PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT3027889

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
ASHUTOSH CHATURVEDI	09/12/2014
SIDDHARTH DANI	09/16/2014
TIMOTHY J. DENISON	09/15/2014
WILLIAM F. KAEMMERER	09/12/2014
SHAHRAM MALEKKHOSRAVI	09/12/2014
ERIC J. PANKEN	09/12/2014
BRANDON ZINGSHEIM	09/12/2014

RECEIVING PARTY DATA

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

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	14481379

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.

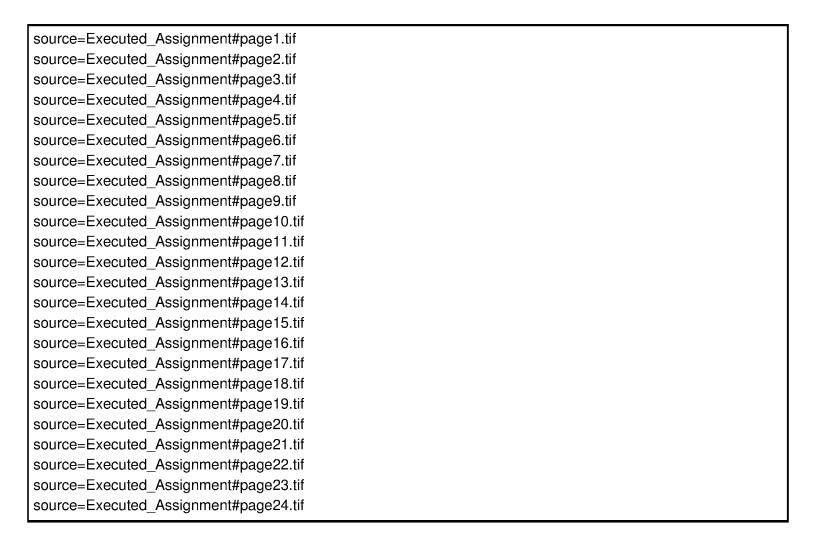
Phone: 651-735-1100

Email: pairdocketing@ssiplaw.com
Correspondent Name: SHUMAKER & SIEFFERT, P.A
Address Line 1: 1625 RADIO DRIVE, SUITE 300
Address Line 4: WOODBURY, MINNESOTA 55125

ATTORNEY DOCKET NUMBER:	1123-185US01/C00007325.US		
NAME OF SUBMITTER:	KAREN SORENSEN		
SIGNATURE:	/Karen Sorensen/		
DATE SIGNED:	09/18/2014		

Total Attachments: 24

PATENT
REEL: 033766 FRAME: 0276



PATENT REEL: 033766 FRAME: 0277 Attorney Docket No.: 1123-185US01/C00007325.USU1

ASSIGNMENT OF APPLICATION(S)

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

	THERAPY PROGRAM SELECTION FOR ELECTRICAL STIMULATION THERAPY BASED ON A VOLUME OF TISSUE ACTIVATION
	for which an application for a United States Patent or a U.S. Provisional Application is being filed contemporaneously herewith;
\boxtimes	for which an application for a United States Patent identified as U.S. Patent Application No. 14/481,379; was filed on September 9, 2014;
	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
	which application is identified as PCT International Patent Application No; filed;
ha rei Ui	Whereas, <u>Medtronic, Inc.</u> , a corporation organized and existing under the laws of the State of Minnesota and existing a principle place of business at <u>710 Medtronic Parkway N.E., Minneapolis, Minnesota 55432-5604</u> , hereinafted to as "Corporation," is desirous of acquiring the entire right, title and interest in and to said invention for the inited States and for all foreign countries and in and to any and all foreign and domestic Letters Patent which may be anted 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

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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/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]): Ashutosh	Family Name or Surname (last name): Chaturvedi			
Inventor's Signature.	Date: 9/12/2	2014		
City and State:	Country:	Citizenship:		
Blaine, Minnesota	USA	USA		
On this day of Sept M Back On this day of Sept M Back John fosh Chartay wed; and who executed the year aforesaid. KARLA K. WEIS Notary Public State of Minnesota My Commission Expiring January 31, 2020	Sal Salfa	peared the above-named erson's free act and deed, on the day and		

