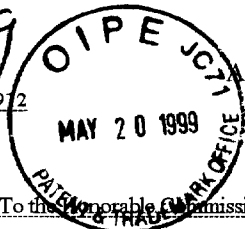


5.20.99
Attorney Docket No. P 7912
FORM PTO-1584
1-31-92



ASSIGNMENT RE

P

07-30-1999



U.S. DEPARTMENT OF COMMERCE
Patent and Trademark Office

101084757

To the Honorable Commissioner of Patents and Trademarks: Please record the assignment and/or copy thereof.

1. Name of conveying party(ies):

Hong S. Shim
Mark C.S. Shu
David L. Miller
Edward Di Domenico
Catherine E. Taylor
Kenneth Keeney
Mark T. Stewart
Eileen L. Halverson

2. Name and address of receiving party(ies)

Name: MEDTRONIC, INC.

Internal Address: M.S. 301

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

Street Address: 7000 CENTRAL AVENUE NORTHEAST

3. Nature of conveyance:

[X] Assignment [] Merger
[] Security Agreement [] Change of Name
[] Other

City: MINNEAPOLIS State: MN Zip: 55432

[X] Execution Date: April 13, 1999, April 15, 1999, April 12, 1999, April 12, 1999, April 12, 1999, April 12, 1999, April 12, 1999, April 12, 1999.

Additional name(s) & address(es) attached? [] Yes [X] No

4. Application number(s) or patent number(s): 09/285953

If this document is being filed together with a new application, the execution date of the application is filed **HEREWITH**

A. Patent Application No.(s)

B. Patent No.(s)

Additional numbers attached? [] Yes [X] No

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

Name: Reed A. Duthler
Address: MEDTRONIC, INC.
7000 Central Avenue N.E.
M.S. 301
Minneapolis, Minnesota 55432

6. Total number of applications and patents involved: 1

7. Total fee (37 CFR 3.41): \$40.00

[] Enclosed
[X] Authorized to be charged to deposit account

8. Deposit Account Number: 13-2546
(Attach duplicate copy of this page)

DO NOT USE THIS SPACE

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.

Reed A. Duthler
Name of Person Signing

Reed A. Duthler
Signature

5/14/99
Date

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

OMB No. 0651-0011 (exp. 4/94)

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

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

Public burden reporting for this sample cover sheet is estimated to average about 30 minutes per document to be recorded, including time for reviewing the document and gathering the data needed, and completing and reviewing the sample cover sheet. Send comments regarding this burden estimate to the U.S. Patent and Trademark Office, Office of information systems, PK2-1000C, Washington, D.C. 20231, and to the Office of Management and Budget, Paperwork Reduction Project (0651-0011), 1 Washington, D.C. 20503.

ASSIGNMENT

WHEREAS, I/we Hong S. Shim, Mark C.S. Shu, David L. Miller, Edward Di Domenico, Catherine E. Taylor, Kenneth W. Keeney, Mark T. Stewart, Eileen L. Halverson, is/are the inventor(s) of **PLASMA PROCESS FOR SURFACE MODIFICATION OF PYROLITIC CARBON** for which we have executed an application for filing in the United States Patent and Trademark Office preparatory to obtaining Letters Patent of the United States on herewith; therefor; and

WHEREAS, MEDTRONIC, INC. a corporation organized and existing under the laws of the State of Minnesota and having a principal place of business at 7000 Central Avenue N.E., Minneapolis, Minnesota 55432 hereinafter referred to as "Corporation," is desirous of acquiring the entire right, title and interest in and to said invention for the United States and for all foreign countries and in and to any and all foreign and domestic Letters Patent which may be granted therefor;

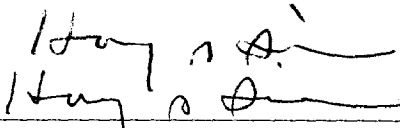
NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, I have sold, assigned, transferred and set over and by these presents do sell, assign, transfer and set over unto Corporation, its successors and assigns, the entire right, title and interest in and to said invention and the entire right, title and interest in and to any and all Letters Patent of the United States and any foreign countries which may be granted therefor including my rights under the International Convention for the Protection of Industrial Property, and in and to any and all extensions, divisions or reissues of said Letters Patent that may be granted, the same to be held and enjoyed by Corporation for its own use and behalf and use and behalf of its successors and assigns to the full end of the term for which said Letters Patent may be granted, as fully and entirely as the same would have been held and enjoyed by me had this assignment and sale not been made;

AND, for the consideration aforesaid, I materially represent to Corporation, its successors and assigns, that at the time of the execution and delivery of these presents, I am the sole lawful owners of the entire right, title and interest in and to the invention, application and Letters Patent above mentioned, and that the same are unencumbered, and that I have good right and lawful authority to sell and convey the same in the manner herein set forth;

