



To the Honorable Commissioner of Patent,

101521037

Attached original documents or copy thereof

1. Name of conveying party(ies):
Riki P. Takeshita
Paula Hartley
Terry L. Hibbard

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

MPD
11.13.00

2. Name and address of receiving party(ies):
 Name: **LOCKHEED MARTIN CORPORATION**
(A Maryland Corporation)
 Internal Address:
 Street Address: **6801 Rockledge Drive**
 City: **Bethesda** State: **MD** Zip: **20817**
 Additional name(s) & address(es) attached? Yes No

3. Nature of conveyance:
 Assignment Merger
 Security Agreement Change of Name
 Other
 Execution Date: **November 7, 2000**

4. Application number(s) or patent number(s):
 If this document is being filed together with a new application other than a provisional patent application, the execution date of the application is:
 A. Patent Application No.(s) **09/141,294** B. Patent No.(s)
 Additional numbers attached? Yes No

5. Name and address of party to whom correspondence concerning document should be mailed:
 Name: **Seth M. Nehrbass**
 Internal Address:
GARVEY, SMITH, NEHRBASS & DOODY,
L.L.C.
 Street Address:
3838 N. Causeway Blvd., Suite 3290
 City: **Metairie** State: **LA** Zip: **70002**

6. Total number of applications and patents involved: 1
 7. Total fee (37 C.F.R. 3.41) **\$40.00**
 Enclosed
 Authorized to be charged to deposit account any deficiencies
 8. Deposit account number:
50-0694
 (Attach duplicate copy of this page if paying by deposit account)

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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.
Brett A. North  **8 November, 2000**
 Name of Person Signing Signature Date

Total number of pages including cover sheet, attachments and document: 4

ASSIGNMENT

WHEREAS we, Riki P. Takeshita, Paula J. Hartley, and Terry L. Hibbard are the joint inventors of the invention claimed in U.S. Patent Application Serial No. 09/141,294, filed August 26, 1998, and entitled "FRICTION PLUG WELDING"; and

WHEREAS, LOCKHEED MARTIN CORPORATION, a corporation created and existing under and by virtue of the laws of the State of Maryland, is desirous of acquiring the entire right, title and interest in and to the aforesaid invention throughout the world, and all right, title and interest in, to and under any and all Letters Patent of the United States and all other countries throughout the world;

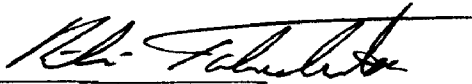
NOW, THEREFORE, for and in consideration of the sum of One Dollar (\$1.00) to us in hand paid by LOCKHEED MARTIN CORPORATION and for other good and valuable considerations, the receipt of which is hereby acknowledged, we hereby sell, assign, transfer and set over to LOCKHEED MARTIN CORPORATION, all right, title and interest in and to the said invention throughout the world, and said application for U.S. Letters Patent, and any and all divisions, continuations, continuations-in-part, and reissues thereof, and any and all Letters Patent of the United States and foreign countries which may be granted therefor, the same to be held and enjoyed by LOCKHEED MARTIN CORPORATION for its own use and benefit, and for the use and benefit of its successors, assigns, or other legal representatives, to the end of the term or terms for which said Letters Patent of the United States or foreign countries are or may be granted or reissued, as fully and entirely as the same would have been held and enjoyed by us if this assignment and sale had not been made.

And we hereby authorize and request the Commissioner of Patents and Trademarks to issue any and all Letters Patent of the United States on said invention or resulting from said application and from any and all divisions, continuations, continuations-in-part, and reissues thereof, to LOCKHEED MARTIN CORPORATION, as assignee of our entire interest, and hereby covenant that we have the full right to convey the entire interest herein assigned, and that we have not executed and will not execute any agreement in conflict herewith.

And we further hereby covenant and agree that we will, at any time, upon request, execute and deliver any and all papers that may be necessary or desirable to perfect the title of said invention and to such Letters Patent as may be granted therefor, to LOCKHEED MARTIN CORPORATION, its successors, assigns, or other legal representatives and that if LOCKHEED MARTIN CORPORATION, its successors, assigns or other legal representatives shall desire to file any divisional, continuation, or continuation-in-part applications or to secure a reissue of such Letters Patent, or to file a disclaimer relating thereto, will upon request, sign all papers, make all rightful oaths and do all lawful acts requisite for the filing of such divisional, continuation, or continuation-in-part application, or such application for reissue and the procuring thereof, and for the filing of such disclaimer, without further compensation but at the expense of said assignee, its successors, or other legal representatives.

And we do further covenant and agree that we will, at any time upon request, communicate to LOCKHEED MARTIN CORPORATION, its successors, assigns or other legal representatives, such facts relating to said invention and Letters Patent or the file history thereof as may be known to us, and testify as to the same in any interference or other litigation when requested so to do, without further compensation but at the expense of said assignee, its successors, or other legal representatives.

EXECUTED THIS 7th day of November, 2000.


Riki P. Takeshita


STATE OF LOUISIANA

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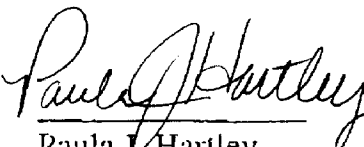
PARISH OF Orleans

BEFORE ME, the undersigned authority, on this day personally appeared Riki P. Takeshita, known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND and seal of office this 7th day of November, 2000.


NOTARY PUBLIC IN AND FOR
THE STATE OF LOUISIANA

EXECUTED THIS 7th day of November, 2000.


Paula L. Hartley

STATE OF LOUISIANA
PARISH OF Orleans

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BEFORE ME, the undersigned authority, on this day personally appeared Paula J. Hartley known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND and seal of office this 7th day of November, 2000.

Judith A. Bilal
NOTARY PUBLIC IN AND FOR
THE STATE OF LOUISIANA

EXECUTED THIS 6 day of Nov., 2000.

Terry L. Hibbard
Terry L. Hibbard

STATE OF LOUISIANA
PARISH OF Orleans

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BEFORE ME, the undersigned authority, on this day personally appeared Terry L. Hibbard, known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND and seal of office this 6th day of November, 2000.

Judith A. Bilal
NOTARY PUBLIC IN AND FOR
THE STATE OF LOUISIANA
