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	Filing Date		
	First Named Inventor	Derek KITCHEN et al.	
	Art Unit		
	Examiner Name		
	Attorney Docket Number	THOLAM P599US	

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Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

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See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

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SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Michael J. Bujold/	Date (YYYY-MM-DD)	2017-08-29
Name/Print	Michael J. Bujold	Registration Number	32018

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Electronic Patent Application Fee Transmittal				
Application Number:				
Filing Date:				
Title of Invention:		RELEASABLE CONNECTION FOR A DOWNHOLE TOOL STRING		
First Named Inventor/Applicant Name:		Derek KITCHEN		
Filer:		Michael James Bujold/Tracy Clark		
Attorney Docket Number:		THOLAM P599US		
Filed as Small Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
UTILITY FILING FEE (ELECTRONIC FILING)	4011	1	70	70
UTILITY SEARCH FEE	2111	1	300	300
UTILITY EXAMINATION FEE	2311	1	360	360
Pages:				
Claims:				
Miscellaneous-Filing:				
LATE FILING FEE FOR OATH OR DECLARATION	2051	1	70	70
Petition:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				800

Electronic Acknowledgement Receipt	
EFS ID:	30212538
Application Number:	15690324
International Application Number:	
Confirmation Number:	8270
Title of Invention:	RELEASABLE CONNECTION FOR A DOWNHOLE TOOL STRING
First Named Inventor/Applicant Name:	Derek KITCHEN
Customer Number:	20210
Filer:	Michael James Bujold/Tracy Clark
Filer Authorized By:	Michael James Bujold
Attorney Docket Number:	THOLAM P599US
Receipt Date:	30-AUG-2017
Filing Date:	
Time Stamp:	09:03:27
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$800
RAM confirmation Number	083017INTEFSW09041900
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	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Specification		1	7	
	Claims		8	9	
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3	Application Data Sheet	p599us-ads.pdf	1827142	no	9
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5	Fee Worksheet (SB06)	fee-info.pdf	36946	no	2
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RELEASABLE CONNECTION FOR A DOWNHOLE TOOL STRING

TECHNICAL FIELD

[0001] This relates to a releasable connection in a downhole tool string, such as a
5 wireline or tubing string, and in particular, a connection that releases as a result of fluid
pressure.

BACKGROUND

[0002] When conducting downhole operations, tools and other components are often
10 inserted into wellbores using tool strings, such as wireline or tubing strings. If it is desired to
leave a component downhole, or if a component or tool string becomes stuck downhole, it
may be desirable to disconnect a releasable connection provided along the tool string.
United States patent no. 7,198,101 (McGarian et al.) entitled "Downhole release joint"
describes a tool that is released by applying torque to the releasable joint.

15

SUMMARY

[0003] According to an aspect, there is provided a releasable connection for a downhole
tool string, comprising a first part comprising a connection profile and a second part
comprising a releasable engagement profile that releasably engages the connection profile of
20 the first part, a locking piston, the locking piston moving axially along the second part
between a locking position that locks the releasable engagement profile into engagement
with the connection profile of the first part and a release position that permits the releasable
engagement profile to release the connection profile of the second part, an expansion
chamber in fluid communication with the locking piston, and a source of fluid pressure in
25 communication with the expansion chamber, wherein, upon activation, the source of fluid
pressure applies fluid pressure to move locking piston from the locking position toward the
release position.

[0004] According to another aspect, the releasable engagement profile may be spring
biased away from the connection profile of the first part.

30 [0005] According to another aspect, the releasable engagement profile may be a collet
having a plurality of fingers that engage the connection profile of the first part.

[0006] According to another aspect, the second part may comprise an outer housing, the locking piston being positioned within an internal cavity of the second part.

[0007] According to another aspect, the outer housing of the second part may comprise a pressure equalization ports, the locking piston closing the pressure equalization ports in the locking position, and opening the pressure equalization ports in the release position.

[0008] According to another aspect, the locking piston may comprise a piston section and a sleeve section that depends from the piston section, the sleeve section may overlie the releasable engagement profile, and the fluid pressure may be applied to the piston section.

[0009] According to another aspect, the releasable connection may further comprise a combustible disposed within the expansion chamber, wherein, upon combustion, the combustible may apply gas pressure to the locking piston.

[0010] According to another aspect, the expansion chamber may comprise a first volume that contains the combustible, and a second volume that encloses at least a portion of the locking piston, the first volume being in fluid communication with the second volume.

[0011] According to another aspect, the combustible may be detonated by an electrical signal.

[0012] According to another aspect, the first part may carry a first electrical connection, and the second part may carry a second electrical connection, the first and second electrical connection being electrically connected when the releasable engagement profile of the second part engages the connection profile of the first part, and becomes disconnected when the releasable engagement profile disengages the connection profile.

[0013] According to another aspect, the first electrical connection may be spring-mounted.

[0014] According to another aspect, the first electrical connection and the second electrical connection may be concentrically disposed within the connection profile and the releasable engagement profile.

[0015] According to another aspect, the first part may comprise a fishneck that attaches to a fishing tool when disconnected from the second part.

[0016] In other aspects, the features described above may be combined together in any reasonable combination as will be recognized by those skilled in the art.

BRIEF DESCRIPTION OF THE DRAWINGS

[0017] These and other features will become more apparent from the following description in which reference is made to the appended drawings, the drawings are for the purpose of illustration only and are not intended to be in any way limiting, wherein:

5 FIG. 1 is a side elevation view in section of the releasable connection in the release position.

 FIG. 2 is a side elevation view in section of the releasable connection in the engaged position.

10 FIG. 3 is a detailed side elevation view in section of the releasable connection in the engaged position.

DETAILED DESCRIPTION

[0018] A releasable connection, generally identified by reference numeral 10, will now be described with reference to FIG. 1 through 3.

15 [0019] Releasable connection 10 is designed for use in a downhole tool string (not shown), such as a wireline or tubing string. In one example, releasable connection 10 may be included in a downhole tool string for use in directional drilling. Releasable connection 10 may be positioned at any convenient location along the tool string, but will generally be located next to a tool section for convenience purposes. It has been found that, in some
20 circumstances, such as in horizontal sections of a well, it may be difficult to apply the necessary force to disconnect a releasable connection in a tool string. The design of the presently described releasable connection is such that the release is triggered remotely without, or with a minimal amount, of force applied.

[0020] Referring to FIG. 1, releasable connection 10 has a first part 12 and a second part
25 14. First part 12 has a connection profile 16 at an upper end that connects with a releasable engagement profile 18 at a lower end of second part 14. First and second parts 12 and 14 also have tubing connectors 20 and 22 for connecting to a tool string (not shown) as is known in the art. It will be understood that, while releasable connection 10 is shown and described in a particular orientation, e.g. with first part 12 below or downstream of second
30 part 14, the orientation and relative position of the various components may vary depending on the preferences of the user and particular design.

[0021] First part 12 is designed to be left downhole, and has a fishneck 24 that is part of, or below, connection profile 16. As shown, connection profile 16 is a lip that extends radially outward from fishneck 24, which also provides an engagement profile that can be engaged by a fishing tool. The actual design of fishneck 24 and connection profile 16 may be varied as is known in the art to be engaged or manipulated by the intended tool that will be lowered to first part 12 after second part 14 has been removed.

[0022] Second part 14 has a releasable engagement profile 26 that releasably engages connection profile 16 of first part 12. As shown, releasable engagement profile 26 is a collet with a series of resilient fingers 28 that extend axially in parallel with first part 12 and are spring-biased outward, such that when the piston moves, they move out of engagement with connection profile 16. Resilient fingers 28 have an inner profile 30 that engages connection profile 16, but is slightly tapered such that, when released, fingers 28 are pushed outward as first and second parts 12 and 14 move away from each other. Other designs may also be possible, including designs that do not include a resilient engagement. For example, rather than resilient fingers 28, releasable engagement profile 26 may be locking pins that move radially between a locking and release position.

[0023] Releasable engagement profile 26 is locked in place by a locking piston 32, which moves axially along second part 14 between a locking position, shown in FIG. 2 and 3, that locks releasable engagement profile 26 into engagement with connection profile 16 of the first part, and a release position, shown in FIG. 1, that permits releasable engagement profile 26 to release connection profile 16 of second part 14. It will be understood that various designs of locking piston 32 may be used to achieve this result. In the depicted example, locking piston 32 is positioned within the outer housing 34 of second part 14, with a piston section 36 located in an expansion chamber 38, which seals around piston section 36 while permitting axial movement, and a sleeve section 40 that depends from piston section 36. Sleeve section 40 overlies releasable engagement profile 26 in the locked position such that fingers 28 are unable to be pushed back from connection profile 16. In the release position, sleeve section 40 moves axially away from releasable engagement profile 26, which allows fingers 28 to move away from connection profile 16. While not shown, piston 32 is preferably held in place by a lock, such as a spring-biased engagement, or a shear screw, that is either released or sheared upon application of a sufficient actuating force in order to ensure

that releasable connection 10 does not release prematurely.

[0024] Locking piston 32 is in fluid communication with an expansion chamber 38 to which fluid pressure is applied in order to apply a force that moves locking piston 32 toward the release position. Fluid pressure may include pressure applied by a liquid or a gas, which
5 may be communicated to expansion chamber 38 in various ways. For example, there may be a gas cylinder that releases gas pressure upon activation, a fluid line that provides gas or liquid to expansion chamber 38 from surface, etc.

[0025] In the depicted example, there is a combustible 42 positioned within a combustion chamber 41. As shown, expansion chamber 38 and combustion chamber 41 are connected
10 by ports 44, such that any gas pressure that results from the combustion of combustible 42 is applied to piston section 36 of locking piston 32, causing it to move from the locked position to the release position. It will be understood that expansion chamber 38 and combustion chamber 41 may be considered a single chamber, and may be designed as such. However, as piston 32 is actuated by gas pressure, resulting from combustion, some flexibility in the
15 design is permitted, as long as the restrictions between chambers 38 and 41 are not sufficient to impede operation of connection 10.

[0026] Combustible 42 may be any suitable material that is able to be ignited remotely. Beneficial results were found when a slow burning combustible 42 was used, triggered by the same system used for a perforation gun used to perforate a casing string. Other
20 combustibles 42 may be used, or other sources of fluid pressure as discussed above, depending on the preferences of the user and the specifications for a particular situation. In the depicted example, combustible 42 is triggered using a detonator 43, which is in turn controlled by a trigger 45 wired to the electrical system and located in a trigger cavity 47. The detonator 43 is enclosed within combustion chamber 41 by a detonator cap 46, which
25 closes an upper end of combustion chamber 41. The trigger 45 may have a microprocessor or other programmable circuit that is activated only upon receiving a predetermined electrical signal or code to prevent accidentally triggering the combustible 42 prematurely. The electrical system is connected through an upper electrode 48 in second part 14, and through a wire (not shown) that is connected between connection points 50 spaced throughout second
30 part 14. The electrical system is then passed from second part 14 to first part 12 by way of lower electrodes 52 in second part 14, and a spring-mounted upper electrode 54 in first part

12. Upon ignition and separation, the electrical connection will be broken by first and second parts 12 and 14 separating, and also damage that may occur to any wire passing by the detonator 43 or combustible 42 when ignited. When assembling first and second parts 12 and 14, the electrical connection is made by the concentrically-located electrodes 52 and 54 to allow an electrical signal to pass through releasable connection 10 to the tools below releasable connection 10. It will be understood that, depending on the operation being conducted, an electrical connection may not be required. Furthermore, combustible 42 may be triggered in other ways, such as by applying a predetermined hydraulic or mechanical force to the downhole tool, as will be apparent to those skilled in the art.

[0027] When combustible 42 is ignited, the combustion process will generate gas pressure, causing an increase in gas pressure within expansion chamber 38 and pushing piston 32 away from the locking position adjacent to releasable engagement profile 26 toward the release position. Once in the release position, piston 32 also opens pressure equalization ports 56, which allows the combustion gas pressure to be released, but also allow the pressure within inner cavity of second part 14 to be equalized with the wellbore pressure. If first part 12 is sealably received within second part 14, as would be the case in the depicted example, a lower pressure within second part 14 relative to the wellbore would result in a vacuum that would resist the release of first part 12. Pressure equalization ports 56 help reduce this possibility. Alternatively, it may be that the combustion of combustible 42 may generate sufficient force to both move piston 32 and also push apart first and second parts 14. As this will be dependent on the wellbore pressure, it may be preferable to ensure the pressure is equalized using equalization ports 56 instead.

[0028] Once piston 32 has been shifted sufficiently, second part 14 may be disengaged from first part 12 by pulling applying a sufficient force to second part 14 to disengage releasable engagement profile 26 from connection profile 16. While releasable engagement profile 26 may be resilient and resist outward movement, releasable engagement profile 26 may also be simple engagement members that are able to slide out of the way once piston 32 has been shifted.

[0029] In this patent document, the word "comprising" is used in its non-limiting sense to mean that items following the word are included, but items not specifically mentioned are not excluded. A reference to an element by the indefinite article "a" does not exclude the

possibility that more than one of the elements is present, unless the context clearly requires that there be one and only one of the elements.

[0030] The scope of the following claims should not be limited by the preferred embodiments set forth in the examples above and in the drawings, but should be given the
5 broadest interpretation consistent with the description as a whole.

What is Claimed is:

1. A releasable connection for a downhole tool string, comprising:
 - a first part comprising a connection profile;
 - 5 a second part comprising:
 - a releasable engagement profile that releasably engages the connection profile of the first part;
 - a locking piston, the locking piston moving axially along the second part between a locking position that locks the releasable engagement profile into engagement
 - 10 with the connection profile of the first part and a release position that permits the releasable engagement profile to release the connection profile of the second part;
 - an expansion chamber in fluid communication with the locking piston;
 - a source of fluid pressure in communication with the expansion chamber, wherein, upon activation, the source of fluid pressure applies fluid pressure to move locking
 - 15 piston from the locking position toward the release position.
2. The releasable connection of claim 1, wherein the releasable engagement profile is spring biased away from the connection profile of the first part.
- 20 3. The releasable connection of claim 1, wherein the releasable engagement profile is a collet having a plurality of fingers that engage the connection profile of the first part.
4. The releasable connection of claim 1, wherein the second part comprises an outer housing, the locking piston being positioned within an internal cavity of the second part.
- 25 5. The releasable connection of claim 1, wherein the outer housing of the second part comprises a pressure equalization ports, the locking piston closing the pressure equalization ports in the locking position, and opening the pressure equalization ports in the release position.
- 30 6. The releasable connection of claim 1, wherein the locking piston comprises a piston section and a sleeve section that depends from the piston section, the sleeve section overlying

the releasable engagement profile, and the fluid pressure is applied to the piston section.

7. The releasable connection of claim 1, further comprising a combustible disposed within the expansion chamber, wherein, upon combustion, the combustible applies gas
5 pressure to the locking piston.

8. The releasable connection of claim 7, wherein the expansion chamber comprises a first volume that contains the combustible, and a second volume that encloses at least a portion of the locking piston, the first volume being in fluid communication with the second
10 volume.

9. The releasable connection of claim 7, wherein the combustible is detonated by an electrical signal.

15 10. The releasable connection of claim 1, wherein the first part carries a first electrical connection, and the second part carries a second electrical connection, the first and second electrical connection being electrically connected when the releasable engagement profile of the second part engages the connection profile of the first part, and becomes disconnected when the releasable engagement profile disengages the connection profile.

20 11. The releasable connection of claim 10, wherein the first electrical connection is spring-mounted.

