

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT5634893

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
EUAN RUSSELL KIRKHOPE	07/31/2018
NIGEL PETER BOSWELL	08/02/2018
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	CATERPILLAR GLOBAL MINING EUROPE GMBH
<b>Street Address:</b>	INDUSTRIESTRASSE 1
<b>City:</b>	LÜNEN
<b>State/Country:</b>	GERMANY
<b>Postal Code:</b>	44534
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
<b>Application Number:</b>	16521175
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	(312)977-9959
<i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.</i>	
<b>Phone:</b>	3129779902
<b>Email:</b>	cramirez@millermatthiashull.com
<b>Correspondent Name:</b>	MILLER, MATTHIAS & HULL LLP/ CATERPILLAR
<b>Address Line 1:</b>	ONE NORTH FRANKLIN STREET
<b>Address Line 2:</b>	SUITE 2350
<b>Address Line 4:</b>	CHICAGO, ILLINOIS 60606
<b>ATTORNEY DOCKET NUMBER:</b>	50100/18-0332-72231
<b>NAME OF SUBMITTER:</b>	THOMAS A. MILLER
<b>SIGNATURE:</b>	/Thomas A. Miller/
<b>DATE SIGNED:</b>	07/24/2019
<b>Total Attachments: 4</b>	
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source=18-0332-72231_Assignment_07-24-2019#page3.tif	
source=18-0332-72231_Assignment_07-24-2019#page4.tif	

## ASSIGNMENT

WHEREAS I/We, the below named inventor(s), [hereinafter referred to as Assignor(s)], have made an invention entitled:

### SYSTEM AND METHOD FOR MONITORING FAULT CONDITIONS IN A PAN LINE OF A LONGWALL MINING SYSTEM

for which I/We will or have filed a patent application; and

WHEREAS, **Caterpillar Global Mining Europe GmbH**, a corporation of **Germany**, whose post office address is **Industriestrasse 1, 44534 Lünen, Germany** (hereinafter referred to as Assignee), is desirous of securing the entire right, title, and interest in and to this invention, and in and to the patent application for this invention and any and all patents to be issued upon this application throughout the world;

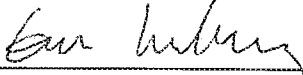
NOW THEREFORE, be it known that for good and valuable consideration the receipt of which from Assignee is hereby acknowledged, I/We, as Assignor(s), have sold, assigned, transferred, and set over, and do hereby sell, assign, transfer, and set over unto the Assignee, its lawful successors and assigns, my/our entire right, title, and interest in and to this invention, and this application, and all divisions, and continuations thereof, and all patents which may be granted thereon, and all reissues thereof, as well as all rights to claim priority in any country or jurisdiction or patent office on the basis of this application, and all applications for patents which may hereafter be filed for this invention in any country or jurisdiction or patent office and all patents which may be granted on this invention in any country or jurisdiction or patent office, and all extensions, renewals, and reissues thereof; and I/We hereby authorize and request any official of any country or jurisdiction or patent office whose duty it is to issue patents on applications as described above, to issue all patents for this invention to Assignee, its successors and assigns, in accordance with the terms of this Assignment;

AND, I/WE HEREBY covenant that I/We have the full right to convey the interest assigned by this Assignment, and I/We have not executed and will not execute any agreement in conflict with this Assignment;

AND, I/WE HEREBY further covenant and agree that I/We will, without further consideration, communicate with Assignee, its successors and assigns, any facts known to me/us respecting this invention, and testify in any legal proceeding, sign all lawful papers when called upon to do so, execute and deliver any and all papers that may be necessary or desirable to perfect the title to this invention in said Assignee, its successors or assigns, execute all divisional, continuation, and reissue applications, make all rightful oaths and generally do everything possible to aid Assignee, its successors and assigns, to obtain and enforce proper patent protection for this invention in any country or jurisdiction or patent office, it being understood that any expense incident to the execution of such papers shall be borne by the Assignee, its successors and assigns;

AND, I/WE HEREBY authorize the attorneys/representatives that I/WE have empowered to prosecute this application to insert here in parentheses the country, application number, and official filing date ( \_\_\_\_\_ Application No. \_\_\_\_\_, filed \_\_\_\_\_).

IN TESTIMONY WHEREOF, I/We have hereunto set our hands.

