

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

EPAS ID: PAT7089248

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
BRANDON HUKILL	07/09/2019
JON GARTH NICHOLS	07/09/2019
CHARLES VAILLANT	07/09/2019
YEW PENG CHONG	10/22/2019
ARPAN PENKAR	10/12/2019
MATTHEW NUNN	12/20/2019
DR. ANDREAS SCOPE	07/09/2019
KEVIN BRIAN BABB	08/02/2019
KARLHEINZ MUENKEL	07/11/2019
MARKUS BEYLICH	12/10/2019
NICHOLAS PAYEN	07/15/2019
DR. STEFAN KUNZE	07/09/2019
UWE PLACH	08/01/2019
LARS-THORSTEN POERSCHKE	08/02/2019
STEPHAN BRAUN	08/01/2019

RECEIVING PARTY DATA

Name:	MANN+HUMMEL GMBH
Street Address:	SCHWIEBERDINGER STRASSE 126
Internal Address:	IP DEPARTMENT 4TEAP-IP
City:	LUDWIGSBURG
State/Country:	GERMANY
Postal Code:	71636

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	16818665

CORRESPONDENCE DATA

Fax Number:

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.

PATENT

Phone: 0497141984316
Email: patentmanagement@mann-hummel.com
Correspondent Name: MANN+HUMMEL GMBH, IP DEPARTMENT 4TEAP-IP
Address Line 1: SCHWIEBERDINGER STRASSE 126
Address Line 4: LUDWIGSBURG, GERMANY 71636

ATTORNEY DOCKET NUMBER: 5564/US-2

NAME OF SUBMITTER: CHRISTINA EFLAND DISCH

SIGNATURE: /Christina Efland Disch/

DATE SIGNED: 12/22/2021

Total Attachments: 270

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15/705367

WORLDWIDE ASSIGNMENT

WHEREAS, I/WE, (hereinafter referred to as the "ASSIGNOR(S)"):

Brandon Hukill, 408 Saint Kitts Ct., 27540 Holly Springs, United States of America

Jon Garth Nichols, 42 Wood Valley Drive, 27524 Four Oaks, United States of America

Charles Vaillant, 204 Lively Oaks Way, 27540 Holly Springs, United States of America

Yew Peng Chong, 115 Lorong 1 Toa Payoh, #06-414, 310115 Singapore, Singapore

Arpan Penkar, 24, Melville Park, Simei Street 1, 10-04, 529946 Singapore, Singapore

Matthew Nunn, 13 Leedon Heights, #13-50, 266224 Singapore, Singapore

Dr. Andreas Scope, Freiburger Str. 53, 09600 Oberschoena, Germany

Kevin Babb, 10640 South 27th Street, MI 49097 Vicksburg, United States of America

Karlheinz Muenkel, Oestliche Bahnhofstr. 7/1, 75038 Oberderdingen-FleHINGEN, Germany

Markus Beylich, Im Obstgarten 20, 71636 Ludwigsburg, Germany

Nicolas Payen, 5 King's Drive, 266372 Singapore, Singapore

Dr. Stefan Kunze, Enno-Littmann-Str. 7, 72076 Tuebingen, Germany

Uwe Plach, Obere Strasse 33/1, 71263 Weil der Stadt, Germany

Lars-Thorsten Poerschke, In der Halde 5, 75378 Bad Liebenzell, Germany

Stephan Braun, Schlossgasse 23, 71706 Markgroeningen, Germany

has/have invented certain new and useful improvements in an invention entitled **A FILTER ELEMENT ANALYSIS SYSTEM AND ASSOCIATED METHODS**

for which an application for United States Letters Patent will be filed; and

WHEREAS, MANN+HUMMEL GMBH, a corporation organized under the laws of Germany, having a place of business at Schwieberdinger Str. 126, 71636 Ludwigsburg/GERMANY, hereinafter referred to as the "ASSIGNEE", is desirous of acquiring the full and exclusive right, title and interest in and to said application inclusive of any and all priority rights derived therefrom and the inventions therein disclosed, and in and to all Letters Patent, both United States and foreign, to be granted for said inventions;

