505928168 02/21/2020

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT5974886

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
LACHLAN DAVIES	02/12/2020
SHERYL MCCAMMON	01/21/2020
ANDREW J. CLELAND	01/17/2020
MELANIE D. GOODMAN KEISER	01/21/2020
YE TAN	01/21/2020
LISA M. JOHANEK	01/21/2020
NATHAN A. TORGERSON	01/21/2020

RECEIVING PARTY DATA

Name:	MEDTRONIC, INC.
Street Address:	710 MEDTRONIC PARKWAY NE
City:	MINNEAPOLIS
State/Country:	MINNESOTA
Postal Code:	55432-9924

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	16797065

CORRESPONDENCE DATA

Fax Number: (651)735-1102

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.

Phone: 651-735-1100

Email: pairdocketing@ssiplaw.com
Correspondent Name: SHUMAKER & SIEFFERT, P.A
Address Line 1: 1625 RADIO DRIVE, SUITE 100
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ATTORNEY DOCKET NUMBER:	A0002528US03/1123-451US01	
NAME OF SUBMITTER:	KAREN SORENSEN	
SIGNATURE:	/Karen Sorensen/	
DATE SIGNED:	02/21/2020	

PATENT 505928168 REEL: 051986 FRAME: 0556

Total Attachments: 24 source=A0002528US03_ASSIGNMENT#page1.tif source=A0002528US03 ASSIGNMENT#page2.tif source=A0002528US03 ASSIGNMENT#page3.tif source=A0002528US03_ASSIGNMENT#page4.tif source=A0002528US03 ASSIGNMENT#page5.tif source=A0002528US03 ASSIGNMENT#page6.tif source=A0002528US03 ASSIGNMENT#page7.tif source=A0002528US03_ASSIGNMENT#page8.tif source=A0002528US03 ASSIGNMENT#page9.tif source=A0002528US03 ASSIGNMENT#page10.tif source=A0002528US03_ASSIGNMENT#page11.tif source=A0002528US03_ASSIGNMENT#page12.tif source=A0002528US03 ASSIGNMENT#page13.tif source=A0002528US03_ASSIGNMENT#page14.tif source=A0002528US03_ASSIGNMENT#page15.tif source=A0002528US03_ASSIGNMENT#page16.tif source=A0002528US03 ASSIGNMENT#page17.tif source=A0002528US03 ASSIGNMENT#page18.tif source=A0002528US03 ASSIGNMENT#page19.tif source=A0002528US03 ASSIGNMENT#page20.tif source=A0002528US03_ASSIGNMENT#page21.tif source=A0002528US03 ASSIGNMENT#page22.tif source=A0002528US03 ASSIGNMENT#page23.tif source=A0002528US03 ASSIGNMENT#page24.tif

ASSIGNMENT OF APPLICATION(S)

WHEREAS I/WE, the below named inventor(s), with residence and citizenship as indicated below, have made one or more inventions relating to:

	TITRATION FOR SUB-THRESHOLD ELECTRICAL STIMULATION THERAPY
\boxtimes	for which an application for a United States Patent or a U.S. Provisional Application is being filed contemporaneously herewith;
	for which an application for a United States Patent identified as U.S. Patent Application No was filed on;
	for which U.S. Provisional Application No was filed on;
\boxtimes	for which the above application claims the benefit of U.S. Provisional Patent Application No. 62/880,493, filed on July 30, 2019; and/or
	for which an application identified as PCT International Patent Application No was filed on
her	d for which I/WE hereby authorize the below identified ASSIGNEE and its successors, representatives and assigns to eafter insert the application number and/or filing date of the above-identified application(s) after such information tomes known to them).

