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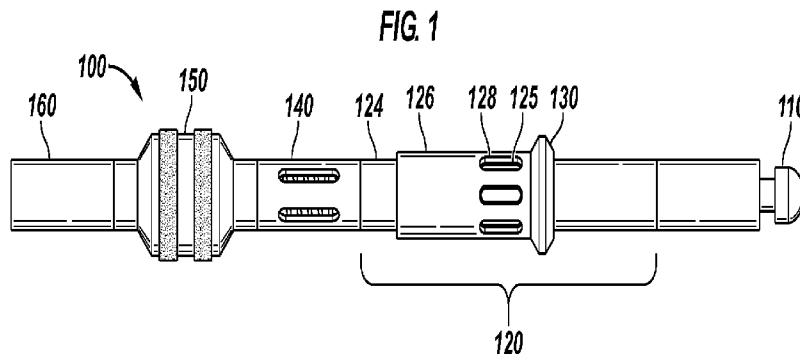
- (51) **International Patent Classification:**  
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[Continued on next page]

(54) Title: OPEN-HOLE MUDCAKE CLEANUP



(57) **Abstract:** Apparatus and methods for performing downhole operations. The apparatus can include a sealing mechanism having an inner bore formed therethrough; a check valve adjacent the sealing mechanism; a circulation device adjacent the check valve; and a rotatable nozzle adjacent the circulation device. The circulation device can include a first tubular member having a radial hole formed therethrough, and a second tubular member disposed about at least a portion of the first tubular member. The second tubular member can also have a radial hole formed therethrough, and the second tubular member can be adapted to longitudinally move about the first tubular member from a first position to a second position.

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**A. CLASSIFICATION OF SUBJECT MATTER***E21B 37/00(2006.01)i, E21B 21/00(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 37/00; E21B 34/06; E21B 37/08; E21B 34/14

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) &amp; Keywords: sealing mechanism, check valve, circulation device, rotatable nozzle

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 05195585 A (CLEMENS; JACK G. et al.) 23 March 1993 See abstract, column 6 and figure 5	1-20
A	US 05337819 A (TAILBY; ROGER) 16 August 1994 See abstract, column 4 and figures 2, 4	1-20
A	US 04560005 A (HELDERLE; PAUL M. et al.) 24 December 1985 See abstract, column 4, figure 2	1-20
A	US 6170577 B1 (NOLES, JR. et al.) 09 January 2001 See abstract, figure 2	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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"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&amp;" document member of the same patent family

Date of the actual completion of the international search

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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 05195585 A	23.03.1993	None	
US 05337819 A	16.08.1994	None	
US 04560005 A	24.12.1985	JP 61-036491 A	21.02.1986
US 6170577 B1	09.01.2001	US 6325305 B1	04.12.2001