1. FULL NAME OF FIRST ASSIGNOR	ASSIGNOR'S SIGNATURE	DATE
Euan Russell Kirkhope		31/07/18
ADDRESS :		CITIZENSHIP
4 Dawson St, Waratah, NSW, 2298, Australia		GB

SOLE/JOINT INVENTION  
(Worldwide Rights)  
Attorney Docket No. 18-0332  
Client Ref. No. \_\_\_\_\_

1. WITNESS NAME <i>PATRICK CLAMP</i>	WITNESS SIGNATURE <i>Patrick Clamp</i>	DATE <i>31.7.18</i>
ADDRESS <i>53 LEMONWOOD CIRCUIT, THORNTON, NSW, AUST</i>		CITIZENSHIP <i>AUSTRALIA</i>

2. WITNESS NAME <i>RANDAL SCHUMACHER</i>	WITNESS SIGNATURE <i>Randal Schumacher</i>	DATE <i>31.7.18</i>
ADDRESS <i>22 KITE CR., HAMLYN TERRACE, NSW</i>		CITIZENSHIP <i>AUSTRALIA</i>

## ASSIGNMENT

WHEREAS I/We, the below named inventor(s), [hereinafter referred to as Assignor(s)], have made an invention entitled:

### SYSTEM AND METHOD FOR MONITORING FAULT CONDITIONS IN A PAN LINE OF A LONGWALL MINING SYSTEM

for which I/We will or have filed a patent application; and

WHEREAS, Caterpillar Global Mining Europe GmbH, a corporation of Germany, whose post office address is Industriestrasse 1, 44534 Lünen, Germany (hereinafter referred to as Assignee), is desirous of securing the entire right, title, and interest in and to this invention, and in and to the patent application for this invention and any and all patents to be issued upon this application throughout the world;

NOW THEREFORE, be it known that for good and valuable consideration the receipt of which from Assignee is hereby acknowledged, I/We, as Assignor(s), have sold, assigned, transferred, and set over, and do hereby sell, assign, transfer, and set over unto the Assignee, its lawful successors and assigns, my/our entire right, title, and interest in and to this invention, and this application, and all divisions, and continuations thereof, and all patents which may be granted thereon, and all reissues thereof, as well as all rights to claim priority in any country or jurisdiction or patent office on the basis of this application, and all applications for patents which may hereafter be filed for this invention in any country or jurisdiction or patent office and all patents which may be granted on this invention in any country or jurisdiction or patent office, and all extensions, renewals, and reissues thereof; and I/We hereby authorize and request any official of any country or jurisdiction or patent office whose duty it is to issue patents on applications as described above, to issue all patents for this invention to Assignee, its successors and assigns, in accordance with the terms of this Assignment;

AND, I/WE HEREBY covenant that I/We have the full right to convey the interest assigned by this Assignment, and I/We have not executed and will not execute any agreement in conflict with this Assignment;

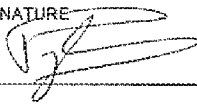
AND, I/WE HEREBY further covenant and agree that I/We will, without further consideration, communicate with Assignee, its successors and assigns, any facts known to me/us respecting this invention, and testify in any legal proceeding, sign all lawful papers when called upon to do so, execute and deliver any and all papers that may be necessary or desirable to perfect the title to this invention in said Assignee, its successors or assigns, execute all divisional, continuation, and reissue applications, make all rightful oaths and generally do everything possible to aid Assignee, its successors and assigns, to obtain and enforce proper patent protection for this invention in any country or jurisdiction or patent office, it being understood that any expense incident to the execution of such papers shall be borne by the Assignee, its successors and assigns;


AND, I/WE HEREBY authorize the attorneys/representatives that I/WE have empowered to prosecute this application to insert here in parentheses the country, application number, and official filing date ( \_\_\_\_\_ Application No. \_\_\_\_\_, filed \_\_\_\_\_).

IN TESTIMONY WHEREOF, I/We have hereunto set our hands.

2. FULL NAME OF SECOND ASSIGNOR  Nigel Peter Boswell	ASSIGNOR'S SIGNATURE 	DATE  8/2/18
ADDRESS :  88 McGinn rd Ferny Grove. Queensland, Australia, 4055		CITIZENSHIP  AU

SOLE/JOINT INVENTION  
(Worldwide Rights)  
Attorney Docket No. 18-0332  
Client Ref. No. \_\_\_\_\_

1. WITNESS NAME THIERRY PEYNOT	WITNESS SIGNATURE 	DATE 8/2/18
ADDRESS 113/15 Goodwin St KANGAROO POINT QLD 4159		CITIZENSHIP AUS

2. WITNESS NAME FAN ZENG	WITNESS SIGNATURE 	DATE 8/2/18
ADDRESS 43 Junction Road MORNINGSIDE QLD 4170		CITIZENSHIP HONG KONG