504683820 12/12/2017

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT4730542

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
JOHN SHISHILLA	01/17/2013
KATHRYN PEDERSON	01/14/2013
MUKUL JAIN	01/11/2013
NICHOLAS S. MAIRS	01/14/2013

RECEIVING PARTY DATA

Name:	MEDTRONIC, INC.
Street Address:	710 MEDTRONIC PARKWAY N.E.
City:	MINNEAPOLIS
State/Country:	MINNESOTA
Postal Code:	55432

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	14396671

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

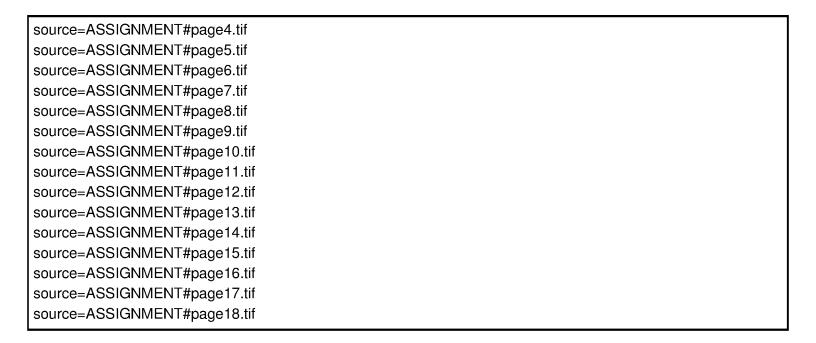
Address Line 4: WOODBURY, MINNESOTA 55125

ATTORNEY DOCKET NUMBER:	1123-099US01/C003347.USN4
NAME OF SUBMITTER:	JENNIFER DALLMAN
SIGNATURE:	/Jennifer Dallman/
DATE SIGNED:	12/12/2017

Total Attachments: 18

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PATENT 504683820 REEL: 044372 FRAME: 0054



ASSIGNMENT

For valuable consideration, the receipt and sufficiency of which are hereby acknowledged, I/We, John Shishilla of 4335 Shorewood Trail, Medina, Minnesota 55340, Kathryn Pederson of 18357 Lakeview Point Drive NE, East Bethel, Minnesota 55092, Mukul Jain of 18612 Harvest Scene Ct., Boyds, Maryland 20841 and Nicholas S. Mairs of 3311 Hennepin Avenue, Minneapolis, Minnesota 55408 (collectively hereinafter called "the Assignor(s)"), have sold, assigned, transferred and set over, and hereby do sell, assign, transfer and set over to Medtronic, Inc. a corporation existing under the laws of the State of Minnesota and having a place of business at: 710 Medtronic Parkway, Minneapolis, Minnesota 55432, and its successors and assigns (collectively hereinafter called "the Assignee") the entire right, title and interest throughout the world in and to the inventions and improvements which are the subject of an application for United States Patent signed by us, entitled TRIAL STIMULATION SYSTEMS, filed April 26, 2012, and assigned U.S. Serial Number 61/638,938; this assignment including all right, title and interest in said application, any provisional, non-provisional, continuation, continuation-in-part, divisional, reissue, renewal, extension or other applications disclosing any of said inventions or improvements, any and all United States and foreign patents, utility models, and design registrations granted for any of said inventions or improvements, and including any rights, including the right to claim priority based on the filing date of any of these applications under the International Convention for the Protection of Industrial Property, the Patent Cooperation Treaty. the European Patent Convention, and all other treaties of like purposes, the same to be held and enjoyed by the Assignee for its own use and benefit and the use and benefit of its successors and assigns to the full end of the term for which any patents may be granted on such applications, as fully and entirely as the same would have been held and enjoyed by the Assignor(s) had this assignment and sale not been made, including the right to enforce such patents as fully and entirely as the same would have been held and enjoyed by the Assignor(s) if this assignment had not been made, together with all claims by the Assignor(s) for damages by reason of past infringement or for provisional rights and including the right to sue for, and collect the same for the Assignce's own use and benefit, and for the use and benefit of its successors, assigns, and other legal representatives, and the Assignor(s) authorize the Assignee to apply in all countries in our name or in its own name for patents, utility models, design registrations and like rights of

