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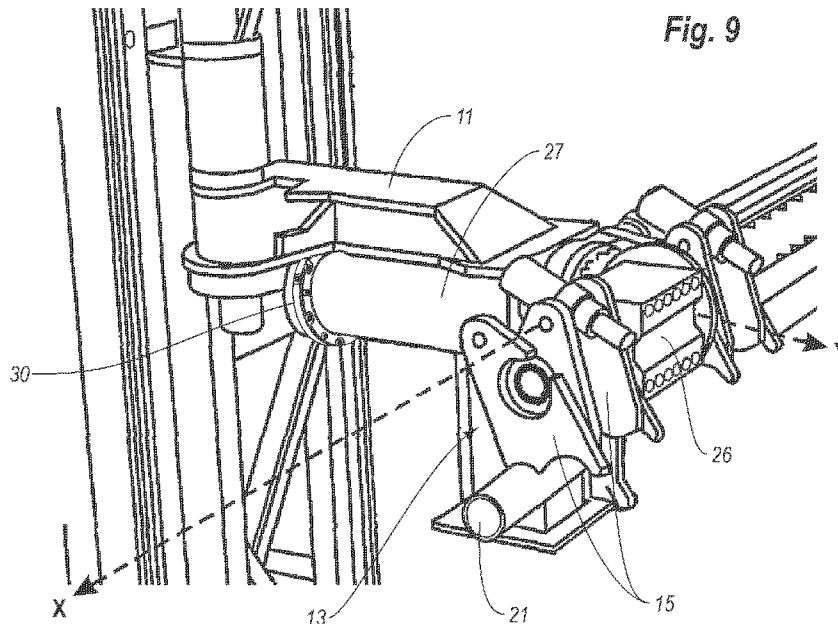
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Declarations under Rule 4.17:

— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))

[Continued on next page]

(54) **Title:** DRILL ROD HANDLER



(57) **Abstract:** According to one example of the invention, a drill rod handler includes a movable clamp. A position sensor system for the drill rod handler includes a level sensor that is configured to detect a position of the moveable clamp with respect to gravity. The position sensor system further includes a rotation sensor configured to detect a rotational position of the moveable clamp with respect to a defined axis that runs parallel to gravity. Furthermore, the position sensor system includes a control center that is communicably connected to the level sensor and the rotation sensor.

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

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A. CLASSIFICATION OF SUBJECT MATTER*E21B 19/20(2006.01)i, E21B 19/15(2006.01)i, E21B 19/16(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 19/20; G01P 1/02; E21B 19/00; E21B 19/14

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) & Keywords: position sensor, pipe, control

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 2007-115375 A1 (BOART LONGYEAR INTERNATIONAL HOLDINGS, INC. et al.) 18 October 2007 See the abstract; figure 1; pages 7-10; claims 1-21.	1-27
A	US 5821419 A1 (MADER; GERHARD et al.) 13 October 1998 See the abstract; figure 2; columns 2, 3; claims 1-4.	1-27
A	US 6298927 B1 (BACK; CARL F.) 09 October 2001 See the abstract; figures 3, 7, 8; columns 6, 7, 9, 10; claims 1-33.	1-27
A	US 4042123 A1 (SHELDON; LOREN B. et al.) 16 August 1977 See the abstract; figures 1, 5, 8; columns 5-8; claims 1-28.	1-27

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

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"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

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Date of the actual completion of the international search

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Information on patent family members

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