

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
 Stylesheet Version v1.2

EPAS ID: PAT8080527

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT
CONVEYING PARTY DATA	
Name	Execution Date
ASHISH GANGWAR	03/01/2017
KANISHK SETHI	03/01/2017
ANUP KUMAR	03/01/2017
RYAN SELLMAN	03/09/2017
PETER STERRANTINO	02/27/2017
MANOJ KUMAR SINGH	07/10/2017
RECEIVING PARTY DATA	
Name:	STRYKER EUROPEAN HOLDINGS I, LLC
Street Address:	2825 AIRVIEW BOULEVARD
City:	KALAMAZOO
State/Country:	MICHIGAN
Postal Code:	49002
PROPERTY NUMBERS Total: 1	
Property Type	Number
Application Number:	18226856
CORRESPONDENCE DATA	
Fax Number:	(816)753-1536
<i>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.</i>	
Phone:	8167531000
Email:	uspt@polsinelli.com, dcarrera@polsinelli.com
Correspondent Name:	POLSINELLI PC
Address Line 1:	PO BOX 140310
Address Line 4:	KANSAS CITY, MISSOURI 64114-0310
ATTORNEY DOCKET NUMBER:	065618-764037
NAME OF SUBMITTER:	DONNA CARRERA
SIGNATURE:	/Donna Carrera for Josh Pranckun/
DATE SIGNED:	07/27/2023
Total Attachments: 6	

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INVENTION AND PATENT ASSIGNMENT FOR PROVISIONAL APPLICATION
(by Inventor)

This INVENTION AND PATENT ASSIGNMENT (this "Assignment"), effective the 8 day of mar, 2017, is made by Ashish Gangwar, having an address of Stryker Global Technology Center, Vatika Business Park, Sohna Rd, Sector 49, Gurgaon, Haryana, India 122001, hereafter referred to as assignor, ("Assignor").

WHEREAS Assignor has invented certain new and useful improvements in:

**METHODS OF LATERAL AND ANTEROPOSTERIOR POSE ESTIMATION OF 3D BONE MODELS IN
SURGICAL PLANNING A TOTAL ANKLE REPLACEMENT ("the Invention")**

[X] for which a provisional application was filed on 5-3-2017, in the country of United States Application Number 62/500,823
("the Application")

[] for which a provisional application for the country of _____ was executed by _____ on _____
("the Application")

WHEREAS, Assignor wishes to assign to STRYKER EUROPEAN HOLDINGS I, LLC, limited liability company incorporated under the laws of the State of Delaware, having its principal place of business at 2825 Airview Boulevard, Kalamazoo, MI 49002, United States of America, acting in its capacity as sole general partner of STRYKER EUROPEAN TECHNOLOGIES C.V., a limited partnership established under the laws of the Netherlands ("commanditaire vennootschap"), having its registered office at Canon's Court, 22 Victoria Street, Hamilton, HM 12, Bermuda ("Assignee"), and Assignee wishes to acquire, the entire right, title, and interest to the Invention and the Application;

NOW, THEREFORE, for good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, Assignor hereby sells, assigns, transfers and sets over to Assignee, and Assignee hereby accepts, the entire right, title and interest, for the United States of America and all other countries, in and to the Invention and the Application and all original, divisional, continuation, continuation-in-part, substitute or reissue applications and patents applied for or granted therefor in the United States of America and all other countries for the Invention, including without limitation all applications and patents for the Invention claiming priority or benefit of the Application pursuant to any law or treaty, and including all claims for damages by reason of past infringement with the right to sue for and collect the same for its own use and the use of its successors, assigns and legal representatives, and including the right to claim such priority or benefit, and the Commissioner of Patents and Trademarks and the Patent Office officials in foreign countries as are duly authorized by the respective foreign patent laws to issue patents are hereby authorized and requested to issue all patents on said improvements or resulting therefrom to Assignee, as assignee of the entire interest therein; and the Assignor does hereby agree and covenant without further remuneration, to execute and deliver all original, divisional, continuation, continuation-in-part, reissue and other applications for Letters Patent on the Invention and all assignments thereof to Assignee or its assigns, to communicate to Assignee or its representatives all facts known to the undersigned respecting the Invention, whenever requested, to testify in any interferences or other legal proceedings in which the Application and any related applications or patents may become involved, to sign all lawful papers, make all rightful oaths, and to do generally everything necessary to aid Assignee, its successors, assigns and nominees to obtain patent protection for said improvements in all countries, the expenses incident to said applications to be borne and paid by Assignee.

