504788108 02/22/2018

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT4834840

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
MARTIN KLEIN	02/15/2017
FRANK BARTEL	01/12/2017
JOBST EISENGRAEBER-PABST	01/12/2017
ANTON KREINER	01/23/2017
PAMELA GOHL	01/13/2017
DR. LARS SPELTER	01/13/2017
ARMANDO LABARTA	02/10/2017
MICHAEL FASOLD	01/13/2017
ULRICH DEHNEN	01/13/2017
CHRISTOPHER MARC STURGESS	03/28/2017

RECEIVING PARTY DATA

Name:	MANN+HUMMEL GMBH	
Street Address:	SCHWIEBERDINGER STRASSE 126	
City:	LUDWIGSBURG	
State/Country:	GERMANY	
Postal Code:	71636	

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	15351925

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.

Email: patentmanagement@mann-hummel.com

Correspondent Name: MANN+HUMMEL GMBH DEPARTMENT LC-IP

Address Line 1: SCHWIEBERDINGER STRASSE 126
Address Line 4: LUDWIGSBURG, GERMANY 71636

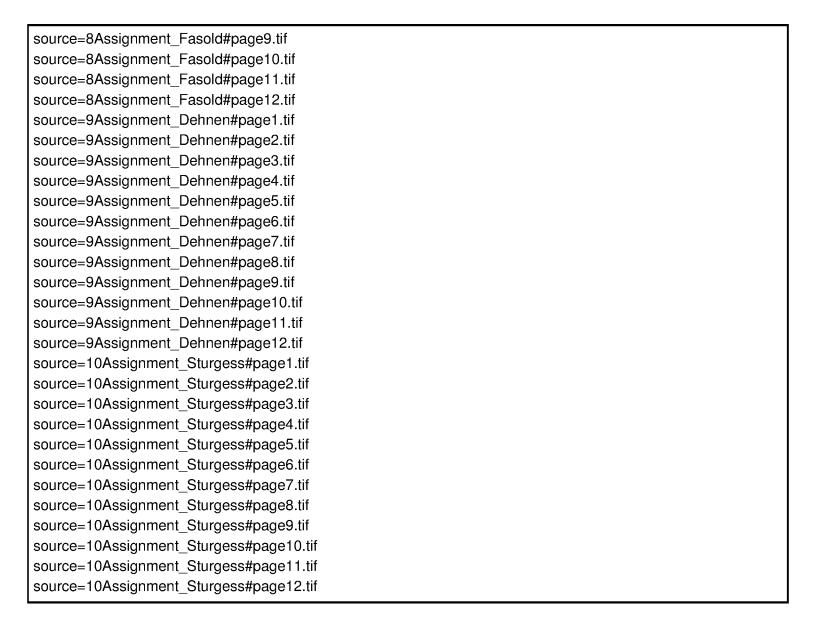
ATTORNEY DOCKET NUMBER:	4443/WO-US
NAME OF SUBMITTER:	JAMES HASSELBECK

PATENT 504788108 REEL: 045405 FRAME: 0216

SIGNATURE: /James Hasselbeck/ **DATE SIGNED:** 02/22/2018 **Total Attachments: 120** source=1Assignment Klein#page1.tif source=1Assignment Klein#page2.tif source=1Assignment Klein#page3.tif source=1Assignment Klein#page4.tif source=1Assignment Klein#page5.tif source=1Assignment Klein#page6.tif source=1Assignment Klein#page7.tif source=1Assignment Klein#page8.tif source=1Assignment Klein#page9.tif source=1Assignment Klein#page10.tif source=1Assignment Klein#page11.tif source=1Assignment Klein#page12.tif source=2Assignment_Bartel#page1.tif source=2Assignment_Bartel#page2.tif source=2Assignment Bartel#page3.tif source=2Assignment Bartel#page4.tif source=2Assignment_Bartel#page5.tif source=2Assignment Bartel#page6.tif source=2Assignment Bartel#page7.tif source=2Assignment Bartel#page8.tif source=2Assignment Bartel#page9.tif source=2Assignment Bartel#page10.tif source=2Assignment Bartel#page11.tif source=2Assignment Bartel#page12.tif source=3Assignment EisengraeberPabst#page1.tif source=3Assignment EisengraeberPabst#page2.tif source=3Assignment EisengraeberPabst#page3.tif source=3Assignment EisengraeberPabst#page4.tif source=3Assignment EisengraeberPabst#page5.tif source=3Assignment EisengraeberPabst#page6.tif source=3Assignment_EisengraeberPabst#page7.tif source=3Assignment EisengraeberPabst#page8.tif source=3Assignment EisengraeberPabst#page9.tif source=3Assignment EisengraeberPabst#page10.tif source=3Assignment EisengraeberPabst#page11.tif source=3Assignment EisengraeberPabst#page12.tif source=4Assignment Kreiner#page1.tif source=4Assignment Kreiner#page2.tif source=4Assignment_Kreiner#page3.tif source=4Assignment Kreiner#page4.tif source=4Assignment Kreiner#page5.tif source=4Assignment_Kreiner#page6.tif source=4Assignment Kreiner#page7.tif

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DATENT	



WORLDWIDE ASSIGNMENT

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

- 1. Martin Klein, Hirschbergstr. 44, 71634 Ludwigsburg / Germany
- 2. Frank Bartel, Kugelweite 39, 84130 Dingolfing / Germany
- 3. Jobst Eisengraeber-Pabst, Kornkammer 21, 71720 Oberstenfeld / Germany
- 4. Anton Kreiner, Klosterweg 8, 94419 Reisbach / Germany
- 5. Pamela Gohl, Leonberger Str. 46, 71686 Remseck / Germany
- 6. Dr. Lars Spelter, Finkenstr. 5, 71254 Ditzingen / Germany
- 7. Armando Labarta, Salonallee 15, 71638 Ludwigsburg / Germany
- 8. Michael Fasold, Altenbergstr. 26, 71549 Auenwald / Germany
- 9. Ulrich Dehnen, Louisianastr. 3, 70806 Kornwestheim / Germany
- 10. Christopher Marc Sturgess, Neuhaldenstr. 55, 70825 Korntal / Germany

has/have invented certain new and useful improvements in an invention entitled Filter Element and Filter Arrangement 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 Hindenburgstr. 45, 71638 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:

Martin Klein

Hirschbergstr. 44 71634 Ludwigsburg

Germany

	Date:
Frank Bartel	
Kugelweite 39	
84130 Dingolfing	
Germany	

	Date:
Jobst Eisengraeber-Pabst	
Kornkammer 21	

Jobst Eisengraeber-Pabs Kornkammer 21 71720 Oberstenfeld Germany

	Date:
Anton Kreiner	
Klosterweg 8	
94419 Reisbach	
Germany	

	Date:
Pamela Gohl	
Leonberger Str. 46	
71686 Remseck	
Germany	

	Date:
Dr. Lars Spelter	

Dr. Lars Spelter Finkenstr. 5 71254 Ditzingen Germany

	Date:
Armando Labarta	
Salonallee 15	
71638 Ludwigsburg	
Germany	

	Date:
Michael Fasold	
Altenbergstr. 26	
71549 Auenwald	
Germany	

	Date:
Ulrich Dehnen	
Louisianastr. 3	
70806 Kornwestheim	
Germany	

Worldwide Assignment for Patent Application 15/351,925		4443/US
	,	
	Date:	
Christopher Marc Sturgess		
Neuhaldenstr. 55		
70825 Korntal		

Germany

WORLDWIDE ASSIGNMENT

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

- 1. Martin Klein, Hirschbergstr. 44, 71634 Ludwigsburg / Germany
- 2. Frank Bartel, Kugelweite 39, 84130 Dingolfing / Germany
- 3. Jobst Eisengraeber-Pabst, Kornkammer 21, 71720 Oberstenfeld / Germany
- 4. Anton Kreiner, Klosterweg 8, 94419 Reisbach / Germany
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- 9. Ulrich Dehnen, Louisianastr. 3, 70806 Kornwestheim / Germany
- 10. Christopher Marc Sturgess, Neuhaldenstr. 55, 70825 Korntal / Germany

has/have invented certain new and useful improvements in an invention entitled **Filter Element** and **Filter Arrangement** 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 Hindenburgstr. 45, 71638 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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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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IN WITNESS WHEREOF, this assignment has been executed below by the undersigned:

	Date:
Martin Klein	
Hirschbergstr. 44	
71634 Ludwigsburg	
Germany	

Date: 17.01.2017

Frank Bartel

Kugelweite 39 84130 Dingolfing

Germany

4

	Date:	
Jobst Eisengraeber-Pabst		
Kornkammer 21		
71720 Oberstenfeld		
Germany		

	Date:
Anton Kreiner	
Klosterweg 8	
94419 Reisbach	
Germany	

6

	Date:
Pamela Gohl	
Leonberger Str. 46	
71686 Remseck	
Germany	

	Date:	
Dr. Lars Spelter		
Finkenstr. 5		
71254 Ditzingen		
Germany		

	Date:
Armando Labarta	
Salonallee 15	
71638 Ludwigsburg	
Germany	

9

	Date:
Michael Fasold	
Altenbergstr. 26	
71549 Auenwald	
Germany	

	Date:
Ulrich Dehnen	
Louisianastr. 3	
70806 Kornwestheim	
Germany	

Worldwide Assignment for Patent Application 15/351,925

4443/US

	Date:
Christopher Marc Sturgess	
Neuhaldenstr. 55	
70825 Korntal	
Germany	

WORLDWIDE ASSIGNMENT

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has/have invented certain new and useful improvements in an invention entitled **Filter Element** and **Filter Arrangement** 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 Hindenburgstr. 45, 71638 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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IN WITNESS WHEREOF, this assignment has been executed below by the undersigned:

	Date:
Martin Klein	
Hirschbergstr. 44	
71634 Ludwigsburg	
Germany	

	Date:
Frank Bartel	
Kugelweite 39	
84130 Dingolfing	
Germany	

Date: 1201.2017

Jobst Eisengracker Pabst Kornkammer 21

71720 Oberstenfeld

Germany

	Date:
Anton Kreiner	
Klosterweg 8	
94419 Reisbach	
Germany	

	Date:
Pamela Gohl	
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71686 Remseck	
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Worldwide Assignment for Patent Application 15/351,925

4443/US

	Date:
Christopher Marc Sturgess	
Neuhaldenstr. 55	
70825 Korntal	
Germany	

PATENT REEL: 045405 FRAME: 0255

WORLDWIDE ASSIGNMENT

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

- 1. Martin Klein, Hirschbergstr. 44, 71634 Ludwigsburg / Germany
- 2. Frank Bartel, Kugelweite 39, 84130 Dingolfing / Germany
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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

PATENT REEL: 045405 FRAME: 0256 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:
Jobst Eisengraeber-Pabst	
Kornkammer 21	
71720 Oberstenfeld	
Germany	

Date: 23.01.17

Anton Kreiner

Mula View

Klosterweg 8

94419 Reisbach

Germany

	Date:
Pamela Gohl	
Leonberger Str. 46	
71686 Remseck	
Germany	

	Date:
Dr. Lars Spelter	
Finkenstr. 5	
71254 Ditzingen	
Germany	

	Date:	
Armando Labarta		
Salonallee 15		
71638 Ludwigsburg		
Germany		

	Date:
Michael Fasold	
Altenbergstr. 26	
71549 Auenwald	
Germany	

	Date:
Ulrich Dehnen	
Louisianastr. 3	
70806 Kornwestheim	
Germany	

Worldwide Assignment for Patent Application 15/351,925

4443/US

	Date:	
Christopher Marc Sturgess		
Neuhaldenstr. 55		
70825 Korntal		
Germany		

WORLDWIDE ASSIGNMENT

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

- 1. Martin Klein, Hirschbergstr. 44, 71634 Ludwigsburg / Germany
- 2. Frank Bartel, Kugelweite 39, 84130 Dingolfing / Germany
- 3. Jobst Eisengraeber-Pabst, Kornkammer 21, 71720 Oberstenfeld / Germany
- 4. Anton Kreiner, Klosterweg 8, 94419 Reisbach / Germany
- 5. Pamela Gohl, Leonberger Str. 46, 71686 Remseck / Germany
- 6. Dr. Lars Spelter, Finkenstr. 5, 71254 Ditzingen / Germany
- 7. Armando Labarta, Salonallee 15, 71638 Ludwigsburg / Germany
- 8. Michael Fasold, Altenbergstr. 26, 71549 Auenwald / Germany
- 9. Ulrich Dehnen, Louisianastr. 3, 70806 Kornwestheim / Germany
- 10. Christopher Marc Sturgess, Neuhaldenstr. 55, 70825 Korntal / Germany

has/have invented certain new and useful improvements in an invention entitled **Filter Element** and **Filter Arrangement** 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 Hindenburgstr. 45, 71638 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

PATENT REEL: 045405 FRAME: 0268 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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IN WITNESS WHEREOF, this assignment has been executed below by the undersigned:

PATENT REEL: 045405 FRAME: 0269

	Date:
Martin Klein	
Hirschbergstr. 44	
71634 Ludwigsburg	
Germany	

	Date:	
Frank Bartel		
Kugelweite 39		
84130 Dingolfing		
Germany		

	Date:	
Jobst Eisengraeber-Pabst		
Kornkammer 21		
71720 Oberstenfeld		
Germany		

	Date:
Anton Kreiner	
Klosterweg 8	
94419 Reisbach	
Germany	

Date: 13.1. 2017, Lucling Lasg

Pamela Gohl ...

Leonberger Str. 46 71686 Remseck

Germany

	Date:
Dr. Lars Spelter	
Finkenstr. 5	
71254 Ditzingen	
Germany	

	Date:	
Armando Labarta		
Salonallee 15		
71638 Ludwigsburg		
Germany		

	Date:
Michael Fasold	
Altenbergstr. 26	
71549 Auenwald	
Germany	

	Date:
Ulrich Dehnen	
Louisianastr. 3	
70806 Kornwestheim	
Germany	

Worldwide Assignment for Patent Application 15/351,925

4443/US

	Date:	
Christopher Marc Sturgess		
Neuhaldenstr. 55		
70825 Korntal		
Germany		

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WHEREAS, MANN+HUMMEL GMBH, a corporation organized under the laws of Germany, having a place of business at Hindenburgstr. 45, 71638 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

PATENT REEL: 045405 FRAME: 0280 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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PATENT REEL: 045405 FRAME: 0281

	Date:
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6

	Date:
Pamela Gohl	
Leonberger Str. 46	
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Germany	

7

Date: 13. Jan 2017

Dr. Lars Speker

Finkenstr. 5

71254 Ditzingen

Germany

	Date:
Armando Labarta	
Salonallee 15	
71638 Ludwigsburg	
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	Date:
Michael Fasold	
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71549 Auenwald	
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	Date:
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Louisianastr. 3	
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Germany	

Worldwide Assignment for Patent Application 15/351,925

4443/US

	Date:
Christopher Marc Sturgess	
Neuhaldenstr. 55	
70825 Korntal	
Germany	

WORLDWIDE ASSIGNMENT

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WHEREAS, MANN+HUMMEL GMBH, a corporation organized under the laws of Germany, having a place of business at Hindenburgstr. 45, 71638 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;

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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

PATENT REEL: 045405 FRAME: 0292 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:
Dr. Lars Spelter	
Finkenstr. 5	
71254 Ditzingen	

Germany

Date: 10.02.20(7

Armando Labarta Salonallee 15

71638 Ludwigsburg

Germany

9

	Date:
Michael Fasold	
Altenbergstr. 26	
71549 Auenwald	
Germany	

	D .
	Date:
Ulrich Dehnen	
Louisianastr. 3	
70806 Kornwestheim	
Germany	

Worldwide	Assignment	for Patent	Application	15/351	925
World wilde	Assignment	ioi i atcht	Application	13/3319	, 45

4443/US

	Date:
hristopher Marc Sturgess	

Christopher Marc Sturgess Neuhaldenstr. 55 70825 Korntal Germany

WORLDWIDE ASSIGNMENT

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

- 1. Martin Klein, Hirschbergstr. 44, 71634 Ludwigsburg / Germany
- 2. Frank Bartel, Kugelweite 39, 84130 Dingolfing / Germany
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- 9. Ulrich Dehnen, Louisianastr. 3, 70806 Kornwestheim / Germany
- 10. Christopher Marc Sturgess, Neuhaldenstr. 55, 70825 Korntal / Germany

has/have invented certain new and useful improvements in an invention entitled **Filter Element** and **Filter Arrangement** 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 Hindenburgstr. 45, 71638 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

PATENT REEL: 045405 FRAME: 0304 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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IN WITNESS WHEREOF, this assignment has been executed below by the undersigned:

PATENT REEL: 045405 FRAME: 0305

	Date:
Martin Klein	
Hirschbergstr. 44	
71634 Ludwigsburg	
Germany	

	Date:
Frank Bartel	
Kugelweite 39	
84130 Dingolfing	
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	Date:
Dr. Lars Spelter	
Finkenstr. 5	
71254 Ditzingen	
Germany	

	Date:
Armando Labarta	
Salonallee 15	
71638 Ludwigsburg	
Germany	

Date: January 13, 2017

Michael Fasold
Altenberger

71549 Auenwald

Germany

10

	Date:
Ulrich Dehnen	
Louisianastr. 3	
70806 Kornwestheim	
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	Date:
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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

PATENT REEL: 045405 FRAME: 0316 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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Jobst Eisengraeber-Pabst		
Kornkammer 21		
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	Date:
Armando Labarta	
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Michael Fasold	
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Date: <u>01/13/20</u>17

Ulrich Dehnen

Louisianastr. 3

70806 Kornwestheim

Germany

Worldwide Assignment for Patent Application 15/351,925

4443/US

	Date:
Christopher Marc Sturgess	
Neuhaldenstr. 55	
70825 Korntal	
Germany	

WORLDWIDE ASSIGNMENT

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

- 1. Martin Klein, Hirschbergstr. 44, 71634 Ludwigsburg / Germany
- 2. Frank Bartel, Kugelweite 39, 84130 Dingolfing / Germany
- 3. Jobst Eisengraeber-Pabst, Kornkammer 21, 71720 Oberstenfeld / Germany
- 4. Anton Kreiner, Klosterweg 8, 94419 Reisbach / Germany
- 5. Pamela Gohl, Leonberger Str. 46, 71686 Remseck / Germany
- 6. Dr. Lars Spelter, Finkenstr. 5, 71254 Ditzingen / Germany
- 7. Armando Labarta, Salonallee 15, 71638 Ludwigsburg / Germany
- 8. Michael Fasold, Altenbergstr. 26, 71549 Auenwald / Germany
- 9. Ulrich Dehnen, Louisianastr. 3, 70806 Kornwestheim / Germany
- 10. Christopher Marc Sturgess, Neuhaldenstr. 55, 70825 Korntal / Germany

has/have invented certain new and useful improvements in an invention entitled **Filter Element** and **Filter Arrangement** 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 Hindenburgstr. 45, 71638 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

PATENT REEL: 045405 FRAME: 0328 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:

PATENT REEL: 045405 FRAME: 0329

	Date:	
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Date: March 78,2017

Christopher Marc Sturgess Neuhaydenstr. 55 70823 Korntal Germany