exclusion and for inventors' certificates for said inventions and improvements; and the Assignor(s) agree for ourselves and our respective heirs, legal representatives and assigns, without further compensation to perform such lawful acts and to sign such further applications, assignments, Preliminary Statements and other lawful documents as the Assignee may reasonably request to effectuate fully this assignment. For the consideration noted above, the Assignor(s) materially represent to the Assignee, and its successors and assigns, that at the time of the execution and delivery of this assignment, the Assignor(s) are the sole lawful owners of the entire right, title and interest in and to the inventions, improvements, applications and patents above mentioned, and that the same are unencumbered, and that the Assignor(s) have good right and lawful authority to assign, sell and convey the same in the manner herein set forth. For the consideration noted above, the Assignor(s) hereby individually covenant and agree to and with the Assignee, its successors and assigns, that whenever its counsel or the counsel of its successors or assigns shall advise that an amendment or division of, or continuation 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 or extension of such patents is lawful and desirable, the Assignor(s), or our executors, administrators or assigns will sign all papers and drawings, take all rightful oaths, and do all acts necessary or required for the procurement of valid patents for said inventions, or for the reissue or extension of the same, without charge to the Assignee, its successors or assigns, but at the Assignee's expense. The Assignor(s) do hereby authorize and request the Commissioner of Patents of the United States Patent and Trademark Office to issue any and all patents which may be granted upon any of the said applications, to the Assignee, as the assignee of the entire right, title, and interest therein.

Attorney Docket No.: 1123-099U	
Date: 17 JAN 2013	3 Chashill
	John Shīshilla
State of)	
County of) ss:	.1.
of satisfactory evidence) to be the acknowledged to me that he/she/ti	anuava, 2013, before me, Hather on the basis person(s) whose name is/are subscribed to within the instrument and hey executed the same in his/her/their authorized capacity, and that by ument the person(s), or the entity upon behalf of which the person(s)
	WITHESS my hand and official scal.
HEATHER L JOHNSON	Heathe bans
Motary Public Minnesota My Comm. Expires	Signature of Notary Public My Commission Expires: ancary 31, 3017

Date:		
		Kathryn Pederson
State of)) ss:	
County of)	
basis of satisfactory and acknowledged to	evidence) to be the o me that he/she/th ature on the instru	thryn Pederson personally known to me (or proved to me on the e person(s) whose name is/are subscribed to within the instrument ney executed the same in his/her/their authorized capacity, and that ment the person(s), or the entity upon behalf of which the person(s)
		WITNESS my hand and official seal.
		Signature of Notary Public

Attorney Docket No.: 1123-099USP1/C00003347.USP1

Date:		Mukul Jain
State of County of)) ss:	
On this Notary Public, personants factory evidence acknowledged to me	e) to be the person that he/she/they re on the instrum	, 20, before me,, Mukul Jain personally known to me (or proved to me on the basis of on(s) whose name is/are subscribed to within the instrument and executed the same in his/her/their authorized capacity, and that by ent the person(s), or the entity upon behalf of which the person(s)
		WITNESS my hand and official seal.
		Signature of Notary Public

Attorney Docket No.: 1123-099USP1/C00003347.USP1

Date:		Nicholas S. Mairs
State of County of)) ss:)	
On this	evidence) to be the o me that he/she/t ature on the instru	, 20, before me,, icholas S. Mairs personally known to me (or proved to me on the ne person(s) whose name is/are subscribed to within the instrument hey executed the same in his/her/their authorized capacity, and that ment the person(s), or the entity upon behalf of which the person(s)
		WITNESS my hand and official seal.
		Signature of Notary Public

