

Title (en)

A reciprocating positive-displacement diaphragm pump for liquids

Title (de)

Hubkolbenmembranverdrängerpumpe für Flüssigkeiten

Title (fr)

Pompe à diaphragme volumétrique alternative pour liquides

Publication

EP 2871362 A1 20150513 (EN)

Application

EP 14187054 A 20140930

Priority

IT RE20130083 A 20131108

Abstract (en)

The pump comprises at least a piston-cylinder group, having a liquid pump chamber (30), and a piston-cylinder pair. A flexible diaphragm (35) separates the pump chamber (30) from the cylinder mouth (31), which is connected to the front thrust surface of the piston (32); a thrust chamber (37), external of the pump chamber (30), is delimited between the diaphragm (35), the thrust surface of the piston (32) and the guide surface (31 b) of the cylinder, and is sealedly closed and filled with non-compressible thrust oil. The rear tank is delimited on the front transversal side by the piston and on the lateral side by a tubular lateral wall (41), comprising a front portion having an internal surface which defines the cylindrical guide surface (31 b) for the piston (32) and a rear portion (41 a) joined to the front portion. To restore the thrust oil level, lost by leakage from the thrust chamber to the rear tank, the tubular wall 41 comprises at least an open-topped groove (31 b), and facing the lateral surface (32b) of the piston, which develops substantially axially, having a rear end connected to the rear tank (40) and a front end that when the piston (32) is in the environs of the bottom dead centre, opens frontally of the front seal edge (33a) and communicates with the thrust chamber (37).

IPC 8 full level

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CPC (source: EP US)

F04B 43/0081 (2013.01 - EP); **F04B 43/067** (2013.01 - EP US); **F04B 53/18** (2013.01 - EP)

Citation (search report)

- [A] US 2007140878 A1 20070621 - SPUDE GAETAN [FR]
- [A] WO 2004106884 A1 20041209 - WANNER ENGINEERING [US]
- [A] EP 2085614 A1 20090805 - WAGNER J AG [CH]

Cited by

CN108613004A

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

EP 2871362 A1 20150513; **EP 2871362 B1 20160615**; ES 2584284 T3 20160926; IT RE20130083 A1 20150509; PL 2871362 T3 20161230

DOCDB simple family (application)

EP 14187054 A 20140930; ES 14187054 T 20140930; IT RE20130083 A 20131108; PL 14187054 T 20140930