Given Name (first and middle initial [if any]): Siddharth	Family Name or Surname (last name): Dani			
Inventor's Signature:		Date:		
Residence (City and State):		Country: Citizenship: India		
Minneapolis, Minnesota	Minneapolis, Minnesota		India	
STATE OF MINNESOTA)) ss. COUNTY OF ANOKA) On this day of, 2014, before me personally appeared the above-named				
aforesaid.	oing instrun	nent, as said person'	s free act and deed, on the day and year	
(Seal)		Notary Public		

Given Name (first and middle initial [if any]): Timothy J.	Family Name or Surname (last name): Denison			
Inventor's Signature:		Date:		
Residence (City and State):		Country:	Citizenship:	
Minneapolis, Minnesota		USA	USA	į
STATE OF MINNESOTA)) ss. COUNTY OF ANOKA) On this day of and who executed the foregoing instrument, as sa	_, 2014, befo	ore me personally a free act and deed, or	appeared the above-named on the day and year aforesaid.	
(Seal)		Notary Public		

Page 4 of 8 Attorney Docket No. 1123-185US01/C00007325.USU1 Medironic, Inc., 710 Medironic Parkway, Minneapolis, MN 55432

Given Name (first and middle initial [if any]): William F.			
Inventor's Signature:	Date:		
Residence (City and State): Edina, Minnesota	Country: USA	Citizenship: USA	
STATE OF MINNESOTA)) ss. COUNTY OF ANOKA) On this day of, 20 who executed the foregoing instrument, as said po	014, before me personally appear erson's free act and deed, on the o	red the above-named, and day and year aforesaid.	
(Seal)	Notary Public		

Given Name (first and middle initial [if any]):	Family Name or Surname (last name):			
Shahram (Malekkho	sravi		
Inventor's Signature:		Date:	9/12	114
Residence (City and State):		Country:	/	Citizenship:
Maple Grove, Minnesota		USA	,	USA
STATE OF MINNESOTA) SS. COUNTY OF ANOKA On this 12 day of Suplemble Throm Malekhus, and who executed the fores aforesaid.	2014, befor	re me persona ment, as said	lly appeared the a	above-named and deed, on the day and year
(Seal) KARLA K. WEIS Notary Public State of Minnesote My Commission Expir Jonuary 31, 2020	85	Notary Publ	das.	mir

Given Name (first and middle initial [if any]): Eric J.	Family Name or Surname (last name): Panken			
Inventor's Signature:	•	Date:	12014	
Residence (City and State):		Country:		Citizenship:
Edina, Minnesota		USA		USA
STATE OF MINNESOTA)) ss. COUNTY OF ANOKA) On this (2 th day of Sink M Ber, Enc Panken), and who executed the foregatives aforesaid.	, 2014, befor	re me personally ment, as said pe	/ appeared the arson's free act	above-named and deed, on the day and year
(Seal) KARLA K. WEIS Notary Public State of Minnesot My Commission Exp. January 31, 202	HOS '	Notary Public	ich	W.

Given Name (first and middle initial [if any]): Brandon Family Name or Surname (last name): Zingsheim			
Inventor's Signature:	Date: 9/12/14		
Residence (City and State):	Country:	Citizenship:	
Circle Pines, Minnesota	USA	USA	
On this Dy day of Sperble Grandon Zingsheimand who executed the fore aforesaid. KARLA K. WEIS	, 2014, before me personally appe going instrument, as said person's	eared the above-named sifree act and deed, on the day and year	
(Seal) Notary Public State of Minnesota My Commission Expire January 31, 2020	Notary Public	et m	

Attorney Docket No.: 1123-185US01/C00007325.USU1

ASSIGNMENT OF APPLICATION(S)

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

THERAPY	PROGRAM SELECTION FOR ELECTRICAL STIMULATION THERAI OF TISSUE ACTIVATION	PY BASED ON A VOLUME	
	an application for a United States Patent or a U.S. Provisional Application raneously herewith;	on is being filed	
	an application for a United States Patent identified as U.S. Patent Applicable 19, 2014;	ation No. 14/481,379; was	filed
for which	an application for a U.S. Provisional Application No.	; was filed on	_;
	above application claims priority to U.S. Provisional Patent Application	No	ــ
which app	plication is identified as PCT International Patent Application No.	; filed	_;
having a prin	reas, Medtronic, Inc., a corporation organized and existing under the least place of business at 710 Medtronic Parkway N.E., Minneapolis, 1 "Corporation," is desirous of acquiring the entire right, title and interest and for all foreign countries and in and to any and all foreign and don fore;	Minnesota 55432-5604, her est in and to said invention	einafter for the

