Form PTO-1595 (Rev. 03/01) OMB No. 0651-0027 (exp. 5/31/2002) Tab settings To the Honorable Commissioner of Patents and Trademarks: F 1. Name of conveying party(ies): S.	T U.S. DEPARTMENT OF COMMERCE U.S. Patent and Trademark Office				
Additional name of conveying party(ies) attached? ☐ Yes ☒ No 3. Nature of conveyance:	Street Address: 100 NE Adams Street City: Peoria State: IL Zip: 61629 Additional Name(s) & address(es) attached? Yes No				
4. Application number(s) or patent number(s): If this document is being filed together with a new application, the execution data of the application is: 7-31-03 A. Patent Application No.(s) B. Patent No.(s) Additional numbers attached? Yes No 5. Name and address of party to whom correspondence 6. Total number of applications and patents involved: 1					
Concerning this document should be mailed: Name: Michael B. McNeil Internal Address: Liell & McNeil Attorneys PC 103 ECROPER 00000037 10637452 21 40.06 UP Street Address: P.O. Box 2417	7. Total fee (37 CFR 3.41) \$ 40 Enclosed Authorized to be charged to deposit account 8. Deposit account number:				
City: Bloomington State: IN Zip: 47402 DO NOT USE 9. Statement and signature. To the best of my knowledge and belief, the foregoing information in the state of my knowledge and belief.	(Attach duplicate copy of this page if paying by deposit account) E THIS SPACE ation is true and correct and any attached copy				
is a true copy of the original document. Michael B. McNeil Name of Person Signing Total number of pages including cover sheet, attachments, and documents:					

<u>0</u>0-644

WHEREAS, Scott F. Shafer, residing at Morton, Illinois, hereinafter referred to ASSIGNOR has invented together with Ye Tian, Norval J. Wiemken and Alan R. Stockner a new and useful

HYDRAULIC FUEL INJECTION SYSTEM WITH INDEPENDENTLY OPERABLE DIRECT CONTROL NEEDLE VALVE

for which ASSIGNOR is about to file an international application and/or make application for Letters Patent in the United States of America, such invention being described and identified by said
application having an attached International Application Request and/or an attached Declaration and
Power of Attorney executed by ASSIGNOR on; and
WHEREAS, Caterpillar Inc., a Delaware corporation having a place of business at Peoria,
State of Illinois, United States of America, hereinafter referred to as ASSIGNEE, is desirous of
acquiring the entire right, title and interest in and to said invention and any Letters Patent granted
thereon by the United States of America and any foreign country;
NOW, THEREFORE, in consideration of the sum of One Dollar (\$1.00) and for other good
and valuable consideration received by ASSIGNOR from ASSIGNEE, the receipt of which is hereby
acknowledged by ASSIGNOR; 1. ASSIGNOR hereby sells, assigns, transfers and conveys unto ASSIGNEE the entire right,
title and interest in and to said invention, any application therefor, and any Letters Patent granted
thereon by the United States of America and any foreign country, including any continuing
application, reissue or extension thereof, together with the right to file applications and obtain patents
for said invention in any foreign country, and covenant that ASSIGNOR has the full right to do so.
2. At the request and expense of ASSIGNEE, ASSIGNOR agrees to communicate to
ASSIGNEE any facts known respecting said invention, to execute all papers necessary to file any
application on said invention necessary or desirable to aid ASSIGNEE in obtaining and enforcing
proper protection for said invention in the United States of America and any foreign country.
3. ASSIGNOR hereby authorizes and requests the COMMISSIONER OF PATENTS AND
TRADEMARKS to issue the United States Letters Patent on said invention, when granted, to
Caterpillar Inc.
4. This assignment shall inure to the benefit of ASSIGNEE, its successors, assigns and other
legal representatives, and shall be binding upon ASSIGNOR, ASSIGNOR'S heirs and legal
representatives.
IN TESTIMONY WHEREOF, ASSIGNOR has executed this instrument.
Satt July 07-31-03
SCOTT E SHAFER Date.
SCOTT F. SHAFER Date.
IN WITNESS OF the execution hereof by SCOTT F. SHAFER we have hereunto set our hands.
011/11/11/11/11/11/11
Kiland of Hotom 7/31/03 Stephen Ly Sampson 7/31/03
Witness (1) Date Witness (2) / Date
Address: 2000 W. Briga Huar Ro Address: 20 Stonehedges Ct.
DINLAP IL Bloomington, IL
61575-9348 61704