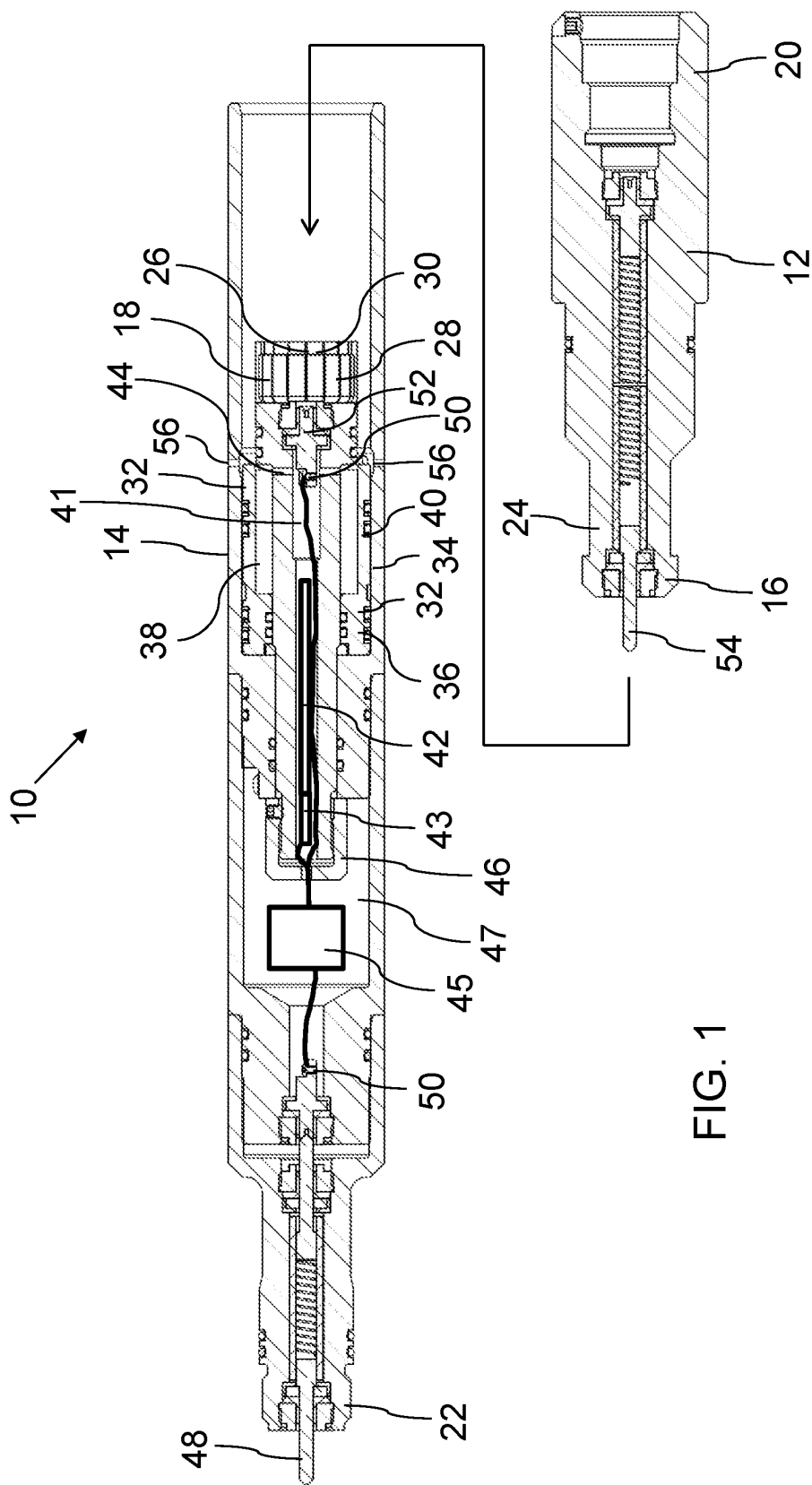
12. The releasable connection of claim 10, wherein the first electrical connection and the
25 second electrical connection are concentrically disposed within the connection profile and the releasable engagement profile.

13. The releasable connection of claim 1, wherein the first part comprises a fishneck that attaches to a fishing tool when disconnected from the second part.

30

ABSTRACT OF THE DISCLOSURE

A releasable connection for a downhole tool string is provided, having a first part with a connection profile and a second part with a releasable engagement profile that
5 releasably engages the connection profile of the first part. The second part also has a locking piston, the locking piston moving axially along the second part between a locking position that locks the releasable engagement profile into engagement with the connection profile of the first part and a release position that permits the releasable engagement profile to release
10 the connection profile of the second part, an expansion chamber in fluid communication with the locking piston, and a source of fluid pressure in communication with the expansion chamber, wherein, upon activation, the source of fluid pressure applies fluid pressure to move locking piston from the locking position toward the release position.



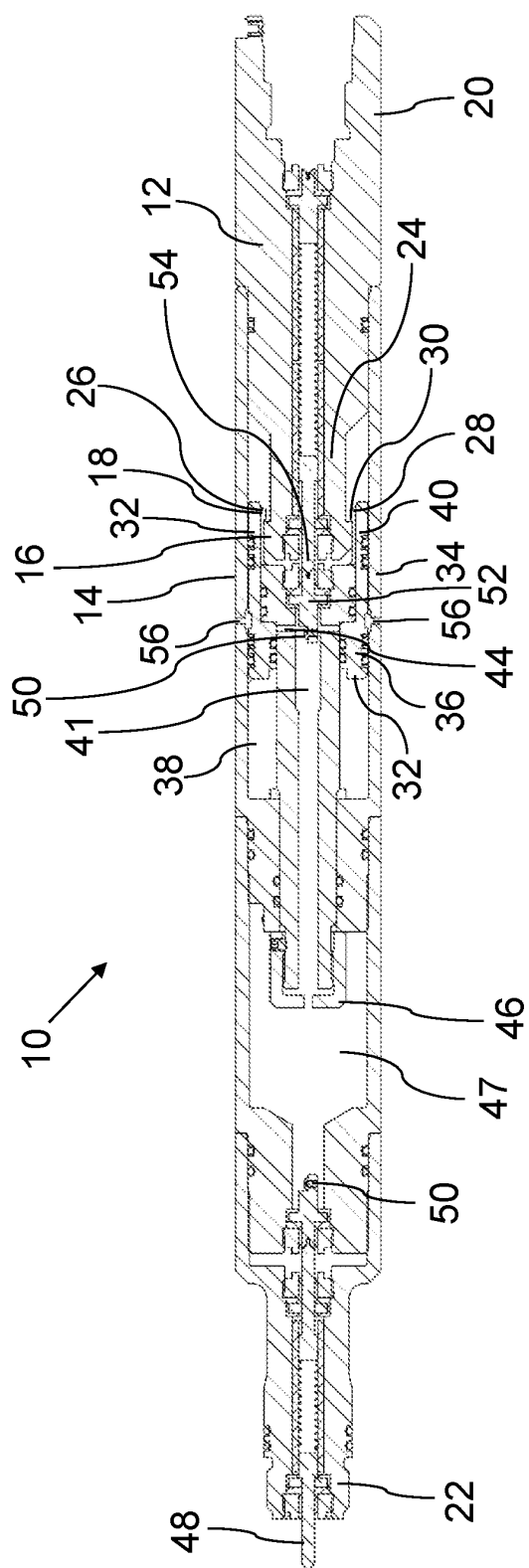


FIG. 2

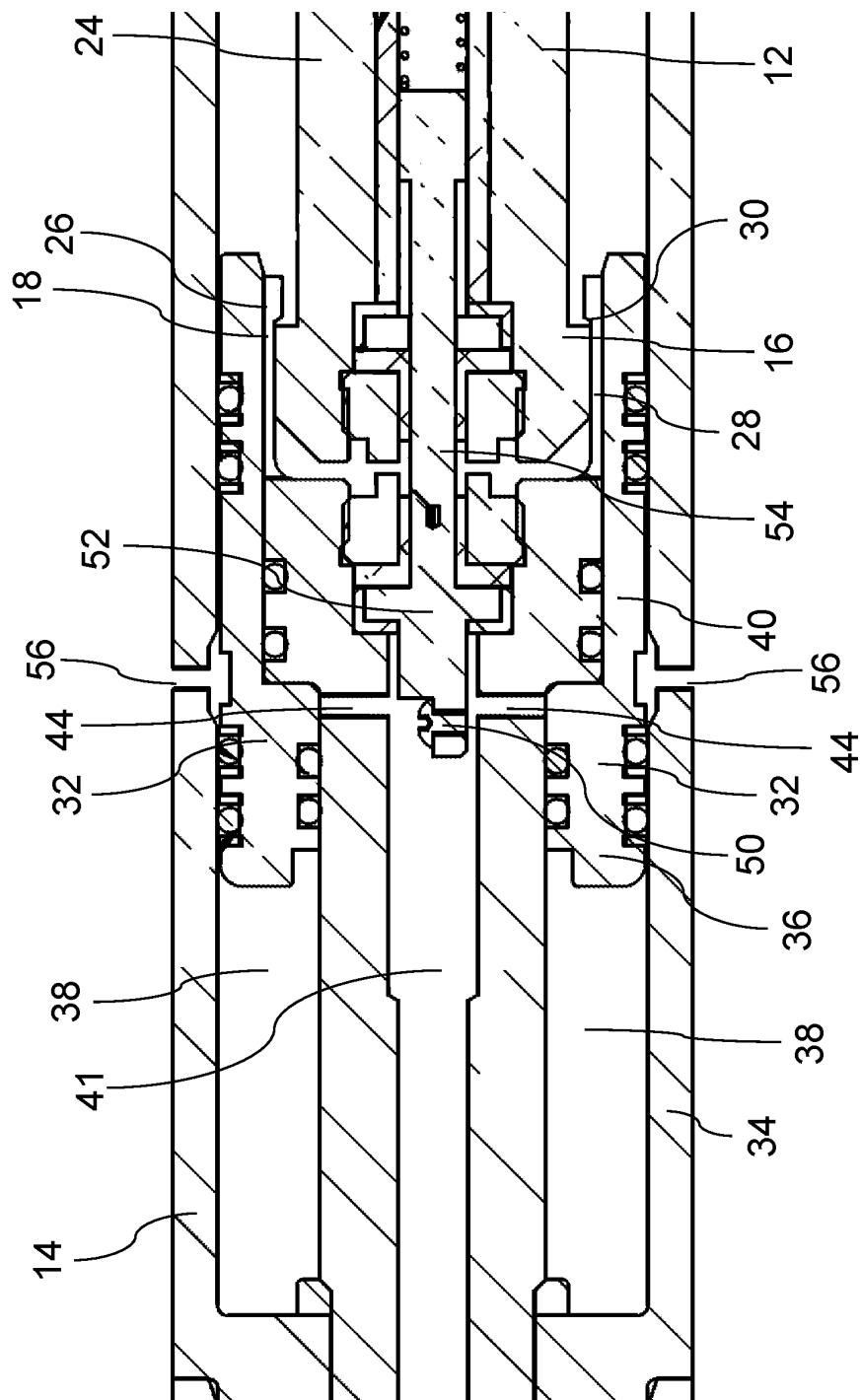


FIG. 3

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	THOLAM P599US
		Application Number	
Title of Invention	RELEASABLE CONNECTION FOR A DOWNHOLE TOOL STRING		
The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76. This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.			

Secrecy Order 37 CFR 5.2:

☐	Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)
--------------------------	---

Inventor Information:

Inventor	1				Remove	
Legal Name						
Prefix	Given Name	Middle Name	Family Name	Suffix		
	Derek		KITCHEN			
Residence Information (Select One) US Residency • Non US Residency Active US Military Service						
City	Elmworth		Country of Residence ⁱ	CA		
Mailing Address of Inventor:						
Address 1		Box 7				
Address 2						
City	Elmworth		State/Province	AB		
Postal Code	T0H 1J0		Country ⁱ	CA		
Inventor	2				Remove	
Legal Name						
Prefix	Given Name	Middle Name	Family Name	Suffix		
	Jeffrey		GOLINOWSKI			
Residence Information (Select One) US Residency • Non US Residency Active US Military Service						
City	Sherwood Park		Country of Residence ⁱ	CA		
Mailing Address of Inventor:						
Address 1		444 Charlotte Crescent				
Address 2						
City	Sherwood Park		State/Province	AB		
Postal Code	T8H 0K7		Country ⁱ	CA		
Inventor	3				Remove	
Legal Name						

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	THOLAM P599US
		Application Number	
Title of Invention	RELEASABLE CONNECTION FOR A DOWNHOLE TOOL STRING		

Prefix	Given Name	Middle Name	Family Name	Suffix
	Sylvain		HOTTE	
Residence Information (Select One) US Residency ☒ Non US Residency Active US Military Service				
City	Grande Prairie	Country of Residence ⁱ	CA	

Mailing Address of Inventor:

Address 1	10321 70 Ave			
Address 2				
City	Grande Prairie	State/Province	AB	
Postal Code	T8W 0A8	Country ⁱ	CA	
Inventor	4	Remove		
Legal Name				

Prefix	Given Name	Middle Name	Family Name	Suffix
	Trevor		ROSTEN	
Residence Information (Select One) US Residency ☒ Non US Residency Active US Military Service				
City	Grande Prairie	Country of Residence ⁱ	CA	

Mailing Address of Inventor:

Address 1	7016 113 St.			
Address 2				
City	Grande Prairie	State/Province	AB	
Postal Code	T8W 0E2	Country ⁱ	CA	
All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the Add button.				
Add				

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below. For further information see 37 CFR 1.33(a).	
☐ An Address is being provided for the correspondence information of this application.	
Customer Number	020210
Email Address	patent@nhpat.com Add Email Remove Email

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	THOLAM P599US
		Application Number	
Title of Invention	RELEASABLE CONNECTION FOR A DOWNHOLE TOOL STRING		

Application Information:

Title of the Invention	RELEASABLE CONNECTION FOR A DOWNHOLE TOOL STRING		
Attorney Docket Number	THOLAM P599US	Small Entity Status Claimed	☒
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	3	Suggested Figure for Publication (if any)	1

Filing By Reference:

Only complete this section when filing an application by reference under 35 U.S.C. 111(c) and 37 CFR 1.57(a). Do not complete this section if application papers including a specification and any drawings are being filed. Any domestic benefit or foreign priority information must be provided in the appropriate section(s) below (i.e., "Domestic Benefit/National Stage Information" and "Foreign Priority Information").

For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).

Application number of the previously filed application	Filing date (YYYY-MM-DD)	Intellectual Property Authority or Country

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)
☐ Request Not to Publish. I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application has not and will not be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32). Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.			
Please Select One:	☒ Customer Number	☐ US Patent Practitioner	☐ Limited Recognition (37 CFR 11.9)
Customer Number	020210		

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	THOLAM P599US
		Application Number	
Title of Invention	RELEASABLE CONNECTION FOR A DOWNHOLE TOOL STRING		

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, 365(c), or 386(c) or indicate National Stage entry from a PCT application. Providing benefit claim information in the Application Data Sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.

When referring to the current application, please leave the "Application Number" field blank.

Prior Application Status	Pending	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	Claims benefit of provisional	62381083	2016-08-30
Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the Add button.			Add

Foreign Priority Information:

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55. When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX)ⁱ the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(i)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

Application Number	Country ⁱ	Filing Date (YYYY-MM-DD)	Access Code ^j (if applicable)	Remove
Additional Foreign Priority Data may be generated within this form by selecting the Add button.				Add

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.

NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	THOLAM P599US
		Application Number	
Title of Invention	RELEASABLE CONNECTION FOR A DOWNHOLE TOOL STRING		

Authorization or Opt-Out of Authorization to Permit Access:

When this Application Data Sheet is properly signed and filed with the application, applicant has provided written authority to permit a participating foreign intellectual property (IP) office access to the instant application-as-filed (see paragraph A in subsection 1 below) and the European Patent Office (EPO) access to any search results from the instant application (see paragraph B in subsection 1 below).

Should applicant choose not to provide an authorization identified in subsection 1 below, applicant **must opt-out** of the authorization by checking the corresponding box A or B or both in subsection 2 below.

NOTE: This section of the Application Data Sheet is **ONLY** reviewed and processed with the **INITIAL** filing of an application. After the initial filing of an application, an Application Data Sheet cannot be used to provide or rescind authorization for access by a foreign IP office(s). Instead, Form PTO/SB/39 or PTO/SB/69 must be used as appropriate.

1. Authorization to Permit Access by a Foreign Intellectual Property Office(s)

A. Priority Document Exchange (PDX) - Unless box A in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the State Intellectual Property Office of the People's Republic of China (SIPO), the World Intellectual Property Organization (WIPO), and any other foreign intellectual property office participating with the USPTO in a bilateral or multilateral priority document exchange agreement in which a foreign application claiming priority to the instant patent application is filed, access to: (1) the instant patent application-as-filed and its related bibliographic data, (2) any foreign or domestic application to which priority or benefit is claimed by the instant application and its related bibliographic data, and (3) the date of filing of this Authorization. See 37 CFR 1.14(h)(1).

