06/27/2018 504979996

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT5026742

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
ASHISH ARORA	05/29/2018
JOTHIMUTHU PALANISAMY	05/29/2018
ANDREW T. KEYS	06/26/2018
MICHAEL E. TOTH	06/25/2018
DANIEL L. CARPENTER	06/18/2018

RECEIVING PARTY DATA

Name:	BANK OF AMERICA CORPORATION
Street Address:	MAIL CODE NC 1-027-20-05
Internal Address:	214 N. TRYON ST.
City:	CHARLOTTE
State/Country:	NORTH CAROLINA
Postal Code:	28255

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	16019775

CORRESPONDENCE DATA

Fax Number: (202)824-3001

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.

Phone: (312) 463-5000

bwptopat@bannerwitcoff.com, gdowns@bannerwitcoff.com Email:

BANNER & WITCOFF, LTD. **Correspondent Name:**

1100 13TH ST. NW Address Line 1:

Address Line 2: STE 1200

Address Line 4: WASHINGTON, D.C. 20005

ATTORNEY DOCKET NUMBER:	007131.01978
NAME OF SUBMITTER:	DARRELL G. MOTTLEY
SIGNATURE:	/Darrell G. Mottley/
DATE SIGNED:	06/27/2018
	This document serves as an Oath/Declaration (37 CFR 1.63).

PATENT

REEL: 046216 FRAME: 0452

Total Attachments: 10
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PATENT REEL: 046216 FRAME: 0453

PMN: 8262US1

COMBINED DECLARATION (37 CFR 1.63) AND ASSIGNMENT FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

Title of Invention	METHOD AND SYSTEM FOR DATA COMMUNICATION AND FRICTIONLESS AUTHENTICATION
As the below	named inventor, I hereby declare that:
This declaration is directed to:	The attached application, or
	United States application or PCT international application number
The above-ide	entified application was made or authorized to be made by me.
I believe that	I am the original inventor or an original joint inventor of a claimed invention in the application.
	bwledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or of not more than five (5) years, or both.
	ASSIGNMENT
have invented otherwise, to	Ashish Arora ("Assignor"), a citizen of India (Country), residing in Issaquah, Washington (City, State/Province) I the above invention. If the following lines are blank, the above application was filed on even date herewith, comply with 37 C.F.R. §3.21 for recordal of this assignment, I, an assignor below, hereby authorize the Bank of America to insert the filing date and application number below after they become known and prior to rdation.
	U.S. Application No16/019,775, filedJune 27, 2018
Delaware, and title and inter	NK OF AMERICA CORPORATION ("Assignee"), a Corporation duly organized under the laws of the State of I having its offices and place of business at Charlotte, North Carolina, is desirous of acquiring the entire right, est in and to the aforesaid inventions and in and to all applications and Letters Patent therefor granted in the of America, and in any and all countries foreign thereto:
payment for t said Assignor, representativ countries for a countries in it entitled unde Letters Patent in-parts and e confidential ir request the C inventions or interest. I rep without furth nominees, an	FORE, TO WHOM IT MAY CONCERN, be it known that, for good and valuable consideration, including salary or the making of inventions, or employee benefits, the receipt and sufficiency of which is hereby acknowledged, I by these presents do sell, assign and transfer unto said Assignee, its successors, assigns and legal es, the full and exclusive right, title and interest for the territory of the United States of America and all ign thereto, and throughout the world and in space, (including the right to apply for Letters Patent in foreign sown name and to claim any priority rights for such foreign applications to which such applications are international conventions, treaties, or otherwise), in and to said inventions and in and to all applications and granted therefor, and all non-provisionals, divisionals, reissues, reexaminations, continuations, continuations, tensions thereof, and in and to all copyrights, trademarks with their associated goodwill, trade secrets, afformation, and compilations, necessary or useful to make, use, or sell the inventions. I hereby authorize and permissioner of Patents, and any official whose duty it is to issue patents, to issue all Letters Patent on said resulting therefrom to said Assignee, or its successors and assigns, as assignee of the entire right, title and resent and warrant that I have full right to agree to, execute, and deliver this assignment. I agree that I will execute all non-visional, reissue, reexamination, continuation and continuation-in-part applications, testify in any legal

proceedings, sign all lawful papers, make all rightful oaths, and generally do everything reasonable for said Assignee, its successors, assigns, and nominees, to obtain and enforce proper patent protection for said inventions in all countries.

