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(54) Title: DUAL ACTING ROD PISTON CONTROL SYSTEM

(57) Abstract: A downhole tool is hydraulically actuated through a control system that features rod piston(s) that are double acting. The piston bore is in a single housing component with an annular cavity that provides access to all piston bores to move the pistons in a first direction. The housing component that has the piston bore also includes an internal sleeve in a passage in the housing. A second control system connection communicates with a sealed annular space defined between the sleeve and the passage wall that holds the sleeve. A series of radial ports communicate from the annular space into each piston bore on the opposite side of each piston from the annular cavity so that each piston is double acting with a bore in a single housing component.

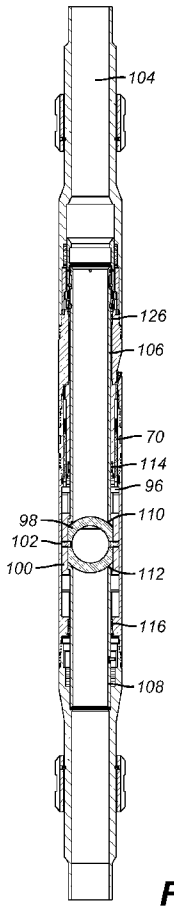


FIG. 6

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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, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

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

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