NOW, THEREFORE, for a valuable consideration, the receipt whereof is hereby acknowledged, I/WE, ASSIGNOR(S) does/do hereby confirm sale, assignment, transfer, and set over, and hereby sell, assign, transfer, and set over unto the ASSIGNEE, its successors and assigns, the full and exclusive right, title and interest in and to the aforesaid application for United States Letters Patent inclusive of any and all priority rights derived therefrom, and the invention therein disclosed, and in and to all Letters Patent and issues thereof which may be granted upon said application and in and to all Letters Patent which may be issued upon any substitutes, divisions, or continuations of said application, and in and to any and all Letters Patent which may be granted for said inventions in any foreign country or countries; the same to be held and enjoyed by the ASSIGNEE for its own use and behoof, and for the use and behoof of its successors and assigns, to the full end of the term or terms for which said Letters Patent and reissues thereof may be granted as fully and entirely as the same would have been held and enjoyed by them had this assignment and sale not been made;

AND I/WE, ASSIGNOR(S) hereby agrees/agree to execute, upon request, any and all further papers which may be necessary or desirable to enable the ASSIGNEE, its successors and assigns, to file and prosecute said application, and any and all substitutes, divisions, or continuations thereof, and any and all reissues of the Letters Patent granted upon said application, or upon any substitutes, divisions, or continuations thereof, and any and all applications for foreign Letters Patent on said invention; and ASSIGNOR(S) further agrees/agree to execute any and all further papers which may be necessary or desirable to vest or perfect the title of ASSIGNEE, its successors and assigns, in and to said application and the inventions therein disclosed, and in and to any and all Letters Patent and reissues thereof, both United States and foreign, which may be granted upon said application, and any substitutes, divisions, or continuations thereof, and upon any foreign applications.

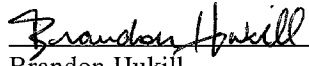
AND I/WE, ASSIGNOR(S) agree(s) to perform all affirmative acts which may be necessary to obtain a grant of (a) valid United States of America patent(s) or a grant of (a) valid United States of America and any foreign patent(s) to the Assignee and to vest all rights therein hereby conveyed to said Assignee as fully and entirely as the same would have been held by the undersigned if this Assignment and sale had not been made.

AND I/WE, ASSIGNOR(S) hereby authorizes/authorize and requests/request The Commissioner of Patents to issue each and every Letters Patent to be granted upon the aforesaid application for United States Letters Patent, and upon any and all substitutes, divisions, and continuations of said application, and each and every reissue of said Letters Patent, to the ASSIGNEE, its successors and assigns, as the assignee of the entire right, title and interest therein, in accordance with this assignment.

The undersigned hereby grant(s) the assignee MANN+HUMMEL GMBH the power to insert on this Assignment any further identification which may be necessary or desirable in order to comply with the rules of the U.S. Patent and Trademark Office for recordation of this document.

The undersigned hereby covenant(s) that no assignment, sale, agreement or encumbrance has been or will be made or entered into which would conflict with this Assignment.

IN WITNESS WHEREOF, this assignment has been executed below by the undersigned:



Brandon Hukill
408 Saint Kitts Ct.
27540 Holly Springs
United States of America

Date: July 9, 2019

Jon Garth Nichols
42 Wood Valley Drive
27524 Four Oaks
United States of America

Date: _____

Charles Vaillant
204 Lively Oaks Way
27540 Holly Springs
United States of America

Date: _____

Yew Peng Chong
115 Lorong 1 Toa Payoh, #06-414
310115 Singapore
Singapore

Date: _____

Arpan Penkar
24, Melville Park, Simei Street 1, 10-04
529946 Singapore
Singapore

Date: _____

Matthew Nunn
13 Leedon Heights, #13-50
266224 Singapore
Singapore

Date: _____

Dr. Andreas Scope
Freiberger Str. 53
09600 Oberschoena
Germany

Date: _____

Kevin Babb
10640 South 27th Street
MI 49097 Vicksburg
United States of America

Date: _____

Karlheinz Muenkel
Oestliche Bahnhofstr. 7/1
75038 Oberderdingen-Flehingen
Germany

Date: _____

Markus Beylich
Im Obstgarten 20
71636 Ludwigsburg
Germany

Date: _____

Nicolas Payen
5 King's Drive
266372 Singapore
Singapore

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Enno-Littmann-Str. 7
72076 Tuebingen
Germany

Date: _____

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Obere Strasse 33/1
71263 Weil der Stadt
Germany