00-644

WHEREAS, Alan R. Stockner, residing at Metamora, Illinois, hereinafter referred to ASSIGNOR has invented together with Ye Tian, Norval J. Wiemken and Scott F. Shafer a new and useful

HYDRAULIC FUEL INJECTION SYSTEM WITH INDEPENDENTLY OPERABLE DIRECT CONTROL NEEDLE VALVE

for which ASSIGNOR is about to file an international application and/or make application for Letters
Patent in the United States of America, such invention being described and identified by said
application having an attached International Application Request and/or an attached Declaration and
Power of Attorney executed by ASSIGNOR on; and
WHEREAS, Caterpillar Inc., a Delaware corporation having a place of business at Peoria.
State of Illinois, United States of America, hereinafter referred to as ASSIGNEE, is desirous of
acquiring the entire right, title and interest in and to said invention and any Letters Patent granted
thereon by the United States of America and any foreign country;
NOW, THEREFORE, in consideration of the sum of One Dollar (\$1.00) and for other good
and valuable consideration received by ASSIGNOR from ASSIGNEE, the receipt of which is hereby
acknowledged by ASSIGNOR;
1. ASSIGNOR hereby sells, assigns, transfers and conveys unto ASSIGNEE the entire right,
title and interest in and to said invention, any application therefor, and any Letters Patent granted
thereon by the United States of America and any foreign country, including any continuing
application, reissue or extension thereof, together with the right to file applications and obtain patents
for said invention in any foreign country, and covenant that ASSIGNOR has the full right to do so.
2. At the request and expense of ASSIGNEE, ASSIGNOR agrees to communicate to
ASSIGNEE any facts known respecting said invention, to execute all papers necessary to file any
application on said invention necessary or desirable to aid ASSIGNEE in obtaining and enforcing
proper protection for said invention in the United States of America and any foreign country.
3. ASSIGNOR hereby authorizes and requests the COMMISSIONER OF PATENTS AND
TRADEMARKS to issue the United States Letters Patent on said invention, when granted, to
Caterpillar Inc.
4. This assignment shall inure to the benefit of ASSIGNEE, its successors, assigns and other
legal representatives, and shall be binding upon ASSIGNOR, ASSIGNOR'S heirs and legal
representatives.
IN TESTIMONY WHEREOF, ASSIGNOR has executed this instrument.
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Clin K Stock 34 2,03
ALAN R. STOCKNER Date
IN WITNESS OF the execution hereof by ALAN R. STOCKNER we have hereunto set our hands.
Mingohun vong 7-31-03 Jehn Jekuna 31 Jelly 2003
Witness (1) Date Date Date
Address: 2603 Interlocken Vr. Address: 1716 Rockingham Dr.
Bloomington IL 61704 Apt. A3
Normal IL 6/76/

00-644

WHEREAS, Norval J. Wiemken, residing at Dwight, Illinois, hereinafter referred to ASSIGNOR has invented together with Ye Tian, Scott F. Shafer and Alan R. Stockner a new and useful

HYDRAULIC FUEL INJECTION SYSTEM WITH INDEPENDENTLY OPERABLE DIRECT

CONTROL NEEDLE VALVE for which ASSIGNOR is about to file an international application and/or make application for Letters Patent in the United States of America, such invention being described and identified by said application having an attached International Application Request and/or an attached Declaration and Power of Attorney executed by ASSIGNOR on WHEREAS, Caterpillar Inc., a Delaware corporation having a place of business at Peoria, State of Illinois, United States of America, hereinafter referred to as ASSIGNEE, is desirous of acquiring the entire right, title and interest in and to said invention and any Letters Patent granted thereon by the United States of America and any foreign country; NOW, THEREFORE, in consideration of the sum of One Dollar (\$1.00) and for other good and valuable consideration received by ASSIGNOR from ASSIGNEE, the receipt of which is hereby acknowledged by ASSIGNOR; 1. ASSIGNOR hereby sells, assigns, transfers and conveys unto ASSIGNEE the entire right, title and interest in and to said invention, any application therefor, and any Letters Patent granted thereon by the United States of America and any foreign country, including any continuing application, reissue or extension thereof, together with the right to file applications and obtain patents for said invention in any foreign country, and covenant that ASSIGNOR has the full right to do so.

