

MED 11-30-98

12-09-1998

FORM PTO-1595  
1-31-92



U.S. DEPARTMENT OF COMMERCE  
Patent and Trademark Office

100914713

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

|  |  |
|--|--|
| <p>1. Name of conveying party(ies):<br/>Jagannathan (NMI) Sarangapani</p> <p>Additional Names attached: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>  | <p>2. Name and address of receiving party(ies):<br/>Name: <u>Caterpillar Inc.</u></p> <p>Internal Address:<br/><u>Intellectual Property Department</u></p> <p>Street Address:<br/><u>100 N.E. Adams Street</u></p> <p>City: <u>Peoria</u> State: <u>Illinois</u></p> <p>Zip: <u>61629-6490</u></p> <p>Additional name(s) &amp; addresses attached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> |
| <p>3. Nature of Conveyance:</p> <p><input checked="" type="checkbox"/> Assignment<br/><input type="checkbox"/> Security Agreement<br/><input type="checkbox"/> Other</p> <p>Execution Date(s): <u>11/25/98</u><br/><u>SoC 11/30/98</u></p> |  |

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 is 11/25/98. SoC 11/30/98

A. Patent Application No.(s) 09-201562 B. Patent No.(s)

Additional numbers attached?  Yes  No

Title of Invention: ENERGY-BASED APPROACH FOR OBSTACLE AVOIDANCE

Attorney Docket No.: 98-186

|   |   |
|---|---|
| <p>5. Name and address of party to whom correspondence concerning document should be mailed:</p> <p>Name: <u>Steve D. Lundquist</u><br/><u>CATERPILLAR INC.</u></p> <p>Internal Address: <u>Intellectual Property Department</u></p> <p>Street Address: <u>100 N. E. Adams Street</u></p> <p>City: <u>Peoria</u> State: <u>IL</u></p> <p>Zip: <u>61629-6490</u></p> | <p>6. Total number of applications and patents involved [1]</p> <p>7. Total fee (37 CFR §3.41) \$ 40.00<br/><input type="checkbox"/> Enclosed<br/><input checked="" type="checkbox"/> Authorized to be charged to deposit account</p> <p>8. Deposit account number: <u>03-1129</u><br/>(If charged duplicate copy attached)</p> |
|---|---|

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.

Steve D. Lundquist  
Name of Person Signing

[Signature]  
Signature

Date: 11/25/98  
SoC 11/30/98

Total number of pages comprising cover sheet, attachments, and document: [2]

Mail document to be recorded with required cover sheet information to:

Commissioner of Patents and Trademarks  
Box Assignments  
Washington, D.C. 20231

12/06/1998 DNGUYEN 00000193 031129 09201562  
01 FC:581 40.00 CH

11/30/98  
09/201562  
JC542 U.S. PTO

ASSIGNMENT

WHEREAS, JAGANNATHAN (NMI) SARANGAPANI, residing at Peoria, Illinois, hereinafter referred to as ASSIGNOR, has invented a new and useful

ENERGY-BASED APPROACH FOR OBSTACLE AVOIDANCE

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 11/25/98; 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.

S. Jan

JAGANNATHAN (NMI) SARANGAPANI

11/25/98

Date

IN WITNESS OF the execution hereof by JAGANNATHAN (NMI) SARANGAPANI we have hereunto set our hands.

Marla Hudson 11-25-98  
Witness (1) (Date)

Frank Lombardi 11/25/98  
Witness (2) (Date)

Address: \_\_\_\_\_

7150 N. Terra Vista #107  
Peoria, IL 61614

Address: \_\_\_\_\_

813 Hickory Creek Ct  
Metamora, IL 61548