



- (51) **International Patent Classification:**
E21B 19/00 (2006.01) *B63B 35/44* (2006.01)
- (21) **International Application Number:**
PCT/US2018/015066
- (22) **International Filing Date:**
24 January 2018 (24.01.2018)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**
62/449,853 24 January 2017 (24.01.2017) US
- (71) **Applicant:** ENSCO INTERNATIONAL INCORPORATED [US/US]; 5847 San Felipe, Suite 3300, Houston, Texas 77057 (US).
- (72) **Inventors:** PILGRIM, Rick; 29980 FM 2978 Rd, Apt 807, Magnolia, Texas 77354 (US). DELORY, Stephen Joseph; 466 Woodpecker Forest Ln, Conroe, Texas 77384 (US). ROPER, Richard Robert; 27410 Myrtle Lake Ln., Katy, Texas 77494 (US).
- (74) **Agent:** DOOLEY, Matthew C. et al.; P.O. Box 692289, Houston, Texas 77269 (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, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, 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, ST, 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).

(54) **Title:** JOINT RECOGNITION SYSTEM

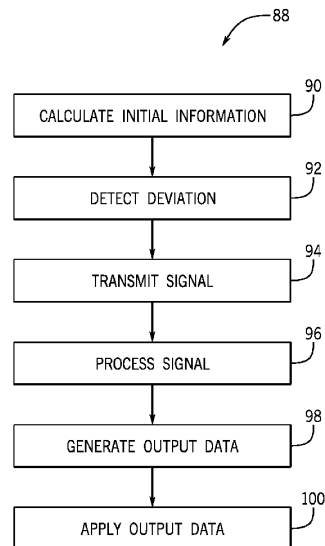


FIG. 4

(57) **Abstract:** Techniques and systems to provide automatic positioning of a tripping apparatus (24). A system may include a sensor (70, 72) configured to detect a physical characteristic of a tubular string (20) moving past the sensor (70, 72) and generate a signal indicative of the physical characteristic. The system may also include a processing device (74) configured to process the signal indicative of the physical characteristic, determine whether the processed signal is indicative of a deviation of the tubular string (20), and generate output data utilized to automatically position a tripping apparatus (24) at a location of the deviation on the tubular string (20).

Declarations under Rule 4.17:

- *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))*