B. Search Results from U.S. Application to EPO - Unless box B in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the EPO access to the bibliographic data and search results from the instant patent application when a European patent application claiming priority to the instant patent application is filed. See 37 CFR 1.14(h)(2).

The applicant is reminded that the EPO's Rule 141(1) EPC (European Patent Convention) requires applicants to submit a copy of search results from the instant application without delay in a European patent application that claims priority to the instant application.

2. Opt-Out of Authorizations to Permit Access by a Foreign Intellectual Property Office(s)

☐ A. Applicant **DOES NOT** authorize the USPTO to permit a participating foreign IP office access to the instant application-as-filed. If this box is checked, the USPTO will not be providing a participating foreign IP office with any documents and information identified in subsection 1A above.

☐ B. Applicant **DOES NOT** authorize the USPTO to transmit to the EPO any search results from the instant patent application. If this box is checked, the USPTO will not be providing the EPO with search results from the instant application.

NOTE: Once the application has published or is otherwise publicly available, the USPTO may provide access to the application in accordance with 37 CFR 1.14.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	THOLAM P599US
		Application Number	
Title of Invention	RELEASABLE CONNECTION FOR A DOWNHOLE TOOL STRING		

Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.			
Applicant	1		Remove
If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.			
		Clear	
☐ Assignee	Legal Representative under 35 U.S.C. 117		Joint Inventor
Person to whom the inventor is obligated to assign.		Person who shows sufficient proprietary interest	
If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:			
Name of the Deceased or Legally Incapacitated Inventor:			
If the Applicant is an Organization check here. ☒			
Organization Name	Avalon Research Ltd.		
Mailing Address Information For Applicant:			
Address 1	P.O. Box 23120		
Address 2			
City	Grande Prairie	State/Province	AB
Country	CA	Postal Code	T8V 6X2
Phone Number		Fax Number	
Email Address			
Additional Applicant Data may be generated within this form by selecting the Add button. Add			

Assignee Information including Non-Applicant Assignee Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	THOLAM P599US
		Application Number	
Title of Invention	RELEASABLE CONNECTION FOR A DOWNHOLE TOOL STRING		

Assignee	1			
Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication. An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.				
				Remove
If the Assignee or Non-Applicant Assignee is an Organization check here.				☐
Prefix	Given Name	Middle Name	Family Name	Suffix
Mailing Address Information For Assignee including Non-Applicant Assignee:				
Address 1				
Address 2				
City		State/Province		
Country ⁱ		Postal Code		
Phone Number		Fax Number		
Email Address				
Additional Assignee or Non-Applicant Assignee Data may be generated within this form by selecting the Add button.				Add

Signature:

NOTE: This Application Data Sheet must be signed in accordance with 37 CFR 1.33(b). However, if this Application Data Sheet is submitted with the **INITIAL** filing of the application and either box A or B is not checked in subsection 2 of the "Authorization or Opt-Out of Authorization to Permit Access" section, then this form must also be signed in accordance with 37 CFR 1.14(c).

This Application Data Sheet **must** be signed by a patent practitioner if one or more of the applicants is a **juristic entity** (e.g., corporation or association). If the applicant is two or more joint inventors, this form must be signed by a patent practitioner, **all** joint inventors who are the applicant, or one or more joint inventor-applicants who have been given power of attorney (e.g., see USPTO Form PTO/AIA/81) on behalf of **all** joint inventor-applicants.

See 37 CFR 1.4(d) for the manner of making signatures and certifications.

Signature	/Michael J. Bujold/		Date (YYYY-MM-DD)	2017-08-29
First Name	Michael	Last Name	Bujold	Registration Number
				32018
Additional Signature may be generated within this form by selecting the Add button.				Add

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	THOLAM P599US
		Application Number	
Title of Invention	RELEASABLE CONNECTION FOR A DOWNHOLE TOOL STRING		

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

POWER OF ATTORNEY BY APPLICANT

I hereby revoke all previous powers of attorney given in the application identified in either the attached transmittal letter or the boxes below.

Application Number	Filing Date

(Note: The boxes above may be left blank if information is provided on form PTO/AIA/82A.)

☒ I hereby appoint the Patent Practitioner(s) associated with the following Customer Number as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above:

020210

OR

☐ I hereby appoint Practitioner(s) named in the attached list (form PTO/AIA/82C) as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the patent application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above. (Note: Complete form PTO/AIA/82C.)

Please recognize or change the correspondence address for the application identified in the attached transmittal letter or the boxes above to:

☒ The address associated with the above-mentioned Customer Number

OR

☐ The address associated with Customer Number:

OR

Firm or Individual Name	---n/a---			
Address	---n/a---			
City	---n/a---	State		Zip
Country	---n/a---			
Telephone	---n/a---	Email		

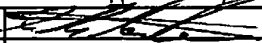
I am the Applicant (if the Applicant is a juristic entity, list the Applicant name in the box):

Avalon Research Ltd.

- ☐ Inventor or Joint Inventor (title not required below)
- ☐ Legal Representative of a Deceased or Legally Incapacitated Inventor (title not required below)
- ☒ Assignee or Person to Whom the Inventor is Under an Obligation to Assign (provide signer's title if applicant is a juristic entity)
- ☐ Person Who Otherwise Shows Sufficient Proprietary Interest (e.g., a petition under 37 CFR 1.46(b)(2) was granted in the application or is concurrently being filed with this document) (provide signer's title if applicant is a juristic entity)

SIGNATURE of Applicant for Patent

The undersigned (whose title is supplied below) is authorized to act on behalf of the applicant (e.g., where the applicant is a juristic entity).

Signature		Date (Optional)	August 1, 2017
Name	Trevor Rosten		
Title	Tool Specialist		

NOTE: Signature - This form must be signed by the applicant in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. If more than one applicant, use multiple forms.

☒ Total of 3 forms are submitted.

This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Electronic Acknowledgement Receipt	
EFS ID:	30270716
Application Number:	15690324
International Application Number:	
Confirmation Number:	8270
Title of Invention:	RELEASABLE CONNECTION FOR A DOWNHOLE TOOL STRING
First Named Inventor/Applicant Name:	Derek KITCHEN
Customer Number:	20210
Filer:	Michael James Bujold/Tracy Clark
Filer Authorized By:	Michael James Bujold
Attorney Docket Number:	THOLAM P599US
Receipt Date:	06-SEP-2017
Filing Date:	
Time Stamp:	08:52:36
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no				
File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Oath or Declaration filed	p599us-decs.pdf	541148 5567d1f9d4aac66f95c39d36bd4f8faa19e4458f	no	3
Warnings:					

Information:					
2	Power of Attorney	p599us-poa.pdf	91875	no	1
			aa1c5c8095b9a4b22a80b9d81cd3388ede34ed28		
Warnings:					
Information:					
Total Files Size (in bytes):				633023	
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

**DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN
APPLICATION DATA SHEET (37 CFR 1.76)****Title of
Invention****RELEASABLE CONNECTION FOR A DOWNHOLE TOOL STRING**

As the below named inventor, I hereby declare that:

This declaration
is directed to:

The attached application, or

United States application or PCT international application number _____
filed on _____.

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001
by fine or imprisonment of not more than five (5) years, or both.**WARNING:**

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

LEGAL NAME OF INVENTORInventor: **Trevor Rosten**

Date (Optional) : _____

Signature: 

Note: An application data sheet (PTO/AIA/14 or equivalent), including naming the entire inventive entity, must accompany this form.
Use an additional PTO/SB/AIA01 form for each additional inventor.

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

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**DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN
APPLICATION DATA SHEET (37 CFR 1.76)**

**Title of
Invention**

RELEASABLE CONNECTION FOR A DOWNHOLE TOOL STRING

As the below named inventor, I hereby declare that:

This declaration
is directed to:



The attached application, or



United States application or PCT international application number _____
filed on _____.

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001
by fine or imprisonment of not more than five (5) years, or both.

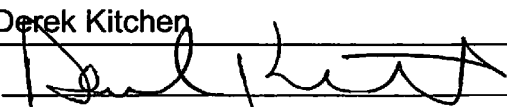
WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

LEGAL NAME OF INVENTOR

Inventor: Derek Kitchen

Date (Optional): 17.07.24

Signature: 

Note: An application data sheet (PTO/AIA/14 or equivalent), including naming the entire inventive entity, must accompany this form.
Use an additional PTO/SB/AIA01 form for each additional inventor.

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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**DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN
APPLICATION DATA SHEET (37 CFR 1.76)**

Title of Invention	RELEASABLE CONNECTION FOR A DOWNHOLE TOOL STRING
As the below named inventor, I hereby declare that: This declaration is directed to: ☒ The attached application, or ☐ United States application or PCT International application number _____ filed on _____. The above-identified application was made or authorized to be made by me. I believe that I am the original inventor or an original joint inventor of a claimed invention in the application. I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both. WARNING: Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available. LEGAL NAME OF INVENTOR Inventor: <u>Jeffrey Golinowski</u> Date (Optional): <u>July 28, 2013</u> Signature: <u>Jeff Golinowski, P.ENG</u> Note: An application data sheet (PTO/AIA/14 or equivalent), including naming the entire inventive entity, must accompany this form. Use an additional PTO/SB/AIA/01 form for each additional inventor.	

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS: SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875						Application or Docket Number 15/690,324			
APPLICATION AS FILED - PART I									
(Column 1)		(Column 2)		SMALL ENTITY		OTHER THAN SMALL ENTITY			
FOR	NUMBER FILED	NUMBER EXTRA	RATE(\$)	FEE(\$)		RATE(\$)	FEE(\$)		
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	70		N/A			
SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A	300		N/A			
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	360		N/A			
TOTAL CLAIMS (37 CFR 1.16(i))	13	minus 20 = *	x 40 =	0.00	OR				
INDEPENDENT CLAIMS (37 CFR 1.16(h))	1	minus 3 = *	x 210 =	0.00					
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			0.00					
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				0.00					
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	730		TOTAL			
APPLICATION AS AMENDED - PART II									
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY		OTHER THAN SMALL ENTITY	
AMENDMENT A	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)	ADDITIONAL FEE(\$)	
	Total (37 CFR 1.16(i))	*	Minus **	=	x =	OR	x =	=	
	Independent (37 CFR 1.16(h))	*	Minus ***	=	x =	OR	x =	=	
	Application Size Fee (37 CFR 1.16(s))					OR			
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					OR			
			TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE			
AMENDMENT B	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)	ADDITIONAL FEE(\$)	
	Total (37 CFR 1.16(i))	*	Minus **	=	x =	OR	x =	=	
	Independent (37 CFR 1.16(h))	*	Minus ***	=	x =	OR	x =	=	
	Application Size Fee (37 CFR 1.16(s))					OR			
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					OR			
			TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE			
* If the entry in column 1 is less than the entry in column 2, write "0" in column 3. ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20". *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3". The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.									



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APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	TOT CLAIMS	IND CLAIMS
15/690,324	08/30/2017	3679	800	THOLAM P599US	13	1

CONFIRMATION NO. 8270

FILING RECEIPT



0000000093922027

20210

DAVIS & BUJOLD, P.L.L.C.
112 PLEASANT STREET
CONCORD, NH 03301

Date Mailed: 09/11/2017

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Inventor(s)

Derek KITCHEN, Elmworth, CANADA;
Jeffrey GOLINOWSKI, Sherwood Park, CANADA;
Sylvain HOTTE, Grande Prairie, CANADA;
Trevor ROSTEN, Grande Prairie, CANADA;

Applicant(s)

Avalon Research Ltd., Grande Prairie, CANADA;

Power of Attorney: The patent practitioners associated with Customer Number 020210

Domestic Priority data as claimed by applicant

This appln claims benefit of 62/381,083 08/30/2016

Foreign Applications for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see <http://www.uspto.gov> for more information.) - None.

Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

Permission to Access Application via Priority Document Exchange: Yes

Permission to Access Search Results: Yes

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

If Required, Foreign Filing License Granted: 09/07/2017

page 1 of 3

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 15/690,324**

Projected Publication Date: 03/01/2018

Non-Publication Request: No

Early Publication Request: No

**** SMALL ENTITY ****

Title

RELEASABLE CONNECTION FOR A DOWNHOLE TOOL STRING

Preliminary Class

403

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at <http://www.uspto.gov/web/offices/pac/doc/general/index.html>.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, <http://www.stopfakes.gov>. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

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Title 37, Code of Federal Regulations, 5.11 & 5.15

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
15/690,324	08/30/2017	Derek KITCHEN	THOLAM P599US

CONFIRMATION NO. 8270

INFORMAL NOTICE



20210
DAVIS & BUJOLD, P.L.L.C.
112 PLEASANT STREET
CONCORD, NH 03301

Date Mailed: 09/11/2017

INFORMATIONAL NOTICE TO APPLICANT

Applicant is notified that the above-identified application contains the deficiencies noted below. No period for reply is set forth in this notice for correction of these deficiencies. However, if a deficiency relates to the inventor's oath or declaration, the applicant must file an oath or declaration in compliance with 37 CFR 1.63, or a substitute statement in compliance with 37 CFR 1.64, executed by or with respect to each actual inventor no later than the expiration of the time period set in the "Notice of Allowability" to avoid abandonment. See 37 CFR 1.53(f).

The item(s) indicated below are also required and should be submitted with any reply to this notice to avoid further processing delays.

- A properly executed inventor's oath or declaration has not been received for the following inventor(s):
Sylvain HOTTE

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at (571) 272-4000 or (571) 272-4200 or 1-888-786-0101.

/hnguyen/



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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
15/690,324	08/30/2017	Derek KITCHEN	THOLAM P599US

CONFIRMATION NO. 8270

PUBLICATION NOTICE



OC00000097746787

20210
DAVIS & BUJOLD, P.L.L.C.
112 PLEASANT STREET
CONCORD, NH 03301

Title:RELEASABLE CONNECTION FOR A DOWNHOLE TOOL STRING

Publication No.US-2018-0058154-A1

Publication Date:03/01/2018

NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publicly available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently <http://www.uspto.gov/patft/>.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Public Records Division. The Public Records Division can be reached by telephone at (571) 272-3150 or (800) 972-6382, by facsimile at (571) 273-3250, by mail addressed to the United States Patent and Trademark Office, Public Records Division, Alexandria, VA 22313-1450 or via the Internet.

In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at www.uspto.gov using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently <https://portal.uspto.gov/pair/PublicPair>. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

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Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

Doc Code: PA..

Document Description: Power of Attorney

PTO/AIA/82B (07-13)

Approved for use through 11/30/2014. OMB 0651-0051

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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POWER OF ATTORNEY BY APPLICANT

I hereby revoke all previous powers of attorney given in the application identified in either the attached transmittal letter or the boxes below.

Application Number	Filing Date
15/690,324	August 30, 2017

(Note: The boxes above may be left blank if information is provided on form PTO/AIA/82A.)

☒ I hereby appoint the Patent Practitioner(s) associated with the following Customer Number as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above:

022828

OR

☐ I hereby appoint Practitioner(s) named in the attached list (form PTO/AIA/82C) as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the patent application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above. (Note: Complete form PTO/AIA/82C.)

Please recognize or change the correspondence address for the application identified in the attached transmittal letter or the boxes above to:

☒ The address associated with the above-mentioned Customer Number

OR

☐ The address associated with Customer Number:

OR

Firm or Individual Name				
Address				
City	State	Zip		
Country				
Telephone	Email			

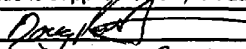
I am the Applicant (if the Applicant is a juristic entity, list the Applicant name in the box):

Avalon Research Ltd.

- ☐ Inventor or Joint Inventor (title not required below)
- ☐ Legal Representative of a Deceased or Legally Incapacitated Inventor (title not required below)
- ☒ Assignee or Person to Whom the Inventor is Under an Obligation to Assign (provide signer's title if applicant is a juristic entity)
- ☐ Person Who Otherwise Shows Sufficient Proprietary Interest (e.g., a petition under 37 CFR 1.46(b)(2) was granted in the application or is concurrently being filed with this document) (provide signer's title if applicant is a juristic entity)

SIGNATURE of Applicant for Patent

The undersigned (whose title is supplied below) is authorized to act on behalf of the applicant (e.g., where the applicant is a juristic entity).

Signature		Date (Optional)	
Name	Doug Rosten		
Title	President		

NOTE: Signature - This form must be signed by the applicant in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. If more than one applicant, use multiple forms.

