## (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization

International Bureau





(10) International Publication Number WO 2014/197263 A3

(43) International Publication Date 11 December 2014 (11.12.2014)

(51) International Patent Classification: *F15B 1/10* (2006.01)

(21) International Application Number:

PCT/US2014/039887

(22) International Filing Date:

29 May 2014 (29.05.2014)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

13/910,199

5 June 2013 (05.06.2013)

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, BN, 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,

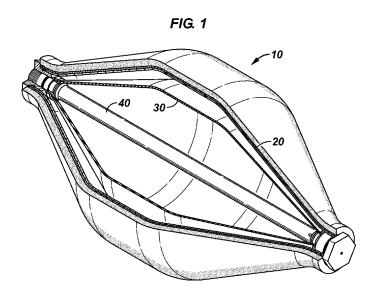
HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, 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, 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, KM, ML, MR, NE, SN, TD, TG).

## Published:

- with international search report (Art. 21(3))
- (88) Date of publication of the international search report: 23 April 2015

(54) Title: HYDRAULIC ACCUMULATOR



(57) Abstract: A hydraulic accumulator comprises a pressure shell, a bladder, and a rod. The pressure shell is filament wound around a leak proof 5 barrier/mold. The bladder is tubular and carried by the rod. The rod extends though the pressure shell and seals to the ends of the shell. The shell has a first generally cylindrical section positioned at the first end and a second generally cylindrical section positioned at the second end. A third generally cylindrical mid section is positioned 10 between the first end and the second end. A first generally frustoconical section connects the first end section to the mid section and a second generally fnjstoconical section connects the second end section to the mid section. The bladder is tubular and expandable. A first chamber having an annular cross section for gas is formed 15 between the rod and the bladder.



## INTERNATIONAL SEARCH REPORT

International application No. PCT/US2014/039887

| A. CLASSIFICATION OF SUBJECT MATTER IPC(8) - F15B 1/10 (2014.01) CPC - F15B 1/10 (2014.07) 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) - F15B 1/04, 1/08, 1/10; F16J 12/00 (2014.01) CPC - F15B 1/04, 1/08, 1/10; F16J 12/00 (2014.07)  |  |   |                       |
| Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched USPC - 92/89, 90, 93, 96, 98; 138/30; 220/721   |  |   |                       |
| Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  Orbit, Google Patents, Google   |  |   |                       |
| C. DOCUMENTS CONSIDERED TO BE RELEVANT  |  |   |                       |
| Category*   | Citation of document, with indication, where a                               | ppropriate, of the relevant passages                | Relevant to claim No. |
| X<br>-<br>Y   | US 2,609,001 A (HEBARD) 02 September 1952 (02.09                             | 9.1952) entire document                             | 14, 15<br>            |
| Υ   | US 3,843,010 A (MORSE et al) 22 October 1974 (22.1                           | 0.1974) entire document                             | 1-3, 11               |
| Υ   | US 3,424,201 A (SUGIMURA et al) 28 January 1969 (28.01.1969) entire document |   | 4, 10, 11             |
| Α   | US 3,744,527 A (MERCIER) 10 July 1973 (10.07.1973) entire document           |   | 1-15                  |
| Α   | US 3,625,242 A (OSTWALD) 07 December 1971 (07.12.1971) entire document       |   | 1-15                  |
| Α   | US 3,209,785 A (MERCIER) 05 October 1965 (05.10.1965) entire document        |   | 1-15                  |
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| Name and mailing address of the ISA/US  Authorized officer:   |  |   |                       |
| Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450  |  | Blaine R. Copenheaver                               |                       |
|   | 571-273-3201   | PCT Helpdesk: 571-272-4300<br>PCT OSP: 571-272-7774 |                       |