(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
22 February 2001 (22.02.2001)

PCT

(10) International Publication Number
WO 01/12952 A1

(51) International Patent Classification[7]: E21D 9/06, 9/08, C09K 7/08

(21) International Application Number: PCT/EP00/05991

(22) International Filing Date: 28 June 2000 (28.06.2000)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
9918992.0 12 August 1999 (12.08.1999) GB

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(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, 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, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

**Published:**
— *With international search report.*

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

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(54) Title: TUNNEL BORING METHOD

(57) Abstract: A process of boring a tunnel using an earth-pressure balance shield boring tunnelling machine having a cutting head, an excavation chamber for soil removed by boring and conveying means for removal of said soil from the excavation chamber; wherein there is injected into a stratum being bored at the cutting head a foamed aqueous solution, characterised in that (a) the aqueous solution contains two essential components which are (i) a sulphate- or sulphonate-containing anionic surfactant, and (ii) β-naphthalene sulphonate-formaldehyde condensate; and in that (b) there is applied to the soil removed by boring in at least one of the excavation chamber and the conveyor a second aqueous solution containing essentially a high molecular weight polyethylene oxide and optionally a sulphate- or sulphonate-containing anionic surfactant. The process allows easy removal of soil from the cutting head to the excavation chamber and from the excavation chamber out of the machine. It is particularly effective for sticky soils with high proportions of clay and a high water content.