WHEREAS, Medtronic, Inc. ("ASSIGNEE"), a corporation organized and existing under the laws of the State of Minnesota and having a principal place of business at 710 Medtronic Parkway NE., Minneapolis, Minnesota 55432-5604, desires to acquire the entire right, title and interest throughout the world in and to said inventions, including the entire right, title and interest in and to the application(s) identified above and all other patent applications filed for the inventions, and in and to all patents throughout the world that have granted or may be granted hereafter for the inventions, including but not limited to patents granted or based on any application(s) identified above or any other patent applications for the inventions, and including any and all rights of priority in the application(s) identified above and any other patent applications for the inventions;

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, I/WE do hereby acknowledge that I/WE have sold, assigned, and transferred and set over and by these presents do sell, assign, transfer and set over unto ASSIGNEE, and its successors, representatives and assigns, the entire right, title and interest throughout the world in and to the inventions, including the entire-right, title and interest in and to all applications that have been filed or may be filed in the United States and all organizations for the invention(s), including the application(s) identified above and all other applications for the invention(s), all applications claiming benefit or priority to the application(s) identified above, and all divisional, continuation, continuation-in-part, substitute, renewal, reissue, re-examinations, provisional, non-provisional, and all other applications for patent which have been or shall be filed in the United States and all foreign countries for the inventions; including the entire right, title and interest in and to all original and reissued or re-examined patents which have been or shall be issued in the United States and all foreign countries for the inventions, including all patents granted on or based on the application(s) identified above or any of the other foregoing applications, and including any utility models, design registrations, inventor's certificates or other like rights of exclusion granted for the inventions; and specifically including any and all rights of priority in the inventions and the application(s) identified above and any of the other foregoing applications, including the right to file the application(s) identified above and any of the other foregoing applications, and the right to claim the priority of the application(s) identified above and any of the other foregoing applications under the International Convention for the Protection for Industrial Property, or any other conventions, treaties, laws or agreements of like purposes; and including the right to enforce and sue for past, present and future infringement of any patents issuing from or based on the application(s) identified above or any of the other foregoing applications for the full term of such patents, all such rights to be held and enjoyed by ASSIGNEE and its successors, representatives, and assigns, for its own use and benefit to the

full end of the term for which any of the U.S. patents, foreign patents, utility models, design registrations, inventor's certificates, or like rights of exclusion are granted;

AND I/WE materially represent to ASSIGNEE, its successors, representatives, and assigns, that I/WE are the sole lawful owners of the entire unencumbered right, title and interest in and to said inventions, and that I/WE have good right and lawful authority to sell and convey the same in the manner herein set forth, and hereby covenant that I/WE have not and will not execute any writing or do any act whatsoever conflicting with these presents;

AND I/WE individually covenant and agree that, when requested and at the expense of ASSIGNEE, its successors representatives, and assigns, but at no charge to ASSIGNEE, will (1) execute all divisional, continuation, continuation-in-part, substitute, renewal, reissue, re-examinations, provisional, non-provisional, and all other patent applications based on said inventions; (2) execute all rightful oaths, declarations, assignments, powers of attorney and other papers relating to the foregoing; (3) communicate to the ASSIGNEE all facts known to the undersigned relating to said inventions and the history relating thereto; (4) cooperate with the ASSIGNEE in any interference, opposition, dispute, litigation, or other proceeding involving any of the applications or patents for such inventions, including but not limited to testifying; and (5) generally do everything possible which the ASSIGNEE shall consider desirable for vesting title to any patent applications relating to said inventions in the ASSIGNEE, and for securing, maintaining and enforcing proper patent protection for such inventions.

AND I/WE do hereby sell, assign, transfer and convey to ASSIGNEE, its successors, representatives, and assigns, all claims for damages and all remedies arising out of or relating to any violation(s) of any of the rights assigned hereby that have or may have accrued prior to the date of assignment to said ASSIGNEE, or may accrue hereafter, including, but not limited to the right to sue for, seek, obtain, collect, recover, and retain damages and any ongoing or prospective royalties to which I/WE may be emitted, or that I/WE may collect for any infringement or from any settlement or agreement related to any patent relating to said inventions before or after issuance;

AND I/WE do hereby authorize and request any issuing authority throughout the world having an applicable duty to issue any and all United States and foreign patents, utility models, design registrations, inventor's certificates or other like rights of exclusion granted on said inventions to the ASSIGNEE, its successors, representatives, and assigns, and authorize ASSIGNEE to apply for such patents utility models, design registrations, inventor's certificates or other like rights of exclusion for said inventions in its own name.

