

Title (en)
Vane pump or motor.

Title (de)
Flügelzellenpumpe oder -motor.

Title (fr)
Pompe ou moteur à palettes.

Publication
EP 0101758 A1 19840307 (DE)

Application
EP 82108045 A 19820901

Priority
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Abstract (en)
1. A vane pump or motor, comprising a housing containing the following components : a) a rotor (21), in which slots (22) and root spaces (23) are provided, b) double vanes, each comprising a front vane (24a) and a rear vane (24b) and guided in a corresponding slot (22), the front and rear vanes having outer head surfaces (25a, 25b), as well as vane roots (26a, 26b), and defining therebetween a central duct (27) which connects a root space (23) with an associated head space (25c) which is located between the outer head surfaces (25a, 25b), c) a cam ring (30), serving both to move the vanes radially, and to form - towards the rotor - at least one crescent-shaped displacement space (35), this space (35) exhibiting a region which becomes wider and another which becomes narrower, these regions being joined by transition zones and being subdivided, by the vanes (24a, 24b), into a plurality of cell spaces, d) at least one inlet opening (31), which communicates with that region of the displacement space which widens, and e) at least one outlet opening (33), which is connected to that region of the displacement space (35) which narrows, characterized in that f) each of the front vanes (24a) possesses a duct (27, 28) which opens onto the front surface, which is connected to the root space (23), and which is provided with a control edge, this edge co-operating with the surface of the rotor (21), the said vane (24a) normally being subjected to the same pressure on all sides, except that over the angular range (α) corresponding to the transition zone between the outlet opening (33) and the inlet opening (31), it is subjected to low pressure at its outer head surface (25a) and to high pressure at its other surfaces, and in that g) the rear part-vane (24b) possesses a rear duct (29) which begins at the vane head (25b) and terminates close to the vane root (26b), at a control edge (29a), this edge (29a) co-operating with the slot (22) in the rotor (21), the said part-vane (24b) being subjected to the same pressure on all sides, except that over the angular range (ζ) corresponding to the transition zone between the inlet opening (31) and the outlet opening (33), it is subjected to low pressure at its outer head surface (25b) and to high pressure at its other surfaces.

Abstract (de)
Flügelzellenpumpe oder -motor mit in den Flügeln (4) eingearbeiteten Kanälen (7, 9), die wechselseitig zu den Fußräumen (3) freigegeben bzw. gesperrt werden. Beim Passieren der Trennstege zwischen Einlaß (11, 12) und Auslaß (13, 14) gelangt so der jeweils höhere Druck in dem betreffenden Fußraum (3), und nur dann wirkt der Flügel (4) als Differenzdruckkolben und wird an den Hubring (10) gedrängt.

IPC 1-7
F04C 2/344; **F01C 1/34**

IPC 8 full level
F01C 20/22 (2006.01); **F01C 21/08** (2006.01); **F04C 2/344** (2006.01)

CPC (source: EP)
F01C 20/22 (2013.01); **F01C 21/0809** (2013.01); **F01C 21/0863** (2013.01)

Citation (search report)
• US 2612115 A 19520930 - WALTER ERNST
• DE 2146656 A1 19720323
• US 2968252 A 19610117 - HENNING JAMES C, et al
• GB 818025 A 19590812 - NEW YORK AIR BRAKE CO
• GB 1038016 A 19660803 - ELLIOTT FREDOLPH HANSON
• DE 2646635 B2 19791108

Cited by
CN103821711A; US7056107B2; WO0246616A3

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