AND, for the consideration aforesaid, I hereby individually covenant and agree to and with Corporation, its successors and assigns, that whenever its counsel or the counsel of its successors or assigns, learned in the law, shall advise that an amendment or division of, or any continuation-in-part thereof, or any other proceeding in connection with the filing or prosecution of said domestic or foreign patent applications, including interference proceedings, is lawful and desirable, or that a reissue of extension of said Letters Patent is lawful and desirable, I, or my executors, administrators or assigns will sign all papers and drawings, take all rightful oaths, and do all acts necessary or required to be done for the procurement of valid Letters Patent for said invention, or for the reissue or extension of the same, without charge to Corporation, its successors or assigns, but at Corporation's expense.

I hereby request the Honorable Commissioner of Patents and Trademarks to issue the Letters Patent to Corporation in accordance with this instrument.

IN WITNESS WHEREOF, I have hereunto set my hand on this 13 day of April, 1999.

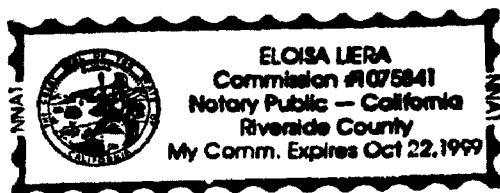


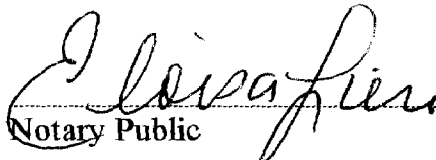
Hong S. Shim

State of California)
) ss.
County of Orange)

On this 13 day of April, 1999, before me personally appeared Hong S. Shim, to me known to be the person described in and who executed the foregoing instrument and acknowledged that he executed the same as his free act and deed.

IN WITNESS WHEREOF, I have hereunto affixed my official signature with the seal of my office, the day and year above written.




Notary Public

I hereby request the Honorable Commissioner of Patents and Trademarks to issue the Letters Patent to Corporation in accordance with this instrument.

IN WITNESS WHEREOF, I have hereunto set my hand on this 15 day of April, 1999.





Mark C.S. Shu

State of California
State of Minnesota)
County of Orange) ss.
County of Anoka)

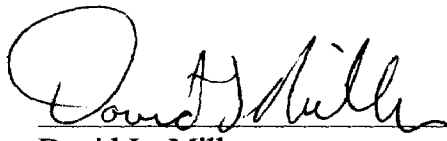
On this 15 day of April, 1999, before me personally appeared Mark C.S. Shu, to me known to be the person described in and who executed the foregoing instrument and acknowledged that he executed the same as his free act and deed.

IN WITNESS WHEREOF, I have hereunto affixed my official signature with the seal of my office, the day and year above written.


Notary Public

I hereby request the Honorable Commissioner of Patents and Trademarks to issue the Letters Patent to Corporation in accordance with this instrument.

IN WITNESS WHEREOF, I have hereunto set my hand on this 12 day of April, 1999.

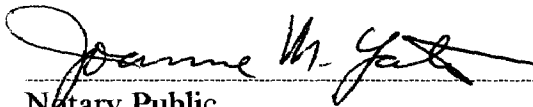


David L. Miller

State of Minnesota)
) ss.
County of Anoka)

On this 12 day of April, 1999, before me personally appeared David L. Miller, to me known to be the person described in and who executed the foregoing instrument and acknowledged that he executed the same as his free act and deed.

IN WITNESS WHEREOF, I have hereunto affixed my official signature with the seal of my office, the day and year above written.




Notary Public



I hereby request the Honorable Commissioner of Patents and Trademarks to issue the Letters Patent to Corporation in accordance with this instrument.

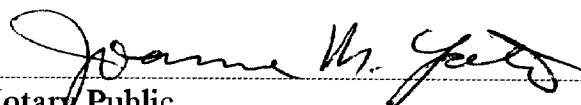
IN WITNESS WHEREOF, I have hereunto set my hand on this 4/27/99 day of
, 1999.

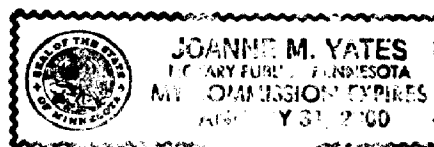

Edward Di Domenico

State of Minnesota)
) ss.
County of Anoka)

On this 12 day of April, 1999, before me personally appeared Edward Di Domenico, to me known to be the person described in and who executed the foregoing instrument and acknowledged that he executed the same as his free act and deed.