☐ Total of _____ forms are submitted.

This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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Electronic Acknowledgement Receipt	
EFS ID:	32219975
Application Number:	15690324
International Application Number:	
Confirmation Number:	8270
Title of Invention:	RELEASABLE CONNECTION FOR A DOWNHOLE TOOL STRING
First Named Inventor/Applicant Name:	Derek KITCHEN
Customer Number:	20210
Filer:	Edward Yoo/Kinga Lebedowska
Filer Authorized By:	Edward Yoo
Attorney Docket Number:	benjon p01aus
Receipt Date:	02-APR-2018
Filing Date:	30-AUG-2017
Time Stamp:	14:11:25
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment		no			
File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Power of Attorney	Executed_POA.pdf	92129	no	1
			516140561d471d9b515c7f1f7b541be829d4fad4		
Warnings:					

Information:	
Total Files Size (in bytes):	92129
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.	



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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
15/690,324	08/30/2017	Derek KITCHEN	benjon p01aus

CONFIRMATION NO. 8270

POA ACCEPTANCE LETTER

22828
EDWARD YOO C/O BENNETT JONES LLP
3200 TELUS HOUSE, SOUTH TOWER
10020 - 100 STREET
EDMONTON, ALBERTA, AB T5J 0N3
CANADA



Date Mailed: 04/05/2018

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 04/02/2018.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at (571) 272-4000 or (571) 272-4200 or 1-888-786-0101.

/ytdemisse/



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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
15/690,324	08/30/2017	Derek KITCHEN	benjon p01aus

CONFIRMATION NO. 8270

POWER OF ATTORNEY NOTICE

20210
DAVIS & BUJOLD, P.L.L.C.
112 PLEASANT STREET
CONCORD, NH 03301



Date Mailed: 04/05/2018

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 04/02/2018.

- The Power of Attorney to you in this application has been revoked by the applicant. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at (571) 272-4000 or (571) 272-4200 or 1-888-786-0101.

/ytdemisse/

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**SUBSTITUTE STATEMENT IN LIEU OF AN OATH OR DECLARATION FOR UTILITY
OR DESIGN PATENT APPLICATION (35 U.S.C. 115(d) AND 37 CFR 1.64)**

Title of Invention	RELEASABLE CONNECTION FOR A DOWNHOLE TOOL STRING		
This statement is directed to:			
☐ The attached application,			
OR			
☒ United States application or PCT international application number <u>15/690,324</u> filed on <u>08/30/2017</u>			
LEGAL NAME of inventor to whom this substitute statement applies:			
(E.g., Given Name (first and middle (if any)) and Family Name or Surname)			
Sylvain Hotte			
Residence (except for a deceased or legally incapacitated inventor):			
City	Grande Prairie	State	AB CA
Mailing Address (except for a deceased or legally incapacitated inventor):			
10321 70 Ave			
City	Grande Prairie	State	AB T8W 0A8 CA
I believe the above-named inventor or joint inventor to be the original inventor or an original joint inventor of a claimed invention in the application.			
The above-identified application was made or authorized to be made by me.			
I hereby acknowledge that any willful false statement made in this statement is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.			
Relationship to the inventor to whom this substitute statement applies:			
☐ Legal Representative (for deceased or legally incapacitated inventor only),			
☒ Assignee,			
☐ Person to whom the inventor is under an obligation to assign,			
☐ Person who otherwise shows a sufficient proprietary interest in the matter (petition under 37 CFR 1.46 is required), or			
☐ Joint Inventor.			

[Page 1 of 2]

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

SUBSTITUTE STATEMENT

Circumstances permitting execution of this substitute statement:

- ☐ Inventor is deceased,
☐ Inventor is under legal incapacity,
☐ Inventor cannot be found or reached after diligent effort, or
☒ Inventor has refused to execute the oath or declaration under 37 CFR 1.63.

If there are joint inventors, please check the appropriate box below:

- ☒ An application data sheet under 37 CFR 1.76 (PTO/AIA/14 or equivalent) naming the entire inventive entity has been or is currently submitted.

OR

- ☐ An application data sheet under 37 CFR 1.76 (PTO/AIA/14 or equivalent) has not been submitted. Thus, a Substitute Statement Supplemental Sheet (PTO/AIA/11 or equivalent) naming the entire inventive entity and providing inventor information is attached. See 37 CFR 1.64(b).

WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

PERSON EXECUTING THIS SUBSTITUTE STATEMENT:

Name: <u>Doug Rosten</u>	Date (Optional):
Signature: <u>Doug Rosten</u>	

APPLICANT NAME AND TITLE OF PERSON EXECUTING THIS SUBSTITUTE STATEMENT:

If the applicant is a juristic entity, list the applicant name and the title of the signer:

Avalon Research Ltd.

Applicant Name: Doug Rosten

Title of Person Executing This Substitute Statement: President

The signer, whose title is supplied above, is authorized to act on behalf of the applicant.

Residence of the signer (unless provided in an application data sheet, PTO/AIA/14 or equivalent):

City <u>Grande Prairie</u>	State <u>Alberta</u>	Country <u>Canada</u>
Mailing Address of the signer (unless provided in an application data sheet, PTO/AIA/14 or equivalent)		

City <u>Grande Prairie</u>	State <u>Alberta</u>	Zip <u>T8V 5M4</u>	Country <u>Canada</u>
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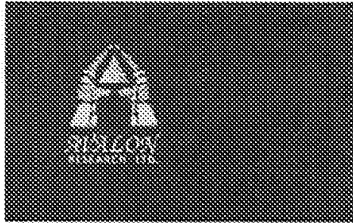
Note: Use an additional PTO/AIA/02 form for each inventor who is deceased, legally incapacitated, cannot be found or reached after diligent effort, or has refused to execute the oath or declaration under 37 CFR 1.63.

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.



AGREEMENT REGARDING CONFIDENTIAL INFORMATION AND INVENTIONS

AVALON RESEARCH LTD.
P.O. Box 23120
Grande Prairie, Alberta
T8V 6X2
Phone: (780) 539-3445 Fax: (780) 830-3382

NAME OF EMPLOYEE

SYLVAIN HOTTE

ADDRESS

10321 70 AVE
GRANDE PRAIRIE, AB
T8W 0A8

PHONE

780-978-2208

I, SYLVAIN HOTTE, acknowledge that I am or will be employed by AVALON RESEARCH LTD. (the "Company") and as part of that employment further acknowledge that:

Confidential Information

I will, during the term of my employment, have access to and become acquainted with certain information (collectively "Trade Secrets") which may include:

- a) formulas or techniques used by the Company in supplying their service;
- b) equipment plans and designs, specialized tools and tool operations;
- c) patterns, devices and the existence of secret inventions;
- d) supply and service information, such as goods and services, suppliers' names or addresses, terms of supply or service contracts, or of particular transactions, or related information about potential suppliers;

e) customer information, such as customer lists, customers' proposals or agreements between customers and the Company, status of customers' accounts or credit, bidding information or related information about actual or prospective customers;

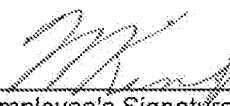
f) personnel information, such as employees personal information, salary and bonuses, or other terms of employment, actual or proposed promotions, hiring resignations, disciplinary actions, terminations or reasons therefore, training methods, performance or other employee information.

I agree that such Trade Secrets could be used to the detriment of the Company and accordingly I agree not to disclose any of the previously mentioned Trade Secrets, directly or indirectly, to any third party either during the term of my employment or at any time after the termination of my employment, regardless of the reason for the termination, except as required in the course of my service to the Company as an employee. I further agree that upon the termination of my employment with the Company I will deliver to the Company any and all devices, records, data, notes, reports, proposals, client lists, correspondence, materials, equipment or other documents or property belonging to the Company and its subsidiaries or their clients, or any copies or reproductions which may have come into my possession during the course of my employment.

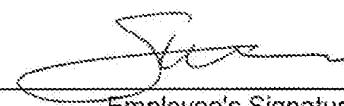
Inventions

I will promptly advise the Company of all inventions, developments, improvements or innovations ("Invention") made or conceived by myself, either alone or with others, during the term of my employment that relate in any way to the business of the Company or any associated employer, subcontractor, or other business or individual contracting with the Company. Further, I acknowledge that all Invention whether or not capable of protection by letters patent, registered design, trademark or otherwise made or discovered will belong absolutely to the Company or the associated employer or subcontractor, as the case may be. I agree to provide the Company with full details and information with regard to the Invention and hereby assign and agree to assign to the Company my entire interest in and to all of the said information and shall do all things requested to enable the Company to protect its ownership of the said information.

Dated this 25 day of SEPT, 2015



Witness to Employee's Signature



Employee's Signature

Name of Witness: Marie King

Address: Site 17, Box 15
RR#2

Secordville, AB T0H 3C0
Phone: 780-539-0050

Electronic Acknowledgement Receipt	
EFS ID:	32475513
Application Number:	15690324
International Application Number:	
Confirmation Number:	8270
Title of Invention:	RELEASABLE CONNECTION FOR A DOWNHOLE TOOL STRING
First Named Inventor/Applicant Name:	Derek KITCHEN
Customer Number:	22828
Filer:	Edward Yoo/Kinga Lebieadowska
Filer Authorized By:	Edward Yoo
Attorney Docket Number:	72944.55
Receipt Date:	27-APR-2018
Filing Date:	30-AUG-2017
Time Stamp:	19:03:12
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment		no			
File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Oath or Declaration filed	Substitute_Statement_Sylvain_Hotte.pdf	798579	no	5
			94147e416e447416a8df1f139d59175ac16b2583		
Warnings:					

Information:	
Total Files Size (in bytes):	798579
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.	



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/690,324	08/30/2017	Derek KITCHEN	72944.55	8270
22828	7590	06/27/2019		
BENNETT JONES LLP Patents Edmonton 3200 TELUS HOUSE, SOUTH TOWER 10020 - 100 STREET EDMONTON, ALBERTA, ALBERTA T5J 0N3 CANADA			EXAMINER CARROLL, DAVID P.	
			ART UNIT 3674	PAPER NUMBER
			NOTIFICATION DATE 06/27/2019	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mcleana@bennettjones.com
patents.edm@bennettjones.com
yoot@bennettjones.com

DETAILED ACTION

Notice of Pre-AIA or AIA Status

The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the releasable engagement profile is spring biased away from the connection profile must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

The drawings are of poor overall quality. Every line, number, and letter must be durable, clean, black, sufficiently dense and dark, and uniformly thick and well-defined. See MPEP 608.02 and 37 CFR 1.84.

It appears the drawings may have been improperly converted during submission. The examiner suggest Applicant review submission guidelines which state in part: "To obtain sufficient quality so that all details in the images are reproducible in black and white in the eighteen-month publication and the printed patent, images should be scanned at a minimum resolution of 300 DPI. Furthermore, PAIR is only capable of displaying portrait orientation. Users should not submit landscape oriented drawings via EFS-Web because PAIR will automatically convert the image to portrait, which may cause the images to be distorted during viewing."

See: <https://www.uspto.gov/patents-application-process/applying-online/legal-framework-efs-web-06april11>

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of 35 U.S.C. 112(b):

(b) CONCLUSION.—The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention.

The following is a quotation of 35 U.S.C. 112 (pre-AIA), second paragraph:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-13 are rejected under 35 U.S.C. 112(b) or 35 U.S.C. 112 (pre-AIA), second paragraph, as being indefinite for failing to particularly point out and distinctly

claim the subject matter which the inventor or a joint inventor, or for pre-AIA the applicant regards as the invention.

The claims are generally narrative and indefinite, failing to conform with current U.S. practice. The claims blend method and apparatus language. The apparatus claims include active method steps. This functional language has not been given patentable weight because the functional recitations are narrative in form.

The claims do not use the term “means” or “step” or generic placeholder for performing the claimed function and does not meet the three prong test for 112(f) to apply. See MPEP 2181 I. In order to be given patentable weight, a functional recitation must be expressed as a “means” for performing the specified function, as set forth in 35 USC 112 (f) paragraph, and must be supported by a recitation in the claims of sufficient structure to warrant the presence of the functional language.

ONE such example in claim 1 is:

“...a locking piston, the locking piston moving axially along the second part...”

The examiner suggest using language similar to:

“...a locking piston, the locking piston configured to move ~~moving~~ axially along the second part...”

This is only ONE example.

Claim 2 includes the limitation(s): “...wherein the releasable engagement profile is spring biased away from the connection profile of the first part.” In the specification as filed (published) the engagement profile is described as:

[0005] According to another aspect, the releasable engagement profile may be a collett having a plurality of fingers that engage the connection profile of the first part.

[0023] Referring to FIG. 1, releasable connection 10 has a first part 12 and a second part 14. First part 12 has a connection profile 16 at an upper end that connects with a releasable engagement profile 18 at a lower end of second part 14.

[0025] Second part 14 has a releasable engagement profile 26 that releasably engages connection profile 16 of first part 12. As shown, releasable engagement profile 26 is a collet with a series of resilient fingers 28 that extend axially in parallel with first part 12 and are spring-biased outward, such that when the piston moves, they move out of engagement with connection profile 16. Resilient fingers 28 have an inner profile 30 that engages connection profile 16, but is slightly tapered such that, when released, fingers 28 are pushed outward as first and second parts 12 and 14 move away from each other.

The engagement profile and connection profile shown in the drawings is a collet latch system (see 18/26/28 and 16/24). However, both the claims and the specification describe the springs of the collet as biased outward, not inward. The engagement profile is described as the outer/female/box portion of the latch and the connection profile is described as the inner/male/pin portion. If the box section is biased outward it is unclear how the box section would retain the pin section. Furthermore, [0025] of the specification as filed describes a tapered section which allows the fingers to be pushed outward as the first and second sections separate. It is unclear why the fingers would need to be forced outward if the fingers are already biased outward. It is unclear if the outward bias only occurs when the tapered section of the connection profile pushes the fingers out during connection/disconnection, or if they are biased slightly out because the connection profile prevents the fingers from fully retracting as on generic collets. As the specification does not provide structural detail regarding the specifics of the collet other than a generic collet, other than the outward bias, the examiner believes that this may be a typographical error and the collet would be operate as a conventional box

collet, having a default diameter and biased inward when a pin is inserted in order to retain the pin.

Clarification and correction are required. No new matter may be entered. The claims will be read and examined as best understood.

Claims 2-13 are rejected based on dependency from a rejected claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a)(1) the claimed invention was patented, described in a printed publication, or in public use, on sale or otherwise available to the public before the effective filing date of the claimed invention.

Claim(s) 1, 4, 6-10 12-13 is/are, as best understood, rejected under 35 U.S.C. 102(a)(1) as being anticipated by Read (US 5984006).

Regarding claim 1, Read teaches:

A releasable connection for a downhole tool string, comprising:

a first part **(Read comprising at least 14)** comprising a connection profile **(Read 92)**;

a second part **(Read comprising at least 16)** comprising: a releasable engagement profile **(Read 76)** that releasably engages the connection profile of the first part;

a locking piston (**Read 22**), the locking piston moving axially along the second part between a locking position (**Read 13:35-55**) that locks the releasable engagement profile into engagement with the connection profile of the first part and a release position (**Read 13:35-55**) that permits the releasable engagement profile to release the connection profile of the second part;

an expansion chamber (**Read near 176**) in fluid communication with the locking piston;

a source of fluid pressure (**Read 28**) in communication with the expansion chamber, wherein, upon activation, the source of fluid pressure applies fluid pressure (**Read 13:35-55**) to move locking piston from the locking position toward the release position.

Regarding claim 4, Read teaches:

The releasable connection of claim 1, wherein the second part comprises an outer housing (**Read 16**), the locking piston being positioned within an internal cavity (**Read near 82/22**) of the second part.

Regarding claim 6, Read teaches:

The releasable connection of claim 1, wherein the locking piston comprises a piston section (**Read 22**) and a sleeve section (**Read comprising 130, 128**) that depends from the piston section, the sleeve section overlying the releasable engagement profile, and the fluid pressure (**Read 13:35-55**) is applied to the piston section.

Regarding claim 7, Read teaches:

The releasable connection of claim 1, further comprising a combustible **(Read 28)** disposed within the expansion chamber, wherein, upon combustion, the combustible applies **(Read 13:35-55)** gas pressure to the locking piston.