Attorney Docket No.: 1123-099USP1/C00003347.USP1

<u>ASSIGNMENT</u>

For valuable consideration, the receipt and sufficiency of which are hereby acknowledged, I/We, John Shishilla of 4335 Shorewood Trail, Mcdina, Minnesota 55340, Kathryn Pederson of 18357 Lakeview Point Drive NE, East Bethel, Minnesota 55092, Mukul Jain of 18612 Harvest Scene Ct., Boyds, Maryland 20841 and Nicholas S. Mairs of 3311 Hennepin Avenue, Minneapolis, Minnesota 55408 (collectively hereinafter called "the Assignor(s)"), have sold, assigned, transferred and set over, and hereby do sell, assign, transfer and set over to Medtronic, Inc, a corporation existing under the laws of the State of Minnesota and having a place of business at: 710 Medtronic Parkway, Minneapolis, Minnesota 55432, and its successors and assigns (collectively hereinafter called "the Assignce") the entire right, title and interest throughout the world in and to the inventions and improvements which are the subject of an application for United States Patent signed by us, entitled TRIAL STIMULATION SYSTEMS, filed April 26, 2012, and assigned U.S. Serial Number 61/638,938; this assignment including all right, title and interest in said application, any provisional, non-provisional, continuation, continuation-in-part, divisional, reissue, renewal, extension or other applications disclosing any of said inventions or improvements, any and all United States and foreign patents, utility models, and design registrations granted for any of said inventions or improvements, and including any rights, including the right to claim priority based on the filing date of any of these applications under the International Convention for the Protection of Industrial Property, the Patent Cooperation Treaty, the European Patent Convention, and all other treaties of like purposes, the same to be held and enjoyed by the Assignee for its own use and benefit and the use and benefit of its successors and assigns to the full end of the term for which any patents may be granted on such applications, as fully and entirely as the same would have been held and enjoyed by the Assignor(s) had this assignment and sale not been made, including the right to enforce such patents as fully and entirely as the same would have been held and enjoyed by the Assignor(s) if this assignment had not been made, together with all claims by the Assignor(s) for damages by reason of past infringement or for provisional rights and including the right to sue for, and collect the same for the Assignce's own use and benefit, and for the use and benefit of its successors, assigns, and other legal representatives, and the Assignor(s) authorize the Assignce to apply in all countries in our name or in its own name for patents, utility models, design registrations and like rights of

exclusion and for inventors' certificates for said inventions and improvements; and the Assignor(s) agree for ourselves and our respective heirs, legal representatives and assigns, without further compensation to perform such lawful acts and to sign such further applications, assignments, Preliminary Statements and other lawful documents as the Assignee may reasonably request to effectuate fully this assignment. For the consideration noted above, the Assignor(s) materially represent to the Assignee, and its successors and assigns, that at the time of the execution and delivery of this assignment, the Assignor(s) are the sole lawful owners of the entire right, title and interest in and to the inventions, improvements, applications and patents above mentioned, and that the same are unencumbered, and that the Assignor(s) have good right and lawful authority to assign, sell and convey the same in the manner herein set forth. For the consideration noted above, the Assignor(s) hereby individually covenant and agree to and with the Assignce, its successors and assigns, that whenever its counsel or the counsel of its successors or assigns shall advise that an amendment or division of, or continuation 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 or extension of such patents is lawful and desirable, the Assignor(s), or our executors, administrators or assigns will sign all papers and drawings, take all rightful oaths, and do all acts necessary or required for the procurement of valid patents for said inventions, or for the reissue or extension of the same, without charge to the Assignee, its successors or assigns, but at the Assignce's expense. The Assignor(s) do hereby authorize and request the Commissioner of Patents of the United States Patent and Trademark Office to issue any and all patents which may be granted upon any of the said applications, to the Assignee, as the assignee of the entire right, title, and interest therein.

