

Title (en)
DRAINAGE PUMP

Title (de)
ENTWÄSSERUNGSPUMPE

Title (fr)
POMPE D'ÉPUISEMENT

Publication
EP 3171032 A1 20170524 (EN)

Application
EP 16188691 A 20160914

Priority
JP 2015225819 A 20151118

Abstract (en)
[Object] Provided is a drainage pump which achieves a further improvement in quietness during an operation. [Solving Means] A rotating blade (50) used in a drainage pump (1) includes: large-diameter blades (60) provided with paddle surfaces (61) formed in a plurality of plate shapes extending in a radial direction from a shaft portion (52) connected to an output shaft of a motor; a plurality of plate-shaped small-diameter blades (54) connected to lower end edge portions of the large-diameter blades (60); and auxiliary blades (70) which are provided with paddle surfaces (71) and are provided between the adjacent large-diameter blades (60). Hitherto, water scraped by the paddle surfaces (61) and (71) of the large-diameter blades (60) and the auxiliary blades (70) becomes a water flow in a yz direction by an upper edge portion (62) and a water flow in an xy direction by a side edge portion (63), and the water flows collide with each other at rear surfaces of the paddle surfaces, generate turbulence, and cause noise. However, the water flows can be suppressed to become water flows in the xy direction by a water flow direction regulation portion (101), and the generation of turbulence is suppressed by the collision of the water flows. Therefore, the generation of noise can be prevented.

IPC 8 full level
F04D 29/24 (2006.01); **F04D 29/66** (2006.01)

CPC (source: CN EP KR)
F04D 29/007 (2013.01 - KR); **F04D 29/24** (2013.01 - KR); **F04D 29/242** (2013.01 - CN); **F04D 29/245** (2013.01 - EP); **F04D 29/445** (2013.01 - CN); **F04D 29/667** (2013.01 - KR); **F04D 29/669** (2013.01 - CN EP); **F04D 29/688** (2013.01 - EP)

Citation (applicant)
JP 2002138992 A 20020517 - FUJI KOKI KK

Citation (search report)
• [X1] JP 2011069257 A 20110407 - FUJI KOKI KK
• [X1] EP 1617084 A1 20060118 - FUJIKOKI CORP [JP]
• [A] EP 0836010 A1 19980415 - FUJIKOKI CORP [JP]
• [A] US 2011008153 A1 20110113 - KATO YUYA [JP], et al

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 3171032 A1 20170524; **EP 3171032 B1 20210217**; CN 106989068 A 20170728; CN 106989068 B 20200114; JP 2017096104 A 20170601; JP 6375285 B2 20180815; KR 102526206 B1 20230427; KR 20170058253 A 20170526

DOCDB simple family (application)
EP 16188691 A 20160914; CN 201610857345 A 20160927; JP 2015225819 A 20151118; KR 20160102420 A 20160811