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[Continued on next page]

(54) Title: APPARATUS AND METHOD FOR CEMENTING LINER

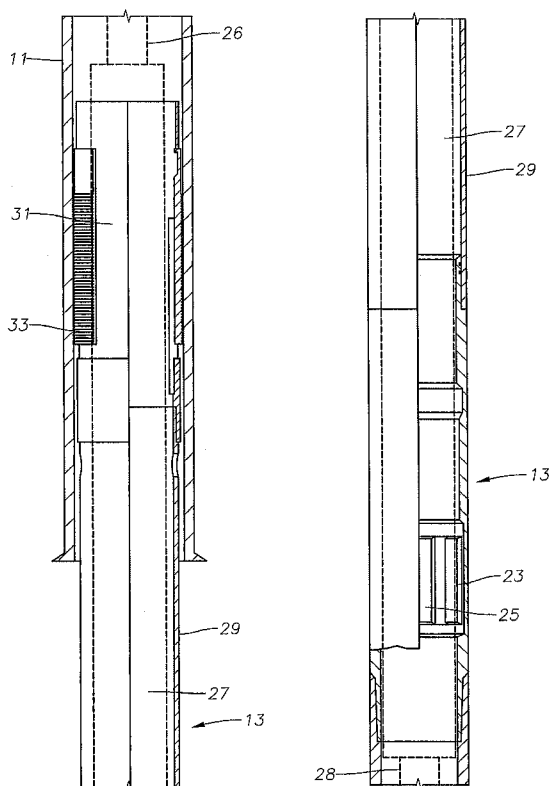


Fig. 1A

Fig. 1B

(57) Abstract: A method of cementing a liner in a well includes mounting a valve assembly that is biased in a closed position to a running tool assembly. The running tool assembly has a stinger inserted through the valve assembly, retaining the valve assembly in an open position. The stinger has a cement retainer releasably mounted to it. After lowering the running tool assembly into engagement with the liner string, the operator pumps a cement slurry through the stinger and the valve assembly. The operator then pumps the cement retainer down the liner string into latching engagement with a lower portion of the liner string. Afterward, the operator lifts the stinger from the valve assembly, causing the valve assembly to move to the closed position. The valve assembly blocks upward flow of fluid from the well conduit through the valve assembly in the event of leakage of the cement retainer.



TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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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 33/14; E21B 7/00; E21B 17/14; E21B 23/06; E21B 34/06; E21B 19/00; E21B 33/129

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: liner, cement, valve, flapper, running tool, stinger

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 04848459 A (BLACKWELL; HENRY W. et al.) 18 July 1989 See abstract, column 4 lines 50-55 and figure 1	1-20
A	US 2009-0107675 A1 (ERIKSEN ERIK P. et al.) 30 April 2009 See paragraphs 0004, 0050, claim 1 and figures 1,5	1-20
A	US 6401824 B1 (MUSSELWHITE; JEFFREY D. et al.) 11 June 2002 See column 3 lines 45-46 and figure 1	1-20
A	US 05823265 A (CROW; ROBERT W. et al.) 20 October 1998 See abstract and column 17 lines 35-40	1-20



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INTERNATIONAL SEARCH REPORT

Information on patent family members

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