In witness whereof, I/WE have signed my/our name(s) on the day and year set forth below.

-	Given Name (first and middle initial [if any]): Lachlan	Family Name or Surname (last name): Davies
	Inventor's Signature	Date:
	City and State: Minneapolis, Minnesota	Country: USA

Given Name (first and middle initial [if any]): Sheryl	Family Name or Surname (last name): McCammon
Inventor's Signature:	Date:
City and State: North Oaks, Minnesota	Country: USA

Given Name (first and middle initial [if any]): Andrew J.	Family Name or Surname (last name): Cleland
Inventor's Signature:	Date:
City and State: St. Paul, Minnesota	Country: USA

Given Name (first and middle initial [if any]): Melanie D.	Family Name or Surname (last name): Goodman Keiser
Inventor's Signature:	Date:
City and State: Otsego, Minnesota	Country: USA

Given Name (first and middle initial [if any]): Ye	Family Name or Surname (last name): Tan
Inventor's Signature:	Date:
City and State: Shoreview, Minnesota	Country: USA

Given Name (first and middle initial [if any]): Lisa M.	Family Name or Surname (last name): Johanek
Inventor's Signature:	Date:
City and State: White Bear Lake, Minnesota	Country: USA

Given Name (first and middle initial [if any]): Nathan A.	Family Name or Surname (last name): Torgerson	
Inventor's Signature:	Date:	
City and State: Andover, Minnesota	Country: USA	

ASSIGNMENT OF APPLICATION(S)

WHEREAS I/WE, the below named inventor(s), with residence and citizenship as indicated below, have made one or more inventions relating to:

TITRATION FOR SUB-THRESHOLD ELECTRICAL STIMULATION THERAPY	
for which an application for a United States Patent or a U.S. Provisional Application is being filed contempor herewith;	aneously
for which an application for a United States Patent identified as U.S. Patent Application No was;	filed on
for which U.S. Provisional Application No was filed on;	
for which the above application claims the benefit of U.S. Provisional Patent Application No. 62/880,493, July 30, 2019; and/or	filed on
for which an application identified as PCT International Patent Application No was filed on	
(and for which I/WE hereby authorize the below identified ASSIGNEE and its successors, representatives and a hereafter insert the application number and/or filing date of the above-identified application(s) after such inf becomes known to them).	

WHEREAS, Medtronic, Inc. ("ASSIGNEE"), a corporation organized and existing under the laws of the State of Minnesota and having a principal place of business at 710 Medtronic Parkway NE., Minneapolis, Minnesota 55432-5604, desires to acquire the entire right, title and interest throughout the world in and to said inventions, including the entire right, title and interest in and to the application(s) identified above and all other patent applications filed for the inventions, and in and to all patents throughout the world that have granted or may be granted hereafter for the inventions, including but not limited to patents granted or based on any application(s) identified above or any other patent applications for the inventions, and including any and all rights of priority in the application(s) identified above and any other patent applications for the inventions;

