505334504 02/19/2019

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT5381285

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
JAMES D. REINKE	04/07/2015
XUSHENG ZHANG	04/15/2015
VINOD SHARMA	04/07/2015
VLADIMIR P. NIKOLSKI	04/07/2015
MICHAEL B. TERRY	04/13/2015
SCOTT A. HARELAND	04/07/2015
DANIEL L. HANSEN	04/07/2015
DONNA M. SALMI	04/07/2015

RECEIVING PARTY DATA

Name:	MEDTRONIC, INC. (CVG)
Street Address:	8200 CORAL SEA STREET NE.
Internal Address:	MS: MVC22
City:	MOUNDS VIEW
State/Country:	MINNESOTA
Postal Code:	55112

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	16278960

CORRESPONDENCE DATA

Fax Number:	(651)	367-0471		
•		e-mail address first; if that is unsuccessful, it will be sent nat is unsuccessful, it will be sent via US Mail.		
Phone:	763-5	526-0929		
Email:	mado	nna.schroeder@medtronic.com		
Correspondent Name:	MIC⊢	MICHAEL J. OSTROM		
Address Line 1:	8200 CORAL SEA STREET NE.			
Address Line 2:	MS: MVC22			
Address Line 4:	MINNEAPOLIS, MINNESOTA 55112			
ATTORNEY DOCKET NUMBER: C00007066.US01CON				
NAME OF SUBMITTER:	OF SUBMITTER: MADONNA M. SCHROEDER			

SIGNATURE:	/Madonna M. Schroeder/		
DATE SIGNED:	02/19/2019		
Total Attachments: 8			
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ASSIGNMENT OF APPLICATION(S)

Whereas I/we, the below named inventor(s), with residence and citizenship as indicated below, have made an invention in

PACE PULSE DETECTOR FOR AN IMPLANTABLE MEDICAL DEVICE

- 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 an application for a U.S. Provisional Application No. ; was filed on

for which above application claims priority to U.S. Provisional Patent Application No. 61/984,249; filed on April 25, 2014;

which application is identified as PCT International Patent Application No.; filed;

Whereas, <u>Medtronic, Inc.</u>, a corporation organized and existing under the laws of the State of Minnesota and having a principle place of business at <u>710 Medtronic Parkway N.E.</u>, <u>Minneapolis</u>, <u>Minnesota 55432-5604</u>, 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 therefore;

NOW, Therefore, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, we 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 application(s) identified above and in and to any application claiming benefit thereto 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 therefore including our rights under the International Convention for the Protection of Industrial Property, and in and to any and all extensions, divisions, continuations, continuations-in-part or reissues of said Letters Patent that may be granted, the same to be held and enjoyed by Corporation for its own use and benefit and use and benefit 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, including the right to enforce such Letters Patent as fully and entirely as the same would have been held and enjoyed by the assignors if this assignment had not been made; together with all claims by assignors for damages by reason of past infringement or for provisional rights and including the right to sue for, and collect the same for its own use and benefit, and for the use and benefit of its successors, assigns, and other legal representatives;

AND, for the consideration aforesaid, we materially represent to Corporation, its successors and assigns, that at the time of the execution and delivery of these presents, we are 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 we have good right and lawful authority to sell and convey the same in the manner herein set forth;

AND, for the consideration aforesaid, we 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 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 of extension of said Letters Patent is lawful and desirable, we, or our 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.

Assignment

Page 1 of 4 Attorney Docket No.: C00007066.USU2 Medtronic, Inc., 710 Medtronic Parkway, Minneapolis, MN 55432

I/We do hereby authorize and request the Commissioner of Patents to issue any and all Letters Patent which may be granted upon any of the said applications, to said Medtronic, Inc., as the assignee of the entire right, title, and interest therein.

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]): James D.	f any]): Family Name or Surname (last name): REINKE			
Inventor's Signature: Aarran D. Rank	1	Date: 4/7/-	SOLZ.	
City hold State: Maple Grove, Minnesota		Country: US	Citizenship: US	
STATE OF MINNESOTA)) ss. COUNTY OF RAMSEY)		Ded 2mm		
On this <u>HT</u> day of <u>HPul</u> and who executed the foregoing instrument, as sai	d person's fi	40/3, before ree act and deed, or	re me personally appeared the above-named, on the day and year aforesaid.	
(Seal) (S	~	Notary Public	Suisely	
	1			
Given Name (first and middle initial [if any]): Xusheng	Family Na ZHANG	ame or Surname (la	asi name):	
Inventor's Signature:		Date:	4/15/2015	
Residence (City and State): Shoreview, Minnesota		Country: US	Citizenship: US	
STATE OF MINNESOTA)) ss. COUNTY OF RAMSEY) On this 540 day of 400 and who executed the foregoing instrument, as sa	id person's f		re me personally appeared the above-named, on the day and year aforesaid.	
(Seal) MADONNA M. SCHROEDER Notary Public State of Minnesota My Commission Expires Jonuory 31, 2020			well	

