503515886 10/08/2015 PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT3562512

SUBMISSION TYPE: NATURE OF CONVEYANCE:		N	NEW ASSIGNMENT		
		A	ASSIGNMENT		
CONVEYING PARTY D	ΑΤΑ				
		Na	me		Execution Date
DANIEL EDWARD MIDDLEMAN					09/28/2015
JOHN HENRY DENNING					09/16/2015
KEITH ALLEN TOPEL					09/22/2015
RECEIVING PARTY DA					
Name:		OF AME	RICA CORPORATION		
Street Address:			YON STREET		
Internal Address:	MAILC	ODE: NO	01-027-20-05		
City:	CHARL	OTTE			
State/Country:	NORTH	H CARO	LINA		
Postal Code:	28255				
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		1487862			
Property Type					
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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	VULNERABILITY EXPOSING APPLICATION CHARACTERISTIC VARIATION IDENTIFICATION ENGINE			
As the below	named inventor, I hereby declare that:			
This declarati is directed to:	M The attached approximity of			
	United States application or PCT international application number			
The above-ide	intified application was made or authorized to be made by me.			
l 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 t of not more than five (5) years, or both.			
	ASSIGNMENT			
Colony, Texas application w assignor belo	Daniel Edward Middleman ("Assignor"), a citizen of the United States of America (Country), residing in The (City, State/Province) have invented the above invention. If the following lines are blank, the above as filed on even date herewith, otherwise, to comply with 37 C.F.R. §3.21 for recordal of this assignment, I, an w, hereby authorize the attorneys for Bank of America to insert the filing date and application number below come known and prior to filing the recordation.			
	U.S. Application No. 14/878,621 , filed October 8, 2015			
Delaware, an title and inter	NK OF AMERICA CORPORATION ("Assignee"), a Corporation duly organized under the laws of the State of d 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 1 said Assignor, representativ countries for countries in it entitled unde Letters Paten continuation- secrets, confi authorize and Patent on sal right, title an- agree that I w successors, a will execute a testify in any	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 eign 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 r international conventions, treaties, or otherwise), in and to said inventions and in and to all applications and t granted therefor, and all non-provisionals, divisionals, reissues, reexaminations, reviews, continuations, in-parts and extensions thereof, and in and to all copyrights, trademarks with their associated goodwill, trade dential information, and compilations, necessary or useful to make, use, or sell the inventions. I hereby I request the Commissioner of Patents, and any official whose duty it is to issue patents, to issue all Letters d inventions or resulting therefrom to said Assignee, or its successors and assigns, as assignee of the entire d interest. I represent and warrant that I have full right to agree to, execute, and deliver this assignment. I will without further consideration, but at the expense of Assignee, communicate to said Assignee, or its assigns, or nominees, any and all facts known to me regarding said inventions whenever requested, and that I ill non-provisional, divisional, reissue, reexamination, continuation and continuation-in-part applications, legal proceedings, sign all lawful papers, make all rightful oaths, and generally do everything reasonable for , its successors, assigns, and nominees, to obtain and enforce proper patent protection for said inventions in all			

PATENT REEL: 036760 FRAME: 0117

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.

LEGAL NAME OF INVENTOR

Inventor: DANIEL EDWARD MIDDLEMAN

Date: Sept. 98,2015

and E Middle Signature: .

СОМВ	INED DECLARATION (37 CFR 1.63) AND ASSIGNMENT FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)
Title of Invention	VULNERABILITY EXPOSING APPLICATION CHARACTERISTIC
As the below	named inventor, I hereby declare that:
This declarati is directed to:	
	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 c of not more than five (5) years, or both.
******	ASSIGNMENT
Virginia (City, filed on even hereby autho	John Henry Denning ("Assignor"), a citizen of the United States of America (Country), residing in Alexandria, 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 m and prior to filing the recordation.
	U.S. Application No. <u>14/878,621</u> , filed October 8, 2015
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 fore countries in it entitled unde Letters Patent continuation- secrets, confile authorize and Patent on said right, title and agree that I w successors, as will execute a testify in any l	ORE, 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 ign thereto, and throughout the world and in space, (including the right to apply for Letters Patent in foreign s 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, reviews, continuations, n-parts and extensions thereof, and in and to all copyrights, trademarks with their associated goodwill, trade lential information, and compilations, necessary or useful to make, use, or sell the inventions. I hereby request the Commissioner of Patents, and any official whose duty it is to issue patents, to issue all Letters I inventions or resulting therefrom to said Assignee, or its successors and assigns, as assignee of the entire I interest. I represent and warrant that I have full right to agree to, execute, and deliver this assignment. I ill without further consideration, but at the expense of Assignee, communicate to said Assignee, or its signs, or nominees, any and all facts known to me regarding said inventions whenever requested, and that i I non-provisional, divisional, reissue, reexamination, continuation and continuation-in-part applications, egal proceedings, sign all lawful papers, make all rightful oaths, and generally do everything reasonable for its successors, assigns, and nominees, to obtain and enforce proper patent protection for said inventions in all

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.

LEGAL NAME OF INVENTOR

Inventor: JOHN HENRY DENNING
Signature:

Date: <u>9/16/2015</u>

[Page 2 of 2]

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

	VULNERABILITY EXPOSING APPLICATION CHARACTERISTIC
Invention	VARIATION IDENTIFICATION ENGINE

As the below named inventor, I hereby declare that:

This declaration 🔀 The at

is directed to:

The attached application, or

United States application or PCT international application number filed on ______.

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, Keith Allen Topel ("Assignor"), a citizen of the United States of America (Country), residing in Lancaster, California (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. 14/878,621 , filed October 8, 2015

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, reviews, 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 everything reasonable for said Assignee, its successors, assigns, and nominees, to obtain and enforce proper patent protection for said inventions in all countries.

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.

LEGAL NAME OF INVENTOR

Inventor: KEITH ALLEN TOPEL

Date: 9-22-15

my ag Thom Signature:

[Page 2 of 2]

PATENT REEL: 036760 FRAME: 0122

RECORDED: 10/08/2015