Assignor does hereby authorize its attorneys, and/or Assignee's attorneys, to insert on this Assignment the filing date and application number of the Application when known.

ASSIGNOR

By: Ashish
Printed: Ashish Gangwar
Title: Inventor
Date: 01-03-2017

WITNESS

By: ANUP
Printed: ANUP KUMAR
Title: _____
Date: 01-03-2017

ASSIGNEE

By: Robert J. Leonard
Printed: Robert J. Leonard
Title: IP Agent
Date: 08 MAR 2017

WITNESS

By: Ashley Saleiro
Printed: Ashley Saleiro
Title: IP Coordinator
Date: 8 MAR 2017

INVENTION AND PATENT ASSIGNMENT FOR PROVISIONAL APPLICATION
(by Inventor)

This INVENTION AND PATENT ASSIGNMENT (this "Assignment"), effective the 8 day of MAR, 2017, is made by **Kanishk Sethi**, having an address of **Stryker Global Technology Center, Block-2, Vatika Business Park, Sector-49, Sohna Road, Gurgaon, Haryana, India 122002**, hereafter referred to as assignor, ("Assignor").

WHEREAS Assignor has invented certain new and useful improvements in:

**METHODS OF LATERAL AND ANTEROPOSTERIOR POSE ESTIMATION OF 3D BONE MODELS IN
SURGICAL PLANNING A TOTAL ANKLE REPLACEMENT** ("the Invention")

[X] for which a provisional application was filed on 5-3-2017, in the country of United States Application Number 62/500,823
("the Application")

[] for which a provisional application for the country of _____ was executed by _____ on _____
("the Application")

WHEREAS, Assignor wishes to assign to STRYKER EUROPEAN HOLDINGS I, LLC, limited liability company incorporated under the laws of the State of Delaware, having its principal place of business at 2825 Airview Boulevard, Kalamazoo, MI 49002, United States of America, acting in its capacity as sole general partner of STRYKER EUROPEAN TECHNOLOGIES C.V., a limited partnership established under the laws of the Netherlands ("commanditaire vennootschap"), having its registered office at Canon's Court, 22 Victoria Street, Hamilton, HM 12, Bermuda ("Assignee"), and Assignee wishes to acquire, the entire right, title, and interest to the Invention and the Application;

NOW, THEREFORE, for good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, Assignor hereby sells, assigns, transfers and sets over to Assignee, and Assignee hereby accepts, the entire right, title and interest, for the United States of America and all other countries, in and to the Invention and the Application and all original, divisional, continuation, continuation-in-part, substitute or reissue applications and patents applied for or granted therefor in the United States of America and all other countries for the Invention, including without limitation all applications and patents for the Invention claiming priority or benefit of the Application pursuant to any law or treaty, and including all claims for damages by reason of past infringement with the right to sue for and collect the same for its own use and the use of its successors, assigns and legal representatives, and including the right to claim such priority or benefit, and the Commissioner of Patents and Trademarks and the Patent Office officials in foreign countries as are duly authorized by the respective foreign patent laws to issue patents are hereby authorized and requested to issue all patents on said improvements or resulting therefrom to Assignee, as assignee of the entire interest therein; and the Assignor does hereby agree and covenant without further remuneration, to execute and deliver all original, divisional, continuation, continuation-in-part, reissue and other applications for Letters Patent on the Invention and all assignments thereof to Assignee or its assigns, to communicate to Assignee or its representatives all facts known to the undersigned respecting the Invention, whenever requested, to testify in any interferences or other legal proceedings in which the Application and any related applications or patents may become involved, to sign all lawful papers, make all rightful oaths, and to do generally everything necessary to aid Assignee, its successors, assigns and nominees to obtain patent protection for said improvements in all countries, the expenses incident to said applications to be borne and paid by Assignee.

