PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
PAUL R. FRIEND	10/06/2014
KENNETH L. STRATTON	10/24/2014

RECEIVING PARTY DATA

Name:	CATERPILLARI NC.
Street Address:	100 NE ADAMS STREET
Internal Address:	AH9510
City:	PEORIA
State/Country:	ILLINOIS
Postal Code:	61629

PROPERTY NUMBERS Total: 1

Property Type	Number	
Application Number:	14506939	

CORRESPONDENCE DATA

Fax Number:

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.

Phone: 309-636-2223

Email: US Docket Clerk@cat.com

Correspondent Name: CATERPILLAR INC. INTELLECTUAL PROPERTY D

Address Line 1: 100 N.E. ADAMS STREET

Address Line 2: AH 9510

Address Line 4: PEORIA, ILLINOIS 61629-9510

ATTORNEY DOCKET NUMBER:	14-0777
NAME OF SUBMITTER:	AMANDA M. RODRIGUEZ
SIGNATURE:	/Amanda M. Rodriguez/
DATE SIGNED:	10/28/2014

Total Attachments: 3

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PATENT 503036676 REEL: 034048 FRAME: 0016

SOLE/JOINT INVENTION (Worldwide Rights) Client Ref. No. 14-0777

ASSIGNMENT

WHEREAS We, the below named inventors, [hereinafter referred to as Assignors], have made an invention entitled:

CYLINDER POSITION DETERMINATION USING FIBER OPTIC SHAPE SENSING

for which WE will file a patent application; and

WHEREAS, Caterpillar Inc., a corporation of Delaware, whose post office address is 100 NE Adams Street, Peoria, IL 61629, United States of America (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, We, as Assignors, have sold, assigned, transferred, and set over, and do hereby sell, assign, transfer, and set over unto the Assignee, its lawful successors and assigns, 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 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 We have the full right to convey the interest assigned by this Assignment, and 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 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 caths 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 Assignee or the attorneys/representatives of As	signee to insert here in
parentheses the country, application number, and official filing date (Application No.
IN TESTIMONY WHEREOF, I have hereunto set my hand.	

PATENT REEL: 034048 FRAME: 0017

1. FULL NAME OF FIRST ASSIGNOR PAUL R. FRIEND	ASSIGNOR'S SIGNATURE	DATE 10/6/2019
ADDRESS 718 N. Oregon Avenue Morton, Illinois 61550		CITIZENSHIP US

1. WITNESS NAME NORMAN	WITNESS SIGNATURE	DATE 10/6/20/4
ADDRESS 2481 N. Alto N. Waltwork		V 5#
Process, IL 6/6/15		

2. WITNESS NAME	WITNESS SIGNATURE	DATE
Total A Dass	Done	04.6,2014
ADDRESS 10865 N. Glenfield Dr.		US
Dauly, IL 61525		

PATENT REEL: 034048 FRAME: 0018

SOLE/JOINT INVENTION (Worldwide Rights) Client Ref. No. 14-0777

2. FULL NAME OF SECOND ASSIGNOR KENNETH L. STRATTON ADDRESS 616 N Hickory Grove Court	ASSIGNOR'S SIGNATURE	DATE /o - 24-2014 CITIZENSHIP US
Duniap, Iilinois 61525		
1. WITNESS NAME	WITNESS SIGNATURE	DATE
Cynthia M. Gardner	Gittie M. Jadon	240272014
ADDRESS		
Po Box 10007 Peoria IL 61612		US
		Januarian de la composición dela composición de la composición de la composición dela composición de la composición de la composición de la composición dela composición de la composición de la composición de la composición dela composición de la composición de la
2. WITNESS NAME	WITNESS SIGNATURE	DATE
William C. Sana	Willing and L	240072014
ADDRESS 6016 DEEL TRACE CT 0001012 ZC 61825	4	Ú.S.

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