Regarding claim 8, Read teaches:

The releasable connection of claim 7, wherein the expansion chamber comprises a first volume **(Read near 28)** that contains the combustible, and a second volume **(Read near 22, 134)** that encloses at least a portion of the locking piston, the first volume being in fluid communication **(Read via at least 176)** with the second volume.

Regarding claim 9, Read teaches:

The releasable connection of claim 7, wherein the combustible is detonated by an electrical signal **(Read 14:25-32)**.

Regarding claim 10, Read teaches:

The releasable connection of claim 1, wherein the first part carries a first electrical connection **(Read 14:25-32)**, and the second part carries a second electrical connection **(Read 14:25-32)**, the first and second electrical connection being electrically connected when the releasable engagement profile of the second part engages the connection profile of the first part, and becomes disconnected when the releasable engagement profile disengages the connection profile. Note: Read teaches conductor

cable connector 38, wherein the cable's individual electrical conductors (not shown) pass through the longitudinal bores 244 and into the longitudinal bore 220 of the flow tube 40. When separated at least 38 is removed with the first part while connector 165 remains on the second part.

Regarding claim 12, Read teaches:

The releasable connection of claim 10, wherein the first electrical connection and the second electrical connection are concentrically disposed (**Read 14:25-32**) within the connection profile and the releasable engagement profile.

Regarding claim 13, Read teaches:

The releasable connection of claim 1, wherein the first part comprises a fishneck (**Read 48**) that attaches to a fishing tool when disconnected from the second part.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 3 is/are, as best understood, rejected under 35 U.S.C. 103 as being unpatentable over Read.

Regarding claim 3, Read teaches:

The releasable connection of claim 1, but does not expressly state:

wherein the releasable engagement profile is a collett having a plurality of fingers that engage the connection profile of the first part. However, a different engagement/connection portion of the tool does teach using a collett (**Read 24**) having a plurality of fingers (**Read 134**) for releasable engagement.

It would have been considered obvious to one of ordinary skill in the art before the effective filing date or at the time the invention was made to have modified Read to include using a collet with a plurality of fingers in place of the dogs in order to form a releasable connection between tool components. Using a collet in place of dogs yields the predictable result of allowing the operator to form a releasable connection between the tool components.

Furthermore, it would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have used a collet in place of dogs since the Examiner takes Official Notice of the equivalence of collets and dogs for their use in forming releasable connections in the downhole tool art and the selection of any of these known equivalents to form a releasable connection would be within the level of ordinary skill in the art.

Claim 11 is/are, as best understood, rejected under 35 U.S.C. 103 as being unpatentable over Read in view of Deere (US 20130008669).

Regarding claim 11, Read teaches:

The releasable connection of claim 10, but does not expressly state:

wherein the first electrical connection is spring-mounted.

Deere teaches:

using spring mounted electrical connections (**Deere Abstract, [0015-0016]**) on downhole tools.

It would have been considered obvious to one of ordinary skill in the art before the effective filing date or at the time the invention was made to have modified the generic electrical connector of Read to include using a spring mounted electrical connector in order to ensure electrical connector match and prevent damage during connection (**Deere [0016]**).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Carroll whose telephone number is (571)272-4808. The examiner can normally be reached on M-Th 12:00-9:30 ET.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at <http://www.uspto.gov/interviewpractice>.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doug Hutton can be reached on (571) 272-4137. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David Carroll/
Examiner, Art Unit 3674

<i>Notice of References Cited</i>	Application/Control No. 15/690,324		Applicant(s)/Patent Under Reexamination KITCHEN et al.	
	Examiner David Carroll		Art Unit 3674	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-5984006-A	11-1999	Read; Dennis M.	E21B17/028	166/63
*	B	US-20130008669-A1	01-2013	Deere; R. Paul	E21B33/0385	166/378
*	C	US-3211222-A	10-1965	MYERS WILLIAM D	E21B31/1075	166/63
	D					
	E					
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FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
	N					
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NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
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*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
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<i>Search Notes</i> 	Application/Control No. 15/690,324	Applicant(s)/Patent Under Reexamination KITCHEN et al.
	Examiner David Carroll	Art Unit 3674

CPC - Searched*		
Symbol	Date	Examiner
E21B17/04,042,06,028	03/27/2019	DC
E21B23/00	03/27/2019	DC

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
Inventor Name	03/27/2019	DC
Forward/Backward	06/13/2019	DC
East Text	06/13/2019	DC

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner

/David Carroll/ Examiner, Art Unit 3674	
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Doc code: IDS

PTO/SB/08a (01-10)

Doc description: Information Disclosure Statement (IDS) Filed

Approved for use through 07/31/2012. OMB 0651-0031

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		
	Filing Date		
	First Named Inventor	Derek KITCHEN et al.	
	Art Unit		
	Examiner Name		
	Attorney Docket Number	THOLAM P599US	

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Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1	7198101	B2	2007-04-03	McGarian et al.	See Spec., Page 1		
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**INFORMATION DISCLOSURE
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(Not for submission under 37 CFR 1.99)

Application Number	
Filing Date	
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Art Unit	
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EXAMINER SIGNATURE

Examiner Signature	/David Carroll/	Date Considered	06/13/2019
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Application Number	
Filing Date	
First Named Inventor	Derek KITCHEN et al.
Art Unit	
Examiner Name	
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CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

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A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Michael J. Bujold/	Date (YYYY-MM-DD)	2017-08-29
Name/Print	Michael J. Bujold	Registration Number	32018

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EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	1	15/690324	US-PGPUB; USPAT; USOCR	OR	ON	2019/03/27 13:43
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S4	2561	E21B17/04,042.CPC.	US-PGPUB; USPAT; USOCR	OR	ON	2019/03/27 14:30
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S6	1437	E21B23/00.CPC. not (S4 S5)	US-PGPUB; USPAT; USOCR	OR	ON	2019/03/27 14:31
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S12	6601	(E21B\$.cpc. 166/\$.ccls. 175/\$.ccls.) and ((lock\$3 retain\$3) with piston) and (piston with pressure)	US-PGPUB; USPAT; USOCR	OR	ON	2019/06/06 20:45
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		20080230232-\$ or US-20080012569-\$ or US-20110174500-\$ or US-20080311776-\$ or US-20110235981-\$ or US-20030066978-\$ or US-20110127085-\$ or US-20050016769-\$ or US-20050205304-\$).did. or (US-8347964-\$ or US-8225865-\$ or US-7669671-\$ or US-7213655-\$ or US-8322440-\$ or US-8215410-\$ or US-7237626-\$ or US-7074064-\$ or US-6705406-\$ or US-6655464-\$ or US-5334801-\$ or US-7980874-\$ or US-4553807-\$ or US-7404725-\$ or US-7277025-\$ or US-8640795-\$ or US-8544553-\$ or US-8474548-\$ or US-8141657-\$ or US-8127868-\$ or US-7849936-\$ or US-7673705-\$ or US-7644760-\$ or US-7543659-\$ or US-7518528-\$ or US-7566235-\$).did. or (US-6926098-\$ or US-8627901-\$ or US-8550160-\$ or US-7913774-\$ or US-7886832-\$ or US-6347674-\$ or US-5332048-\$ or US-7819666-\$ or US-7649475-\$ or US-7488194-\$ or US-5389003-\$ or US-6481495-\$).did. or (US-3430181-\$ or US-2748358-\$).did. or (US-20100206583-\$).did.				
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S23	133	S18 S19 S20 S21 S22	US-	OR	ON	2019/06/13

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S24	2793	E21B23/04,065.cpc. E21B29/02.cpc. E21B31/1075.cpc.	US- PGPUB; USPAT; USOCR	OR	ON	2019/06/13 23:10
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S26	250	S25 and ((gas with (combustion pressure)) same piston)	US- PGPUB; USPAT; USOCR	OR	ON	2019/06/13 23:28
S27	26	("2308004").URPN.	USPAT	OR	ON	2019/06/13 23:30
S28	32	("3737181" "4694878" "4721132" "4772050" "5046896" "5323853").PN. OR ("6269883").URPN.	US- PGPUB; USPAT; USOCR	OR	ON	2019/06/13 23:32
S29	27	S25 and (disconnect\$4 same ((gas with (combustion pressure)) same piston))	US- PGPUB; USPAT; USOCR	OR	ON	2019/06/14 00:19
S30	88	S25 and (((releas\$4 disconnect\$4) with (piston) same ((gas with (combustion pressure))))))	US- PGPUB; USPAT; USOCR	OR	ON	2019/06/14 00:21
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S34	2793	E21B23/04,065.cpc. E21B29/02.cpc. E21B31/1075.cpc.	US- PGPUB; USPAT; USOCR	OR	ON	2019/06/14 01:47
S35	88	S34 and (((releas\$4 disconnect\$4) with (piston) same ((gas with (combustion pressure))))))	US- PGPUB; USPAT; USOCR	OR	ON	2019/06/14 01:47
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S42	13	S41 and (spring collet fingers)	US- PGPUB; USPAT; USOCR	OR	ON	2019/06/15 22:07
S43	1	("5984006").PN.	US-	OR	OFF	2019/06/15

EAST Search History

			PGPUB; USPAT; USOCR			22:21
S44	1	15/690324	US- PGPUB; USPAT; USOCR	OR	ON	2019/06/15 23:24
S45	1	S44 and (spring biased)	US- PGPUB; USPAT; USOCR	OR	ON	2019/06/15 23:24
S46	4	((("3211222") or ("5984006") or ("20130008669")).PN.	US- PGPUB; USPAT; USOCR	OR	OFF	2019/06/15 23:50

EAST Search History (Interference)

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6/ 15/ 2019 11:53:13 PM

C:\ Users\ dcarroll2\ Documents\ EAST\ Workspaces\ 15690324.wsp

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875				Application or Docket Number 15/690,324		Filing Date 08/30/2017		☐ To be Mailed					
ENTITY: ☐ LARGE ☒ SMALL ☐ MICRO													
APPLICATION AS FILED - PART I													
		(Column 1)		(Column 2)									
FOR		NUMBER FILED		NUMBER EXTRA		RATE (\$)		FEE (\$)					
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))		N/A		N/A		N/A							
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))		N/A		N/A		N/A							
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))		N/A		N/A		N/A							
TOTAL CLAIMS (37 CFR 1.16(i))		minus 20 =		*		x \$40 =							
INDEPENDENT CLAIMS (37 CFR 1.16(h))		minus 3 =		*		x \$210 =							
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))		If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).											
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))													
* If the difference in column 1 is less than zero, enter "0" in column 2.						TOTAL							
APPLICATION AS AMENDED - PART II													
		(Column 1)		(Column 2)		(Column 3)							
AMENDMENT	10/25/2019	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR		PRESENT EXTRA		RATE (\$)		ADDITIONAL FEE (\$)			
	Total (37 CFR 1.16(i))	* 13	Minus	** 20	= 0	x \$50 =		0					
	Independent (37 CFR 1.16(h))	* 1	Minus	*** 3	= 0	x \$230 =		0					
	☐ Application Size Fee (37 CFR 1.16(s))												
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))												
										TOTAL ADD'L FEE		0	
AMENDMENT			(Column 1)		(Column 2)		(Column 3)						
			CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR		PRESENT EXTRA		RATE (\$)		ADDITIONAL FEE (\$)		
			*	Minus	**	=	x \$0 =						
			*	Minus	***	=	x \$0 =						
	☐ Application Size Fee (37 CFR 1.16(s))												
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))													
										TOTAL ADD'L FEE			
* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.										LIE			
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".										/TRACEY M YOUNG/			
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".													
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.													

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Electronic Patent Application Fee Transmittal				
Application Number:		15690324		
Filing Date:		30-Aug-2017		
Title of Invention:		RELEASABLE CONNECTION FOR A DOWNHOLE TOOL STRING		
First Named Inventor/Applicant Name:		Derek KITCHEN		
Filer:		Edward Yoo/Ashley McLean		
Attorney Docket Number:		72944.55		
Filed as Small Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension - 1 month with \$0 paid	2251	1	100	100
Miscellaneous:				
Total in USD (\$)				100

Electronic Acknowledgement Receipt	
EFS ID:	37570423
Application Number:	15690324
International Application Number:	
Confirmation Number:	8270
Title of Invention:	RELEASABLE CONNECTION FOR A DOWNHOLE TOOL STRING
First Named Inventor/Applicant Name:	Derek KITCHEN
Customer Number:	22828
Filer:	Edward Yoo/Ashley McLean
Filer Authorized By:	Edward Yoo
Attorney Docket Number:	72944.55
Receipt Date:	25-OCT-2019
Filing Date:	30-AUG-2017
Time Stamp:	19:37:47
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$100
RAM confirmation Number	E201900J38053284
Deposit Account	
Authorized User	

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

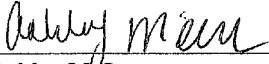
File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
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Warnings:					
Information:					
2	Amendment/Req. Reconsideration-After Non-Final Reject	Response_Amendment.PDF	454244	no	11
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3	Fee Worksheet (SB06)	fee-info.pdf	30792	no	2
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Warnings:					
Information:					
Total Files Size (in bytes):			523059		
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.: 15/690,324
Filing Date: 08/30/2017
Inventor (first named): Derek KITCHEN
Group Art Unit: 3674
Examiner Name: CARROLL, DAVID P.
Attorney Docket No.: 72944.55

Certificate of Transmission under 37 C.F.R. 1.8(a)

I hereby certify that this document is being electronically transmitted on October 25, 2019 to the U.S. Patent and Trademark Office.



Ashley McLean

DATED: October 25, 2019

**PETITION FOR A ONE-MONTH EXTENSION OF TIME
PURSUANT TO 37 C.F.R. 1.136(a)**

Assistant Commissioner for Patents
Alexandria, VA 22313-1450

Sir/Madam:

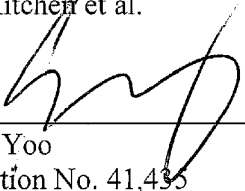
Applicant hereby requests a one-month extension of time for filing a Response to the Office Action dated June 27, 2019. The grant of this Petition will extend the time for response from September 27, 2019 to October 27, 2019.

The extension fee under 37 CFR 1.17(a)(1) of \$100.00 (small entity) is being paid electronically with the filing of this Petition.

Please address all correspondence to customer number 22828.

DATED: October 25, 2019.

Respectfully submitted,
Derek Kitchen et al.

By: 

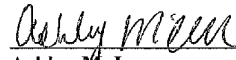
Edward Yoo
Registration No. 41,435

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

Application No.: 15/690,324
Filing Date: 08/30/2017
Inventor (first named): Derek KITCHEN
Group Art Unit: 3674
Examiner Name: CARROLL, DAVID P.
Attorney Docket No.: 72944.55

Certificate of Transmission under 37 C.F.R. 1.8(a)

I hereby certify that this document is being electronically transmitted on the date below to the U.S. Patent and Trademark Office, in Alexandria, VA 22313-1450.


Ashley McLean

DATED: October 25, 2019

AMENDMENT & RESPONSE TO OFFICE ACTION

To: Commissioner for Patents
Alexandria, VA 22313-1450

This paper is in response to the non-final Office Action mailed June 27, 2019. Please enter the amendments and consider the remarks/arguments below.

Amendments to the Claims begin on page 2 of this paper.

Amendments to the Drawings begin on page 5 of this paper.

Remarks/Arguments begin on page 6 of this paper.

Attachments:

- Replacement Sheets for Amended Drawing Pages 1 to 3.

AMENDMENTS

Amendments to the Claims

This listing of claims will replace all prior versions and listings of claim in the application.

Listing of Claims

1. (Currently Amended) A releasable connection for a downhole tool string, comprising
 - a first part comprising an external connection profile;
 - a second part comprising:
 - a releasable engagement profile which internally that releasably engages the connection profile of the first part and which is configured to expand radially to release the connection profile of the first part;
 - a locking piston, the locking piston ~~moving~~ configured to move axially along the second part between a locking position that ~~locks directly~~ constrains the releasable engagement profile into engagement with the connection profile of the first part and a release position that permits the releasable engagement profile to expand radially to release the connection profile of the second part;
 - an expansion chamber in fluid communication with the locking piston;
 - a source of fluid pressure in communication with the expansion chamber, wherein, upon activation, the source of fluid pressure is configured to apply ~~applies~~ fluid pressure to move the locking piston from the locking position toward the release position.
2. (Original) The releasable connection of claim 1, wherein the releasable engagement profile is spring biased away from the connection profile of the first part.
3. (Original) The releasable connection of claim 1, wherein the releasable engagement profile is a collet having a plurality of fingers that engage the connection profile of the first part.