Assignor does hereby authorize its attorneys, and/or Assignee's attorneys, to insert on this Assignment the filing date and application number of the Application when known.

ASSIGNOR

By: *Kanishk Sethi*
Printed: Kanishk Sethi
Title: Inventor
Date: 1-03-2017

WITNESS

By: *Ashish Gangwar*
Printed: ASHISH GANGWAR
Title: _____
Date: 1-03-2017

ASSIGNEE

By: *Robert J. Leonard*
Printed: Robert J. Leonard
Title: IP Agent
Date: 08 MAR 2017

WITNESS

By: *Ashley Salervo*
Printed: Ashley Salervo
Title: IP Coordinator
Date: 8 MAR 2017

INVENTION AND PATENT ASSIGNMENT FOR PROVISIONAL APPLICATION
(by Inventor)

This INVENTION AND PATENT ASSIGNMENT (this "Assignment"), effective the 8 day of mar, 2017, is made by **Anup Kumar**, having an address of **Stryker Global Technology Center, Vatika Business Park, Sohna Rd, Sector 49, Gurgaon, Haryana, India 122001**, hereafter referred to as assignor, ("Assignor").

WHEREAS Assignor has invented certain new and useful improvements in:

**METHODS OF LATERAL AND ANTEROPOSTERIOR POSE ESTIMATION OF 3D BONE MODELS IN
SURGICAL PLANNING A TOTAL ANKLE REPLACEMENT ("the Invention")**

[X] for which a provisional application was filed on 5-3-2017 in the country of United States Application Number 62/500,823
("the Application")

[] for which a provisional application for the country of _____ was executed by _____ on _____
("the Application")

WHEREAS, Assignor wishes to assign to STRYKER EUROPEAN HOLDINGS I, LLC, limited liability company incorporated under the laws of the State of Delaware, having its principal place of business at 2825 Airview Boulevard, Kalamazoo, MI 49002, United States of America, acting in its capacity as sole general partner of STRYKER EUROPEAN TECHNOLOGIES C.V., a limited partnership established under the laws of the Netherlands ("commanditaire vennootschap"), having its registered office at Canon's Court, 22 Victoria Street, Hamilton, HM 12, Bermuda ("Assignee"), and Assignee wishes to acquire, the entire right, title, and interest to the Invention and the Application;

NOW, THEREFORE, for good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, Assignor hereby sells, assigns, transfers and sets over to Assignee, and Assignee hereby accepts, the entire right, title and interest, for the United States of America and all other countries, in and to the Invention and the Application and all original, divisional, continuation, continuation-in-part, substitute or reissue applications and patents applied for or granted therefor in the United States of America and all other countries for the Invention, including without limitation all applications and patents for the Invention claiming priority or benefit of the Application pursuant to any law or treaty, and including all claims for damages by reason of past infringement with the right to sue for and collect the same for its own use and the use of its successors, assigns and legal representatives, and including the right to claim such priority or benefit, and the Commissioner of Patents and Trademarks and the Patent Office officials in foreign countries as are duly authorized by the respective foreign patent laws to issue patents are hereby authorized and requested to issue all patents on said improvements or resulting therefrom to Assignee, as assignee of the entire interest therein; and the Assignor does hereby agree and covenant without further remuneration, to execute and deliver all original, divisional, continuation, continuation-in-part, reissue and other applications for Letters Patent on the Invention and all assignments thereof to Assignee or its assigns, to communicate to Assignee or its representatives all facts known to the undersigned respecting the Invention, whenever requested, to testify in any interferences or other legal proceedings in which the Application and any related applications or patents may become involved, to sign all lawful papers, make all rightful oaths, and to do generally everything necessary to aid Assignee, its successors, assigns and nominees to obtain patent protection for said improvements in all countries, the expenses incident to said applications to be borne and paid by Assignee.

