



- (51) International Patent Classification:
E21B 43/08 (2006.01) *E21B 43/10* (2006.01)
- (21) International Application Number:
PCT/US2012/021023
- (22) International Filing Date:
12 January 2012 (12.01.2012)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
13/010,812 21 January 2011 (21.01.2011) US
- (71) Applicant (for all designated States except US): **HAL-LIBURTON ENERGY SERVICES, INC.** [US/US];
10200 Bellaire Boulevard, Houston, TX 77072 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **DAGENAIS, Peter** [US/US]; 2601 Beltline Road, Carrollton, TX 75006 (US).
FRIPP, Michael, L. [US/US]; 2601 Beltline Road, Carrollton, TX 75006 (US).
- (74) Agent: **SMITH, Marlin, R.**; Smith IP Services, P.C., P.O. Box 997, Rockwall, TX 75087 (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, QA, RO, RS, RU, RW, SC, SD,

[Continued on next page]

(54) Title: VARYING PORE SIZE IN A WELL SCREEN

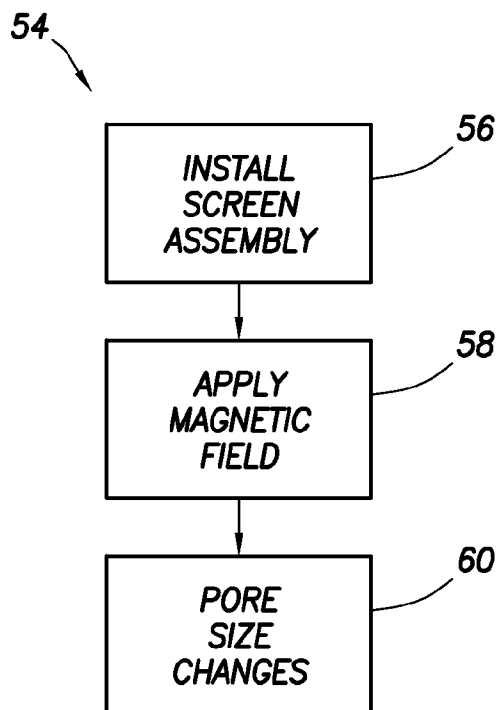


FIG.8

(57) Abstract: A method can include applying a magnetic field to a well screen, thereby varying sizes of pores via which fluid flows through the well screen. A well screen can include a magnetic shape memory material having a dimension which changes in response to application of a magnetic field. Restriction to flow through the well screen can vary in response to the change in dimension of the magnetic shape memory material.



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).

Declarations under Rule 4.17:

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

Published:

- with international search report (Art. 21(3))
— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))

(88) Date of publication of the international search report:

26 October 2012