### 12/17/2021 507033533

# PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT7080370

SUBMISSION TYPE:	NEW ASSIGNMENT	
NATURE OF CONVEYANCE:	ASSIGNMENT	

# **CONVEYING PARTY DATA**

Name	Execution Date
RA UF RIDZUAN BIN MA AROF	12/15/2021
HARISH TAMMAJI KULKARNI	12/10/2021
KUMUDINI CHOYAL	12/12/2021
NHAT MINH NGUYEN	12/16/2021
SURENDRAN SURENDRAN	12/14/2021

# **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:	17554348

# **CORRESPONDENCE DATA**

Fax Number: (312)463-5001

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

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

BANNER & WITCOFF, LTD. **Correspondent Name:** 71 SOUTH WACKER DRIVE Address Line 1:

Address Line 2: **SUITE 3600** 

Address Line 4: CHICAGO, ILLINOIS 60606

ATTORNEY DOCKET NUMBER:	007131.02586
NAME OF SUBMITTER:	GAIL M. BEKIN
SIGNATURE:	/Gail M. Bekin/
DATE SIGNED:	12/17/2021
	This document serves as an Oath/Declaration (37 CFR 1.63).

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REEL: 058417 FRAME: 0855 507033533

# Total Attachments: 10 source=Assignment for filng#page1.tif source=Assignment for filng#page2.tif source=Assignment for filng#page3.tif source=Assignment for filng#page4.tif source=Assignment for filng#page5.tif source=Assignment for filng#page6.tif source=Assignment for filng#page7.tif source=Assignment for filng#page8.tif source=Assignment for filng#page9.tif source=Assignment for filng#page9.tif

PATENT REEL: 058417 FRAME: 0856

12957 US1

Title of Invention	Multi-Factor User Authentication
As the below na	amed inventor, I hereby declare that:
This declaration is directed to:	The attached application, or
	United States application or PCT international application number
The above-iden	tified application was made or authorized to be made by me.
I believe that I a	am the original inventor or an original joint inventor of a claimed invention in the application.
	wledge 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
State/Province) date herewith, authorize the at	Uf Ridzuan Bin Ma Arof ("Assignor"), a citizen of Malaysia (Country), residing in Singapore, Singapore (City, have invented the above invention. If the following lines are blank, the above application was filed on even otherwise, to comply with 37 C.F.R. §3.21 for recordal of this assignment, I, an assignor below, hereby trorneys for Bank of America to insert the filing date and application number below after they become or to filing the recordation.
	U.S. Application No. <u>17/554,348</u> , filed <u>12-17-2021</u> .
Delaware, and h title and interes	K OF AMERICA CORPORATION ("Assignee"), a Corporation duly organized under the laws of the State of naving its offices and place of business at Charlotte, North Carolina, is desirous of acquiring the entire right, at in and to the aforesaid inventions and in and to all applications and Letters Patent therefor granted in the f America, and in any and all countries foreign thereto:
payment for the said Assignor, be representatives countries foreig countries in its contitled under it Letters Patent gin-parts and extendidential inforequest the Confidential inforeignmentions or rejuterest. I represent the continuentions of the interest, and it is provisional, diviproceedings, significant in the said of the sa	RE, TO WHOM IT MAY CONCERN, be it known that, for good and valuable consideration, including salary or a 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 to the full and exclusive right, title and interest for the territory of the United States of America and all go thereto, and throughout the world and in space, (including the right to apply for Letters Patent in foreign own 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, and compilations, necessary or useful to make, use, or sell the inventions. I hereby authorize and missioner of Patents, and any official whose duty it is to issue patents, to issue all Letters Patent on said esulting therefrom to said Assignee, or its successors and assigns, as assignee of the entire right, title and issent and warrant that I have full right to agree to, execute, and deliver this assignment. I agree that I will be consideration, but at the expense of Assignee, communicate to said Assignee, or its successors, assigns, or and all facts known to me regarding said inventions whenever requested, and that I will execute all non-isional, reissue, reexamination, continuation and continuation-in-part applications, testify in any legal go, all lawful papers, make all rightful oaths, and generally do everything reasonable for said Assignee, its gns, and nominees, to obtain and enforce proper patent protection for said inventions in all countries.