Assignor does hereby authorize its attorneys, and/or Assignee's attorneys, to insert on this Assignment the filing date and application number of the Application when known.

ASSIGNOR

By: [Signature]
Printed: Anup Kumar
Title: Inventor
Date: 1-03-2017

WITNESS

By: [Signature]
Printed: ASHISH GANGWAR
Title: _____
Date: 1-03-2017

ASSIGNEE

By: [Signature]
Printed: Robert J. Leonard
Title: IP Agent
Date: 08 Mar 2017

WITNESS

By: [Signature]
Printed: Ashley Salerno
Title: IP Coordinator
Date: 8 Mar 2017

INVENTION AND PATENT ASSIGNMENT FOR PROVISIONAL APPLICATION (by Inventor)

This INVENTION AND PATENT ASSIGNMENT (this "Assignment"), effective the 20 day of March, 2017, is made by **Ryan Sellman**, having an address of **Stryker Orthopaedics, 325 Corporate Drive, Mahwah, New Jersey 07430 USA**, hereafter referred to as assignor, ("Assignor").

WHEREAS Assignor has invented certain new and useful improvements in:

METHODS OF LATERAL AND ANTEROPOSTERIOR POSE ESTIMATION OF 3D BONE MODELS IN SURGICAL PLANNING A TOTAL ANKLE REPLACEMENT ("the Invention")

[X] for which a provisional application was filed on 5-3-2017 in the country of United States Application Number 62/500,823
("the Application")

[] for which a provisional application for the country of _____ was executed by _____ on _____
("the Application")

WHEREAS, Assignor wishes to assign to STRYKER EUROPEAN HOLDINGS I, LLC, limited liability company incorporated under the laws of the State of Delaware, having its principal place of business at 2825 Airview Boulevard, Kalamazoo, MI 49002, United States of America, acting in its capacity as sole general partner of STRYKER EUROPEAN TECHNOLOGIES C.V., a limited partnership established under the laws of the Netherlands ("commanditaire vennootschap"), having its registered office at Canon's Court, 22 Victoria Street, Hamilton, HM 12, Bermuda ("Assignee"), and Assignee wishes to acquire, the entire right, title, and interest to the Invention and the Application;

NOW, THEREFORE, for good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, Assignor hereby sells, assigns, transfers and sets over to Assignee, and Assignee hereby accepts, the entire right, title and interest, for the United States of America and all other countries, in and to the Invention and the Application and all original, divisional, continuation, continuation-in-part, substitute or reissue applications and patents applied for or granted therefor in the United States of America and all other countries for the Invention, including without limitation all applications and patents for the Invention claiming priority or benefit of the Application pursuant to any law or treaty, and including all claims for damages by reason of past infringement with the right to sue for and collect the same for its own use and the use of its successors, assigns and legal representatives, and including the right to claim such priority or benefit, and the Commissioner of Patents and Trademarks and the Patent Office officials in foreign countries as are duly authorized by the respective foreign patent laws to issue patents are hereby authorized and requested to issue all patents on said improvements or resulting therefrom to Assignee, as assignee of the entire interest therein; and the Assignor does hereby agree and covenant without further remuneration, to execute and deliver all original, divisional, continuation, continuation-in-part, reissue and other applications for Letters Patent on the Invention and all assignments thereof to Assignee or its assigns, to communicate to Assignee or its representatives all facts known to the undersigned respecting the Invention, whenever requested, to testify in any interferences or other legal proceedings in which the Application and any related applications or patents may become involved, to sign all lawful papers, make all rightful oaths, and to do generally everything necessary to aid Assignee, its successors, assigns and nominees to obtain patent protection for said improvements in all countries, the expenses incident to said applications to be borne and paid by Assignee.

Assignor does hereby authorize its attorneys, and/or Assignee's attorneys, to insert on this Assignment the filing date and application number of the Application when known.

