

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

EPAS ID: PAT3377017

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| SUBMISSION TYPE: | NEW ASSIGNMENT |
| NATURE OF CONVEYANCE: | ASSIGNMENT |
| CONVEYING PARTY DATA | |
| Name | Execution Date |
| JASPEN TANNER PATENAUDE | 05/29/2015 |
| MATTHEW DONALD MEADS | 06/01/2015 |
| KRANTHI KUMAR KOTHAMACHU | 05/28/2015 |
| JOHN BERNARD HESSLING III | 06/01/2015 |
| RECEIVING PARTY DATA | |
| Name: | CATERPILLAR INC. |
| Street Address: | 100 NORTH EAST ADAMS |
| City: | PEORIA |
| State/Country: | ILLINOIS |
| Postal Code: | 61629 |
| PROPERTY NUMBERS Total: 1 | |
| Property Type | Number |
| Application Number: | 14727449 |
| CORRESPONDENCE DATA | |
| Fax Number: | |
| <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> | |
| Phone: | 312-977-9903 |
| Email: | esantiago@millermatthiashull.com |
| Correspondent Name: | CATERPILLAR/ MILLER, MATTHIAS & HULL LLP |
| Address Line 1: | ONE NORTH FRANKLIN STREET |
| Address Line 2: | SUITE 2350 |
| Address Line 4: | CHICAGO, ILLINOIS 60606 |
| ATTORNEY DOCKET NUMBER: | 50100/15-0275 |
| NAME OF SUBMITTER: | SCOTT E. BAXENDALE |
| SIGNATURE: | /Scott E. Baxendale/ |
| DATE SIGNED: | 06/01/2015 |
| Total Attachments: 5 | |
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ASSIGNMENT

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

METHOD OF OPTIMIZED GEAR SELECTION ON HIGH SPEED DIRECTIONAL SHIFTS

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

WHEREAS, **Caterpillar Inc.**, a corporation of Delaware whose post office address is **100 North East Adams, Peoria, Illinois 61629** (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;

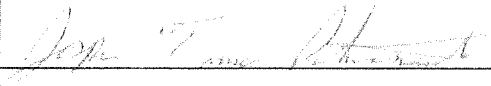
NOW THEREFORE, be it known that for good and valuable consideration the receipt of which from Assignee is hereby acknowledged, I/We, as Assignor(s), have sold, assigned, transferred, and set over, and do hereby sell, assign, transfer, and set over unto the Assignee, its lawful successors and assigns, 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;

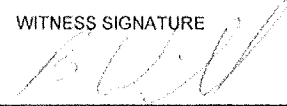
AND, WE HEREBY covenant that I/We have the full right to convey the interest assigned by this Assignment, and I/We have not executed and will not execute any agreement in conflict with this Assignment;

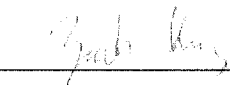
AND, WE HEREBY further covenant and agree that We will, without further consideration, communicate with Assignee, its successors and assigns, any facts known to me/us respecting this invention, and testify in any legal proceeding, sign all lawful papers when called upon to do so, execute and deliver 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;

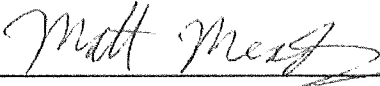
AND, WE HEREBY authorize the attorneys/representatives that we have empowered to prosecute this application filed herewith.


IN TESTIMONY WHEREOF, We have hereunto set our hands.

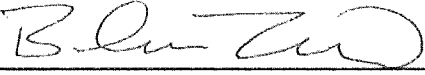
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|---|--|-------------------|
| 1. FULL NAME OF FIRST ASSIGNOR Jaspen Tanner Patenaude | ASSIGNOR'S SIGNATURE  | DATE 5-29-2015 |
| ADDRESS 5313 West Akron Rd., Princeville, IL 61559 | | CITIZENSHIP US |
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| 1. WITNESS NAME Brian Williams | WITNESS SIGNATURE  | DATE 5-29-15 |
| ADDRESS 2978 Beason Ln Normal, IL 61761 | | CITIZENSHIP US |
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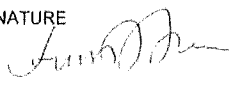
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| 2. WITNESS NAME Zach Harsanyi | WITNESS SIGNATURE  | DATE 5-29-15 |
| ADDRESS 566 W. Highway Ave Peoria, IL 61605 | | CITIZENSHIP US |
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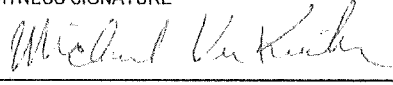
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| 2. FULL NAME OF FIRST ASSIGNOR Matthew Donald Meads | ASSIGNOR'S SIGNATURE  | DATE 6/1/15 |
| ADDRESS 109 Patterson Drive, East Peoria, IL 61611 | | CITIZENSHIP US |
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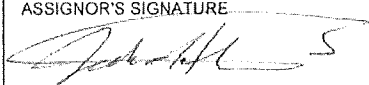
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| 1. WITNESS NAME Richard L. Fulcher | WITNESS SIGNATURE  | DATE 6/1/2015 |
| ADDRESS 5617 Fa. Rmont Peoria, IL 61614 | | CITIZENSHIP USA |
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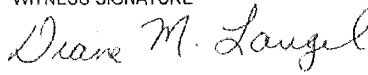
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| 2. WITNESS NAME Balmes Tejada | WITNESS SIGNATURE  | DATE 6/1/2015 |
| ADDRESS 10426 N Schopp Ln Peoria, IL, 61615 | | CITIZENSHIP US |
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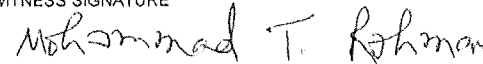
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| 3. FULL NAME OF FIRST ASSIGNOR Kranthi Kumar Kothamachu | ASSIGNOR'S SIGNATURE K k. kumar | DATE 05/28/15 |
| ADDRESS 7111 North Wildlife Dr., Peoria, IL 61614 | | CITIZENSHIP IN |
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| 1. WITNESS NAME DHANASHEKAR AROOT | WITNESS SIGNATURE  | DATE 5/28/2015 |
| ADDRESS 10917 N WATERTON . DONLAP IL , 61525 | | CITIZENSHIP INDIA |
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| 2. WITNESS NAME MICHAEL VERKUILEN | WITNESS SIGNATURE  | DATE 5/28/2015 |
| ADDRESS 505 LAEMPER DRIVE, GERMANTOWN HILLS, IL 61548 | | CITIZENSHIP USA |
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| 3. FULL NAME OF FIRST ASSIGNOR John Bernard Hessling III | ASSIGNOR'S SIGNATURE  | DATE June 1, 2015 |
| ADDRESS 224 Frontenac Rd., Marquette Heights, IL 61554 | | CITIZENSHIP US |
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| 1. WITNESS NAME Diane M. Laugel | WITNESS SIGNATURE  | DATE 6-1-2015 |
| ADDRESS 3505 Carrington Ln, Bloomington IL 61705 | | CITIZENSHIP US |
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| 2. WITNESS NAME Mohammad T. Rahman | WITNESS SIGNATURE  | DATE 6-1-2015 |
| ADDRESS 10810 N. David Ct. Peoria, IL 61615 | | CITIZENSHIP US |
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