Title (en)

NOZZLE FOR JET DRILLING AND ASSOCIATED METHOD

Title (de)

DÜSE ZUM STRAHLBOHREN UND ZUGEHÖRIGES VERFAHREN

Title (fr)

BUSE DE FORAGE AU JET ET METHODE ASSOCIEE

Publication

EP 1499789 A4 20100721 (EN)

Application

EP 03746666 A 20030409

Priority

- US 0310813 W 20030409
- US 11979002 A 20020410

Abstract (en)

[origin: CA2480249A1] A jet nozzle (60) is provided for drilling holes through the earth. The nozz le (60) may include orifices (68) for discharging fluid to drive the nozzle forward and includes a disk (70) or other device having orifices (80) to produce a swirling motion to fluid in the body of the nozzle. Swirling fluid is discharged from a front orifice (74) and an extension (76) is placed forward of the front orifice to confine the swirling fluid in a radial direction.

IPC 8 full level

E21B 7/18 (2006.01); **B05B 1/34** (2006.01); **E21B 7/08** (2006.01)

CPC (source: EP)

B05B 1/3447 (2013.01); **E21B 7/18** (2013.01)

Citation (search report)

- [Y] US 4787465 A 19881129 - DICKINSON III BEN W O [US], et al
- [Y] US 3415453 A 19681210 - COSTA ROBERT B
- [Y] US 4790384 A 19881213 - SCHELLSTEDE HERMAN J [US], et al
- [A] GB 1603090 A 19811118 - HUGHES & CO
- [A] US 2017467 A 19351015 - LOOMIS LEAVITT R
- [A] US 3344558 A 19671003 - KIRKLAND WYATT S
- [A] US 4852800 A 19890801 - MURDOCK G DUNCAN [US]
- [A] US 4150794 A 19790424 - HIGGINS BOBBY L [US]
- [A] GB 1376591 A 19741204 - FRANZ N C
- [A] US 4244521 A 19810113 - GUSE KUNO
- [AD] US 6263984 B1 20010724 - BUCKMAN SR WILLIAM G [US]
- [A] US 4798339 A 19890117 - SUGINO KENJI [JP], et al
- [Y] WANG RUIHE ET AL: "Theoretical and experimental study on conical swirling water jet flow", JOURNAL OF HYDRODYNAMICS, JOURNAL OF HYDRODYNAMICS, BEIJING, CN, vol. 10, no. 3, 1 January 1998 (1998-01-01), pages 80 - 90, XP008122899, ISSN: 1001-6058
- See references of WO 03087522A2

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