05/18/2017 504375083

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT4421778

| SUBMISSION TYPE: | NEW ASSIGNMENT |
|-----------------------|----------------|
| NATURE OF CONVEYANCE: | ASSIGNMENT |

CONVEYING PARTY DATA

| Name | Execution Date |
|------------------------|----------------|
| HECTOR D. MIRANDA | 05/10/2017 |
| GARY WAYNE RICHARDSON | 05/09/2017 |
| MICHAEL AARON SCHETGEN | 05/09/2017 |
| SOAHAM D. JOSHI | 05/15/2017 |
| TODD M. GOODYEAR | 05/18/2017 |

RECEIVING PARTY DATA

| Name: | BANK OF AMERICA CORPORATION |
|-------------------|-----------------------------|
| Street Address: | 214 N. TRYON ST. |
| Internal Address: | MAILCODE NC1-027-20-05 |
| City: | CHARLOTTE |
| State/Country: | NORTH CAROLINA |
| Postal Code: | 28255 |

PROPERTY NUMBERS Total: 1

| Property Type | Number | |
|---------------------|----------|--|
| Application Number: | 15599442 | |

CORRESPONDENCE DATA

Fax Number: (845)362-6111

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: 845-362-6100

jbaldinger@weissarons.com Email:

Correspondent Name: JACOB BALDINGER 1540 ROUTE 202 Address Line 1:

Address Line 2: SUITE 8

Address Line 4: POMONA, NEW YORK 10970

| ATTORNEY DOCKET NUMBER: | 104-384 |
|-------------------------|--|
| NAME OF SUBMITTER: | JACOB BALDINGER |
| SIGNATURE: | /Jacob Baldinger/ |
| DATE SIGNED: | 05/18/2017 |
| | This document serves as an Oath/Declaration (37 CFR 1.63). |

PAIENI

REEL: 042432 FRAME: 0363 504375083

Total Attachments: 10 source=Miranda_Assignment_Dec_AS_FILED_2#page1.tif source=Miranda_Assignment_Dec_AS_FILED_2#page2.tif source=104-384_Oath-Declaration-Assignment Richardson_AS_FILED#page1.tif source=104-384_Oath-Declaration-Assignment SCHETGEN_AS_FILED#page2.tif source=104-384_Oath-Declaration-Assignment SCHETGEN_AS_FILED#page2.tif source=104-384_Oath-Declaration-Assignment_JOSHI_AS_FILED#page1.tif source=104-384_Oath-Declaration-Assignment_JOSHI_AS_FILED#page1.tif source=104-384_Oath-Declaration-Assignment_JOSHI_AS_FILED#page2.tif source=Goodyear_Assignment_Dec_AS_FILED#page1.tif source=Goodyear_Assignment_Dec_AS_FILED#page2.tif

PATENT REEL: 042432 FRAME: 0364

Attorney Docket No.: 104-384

IDF 7711

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 | SECURITY ENHANCEMENT TOOL FOR A TARGET COMPUTER SYSTEM OPERATING WITHIN A COMPLEX WEB OF INTERCONNECTED SYSTEMS |
|--|---|
| | named inventor, I hereby declare that: |
| This declaration is directed to: | ₹ S I NE attached abblication, 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 fine or to fine the five (5) years, or both. |
| | ASSIGNMENT |
| Jersey have in herewith, oth | |
| | U.S. Application No. 15 597, 443, filed Nat 18, 2017 |
| 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 the said Assignor, representative countries for ecountries in its entitled under Letters Patent in-parts and econfidential in request the Coinventions or interest. I represent furthe | 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 less, 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, treaties, and in and to all copyrights, trademarks with their associated goodwill, trade secrets, formation, and compilations, necessary or useful to make, use, or sell the inventions. I hereby authorize and presenting 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 are 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- |

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:

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| LOAL WASHINGTON | | |
|-----------------------------------|--|------|
| inventor <u>Hector D. Miran</u> c | <u> </u> | Jate |
| Sensor JACA | A CONTRACTOR OF THE CONTRACTOR | |

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 | SECURITY ENHANCEMENT TOOL FOR A TARGET COMPUTER SYSTEM OPERATING WITHIN A COMPLEX WEB OF INTERCONNECTED SYSTEMS | | |
|--|---|----------------|---|
| As the below | name | ed inv | entor, I hereby declare that: |
| This declarati | | $ \checkmark $ | The attached application, or |
| | | | 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. | | | |
| | | - | at any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or than five (5) years, or both. |
| | ********* | ******** | |

ASSIGNMENT

WHEREAS, I, Gary Wayne Richardson ("Assignor"), a citizen of the United States of America, residing in Dallas, Texas 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 filling the recordation.

