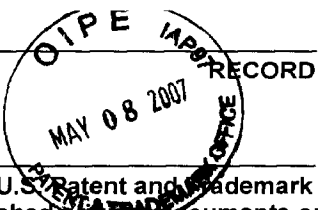


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05-14-2007



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U.S. Department of Commerce
Customer No. 58,982
Patent and Trademark Office
Attorney Docket No. 08350.6866

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To the Director of the U.S. Patent and Trademark Office
Please record the attached documents or

op Assignment Recordation Services

| | |
|---|--|
| 1. Name of conveying party(ies): (1) Chen-Chun Kao (2) Marion Billingsley Grant | 2. Name and address of receiving party(ies): Name: Caterpillar Inc. |
|---|--|

| | |
|--|-------------------|
| Additional name(s) of conveying party(ies) attached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | Internal Address: |
|--|-------------------|

| | |
|--------------------------|---------------------------------------|
| 3. Nature of conveyance: | Street Address: 100 N.E. Adams Street |
|--------------------------|---------------------------------------|

| | | |
|--|---------------------------------|--------------|
| <input checked="" type="checkbox"/> Assignment | <input type="checkbox"/> Merger | City: Peoria |
|--|---------------------------------|--------------|

| | | | |
|---|---|-----------|----------------------|
| <input type="checkbox"/> Security Agreement | <input type="checkbox"/> Change of Name | State: IL | Zip Code: 61629-6490 |
|---|---|-----------|----------------------|

| | | |
|---|---|---|
| <input type="checkbox"/> Joint Research Agreement | <input type="checkbox"/> Government Interest Assignment | Additional name(s) & Address(es) attached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| <input type="checkbox"/> Executive Order 9494, Confirmatory License | <input type="checkbox"/> Other: | |

Execution Date: (1) February 28, 2007
(2) March 1, 2007

4. Application number(s) or patent number(s): If this document is being filed together with a new application, the execution date of the application:

A. Patent Application Number(s):
11/711,722

Additional numbers attached? Yes No

B. Patent Number(s):

Yes No

5. Name and address of party to whom correspondence concerning document should be mailed:

Name: Elizabeth M. Burke

Internal Address: FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER, L.L.P.

Street Address: 901 New York Avenue, N.W.

City: Washington, D.C.

6. Total number of applications and patents involved: 1

7. Total fee (37 CFR 1.21(h) and 3.41): \$40

Enclosed (Please charge deficiency or credit overpayment to deposit account 06-0916)

Authorized to be charged to deposit account

State: Zip: 20001-4413

8. Deposit Account No.: 06-0916

9. Statement and signature.

To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.

Signed: Elizabeth M. Burke
Elizabeth M. Burke
Reg. No. 38,758

May 8, 2007
Date

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

05/14/2007 09:44:10 AM 00000153 11711722
20 01:28:57 06.00 07

ASSIGNMENT

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

EDM PROCESS FOR MANUFACTURING REVERSE TAPERED HOLES

for which We executed an application for United States Letters Patent concurrently herewith; and

WHEREAS, Caterpillar Inc., a corporation of Delaware whose post office address is 100 N.E. Adams Street, Peoria, IL 61629-6490 (hereinafter referred to as Assignee), is desirous of securing the entire right, title, and interest in and to this invention in all countries throughout the world, and in and to the application for United States Letters Patent on this invention and the Letters Patent to be issued upon this application;

NOW THEREFORE, be it known that for and in consideration of the sum of One Dollar (\$1.00) in hand paid and other 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 Letters Patent of the United States which may be granted thereon, and all reissues thereof, and all rights to claim priority (if any), as well as all rights to claim priority on the basis of this application, and all applications for Letters Patent which may hereafter be filed for this invention in any foreign country and all Letters Patent which may be granted on this invention in any foreign country, and all extensions, renewals, and reissues thereof, and We hereby authorize and request the Commissioner of Patents and Trademarks of the United States and any official of any foreign country whose duty it is to issue patents on applications as described above, to issue all Letters Patent 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 oaths and generally do everything possible to aid Assignee, its successors and assigns, to obtain and enforce proper patent protection for this invention in the United States and any foreign country, 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 and request the attorneys we have empowered in the Declaration and Power of Attorney in this application, to insert above the filing date and application number of said application when known.