Date: _____

Lars-Thorsten Poerschke
In der Halde 5
75378 Bad Liebenzell
Germany

Date: _____

Worldwide Assignment for Patent Application 15/705367

5564/US

Stephan Braun
Schlossgasse 23
71706 Markgroeningen
Germany

Date: _____

5564/US

15/705367

WORLDWIDE ASSIGNMENT

WHEREAS, I/WE, (hereinafter referred to as the "ASSIGNOR(S)"):

Brandon Hukill, 408 Saint Kitts Ct., 27540 Holly Springs, United States of America

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Charles Vaillant, 204 Lively Oaks Way, 27540 Holly Springs, United States of America

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for which an application for United States Letters Patent will be filed; and

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NOW, THEREFORE, for a valuable consideration, the receipt whereof is hereby acknowledged, I/WE, ASSIGNOR(S) does/do hereby confirm sale, assignment, transfer, and set over, and hereby sell, assign, transfer, and set over unto the ASSIGNEE, its successors and assigns, the full and exclusive right, title and interest in and to the aforesaid application for United States Letters Patent inclusive of any and all priority rights derived therefrom, and the invention therein disclosed, and in and to all Letters Patent and issues thereof which may be granted upon said application and in and to all Letters Patent which may be issued upon any substitutes, divisions, or continuations of said application, and in and to any and all Letters Patent which may be granted for said inventions in any foreign country or countries; the same to be held and enjoyed by the ASSIGNEE for its own use and behoof, and for the use and behoof of its successors and assigns, to the full end of the term or terms for which said Letters Patent and reissues thereof may be granted as fully and entirely as the same would have been held and enjoyed by them had this assignment and sale not been made;

AND I/WE, ASSIGNOR(S) hereby agrees/agree to execute, upon request, any and all further papers which may be necessary or desirable to enable the ASSIGNEE, its successors and assigns, to file and prosecute said application, and any and all substitutes, divisions, or continuations thereof, and any and all reissues of the Letters Patent granted upon said application, or upon any substitutes, divisions, or continuations thereof, and any and all applications for foreign Letters Patent on said invention; and ASSIGNOR(S) further agrees/agree to execute any and all further papers which may be necessary or desirable to vest or perfect the title of ASSIGNEE, its successors and assigns, in and to said application and the inventions therein disclosed, and in and to any and all Letters Patent and reissues thereof, both United States and foreign, which may be granted upon said application, and any substitutes, divisions, or continuations thereof, and upon any foreign applications.

AND I/WE, ASSIGNOR(S) agree(s) to perform all affirmative acts which may be necessary to obtain a grant of (a) valid United States of America patent(s) or a grant of (a) valid United States of America and any foreign patent(s) to the Assignee and to vest all rights therein hereby conveyed to said Assignee as fully and entirely as the same would have been held by the undersigned if this Assignment and sale had not been made.

AND I/WE, ASSIGNOR(S) hereby authorizes/authorize and requests/request The Commissioner of Patents to issue each and every Letters Patent to be granted upon the aforesaid application for United States Letters Patent, and upon any and all substitutes, divisions, and continuations of said application, and each and every reissue of said Letters Patent, to the ASSIGNEE, its successors and assigns, as the assignee of the entire right, title and interest therein, in accordance with this assignment.

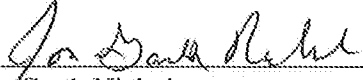
The undersigned hereby grant(s) the assignee MANN+HUMMEL GMBH the power to insert on this Assignment any further identification which may be necessary or desirable in order to comply with the rules of the U.S. Patent and Trademark Office for recordation of this document.

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Jon Garth Nichols
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Singapore

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529946 Singapore
Singapore

Date: _____

Matthew Nunn
13 Leedon Heights, #13-50
266224 Singapore
Singapore

Date: _____

Dr. Andreas Scope
Freiberger Str. 53
09600 Oberschoena
Germany

Date: _____

Kevin Babb
10640 South 27th Street
MI 49097 Vicksburg
United States of America

Date: _____

Karlheinz Muenkel
Oestliche Bahnhofstr. 7/1
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Uwe Plach
Obere Strasse 33/1
71263 Weil der Stadt
Germany

