

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

To: ROLSTON, GEORGE A. 900 - 45 Sheppard Avenue East TORONTO, Ontario Canada, M2N 5W9

Date of mailing	5 June 2018 (05-06-2018)
<i>(day/month/year)</i>	

Applicant's or agent's file reference 1369PCT108

FOR FURTHER ACTION
See paragraph 2 below

International application No. PCT/CA2018/050271	International filing date <i>(day/month/year)</i> 07 March 2018 (07-03-2018)	Priority date <i>(day/month/year)</i> 09 March 2017 (09-03-2017)
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International Patent Classification (IPC) or both national classification and IPC IPC: E02F 9/28 (2006.01), E02F 3/36 (2006.01), E02F 9/00 (2006.01), E05B 47/00 (2006.01)

Applicant HARDER, CRAIG ET AL

<p>1. This opinion contains indications relating to the following items:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Box No. I Basis of the opinion <input type="checkbox"/> Box No. II Priority <input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability <input type="checkbox"/> Box No. IV Lack of unity of invention <input checked="" type="checkbox"/> Box No. V Reasoned statement under Rule 43<i>bis</i>.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement <input type="checkbox"/> Box No. VI Certain documents cited <input type="checkbox"/> Box No. VII Certain defects in the international application <input checked="" type="checkbox"/> Box No. VIII Certain observations on the international application <p>2. FURTHER ACTION</p> <p>If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1<i>bis</i>(b) that written opinions of this International Searching Authority will not be so considered.</p> <p>If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.</p> <p>For further options, see Form PCT/ISA/220.</p>
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Name and mailing address of the ISA/CA Canadian Intellectual Property Office Place du Portage I, C114 - 1st Floor, Box PCT 50 Victoria Street Gatineau, Quebec K1A 0C9 Facsimile No.: 001-819-953-2476	Date of completion of this opinion 17 May 2018 (17-05-2018)	Authorized officer Christine Lord (819) 639-7867
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Box No I **Basis of this opinion**

1. With regard to the **language**, this opinion has been established on the basis of:

- the international application in the language in which it was filed.
- a translation of the international application into _____ which is the language of a translation
furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

2. This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43*bis*.1(a))

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of a sequence listing:

a. forming part of the international application as filed:

- in the form of an Annex C/ST.25 text file.
- on paper or in the form of an image file.

b. furnished together with the international application under PCT Rule 13*ter*.1(a) for the purposes of international search only in the form of an Annex C/ST.25 text file.

c. furnished subsequent to the international filing date for the purposes of international search only:

- in the form of an Annex C/ST.25 text file (Rule 13*ter*.1(a)).
- on paper or in the form of an image file (Rule 13*ter*.1(b) and Administrative Instructions, Section 713).

4. In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

5. Additional comments:

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims 1 to 7 and 9 to 17	YES
	Claims 8	NO
Inventive step (IS)	Claims 2 to 7 and 9 to 15	YES
	Claims 1, 8, 16 and 17	NO
Industrial applicability (IA)	Claims 1 to 17	YES
	Claims None	NO

2. Citations and explanations:

Cited References:

D1: US2016258228A1 (THOMAS, S.G. et al.), 08 September 2016 (08-09-2016)
D2: US5709043A (JONES, L.F. et al.), 20 January 1998 (20-01-1998)

Novelty (N):

Claim 8 lacks novelty and does not comply with **Article 33(2) of the PCT**. D1 disclosed the claimed subject matter before the claim date. As in claim 8, D1 discloses a remotely operable power operated tool lock (Fig. 5 6, 9 and 10: 310 or 510) for securing a tool bit (304 inherently supporting a tool bit at an outer end) on a tool bit mount (302) on a ground engaging system (Fig. 1: see wellbore drilling system) said tool lock being concealed wholly within a tool bit mount, the tool lock comprising a lock housing body (housing of 316) adapted to be placed in said tool bit mount, a lock member (318) slideably secured in said lock housing body, a drive transmission means/wireless responsive electrical motor (motor/actuator 316 with communication link 520) connected to said lock member, operable to extend and retract said lock member relative to said lock housing body, and a remote wireless controller operable to send a specific coded signal to said tool lock, and operate said wireless responsive electrical motor (via communication link 520).