4. (Original) The releasable connection of claim 1, wherein the second part comprises an outer housing, the locking piston being positioned within an internal cavity of the second part.
5. (Currently Amended) The releasable connection of claim 1, wherein the outer housing of the second part comprises a pressure equalization ports, the locking piston configured to close ~~closing~~ the pressure equalization ports in the locking position, and ~~opening~~ the pressure equalization ports in the release position.
6. (Original) The releasable connection of claim 1, wherein the locking piston comprises a piston section and a sleeve section that depends from the piston section, the sleeve section overlying the releasable engagement profile, and the fluid pressure is applied to the piston section.
7. (Original) The releasable connection of claim 1, further comprising a combustible disposed within the expansion chamber, wherein, upon combustion, the combustible applies gas pressure to the locking piston.
8. (Original) The releasable connection of claim 7, wherein the expansion chamber comprises a first volume that contains the combustible, and a second volume that encloses at least a portion of the locking piston, the first volume being in fluid communication with the second volume.
9. (Currently Amended) The releasable connection of claim 7, wherein the combustible is configured to be detonated by an electrical signal.
10. (Original) The releasable connection of claim 1, wherein the first part carries a first electrical connection, and the second part carries a second electrical connection, the first and second electrical connection being electrically connected when the releasable engagement profile of the second part engages the connection profile of the first part, and becomes disconnected when the releasable engagement profile disengages the connection profile.

11. (Original) The releasable connection of claim 10, wherein the first electrical connection is spring-mounted.
12. (Original) The releasable connection of claim 10, wherein the first electrical connection and the second electrical connection are concentrically disposed within the connection profile and the releasable engagement profile.
13. (Original) The releasable connection of claim 1, wherein the first part comprises a fishneck that attaches to a fishing tool when disconnected from the second part.

Amendments to the Drawings

Please replace drawing pages for Figures 1-3 currently on file with the attached Replacement Sheets for amended drawing pages 1-3 containing Figures 1-3. The amendments to the drawings are further discussed in the Remarks below. The amended Drawings contains no new matter.

REMARKS/ARGUMENTS

Claim Amendments

With entry of amendments to claim 1, 5 and 9 shown above, claims 1-13 are pending.

The nature and purpose of the amendments are described below.

Drawing Amendments

Figures 1-3 are amended in response to an Examiner's objection, to improve the overall quality so as to be sufficient for reproduction. No substantive changes are made.

Drawing Objections – 37 CFR 1.83(a)

Examiner objects to the drawings because they do not show "the releasable engagement profile is spring biased away from the connection profile of the first part", as recited in original claim 2.

Applicant requests reconsideration and withdrawal of this objection; no correction is required. A portion of Figures 1 and 3 are annotated below to assist in understanding how they show that the releasable engagement profile is spring biased away from the connection profile. The Figures show the releasable engagement profile 26 in the form a collet with a series of resilient fingers 28 that are spring-biased outward (see paragraph [0022]). When the locking piston 32 is in the release position (Figure 1), the sleeve section thereof moves away from the releasable engagement profile 26, which allows the fingers 28 to move away from the connection profile 16 (see paragraph [0023]). When the locking piston 32 is in the locking position (Figure 2 and 3), the sleeve section 40 thereof overlies the releasable engagement profile 26 such that the fingers 28 are unable to be pushed back from the connection profile. Applicant further refers to the response to the Examiner's rejection to claim 2 under 35 U.S.C. 112.

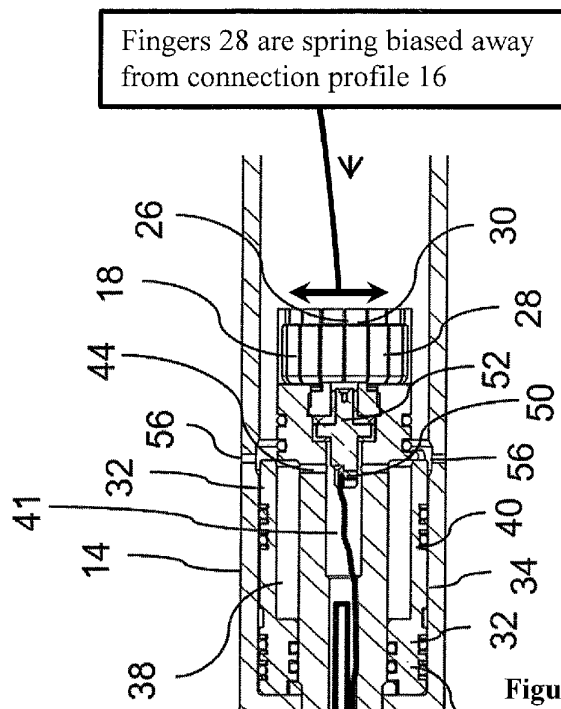


Figure 1

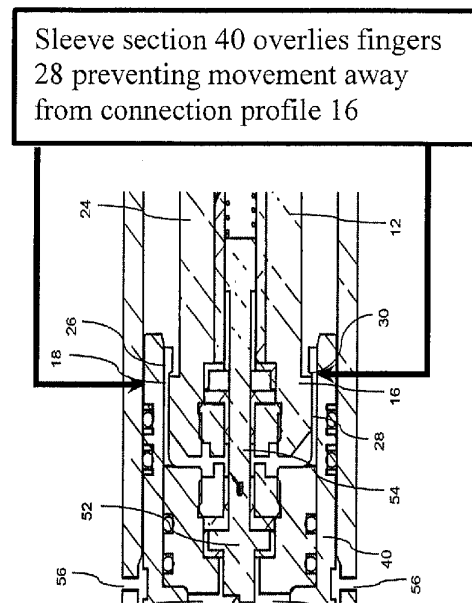


Figure 3

Examiner objects to the drawings because of alleged poor overall quality. Examiner notes that it appears the drawings may have been improperly converted during submission.

Applicant submits that the amended drawings submitted herein are of sufficiently quality for reproduction.

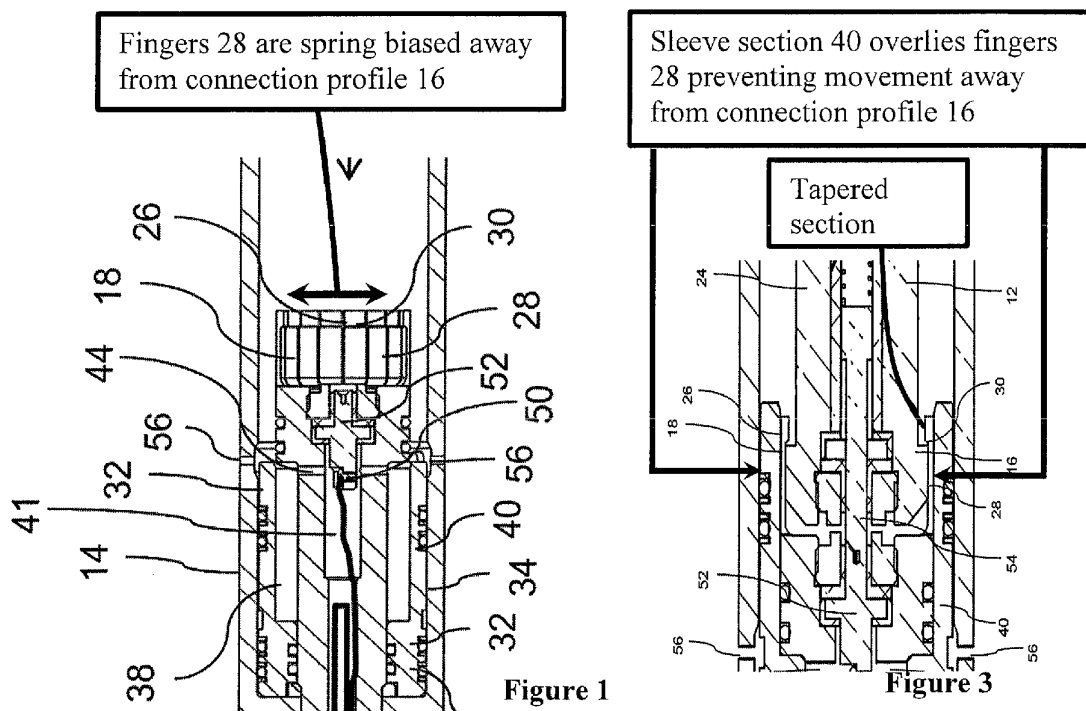
Claim Objection – 35 USC 112

Examiner alleges that claims fail to conform to U.S. practice, by virtue of blending apparatus language and active method steps, in a narrative form, thus introducing functional language not expressed in "means plus function" form. Examiner notes one example in claim 1 "the locking piston moving axially along the second part", and has suggested revision to "the locking piston configured to move along the second part". Examiner rejects claims 2-13 based on dependency from a rejected claim.

In response to this objection, Applicant accepts Examiner's suggestion. Claims 1, 5 and 9 have been amended to recite configured structure and not functional language.

Examiner requests clarification and correction of claim 2 in respect to the limitation "wherein the releasable engagement profile is spring biased away from the connection profile of the first part", which the Examiner alleges is inconsistent with the operation of the collet latch system (parts 18, 26, 28, 16, 24) shown in the drawings.

Applicant requests reconsideration and withdrawal of this objection; no correction is required. A portion of Figures 1 and 3 are annotated below to assist in understanding the described operation of the releasable engagement profile.



Claim 2's recited limitation "wherein the releasable engagement profile is spring biased away from the connection profile of the first part" is not inconsistent with the operation of the releasable engagement profile described at paragraphs [0022] and [0023] of the specification, and shown in the drawings.

Examiner states: "The engagement profile is described as the outer/female/box portion of the latch and the connection profile is described as the inner/male/pin portion. If the box section is biased outward it is unclear how the box section would retain the pin section". To explain, the fingers 28 retain the connection profile 16 by virtue of the sleeve section 40 constricting the fingers

28 radially inward toward the connection profile 16 when the locking piston 32 is moved toward the locked position, such that the tapered section of the fingers 28 latch the shoulder defined by the intersection of the fish neck profile 24 and the lip of the connection profile 16 (see paragraph [0023] and Figure 3).

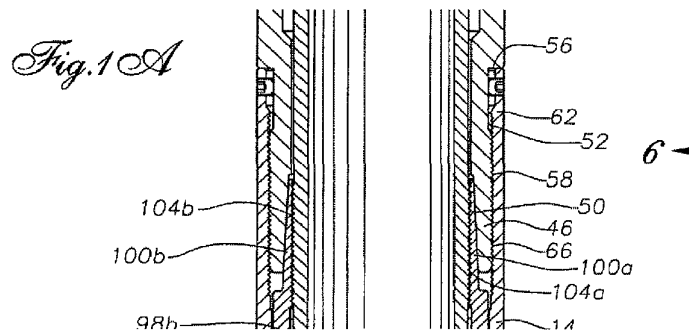
Examiner states: "Furthermore, [0025] of the specification as filed describes a tapered section which allows the fingers to be pushed outwards as the first and second sections separate. It is unclear why the fingers would need to be forced outward if the fingers are already biased outwards." To explain, the fingers 28 are biased outward to disengage from the connection profile 16 when the locking piston 32 moves into the release position, such that the sleeve section 40 moves away from the fingers 28 and allows them to move away from the connection profile 16 (see paragraph [0023] and Figure 1). This is not inconsistent with the fingers 28 being pushed apart as the connection profile 16 passes through the narrowed tapered section of the fingers 28, as the first part 12 and the second part 14 separate.

Claim Rejection – 35 USC 102

Examiner rejects claims 1, 4, 6-10, 12-13 as being anticipated by Read et al. (US 5984006).

Claim 1 has been amended to clarify that the releasable connection comprises "a releasable engagement profile which internally engages the connection profile of the first part and which is configured to expand radially to release the connection profile of the first part" and "a locking piston, the locking piston configured to move axially along the second part between a locking position that directly constrains the releasable engagement profile..."

Read et al. describes a different release tool where coiled tubing is gripped by slips which are driven into engagement of the loading nut, which causes inward pressure on the slips flared ends 100a and 100b. Although Read et al. describes a collet, its function is to retain the piston until the propellant is ignited. In Read, there is no first part connection profile, because the coiled tubing has a smooth outer diameter and is gripped by the slips at any point along its length.



In contrast, in the presently claimed invention, the releasable engagement profile internally engages the first part connection profile, which is exemplified by an expandable collet which surrounds the profile. The locking piston in this case directly constrains the releasable engagement profile from expanding radially outwards.

In Read et al. the piston 22 drives upward and acts on slip housing, which then acts to separate the loading nut from the slips. The piston therefore does not directly constrain the slips.

Thus, Read et al. fails to teach the elements of claim 1, and each claim dependent on claim 1. Thus, claim 1 and its dependent claims are submitted to be novel and inventive.

Claim Rejection – 35 USC 103

Examiner rejects claim 3 as being obvious over Read et al. (US 5984006) alone.

Read et al fails to teach all the elements of claim 3, and is therefore claim 3 is submitted to be novel and inventive.

Examiner rejects claim 11 as being obvious over Read et al. (US 5984006) in view of Deere et al. (US 2013/0008669 A1)

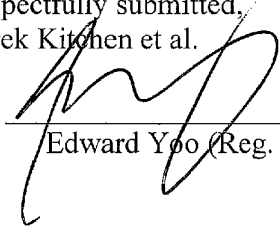
The combination of Read et al and Deere et al fail to teach all the elements of claim 11, and therefore claim 11 is submitted to be novel and inventive.

CONCLUSION

In view of the foregoing amendments and remarks/arguments, it is respectfully submitted that this application is in condition for allowance and allowance thereof is respectfully requested.

CORRESPONDENCE ADDRESS:
CUSTOMER NO. 22828

Respectfully submitted,
Derek Kitchen et al.

By: 
Edward Yoo (Reg. No. 41,435)



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/690,324	08/30/2017	Derek KITCHEN	72944.55	8270
22828	7590	12/30/2019	EXAMINER	
BENNETT JONES LLP			CARROLL, DAVID P.	
Patents Edmonton				
3200 TELUS HOUSE, SOUTH TOWER				
10020 - 100 STREET				
EDMONTON, ALBERTA, ALBERTA T5J 0N3				
CANADA				
			ART UNIT	PAPER NUMBER
			3674	
			NOTIFICATION DATE	DELIVERY MODE
			12/30/2019	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mcleana@bennettjones.com
patents.edm@bennettjones.com
yoot@bennettjones.com

DETAILED ACTION

Notice of Pre-AIA or AIA Status

The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

Response to Arguments

Applicant's arguments with respect to the claims have been considered but are moot because the arguments do not apply to any of the references being used in the current rejection.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a)(1) the claimed invention was patented, described in a printed publication, or in public use, on sale or otherwise available to the public before the effective filing date of the claimed invention.

Claim(s) 1-3, 6, 13 is/are rejected under 35 U.S.C. 102(a)(1) as being anticipated by Beeman (US 6095583).

Regarding claim 1, Beeman teaches:

A releasable connection for a downhole tool string, comprising:

a first part (**Beeman described but not shown, 10:33-36**) comprising an external connection profile (**Beeman described but not shown, 10:33-36**);

a second part (**Beeman comprising at least 140**) comprising:

a releasable engagement profile (**Beeman comprising at least 140**)

which internally engages the connection profile of the first part and which is configured to (**Beeman 10:19-41**) expand radially to release the connection profile of the first part;

a locking piston (**Beeman 106**), the locking piston configured to move axially along the second part between a locking position (**Beeman Fig. 7B**) that directly constrains the releasable engagement profile into engagement with the connection profile of the first part and a release position (**Beeman Fig. 7A**) that permits the releasable engagement profile to expand radially to release the connection profile of the second part;

an expansion chamber (**Beeman 150**) in fluid communication with the locking piston;

a source of fluid pressure (**Beeman 10:19-22, 38-41**) in communication (**Beeman via 128**) with the expansion chamber, wherein, upon activation, the source of fluid pressure is configured to apply fluid pressure to move the locking piston from the locking position toward the release position.