WARNING:

purposes are not	retained in the application file and therefore ar	e not publicly av	vailable.	
LEGAL NAME OF	INVENTOR			
Inventor:	Ashish Arora	Date:0	5-29-2018	
Signature:	, Ashish			Management of the second of th

PMN: 8262US1

COMBINED DECLARATION (37 CFR 1.63) AND ASSIGNMENT FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

Title of Invention	METHOD AND SYSTEM FOR DATA COMMUNICATION AND FRICTIONLESS AUTHENTICATION	
As the below	named inventor, I hereby declare that:	
This declarati is directed to	The attached application, or	
	United States application or PCT international application number filed on	
The above-ide	entified application was made or authorized to be made by me.	
I believe that	I am the original inventor or an original joint inventor of a claimed invention in the application.	
	owledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or t of not more than five (5) years, or both.	
	ASSIGNMENT	
WHEREAS, I, Jothimuthu Palanisamy ("Assignor"), a citizen ofIndia(Country), residing in _Bothell, Washington(City, State/Province) have invented the above invention. If the following lines are blank, the above application was filed on even date herewith, otherwise, to comply with 37 C.F.R. §3.21 for recordal of this assignment, I, an assignor below, hereby authorize the attorneys for Bank of America to insert the filing date and application number below after they become known and prior to filing the recordation.		
	U.S. Application No. $\underline{16/019,775}$, filed $\underline{June~27,2018}$.	
WHEREAS, BANK OF AMERICA CORPORATION ("Assignee"), a Corporation duly organized under the laws of the State of Delaware, and having its offices and place of business at Charlotte, North Carolina, is desirous of acquiring the entire right, title and interest in and to the aforesaid inventions and in and to all applications and Letters Patent therefor granted in the United States of America, and in any and all countries foreign thereto:		
NOW, THEREFORE, TO WHOM IT MAY CONCERN, be it known that, for good and valuable consideration, including salary or payment for the making of inventions, or employee benefits, the receipt and sufficiency of which is hereby acknowledged, I said Assignor, by these presents do sell, assign and transfer unto said Assignee, its successors, assigns and legal representatives, the full and exclusive right, title and interest for the territory of the United States of America and all countries foreign thereto, and throughout the world and in space, (including the right to apply for Letters Patent 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), in and to said inventions and in and to all applications and Letters Patent granted therefor, and all non-provisionals, divisionals, reissues, reexaminations, continuations, continuation-in-parts and extensions thereof, and in and to all copyrights, trademarks with their associated goodwill, trade secrets, confidential information, and compilations, necessary or useful to make, use, or sell the inventions. I hereby authorize and request the Commissioner of Patents, and any official whose duty it is to issue patents, to issue all Letters Patent on said inventions or resulting therefrom to said Assignee, or its successors and assigns, as assignee of the entire right, title and interest. I represent and warrant that I have full right to agree to, execute, and deliver this assignment. I agree that I will without further consideration, but at the expense of Assignee, communicate to said Assignee, or its successors, assigns, or nominees, any and all facts known to me regarding said inventions whenever requested, and that I will execute all non-provisional, divisional, reissue, reexamination, continuation and continuation-in-part applications, testify in any legal proceedings, sign all lawful papers, make all rightful oaths, and generally do		

WARNING:

purposes are not r	retained in the application file and therefore are	e not publicly available.
LEGAL NAME OF II	NVENTOR	
Inventor:	Jothimuthu Palanisamy	Date:05/29/2018
Signature:	P-3-1e-	

