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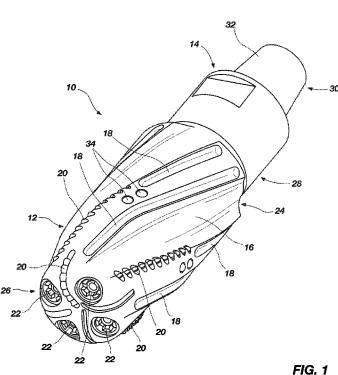
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[Continued on next page]

(54) Title: DRILLING SYSTEMS FOR CLEANING WELLBORES, BITS FOR WELLBORE CLEANING, METHODS OF FORMING SUCH BITS, AND METHODS OF CLEANING WELLBORES USING SUCH BITS



(57) Abstract: Wellbore cleaning bits include a bit body, at least one cutting structure on the bit body, and a shank configured to attach the bit body to a drill string. Drilling systems for cleaning wellbores include a wellbore cleaning bit coupled to a drill string. The wellbore cleaning bit may include a casing bit body and a shank attached to the casing bit body and the drill string. A casing bit may be attached to a shank having a connection portion configured for attachment to a drill string to form wellbore cleaning bits for cleaning at least a section of a wellbore. Furthermore, a casing bit may be advanced into a wellbore using a drill string to clean a wellbore.

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#### **Declarations under Rule 4.17:**

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- the earlier application (Rule 4.17(iii))

- with international search report (Art. 21(3))
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))

#### as to the applicant's entitlement to claim the priority of (88) Date of publication of the international search report: 20 January 2011

International application No. PCT/US2010/031193

#### A. CLASSIFICATION OF SUBJECT MATTER

#### E21B 10/60(2006.01)i, E21B 10/54(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 10/60; E21B 10/18; E21B 10/26; E21B 10/46

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: reamer, wellbore, fluid, drill

#### C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2007-0289782 A1 ( LESTER I. CLARK et al. ) 20 December 2007 See paragraphs 17 - 24; figures 1 - 2.	1-14
Y	US 5035293 A1 ( RIVES, ALLEN K. ) 30 July 1991 See column 2, line 23 - line 44; figure 1.	1-14
A	US 2004-0206552 A1 ( TIMOTHY P. BEATON ) 21 October 2004 See paragraphs 18 - 19; figure 1.	1-14
A	US 2006-0054355 A1 ( JAMES L. LARSEN et al. ) 16 March 2006 See paragraphs 7 - 9; figure 3.	1-14

		Further	documents	are	listed	in	the	con	tinua	ation	of	Box	C
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See patent family annex.

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Date of mailing of the international search report

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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
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