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(71) Applicant (*for all designated States except US*):
QUANTA ASSOCIATES, L.P. [US/US]; Suite 2600,
2800 Post Oak Blvd., Houston, Texas 77056 (US).

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): **HALDERMAN, Ronald G.** [US/US]; 7003 Northwind Dr., Billings, Montana 59106 (US). **QUACKENBUSH, Karl D.** [US/US]; 6490 S. Coldwater Road, Blanchard, Michigan 49310 (US).

(74) Agent: **OATHOUT, Mark A.**; Suite 960, 3701 Kirby Drive, Houston, Texas 77098 (US).

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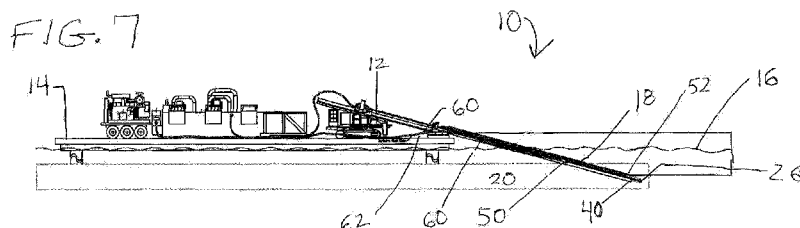
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(54) Title: DRILLING FLUID RECOVERY WHEN DRILLING UNDER AN OBSTACLE OR WATER BODY



(57) Abstract: A system for recovering drilling mud in drilling an underground arcuate path around at least a portion of an obstacle has a conductor casing, a drill pipe surrounded by the conductor casing for at least a portion of an axial length of the drill pipe, a flow line connected to the conductor casing at a downhole position, and a pump coupled to the flow line placed at another downhole position. A volume of drilling mud within the underground arcuate path is pumped from the underground arcuate path to the surface and recovered for recirculation.



A. CLASSIFICATION OF SUBJECT MATTER***E21B 21/06(2006.01)i***

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

E21B 21/06; E21D 1/06; E21B 7/04; E21B 7/28

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

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) & Keywords: arcuate, dill, pump, recycle, flow and similar terms

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y A	US 04121673 A (CHERRINGTON, MARTIN D.) 24 October 1978 See column 2, line 36 - column 3, line 54 and figures 1, 2	1-5, 7, 18, 20 8, 17, 19 6, 9-16
Y A	US 05711385 A (BROTHERTON, JIM) 27 January 1998 See the abstract and figures 1-6	8 1-7, 9-20
Y A	US 05096002 A (CHERRINGTON, MARTIN D.) 17 March 1992 See column 8, line 46 - column 8, line 64 and figures 1-7	17, 19 1-16, 18, 20
A	US 05375669 A (CHERRINGTON, MARTIN D.) 27 December 1994 See the abstract and figures 1-4	1-20
A	US 05269384 A (CHERRINGTON, MARTIN D.) 14 December 1993 See column 5, line 52 - column 6, line 7 and figure 7	1-20



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:

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Authorized officer

Bonghoon Lee

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INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 04121673 A	24. 10. 1978	None	
US 05711385 A	27. 01. 1998	None	
US 05096002 A	17. 03. 1992	EP 0468664 A2	29. 01. 1992
		EP 0468664 A3	10. 02. 1993
		US 05096002 A	17. 03. 1992
		US 05351764 A	04. 10. 1994
US 05375669 A	27. 12. 1994	None	
US 05269384 A	14. 12. 1993	None	