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**Declarations under Rule 4.17:**

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- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

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[Continued on next page]

(54) Title: NON-MAGNETIC DRILL STRING MEMBER WITH NON-MAGNETIC HARDFACING AND METHOD OF MAKING THE SAME

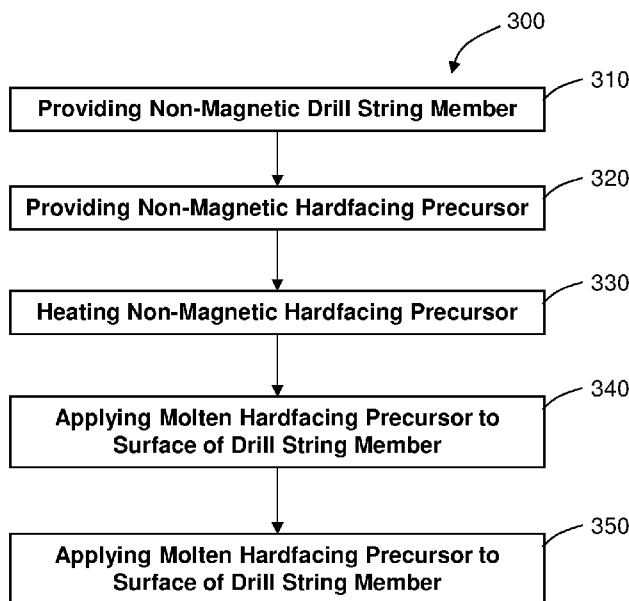


FIG. 10

(57) Abstract: A method for applying a non-magnetic, abrasive, wear-resistant hardfacing material to a surface of a drill string member includes providing a non-magnetic drill string member formed of a non-magnetic material, the drill string member having an outer surface. It also includes providing a non-magnetic hardfacing precursor material comprising a plurality of non-magnetic, sintered carbide pellets and a non-magnetic matrix material; heating a portion of the non-magnetic hardfacing precursor material to a temperature above the melting point of the matrix material to melt the matrix material. It further includes applying the molten non-magnetic matrix material and the plurality of non-magnetic, sintered carbide pellets to the exterior surface of the drill string member; and solidifying the molten non-magnetic matrix material to form a layer of a non-magnetic hardfacing material having a plurality of non-magnetic, sintered carbide pellets dispersed in the hardfacing material.

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## INTERNATIONAL SEARCH REPORT

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**PCT/US2012/022995****A. CLASSIFICATION OF SUBJECT MATTER***E21B 10/46(2006.01)i, E21B 10/50(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 10/46; E21B 10/36; C22C 29/00; E21B 7/24

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: hardfacing, pellet, non-magnetic 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	US 2007-0056776 A1 (OVERSTREET, JAMES) 15 March 2007 See paragraphs 39-53, 65-72 and figure 5	10-21,24-30 1-9,22,23
Y A	US 2005-0217898 A1 (BRENT, CLARK) 06 October 2005 See paragraphs 20 and figure 1	1-9 10-30
Y A	US 05663512 A (SCHADER, KEVIN W. et al.) 02 September 1997 See column 2, line 35 - column 2, line 47	22,23 1-21,24-30

 Further documents are listed in the continuation of Box C. See patent family annex.

\* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

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"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"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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