OMB No. 0651-0027 (exp. 6/30/2008)	7 - 2008 United States Patent and Trademark
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To the Director of the U.S. Patent and 1035	28436 uncomments or the new address(es) below.
1. Name of conveying party(ies)	2. Name and address of receiving party(ies)
Jayaraman Venkataraghavan	Name: Caterpillar Inc.
Amy H. Hess Shriprasad Lakhapati Michael C. Long	Internal Address:
Additional name(s) of conveying party(ies) attached? Yes V	
3. Nature of conveyance/Execution Date(s):	Street Address: 100 NE Adams St.
Execution Date(s) <u>4-18-08; 4-21-08; 4-18-08; 4-18-08</u>	_
Assignment Merger	
Security Agreement Change of Name	City: Peoria
☐ Joint Research Agreement	State: Illinois
Government Interest Assignment	
Executive Order 9424, Confirmatory License	Country: U.S. Zip: 61629
Other	Additional name(s) & address(es) attached? Yes
A. Patent Application No.(s)	s document is being filed together with a new applicati  B. Patent No.(s)
A. Patent Application No.(s)  Additional numbers at 5. Name and address to whom correspondence	1
A. Patent Application No.(s)  Additional numbers at the second se	B. Patent No.(s)  attached? ☐ Yes ☑ No
A. Patent Application No.(s)  Additional numbers at 5. Name and address to whom correspondence	B. Patent No.(s)  attached? Yes Vo  6. Total number of applications and patents
A. Patent Application No.(s)  Additional numbers at the second se	B. Patent No.(s)  attached? Yes No  6. Total number of applications and patents involved: 1
A. Patent Application No.(s)  Additional numbers at the second se	B. Patent No.(s)  attached? Yes No  6. Total number of applications and patents involved: 1  7. Total fee (37 CFR 1.21(h) & 3.41) \$ 40.00
A. Patent Application No.(s)  Additional numbers at the second se	B. Patent No.(s)  attached? Yes No  6. Total number of applications and patents involved: 1  7. Total fee (37 CFR 1.21(h) & 3.41) \$ 40.00  Authorized to be charged by credit card
A. Patent Application No.(s)  Additional numbers a  5. Name and address to whom correspondence concerning document should be mailed:  Name: Michael B. McNeil  Internal Address:	B. Patent No.(s)  attached? Yes Vo  6. Total number of applications and patents involved: 1  7. Total fee (37 CFR 1.21(h) & 3.41) \$ 40.00  Authorized to be charged by credit card V Authorized to be charged to deposit account V Enclosed
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A. Patent Application No.(s)  Additional numbers at the second street Address:  Street Address:  Street Address:  City: Bloomington  State: IN  Zip:47403  Phone Number: (812) 333-5355	B. Patent No.(s)  attached? Yes No  6. Total number of applications and patents involved: 1  7. Total fee (37 CFR 1.21(h) & 3.41) \$ 40.00  Authorized to be charged by credit card  Authorized to be charged to deposit account  Enclosed  None required (government interest not affecting to a credit Card Last 4 Numbers  Expiration Date
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Additional numbers a  5. Name and address to whom correspondence concerning document should be mailed:  Name: Michael B. McNeil  Internal Address:  Street Address: 511 S. Madison Street P.O. Box 2417  City: Bloomington  State: IN Zip: 47403  Phone Number: (812) 333-5355  Fax Number: (812) 333-3173  Email Address:	B. Patent No.(s)  attached? Yes No  6. Total number of applications and patents involved: 1  7. Total fee (37 CFR 1.21(h) & 3.41) \$ 40.00  Authorized to be charged by credit card  Authorized to be charged to deposit account  Enclosed  None required (government interest not affecting to a credit Card Last 4 Numbers  Expiration Date
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Additional numbers a  5. Name and address to whom correspondence concerning document should be mailed:  Name: Michael B. McNeil  Internal Address:  Street Address: 511 S. Madison Street P.O. Box 2417  City: Bloomington  State: IN Zip: 47403  Phone Number: (812) 333-5355  Fax Number: (812) 333-3173  Email Address:	B. Patent No.(s)  6. Total number of applications and patents involved: 1  7. Total fee (37 CFR 1.21(h) & 3.41) \$ 40.00  Authorized to be charged by credit card  Authorized to be charged to deposit account  Enclosed  None required (government interest not affecting to the second se