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, I/WE do hereby acknowledge that I/WE have sold, assigned, and transferred and set over and by these presents do sell, assign, transfer and set over unto ASSIGNEE, and its successors, representatives and assigns, the entire right, title and interest throughout the world in and to the inventions, including the entire-right, title and interest in and to all applications that have been filed or may be filed in the United States and all organizations for the invention(s), including the application(s) identified above and all other applications for the invention(s), all applications claiming benefit or priority to the application(s) identified above, and all divisional, continuation, continuation-in-part, substitute. renewal, reissue, re-examinations, provisional, non-provisional, and all other applications for patent which have been or shall be filed in the United States and all foreign countries for the inventions; including the entire right, title and interest in and to all original and reissued or re-examined patents which have been or shall be issued in the United States and all foreign countries for the inventions, including all patents granted on or based on the application(s) identified above or any of the other foregoing applications, and including any utility models, design registrations, inventor's certificates or other like rights of exclusion granted for the inventions; and specifically including any and all rights of priority in the inventions and the application(s) identified above and any of the other foregoing applications, including the right to file the application(s) identified above and any of the other foregoing applications, and the right to claim the priority of the application(s) identified above and any of the other foregoing applications under the International Convention for the Protection for Industrial Property, or any other conventions, treaties, laws or agreements of like purposes; and including the right to enforce and sue for past, present and future infringement of any patents issuing from or based on the application(s) identified above or any of the other foregoing applications for the full term of such patents, all such rights to be held and enjoyed by ASSIGNEE and its successors, representatives, and assigns, for its own use and benefit to the

full end of the term for which any of the U.S. patents, foreign patents, utility models, design registrations, inventor's certificates, or like rights of exclusion are granted;

AND I/WE materially represent to ASSIGNEE, its successors, representatives, and assigns, that I/WE are the sole lawful owners of the entire unencumbered right, title and interest in and to said inventions, and that I/WE have good right and lawful authority to sell and convey the same in the manner herein set forth, and hereby covenant that I/WE have not and will not execute any writing or do any act whatsoever conflicting with these presents;

AND I/WE individually covenant and agree that, when requested and at the expense of ASSIGNEE, its successors representatives, and assigns, but at no charge to ASSIGNEE, will (1) execute all divisional, continuation, continuation-in-part, substitute, renewal, reissue, re-examinations, provisional, non-provisional, and all other patent applications based on said inventions; (2) execute all rightful oaths, declarations, assignments, powers of attorney and other papers relating to the foregoing; (3) communicate to the ASSIGNEE all facts known to the undersigned relating to said inventions and the history relating thereto; (4) cooperate with the ASSIGNEE in any interference, opposition, dispute, litigation, or other proceeding involving any of the applications or patents for such inventions, including but not limited to testifying; and (5) generally do everything possible which the ASSIGNEE shall consider desirable for vesting title to any patent applications relating to said inventions in the ASSIGNEE, and for securing, maintaining and enforcing proper patent protection for such inventions.

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In witness whereof, I/WE have signed my/our name(s) on the day and year set forth below.

Given Name (first and middle initial [if any]): Lachlan	Family Name or Surname (last name): Davies	
Inventor's Signature:	Date:	
City and State: Minneapolis, Minnesota	Country: USA	

Attorney Docket No.: A0002528US03/1123-451US01 Page 3 of 8

Given Name (first and middle initial [if any]): Sheryl	Family Name or Surname (last name): McCammon	
Inventor's Signature:	Date: 1/2020	
City and State: North Oaks, Minnesota	Country: USA	

Given Name (first and middle initial [if any]): Andrew J.	Family Name or Surname (last name): Cleland	
Inventor's Signature:	Date:	
City and State: St. Paul, Minnesota	Country: USA	

Given Name (first and middle initial [if any]): Melanie D.	Family Name or Surname (last name): Goodman Keiser
Inventor's Signature:	Date:
City and State: Otsego, Minnesota	Country: USA

Given Name (first and middle initial [if any]): Ye	Family Name or Surname (last name): Tan	
Inventor's Signature:	Date:	
City and State: Shoreview, Minnesota	Country: USA	

Attorney Docket No.: A0002528US03/1123-451US01 Page 7 of 8

Given Name (first and middle initial [if any]): Lisa M.	Family Name or Surname (la Johanek	ist name);	
Inventor's Signature:	Date:		
City and State:	Country:	sels.	
White Bear Lake, Minnesota	USA		

Given Name (first and middle initial [if any]): Nathan A.	Family Name or Surname (last name): Torgerson	
Inventor's Signature:	Date:	
City and State: Andover, Minnesota	Country: USA	