Date:		John Shishilla
State of)	
County of) ss:)	
of satisfactory evid acknowledged to m	ence) to be the pers to that he/she/they e tre on the instrumen	, 20, before mc,, on Shishilla personally known to me (or proved to me on the basis on(s) whose name is/are subscribed to within the instrument and executed the same in his/her/their authorized capacity, and that by the person(s), or the entity upon behalf of which the person(s)
		WITNESS my hand and official seal.
		Signature of Notary Public

Attorney Docket No.: 1123-099USP1/C00003347.USP1

Attorney Docket No.:	1123-099USP1/0	C00003347.USP1			
Date: 14 Jan 20	13	Zalles Kathryn Peder	<i>Lellau</i> son		
State of)) ss:				
County of	Ś				
On this 14 Notary Public, persona basis of satisfactory ev and acknowledged to n by his/her/their signatu acted, executed the inst	illy appdared Katl idence) to be the ne that he/she/the ire on the instrum	person(s) whose by executed the sa	rsonally known to name is/are subso nne in his/her/the	o me (or provéd_ cribed to within (ir authorized cap	to me on the the instrument pacity, and that
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My C	ER L JOHNSON stary Public dinnesota omm. Expires M n 31 2017	,	re of Notary Publ	John!	17

01:52:22 p.m.

Date:		·	
		Mukut Jain	
State of)		
) ss:		
County of)		
On this	day of	, 20, before mc,	

Attorney Docket No.: 1123-099USP1/C00003347.USP1

Notary Public, personally appeared Mukul Jain personally known to me (or proved to me on the basis of satisfactory evidence) to be the person(s) whose name is/are subscribed to within the instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity, and that by his/her/their signature on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Signature of Notary Public

My Commission Expires:

Attorney Docket No.: 1123-099USP1/C00003347.USP1 Nicholas S. Mairs State of) ss: County of On this 14 day of analy 2013, before me, 1000 for the Notary Public, personally appeared Nicholas S. Mairs personally known to me (or proved to me on the basis of satisfactory evidence) to be the person(s) whose name is/are subscribed to within the instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity, and that by his/her/their signature on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument. WITNESS my hand and official seal. HEATHER L JOHNSON Notary Public Minnesota My Commission Expires: Jour a avery My Comm. Expires: Jan 31

<u>ASSIGNMENT</u>

For valuable consideration, the receipt and sufficiency of which are hereby acknowledged, I/We, John Shishilla of 4335 Shorewood Trail, Medina, Minnesota 55340, Kathryn Pederson of 18357 Lakeview Point Drive NE, East Bethel, Minnesota 55092, Mukul Jain of 18612 Harvest Scene Ct., Boyds, Maryland 20841 and Nicholas S. Mairs of 3311 Hennepin Avenue, Minneapolis, Minnesota 55408 (collectively hereinafter called "the Assignor(s)"), have sold, assigned, transferred and set over, and hereby do sell, assign, transfer and set over to Medtronic, Inc, a corporation existing under the laws of the State of Minnesota and having a place of business at: 710 Medtronic Parkway, Minneapolis, Minnesota 55432, and its successors and assigns (collectively hereinafter called "the Assignee") the entire right, title and interest throughout the world in and to the inventions and improvements which are the subject of an application for United States Patent signed by us, entitled TRIAL STIMULATION SYSTEMS, filed April 26, 2012, and assigned U.S. Serial Number 61/638,938; this assignment including all right, title and interest in said application, any provisional, non-provisional, continuation, continuation-in-part, divisional, reissue, renewal, extension or other applications disclosing any of said inventions or improvements, any and all United States and foreign patents, utility models, and design registrations granted for any of said inventions or improvements, and including any rights, including the right to claim priority based on the filing date of any of these applications under the International Convention for the Protection of Industrial Property, the Patent Cooperation Treaty, the European Patent Convention, and all other treaties of like purposes, the same to be held and enjoyed by the Assignee for its own use and benefit and the use and benefit of its successors and assigns to the full end of the term for which any patents may be granted on such applications, as fully and entirely as the same would have been held and enjoyed by the Assignor(s) had this assignment and sale not been made, including the right to enforce such patents as fully and entirely as the same would have been held and enjoyed by the Assignor(s) if this assignment had not been made, together with all claims by the Assignor(s) for damages by reason of past infringement or for provisional rights and including the right to sue for, and collect the same for the Assignee's own use and benefit, and for the use and benefit of its successors, assigns, and other legal representatives, and the Assignor(s) authorize the Assignee to apply in all countries in our name or in its own name for patents, utility models, design registrations and like rights of