Regarding claim 2, Beeman teaches:

The releasable connection of claim 1, wherein the releasable engagement profile is spring biased (**Beeman via 108**) away from the connection profile of the first part.

Regarding claim 3, Beeman teaches:

The releasable connection of claim 1, wherein the releasable engagement profile is a collett (**Beeman comprising at least 140**) having a plurality of fingers (**Beeman 140**) that engage the connection profile of the first part.

Regarding claim 6, Beeman teaches:

The releasable connection of claim 1, wherein the locking piston comprises a piston section (**Beeman comprising 126 and 106 near 150**) and a sleeve section (**Beeman 106 near 140**) that depends from the piston section, the sleeve section overlying the releasable engagement profile, and the fluid pressure is applied to the piston section.

Regarding claim 13, Beeman teaches:

The releasable connection of claim 1, wherein the first part comprises a fishneck (**Beeman described but not shown, 10:33-36**) that attaches to a fishing tool (**Beeman described but not shown, 10:33-36**) when disconnected from the second part.

Allowable Subject Matter

Claims 4-5, 7-12, are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Carroll whose telephone number is (571)272-4808. The examiner can normally be reached on M-F 2:00-10:00 PM EDT.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at <http://www.uspto.gov/interviewpractice>.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doug Hutton can be reached on (571) 272-4137. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David Carroll/
Primary Examiner, Art Unit 3674

<i>Notice of References Cited</i>	Application/Control No. 15/690,324		Applicant(s)/Patent Under Reexamination KITCHEN et al.	
	Examiner David Carroll		Art Unit 3674	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-5242201-A	09-1993	Beeman; Robert S.	E21B23/04	294/86.15
*	B	US-6095583-A	08-2000	Beeman; Robert S.	E21B31/20	294/86.15
	C					
	D					
	E					
	F					
	G					
	H					
	I					
	J					
	K					
	L					
	M					

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

<i>Search Notes</i> 	Application/Control No. 15/690,324	Applicant(s)/Patent Under Reexamination KITCHEN et al.
	Examiner David Carroll	Art Unit 3674

CPC - Searched*		
Symbol	Date	Examiner
E21B17/04,042,06,028	03/27/2019	DC
E21B23/00	03/27/2019	DC
Above Updated	11/11/2019	DC

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
Inventor Name	03/27/2019	DC
Forward/Backward	06/13/2019	DC
East Text	06/13/2019	DC
Updated Search	11/11/2019	DC
Updated Search	12/18/2019	DC

/David Carroll/ Primary Examiner, Art Unit 3674	
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<i>Search Notes</i> 	Application/Control No. 15/690,324	Applicant(s)/Patent Under Reexamination KITCHEN et al.
	Examiner David Carroll	Art Unit 3674

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner

/David Carroll/ Primary Examiner, Art Unit 3674	
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EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S68	1	S67 and piston	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/19 01:11
S67	1	15/690324	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/19 01:11
S66	1	("5242201").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/12/19 01:05
S65	4	(US-3266835-\$ US-3292717-\$).DID.	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/19 00:54
S64	40	(E21B\$.cpc. 166/\$.ccls. 175/\$.ccls.) and ((collet collet finger) with ((overshot (over adj shot)))) and piston	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/19 00:45
S63	112	(E21B\$.cpc. 166/\$.ccls. 175/\$.ccls.) and ((collet collet finger) with ((overshot (over adj shot))))	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/19 00:41
S62	46	("1916449" "4476945" "4526233" "4611662" "4877089" "4878695" "4913229" "4949791" "4984632" "5109921" "5156206" "5201814" "5265675" "5323853" "5339913" "5370180" "5419399" "5607250" "5762142").PN. OR ("2013/0008669" "3211222" "5984006").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/18 23:52
S61	18	(US-20130008669-\$ or US-20050205304-\$ or US-20020000320-\$ or US-20020053434-\$ or US-20110174504-\$ or US-20080066931-\$ or US-20020100586-\$ or US-20070089911-\$ or US-20140202710-\$).did. or (US-7198101-\$ or US-6481495-\$ or US-4981438-\$ or US-6347674-\$ or US-7566235-\$ or US-6269883-\$ or US-5984006-\$).did. or (US-2308004-\$ or US-3211222-\$).did.	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/18 23:51
S58	6	(E21B\$.cpc. 166/\$.ccls. 175/\$.ccls.) and ((collet adj lock\$3 adj sleeve) same piston)	US-PGPUB; USPAT; USOCR	OR	ON	2019/11/11 23:30
S57	75	(E21B\$.cpc. 166/\$.ccls. 175/\$.ccls.) and ((collet with lock with sleeve) same piston)	US-PGPUB; USPAT; USOCR	OR	ON	2019/11/11 23:29

EAST Search History

S56	484	(E21B\$.cpc. 166/\$.ccls. 175/\$.ccls.) and (collet with lock with sleeve)	US-PGPUB; USPAT; USOCR	OR	ON	2019/11/11 23:29
S55	0	(E21B\$.cpc. 166/\$.ccls. 175/\$.ccls.) and (collet lock sleeve)	US-PGPUB; USPAT; USOCR	WITH	ON	2019/11/11 23:29
S54	119	(E21B\$.cpc. 166/\$.ccls. 175/\$.ccls.) and ((collet collet finger) near3 (external) with (sleeve))	US-PGPUB; USPAT; USOCR	OR	ON	2019/11/11 23:26
S53	1290	(E21B\$.cpc. 166/\$.ccls. 175/\$.ccls.) and ((collet collet finger) with (outwar\$4 expand\$4) with (sleeve))	US-PGPUB; USPAT; USOCR	OR	ON	2019/11/11 23:24
S52	1782	(E21B\$.cpc. 166/\$.ccls. 175/\$.ccls.) and ((collet collet finger) with (open\$3 outwar\$4 expand\$4) with (sleeve))	US-PGPUB; USPAT; USOCR	OR	ON	2019/11/11 23:24
S51	2614	(E21B\$.cpc. 166/\$.ccls. 175/\$.ccls.) and ((collet collet finger) with (open\$3 outwar\$4 expand\$4) same (sleeve))	US-PGPUB; USPAT; USOCR	OR	ON	2019/11/11 23:24
S50	4	(US-20130008669-\$).did. or (US-5984006-\$ or US-3211222-\$).did. or (US-3211222-\$).did.	US-PGPUB; USPAT; USOCR	OR	ON	2019/11/11 23:11
S49	17	(US-20130008669-\$ or US-20050205304-\$ or US-20020000320-\$ or US-20020053434-\$ or US-20110174504-\$ or US-20080066931-\$ or US-20020100586-\$ or US-20070089911-\$).did. or (US-7198101-\$ or US-6481495-\$ or US-4981438-\$ or US-6347674-\$ or US-7566235-\$ or US-6269883-\$ or US-5984006-\$).did. or (US-2308004-\$ or US-3211222-\$).did.	US-PGPUB; USPAT; USOCR	OR	ON	2019/11/11 23:10
S48	309	S47 and @pd>"20190301"	US-PGPUB; USPAT; USOCR	OR	ON	2019/11/11 23:10
S47	6558	E21B17/04,042,06,028.CPC. E21B23/00.CPC.	US-PGPUB; USPAT; USOCR	OR	ON	2019/11/11 23:10
S46	4	((("3211222") or ("5984006") or ("20130008669")).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/06/15 23:50

EAST Search History (Interference)

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12/ 20/ 2019 2:04:57 AM

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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875			Application or Docket Number 15/690,324		Filing Date 08/30/2017		☐ To be Mailed	
ENTITY: ☐ LARGE ☒ SMALL ☐ MICRO								
APPLICATION AS FILED - PART I								
		(Column 1)	(Column 2)					
FOR		NUMBER FILED	NUMBER EXTRA		RATE (\$)	FEE (\$)		
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))		N/A	N/A		N/A			
☐ SEARCH FEE (37 CFR 1.16(k), (l), or (m))		N/A	N/A		N/A			
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))		N/A	N/A		N/A			
TOTAL CLAIMS (37 CFR 1.16(i))		minus 20 =	*		x \$40 =			
INDEPENDENT CLAIMS (37 CFR 1.16(h))		minus 3 =	*		x \$210 =			
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))		If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))								
* If the difference in column 1 is less than zero, enter "0" in column 2.					TOTAL			
APPLICATION AS AMENDED - PART II								
		(Column 1)	(Column 2)		(Column 3)			
AMENDMENT	05/26/2020	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	
	Total (37 CFR 1.16(i))	* 19	Minus	** 20	= 0	x \$50 =	0	
	Independent (37 CFR 1.16(h))	* 3	Minus	*** 3	= 0	x \$230 =	0	
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
						TOTAL ADD'L FEE	0	
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	
	Total (37 CFR 1.16(i))	*	Minus	**	=	x \$0 =		
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x \$0 =		
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
						TOTAL ADD'L FEE		
* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.						LIE		
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".						/SHARON D HARRIS/		
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".								
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.								

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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Doc code: RCEX

Doc description: Request for Continued Examination (RCE)

PTO/SB/30EFS (02-18)

Approved for use through 11/30/2020. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL **(Submitted Only via EFS-Web)**

Application Number	15/690,324	Filing Date	2017-08-30	Docket Number (if applicable)	72944.55	Art Unit	3674
First Named Inventor	Derek KITCHEN			Examiner Name	David P. CARROLL		

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.

Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. The Instruction Sheet for this form is located at WWW.USPTO.GOV

SUBMISSION REQUIRED UNDER 37 CFR 1.114

Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____

☐ Other _____

☒ Enclosed

☒ Amendment/Reply

☐ Information Disclosure Statement (IDS)

☐ Affidavit(s)/ Declaration(s)

☐ Other _____

MISCELLANEOUS

☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of months _____
 (Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)

☐ Other _____

FEES

The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.

☒ The Director is hereby authorized to charge any underpayment of fees, or credit any overpayments, to Deposit Account No 022057

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

☒ Patent Practitioner Signature

Applicant Signature

Doc code: RCEX

Doc description: Request for Continued Examination (RCE)

PTO/SB/30EFS (02-18)

Approved for use through 11/30/2020. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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Signature of Registered U.S. Patent Practitioner			
Signature	Edward Yoo/	Date (YYYY-MM-DD)	2020-05-26
Name	Edward Yoo	Registration Number	41435

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450.

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The information provided by you in this form will be subject to the following routine uses:

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2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Patent Application Fee Transmittal				
Application Number:		15690324		
Filing Date:		30-Aug-2017		
Title of Invention:		RELEASABLE CONNECTION FOR A DOWNHOLE TOOL STRING		
First Named Inventor/Applicant Name:		Derek KITCHEN		
Filer:		Edward Yoo/Ashley McLean		
Attorney Docket Number:		72944.55		
Filed as Small Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension - 2 months with \$0 paid	2252	1	300	300
Miscellaneous:				
RCE- 1ST REQUEST	2801	1	650	650
Total in USD (\$)				950

Electronic Acknowledgement Receipt	
EFS ID:	39538128
Application Number:	15690324
International Application Number:	
Confirmation Number:	8270
Title of Invention:	RELEASABLE CONNECTION FOR A DOWNHOLE TOOL STRING
First Named Inventor/Applicant Name:	Derek KITCHEN
Customer Number:	22828
Filer:	Edward Yoo/Ashley McLean
Filer Authorized By:	Edward Yoo
Attorney Docket Number:	72944.55
Receipt Date:	26-MAY-2020
Filing Date:	30-AUG-2017
Time Stamp:	16:14:01
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$950
RAM confirmation Number	E20205PG14224910
Deposit Account	
Authorized User	

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Response After Final Action	Amendment_Response.pdf	115411	no	7
			d4c0c205f45a404c9b74af90547a9270e336d23d		
Warnings:					
Information:					
2	Extension of Time	Extension_of_time.pdf	111444	no	1
			75795c110acb844eaff5991f10e4113e17bd158		
Warnings:					
Information:					
3	Request for Continued Examination (RCE)	RCE.pdf	1349930	no	3
			534e6bc8028897d08bd0d205469d1ccbcd52406a		
Warnings:					
Information:					
4	Fee Worksheet (SB06)	fee-info.pdf	32759	no	2
			c491541b6d2c1f9a16a26b4f62bc6a6c4e691dd2		
Warnings:					
Information:					
Total Files Size (in bytes):			1609544		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

Application No.: 15/690,324
Filing Date: 08/30/2017
Inventor (first named): Derek KITCHEN
Group Art Unit: 3674
Examiner Name: CARROLL, DAVID P.
Attorney Docket No.: 72944.55

Certificate of Transmission under 37 C.F.R. 1.8(a)

I hereby certify that this document is being electronically transmitted on the date below to the U.S. Patent and Trademark Office, in Alexandria, VA 22313-1450.

/Ashley McLean/
Ashley McLean

DATED: May 26, 2020

**PETITION FOR A TWO-MONTH EXTENSION OF TIME
PURSUANT TO 37 C.F.R. 1.136(a)**

Commissioner for Patents
Alexandria, VA 22313-1450

Sir:

Applicant hereby requests a two-month extension of time for filing a Response to Final Office Action mailed December 30, 2020. The grant of this Petition will extend the time for response from March 30, 2020 to May 30, 2020.

The extension fee under 37 CFR 1.17(a)(1) of \$300.00 (small entity) is being paid electronically with the filing of this Petition.

Please address all correspondence to customer number 022828.

DATED: May 26, 2020.

CORRESPONDENCE ADDRESS:
CUSTOMER NO. 22828

Respectfully submitted,
Derek Kitchen et al.

By: /Edward Yoo/
Edward Yoo (Reg. No. 41,435)

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

Application No.: 15/690,324
Filing Date: 08/30/2017
Inventor (first named): Derek KITCHEN
Group Art Unit: 3674
Examiner Name: CARROLL, DAVID P.
Attorney Docket No.: 72944.55

Certificate of Transmission under 37 C.F.R. 1.8(a)

I hereby certify that this document is being electronically transmitted on the date below to the U.S. Patent and Trademark Office, in Alexandria, VA 22313-1450.

/Ashley McLean/
Ashley McLean

DATED: May 26, 2020

AMENDMENT & RESPONSE TO FINAL OFFICE ACTION

To: Commissioner for Patents
Alexandria, VA 22313-1450

This paper is in response to the Final Office Action mailed December 30, 2019. Please enter the amendments and consider the remarks/arguments below.

Amendments to the Claims begin on page 2 of this paper.

Remarks/Arguments begin on page 7 of this paper.

AMENDMENTS

Amendments to the Claims

This listing of claims will replace all prior versions and listings of claim in the application.

Listing of Claims

1. (Currently Amended) A releasable connection for a downhole tool string, comprising
 a first part comprising an external connection profile; and
 a second part comprising:
 an outer housing;
 a releasable engagement profile which internally engages the connection profile of the first part and which is configured to expand radially to release the connection profile of the first part;
 a locking piston positioned within an internal cavity of the second part, the locking piston configured to move axially along the second part between a locking position that directly constrains the releasable engagement profile into engagement with the connection profile of the first part and a release position that permits the releasable engagement profile to expand radially to release the connection profile of the second part;
 an expansion chamber in fluid communication with the locking piston; and
 a source of fluid pressure in communication with the expansion chamber, wherein, upon activation, the source of fluid pressure is configured to apply fluid pressure to move the locking piston from the locking position toward the release position.
2. (Original) The releasable connection of claim 1, wherein the releasable engagement profile is spring biased away from the connection profile of the first part.

3. (Original) The releasable connection of claim 1, wherein the releasable engagement profile is a collet having a plurality of fingers that engage the connection profile of the first part.
4. (Cancelled)
5. (Previously Amended) The releasable connection of claim 1, wherein the outer housing of the second part comprises a pressure equalization ports, the locking piston configured to close the pressure equalization ports in the locking position, and open the pressure equalization ports in the release position.
6. (Original) The releasable connection of claim 1, wherein the locking piston comprises a piston section and a sleeve section that depends from the piston section, the sleeve section overlying the releasable engagement profile, and the fluid pressure is applied to the piston section.
7. (Currently Amended) ~~The releasable connection of claim 1, further comprising~~ A releasable connection for a downhole tool string, comprising:
a first part comprising an external connection profile; and
a second part comprising:
a releasable engagement profile which internally engages the connection profile of the first part and which is configured to expand radially to release the connection profile of the first part;
a locking piston, the locking piston configured to move axially along the second part between a locking position that directly constrains the releasable engagement profile into engagement with the connection profile of the first part and a release position that permits the releasable engagement profile to expand radially to release the connection profile of the second part;
an expansion chamber in fluid communication with the locking piston;

a combustible disposed within the expansion chamber, wherein, upon combustion, the combustible applies gas pressure to the locking piston to move the locking piston from the locking position toward the release position.

