

Title (en)  
CENTRIFUGAL PUMP WITH A VOLUTE HAVING A SLANTED WALL

Title (de)  
ZENTRIFUGALPUMPE MIT EINER SPIRALE, DIE EINE SCHRÄGE WANDUNG AUFWEIST

Title (fr)  
POMPE CENTRIFUGE AVEC UNE VOLUTE AYANT UNE PAROI OBLIQUE

Publication  
**EP 3176439 A3 20171011 (EN)**

Application  
**EP 16197333 A 20161104**

Priority  
JP 2015221998 A 20151112

Abstract (en)  
[origin: EP3176439A2] A pump according to the present disclosure includes a pump body, an impeller stored in a pump chamber formed inside the pump body, and a shaft that supports the impeller such that the impeller is rotatable. A pump channel extending from a suction port to a first discharge port is formed inside the pump body. The pump channel includes a suction path, an impeller channel which is formed inside the impeller and into which liquid in the suction path is introduced, a volute portion which is formed on a radially outer side of the impeller and into which liquid in the impeller channel is introduced, and a discharge path into which liquid in the volute portion is introduced. A liquid separation reduction structure that reduces separation of liquid flowing in the pump channel is provided in the pump channel.

IPC 8 full level  
**F04D 13/06** (2006.01); **F04D 29/22** (2006.01); **F04D 29/44** (2006.01)

CPC (source: EP)  
**F04D 13/0606** (2013.01); **F04D 29/2255** (2013.01); **F04D 29/445** (2013.01); **F05D 2250/52** (2013.01)

Citation (search report)

- [X] US 2014017073 A1 20140116 - MUIZELAAR RICHARD [CA], et al
- [X] GB 1402743 A 19750813 - PEABODY BARNES
- [X] DE 102014110231 B3 20150910 - NIDEC GPM GMBH [DE]
- [X] DE 102014003296 B3 20150521 - GERÄTE UND PUMPENBAU GMBH DR EUGEN SCHMIDT [DE]
- [XYI] US 3146722 A 19640901 - HAROLD WARMAN CHARLES
- [Y] US 3860360 A 19750114 - YU MASON K
- [X] US 2013115053 A1 20130509 - CHIEN HUAN-JAN [TW], et al
- [X] WO 2015097851 A1 20150702 - IWAKI CO LTD [JP]
- [X] US 2004131485 A1 20040708 - SHI CHI-WEI [TW]
- [X] DE 195747 C 19080224 - NEUMANN FRITZ [DE]
- [X] JP 2006296125 A 20061026 - AISIN SEIKI

Cited by  
CN112483417A; WO2023208917A1

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 3176439 A2 20170607; EP 3176439 A3 20171011; EP 3176439 B1 20231025**; JP 2017089530 A 20170525; JP 6671048 B2 20200325

DOCDB simple family (application)  
**EP 16197333 A 20161104**; JP 2015221998 A 20151112