Claims 1 to 7 and 9 to 17 meet the requirements of **Article 33(2) of the PCT**. The subject matter of these claims is considered novel since the closest prior art document D1 does not disclose nor fairly suggest a shovel for earth moving equipment/method of securing a tool bit to a shovel comprising a plurality of electrically operated tool bit locks individually controlled by a remote controller.

Continued in Supplemental Box

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

Claims 1 to 9 and 11 to 17 are indefinite and do not comply with **Article 6 of the PCT**. The expressions “tool bit” and “tool bit mount” do not appear to be a commonly used term in the art, where the terms tooth (or teeth) and adaptor(s) appear more commonly used to refer to the retention of teeth on buckets of earth moving equipment. Such terminology is also in line with the “teeth” nomenclature and “adaptors” nomenclature used by the applicant throughout the description.

Claims 7 and 15 are indefinite and do not comply with **Article 6 of the PCT**. The second introduction of an element already introduced causes ambiguity. In particular, it is unclear if the “lock recesses” introduced in claims 7 and 15 differ from the “lock receiving recess” previously introduced in the singular form in claims 1 and 9 respectively.

Claim 8 is indefinite and does not comply with **Article 6 of the PCT**. The expression “tool bit mount” (claim 8, line 2) has already been introduced in the claim and should therefore be referred to using a definite article. Conversely, the expressions “each said tool lock” and “respective said wireless responsive electrical motor” each leads to ambiguity as a single tool lock and a single motor have previously been introduced in the claim. Finally, the expression “a lock... on a ground engaging system” appears broader than the description which discloses a lock on a ground engaging shovel (p. 1, see “Background of the invention” paragraph).

Claim 11 is indefinite and does not comply with **Article 6 of the PCT**. The expression “tool bit mounts” leads to ambiguity as a single tool bit mount has previously been introduced in the claims.

Claim 16 is indefinite and does not comply with **Article 6 of the PCT**. The claim is directed to a “method of securing a tool bit on a tool bit mount” per the preamble (underline used for emphasis), but the method steps claimed do not include any steps related to securing a tool bit. It would appear that the steps presented in claim 17 should be included in claim 16 to achieve this result.

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: Box No. V

Inventive Step (IS):

Claim 8 lacks an inventive step and does not comply with **Article 33(3) of the PCT**, based on the novelty objection recited above.

Claims 1, 16 and 17 lack an inventive step and do not comply with **Article 33(3) of the PCT**. The claimed subject matter would have been obvious at the claim date to a person skilled in the art or science to which it pertains having regard to D2 in view of D1 and general common knowledge. As in claims 1 and 16, D2 discloses a shovel for earth moving equipment/ method of securing a tool bit to a shovel (Fig. 1, 3, 16 and 40) comprising a plurality of ground engaging tool bits (12) removably attached to said lip and characterized by a plurality of tool bit mounts (13) on said shovel lip, a plurality of tool bits (12) releasably carried on respective said tool bit mounts, said tool bits each defining a hollow interior cavity (16) adapted to fit over respective said tool bit mounts, a lock receiving recess (103) in each said tool bit mount, power operated tool bit locks (175) received in respective said lock receiving recesses, said power operated tool bit locks incorporating a moveable lock member (216), and a power operated drive (hydraulic drive coupling to 210) operable to drive said lock member between two positions, a lock receiving socket (145) accessible within said hollow interior of each said tool bit, and oriented to register with a respective said lock receiving recess. Regarding claims 1, 16 and 17, the applicant further claims an electrically powered drive and a remote control device operable to signal respective said electrical power operated drive. However, such feature has previously been disclosed by D1. D1 discloses an electrically power operated drive (316) and a remote control device operable to signal respective said electrical power operated drive (via communication link 520)

Claims 2 to 7 and 9 to 15 meet the requirements of **Article 33(3) of the PCT**. The subject matter of these claims is considered to involve an inventive step since the prior art does not disclose nor fairly suggest a shovel for earth moving equipment/method of securing a tool bit to a shovel comprising a plurality of electrically operated tool bit locks individually controlled by a remote controller, wherein the powered tool lock comprises a drive gear rack, a drive gear and an electrical motor for moving the lock from a locked position to an unlocked position.

Industrial Applicability (IA):

The subject matter of claims 1 to 17 meets the requirements of **Article 33(4) of the PCT** for Industrial Applicability.