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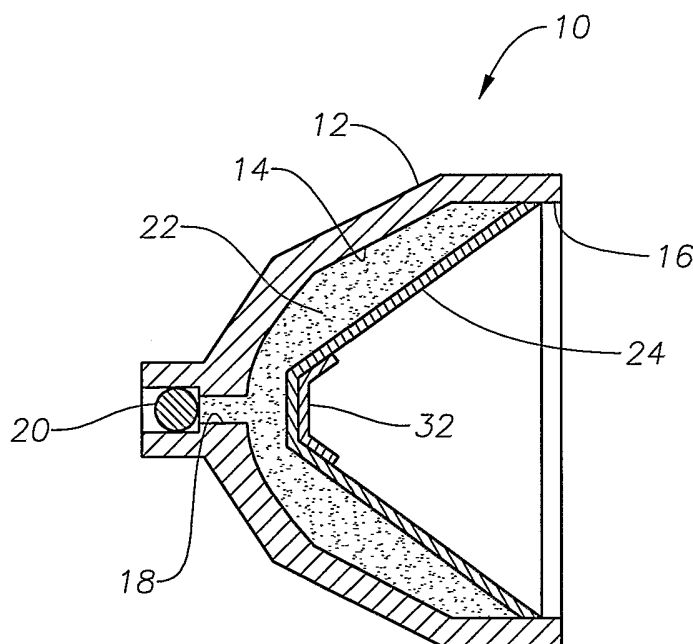
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Declarations under Rule 4.17:

— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations 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, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE,

[Continued on next page]

(54) Title: APPARATUS AND METHOD FOR PENETRATING OILBEARING SANDY FORMATIONS



(57) Abstract: A shaped charge (10) and a method of using such to provide for large and effective perforations in oil bearing sandy formations while causing minimal disturbance to the formation porosity is described. This shaped charge uses a low-density liner (24) having a filler material that is enclosed by outer walls made, preferably, of plastic or polyester. The filler material is preferably a powdered metal or a granulated substance, which is left largely unconsolidated. The preferred filler material is aluminum powder, or aluminum particles, that are coated with an oxidizing substance, such as TEFLON®, permitting a secondary detonation reaction inside the formation following jet penetration. The filled liner is also provided with a metal cap to aid penetration of the gun scallops, the surrounding borehole casing and the cement sheath.



BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for the following designations 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, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR,

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US CL : 102/307

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B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
Derwents Abstracts, EPO abstracts, JPO abstracts.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	WO 01/25717 A1 (POWELL) 12 April 2001 (12.04.2001), abstract, pages 8, 9 and 19; figure 1.	1-8, 12, 13, 15-17, 20-23, 25, and 32-34 ----- 9-11, 14, 18, 19, 24, and 26-31
Y	US 6,588,344 B2 (CLARK et al.) 8 July 2003 (08.07.2003), col. 3, lines 50-60 and col. 4, lines 5-23).	9-11, 14, 18, 19, 24, and 26-31
A	US 6,186,070 B1 (FONG et al.) 13 February 2001 (13.02.2001), abstract, figs. 1-3; claims 1-16.	1-34
A	US 2003/0037692 A1 (LIU) 27 February 2003 (27.02.2003), see abstract, and claims 1-10.	1-34
A	US 6,510,797 B1 (FONG) 28 January 2003 (28.01.2003), see abstract, figure 2, and claims 1-8.	1-34
A	US 6,308,634 B1 (FONG) 30 October 2001 (30.10.2001), see abstract, figure 2 and claims 1-7.	1-34

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