ASSIGNOR

By: [Signature]
Printed: Ryan Sellman
Title: Inventor
Date: 3/9/2017

STATE OF NJ)
COUNTY OF Bergen) : ss.

The person whose name is subscribed to the accompanying instrument is personally known to me or has proved his/her identity to me on the basis of satisfactory evidence. On 9 MAR 2017, he/she appeared before me and acknowledged that he/she has read the accompanying instrument and knows the contents thereof, and that he/she executed the same as their free act and deed for the purposes set forth therein. If he/she is acting on behalf of an entity, he/she also acknowledged that he/she executed the accompanying instrument in his/her authorized capacity, and that by his/her signature on the instrument, the entity executed the same.

Ashley M. Salerno
NOTARY PUBLIC
Residing at Passaic County

My Commission Expires: ASHLEY M. SALERNO
NOTARY PUBLIC OF NEW JERSEY
My Commission Expires 7/31/2018

ASSIGNEE

By: [Signature]
Printed: Robert J. Leonard
Title: IP Agent
Date: 20 MAR 2017

STATE OF NJ)
COUNTY OF Bergen) : ss.

The person whose name is subscribed to the accompanying instrument is personally known to me or has proved his/her identity to me on the basis of satisfactory evidence. On MAR. 20 2017, he/she appeared before me and acknowledged that he/she has read the accompanying instrument and knows the contents thereof, and that he/she executed the same as their free act and deed for the purposes set forth therein. If he/she is acting on behalf of an entity, he/she also acknowledged that he/she executed the accompanying instrument in his/her authorized capacity, and that by his/her signature on the instrument, the entity executed the same.

Ashley M. Salerno
NOTARY PUBLIC
Residing at Passaic County

My Commission Expires: ASHLEY M. SALERNO
NOTARY PUBLIC OF NEW JERSEY

PATENT

REEL: 064399 FRAME: 0477

INVENTION AND PATENT ASSIGNMENT FOR PROVISIONAL APPLICATION (by Inventor)

This INVENTION AND PATENT ASSIGNMENT (this "Assignment"), effective the 27 day of Feb, 2017, is made by **Peter Sterrantino**, having an address of **Stryker Orthopaedics, 325 Corporate Drive, Mahwah, New Jersey 07430 USA**, hereafter referred to as assignor, ("Assignor").

WHEREAS Assignor has invented certain new and useful improvements in:

METHODS OF LATERAL AND ANTEROPOSTERIOR POSE ESTIMATION OF 3D BONE MODELS IN SURGICAL PLANNING A TOTAL ANKLE REPLACEMENT ("the Invention")

[X] for which a provisional application was filed on 5-3-2017 in the country of United States Application Number 62/500,823
("the Application")

[] for which a provisional application for the country of _____ was executed by _____ on _____
("the Application")

WHEREAS, Assignor wishes to assign to STRYKER EUROPEAN HOLDINGS I, LLC, limited liability company incorporated under the laws of the State of Delaware, having its principal place of business at 2825 Airview Boulevard, Kalamazoo, MI 49002, United States of America, acting in its capacity as sole general partner of STRYKER EUROPEAN TECHNOLOGIES C.V., a limited partnership established under the laws of the Netherlands ("commanditaire vennootschap"), having its registered office at Canon's Court, 22 Victoria Street, Hamilton, HM 12, Bermuda ("Assignee"), and Assignee wishes to acquire, the entire right, title, and interest to the Invention and the Application;