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

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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/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]): Ashutosh	Family Name or Surname (last name): Chaturvedi		
Inventor's Signature:		Date:	
City and State: Blaine, Minnesota		Country: USA	Citizenship: USA
STATE OF MINNESOTA)) ss. COUNTY OF ANOKA) On this day of, and who executed the year aforesaid.			appeared the above-named person's free act and deed, on the day and
(Scal)		Notary Public	

Page 2 of 8 Attorney Docket No. 1123-185US01/C00007325.USU1 Medtronic, Inc., 710 Medtronic Parkway, Minneapolls, MN 55432

Given Name (first and middle initial [if any]): Siddharth	Family Name or Surname (last name): Dani			
Inventor's Signature:	Date:	September	16, 2014	
Residence (City and State):	Country:	Citizer	ıship:	
Minneapolis, Minnesota	USA	India		
STATE OF MINNESOTA)) ss. COUNTY OF ANOKA) On this \(\leftarrow{local}{local} \) On this \(\leftarrow{local}{local} \) ANI , and who executed the forego aforesaid.	, 2014, before me pe ing instrument, as said	rsonally appeared the abov person's free act and deed,	e-named / SIDDHARTH on the day and year	
(Seal) RAMONA SLY NOTARY PUBLIC MINNESOTA My Commission Explies Jan. 31, 2018	Rotary Pu	one Sly	·	

Given Name (first and middle initial [if any]):	Family Name or Surname (last name):			
Timothy J.	Denison			
Inventor's Signature:	Date:	5 Sept 2014		
Residence (City and State):	Country:	Citizenship:		
Minneapolis, Minnesota	USA	USA		
STATE OF MINNESOTA)) ss. COUNTY OF ANOKA) On this 15 day of 5とりたいのとR and who executed the foregoing instrument, as sai	, 2014, before me persona d person's free act and dee	lly appeared the above-named II M I)ENISON	
(Seal) RAMONA SLY NOTARY PUBLIC MINNESOTA My Commission Expires Jan. 31, 20		na Sley	_	

Given Name (first and middle initial [if any]): William F.	Family Name or Surname (last name): Kaemmerer		
Inventor's Signature:	Date:		
Residence (City and State): Edina, Minnesota	Country: USA	Citizenship: USA	
STATE OF MINNESOTA)) ss. COUNTY OF ANOKA) On this day of, 2i who executed the foregoing instrument, as said p	014, before me personally appeare erson's free act and deed, on the d	ed the above-named, and ay and year aforesaid.	
(Seal)	Notary Public		

Given Name (first and middle initial [if any]): Shahram	Family Name or Surname (last name): Malekkhosravi		
Inventor's Signature:	Date:		
Residence (City and State): Maple Grove, Minnesota	Country: USA	Citizenship: USA	
STATE OF MINNESOTA)) ss. COUNTY OF ANOKA) On this day of, and who executed the fore	, 2014, before me personally appe	eared the above-named s free act and deed, on the day and year	
aforesaid.			
(Seal)			
	Notary Public		

Given Name (first and middle initial [if any]): Eric J.	d middle initial [if any]): Family Name or Surname (last name): Panken		
Inventor's Signature:	Date:		
Residence (City and State): Edina, Minnesota	Country: USA	Citizenship: USA	
STATE OF MINNESOTA)) ss. COUNTY OF ANOKA) On this day of, and who executed the fore aforesaid.	, 2014, before me personally appe egoing instrument, as said person's	eared the above-named s free act and deed, on the day and year	
(Seal)	Notary Public		

Given Name (first and middle initial [if any]): Brandon	Family Name or Surname (last name): Zingsheim		
Inventor's Signature:	Date:		
Residence (City and State): Circle Pines, Minnesota	Country: USA	Citizenship: USA	
STATE OF MINNESOTA)) ss. COUNTY OF ANOKA) On this day of, and who executed the fore aforesaid.	, 2014, before me person going instrument, as said	nally appeared the above-named d person's free act and deed, on the day and year	
(Seal)	Notary Pu	ıblic	

