

Title (en)
IMPELLER WITH AXIALLY CURVING VANE EXTENSIONS TO PREVENT AIRLOCK

Title (de)
LAUFRAD MIT AXIAL GEBOGENEN SCHAUFELVERLÄNGERUNGEN ZUR VERHINDERUNG VON LUFTEINSCHLÜSSEN

Title (fr)
TURBINE À EXTENSIONS D'AUBES INCURVÉES AXIALEMENT POUR ÉVITER UNE POCHE D'AIR

Publication
EP 3177834 A4 20180411 (EN)

Application
EP 15829258 A 20150806

Priority
• US 201462033814 P 20140806
• US 2015043982 W 20150806

Abstract (en)
[origin: WO2016022781A2] A pump has a housing that includes an inlet to receive a liquid to be pumped, an outlet to provide the liquid being pumped, a pumping chamber between the inlet/outlet; and a motor shaft to rotate in the pumping chamber. The impeller is arranged on the motor shaft, includes radially curved vanes to rotate inside the pumping chamber to pump the liquid from the pumping chamber to the outlet; and includes anti-airlock vanes formed as a set of axially curving vane extensions that extend along the axis of the shaft, rotate with one part inside the pumping chamber, protrude through the inlet and rotate with another part outside the inlet for submerging in liquid to be pumped underneath the pump, draw the liquid through the inlet into the pumping chamber, and provide the liquid to the radially curved vanes to generate pressure to force entrapped air from the pumping chamber.

IPC 8 full level
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CPC (source: EP US)
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F04D 13/06 (2013.01 - EP US); **F04D 29/2277** (2013.01 - EP US); **F04D 29/245** (2013.01 - US); **F04D 29/4293** (2013.01 - US)

Citation (search report)
• [X] US 5615997 A 19970401 - HOEGLUND RONNY [SE], et al
• [X] WO 2008116239 A1 20081002 - ANDRITZ AG MASCHF [AT], et al
• [X] US 4275988 A 19810630 - KALASHNIKOV LEONID F, et al
• [I] DE 4325549 A1 19950202 - BRINKMANN PUMPEN K H BRINKMANN [DE]
• [I] US 2004175265 A1 20040909 - WAGNER PETER [DE]
• See references of WO 2016022781A2

Designated contracting state (EPC)
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DOCDB simple family (publication)
WO 2016022781 A2 20160211; WO 2016022781 A3 20160519; AU 2015300990 A1 20170223; AU 2019203725 A1 20190620;
AU 2019203725 B2 20200910; CA 2957279 A1 20160211; CA 2957279 C 20200804; CN 106715915 A 20170524; CN 106715915 B 20200117;
EP 3177834 A2 20170614; EP 3177834 A4 20180411; MX 2017001588 A 20170901; SA 517380848 B1 20220228; US 2016186758 A1 20160630

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CN 201580050050 A 20150806; EP 15829258 A 20150806; MX 2017001588 A 20150806; SA 517380848 A 20170206;
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