NOW, THEREFORE, for good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, Assignor hereby sells, assigns, transfers and sets over to Assignee, and Assignee hereby accepts, the entire right, title and interest, for the United States of America and all other countries, in and to the Invention and the Application and all original, divisional, continuation, continuation-in-part, substitute or reissue applications and patents applied for or granted therefor in the United States of America and all other countries for the Invention, including without limitation all applications and patents for the Invention claiming priority or benefit of the Application pursuant to any law or treaty, and including all claims for damages by reason of past infringement with the right to sue for and collect the same for its own use and the use of its successors, assigns and legal representatives, and including the right to claim such priority or benefit, and the Commissioner of Patents and Trademarks and the Patent Office officials in foreign countries as are duly authorized by the respective foreign patent laws to issue patents are hereby authorized and requested to issue all patents on said improvements or resulting therefrom to Assignee, as assignee of the entire interest therein; and the Assignor does hereby agree and covenant without further remuneration, to execute and deliver all original, divisional, continuation, continuation-in-part, reissue and other applications for Letters Patent on the Invention and all assignments thereof to Assignee or its assigns, to communicate to Assignee or its representatives all facts known to the undersigned respecting the Invention, whenever requested, to testify in any interferences or other legal proceedings in which the Application and any related applications or patents may become involved, to sign all lawful papers, make all rightful oaths, and to do generally everything necessary to aid Assignee, its successors, assigns and nominees to obtain patent protection for said improvements in all countries, the expenses incident to said applications to be borne and paid by Assignee.

Assignor does hereby authorize its attorneys, and/or Assignee's attorneys, to insert on this Assignment the filing date and application number of the Application when known.

ASSIGNOR

By: [Signature]
Printed: Peter Sterrantino
Title: Inventor
Date: 2/27/17

STATE OF NJ)
COUNTY OF Bergen : ss.

The person whose name is subscribed to the accompanying instrument is personally known to me or has proved his/her identity to me on the basis of satisfactory evidence. On 27-Feb-17, he/she appeared before me and acknowledged that he/she has read the accompanying instrument and knows the contents thereof, and that he/she executed the same as their free act and deed for the purposes set forth therein. If he/she is acting on behalf of an entity, he/she also acknowledged that he/she executed the accompanying instrument in his/her authorized capacity, and that by his/her signature on the instrument, the entity executed the same.

Ashley M Salerno
NOTARY PUBLIC
Residing at Passaic County

My Commission Expires: _____
NOTARY PUBLIC OF NEW JERSEY
My Commission Expires 7/31/2018

ASSIGNEE

By: [Signature]
Printed: Robert Leonard
Title: IP Agent
Date: 27 FEB 2017

STATE OF NJ)
COUNTY OF Bergen : ss.

The person whose name is subscribed to the accompanying instrument is personally known to me or has proved his/her identity to me on the basis of satisfactory evidence. On 27-Feb-17, he/she appeared before me and acknowledged that he/she has read the accompanying instrument and knows the contents thereof, and that he/she executed the same as their free act and deed for the purposes set forth therein. If he/she is acting on behalf of an entity, he/she also acknowledged that he/she executed the accompanying instrument in his/her authorized capacity, and that by his/her signature on the instrument, the entity executed the same.

Ashley M Salerno
NOTARY PUBLIC
Residing at Passaic County

My Commission Expires: _____
NOTARY PUBLIC OF NEW JERSEY

PATENT

REEL: 064399 FRAME: 0478

INVENTION AND PATENT ASSIGNMENT FOR PROVISIONAL APPLICATION
(by Inventor)

This INVENTION AND PATENT ASSIGNMENT (this "Assignment"), effective the 11 day of July, 2017, is made by **Manoj Kumar Singh**, having an address of **Stryker Orthopaedics, 325 Corporate Drive, Mahwah, New Jersey 07430 USA**, hereafter referred to as assignor, ("Assignor").

WHEREAS Assignor has invented certain new and useful improvements in:

METHODS OF LATERAL AND ANTEROPOSTERIOR POSE ESTIMATION OF 3D BONE MODELS IN SURGICAL PLANNING A TOTAL ANKLE REPLACEMENT ("the Invention")

[X] for which a provisional application was filed on **May 3, 2017**, in the country of United States Application Number **62/500,823** ("the Application")

[] for which a provisional application for the country of _____ was executed by _____ on _____ ("the Application")