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, 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 nonprovisional, 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: Ga | nry Wayne Richardson | | Date: | 5-9-2017 |
| Signature: | Darry | Wayne | Ric | hardren |

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 | SECURITY ENHANCEMENT TOOL FOR A TARGET COMPUTER SYSTEM OPERATING WITHIN A COMPLEX WEB OF INTERCONNECTED SYSTEMS | | |
|--|--|--|--|
| As the below | named inventor, I hereby declare that: | | |
| This declarati is directed to | ine attached application, or | | |
| | 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. | | | |
| | 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. | | |
| | | | |

ASSIGNMENT

WHEREAS, I, Michael Aaron Schetgen ("Assignor"), a citizen of the United States of America, residing in Charlotte, North Carolina 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. 15/599,442 , filed May 18, 2017.

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, continuationin-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 nonprovisional, 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.

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| LEGAL NAME OF INVENTOR | |
|----------------------------------|----------------|
| LEGAL WAIVIE OF HAVEINTON | |
| | |
| Inventor: Michael Aaron Schetgen | Date:5/09/2017 |
| Signature: nlASMAT | |

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 | SECURITY ENHANCEMENT TOOL FOR A TARGET COMPUTER SYSTEM OPERATING WITHIN A COMPLEX WEB OF INTERCONNECTED SYSTEMS | | |
|----------------------------------|---|----------|--|
| As the below | name | ed inve | ntor, I hereby declare that: |
| This declaration is directed to: | | <u>/</u> | The attached application, or |
| | | | United States application or PCT international application number |
| The above-ide | entific | ed app | lication was made or authorized to be made by me. |
| I believe that | Lam: | the ori | ginal inventor or an original joint inventor of a claimed invention in the application. |
| | | | at any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or e than five (5) years, or both. |

ASSIGNMENT

WHEREAS, I, Soaham D. Joshi ("Assignor"), a citizen of the United States of America, residing in West Chicago, Illinois 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. 15/599,442 , filed May 18, 2017

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, 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 nonprovisional, 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.

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| LEGAL NAME OF INVENTOR | |
|---------------------------|--------|
| | - lith |
| Inventor: Soaham D. Joshi | Date: |
| Signature: 50000 | |
| // | |
| 7/ | |

Atomic Docker No. 104-164 (17-7)

COMBINED DECLARATION (37 CFR 1,63) AND ASSIGNMENT FOR UTILITY OR DESIGN APPLICATION DATA SHEET (37 CFR 1,76)

| , | |
|--|--|
| Title of Invention | SECURITY ENHANCEMENT TOOL FOR A TARGET COMPUTER SYSTEM OF ERATING WITHIN A COMPLEX WEB OF INTERCONNECTED SYSTEMS |
| As the below | named inventor, Thereby declare that |
| This declarati | |
| | □ United States application on Contemptional equipment number |
| The above 4d | entified application was made or authorized to be made by me |
| I believe that | and the original inventor or an original joint inventor of a caimed inventor in the application. |
| | owledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or Lof not more than five (S) years, or both |
| ASSIGNMENT | |
| have invented otherwise, to | Todd M. Goodyear ("Assignor"), a citizen of the United States of America, residing in New Hope, Pennsylvania I the above invention. If the following lines are blank, the above application was filled 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 filling date and application number below after they become known and prior to irrigation. |
| | U.S. Application No. 25 / 530 / 542 https://doi.org/10.100/10.100/10.1000/ |
| Delaware, an title and inter | NK OF AMERICA CORPORATION ("Assignee"), a Corporation duly organized under the laws of the State of dialying its offices and place of business at Charlotte, North Carolina, is desirous of acquiring the entire right, set 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 therefor. |
| payment for said Assignor representative countries in entitled under Letters Parter in parts arrisis confidential request the Cinventions or interest. Fee | FORE, TO WHOM IT MAY CORCERN, be it known that, for good and valuable consideration, including salarly or the making of inventions, or employee benefits, the receipt and sufficiency of which is hereby acknowledged. It is these presents do self-assign and transfer unto said Assignee, its successors, assigns and legal less, the full and exclusive right, title and interest for the territory of the United States of America and all legal thereto, and throughout the world and in space, including the right to apply for Letters Patent in foreign some rame 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 transfer international conventions, treaties, or otherwise, in and to said inventions and in and to all conventionals, discionals resistance, remainstations, continuations, continuation states and an enterior and all non-troubleously, discionals resistance, remainstations, continuations, continuations, therefore and organization and to all copyrights, trademarks with their associated goodwill, trade sections and companies of priority and assignee, or useful to make use or self-the inventions. Thereby authorize and commissioner of Priority and Assignee, or useful to appear to a supply a supply of the entire right title and incommission but at the express of Assignee, commissioner requirements in the supply of the supply of the entire right will execute all non-year of the following the response of Assignee, commissioner requirements and that twill execute all non-year of the right to all execute all non-year of the course of the supply of the receipt and that twill execute all non-year of the right to all the receipts and on the receipts and that twill execute all non-year of the right to all the receipts and on the receipts and that twill execute all non-year of the right to the receipts and the receipts and the right to the receipts and the receipts and the receipt |

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Attorney Docker No.: 104-384

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Inventor Todd M. Goodyear Usis 5 1 8 2012