

Title (en)  
MULTISTAGE PUMP

Title (de)  
MEHRSTUFIGE PUMPE

Title (fr)  
POMPE À ÉTAGES MULTIPLES

Publication  
**EP 2653727 A1 20131023 (EN)**

Application  
**EP 11848993 A 20111213**

Priority  
• JP 2010277557 A 20101214  
• JP 2011269503 A 20111209  
• JP 2011078734 W 20111213

Abstract (en)  
Provided is a multistage pump in which a fluid raised in pressure by an impeller at a last stage is guided to a discharge opening through a diffuser 21c at the last stage. A discharge flow path 22 for guiding the fluid from the last-stage diffuser 21c to the discharge opening is formed in a pump casing. The discharge flow path 22 is formed in a direction in which the discharge flow path swirls about the shaft center of a rotating shaft. The cross-sectional area of the discharge flow path 22 in a plane including the shaft center of the rotating shaft increases from the upstream side toward the downstream side of a flow toward the discharge opening in a shaft center direction A and an inward radial direction B of the rotating shaft.

IPC 8 full level  
**F04D 1/08** (2006.01); **F04D 29/44** (2006.01)

CPC (source: EP)  
**F04D 1/063** (2013.01); **F04D 29/426** (2013.01); **F04D 29/445** (2013.01); **F05D 2250/52** (2013.01)

Cited by  
WO2020187562A1

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

DOCDB simple family (publication)  
**EP 2653727 A1 20131023**; **EP 2653727 A4 20170614**; **EP 2653727 B1 20190911**; CN 103261697 A 20130821; CN 103261697 B 20160120; JP 2012140931 A 20120726; JP 5889622 B2 20160322; WO 2012081562 A1 20120621

DOCDB simple family (application)  
**EP 11848993 A 20111213**; CN 201180056471 A 20111213; JP 2011078734 W 20111213; JP 2011269503 A 20111209