WHEREAS, Assignor wishes to assign to **STRYKER EUROPEAN HOLDINGS I, LLC**, limited liability company incorporated under the laws of the State of Delaware, having its principal place of business at 2825 Airview Boulevard, Kalamazoo, MI 49002, United States of America, acting in its capacity as sole general partner of **STRYKER EUROPEAN TECHNOLOGIES C.V.**, a limited partnership established under the laws of the Netherlands ("*commanditaire vennootschap*"), having its registered office at Canon's Court, 22 Victoria Street, Hamilton, HM 12, Bermuda ("Assignee"), and Assignee wishes to acquire, the entire right, title, and interest to the Invention and the Application;

NOW, THEREFORE, for good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, Assignor hereby sells, assigns, transfers and sets over to Assignee, and Assignee hereby accepts, the entire right, title and interest, for the United States of America and all other countries, in and to the Invention and the Application and all original, divisional, continuation, continuation-in-part, substitute or reissue applications and patents applied for or granted therefor in the United States of America and all other countries for the Invention, including without limitation all applications and patents for the Invention claiming priority or benefit of the Application pursuant to any law or treaty, and including all claims for damages by reason of past infringement with the right to sue for and collect the same for its own use and the use of its successors, assigns and legal representatives, and including the right to claim such priority or benefit, and the Commissioner of Patents and Trademarks and the Patent Office officials in foreign countries as are duly authorized by the respective foreign patent laws to issue patents are hereby authorized and requested to issue all patents on said improvements or resulting therefrom to Assignee, as assignee of the entire interest therein; and the Assignor does hereby agree and covenant without further remuneration, to execute and deliver all original, divisional, continuation, continuation-in-part, reissue and other applications for Letters Patent on the Invention and all assignments thereof to Assignee or its assigns, to communicate to Assignee or its representatives all facts known to the undersigned respecting the Invention, whenever requested, to testify in any interferences or other legal proceedings in which the Application and any related applications or patents may become involved, to sign all lawful papers, make all rightful oaths, and to do generally everything necessary to aid Assignee, its successors, assigns and nominees to obtain patent protection for said improvements in all countries, the expenses incident to said applications to be borne and paid by Assignee.

Assignor does hereby authorize its attorneys, and/or Assignee's attorneys, to insert on this Assignment the filing date and application number of the Application when known.

ASSIGNOR

By: [Signature]
Printed: Manoj Kumar Singh
Title: Inventor
Date: 07-10-2017

STATE OF NJ)

COUNTY OF Bergen)

The person whose name is subscribed to the accompanying instrument is personally known to me or has proved his/her identity to me on the basis of satisfactory evidence. On July 10, 2017 he/she appeared before me and acknowledged that he/she has read the accompanying instrument and knows the contents thereof, and that he/she executed the same as their free act and deed for the purposes set forth therein. If he/she is acting on behalf of an entity, he/she also acknowledged that he/she executed the accompanying instrument in his/her authorized capacity, and that by his/her signature on the instrument, the entity executed the same.

[Signature]
NOTARY PUBLIC
Residing at Passaic County

My Commission Expires: ASHLEY M. SALERNO
NOTARY PUBLIC OF NEW JERSEY
My Commission Expires 7/31/2018

ASSIGNEE

By: [Signature]
Printed: Robert J. Leonard III
Title: IP Agent
Date: 11 Jul 17

STATE OF NJ)

COUNTY OF Bergen)

The person whose name is subscribed to the accompanying instrument is personally known to me or has proved his/her identity to me on the basis of satisfactory evidence. On July 11, 2017 he/she appeared before me and acknowledged that he/she has read the accompanying instrument and knows the contents thereof, and that he/she executed the same as their free act and deed for the purposes set forth therein. If he/she is acting on behalf of an entity, he/she also acknowledged that he/she executed the accompanying instrument in his/her authorized capacity, and that by his/her signature on the instrument, the entity executed the same.

[Signature]
NOTARY PUBLIC
Residing at Passaic County

My Commission Expires: ASHLEY M. SALERNO
NOTARY PUBLIC OF NEW JERSEY

PATENT