

07-09-2008

U.S. DEPARTMENT OF COMMERCE
United States Patent and Trademark Office



103512795

To the Director of the U.S. Patent and Trademark Office: Please record the attached documents or the new address(es) below.

1. Name of conveying party(ies)

Jay Venkataraghavan
Michael Long
Zhenlong Xu
Stephen Lewis

Additional name(s) of conveying party(ies) attached? ☐ Yes ☒ No

3. Nature of conveyance/Execution Date(s):

Execution Date(s) 6-27-08; 6-27-08; 6-27-08; 6-27-08

- ☒ Assignment ☐ Merger
☐ Security Agreement ☐ Change of Name
☐ Joint Research Agreement
☐ Government Interest Assignment
☐ Executive Order 9424, Confirmatory License
☐ Other

2. Name and address of receiving party(ies)

Name: Caterpillar Inc.

Internal Address:

Street Address: 100 NE Adams St.

City: Peoria

State: Illinois

Country: U.S.

Zip: 61629

Additional name(s) & address(es) attached? ☐ Yes ☒ No

4. Application or patent number(s):

☒ This document is being filed together with a new application.

A. Patent Application No.(s)

B. Patent No.(s)

Additional numbers attached? ☐ Yes ☒ No

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:

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 title)

8. Payment Information

a. Credit Card Last 4 Numbers

Expiration Date

b. Deposit Account Number 500226

Authorized User Name Jonathan F. Yates

9. Signature:

Jonathan F. Yates
Signature

6-27-08

Date

Jonathan F. Yates

Name of Person Signing

Total number of pages including cover sheet, attachments, and documents: 5

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

40.00 OP

ASSIGNMENT

WHEREAS, Jay Venkataraghavan, residing at Dunlap, Illinois, hereinafter referred to as ASSIGNOR has invented together with Michael Long, Zhenlong Xu and Stephen Lewis a new and useful DISTRIBUTED STIFFNESS BLASING SPRING FOR ACTUATOR SYSTEM AND FUEL INJECTOR USING SAME

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 6/27/2008; 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.

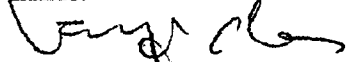
4. This assignment shall inure to the benefit of ASSIGNEE, its successors, assigns and other legal representatives, and shall be binding upon ASSIGNOR, ASSIGNOR'S heirs and legal representatives.


IN TESTIMONY WHEREOF, ASSIGNOR has executed this instrument.


JAY VENKATARAGHAVAN

6/27/2008
Date

IN WITNESS OF the execution hereof by JAY VENKATARAGHAVAN we have hereunto set our hands.

 6/27/08
Witness (1) GUOQI CHEN Date
Address: 2417 W. Brooklyn pl.
Dunlap, IL 61525

 06/27/08
Witness (2) SRIVATHSAN RAJUNATH Date
Address: 935, W. LOIRE CT.
PEORIA, IL - 61614

07-1164

ASSIGNMENT

WHEREAS, Michael Long, residing at Metamora, Illinois, hereinafter referred to as ASSIGNOR has invented together with Zhenlong Xu, Stephen Lewis and Jay Venkataraghavan a new and useful

**DISTRIBUTED STIFFNESS BIASING SPRING FOR ACTUATOR SYSTEM AND FUEL INJECTOR
USING SAME**

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 6/27/2008; 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.

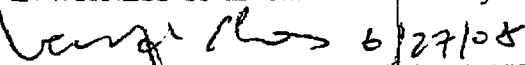
4. This assignment shall inure to the benefit of ASSIGNEE, its successors, assigns and other legal representatives, and shall be binding upon ASSIGNOR, ASSIGNOR'S heirs and legal representatives.


IN TESTIMONY WHEREOF, ASSIGNOR has executed this instrument.


MICHAEL LONG

6/27/2008
Date

IN WITNESS OF the execution hereof by MICHAEL LONG we have hereunto set our hands.


Witness (1) G. J. CHEN Date 6/27/08
Address: 2417. W. Brooklyn Pl.
Dunkirk, IL 61525


Witness (2) SRIVATHSAN RAGHUNATHAN Date 06/27/08
Address: 935 N. LOIRE CT
PEORIA, IL 61614

07-1164

ASSIGNMENT

WHEREAS, Zhenlong Xu, residing at Peoria, Illinois, hereinafter referred to as ASSIGNOR has invented together with Stephen Lewis, Jay Venkataraghavan and Michael Long a new and useful

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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 6/27/2008; 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;

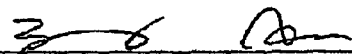
1. ASSIGNOR hereby sells, assigns, transfers and conveys unto ASSIGNEE the entire right, title and interest in and to said invention, any application therefor, and any Letters Patent granted thereon by the United States of America and any foreign country, including any continuing application, reissue 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.

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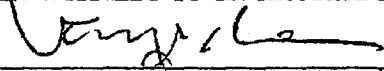
4. This assignment shall inure to the benefit of ASSIGNEE, its successors, assigns and other legal representatives, and shall be binding upon ASSIGNOR, ASSIGNOR'S heirs and legal representatives.

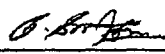
IN TESTIMONY WHEREOF, ASSIGNOR has executed this instrument.


ZHENLONG XU

6/27/2008
Date

IN WITNESS OF the execution hereof by ZHENLONG XU we have hereunto set our hands.

 6/27/08
Witness (1) GUOQI CHEN Date
Address: 2417 W. Brooklyn Pl.
Dunlap, IL 61525

 06/27/08
Witness (2) SEIVATHAN RAGU Date
Address: 935 N. LOIRE CT
PEORIA IL 61614

07-1164

ASSIGNMENT

WHEREAS, Stephen Lewis, residing at Chillicothe, Illinois, hereinafter referred to as ASSIGNOR has invented together with Jay Venkataraghavan, Michael Long and Zhenlong Xu a new and useful

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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 6-27-08; 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.

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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.

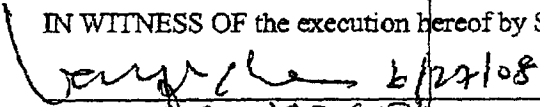
4. This assignment shall inure to the benefit of ASSIGNEE, its successors, assigns and other legal representatives, and shall be binding upon ASSIGNOR, ASSIGNOR'S heirs and legal representatives.

IN TESTIMONY WHEREOF, ASSIGNOR has executed this instrument.


STEPHEN LEWIS

6-27-08
Date

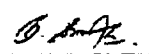
IN WITNESS OF the execution hereof by STEPHEN LEWIS we have hereunto set our hands.


Witness (1) GUOQI CHEN Date
Address:

2417 W. Brooklyn Pl.

Dunlap, IL 61255

07-1164


Witness (2) SRIVATHSAN RAGU Date
Address: 935, W. LOIRE CT

PEORIA, IL - 61614

PATENT

RECORDED: 06/27/2008

REEL: 021231 FRAME: 0005