IN TESTIMONY WHEREOF, We have hereunto set our hands.

| | | |
|--|--|------------------|
| 1. FULL NAME OF SOLE OR FIRST ASSIGNOR Chen Chun Kao | ASSIGNOR'S SIGNATURE <i>Chen Chun Kao</i> | DATE 02/28/07 |
| ADDRESS 100 Woodview Lane Apt. 432A, East Peoria, IL 61611, USA | CITIZENSHIP Taiwan | |
| | | |

| | | |
|--------------------------------------|-------------------------------------|-------------------|
| 1. WITNESS NAME RITESH LAKHKAR | WITNESS SIGNATURE <i>R. Lakhtar</i> | DATE 02/28/2007 |
| ADDRESS 2714 W WILLOWLAKE DR APT 104 | | CITIZENSHIP INDIA |
| PEORIA IL 61614 | | |

| | | |
|--------------------------------------|-------------------------------------|-------------------|
| 2. WITNESS NAME KALYANA BHAMIDI | WITNESS SIGNATURE <i>K. Bhamidi</i> | DATE 02/28/2007 |
| ADDRESS 2708 W WILLOWLAKE DR APT 302 | | CITIZENSHIP INDIA |
| PEORIA IL 61614 | | |

| | | |
|---|----------------------|-----------------------|
| 2. FULL NAME OF SECOND ASSIGNOR Marion Billingsley Grant | ASSIGNOR'S SIGNATURE | DATE |
| ADDRESS 6504-Hicks-Hollow-Rd.,-Princeville,-IL,-61559,-USA | | CITIZENSHIP U.S.A. |

| | | |
|-----------------|-------------------|-------------|
| 1. WITNESS NAME | WITNESS SIGNATURE | DATE |
| ADDRESS | | CITIZENSHIP |

| | | |
|-----------------|-------------------|-------------|
| 2. WITNESS NAME | WITNESS SIGNATURE | DATE |
| ADDRESS | | CITIZENSHIP |

SOLE/JOINT INVENTION
(Worldwide Rights)
08350.6866-00000
Client Ref. No. 06-866

ASSIGNMENT

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

EDM PROCESS FOR MANUFACTURING REVERSE TAPERED HOLES

for which We executed an application for United States Letters Patent concurrently herewith; and

WHEREAS, Caterpillar Inc., a corporation of Delaware whose post office address is 100 N.E. Adams Street, Peoria, IL 61629-6490 (hereinafter referred to as Assignee), is desirous of securing the entire right, title, and interest in and to this invention in all countries throughout the world, and in and to the application for United States Letters Patent on this invention and the Letters Patent to be issued upon this application;

NOW THEREFORE, be it known that for and in consideration of the sum of One Dollar (\$1.00) in hand paid and other 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 Letters Patent of the United States which may be granted thereon, and all reissues thereof, and all rights to claim priority (if any), as well as all rights to claim priority on the basis of this application, and all applications for Letters Patent which may hereafter be filed for this invention in any foreign country and all Letters Patent which may be granted on this invention in any foreign country, and all extensions, renewals, and reissues thereof; and We hereby authorize and request the Commissioner of Patents and Trademarks of the United States and any official of any foreign country whose duty it is to issue patents on applications as described above, to issue all Letters Patent 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 oaths and generally do everything possible to aid Assignee, its successors and assigns, to obtain and enforce proper patent protection for this invention in the United States and any foreign country, 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 and request the attorneys we have empowered in the Declaration and Power of Attorney in this application, to insert above the filing date and application number of said application when known.

IN TESTIMONY WHEREOF, We have hereunto set our hands.

| | | |
|--|----------------------|-----------------------|
| 1. FULL NAME OF SOLE OR FIRST ASSIGNOR Chen Chun Kao | ASSIGNOR'S SIGNATURE | DATE |
| ADDRESS 100 Woodview Lane Apt. 432A, East Peoria, IL 61611, USA | | CITIZENSHIP Taiwan |
| | | |

SOLE/JOINT INVENTION
(Worldwide Rights)
08350.6866-00000
Client Ref. No. 06-866

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|-----------------|-------------------|-------------|
| 1. WITNESS NAME | WITNESS SIGNATURE | DATE |
| ADDRESS | | CITIZENSHIP |
| | | |

| | | |
|-----------------|-------------------|-------------|
| 2. WITNESS NAME | WITNESS SIGNATURE | DATE |
| ADDRESS | | CITIZENSHIP |
| | | |

| | | |
|---|---|-----------------------|
| 2. FULL NAME OF SECOND ASSIGNOR Marion Billingsley Grant | ASSIGNOR'S SIGNATURE <i>Marion B Grant</i> | DATE 01-March-07 |
| ADDRESS 6504 Hicks Hollow Rd., Princeville, IL, 61559, USA | | CITIZENSHIP U.S.A. |
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| | | |
|--|---|--------------------|
| 1. WITNESS NAME <i>James R. Gilmore</i> | WITNESS SIGNATURE <i>James R Gil</i> | DATE 3/1/07 |
| ADDRESS <i>128 Hermitage Circle, Ligonier, PA 15658</i> | | CITIZENSHIP USA |
| | | |

| | | |
|--|---------------------------------------|----------------------|
| 2. WITNESS NAME <i>Zhaoli Hu</i> | WITNESS SIGNATURE <i>Zhaoli Hu</i> | DATE 3/1/07 |
| ADDRESS <i>11427 N Columbine Dr. Dunlap, IL 61525</i> | | CITIZENSHIP China |
| | | |