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09-07-2007



EET

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To the Director of the U.S. Patent

and documents or the new address(es) below.

1. Name of conveying party(ies)
 Daniel W. Crosby
 Anil Raina

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

2. Name and address of receiving party(ies)
 Name: Caterpillar Inc.
 Internal Address: _____

3. Nature of conveyance/Execution Date(s):
 Execution Date(s) 08-28-07; 08-29-07

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

Street Address: 100 NE Adams Street
 City: Peoria
 State: Illinois
 Country: US 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: Indiana Zip: 47402
 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
 Jonathan F. Yates
 Name of Person Signing

8-30-07
 Date
 Total number of pages including cover sheet, attachments, and documents: _____

U.S. PTO
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083007

09/06/2007 11:41:41
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ASSIGNMENT

WHEREAS, Daniel W. Crosby, residing at Chillicothe, Illinois, hereinafter referred to as ASSIGNOR has invented together with Anil Raina a new and useful

MACHINE, ENGINE SYSTEM AND OPERATING 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 August 28, 2007; 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 an 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.

Daniel W. Crosby 8-28-07
DANIEL W. CROSBY Date

IN WITNESS OF the execution hereof by DANIEL W. CROSBY we have hereunto set our hands.

Randall D. Pruitt 8/28/07
Witness (1) Date
Address: 916 Wellington Dr.
Washington, IL
61571

Marlyn E. Wiley 28 Aug. 2007
Witness (2) Date
Address: 802 E. Sycamore Ave.
Peoria Heights, IL 61616

ASSIGNMENT

WHEREAS, Anil Raina, residing at Stamford, Lincolnshire, United Kingdom, hereinafter referred to as ASSIGNOR has invented together with David W. Crosby a new and useful

MACHINE, ENGINE SYSTEM AND OPERATING 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 29 AUGUST 2007; 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.

Anil Raina
ANIL RAINA

29-Aug-07
Date

IN WITNESS OF the execution hereof by ANIL RAINA we have hereunto set our hands.

[Signature] 29/08/07
Witness (1) Date

[Signature] 29/08/07
Witness (2) Date

Address: CHAPEL HOUSE, CHAPEL
JETTY, BASSINGHAM, LINCOLN
LN5 9EX, UK

Address: 2 St Christopher Drive
Orwell, Peterborough
PE8 4HU.