

Title (en)
PUMP APPARATUS

Title (de)
PUMPENVORRICHTUNG

Title (fr)
APPAREIL DE POMPE

Publication
EP 1947332 A4 20120201 (EN)

Application
EP 06781991 A 20060731

Priority
• JP 2006315113 W 20060731
• JP 2005235377 A 20050815

Abstract (en)
[origin: EP1947332A1] A pump apparatus which is expected to realize satisfactory work efficiency of an assembly operation, reduction of noise and suppression of rust comprises: two pump units (22 and 23); a valve unit (24) provided between the pump units (22 and 23); and a fastening means (36) for fastening the pump units (22 and 23) to each other such that the valve unit (24) is able to be held by the pump units (22 and 23) therebetween.

IPC 8 full level
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CPC (source: EP KR US)
F04B 1/0538 (2013.01 - EP KR US); **F04B 1/22** (2013.01 - KR); **F04B 23/04** (2013.01 - EP US); **F04B 23/06** (2013.01 - EP KR US); **F04B 41/06** (2013.01 - EP US); **F04B 53/001** (2013.01 - KR); **F04B 53/10** (2013.01 - EP KR US); **Y10T 137/86131** (2015.04 - EP US)

Citation (search report)
• [X] US 1938369 A 19331205 - BEEBE EDWARD M
• [X] DE 4132930 A1 19930408 - TEVES GMBH ALFRED [DE]
• See references of WO 2007020788A1

Designated contracting state (EPC)
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI SK TR

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EP 1947332 A1 20080723; **EP 1947332 A4 20120201**; **EP 1947332 B1 20130227**; CN 101243254 A 20080813; CN 101243254 B 20101006; JP 2007051553 A 20070301; KR 20080025208 A 20080319; US 2010003144 A1 20100107; WO 2007020788 A1 20070222

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