

Title (en)
Vacuum pump

Title (de)
Vakuumpumpe

Title (fr)
Pompe à vide

Publication
EP 2253851 A3 20140709 (DE)

Application
EP 10004025 A 20100416

Priority
DE 102009021642 A 20090516

Abstract (en)
[origin: EP2253851A2] The pump (1) has a side channel pumping stage (4) comprising running wheels (400) with an edge and vanes (402), where the wheels are displaced during rotation. The vanes exhibit a rear side with an outer edge. The vanes comprise flanges at the outer edge of the rear side. A middle rod is provided between the vanes and other vane. The former vanes comprise two vane sections, which are arranged in a movement direction. The former vanes are arranged at the edge of the wheels in a radial direction. The rear side and the flanges comprise flat surfaces.

IPC 8 full level
F04D 17/16 (2006.01); **F04D 19/04** (2006.01); **F04D 23/00** (2006.01); **F04D 29/28** (2006.01)

CPC (source: EP)
F04D 17/168 (2013.01); **F04D 19/044** (2013.01); **F04D 19/046** (2013.01); **F04D 23/008** (2013.01); **F04D 29/28** (2013.01)

Citation (search report)

- [X] US 2005207883 A1 20050922 - SHUFELDT JOEL B [US]
- [X] JP H10196586 A 19980731 - HITACHI LTD
- [XI] DE 10334950 A1 20041209 - NASH ELMO IND GMBH [DE]
- [X] EP 0845600 A2 19980603 - DUERR DENTAL GMBH CO KG [DE]
- [A] GB 2298457 A 19960904 - HITACHI LTD [JP]

Cited by
EP2835536A3; EP3623634A1; US10337517B2

Designated contracting state (EPC)
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 SE SI SK SM TR

Designated extension state (EPC)
AL BA ME RS

DOCDB simple family (publication)
EP 2253851 A2 20101124; EP 2253851 A3 20140709; EP 2253851 B1 20161214; DE 102009021642 A1 20101118;
DE 102009021642 B4 20210722; JP 2010265895 A 20101125; JP 5670095 B2 20150218

DOCDB simple family (application)
EP 10004025 A 20100416; DE 102009021642 A 20090516; JP 2010109860 A 20100512