exclusion and for inventors' certificates for said inventions and improvements; and the Assignor(s) agree for ourselves and our respective heirs, legal representatives and assigns, without further compensation to perform such lawful acts and to sign such further applications, assignments, Preliminary Statements and other lawful documents as the Assignee may reasonably request to effectuate fully this assignment. For the consideration noted above, the Assignor(s) materially represent to the Assignee, and its successors and assigns, that at the time of the execution and delivery of this assignment, the Assignor(s) are the sole lawful owners of the entire right, title and interest in and to the inventions, improvements, applications and patents above mentioned, and that the same are unencumbered, and that the Assignor(s) have good right and lawful authority to assign, sell and convey the same in the manner herein set forth. For the consideration noted above, the Assignor(s) hereby individually covenant and agree to and with the Assignee, its successors and assigns, that whenever its counsel or the counsel of its successors or assigns shall advise that an amendment or division of, or continuation 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 or extension of such patents is lawful and desirable, the Assignor(s), or our executors, administrators or assigns will sign all papers and drawings, take all rightful oaths, and do all acts necessary or required for the procurement of valid patents for said inventions, or for the reissue or extension of the same, without charge to the Assignee, its successors or assigns, but at the Assignee's expense. The Assignor(s) do hereby authorize and request the Commissioner of Patents of the United States Patent and Trademark Office to issue any and all patents which may be granted upon any of the said applications, to the Assignee, as the assignee of the entire right, title, and interest therein.

Attorney Docket No	.: 1123-099USP	I/C00003347.USP1
Date:		John Shishilla
State of)) ss:	
County of	5	
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		WITNESS my hand and official seal.
		Signature of Notary Public
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Attorney Docket No	.: 1123-099USF	P1/C00003347.USP1
Date:		Kathryn Pederson
State of)) ss:	
County of)	
basis of satisfactory and acknowledged to	evidence) to be o me that he/she ature on the inst	, 20, before me, Kathryn Pederson personally known to me (or proved to me on the the person(s) whose name is/are subscribed to within the instrument /they executed the same in his/her/their authorized capacity, and that rument the person(s), or the entity upon behalf of which the person(s)
		WITNESS my hand and official seal.
		Cionatora of Notary Dublin
		Signature of Notary Public
		My Commission Expires:

Attorney Docket No.: 1123-099USP1/C00003347.USP1
Date: Jan 11, 2013 Aukul Jain
IYIOKUI JAIN
State of my Lard) ss:
State of Mindler of) ss: County of Montgorner) On this // day of // 20/3, before me, // which was a long to the basis of Notary Public, personally appeared Mukul Jaja personally known to me (or proved to me on the basis of
Notary Public, personally appeared Mukul Jajin personally known to me (or proved to injector the basis of satisfactory evidence) to be the person(s) whose name is/are subscribed to within the instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity, and that by his/her/their signature on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.
WITNESS my hand and official seal.
Signature of Notary Public
My Commission Expires: 0.5 /20/20/6

Date:		
Date.		Nicholas S. Mairs
State of)	
County of) ss:)	
Notary Public, pers- basis of satisfactory and acknowledged	onally appeared Nic evidence) to be the to me that he/she/the ature on the instrum	, 20, before me,, holas S. Mairs personally known to me (or proved to me on the person(s) whose name is/are subscribed to within the instrument ey executed the same in his/her/their authorized capacity, and that nent the person(s), or the entity upon behalf of which the person(s)
		WITNESS my hand and official seal.
		Signature of Notary Public
	Му	Commission Expires: