EP KR US)
F04B 43/067 (2013.01 - EP US); **F04B 53/00** (2013.01 - KR); **F04B 53/1002** (2013.01 - EP); **F04B 53/1015** (2013.01 - EP US);
F04B 53/141 (2013.01 - EP)

Cited by
DE19604132A1; DE19604132C2

Designated contracting state (EPC)
CH DE FR GB IT LI SE

DOCDB simple family (publication)
EP 0343773 A1 19891129; **EP 0343773 B1 19931118**; AU 3160689 A 19890928; AU 626838 B2 19920813; AU 639071 B2 19930715;
AU 7113391 A 19910502; CA 1338102 C 19960305; DE 68910726 D1 19931223; DE 68910726 T2 19940324; DE 68917587 D1 19940922;
DE 68917587 T2 19941215; DE 68920306 D1 19950209; DE 68920306 T2 19950518; EP 0390298 A2 19901003; EP 0390298 A3 19901031;
EP 0390298 B1 19941228; EP 0393800 A2 19901024; EP 0393800 A3 19901107; EP 0393800 B1 19940817; KR 0181711 B1 19990501;
KR 890014899 A 19891025

DOCDB simple family (application)
EP 89302606 A 19890316; AU 3160689 A 19890322; AU 7113391 A 19910218; CA 594378 A 19890321; DE 68910726 T 19890316;
DE 68917587 T 19890316; DE 68920306 T 19890316; EP 90201568 A 19890316; EP 90201581 A 19890316; KR 890003401 A 19890318