

Title (en)
SYSTEM AND METHODOLOGY TO FACILITATE PUMPING OF FLUID

Title (de)
SYSTEM UND METHODOLOGIE ZUR ERMÖGLICHUNG DES PUMPENS VON FLUID

Title (fr)
SYSTÈME ET MÉTHODOLOGIE POUR FACILITER LE POMPAGE DE FLUIDE

Publication
EP 3536975 B1 20210428 (EN)

Application
EP 19160495 A 20190304

Priority
US 201815914253 A 20180307

Abstract (en)
[origin: EP3536975A1] A technique facilitates operation of a pump such as a multiphase pump. The pump may be provided with an impeller having a plurality of impeller blades. The impeller blades have blade tips which extend over an axial length. A ring is positioned along the blade tips to stiffen the impeller and to thus provide stability. However, the axial length of the ring is limited relative to the axial length of the impeller to enable flow, e.g. leakage, across the blade tips in a manner which causes active phase mixing during pumping of a fluid, e.g. a multiphase fluid.

IPC 8 full level
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Citation (examination)
• US 2016222977 A1 20160804 - PAGNIER PHILIPPE [FR]
• US 4865519 A 19890912 - DIANKUI LIU [CN], et al

Citation (opposition)
Opponent : Sulzer Management AG,
• CN 1975172 A 20070606 - ZHOUS PUMP INDUSTRY CO LTD YIX [CN]
• US 2015354373 A1 20151210 - GUO CHANGSHENG [US], et al
• DE 102015210601 A1 20161215 - VOITH PATENT GMBH [DE]
• EP 2386766 A2 20111116 - SULZER PUMPEN AG [CH]
• EP 2386767 A2 20111116 - SULZER PUMPEN AG [CH]
• FR 2697870 A1 19940513 - TECHNICATOME [FR]
• US 2016222977 A1 20160804 - PAGNIER PHILIPPE [FR]
• US 2002187037 A1 20021212 - LEE WOON Y [US]
• US 8075272 B2 20111213 - RIAZ MUHAMMAD SAQIB [US], et al
• US 2013094944 A1 20130418 - LACY BENJAMIN PAUL [US], et al
• US 2851289 A 19580909 - PEDERSEN HAAKON O
• TANG JIN, ET AL: "Use of partially shrouded impeller in a small centrifugal compressor", JOURNAL OF THERMAL SCIENCE, vol. 17, no. 1, 1 January 2008 (2008-01-01), pages 21 - 27, XP055889509

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