Date: _____

Lars-Thorsten Poerschke
In der Halde 5
75378 Bad Liebenzell
Germany

Date: _____

Worldwide Assignment for Patent Application 15/705367

5564/US

Stephan Braun
Schlossgasse 23
71706 Markgroeningen
Germany

Date: _____

5564/US

15/705367

WORLDWIDE ASSIGNMENT

WHEREAS, I/WE, (hereinafter referred to as the "ASSIGNOR(S)"):

Brandon Hukill, 408 Saint Kitts Ct., 27540 Holly Springs, United States of America

Jon Garth Nichols, 42 Wood Valley Drive, 27524 Four Oaks, United States of America

Charles Vaillant, 204 Lively Oaks Way, 27540 Holly Springs, United States of America

Yew Peng Chong, 115 Lorong 1 Toa Payoh, #06-414, 310115 Singapore, Singapore

Arpan Penkar, 24, Melville Park, Simei Street 1, 10-04, 529946 Singapore, Singapore

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Lars-Thorsten Poerschke, In der Halde 5, 75378 Bad Liebenzell, Germany

Stephan Braun, Schlossgasse 23, 71706 Markgroeningen, Germany

has/have invented certain new and useful improvements in an invention entitled **A FILTER ELEMENT ANALYSIS SYSTEM AND ASSOCIATED METHODS**

for which an application for United States Letters Patent will be filed; and

WHEREAS, MANN+HUMMEL GMBH, a corporation organized under the laws of Germany, having a place of business at Schwieberdinger Str. 126, 71636 Ludwigsburg/GERMANY, hereinafter referred to as the "ASSIGNEE", is desirous of acquiring the full and exclusive right, title and interest in and to said application inclusive of any and all priority rights derived therefrom and the inventions therein disclosed, and in and to all Letters Patent, both United States and foreign, to be granted for said inventions;

NOW, THEREFORE, for a valuable consideration, the receipt whereof is hereby acknowledged, I/WE, ASSIGNOR(S) does/do hereby confirm sale, assignment, transfer, and set over, and hereby sell, assign, transfer, and set over unto the ASSIGNEE, its successors and assigns, the full and exclusive right, title and interest in and to the aforesaid application for United States Letters Patent inclusive of any and all priority rights derived therefrom, and the invention therein disclosed, and in and to all Letters Patent and issues thereof which may be granted upon said application and in and to all Letters Patent which may be issued upon any substitutes, divisions, or continuations of said application, and in and to any and all Letters Patent which may be granted for said inventions in any foreign country or countries; the same to be held and enjoyed by the ASSIGNEE for its own use and behoof, and for the use and behoof of its successors and assigns, to the full end of the term or terms for which said Letters Patent and reissues thereof may be granted as fully and entirely as the same would have been held and enjoyed by them had this assignment and sale not been made;

AND I/WE, ASSIGNOR(S) hereby agrees/agree to execute, upon request, any and all further papers which may be necessary or desirable to enable the ASSIGNEE, its successors and assigns, to file and prosecute said application, and any and all substitutes, divisions, or continuations thereof, and any and all reissues of the Letters Patent granted upon said application, or upon any substitutes, divisions, or continuations thereof, and any and all applications for foreign Letters Patent on said invention; and ASSIGNOR(S) further agrees/agree to execute any and all further papers which may be necessary or desirable to vest or perfect the title of ASSIGNEE, its successors and assigns, in and to said application and the inventions therein disclosed, and in and to any and all Letters Patent and reissues thereof, both United States and foreign, which may be granted upon said application, and any substitutes, divisions, or continuations thereof, and upon any foreign applications.

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Date: 22|10|19

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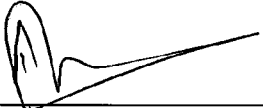
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Worldwide Assignment for Patent Application 15/705367 (cont'd.)

5564/US



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24, Melville Park, Simei Street 1, 10-04
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Date: 12/10/2019

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PATENT

REEL: 058568 FRAME: 0589

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Matthew Nunn, 13 Leedon Heights, #13-50, 266224 Singapore, Singapore

Dr. Andreas Scope, Freiburger Str. 53, 09600 Oberschoena, Germany

Kevin Babb, 10640 South 27th Street, MI 49097 Vicksburg, United States of America

Karlheinz Muenkel, Oestliche Bahnhofstr. 7/1, 75038 Oberderdingen-FleHINGEN, Germany