IN WITNESS WHEREOF, I have hereunto affixed my official signature with the seal of my office, the day and year above written.


Notary Public



I hereby request the Honorable Commissioner of Patents and Trademarks to issue the Letters Patent to Corporation in accordance with this instrument.

IN WITNESS WHEREOF, I have hereunto set my hand on this 12 day of April, 1999.

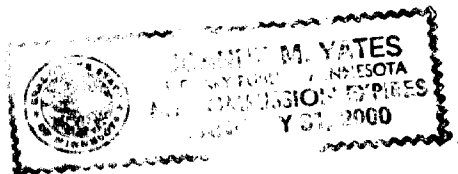
Catherine E. Taylor
Catherine E. Taylor

State of Minnesota)
) ss.
County of Anoka)

On this 12 day of April, 1999, before me personally appeared Caherine E. Taylor, to me known to be the person described in and who executed the foregoing instrument and acknowledged that he executed the same as his free act and deed.

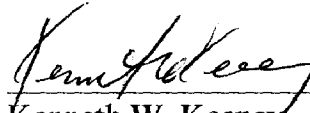
IN WITNESS WHEREOF, I have hereunto affixed my official signature with the seal of my office, the day and year above written.

Joanne M. Yates
Notary Public



I hereby request the Honorable Commissioner of Patents and Trademarks to issue the Letters Patent to Corporation in accordance with this instrument.

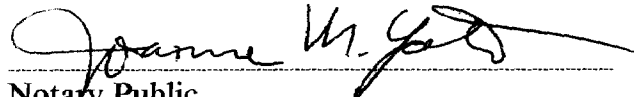
IN WITNESS WHEREOF, I have hereunto set my hand on this April day of
, 1999.

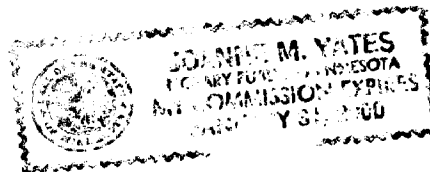

Kenneth W. Keeney

State of Minnesota)
County of ~~Anoka~~ ^{Wash.} ~~Washington~~) ss.

On this 12 day of April, 1999, before me personally appeared Kenneth W. Kenney, to me known to be the person described in and who executed the foregoing instrument and acknowledged that he executed the same as his free act and deed.

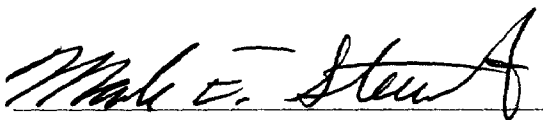
IN WITNESS WHEREOF, I have hereunto affixed my official signature with the seal of my office, the day and year above written.


Notary Public

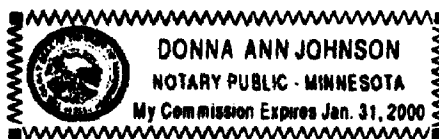


I hereby request the Honorable Commissioner of Patents and Trademarks to issue the Letters Patent to Corporation in accordance with this instrument.

IN WITNESS WHEREOF, I have hereunto set my hand on this 12 day of April, 1999.

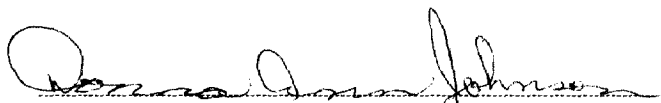

Mark T. Stewart

State of Minnesota)
) ss.
County of Anoka)



On this 12th day of April, 1999, before me personally appeared Mark T. Stewart, to me known to be the person described in and who executed the foregoing instrument and acknowledged that he executed the same as his free act and deed.

IN WITNESS WHEREOF, I have hereunto affixed my official signature with the seal of my office, the day and year above written.

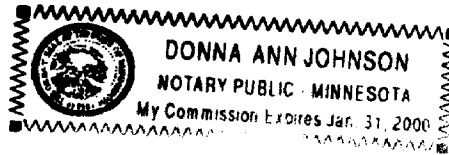

Notary Public

I hereby request the Honorable Commissioner of Patents and Trademarks to issue the Letters Patent to Corporation in accordance with this instrument.

IN WITNESS WHEREOF, I have hereunto set my hand on this 12 day of April, 1999.

Eileen L. Halverson
Eileen L. Halverson

State of Minnesota)
County of Anoka) ss.



On this 12th day of April, 1999, before me personally appeared Eileen L. Halverson, to me known to be the person described in and who executed the foregoing instrument and acknowledged that he executed the same as his free act and deed.

IN WITNESS WHEREOF, I have hereunto affixed my official signature with the seal of my office, the day and year above written.

Donna Ann Johnson
Notary Public