COMBINED DECLARATION (37 CFR 1.63) AND ASSIGNMENT FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

Title of Invention	METHOD AND SYSTEM FOR DATA COMMUNICATION AND FRICTIONLESS AUTHENTICATION
As the below	named inventor; I hereby declare that:
This declarati	The attached application, or
	United States application or PCT International application number
The above-ide	entified application was made or authorized to be made by me.
I believe that	I am the original inventor or an original joint inventor of a claimed invention in the application.
I hereby ackn imprisonmen	owledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or of not more than five (5) years, or both.
	ASSIGNMENT
date herewith authorize the	Andrew T. Keys ("Assignor"), a citizen of
	U.S. Application No. <u>16/019,775</u> , filed <u>June 27, 2018</u> .
Delaware, an	NK OF AMERICA CORPORATION ("Assignee"), a Corporation duly organized under the laws of the State of diavoring its offices and place of business at Charlotte, North Carolina, is desirous of acquiring the entire right, est in and to the aforesaid inventions and in and to all applications and Letters Patent therefor granted in the of America, and in any and all countries foreign thereto:
payment for said Assignor representative countries in a entitled under Letters Paten in-parts and confidential in request the Conventions or interest. I reg without furth nominees, are provisional, conceedings	FORE, TO WHOM IT MAY CONCERN, be it known that, for good and valuable consideration, including salary or the making of inventions, or employee benefits, the receipt and sufficiency of which is hereby acknowledged, to these presents do sell, assign and transfer unto sald Assignee, its successors, assigns and legal es, the full and exclusive right, title and interest for the territory of the United States of America and all eigh thereto, and throughout the world and in space, (including the right to apply for Letters Patent in foreign is own name and to claim any priority rights for such foreign applications to which such applications are rinternational conventions, treaties, or otherwise), in and to sald inventions and in and to all applications and transfer therefor, and all non-provisionals, divisionals, reissues, reexaminations, continuations, continuations, extensions thereof, and in and to all copyrights, trademarks with their associated goodwill, trade secrets, information, and compilations, necessary or useful to make, use, or sell the inventions. I hereby authorize and ommissioner of Patents, and any official whose duty it is to issue patents, to issue all Letters Patent on said resulting therefrom to said Assignee; or its successors and assigns, as assignee of the entire right, title and resent and warrant that I have full right to agree to, execute, and deliver this assignment. I agree that I will er consideration, but at the expense of Assignee, communicate to said Assignee, or its successors, assigns, or y and all facts known to me regarding said inventions whenever requested, and that I will execute all non-livisional, reissue, reexamination, continuation and continuation-in-part applications, testify in any legal sign all lawful papers, make all rightful oaths, and generally do everything reasonable for said Assignee, its

[Page 1 of 2]

WARNING:

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LEGAL NAME OF INVENTOR	
Inventor: Andrew T. Keys	Date: 6/26/2018
Signature:	

PMN: 8262US1

COMBINED DECLARATION (37 CFR 1.63) AND ASSIGNMENT FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

Title of Invention	METHOD AND SYSTEM FOR DATA COMMUNICATION AND FRICTIONLESS AUTHENTICATION
As the below	named inventor, I hereby declare that:
This declaration	The attached application, or
	United States application or PCT international application number
The above-ide	entified application was made or authorized to be made by me.
I believe that	I am the original inventor or an original joint inventor of a claimed invention in the application.
	owledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or to find more than five (5) years, or both.
	ASSIGNMENT
Carolina (City filed on even hereby autho	Michael E. Toth ("Assignor"), a citizen of the United States of America (Country), residing in Charlotte, North State/Province) have invented the above invention. If the following lines are blank, the above application was date herewith, otherwise, to comply with 37 C.F.R. §3.21 for recordal of this assignment, I, an assignor below, rize the attorneys for Bank of America to insert the filing date and application number below after they and prior to filing the recordation.
	U.S. Application No. <u>16/019,775</u> , filed <u>June 27, 2018</u> .
Delaware, and title and inter	NK OF AMERICA CORPORATION ("Assignee"), a Corporation duly organized under the laws of the State of I having its offices and place of business at Charlotte, North Carolina, is desirous of acquiring the entire right, est in and to the aforesaid inventions and in and to all applications and Letters Patent therefor granted in the of America, and in any and all countries foreign thereto:
payment for t said Assignor, representative countries for e countries in it entitled under Letters Patent in-parts and e confidential in request the Co	FORE, TO WHOM IT MAY CONCERN, be it known that, for good and valuable consideration, including salary or the making of inventions, or employee benefits, the receipt and sufficiency of which is hereby acknowledged, I by these presents do sell, assign and transfer unto said Assignee, its successors, assigns and legal es, the full and exclusive right, title and interest for the territory of the United States of America and all ign thereto, and throughout the world and in space, (including the right to apply for Letters Patent in foreign sown name and to claim any priority rights for such foreign applications to which such applications are international conventions, treaties, or otherwise), in and to said inventions and in and to all applications and granted therefor, and all non-provisionals, divisionals, reissues, reexaminations, continuations, extensions thereof, and in and to all copyrights, trademarks with their associated goodwill, trade secrets, information, and compilations, necessary or useful to make, use, or sell the inventions. I hereby authorize and the provisional provisi

