



- (51) International Patent Classification:  
F16K 11/074 (2006.01)
- (21) International Application Number:  
PCT/US2012/023759
- (22) International Filing Date:  
3 February 2012 (03.02.2012)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:  
61/440,013 7 February 2011 (07.02.2011) US
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(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report (Art. 21(3))

(88) Date of publication of the international search report:  
17 April 2014

(54) Title: FLUID SWITCHING VALVES

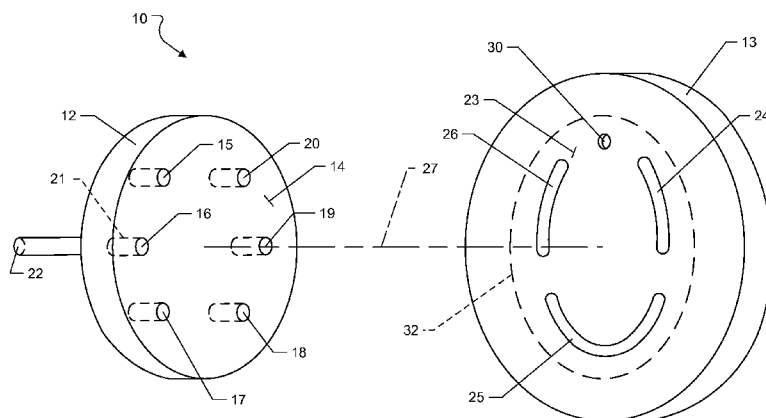


FIG. 1

(57) Abstract: A fluid switching valve includes a first valve element (e.g., a stator) that has a plurality of first fluid-conveying features (e.g., ports), and a second valve element (e.g., a rotor) that has one or more second fluid-conveying features (e.g., fluid conduits in the form of grooves). The second valve element is movable, relative to the first valve element, between a plurality of discrete positions such that, in each of the discrete positions, at least one of the one or more second fluid-conveying features overlaps with multiple ones of the first fluid conveying features to provide for fluid communication therebetween. At least one of the first valve element and the second valve element includes a recess. The recess serves to reduce wear between the first valve element and the second valve element. The recess is arranged such that it does not overlap with any of the first fluid-conveying features or any of the second fluid-conveying features when the rotor is in any of the discrete positions.



## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US2012/023759

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - F16K 11/074 (2012.01)

USPC - 251/61.2

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC(8) - F16K 11/074; G01N 1/00 (2012.01)

USPC - 73/863.73, 864.12; 251/61.2, 355; 422/103, 540

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

PatBase

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4,822,569 A (PELLEGRINO) 18 April 1989 (18.04.1989) entire document	1, 3-9, 11-19
Y		2, 10
Y	US 6,872,361 B2 (LI et al) 29 March 2005 (29.03.2005) entire document	2
Y	US 3,208,719 A (HULSEY) 28 September 1965 (28.09.1965) entire document	10

 Further documents are listed in the continuation of Box C.

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"&amp;" document member of the same patent family

Date of the actual completion of the international search

04 May 2012

Date of mailing of the international search report

18 MAY 2012

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PCT OSP: 571-272-7774