8. (Original) The releasable connection of claim 7, wherein the expansion chamber comprises a first volume that contains the combustible, and a second volume that encloses at least a portion of the locking piston, the first volume being in fluid communication with the second volume.
9. (Previously Amended) The releasable connection of claim 7, wherein the combustible is configured to be detonated by an electrical signal.
10. (Original) ~~The releasable connection of claim 1, further comprising~~ A releasable connection for a downhole tool string, comprising:

a first part comprising an external connection profile; and

a second part comprising:

a releasable engagement profile which internally engages the connection profile of the first part and which is configured to expand radially to release the connection profile of the first part;

a locking piston, the locking piston configured to move axially along the second part between a locking position that directly constrains the releasable engagement profile into engagement with the connection profile of the first part and a release position that permits the releasable engagement profile to expand radially to release the connection profile of the second part;

an expansion chamber in fluid communication with the locking piston; and

a source of fluid pressure in communication with the expansion chamber, wherein, upon activation, the source of fluid pressure is configured to apply fluid pressure to move the locking piston from the locking position toward the release position.

wherein the first part carries a first electrical connection, and the second part carries a second electrical connection, the first and second electrical connection being electrically connected when the releasable engagement profile of the second part engages the connection profile of the first part, and becomes disconnected when the releasable engagement profile disengages the connection profile.

11. (Original) The releasable connection of claim 10, wherein the first electrical connection is spring-mounted.
12. (Original) The releasable connection of claim 10, wherein the first electrical connection and the second electrical connection are concentrically disposed within the connection profile and the releasable engagement profile.
13. (Original) The releasable connection of claim 1, wherein the first part comprises a fishneck that attaches to a fishing tool when disconnected from the second part.
14. (New) The releasable connection of claim 7 wherein the second part comprises an outer housing and the locking piston is positioned within an internal cavity of the second part.
15. (New) The releasable connection of claim 14, wherein the outer housing of the second part comprises a pressure equalization ports, the locking piston configured to close the pressure equalization ports in the locking position, and open the pressure equalization ports in the release position.
16. (New) The releasable connection of claim 7, wherein the locking piston comprises a piston section and a sleeve section that depends from the piston section, the sleeve section overlying the releasable engagement profile, and the fluid pressure is applied to the piston section.
17. (New) The releasable connection of claim 7, wherein the first part carries a first electrical connection, and the second part carries a second electrical connection, the first and second electrical connection being electrically connected when the releasable engagement profile of the second part engages the connection profile of the first part, and becomes disconnected when the releasable engagement profile disengages the connection profile.

18. (New) The releasable connection of claim 10 wherein the second part comprises an outer housing and the locking piston is positioned within an internal cavity of the second part.
19. (New) The releasable connection of claim 18, wherein the outer housing of the second part comprises a pressure equalization ports, the locking piston configured to close the pressure equalization ports in the locking position, and open the pressure equalization ports in the release position.
20. (New) The releasable connection of claim 10, wherein the locking piston comprises a piston section and a sleeve section that depends from the piston section, the sleeve section overlying the releasable engagement profile, and the fluid pressure is applied to the piston section.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

22828 7590 06/12/2020
BENNETT JONES LLP
Patents Edmonton
3200 TELUS HOUSE, SOUTH TOWER
10020 - 100 STREET
EDMONTON, ALBERTA, ALBERTA T5J 0N3
CANADA

EXAMINER

CARROLL, DAVID P.

ART UNIT

PAPER NUMBER

3674

DATE MAILED: 06/12/2020

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/690,324	08/30/2017	Derek KITCHEN	72944.55	8270

TITLE OF INVENTION: RELEASABLE CONNECTION FOR A DOWNHOLE TOOL STRING

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$500	\$0.00	\$0.00	\$500	09/14/2020

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Maintenance fees are due in utility patents issuing on applications filed on or after Dec. 12, 1980. It is patentee's responsibility to ensure timely payment of maintenance fees when due. More information is available at www.uspto.gov/PatentMaintenanceFees.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

22828 7590 06/12/2020
BENNETT JONES LLP
Patents Edmonton
3200 TELUS HOUSE, SOUTH TOWER
10020 - 100 STREET
EDMONTON, ALBERTA, ALBERTA T5J 0N3
CANADA

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

_____ (Typed or printed name)
_____ (Signature)
_____ (Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/690,324	08/30/2017	Derek KITCHEN	72944.55	8270

TITLE OF INVENTION: RELEASABLE CONNECTION FOR A DOWNHOLE TOOL STRING

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$500	\$0.00	\$0.00	\$500	09/14/2020

EXAMINER	ART UNIT	CLASS-SUBCLASS
CARROLL, DAVID P.	3674	166-242600

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-09 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,

1 _____

(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

2 _____

3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. Fees submitted: ☐ Issue Fee ☐ Publication Fee (if required) ☐ Advance Order - # of Copies _____

4b. Method of Payment: (Please first reapply any previously paid fee shown above)

☐ Electronic Payment via EFS-Web ☐ Enclosed check ☐ Non-electronic payment by credit card (Attach form PTO-2038)

☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. _____

5. Change in Entity Status (from status indicated above)

☐ Applicant certifying micro entity status. See 37 CFR 1.29

☐ Applicant asserting small entity status. See 37 CFR 1.27

☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____

Date _____

Typed or printed name _____

Registration No. _____



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UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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P.O. Box 1450
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www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/690,324	08/30/2017	Derek KITCHEN	72944.55	8270
22828	7590	06/12/2020	EXAMINER	
BENNETT JONES LLP			CARROLL, DAVID P.	
Patents Edmonton			ART UNIT	
3200 TELUS HOUSE, SOUTH TOWER			PAPER NUMBER	
10020 - 100 STREET			3674	
EDMONTON, ALBERTA, ALBERTA T5J 0N3			DATE MAILED: 06/12/2020	
CANADA				

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.** Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b) (2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No. 15/690,324	Applicant(s) KITCHEN et al.	
	Examiner David Carroll	Art Unit 3674	AIA (FITF) Status Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the reply filed 5/26/2020.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on ____.

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.

3. ☒ The allowed claim(s) is/are 1-3 and 5-20. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a) ☐ All b) ☐ Some *c) ☐ None of the:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. ____.

3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: ____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date ____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892) 2. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date ____. 3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material ____. 4. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____.	5. ☐ Examiner's Amendment/Comment 6. ☐ Examiner's Statement of Reasons for Allowance 7. ☐ Other _____.
--	---

/David Carroll/
Primary Examiner, Art Unit 3674

Issue Classification 	Application/Control No. 15/690,324	Applicant(s)/Patent Under Reexamination KITCHEN et al.
	Examiner David Carroll	Art Unit 3674

CPC						
Symbol					Type	Version
E21B	/	17	/	06	F	2013-01-01
E21B	/	17	/	028	I	2013-01-01
E21B	/	23	/	00	I	2013-01-01

CPC Combination Sets							
Symbol				Type	Set	Ranking	Version
	/		/				

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	19	
/David Carroll/ Primary Examiner, Art Unit 3674 (Primary Examiner)	31 May 2020 (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 1

Issue Classification 	Application/Control No. 15/690,324	Applicant(s)/Patent Under Reexamination KITCHEN et al.
	Examiner David Carroll	Art Unit 3674

INTERNATIONAL CLASSIFICATION			
CLAIMED			
E21B17/06		17	06
NON-CLAIMED			

US ORIGINAL CLASSIFICATION	
CLASS	SUBCLASS

CROSS REFERENCES(S)						
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)					

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	19	
/David Carroll/ Primary Examiner, Art Unit 3674 (Primary Examiner)	31 May 2020 (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 1

Issue Classification 	Application/Control No. 15/690,324	Applicant(s)/Patent Under Reexamination KITCHEN et al.
	Examiner David Carroll	Art Unit 3674

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47															
CLAIMS															
Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1	13	10	19	19										
2	2	14	11	17	20										
3	3	15	12												
	4	6	13												
4	5	10	14												
5	6	16	15												
7	7	11	16												
8	8	12	17												
9	9	18	18												

NONE (Assistant Examiner) _____ (Date) _____		Total Claims Allowed: 19	
/David Carroll/ Primary Examiner, Art Unit 3674 (Primary Examiner) _____ (Date) _____		31 May 2020 (Date)	O.G. Print Claim(s) 1
			O.G. Print Figure 1

<i>Search Notes</i> 	Application/Control No. 15/690,324	Applicant(s)/Patent Under Reexamination KITCHEN et al.
	Examiner David Carroll	Art Unit 3674

CPC - Searched*		
Symbol	Date	Examiner
E21B17/04,042,06,028	03/27/2019	DC
E21B23/00	03/27/2019	DC
Above Updated	11/11/2019	DC
Above Updated	05/30/2020	DC

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
Inventor Name	03/27/2019	DC
Forward/Backward	06/13/2019	DC
East Text	06/13/2019	DC
Updated Search	11/11/2019	DC
Updated Search	12/18/2019	DC
Updated Search	05/30/2020	DC

/David Carroll/ Primary Examiner, Art Unit 3674	
--	--

<i>Search Notes</i> 	Application/Control No. 15/690,324	Applicant(s)/Patent Under Reexamination KITCHEN et al.
	Examiner David Carroll	Art Unit 3674

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner
	See Attached Search History	05/31/2020	DC

/David Carroll/ Primary Examiner, Art Unit 3674	
--	--

EAST Search History**EAST Search History (Prior Art)**

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S71	23	(US-20130008669-\$ or US-20050205304-\$ or US-20020000320-\$ or US-20020053434-\$ or US-20110174504-\$ or US-20080066931-\$ or US-20020100586-\$ or US-20070089911-\$ or US-20140202710-\$).did. or (US-7198101-\$ or US-6481495-\$ or US-4981438-\$ or US-6347674-\$ or US-7566235-\$ or US-6269883-\$ or US-5984006-\$ or US-3266835-\$ or US-3292717-\$ or US-4969524-\$ or US-5242201-\$ or US-6095583-\$).did. or (US-2308004-\$ or US-3211222-\$).did.	US-PGPUB; USPAT; USOCR	OR	ON	2020/05/30 00:41
S70	195	S69 and @pd>"20191201"	US-PGPUB; USPAT; USOCR	OR	ON	2020/05/30 00:41
S69	6,815	E21B17/04,042,06,028.CPC. E21B23/00.CPC.	US-PGPUB; USPAT; USOCR	OR	ON	2020/05/30 00:41
S68	1	S67 and piston	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/19 01:11

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S76	0	(downhole tool string connection profile outer housing engagement locking piston radially expand fluid pressure expansion chamber release).clm.	US-PGPUB; USPAT	AND	ON	2020/05/31 14:11
S75	131	(downhole tool string connection profile outer housing engagement locking piston radially expand fluid pressure expansion chamber release)	US-PGPUB; USPAT	AND	ON	2020/05/31 14:11

5/31/2020 2:15:08 PM

C:\Users\dcarroll2\Documents\EAST\Workspaces\15690324.wsp

Bibliographic Data

Application No: 15/690,324

Foreign Priority claimed: ☐ Yes ☒ No

35 USC 119 (a-d) conditions met: ☐ Yes ☒ No

☐ Met After Allowance

Verified and Acknowledged:

/David Carroll/

Examiner's Signature

Initials

Title:

RELEASABLE CONNECTION FOR A DOWNHOLE TOOL
STRING

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
08/30/2017	166	3674	72944.55
RULE			

APPLICANTS

Avalon Research Ltd., Grande Prairie, CANADA

INVENTORS

Derek KITCHEN Elmworth, CANADA

Jeffrey GOLINOWSKI Sherwood Park, CANADA

Sylvain HOTTE Grande Prairie, CANADA

Trevor ROSTEN Grande Prairie, CANADA

CONTINUING DATA

This application has PRO of 62381083 08/30/2016

FOREIGN APPLICATIONS

IF REQUIRED, FOREIGN LICENSE GRANTED**

09/07/2017

**** SMALL ENTITY ****

STATE OR COUNTRY

CANADA

ADDRESS

BENNETT JONES LLP

Patents Edmonton

3200 TELUS HOUSE, SOUTH TOWER

10020 - 100 STREET

EDMONTON, ALBERTA, AB T5J 0N3

CANADA

FILING FEE RECEIVED

\$800

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

22828 7590 06/12/2020
BENNETT JONES LLP
Patents Edmonton
3200 TELUS HOUSE, SOUTH TOWER
10020 - 100 STREET
EDMONTON, ALBERTA, ALBERTA T5J 0N3
CANADA

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

Ashley McLean (Typed or printed name)

/Ashley McLean/ (Signature)

September 4, 2020 (Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/690,324	08/30/2017	Derek KITCHEN	72944.55	8270

TITLE OF INVENTION: RELEASABLE CONNECTION FOR A DOWNHOLE TOOL STRING

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$500	\$0.00	\$0.00	\$500	09/14/2020

EXAMINER	ART UNIT	CLASS-SUBCLASS
CARROLL, DAVID P.	3674	166-242600

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-09 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,

(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 Bennett Jones LLP

2

3

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

Tier 1 Energy Tech Inc.

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Edmonton, Alberta, Canada

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. Fees submitted: ☒ Issue Fee ☐ Publication Fee (if required) ☐ Advance Order - # of Copies _____

4b. Method of Payment: (Please first reapply any previously paid fee shown above)

☒ Electronic Payment via EFS-Web ☐ Enclosed check ☐ Non-electronic payment by credit card (Attach form PTO-2038)

☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. _____

5. Change in Entity Status (from status indicated above)

☐ Applicant certifying micro entity status. See 37 CFR 1.29

☐ Applicant asserting small entity status. See 37 CFR 1.27

☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature /Edward Yoo/

Date September 4, 2020

Typed or printed name Edward Yoo

Registration No. 41435

Electronic Patent Application Fee Transmittal				
Application Number:		15690324		
Filing Date:		30-Aug-2017		
Title of Invention:		RELEASABLE CONNECTION FOR A DOWNHOLE TOOL STRING		
First Named Inventor/Applicant Name:		Derek KITCHEN		
Filer:		Edward Yoo/Ashley McLean		
Attorney Docket Number:		72944.55		
Filed as Small Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
UTILITY APPL ISSUE FEE	2501	1	500	500

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				500

Electronic Acknowledgement Receipt	
EFS ID:	40482324
Application Number:	15690324
International Application Number:	
Confirmation Number:	8270
Title of Invention:	RELEASABLE CONNECTION FOR A DOWNHOLE TOOL STRING
First Named Inventor/Applicant Name:	Derek KITCHEN
Customer Number:	22828
Filer:	Edward Yoo/Ashley McLean
Filer Authorized By:	Edward Yoo
Attorney Docket Number:	72944.55
Receipt Date:	04-SEP-2020
Filing Date:	30-AUG-2017
Time Stamp:	18:07:35
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$500
RAM confirmation Number	E202094I07499617
Deposit Account	
Authorized User	

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Issue Fee Payment (PTO-85B)	Issue_Fee_Transmittal.pdf	89468	no	1
			13c2e1ec402c44f5718695a5af7e50c68c24a063		
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30568	no	2
			3ccd1ea6c383a7466961b54c2cabd213d2cc45a0		
Warnings:					
Information:					
Total Files Size (in bytes):			120036		
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					



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UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/690,324	10/06/2020	10794122	72944.55	8270

22828 7590 09/16/2020

BENNETT JONES LLP
PATENTS EDMONTON
3200 TELUS HOUSE, SOUTH TOWER
10020 - 100 STREET
EDMONTON, ALBERTA, ALBERTA T5J 0N3
CANADA

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment is 174 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site <http://pair.uspto.gov> for additional applicants):

Derek KITCHEN, Elmworth, CANADA;
Avalon Research Ltd., Grande Prairie, CANADA;
Jeffrey GOLINOWSKI, Sherwood Park, CANADA;
Sylvain HOTTE, Grande Prairie, CANADA;
Trevor ROSTEN, Grande Prairie, CANADA;

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