Attorney Docket No.: 1123-185US01/C00007325.USU1

ASSIGNMENT OF APPLICATION(S)

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

THERAPY PROGRAM SELECTION FOR ELECTRICAL STIMULATION THERAPY BASED ON A VOLUME

	OF TISSUE ACTIVATION	
	for which an application for a United States Patent or a U.S. Provisional Application is being filed contemporaneously herewith;	
\boxtimes	for which an application for a United States Patent identified as U.S. Patent Application No. 14/481,379; was a on September 9, 2014;	filed
	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;	ِ د
	which application is identified as PCT International Patent Application No; filed;	ı I
ref Ur	Whereas, <u>Medtronic</u> , <u>Inc.</u> , a corporation organized and existing under the laws of the State of Minneson a principle place of business at <u>710 Medtronic Parkway N.E.</u> , <u>Minneapolis</u> , <u>Minnesota 55432-5604</u> , here ferred to as "Corporation," is desirous of acquiring the entire right, title and interest in and to said invention in the states and for all foreign countries and in and to any and all foreign and domestic Letters Patent which manted therefore;	inafter for the

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

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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/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]): Ashutosh	Family Name or Surname (last name): Chaturvedi		
Inventor's Signature:		Date:	
City and State: Blaine, Minnesota	•	Country: USA	Citizenship: USA
STATE OF MINNESOTA)) ss. COUNTY OF ANOKA) On this day of, and who executed the year aforesaid.			appeared the above-named person's free act and deed, on the day and
(Seal)		Notary Public	

Given Name (first and middle initial [if any]): Siddharth	Family Name or Surname (last name): Dani			
Inventor's Signature:		Date:		
Residence (City and State): Minneapolis, Minnesota		Country: USA		Citizenship: India
STATE OF MINNESOTA)) ss. COUNTY OF ANOKA) On this day of, and who executed the foregona foresaid.		efore me personally ap aent, as said person's fr		
(Seal)		Notary Public		

Given Name (first and middle initial [if any]): Timothy J.	Family Name or Surname (last name): Denison			
Inventor's Signature:		Date:		
Residence (City and State):		Country:	Citizenship:	
Minneapolis, Minnesota		USA	USA	
STATE OF MINNESOTA)) ss. COUNTY OF ANOKA) On this day of, 2014, before me personally appeared the above-named, and who executed the foregoing instrument, as said person's free act and deed, on the day and year aforesaid.				
(Seal)		Notary Public	·	

Given Name (first and middle initial [if any]): William F.	Family Name Kaemmerer	or Surname (la	st name):	
Inventor's Signature: Kulenmere	Da	te: Sept	+ 1Z,	204
Residence (City and State):	Co	untry:		Citizenship:
Edina, Minnesota	US	A		USA
STATE OF MINNESOTA)) ss. COUNTY OF ANOKA) On this 12 day of 5eptember, 2014, before me personally appeared the above-named who executed the foregoing instrument, as said person's free act and deed, on the day and year aforesaid. MARY P. BAUMAN				

REEL: 033766 FRAME: 0298

Given Name (first and middle initial [if any]): Shahram	Family Name or Surname (last name): Malekkhosravi			
Inventor's Signature:		Date:		
Residence (City and State): Maple Grove, Minnesota		Country: USA	Citizenship: USA	
STATE OF MINNESOTA)) ss. COUNTY OF ANOKA) On this day of, 2014, before me personally appeared the above-named				
, and who executed the foregoing instrument, as said person's free act and deed, on the day and year aforesaid.				
(Seal)		Notary Public		

Given Name (first and middle initial [if any]): Eric J.	Family Name or Surname (last name): Panken				
Inventor's Signature:	Date:				
Residence (City and State): Edina, Minnesota	Country: USA	Citizenship: USA			
STATE OF MINNESOTA) On this day of 2014, before me personally appeared the above-named and who executed the foregoing instrument, as said person's free act and deed, on the day and year aforesaid.					
(Seal)	Notary Public				

Given Name (first and middle initial [if any]): Brandon	Family Name or Surname (last name): Zingsheim				
Inventor's Signature:	Date:				
Residence (City and State):	Country:	Citizenship:			
Circle Pines, Minnesota	USA	USA			
STATE OF MINNESOTA) State of Minnesota)					
(Seal)	Notary Public				

Assignment

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PATENT REEL: 033766 FRAME: 0301