

FORM PTO-1595
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U.S. DEPARTMENT OF COMMERCE
Patent and Trademark Office

MRD 5-28-98

100736562

35 U.S.C. § 371
05/000003
06/10/98

To the Honorable Commissioner of Patents and Trademarks. Please record the attached original documents or copy thereof.

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|--|---------------|---|--|---|---------------|-------------------------|
| 1. Name of conveying party(ies): Lianghe Zuo Additional Names attached: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | | 2. Name and address of receiving party(ies): Name: <u>Caterpillar Inc.</u> Internal Address: <u>Intellectual Property Department</u> Street Address: <u>100 N.E. Adams Street</u> City: <u>Peoria</u> State: <u>Illinois</u> Zip: <u>61629-6490</u> Additional name(s) & addresses attached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | | | | |
| 3. Nature of Conveyance: <input checked="" type="checkbox"/> Assignment <input type="checkbox"/> Security Agreement <input type="checkbox"/> Other Execution Date(s): | | | | | | |
| 4. Application number(s) or patent number(s): <u>09/086083</u> If this document is being filed together with a new application, the execution date of the application is . A. Patent Application No.(s) B. Patent No.(s) Additional numbers attached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Title of Invention: VALVE AREA SCHEDULING IN A DOUBLE ACTING PISTON FOR A HYDRAULICALLY-ACTUATED FUEL INJECTOR Attorney Docket No.: 96-211 | | | | | | |
| 5. Name and address of party to whom correspondence concerning document should be mailed: Name: <u>Eric M. Bram</u> <u>CATERPILLAR INC.</u> Internal Address: <u>Intellectual Property Department</u> Street Address: <u>100 N. E. Adams Street</u> City: <u>Peoria</u> State: <u>IL</u> Zip: <u>61629-6490</u> | | 6. Total number of applications and patents involved [1] 7. Total fee (37 CFR §3.41) \$ 40.00 <input type="checkbox"/> Enclosed <input checked="" type="checkbox"/> Authorized to be charged to deposit account 8. Deposit account number: <u>03-1129</u> (If charged duplicate copy attached) | | | | |
| 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. <table border="0" style="width: 100%;"><tr><td style="width: 30%;"><u>Eric M. Bram</u> Name of Person Signing</td><td style="width: 30%; text-align: center;"> Signature</td><td style="width: 30%; text-align: right;"><u>04/29/98</u> Date</td></tr></table> Total number of pages comprising cover sheet, attachments, and document: [2] | | | | <u>Eric M. Bram</u> Name of Person Signing | Signature | <u>04/29/98</u> Date |
| <u>Eric M. Bram</u> Name of Person Signing | Signature | <u>04/29/98</u> Date | | | | |
| Mail document to be recorded with required cover sheet information to: <div style="display: flex; justify-content: space-between;"><div>06/10/1998 BCDATES 00000170 031129 09006003 01 FC:581 40.00 CH</div><div>Commissioner of Patents and Trademarks Box Assignments Washington, D.C. 20231</div></div> | | | | | | |

PATENT
REEL: 9229 FRAME: 0089

ASSIGNMENT

WHEREAS, LIANGHE ZUO, residing at Chicago, Illinois, hereinafter referred to as ASSIGNOR, has invented a new and useful

VALVE AREA SCHEDULING IN A DOUBLE ACTING PISTON FOR A
HYDRAULICALLY-ACTUATED FUEL INJECTOR

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 5/22/98; 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;

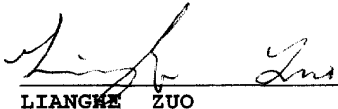
1. ASSIGNOR hereby sells, assigns, transfers and conveys unto ASSIGNEE the entire right, title and interest in and to said invention, any application therefor, and any Letters Patent granted thereon by the United States of America and any foreign country, including any continuing application, reissue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


LIANGHE ZUO

5/22/98
Date

IN WITNESS OF the execution hereof by LIANGHE ZUO we have hereunto set our hands.

Richard N. Stefani 22 MAY 1998
Witness (1) (Date)

Address: 1649 E 50th #10F
Chicago, IL 60615

Richard N. Stefani 22 May 1998
Witness (2) (Date)

Address: 6022 S Drexel Ave
Chicago, Illinois