

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
20 April 2006 (20.04.2006)

PCT

(10) International Publication Number
WO 2006/042131 A2

- (51) International Patent Classification:
E21B 43/11 (2006.01) *E21B 43/26* (2006.01)
- (21) International Application Number:
PCT/US2005/036199
- (22) International Filing Date: 6 October 2005 (06.10.2005)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
10/961498 8 October 2004 (08.10.2004) US
- (71) Applicant (for all designated States except US): **BUCKMAN JET DRILLING, INC.** [US/US]; 183 St. Charles Avenue, Bowling Green, KY 42101 (US).

[US/US]; 11169 Patton Road, Northport, AL 35475 (US). **BUCKMAN, William, G., Sr.** [US/US]; 504 Memphis Junction Road, Bowling Green, KY 42101 (US). **HALE, Carl, B.** [US/US]; 203 Molly Avenue, Franklin, KY 42134 (US). **SEARS, Adam, W.** [US/US]; 8108 Houston Lane, Pewee Valley, KY 40056 (US).

(74) Agent: **BOWLING, Bradley, S.**; Baker Botts, L.L.P., One shell Plaza, 910 Louisiana, Houston, TX 77002-4995 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

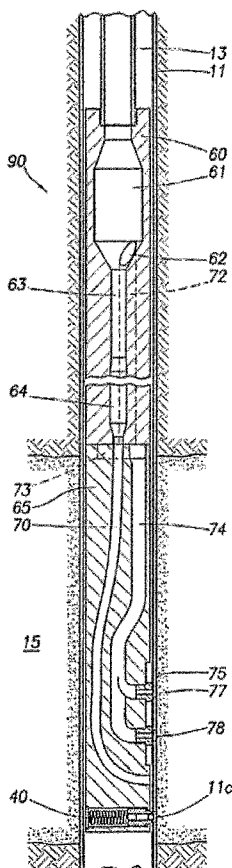
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,

[Continued on next page]

- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **MALONE, Philip, G.** [US/US]; 14151 Wire Lane, Cottdonale, AL 35453 (US). **MURPHY, Michael, E.** [US/US]; 108 Ann Street, Moundville, AL 35474 (US). **BRISCOE, Floyd, H.**

(54) Title: PERFORATION ALIGNMENT TOOL FOR JET DRILLING, PERFORATING AND CLEANING

(57) Abstract: Method and apparatus are provided for pumping operations that may be used to form perforations in the casing of a well, clean perforations and drill drain holes through perforations. A plunger is placed in a reference perforation and the pumping operations may be performed through a nozzle at a known location with respect to the reference perforation. The nozzle may be attached to a flexible hose to drill a drain hole or may be inserted in a body on the bottom of a tubing string. Addition apparatus and method are provided to insure that the plunger or plungers are maintained in a reference perforation or perforations when pumping operations are carried out through tubing.



WO 2006/042131 A2