Markus Beylich, Im Obstgarten 20, 71636 Ludwigsburg, Germany

Nicolas Payen, 5 King's Drive, 266372 Singapore, Singapore

Dr. Stefan Kunze, Enno-Littmann-Str. 7, 72076 Tuebingen, Germany

Uwe Plach, Obere Strasse 33/1, 71263 Weil der Stadt, Germany

Lars-Thorsten Poerschke, In der Halde 5, 75378 Bad Liebenzell, Germany

Stephan Braun, Schlossgasse 23, 71706 Markgroeningen, Germany

has/have invented certain new and useful improvements in an invention entitled **A FILTER ELEMENT ANALYSIS SYSTEM AND ASSOCIATED METHODS**

for which an application for United States Letters Patent will be filed; and

WHEREAS, MANN+HUMMEL GMBH, a corporation organized under the laws of Germany, having a place of business at Schwieberdinger Str. 126, 71636 Ludwigsburg/GERMANY, hereinafter referred to as the "ASSIGNEE", is desirous of acquiring the full and exclusive right, title and interest in and to said application inclusive of any and all priority rights derived therefrom and the inventions therein disclosed, and in and to all Letters Patent, both United States and foreign, to be granted for said inventions;

NOW, THEREFORE, for a valuable consideration, the receipt whereof is hereby acknowledged, I/WE, ASSIGNOR(S) does/do hereby confirm sale, assignment, transfer, and set over, and hereby sell, assign, transfer, and set over unto the ASSIGNEE, its successors and assigns, the full and exclusive right, title and interest in and to the aforesaid application for United States Letters Patent inclusive of any and all priority rights derived therefrom, and the invention therein disclosed, and in and to all Letters Patent and issues thereof which may be granted upon said application and in and to all Letters Patent which may be issued upon any substitutes, divisions, or continuations of said application, and in and to any and all Letters Patent which may be granted for said inventions in any foreign country or countries; the same to be held and enjoyed by the ASSIGNEE for its own use and behoof, and for the use and behoof of its successors and assigns, to the full end of the term or terms for which said Letters Patent and reissues thereof may be granted as fully and entirely as the same would have been held and enjoyed by them had this assignment and sale not been made;

AND I/WE, ASSIGNOR(S) hereby agrees/agree to execute, upon request, any and all further papers which may be necessary or desirable to enable the ASSIGNEE, its successors and assigns, to file and prosecute said application, and any and all substitutes, divisions, or continuations thereof, and any and all reissues of the Letters Patent granted upon said application, or upon any substitutes, divisions, or continuations thereof, and any and all applications for foreign Letters Patent on said invention; and ASSIGNOR(S) further agrees/agree to execute any and all further papers which may be necessary or desirable to vest or perfect the title of ASSIGNEE, its successors and assigns, in and to said application and the inventions therein disclosed, and in and to any and all Letters Patent and reissues thereof, both United States and foreign, which may be granted upon said application, and any substitutes, divisions, or continuations thereof, and upon any foreign applications.

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27540 Holly Springs
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Matthew Nunn
13 Leedon Heights, #13-50
266224 Singapore
Singapore

Date: _____

Worldwide Assignment for Patent Application 15/705367 (cont'd.)

5564/US



Dr. Andreas Scope
Freiberger Str. 53
09600 Oberschoena
Germany

Date: 7/9/2019

Kevin Babb
10640 South 27th Street
MI 49097 Vicksburg
United States of America

Date: _____

Karlheinz Muenkel
Oestliche Bahnhofstr. 7/1
75038 Oberderdingen-Flehingen
Germany

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Schlossgasse 23
71706 Markgroeningen
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Date: _____

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15/705367

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Germany

Date: _____



Kevin Babb
10640 South 27th Street
MI 49097 Vicksburg
United States of America

Date: August 2, 2019

Karlheinz Muenkel
Oestliche Bahnhofstr. 7/1
75038 Oberderdingen-Flehingen
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Date: _____

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Date: _____

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Karlheinz Muenkel
Oestliche Bahnhofstr. 7/1
75038 Oberderdingen-Flehing
Germany

Date: 2019/7/11

Markus Beylich
Im Obstgarten 20
71636 Ludwigsburg
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Date: _____

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266372 Singapore
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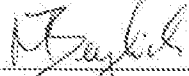
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Date: 18/12/2015