12957 US1

# **WARNING:**

purposes are not retained in the application life and therefore a	re not publicly available.
LEGAL NAME OF INVENTOR	
Inventor: <u>Ra Uf Ridzuan Bin Ma Arof</u>	Date:
Signature:/ Ka Uf Kidyuan Bin Ma drof _	

12957 US1

Title of Invention	Multi-Factor User 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	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 of not more than five (5) years, or both.
	ASSIGNMENT
State/Provinc date herewith authorize the	("Assignor"), a citizen of <u>India</u> (Country), residing in <u>Tung Chung, Hong Kong</u> (City, e) have invented the above invention. If the following lines are blank, the above application was filed on even, otherwise, to comply with 37 C.F.R. §3.21 for recordal of this assignment, I, an assignor below, hereby attorneys for Bank of America to insert the filing date and application number below after they become ior to filing the recordation.
	U.S. Application No. <u>17/554,348</u> filed <u>12-17-2021</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:
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 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 everything rea	

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# **WARNING:**

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LEGAL NAME OF INVENTOR	
Inventor. Kungudini Chaval	12/12/2021
Inventor: <u>Kumudini Choyal</u>	Date:
Signature:	

12957 US1

Title of Invention	Multi-Factor User Authentication
As the below	named inventor, I hereby declare that:
This declaration is directed to:	[M] 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 tof not more than five (5) years, or both.
<del>2000000000000000000000000000000000000</del>	ASSIGNMENT
State/Provinc date herewith authorize the	Harish Tammaji Kulkarni ("Assignor"), a citizen of India (Country), residing in Singapore, Singapore (City, e) have invented the above invention. If the following lines are blank, the above application was filed on even a, otherwise, to comply with 37 C.F.R. §3.21 for recordal of this assignment, I, an assignor below, hereby attorneys for Bank of America to insert the filing date and application number below after they become ior to filing the recordation.
	U.S. Application No. <u>17/554,348</u> filed <u>12-17-2021</u>
Delaware, and title and inter	NK OF AMERICA CORPORATION ("Assignee"), a Corporation duly organized under the laws of the State of dhaving 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 countries in it entitled unde Letters Paten in-parts and e confidential in request the C inventions or interest. I rep without furth nominees, an provisional, d proceedings,	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 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 said inventions and in and to all applications and a granted therefor, and all non-provisionals, divisionals, reissues, reexaminations, continuation, xtensions 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-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.

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# **WARNING:**

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LEGAL NAME OF INVENTOR	
Inventor: <u>Harish Tammaji Kulkarni</u>	12/10/2021 Date:
Signature: / Harish Tannaji Kulkarni	

12957 US1

Title of Invention	Multi-Factor User 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 filed on
The above-ide	entified application was made or authorized to be made by me.
I believe that	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 of not more than five (5) years, or both.
000000000000000000000000000000000000000	ASSIGNMENT
State/Provinc date herewith authorize the	Hat Minh Nguyen ("Assignor"), a citizen of Vietnam (Country), residing in Singapore, Singapore (City, e) have invented the above invention. If the following lines are blank, the above application was filed on even, otherwise, to comply with 37 C.F.R. §3.21 for recordal of this assignment, I, an assignor below, hereby attorneys for Bank of America to insert the filing date and application number below after they become ior to filing the recordation.
	U.S. Application No. <u>17/554,348</u> , filed <u>12-17-2021</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 a countries in it entitled unde Letters Patent in-parts and e confidential in request the C inventions or interest. I rep without furth- nominees, an provisional, d proceedings,	ORE, 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, xtensions 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 present and compilations, and any official whose duty it is to issue patents, to issue all Letters Patent on said presulting 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 be 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-visional, reissue, reexamination, continuation and continuation-in-part applications, testify in any legal sign, and nominees, to obtain and enforce proper patent protection for said inventions in all countries.

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# **WARNING:**

purposes are not retained in the application file and therefore are not publicly available.				
LEGAL NAME OF INVENTOR				
Inventor: Nhat Minh Nguyen	12/16/2021 Date:			
Signature: / Must Minh Myyen				

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Title of Invention	Multi-Factor User Authentication			
As the below i	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	The above-identified application was made or authorized to be made by me.			
I believe that	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, <u>Surendran Surendran</u> ("Assignor"), a citizen of <u>Singapore</u> (Country), residing in <u>Singapore</u> , <u>Singapore</u> (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. <u>17/554,348</u> filed <u>12-17-2021</u>			
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 t said Assignor, representative countries fore countries in it entitled under Letters Patent in-parts and e confidential ir request the Co inventions or interest. I represent without further nominees, and provisional, di proceedings, s	ORE, 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 so own 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, trends 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 present and warrant that I have full right to agree to, execute, and deliver this assignment. I agree that I will be reconsideration, 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 nonvisional, reissue, reexamination, continuation and continuation-in-part applications, testify in any legal sign, and nominees, to obtain and enforce proper patent protection for said inventions in all countries.			

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# **WARNING:**

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

Inventor: Surendran Surendran Date:  Signature: / Curv to Avata Survival Avata (12/14/2021)	P P. C.	or o	*****
Inventor: Surendran Surendran Date:	LEGAL NAME OF INVENTOR		
	Inventor: Surendran Surendran		
71987EBD88274F0	Signature:/ Surendran Surendran		

**RECORDED: 12/17/2021**