interest. I represent and warrant that I have full right to agree to, execute, and deliver this assignment. I agree that I will without further consideration, but at the expense of Assignee, communicate to said Assignee, or its successors, assigns, or nominees, any and all facts known to me regarding said inventions whenever requested, and that I will execute all non-provisional, divisional, reissue, reexamination, continuation and continuation-in-part applications, testify in any legal proceedings, sign all lawful papers, make all rightful oaths, and generally do everything reasonable for said Assignee, its successors, assigns, and nominees, to obtain and enforce proper patent protection for said inventions in all countries.

PMN: 8262US1

WARNING:

purposes are not retained in the application file and therefore are not publicly available.					
LEGAL NAME OF INVENTOR					
Inventor: Michael E. Toth	Date:06/25/2018				
Signature:, Michael E. Toth					

COMBINED DECLARATION (37 CFR 1.63) AND ASSIGNMENT FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

Title of Invention	METHOD AND SYSTEM FOR DATA COMMUNICATION AND FRICTIONLESS AUTHENTICATION			
As the below	named inventor, I hereby declare that:			
This declarati	This declaration			
	United States application or PCT international application number			
The above-identified application was made or authorized to be made by me.				
I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.				
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 five (5) years, or both.				
	ASSIGNMENT			
WHEREAS, I, Daniel L. Carpenter ("Assignor"), a citizen of <u>In teal States of America</u> (Country), residing in Mathews, North Carolina (City, State/Province) have invented the above invention. If the following lines are blank, the above application was filed on even date herewith, otherwise, to comply with 37 C.F.R. §3.21 for recordal of this assignment, I, an assignor below, hereby authorize the attorneys for Bank of America to insert the filing date and application number below after they become known and prior to filing the recordation.				
	U.S. Application No16/019,775, filedJune 27, 2018			
WHEREAS, BANK OF AMERICA CORPORATION ("Assignee"), a Corporation duly organized under the laws of the State of Delaware, and having its offices and place of business at Charlotte, North Carolina, is desirous of acquiring the entire right, title and interest in and to the aforesaid inventions and in and to all applications and Letters Patent therefor granted in the United States of America, and in any and all countries foreign thereto:				
payment for the said Assignor, representative countries for a countries in it entitled under Letters Patentin-parts and a confidential in request the Countries. I republished further nominees, and provisional, deproceedings,	FORE, TO WHOM IT MAY CONCERN, be it known that, for good and valuable consideration, including salary or he making of inventions, or employee benefits, the receipt and sufficiency of which is hereby acknowledged, I by these presents do sell, assign and transfer unto said Assignee, its successors, assigns and legal es, the full and exclusive right, title and interest for the territory of the United States of America and all sign thereto, and throughout the world and in space, (including the right to apply for Letters Patent in foreign is own name and to claim any priority rights for such foreign applications to which such applications are rinternational conventions, treaties, or otherwise), in and to said inventions and in and to all applications and granted therefor, and all non-provisionals, divisionals, reissues, reexaminations, continuations, tensions thereof, and in and to all copyrights, trademarks with their associated goodwill, trade secrets, information, and compilations, necessary or useful to make, use, or sell the inventions. I hereby authorize and commissioner of Patents, and any official whose duty it is to issue patents, to issue all Letters Patent on said resulting therefrom to said Assignee, or its successors and assigns, as assignee of the entire right, title and resent and warrant that I have full right to agree to, execute, and deliver this assignment. I agree that I will er consideration, but at the expense of Assignee, communicate to said Assignee, or its successors, assigns, or y and all facts known to me regarding said inventions whenever requested, and that I will execute all non-ivisional, reissue, reexamination, continuation and continuation-in-part applications, testify in any legal sign all lawful papers, make all rightful oaths, and generally do everything reasonable for said Assignee, its signs, and nominees, to obtain and enforce proper patent protection for said inventions in all countries.			

PMN: 8262US1

WARNING:

LEGAL NAME OF INVENTOR				
Inventor:	Daniel L. Carpenter	Date: _	6/18/2018	
Signature:	Maniel Z. Caysenter			