

Title (en)

VANE PUMP WITH ONE OR MORE LESS RESTRICTED VANES

Title (de)

FLÜGELZELLENPUMPE MIT EINEM ODER MEHREREN WENIGER EINGESCHRÄNKTE SCHAUFELN

Title (fr)

POMPE À PALETTES AYANT UNE OU PLUSIEURS PALETTES MOINS RESTREINTES

Publication

EP 3371455 A4 20190508 (EN)

Application

EP 17875080 A 20171208

Priority

- US 201662432194 P 20161209
- IB 2017057752 W 20171208

Abstract (en)

[origin: US2018163543A1] A vane pump that employs one or more less restricted vanes (or looser vanes) within its rotor is described herein. The less restricted vane(s) are configured to radially move outwardly before the remaining vanes during startup. In one case, for example, at least one vane has a different thickness (e.g., thinner) as compared to the thickness of the remaining vanes. In another case, at least one slot has a different width (e.g., wider) as compared to the width of the other slots. The less restricted vane facilitates a cold start in highly viscous oil by allowing easier radial displacement and thus earlier initial build-up of pressure in the pump. The pump may be used with an engine or transmission.

IPC 8 full level

F01C 21/08 (2006.01); **F04C 2/344** (2006.01); **F04C 28/06** (2006.01)

CPC (source: CN EP KR US)

F01C 21/0809 (2013.01 - EP US); **F01C 21/0836** (2013.01 - KR US); **F01C 21/0863** (2013.01 - EP KR US); **F04C 2/3442** (2013.01 - KR); **F04C 2/3446** (2013.01 - CN EP US); **F04C 15/00** (2013.01 - CN); **F04C 28/06** (2013.01 - EP US); **F16N 13/20** (2013.01 - CN); **F04C 2/3442** (2013.01 - US); **F04C 2240/20** (2013.01 - CN); **F04C 2270/701** (2013.01 - EP KR US)

Citation (search report)

[X1] DE 102013217819 A1 20150312 - ZAHNRADFABRIK FRIEDRICHSHAFEN [DE]

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)

US 2018163543 A1 20180614; CA 3009116 A1 20180614; CN 108223362 A 20180629; CN 208106745 U 20181116; EP 3371455 A1 20180912; EP 3371455 A4 20190508; JP 2020501057 A 20200116; KR 101960235 B1 20190319; KR 20180121476 A 20181107; MX 2018006924 A 20180815; WO 2018104918 A1 20180614

DOCDB simple family (application)

US 201715835788 A 20171208; CA 3009116 A 20171208; CN 201711294561 A 20171208; CN 201721707940 U 20171208; EP 17875080 A 20171208; IB 2017057752 W 20171208; JP 2018526081 A 20171208; KR 20187016933 A 20171208; MX 2018006924 A 20171208