

Title (en)
Pump

Title (de)
Pumpe

Title (fr)
Pompe

Publication
EP 1489306 A2 20041222 (EN)

Application
EP 04014052 A 20040616

Priority
• JP 2003172106 A 20030617
• JP 2003290659 A 20030808
• JP 2003348424 A 20031007
• JP 2004084638 A 20040323

Abstract (en)
A pump (10) comprises a primary pump chamber (27) whose volume can be varied by driving a diaphragm (60), an inlet passage for allowing a working fluid to flow into the primary pump chamber (27), an outlet passage for allowing the working fluid to flow out of the primary pump chamber (27), and check valves (41, 42) for opening and closing at least the inlet passage, wherein the total inertance value of the inlet passage is set to be smaller than the total inertance value of the outlet passage, and bubble discharging means for discharging gas bubbles remaining in the primary pump chamber (27) is further provided. As a result, it is possible to provide a pump capable of discharging gas bubbles with the bubble discharging means and thus maintaining a discharging ability, even when the gas bubbles stay in the primary pump chamber (27). <IMAGE>

IPC 1-7
F04B 43/04

IPC 8 full level
F04B 23/06 (2006.01); **F04B 43/02** (2006.01); **F04B 43/04** (2006.01)

CPC (source: EP US)
F04B 23/06 (2013.01 - EP US); **F04B 43/046** (2013.01 - EP US)

Cited by
WO2012021412A1; EP1947339A4; DE112007000669B4; EP2279350A4; WO2009134181A1; WO2013119860A3; WO2013119837A3

Designated contracting state (EPC)
DE FR GB IT

DOCDB simple family (publication)
EP 1489306 A2 20041222; **EP 1489306 A3 20051116**; **EP 1489306 B1 20070606**; CN 100398821 C 20080702; CN 1573102 A 20050202; DE 602004006802 D1 20070719; DE 602004006802 T2 20080214; JP 2005133704 A 20050526; JP 4678135 B2 20110427; US 2005019180 A1 20050127

DOCDB simple family (application)
EP 04014052 A 20040616; CN 200410048313 A 20040617; DE 602004006802 T 20040616; JP 2004084638 A 20040323; US 86611904 A 20040614