



- (51) **International Patent Classification:**
E21B 10/42 (2006.01) *E21B 10/58* (2006.01)
E21B 10/52 (2006.01)
- (21) **International Application Number:**
PCT/US2012/022734
- (22) **International Filing Date:**
26 January 2012 (26.01.2012)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**
13/014,797 27 January 2011 (27.01.2011) US
- (71) **Applicant (for all designated States except US):** **BAKER HUGHES INCORPORATED** [US/US]; P.O. Box 4740, Houston, TX 77210-4740 (US).
- (72) **Inventor; and**
- (75) **Inventor/Applicant (for US only):** **TRAHAN, James, S.** [US/US]; 25410 Pipestem Dr., Magnolia, TX 77355 (US).
- (74) **Agent:** **PORTER, Andre, J.**; Baker Hughes Incorporated, P.O. Box 4740, Houston, TX 77210-4740 (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, 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))

[Continued on next page]

(54) **Title:** FABRICATED MILL BODY WITH BLADE POCKETS FOR INSERT PLACEMENT AND ALIGNMENT

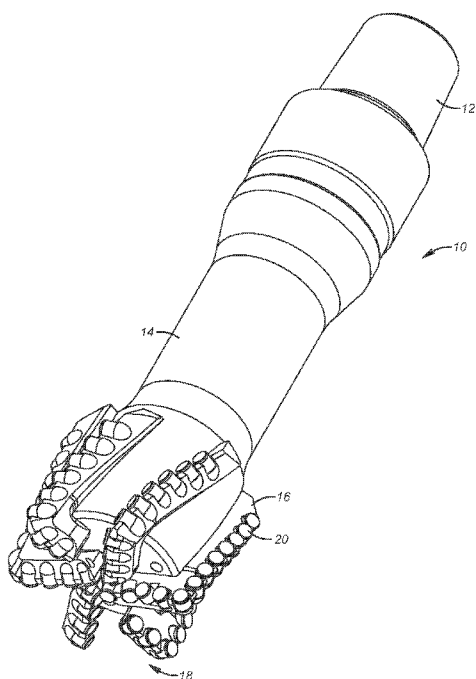


FIG. 1

(57) **Abstract:** A mill body is machined integrally with blades that have pockets to receive PDC inserts. The insert pockets can have an orientation feature to ensure that inserts that require specific rotational orientation are put into the pockets at the right orientation for efficient milling. The orientation of some of the pockets closest to the bottom and center of the bit have their axis reoriented to a near parallel orientation to the bit center axis to allow the bit body and blade fabrication equipment access to drill the insert pocket.



-
- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*
- Published:**
- *without international search report and to be republished upon receipt of that report (Rule 48.2(g))*