Assignment

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Given Name (first and middle initial [if any]): Vinod	Family N SHARM	ame or Surname (last name): A	
Inventor's Signature:		Date: 4/7/20	
Residence (City and State): Maple Grove, Minnesota		Country: US	Citizenship: US
STATE OF MINNESOTA			
On this day of April 0	id person's f	, <u>24-15</u> before me persor ree act and deed, on the day ar	nally appeared the above-named , nd vear aforesaid.
(Seal) MADONNA M. SCHROEDI Notary Public State of Minnesota My Commission Expire: Jonuary 31, 2020	ER	Notary Public	la
Given Name (first and middle initial [if any]):	Family N	ame or Surname (last name):	
Vladimir P.	NIKÓLS	· · · ·	
Inventor's Signature: Leching P. Nibelflij		Date: 2015-04	
Residence (City and State): Blaine, Minnesota		Country: US	Citizenship: US
STATE OF MINNESOTA)) ss.			
COUNTY OF RAMSEY) On this 4 day of 4 pick and who executed the foregoing instrument, as sa		205, before me person	nally appeared the above-named,
(Seal) (S	R		
Given Name (first and middle initial [if any]):	Family N	ame or Surname (last name):	
Michael B.	TERRY	11330 OX CALINGSIN (3400 11031197).	
Inventor's Signature:		Date:	
Residence (City and State): Camas, Washington		Country: US	Citizenship: US
STATE OF WASHINGTON)			
COUNTY OF) ss.			
On this day of and who executed the foregoing instrument, as sa	id person's	, before me perso free act and deed, on the day a	nally appeared the above-named , nd year aforesaid.
(Seal)	*****	Notary Public	

Page 3 of 4 Medironic, Inc., 710 Medironic Parkway, Minneapolis, MN 55432

Attorney Docket No.: C00007066.USU2

Given Name (first and middle initial [if any]): Scott A.	Family No HAREL	ame or Surname (last name): AND	
Inventor's Signature:	.L	Date: Ø7 APR 2Ø15	
Residence (City and State): Lino Lakes, Minnesota		Country: US	Citizenship: US
STATE OF MINNESOTA)) ss.		<u>.</u>	
COUNTY OF RAMSEY) On this 44 day of 40 ultrastructure day of 40 ultrastructure day of 40 ultrastructure as sa	id person's f	2015, before me person ree act and deed, on the day a	nally appeared the above-named , nd year aforesaid.
(Seal) MADONNA M. SCHROEDER Notary Public State of Minnesota My Commission Expires January 31, 2020		Notary Public	<u>}</u>
Given Name (first and middle initial [if any]): Daniel L.	Family N HANSEP	ame or Sumame (last name): N	
Inventor's Signature: Daniel Z Hansa		Date: 4/7/2015	
Residence (City and State): Castle Rock, Colorado		Country: US	Citizenship: US
STATE OF COLORADO) MUNOM	(ms)		
COUNTY OF LANGUE	id nerson's f	, Diffuence me perso	nally appeared the above-named,
(Seal) (S	DER		
Given Name (first and middle initial [if any]): Donna M.	Family N SALMI	ame or Surname (last name):	
Inventor's Signature:		Date: 04/07/2015	
Residence (City and State): Minneapolis, Minnesota		Country: US	Citizenship: US
STATE OF MINNESOTA)) ss.			
COUNTY OF RAMSEY) On this 4 day of 4 Dill and who executed the foregoing instrument, as sa	id nerson's		nally appeared the above-named,
(Seal) (S	R		<u>A</u>

Page 4 of 4 Attorn Medtronic, Inc., 710 Medtronic Parkway, Minneapolis, MN 55432

Attorney Docket No.: C00007066.USU2

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Whereas I/we, the below named inventor(s), with residence and citizenship as indicated below, have made an invention in

PACE PULSE DETECTOR FOR AN IMPLANTABLE MEDICAL DEVICE

- for which an application for a United States Patent or a U.S. Provisional Application is being filed contemporaneously herewith;
- if for which an application for a United States Patent identified as U.S. Patent Application No.; was filed on
- for which an application for a U.S. Provisional Application No.
- for which above application claims priority to U.S. Provisional Patent Application No. 61/984,249; filed on April 25, 2014;

which application is identified as PCT International Patent Application No.; filed ;

Whereas, <u>Meditonic, Inc.</u>, a corporation organized and existing under the laws of the State of Minnesota and having a principle place of business at 710 Meditonic Parkway N.E., Minneapolis, Minnesota 55432-5604, 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 therefore;