- 2. At the request and expense of ASSIGNEE, ASSIGNOR agrees to communicate to ASSIGNEE any facts known respecting said invention, to execute all papers necessary to file any application on said invention necessary or desirable to aid ASSIGNEE in obtaining and enforcing proper protection for said invention in the United States of America and any foreign country.
- 3. ASSIGNOR hereby authorizes and requests the COMMISSIONER OF PATENTS AND TRADEMARKS to issue the United States Letters Patent on said invention, when granted, to Caterpillar Inc.
- 4. This assignment shall inure to the benefit of ASSIGNEE, its successors, assigns and other legal representatives, and shall be binding upon ASSIGNOR, ASSIGNOR'S heirs and legal representatives.

IN TESTIMONY WHEREOF, ASSIGNOR has executed this instrument.

gland a Wien	Sen	7-30-03	>	
NORVAL WIEMKEN		Date		
IN WITNESS OF the execution	n hereof by NOR	VAL WIEMKEN WE	have hereunto set	our hands. イ チ/ろこ/ロラ
Witness (1)	Date	Witness (2)	Date	
Address: 2000 N Linder	SF, A+N321	Address: <u>S</u>	Harmony	Lane
Normal, IL 61.	761	Romecville	1160446	
00.644				

WHEREAS, Ye Tian, residing at Bloomington, Illinois, hereinafter referred to ASSIGNOR has invented together with Scott F. Shafer, Norval J. Wiemken and Alan R. Stockner a new and useful

HYDRAULIC FUEL INJECTION SYSTEM WITH INDEPENDENTLY OPERABLE DIRECT CONTROL NEEDLE VALVE

WHEREAS, Caterpillar Inc., a Delaware corporation having a place of business at Peoria, State of Illinois, United States of America, hereinafter referred to as ASSIGNEE, is desirous of acquiring the entire right, title and interest in and to said invention and any Letters Patent granted thereon by the United States of America and any foreign country;

NOW, THEREFORE, in consideration of the sum of One Dollar (\$1.00) and for other good and valuable consideration received by ASSIGNOR from ASSIGNEE, the receipt of which is hereby acknowledged by ASSIGNOR;

- 1. ASSIGNOR hereby sells, assigns, transfers and conveys unto ASSIGNEE the entire right, title and interest in and to said invention, any application therefor, and any Letters Patent granted thereon by the United States of America and any foreign country, including any continuing application, reissue or extension thereof, together with the right to file applications and obtain patents for said invention in any foreign country, and covenant that ASSIGNOR has the full right to do so.
- 2. At the request and expense of ASSIGNEE, ASSIGNOR agrees to communicate to ASSIGNEE any facts known respecting said invention, to execute all papers necessary to file any application on said invention necessary or desirable to aid ASSIGNEE in obtaining and enforcing proper protection for said invention in the United States of America and any foreign country.
- 3. ASSIGNOR hereby authorizes and requests the COMMISSIONER OF PATENTS AND TRADEMARKS to issue the United States Letters Patent on said invention, when granted, to Caterpillar Inc.
- 4. This assignment shall inure to the benefit of ASSIGNEE, its successors, assigns and other legal representatives, and shall be binding upon ASSIGNOR, ASSIGNOR'S heirs and legal representatives.

IN TESTIMONY WI	jereof, assic	GNOR has executed this instrument.	
11 1 60	·	7/30/203	
YE HAN		Date	
IN WITNESS OF the execution	on hereof by YE	TIAN we have hereunto set our hands.	
	7/30/03	Ala Sofomon 30 July	2003
Witness (1)	Date	Witness (2) Date	
Address: 904 N Market	St	Mitness (2) Date Date Address: 17/16 Rockingham Dn.	
Gridley IL	61744	Apt. A3	
		Normal IL 61761	
00 644		,	

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RECORDED: 08/08/2003

PATENT REEL: 014388 FRAME: 0927