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NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, I/WE do hereby acknowledge that I/WE have sold, assigned, and transferred and set over and by these presents do sell, assign, transfer and set over unto ASSIGNEE, and its successors, representatives and assigns, the entire right, title and interest throughout the world in and to the inventions, including the entire-right, title and interest in and to all applications that have been filed or may be filed in the United States and all organizations for the invention(s), including the application(s) identified above and all other applications for the invention(s), all applications claiming benefit or priority to the application(s) identified above, and all divisional, continuation, continuation-in-part, substitute, renewal, reissue, re-examinations, provisional, non-provisional, and all other applications for patent which have been or shall be filed in the United States and all foreign countries for the inventions; including the entire right, title and interest in and to all original and reissued or re-examined patents which have been or shall be issued in the United States and all foreign countries for the inventions, including all patents granted on or based on the application(s) identified above or any of the other foregoing applications, and including any utility models, design registrations, inventor's certificates or other like rights of exclusion granted for the inventions; and specifically including any and all rights of priority in the inventions and the application(s) identified above and any of the other foregoing applications, including the right to file the application(s) identified above and any of the other foregoing applications, and the right to claim the priority of the application(s) identified above and any of the other foregoing applications under the International Convention for the Protection for Industrial Property, or any other conventions, treaties, laws or agreements of like purposes; and including the right to enforce and sue for past, present and future infringement of any patents issuing from or based on the application(s) identified above or any of the other foregoing applications for the full term of such patents, all such rights to be held and enjoyed by ASSIGNEE and its successors, representatives, and assigns, for its own use and benefit to the

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AND I/WE do hereby authorize and request any issuing authority throughout the world having an applicable duty to issue any and all United States and foreign patents, utility models, design registrations, inventor's certificates or other like rights of exclusion granted on said inventions to the ASSIGNEE, its successors, representatives, and assigns, and authorize ASSIGNEE to apply for such patents utility models, design registrations, inventor's certificates or other like rights of exclusion for said inventions in its own name.

In witness whereof, I/WE have signed my/our name(s) on the day and year set forth below.

Given Name (first and middle initial [if any]):	Family Name or Surname (last name):	
Lachlan	Davies	
Inventor's Signature:	Date:	
City and State:	Country:	
Minneapolis, Minnesota	USA	

Given Name (first and middle initial [if any]): Sheryl	Family Name or Surname (last name): McCammon	
Inventor's Signature:	Date:	
City and State: North Oaks, Minnesota	Country: USA	

	Given Name (first and middle initial [if any]): Andrew J.	Family Name or Surname (last name): Cleland
-	Inventor's Signardre	Date: 1/17/2020
- ?	City and State: St. Paul, Minnesota	Country: USA

Attorney Docket No.: A0002528US03/1123-451US01 Page 5 of 8

	Given Name (first and middle initial [if any]): Melanie D.	Family Name or Surname (last name): Goodman Keiser
	Inventor's Signature:	Date: 21 2010
*	City and State: Otsego, Minnesota	Country: USA

Given Name (first and middle initial [if any]): Ye	Family Name or Surname (last name): Tan
Inventor's Signature:	Date: 2 (J 4 4 ノ o) o
City and State: Shoreview, Minnesota	Country: USA

Attorney Docket No.: A0002528US03/1123-451US01 Page 7 of 8

Given Name (first and middle initial [if any]):	Family Name or Surname (last name):
Lisa M.	Johanek
Inventoy's Signature:	Date: 21 Jan 2020
City and State:	Country:
White Bear Lake, Minnesota	USA

Given Name (first and middle initial [if any]):

Nathan A.

Inventor's Signature:

Outly Google
City and State:
Andover, Minnesota

Family Name or Surname (last name):

Torgerson

Date:

SAN 21, 2020

Country:

USA

PATENT REEL: 051986 FRAME: 0581

RECORDED: 02/21/2020