

(51) International Patent Classification:
G01L 27/00 (2006.01)(21) International Application Number:
PCT/US2009/060366(22) International Filing Date:
12 October 2009 (12.10.2009)

(25) Filing Language: English

(26) Publication Language: English

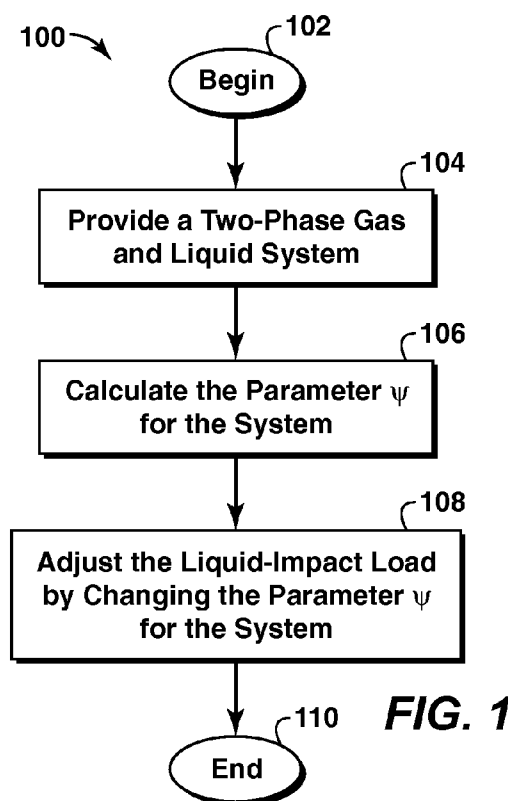
(30) Priority Data:
61/117,029 21 November 2008 (21.11.2008) US(71) Applicant (for all designated States except US):
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Box 2189, Houston, TX 77252-2189 (US).(81) Designated States (unless otherwise indicated, for every
kind of national protection available): 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, RO, RS, RU, SC, SD,
SE, SG, SK, SL, SM, ST, SV, SY, 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,

[Continued on next page]

(54) Title: LIQUID IMPACT PRESSURE CONTROL METHODS AND SYSTEMS

**FIG. 1**

(57) Abstract: The present invention discloses apparatuses, systems, and methods for controlling liquid impact pressure in liquid impact systems. The liquid impact systems include at least one gas and a liquid, the gas having a density (PG) and a polytropic index (κ) and the liquid having a density (PL). The methods include the step of calculating a liquid impact load of the liquid on the object by determining a parameter Ψ for the system, wherein Ψ is defined as $(PG/PL)(\kappa-1)/\kappa$. The systems are also configured to utilize the parameter Ψ . The parameter Ψ may be adjusted to increase or reduce the liquid impact load on the system. Automatic, computer-implemented systems and methods may be used or implemented. These methods and systems may be useful in applications such as LNG shipping and loading/off-loading, fuel tank operation, manufacturing processes, vehicles dynamics, and combustion processes, among others.



GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (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, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))

— as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

Published:

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

Declarations under Rule 4.17: