#### 12/02/2019 505798861

# PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT5845690

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

#### **CONVEYING PARTY DATA**

Name	Execution Date
MALTE KORTEN	04/23/2019
GIOACCHINO RAIA	06/11/2019
ADRIAN S. ECKERT	04/26/2019
BERNHARD HOFMANN	04/18/2019
CHRISTIAN A. RICHTER	11/19/2019
BASTIAN KIRCHNER	04/23/2019
ANJA FRIEDRICH	04/18/2019
HELMAR B. MAYR	04/23/2019
CARSTEN FRANKE	04/17/2019
GALLUS SCHECHNER	04/23/2019

## **RECEIVING PARTY DATA**

Name:	3M INNOVATIVE PROPERTIES COMPANY	
Street Address:	P.O. BOX 33427	
City:	ST. PAUL	
State/Country:	MINNESOTA	
Postal Code:	55133-3427	

# **PROPERTY NUMBERS Total: 1**

Property Type	Number
Application Number:	16321534

#### CORRESPONDENCE DATA

Fax Number: (651)736-7586

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.

651-733-1500 Phone: Email: tlriley@mmm.com

3M INNOVATIVE PROPERTIES COMPANY Correspondent Name:

Address Line 1: PO BOX 33427

Address Line 4: ST. PAUL, MINNESOTA 55133-3427

ATTORNEY DOCKET NUMBER: 78630US004

> **PATENT REEL: 051153 FRAME: 0340**

505798861

NAME OF SUBMITTER: TRACEY L. RILEY				
SIGNATURE: /TRACEY L. RILEY/				
DATE SIGNED:	12/02/2019			
	This document serves as an Oath/Declaration (37 CFR 1.63).			
Total Attachments: 10				
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source=FullyExecutedDeclaration-78630#page2.tif				
source=FullyExecutedDeclaration-78630#page3.tif				
source=FullyExecutedDeclaration-78630#page4.tif				
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source=FullyExecutedDeclaration-78630#page9.tif				

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Case No:

78630US004

As a below named inventor, I believe I am an original inventor or an original joint inventor of a claimed invention in the application and for which a patent is sought on the invention entitled:

DEVICE AN	ID METHOD FOR PROGRESSI LIGHT HARDEN	VELY BUILDING UP AN OBJECT FROM A ABLE MATERIAL
The specification of	which:	
is attached her	eto;	
⊠ was filed on	January 20 2040	
	January 29, 2019 as Application No.	16/321534
		10002.000
is identified as	PCT International Application No.	PCT/US2017/044278
ined On	July 28, 2017	
The above-identified	application was made or authorized to	o be made by me.
I hereby acknowledg fine or imprisonment	e that any willful false statement made of not more than 5 years, or both.	in this declaration is punishable under 18 U.S.C. 1001 by
assigns, the entire ricontinuation (in whole by me or made joint) termination of, my erall Letters Patent, rethereto (including the own name and to clainternational convent continuation (in whole part upon the said in have been by me har	a corporation of Delaware, having its ight, title, and interest in and to the said e or in part) of said application, and in y with others (provided any such improprious and the said apployment with 3M COMPANY and an examinations, relssues, or extensions a right to apply for Letters Patent, Utility im any priority rights for such foreign a ions, treaties, or otherwise), which have or in part), renewal, reexamination, revention or improvements thereon, to be discussed this assignment and transfer not bee	
that may be deemed	ther applications, assignments, and do necessary by said Company, its succe	nd administrators, to execute and deliver without further ocuments, and to perform such other acts as I lawfully may, essors, assigns, and nominees, fully to secure its right, title, Patent, Utility Models, or Inventors' Certificates in any and all
I do hereby authorize granted upon any of t litle, and interest ther	HE SAID ADDICAROUS, 10 SSID 3W IDDOV	ents to issue any and all Letters Patent which may be ative Properties Company, as the assignee of the entire right,
Legal Name of Inver	ntor:	
Malte Korten		
Inventor's Signature	•	Date:
440		1px 23 ml 2013

Goardino Non

Case No:

78630US004

As a below named inventor, I believe I am an original inventor or an original joint inventor of a claimed invention in the application and for which a patent is sought on the invention entitled:

# DEVICE AND METHOD FOR PROGRESSIVELY BUILDING UP AN OBJECT FROM A LIGHT HARDENABLE MATERIAL The specification of which: is attached hereto; was filed on January 29, 2019 as United States Application No. 16/321534 is identified as PCT International Application No. PCT/US2017/044278 July 28, 2017 filed on The above-identified application was made or authorized to be made by me. I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than 5 years, or both. In addition, for good and valuable consideration, receipt of which is acknowledged. I have agreed to assign and transfer and do hereby assign and transfer unto the 3M INNOVATIVE PROPERTIES COMPANY, a wholly-owned subsidiary of 3M COMPANY, and a corporation of Delaware, having its principal office at Saint Paul, Minnesota, its successors and assigns, the entire right, title, and interest in and to the said invention and application, and in and to any division or continuation (in whole or in part) of said application, and in and to any and all improvements in the said invention made by me or made jointly with others (provided any such improvement is made during, or within one year after the termination of, my employment with 3M COMPANY and any of its existing or future subsidiaries), and in and to any and all Letters Patent, reexaminations, reissues, or extensions thereof, of the United States of America and countries foreign thereto (including the right to apply for Letters Patent, Utility Models, or Inventors' Certificates in foreign countries in its own name and to claim any priority rights for such foreign applications to which such applications are entitled under international conventions, treaties, or otherwise), which have been or may be granted thereon or on any divisional. continuation (in whole or in part), renewal, reexamination, reissue, or other or further application based in whole or in part upon the said invention or improvements thereon, to be held and enjoyed as fully and exclusively as they would have been by me had this assignment and transfer not been made: I do further agree for myself and for my heirs, executors, and administrators, to execute and deliver without further consideration any further applications, assignments, and documents, and to perform such other acts as I lawfully may, that may be deemed necessary by said Company, its successors, assigns, and nominees, fully to secure its right, title, and interest as aforesaid and to obtain or maintain Letters Patent, Utility Models, or Inventors' Certificates in any and all countries; and I do hereby authorize and request the Commissioner of Patents to issue any and all Letters Patent which may be granted upon any of the said applications, to said 3M Innovative Properties Company, as the assignee of the entire right, title, and interest therein. Legal Name of Inventor. Gioacchino Raia Inventor's Signature: Date:

M. Juni 2019

Case No:

78630US004

As a below named inventor, I believe I am an original inventor or an original joint inventor of a claimed invention in the application and for which a patent is sought on the invention entitled:

DEVICE AND	METHOD FOR PROGRESS! LIGHT HARDEN		ING UP AN OBJECT FROM A RIAL
The specification of w	hich:		
is attached heret	o;		
⊠ was filed on as United States	January 29, 2019 Application No.		16/321534
is identified as Po	CT International Application No. July 28, 2017		PCT/US2017/044278
The above-identified a	application was made or authorized to	o be made by me	⊋.
I hereby acknowledge fine or imprisonment of	that any willful false statement made of not more than 5 years, or both.	in this declarati	on is punishable under 18 U.S.C. 1001 by
and do hereby assign 3M COMPANY, and a assigns, the entire right continuation (in whole by me or made jointly termination of, my empail Letters Patent, reexthereto (including the own name and to clair international convention continuation (in whole part upon the said inverse).	and transfer unto the 3M INNOVATIVE corporation of Delaware, having its plot, title, and interest in and to the said or in part) of said application, and in with others (provided any such improployment with 3M COMPANY and an xaminations, reissues, or extensions right to apply for Letters Patent, Utility in any priority rights for such foreign and foreign and foreign and foreign and foreign and foreign, renewal, reexamination, renewal, renewal, reexamination, renewal,	VE PROPERTIE principal office at any ention and a and to any and a and to any and a property of its existing of the U y Models, or investigations to wive been or may be applications or other a held and enjoy	riedged, I have agreed to assign and transfer S COMPANY, a wholly-owned subsidiary of it Saint Paul, Minnesota, its successors and application, and in and to any division or all improvements in the said invention made during, or within one year after the or future subsidiaries), and in and to any and nited States of America and countries foreign entors' Certificates in foreign countries in its hich such applications are entitled under be granted thereon or on any divisional, or further application based in whole or in red as fully and exclusively as they would
consideration any furth that may be deemed r	her applications, assignments, and do necessary by said Company, its succ	ocuments, and to essors, assigns,	s, to execute and deliver without further operform such other acts as I lawfully may, and nominees, fully to secure its right, title, odels, or inventors' Certificates in any and all
I do hereby authorize granted upon any of the title, and interest there	he said applications, to said 3M Innov	tents to issue an rative Properties	y and all Letters Patent which may be Company, as the assignee of the entire right,
Legal Name of Inven	itor	***************************************	
Adrian S. Eckert			
Inventor's Signature:	•	Date:	
Meiden	Each	04/28	1/2019

Case No:

78630US004

As a below named inventor, I believe I am an original inventor or an original joint inventor of a claimed invention in the application and for which a patent is sought on the invention entitled:

# DEVICE AND METHOD FOR PROGRESSIVELY BUILDING UP AN OBJECT FROM A LIGHT HARDENABLE MATERIAL The specification of which: is attached hereto: January 29, 2019 was filed on as United States Application No. 16/321534 PCT/US2017/044278 is identified as PCT International Application No. July 28, 2017 filed on The above-identified application was made or authorized to be made by me. I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than 5 years, or both. In addition, for good and valuable consideration, receipt of which is acknowledged, I have agreed to assign and transfer and do hereby assign and transfer unto the 3M INNOVATIVE PROPERTIES COMPANY, a wholly-owned subsidiary of 3M COMPANY, and a corporation of Delaware, having its principal office at Saint Paul, Minnesota, its successors and assigns, the entire right, title, and interest in and to the said invention and application, and in and to any division or continuation (in whole or in part) of said application, and in and to any and all improvements in the said invention made by me or made jointly with others (provided any such improvement is made during, or within one year after the termination of, my employment with 3M COMPANY and any of its existing or future subsidiaries), and in and to any and all Letters Patent, reexaminations, reissues, or extensions thereof, of the United States of America and countries foreign thereto (including the right to apply for Letters Patent, Utility Models, or Inventors' Certificates in foreign countries in its own name and to claim any priority rights for such foreign applications to which such applications are entitled under international conventions, treaties, or otherwise), which have been or may be granted thereon or on any divisional, continuation (in whole or in part), renewal, reexamination, reissue, or other or further application based in whole or in part upon the said invention or improvements thereon, to be held and enjoyed as fully and exclusively as they would have been by me had this assignment and transfer not been made; I do further agree for myself and for my heirs, executors, and administrators, to execute and deliver without further consideration any further applications, assignments, and documents, and to perform such other acts as I lawfully may, that may be deemed necessary by said Company, its successors, assigns, and nominees, fully to secure its right, title, and interest as aforesaid and to obtain or maintain Letters Patent, Utility Models, or Inventors' Certificates in any and all countries; and I do hereby authorize and request the Commissioner of Patents to issue any and all Letters Patent which may be granted upon any of the said applications, to said 3M Innovative Properties Company, as the assignee of the entire right, title, and interest therein. Legal Name of Inventor: Bernhard Hofmann Inventor's Signature: Date: 18.04.19

Case No:

78630US004

As a below named inventor, I believe I am an original inventor or an original joint inventor of a claimed invention in the application and for which a patent is sought on the invention entitled:

# DEVICE AND METHOD FOR PROGRESSIVELY BUILDING UP AN OBJECT FROM A

	LIGHT HAR	RDENABLE MATI	ERIAL	
The specification of v	which:			
is attached here	eto;			
was filed on as United State	January 29, 2019 s Application No.		16/321534	
is identified as t	PCT International Application N July 28, 2017	0.	PCT/US2017/044278	
The above-identified	application was made or author	rized to be made by	me.	
I hereby acknowledg fine or imprisonment	e that any willful false statemer of not more than 5 years, or bo	nt made in this declar oth.	ation is punishable under 18 U.S.C	), 1001 by
and do hereby assign 3M COMPANY, and assigns, the entire riccontinuation (in whole by me or made jointly termination of, my enall Letters Patent, recthereto (including the own name and to clainternational convent continuation (in whole part upon the said improve been by me har	and transfer unto the 3M INN a corporation of Delaware, have the corporation of Delaware, have the corporation of said application, with others (provided any such apployment with 3M COMPANY examinations, reissues, or exterminations, reissues, or exterminations, reissues, or exterminations, reissues, or exterminations, treaties, or otherwise), where or in part), renewal, reexaming this assignment and transfer in this assignment and transfer in the corporation or improvements there are this assignment and transfer in the corporation of the c	OVATIVE PROPERT ing its principal office the said invention and and in and to any ar h improvement is ma and any of its existin nsions thereof, of the nt, Utility Models, or lib preign applications to nich have been or ma nation, reissue, or oth on, to be held and en not been made;	owledged, I have agreed to assign TES COMPANY, a wholly-owned seat Saint Paul, Minnesota, its successive at Saint Paul, Minnesota, its successive application, and in and to any divided all improvements in the said invested during, or within one year aftering or future subsidiaries), and in any or future subsidiaries, and in any or future States of America and countries. Certificates in foreign countries which such applications are entitled by be granted thereon or on any divided as fully and exclusively as the	subsidiary of essors and ision or ention made the document of the document of the document is set of the document of the docum
consideration any fur that may be deemed	ther applications, assignments, necessary by said Company, if	, and documents, and ts successors, assign	ors, to execute and deliver without of to perform such other acts as I law is, and nominees, fully to secure its Models, or Inventors' Certificates in	wfully may, s right, title.
I do hereby authorize granted upon any of title, and interest ther	the said applications, to said 31	r of Patents to issue Vi Innovative Properti	any and all Letters Patent which m es Company, as the assignee of th	ay be e entire right,
Legal Name of Inve	ntor:			***************************************
Christian A. Ric	hter			
Inventor's Signature	:-2d	Date:	7 11 19	

Case No:

78630US004

As a below named inventor, I believe I am an original inventor or an original joint inventor of a claimed invention in the application and for which a patent is sought on the invention entitled:

The specification of	which:	
is attached her	reto;	
⊠ was filed on as United Stat	January 29, 2019 es Application No.	16/321534
is identified as	PCT International Application No. July 28, 2017	PCT/US2017/044278
The above-identifie	d application was made or authorized	to be made by me.
I hereby acknowled fine or imprisonmer	ge that any wiifful false statement mad it of not more than 5 years, or both.	le in this declaration is punishable under 18 U.S.C. 1001 by
assigns, the entire continuation (in who by me or made join termination of, my eall Letters Patent, rethereto (including the own name and to conternational convecentinuation (in who part upon the said in have been by me here ontinuation of the said in the sa	right, title, and interest in and to the sail or in part) of said application, and in the with others (provided any such implemployment with 3M COMPANY and a sexaminations, reissues, or extensions are right to apply for Letters Patent, Utilitating any priority rights for such foreign intions, treaties, or otherwise), which have or in part), renewal, reexamination, invention or improvements thereon, to ad this assignment and transfer not be	
consideration any fi that may be deeme	urther applications, assignments, and dinecessary by said Company, its suc	and administrators, to execute and deliver without further documents, and to perform such other acts as I lawfully may, cessors, assigns, and nominees, fully to secure its right, title, a Patent, Utility Models, or Inventors' Certificates in any and al
I do hereby authoriz granted upon any c title, and interest th	f the said applications, to said 3M Inno	atents to issue any and all Letters Patent which may be ovative Properties Company, as the assignee of the entire righ
Legal Name of Inv	entor.	
Bastian P. Kir	chner	
Inventor's Signatu	re:	Date:
Van D	r Va	April 23, 2019

DECLARATION AND ASSIGNMENT,	
FOR UTILITY OR DESIGN	
PATENT APPLICATION (37 CFR § 1.6	3)

Case No:

78630US004

As a below named inventor, I believe I am an original inventor or an original joint inventor of a claimed invention in the application and for which a patent is sought on the invention entitled:

DEVICE AND	LIGHT HARDENA		
The specification of w	hich:		
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	January 29, 2019		
as United States		16/	321534
is identified as Pi	CT International Application No. July 28, 2017	PC	T/US2017/044278
The above-identified a	application was made or authorized to	be made by me.	
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thereto (including the own name and to clair international convention continuation (in whole part upon the said inv	right to apply for Letters Patent, Utility m any priority rights for such foreign a ons, treaties, or otherwise), which hav or in part), renewal, reexamination, re	Models, or Invento applications to which the been or may be go elssue, or other or the a held and enjoyed	
consideration any furt that may be deemed i	necessary by said Company, its succe	ocuments, and to pessors, assigns, an	o execute and deliver without further erform such other acts as I lawfully may, d nominees, fully to secure its right, title, is, or Inventors' Certificates in any and all
			nd all Letters Patent which may be impany, as the assignee of the entire right
Legal Name of Inver		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
Anja Friedrich			
Inventor's Signature		Date:	
U. Tie	die L	18.0	74. 2019

Case No:

78630US004

As a below named inventor, I believe I am an original inventor or an original joint inventor of a claimed invention in the application and for which a patent is sought on the invention entitled:

# DEVICE AND METHOD FOR PROGRESSIVELY BUILDING UP AN OBJECT FROM A LIGHT HARDENABLE MATERIAL

L		LIGHT HARDENA	ARLE MAI	EKIAL
The	specification of wl	nich:		
	is attached hereto	<b>D</b> ;		
Ø	was filed on as United States	January 29, 2019 Application No.		16/321534
×	is identified as Pt filed on	CT International Application No.  July 28, 2017		PCT/US2017/044278
The	above-identified a	pplication was made or authorized to	be made by	me.
In a and 3M assi con term all L ther own	or imprisonment of ddition, for good at do hereby assign COMPANY, and a igns, the entire right inuation (in whole ne or made jointly inination of, my empletters Patent, reexteto (including the iname and to claim	f not more than 5 years, or both, and valuable consideration, receipt of and transfer unto the 3M INNOVATIVe corporation of Delaware, having its part, title, and interest in and to the said or in part) of said application, and in with others (provided any such improbloyment with 3M COMPANY and an earninations, reissues, or extensions right to apply for Letters Patent, Utility any priority rights for such foreign a	which is ackn VE PROPERT orincipal office I invention and and to any ar ement is ma y of its existir thereof, of the Models, or I upplications to	cation is punishable under 18 U.S.C. 1001 by cowledged, I have agreed to assign and transfer TIES COMPANY, a wholly-owned subsidiary of at Saint Paul, Minnesota, its successors and d application, and in and to any division or and all improvements in the said invention made ade during, or within one year after the ag or future subsidiaries), and in and to any and a United States of America and countries foreign eventors' Certificates in foreign countries in its which such applications are entitled under any be granted thereon or on any divisional,
con part hav	tinuation (in whole upon the said inve e been by me had	or in part), renewal, reexamination, rention or improvements thereon, to be this assignment and transfer not bee	eissue, or oth e held and en n made;	er or further application based in whole or in joyed as fully and exclusively as they would tors, to execute and deliver without further
that and	may be deemed r	ecessary by said Company, its succ	essors, assigr	d to perform such other acts as I lawfully may, ns, and nominees, fully to secure its right, title, Models, or Inventors' Certificates in any and all
grar		e said applications, to said 3M Innov		any and all Letters Patent which may be less Company, as the assignee of the entire right,
8	gal Name of Inven	tor:	<del>/////////////////////////////////////</del>	
H	elmar B. Mayr			
Inv	ventor's Signature:	And the state of t	Date:	26 27° × 20-19

Case No:

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fine or imprisonment In addition, for good and do hereby assig 3M COMPANY, and assigns, the entire ri- continuation (in whol by me or made jointl- termination of, my er all Letters Patent, re- thereto (including the own name and to cla international conven- continuation (in whol part upon the said in have been by me ha I do further agree for consideration any fu that may be deemed and interest as afore countries; and I do hereby authorize	and valuable consideration, receipt of a nand transfer unto the 3M INNOVATIVE a corporation of Delaware, having its perfect of a corporation of Delaware, having its perfect of title, and interest in and to the said e or in part) of said application, and in y with others (provided any such improposed any priority rights for such foreign a tions, treaties, or otherwise), which have or in part), renewal, reexamination, revention or improvements thereon, to be detailed and for my heirs, executors, and the transfer applications, assignments, and delayed and to obtain or maintain Letters and request the Commissioner of Pa	which is acknow VE PROPERTI principal office of invention and and to any and overment is made over the reof, of the y Models, or Interested and enjugations to be held and enjugation made; and administrate occuments, and essors, assignatent, Utility Matents to issue a state of the patent of the p	wledged, I have agreed to assign and transfer ES COMPANY, a wholly-owned subsidiary of at Saint Paul, Minnesota, its successors and application, and in and to any division or all improvements in the said invention made e during, or within one year after the or future subsidiaries), and in and to any and United States of America and countries foreign ventors' Certificates in foreign countries in its which such applications are entitled under be granted thereon or on any divisional, or or further application based in whole or in byed as fully and exclusively as they would as fully and exclusively as they would res, to execute and deliver without further to perform such other acts as I lawfully may, and nominees, fully to secure its right, title, models, or Inventors' Certificates in any and all letters Patent which may be s Company, as the assignee of the entire right
title, and interest the	rein.		2 Company, as the assigned of the orthorigh
Legal Name of Inve			
		Date:	
Inventor's Signatur		Date.	7/2013

Case No:

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# DEVICE AND METHOD FOR PROGRESSIVELY BUILDING UP AN OBJECT FROM A LIGHT HARDENABLE MATERIAL The specification of which: is attached hereto: W was filed on January 29, 2019 as United States Application No. 16/321534 is identified as PCT International Application No. PCT/US2017/044278 filed on July 28, 2017 The above-identified application was made or authorized to be made by me. I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than 5 years, or both. In addition, for good and valuable consideration, receipt of which is acknowledged, I have agreed to assign and transfer and do hereby assign and transfer unto the 3M INNOVATIVE PROPERTIES COMPANY, a wholly-owned subsidiary of 3M COMPANY, and a corporation of Delaware, having its principal office at Saint Paul, Minnesota, its successors and assigns, the entire right, title, and interest in and to the said invention and application, and in and to any division or continuation (in whole or in part) of said application, and in and to any and all improvements in the said invention made by me or made jointly with others (provided any such improvement is made during, or within one year after the termination of, my employment with 3M COMPANY and any of its existing or future subsidiaries), and in and to any and all Letters Patent, reexaminations, reissues, or extensions thereof, of the United States of America and countries foreign thereto (including the right to apply for Letters Patent, Utility Models, or Inventors' Certificates in foreign countries in its own name and to claim any priority rights for such foreign applications to which such applications are entitled under international conventions, treaties, or otherwise), which have been or may be granted thereon or on any divisional, continuation (in whole or in part), renewal, reexamination, reissue, or other or further application based in whole or in part upon the said invention or improvements thereon, to be held and enjoyed as fully and exclusively as they would have been by me had this assignment and transfer not been made; I do further agree for myself and for my heirs, executors, and administrators, to execute and deliver without further consideration any further applications, assignments, and documents, and to perform such other acts as I lawfully may, that may be deemed necessary by said Company, its successors, assigns, and nominees, fully to secure its right, title, and interest as aforesaid and to obtain or maintain Letters Patent, Utility Models, or Inventors' Certificates in any and all countries: and I do hereby authorize and request the Commissioner of Patents to issue any and all Letters Patent which may be granted upon any of the said applications, to said 3M Innovative Properties Company, as the assignee of the entire right, title, and interest therein. Legal Name of Inventor. Gallus Schechner Inventor's Signature: eller Ydd dan c April 23th 2019

PATENT REEL: 051153 FRAME: 0351

**RECORDED: 12/02/2019**