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*B08B 9/027* (2006.01)
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[Continued on next page]

(54) **Title:** SELF-CLEANING APPARATUS AND METHOD FOR THICK SLURRY PRESSURE CONTROL

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FIGURE 1A

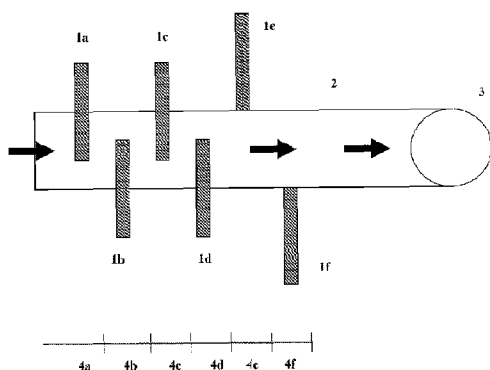
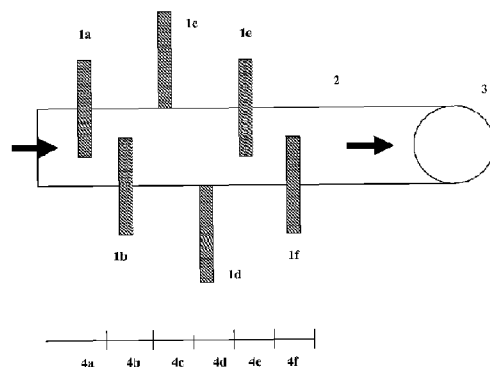


FIGURE 1B



(57) **Abstract:** Self-cleaning apparatus and methods are disclosed for handling viscous fluids, such as thick solid-liquid slurries of lignocellulosic biomass and its components, under high pressure, using an array of retractable valves.



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.

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).

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**A. CLASSIFICATION OF SUBJECT MATTER***C02F 11/00(2006.01)i, B08B 9/027(2006.01)i, C02F 1/00(2006.01)i*

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)

C02F 11/00; C02F 11/12; F16K 7/07; B01D 3/00; F16K 7/04; F16K 5/06

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

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

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

eKOMPASS(KIPO internal) &amp; Keywords: valve, pressure, slurry

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JP 2001-347298 A (IWATANI INT. CO., LTD. et al.) 18 December 2001 See abstract, figures 2-6, paragraphs 0007-0031 and claims 1-4.	1-42
A	US 3896005 A (ZUCCOLOTTO, HECTOR M.) 22 July 1975 See abstract, figures 1-5 and column 1, lines 6-20, column 5, lines 24-64, column 6, lines 16-54	1-42
A	WO 94-23226 A1 (CATIN, NOEL) 13 October 1994 See abstract, pages 1-11 and figures 1-15.	1-42
A	US 2009-0121166 A1 (GABELGAARD, HANS CHRISTIAN) 14 May 2009 See abstract, figures 1-8, paragraphs 0001-0003,0032,0054-0056,0063,0067,0072 and claim 11	1-42
A	US 3918471 A1 (BEDNER, MICHAEL P.) 11 November 1975 See abstract, figures 1-4 and column 1, line 56-column 2, line 2, column 2, lines 47-65.	1-42

 Further documents are listed in the continuation of Box C. See patent family annex.

\* Special categories of cited documents:

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

Date of the actual completion of the international search

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**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No.

**PCT/US2012/036600**

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US 3918471 A1	11.11.1975	None	