NOW, Therefore, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, we 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 application(s) identified above and in and to any application claiming benefit thereto 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 therefore including our rights under the International Convention for the Protection of Industrial Property, and in and to any and all extensions, divisions, continuations, continuations-in-part or reissues of said Letters Patent that may be granted, the same to be held and enjoyed by Corporation for its own use and benefit and use and benefit 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, including the right to enforce such Letters Patent as fully and entirely as the same would have been made; together with all claims by assignors for damages by reason of past infringement or for provisional rights and including the right to sue for, and collect the same for its own use and benefit, and for the use and benefit of its successors, assigns, and other legal representatives;

AND, for the consideration aforesaid, we materially represent to Corporation, its successors and assigns, that at the time of the execution and delivery of these presents, we are 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 we have good right and lawful authority to sell and convey the same in the manner herein set forth;

AND, for the consideration aforesaid, we 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 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 of extension of said Letters Patent is lawful and desirable, we, or our 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.

Assignment

Page 1 of 4 Attorney Docket No.: C00007066.USU2 Meditronic, Inc., 710 Meditronic Parkway, Minneapolis, MN 55432

I/We do hereby authorize and request the Commissioner of Patents to issue any and all Letters Patent which may be granted upon any of the said applications, to said Medtronic, Inc., as the assignee of the entire right, title, and interest therein.

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]): James D.	Family Name or Surname (last name): REINKE				
Inventor's Signature.	's Signature:		Date:		
City and State: Maple Grove, Minnesota		Country: US	Citizenship US		
STATE OF MINNESOTA)) ss. COUNTY OF RAMSEY) On this day of and who executed the foregoing instrument, as sa	id person's l	, befic fee act and deed,	ire me personally appeared the above-named , on the day and year aforesaid.		
(Seal)		Notary Public			
Given Name (first and middle initial [if any]). Xusheng	Family N ZHANG	ame or Sumame (lest name):		
Inventor's Signature: Date:					
Residence (City and State): Shoreview, Minnesota		Country: US	Citizenship: US		
STATE OF MINNESOTA)) 58. COUNTY OF RAMSEY) On this day of and who executed the foregoing instrument, as sa	id person's f	,	re me personally appeared the above-named , on the day and year aforesaid.		
(Seal)		Notary Public			

Page 2 of 4 Attorney Docket No.: C00007066-USU2 Meditronic, Inc., 710 Meditronic Parkway, Minneapolis, MN 55432

Given Name (first and middle initial [if any]): Vinod	Family 3 SHARM	lame or Surname (last A	: name):		
Inventor's Signature:	mtor's Signature:		Date		
Residence (City and State): Maple Grove, Minnesola				Citizenship: US	
STATE OF MINNESOTA)) ss. COUNTY OF RAMSEY) On thisday of and who executed the foregoing instrument, as sc	aid person's	, before r free act and deed, on t	me person the day an	ally appeared the above-named . d year aforesaid.	
(Seal)		Notary Public			
Given Name (first and middle initial [if any]). Vladimir P.	Family N NIKOL	lame or Signame (last SKI	i name):		
Inventor's Signature:		Date:			
Residence (City and State): Blaine, Minnesota		Country: US		Citizenship: US	
On this day of and who executed the foregoing instrument, as sa	aid person's	free act and deed, on I	me person the day an	ally appeared the above-named ci year aforesaid.	
(Scal)		Notary Public			
Given Name (first and middle initial [if any]): Michael B.	Family ? TERRY	iame or Surname (last	(riame):		
Inventor's Signature Marka B Residence (City and State) Camas, Washington		Date: 4/13 Country: US	20	V.5 Citizenship: US	
STATE OF WASHINGTON) COUNTY OF (234) ss. On this 234 day Motary Annie and who executed the fi fteen of Allenheingtons . PAULA I LAWTON MY COMMISSION EXPIRES		<u>2015</u> before the formation of the forma	me person the day as	naliy appeared the above-named	
(Seal)		Notary Public	<u>A</u>	Jaw bon	

Page 3 of 4 Attorney Docket No : C00007065.USU2 Meditranic, Inc., 710 Meditranic Parkway, Minneapolis, MN 55432

Date:		
Country: US	Citizenship: US	
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d person's free act and deed, on	the day and year aforesaid.	-manace ,
Notary Public		
Family Name or Surname (las HANSEN	t name):	
Date		
Country: US	Citizenship: US	
d person's free act and deed, on	the day and year aforesaid.	-named ,
Notary Public		
Family Name or Surname (las	t name):	
Date:		
Country: US	Citizenship: US	
d person's free act and deed, on	me personally appeared the above the day and year aforesaid.	>named ,
Notary Public		~~
	US	US US

Page 4 of 4 Medironic, Inc., 710 Medironic Parkway, Minneapolis, MN 55432

Attorney Docket No.: C00007066 USU2

PATENT REEL: 048367 FRAME: 0498

RECORDED: 02/19/2019