

Title (en)

CENTRIFUGAL PUMP FOR FLUID CONTAINING SOLID PARTICLES WITH SEALING OF A GAP

Title (de)

KREISELPUMPE FÜR FESTSTOFFE ENTHALTENDE FLÜSSIGKEITEN MIT SPALTABDICHTUNG

Title (fr)

POMPE CENTRIFUGE POUR FLUIDE CONTENANT DES PARTICULES SOLIDES AVEC FERMETURE D'UN INTERSTICE

Publication

**EP 2766608 A1 20140820 (DE)**

Application

**EP 12788429 A 20121004**

Priority

- DE 102011054320 A 20111007
- DE 2012100314 W 20121004

Abstract (en)

[origin: WO2013050031A1] The proposed centrifugal pump for pumping fluids containing solid materials consists of a pump housing (1) and an impeller (2) arranged on a rotationally driven shaft. The pump housing (1) comprises a flow chamber with a suction area (4) and a pressure area (5) surrounding the periphery of the impeller (2), as well as an impeller back chamber (6). According to the invention, the gap (3) to the impeller back chamber (6) is completely sealed off from the flow chamber in relation to the pumped fluid with the solid materials contained therein, but a connection of the impeller back chamber (6) to the pressure area (5) is provided in order to enable air supply to and extraction from said impeller back chamber. Essential elements of an arrangement for sealing the gap (3) include a sliding face (10) formed on the impeller (2), an at least partially flexible sealing element (9) sliding at one end (11) on the slide face (10), and the means (15, 15', 16, 16', 17, 17', 18, 18') for air supply to and extraction from the impeller back chamber (6), wherein the sealing element (9) is fixed to a pressure cover closing off the pump housing (1) on the side facing away from the suction area (4).

IPC 8 full level

**F04D 7/04** (2006.01); **F04D 29/08** (2006.01); **F04D 29/16** (2006.01)

CPC (source: EP US)

**F04D 7/04** (2013.01 - EP US); **F04D 29/086** (2013.01 - EP US); **F04D 29/167** (2013.01 - EP US)

Citation (search report)

See references of WO 2013050031A1

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)

**WO 2013050031 A1 20130411**; CN 103857917 A 20140611; DE 102011054320 A1 20130411; DE 112012004156 A5 20140618; EP 2766608 A1 20140820; EP 2766608 B1 20190417; RU 2014117306 A 20151120; RU 2583482 C2 20160510; US 2014255165 A1 20140911

DOCDB simple family (application)

**DE 2012100314 W 20121004**; CN 201280048966 A 20121004; DE 102011054320 A 20111007; DE 112012004156 T 20121004; EP 12788429 A 20121004; RU 2014117306 A 20121004; US 201214350316 A 20121004