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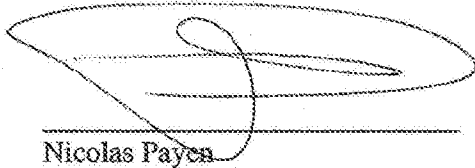
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Date: 15th of July 2019

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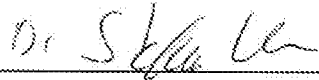
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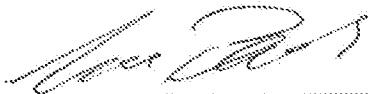
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for which an application for United States Letters Patent will be filed; and

WHEREAS, MANN+HUMMEL GMBH, a corporation organized under the laws of Germany, having a place of business at Schwieberdinger Str. 126, 71636 Ludwigsburg/GERMANY, hereinafter referred to as the "ASSIGNEE", is desirous of acquiring the full and exclusive right, title and interest in and to said application inclusive of any and all priority rights derived therefrom and the inventions therein disclosed, and in and to all Letters Patent, both United States and foreign, to be granted for said inventions;

NOW, THEREFORE, for a valuable consideration, the receipt whereof is hereby acknowledged, I/WE, ASSIGNOR(S) does/do hereby confirm sale, assignment, transfer, and set over, and hereby sell, assign, transfer, and set over unto the ASSIGNEE, its successors and assigns, the full and exclusive right, title and interest in and to the aforesaid application for United States Letters Patent inclusive of any and all priority rights derived therefrom, and the invention therein disclosed, and in and to all Letters Patent and issues thereof which may be granted upon said application and in and to all Letters Patent which may be issued upon any substitutes, divisions, or continuations of said application, and in and to any and all Letters Patent which may be granted for said inventions in any foreign country or countries; the same to be held and enjoyed by the ASSIGNEE for its own use and behoof, and for the use and behoof of its successors and assigns, to the full end of the term or terms for which said Letters Patent and reissues thereof may be granted as fully and entirely as the same would have been held and enjoyed by them had this assignment and sale not been made;

AND I/WE, ASSIGNOR(S) hereby agrees/agree to execute, upon request, any and all further papers which may be necessary or desirable to enable the ASSIGNEE, its successors and assigns, to file and prosecute said application, and any and all substitutes, divisions, or continuations thereof, and any and all reissues of the Letters Patent granted upon said application, or upon any substitutes, divisions, or continuations thereof, and any and all applications for foreign Letters Patent on said invention; and ASSIGNOR(S) further agrees/agree to execute any and all further papers which may be necessary or desirable to vest or perfect the title of ASSIGNEE, its successors and assigns, in and to said application and the inventions therein disclosed, and in and to any and all Letters Patent and reissues thereof, both United States and foreign, which may be granted upon said application, and any substitutes, divisions, or continuations thereof, and upon any foreign applications.

AND I/WE, ASSIGNOR(S) agree(s) to perform all affirmative acts which may be necessary to obtain a grant of (a) valid United States of America patent(s) or a grant of (a) valid United States of America and any foreign patent(s) to the Assignee and to vest all rights therein hereby conveyed to said Assignee as fully and entirely as the same would have been held by the undersigned if this Assignment and sale had not been made.

AND I/WE, ASSIGNOR(S) hereby authorizes/authorize and requests/request The Commissioner of Patents to issue each and every Letters Patent to be granted upon the aforesaid application for United States Letters Patent, and upon any and all substitutes, divisions, and continuations of said application, and each and every reissue of said Letters Patent, to the ASSIGNEE, its successors and assigns, as the assignee of the entire right, title and interest therein, in accordance with this assignment.

The undersigned hereby grant(s) the assignee MANN+HUMMEL GMBH the power to insert on this Assignment any further identification which may be necessary or desirable in order to comply with the rules of the U.S. Patent and Trademark Office for recordation of this document.

The undersigned hereby covenant(s) that no assignment, sale, agreement or encumbrance has been or will be made or entered into which would conflict with this Assignment.

IN WITNESS WHEREOF, this assignment has been executed below by the undersigned:

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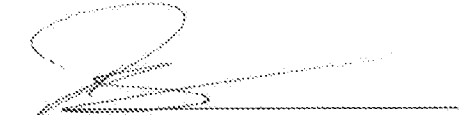
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Worldwide Assignment for Patent Application 15/705367

3564/US



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Date: 01.08.2019