Documents to be recorded (including cover sheet) should be faxed to (571) 273-0140, or mailed to: Mail Stop Assignment Recordation Services, Director of the USPTO, P.O.Box 1450, Alexandria, V.A. 22313-1450

> **PATENT REEL: 021645 FRAME: 0688**

WHEREAS, Michael C. Long, residing at Metamora, Illinois, hereinafter referred to as ASSIGNOR has invented together with Amy M. Hess, Stephen R. Lewis, Jayaraman Venkataraghavan and Shriprasad Lakhapati a new and useful

## ENGINE HAVING FUEL INJECTOR WITH ACTUATOR COOLING SYSTEM AND METHOD

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 4/18/08; 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.

THE OPEN ASSESSMENT YELLOW DOOR A COLONION Land and a thin in a

A SI INJON I WHEREOF, ASSICI	NOR has executed this institution.
MICHAEL C. LONG	4/18/7008 Date
Mall Lins 4/18/2008	HAEL C. LONG we have hereunto set our hands.
Withess (1) Date Address: 7.218 Chast Ln  1/01 ma   T.   6/76/	Witness (2) Date Address:  1316, N. Elmwood Are
- //ormal, I. Co. 76.	Peeria, IL- 61606

07-1059

PATENT REEL: 021645 FRAME: 0689

WHEREAS, Amy M. Hess, residing at Metamora, Illinois, hereinafter referred to as ASSIGNOR has invented together with Michael C. Long, Stephen R. Lewis, Jayaraman Venkataraghavan and Shriprasad Lakhapati a new and useful

### ENGINE HAVING FUEL INJECTOR WITH ACTUATOR COOLING SYSTEM AND METHOD

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 4/21/08

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;

- 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.
- 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.
- 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 WITNESS OF the execution hereof by AMY M. HESS we have hereunto set our hands. Witness (1) Address: Address: 211 News

IN TESTIMONY WHEREOF, ASSIGNOR has executed this instrument.

07-1059

PATENT REEL: 021645 FRAME: 0690

WHEREAS, Jayaraman Venkataraghavan, tesiding at Dunlap, Illinois, hereinafter referred to as ASSIGNOR has invented together with Amy M. Hess, Michael C. Long, Stephen R. Lewis and Shriprasad Lakhapati a new and useful

## ENGINE HAVING FUEL INJECTOR WITH ACTUATOR COOLING SYSTEM AND

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METHOD
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 4/18/08 ; 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 Platent 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.

- Table	4/18/08
JAYARAMAN VENKATARAGHAVAN	Date
IN WITNESS OF the execution hereof by JAYA	RAMAN VENKATARAGHAVAN we have
hereunto set our hands.	$\sim$ $\sim$
Man 9 Lins 4/18/08	Mus 4/18/2008
Witness (1) Date	Witness (2) Date
Address: 7218 Chase Ln	Address:
Noimal, I161761	1316, N. Elmnood Are
	1316, N. Elmnood Are Penia, IL -61606
07-1059	

PATENT REEL: 021645 FRAME: 0691

WHEREAS, Shriprasad Lakhapati, residing at Peoria, Illinois, hereinafter referred to as ASSIGNOR has invented together with Amy M. Hess, Michael C. Long, Stephen R. Lewis and Jayaraman Venkataraghavan a new and useful

# ENGINE HAVING FUEL INJECTOR WITH ACTUATOR COOLING SYSTEM AND METHOD

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 \( \lambda \) \

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.

> PATENT REEL: 021645 FRAME: 0692

**RECORDED: 09/26/2008**