

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT3858789

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
TIMOTHY J. BENDEL	10/29/2013
MARK V. KREIN	10/29/2013
DAVID N. JOFFE	10/26/2013
SANDI SETIAWAN	10/28/2013
WILLIAM ANTHONY NOBILI	11/08/2013
DAVID JOA	05/02/2016
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	BANK OF AMERICA CORPORATION
<b>Street Address:</b>	MAIL CODE NC 1-027-20-05
<b>Internal Address:</b>	214 N. TRYON ST.
<b>City:</b>	CHARLOTTE
<b>State/Country:</b>	NORTH CAROLINA
<b>Postal Code:</b>	28255
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
<b>Application Number:</b>	15146345
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	(312)463-5001
<i>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.</i>	
<b>Phone:</b>	312-463-5000
<b>Email:</b>	aonoda@bannerwitcoff.com
<b>Correspondent Name:</b>	BANNER & WITCOFF, LTD.
<b>Address Line 1:</b>	10 S. WACKER DRIVE
<b>Address Line 2:</b>	SUITE 3000
<b>Address Line 4:</b>	CHICAGO, ILLINOIS 60606
<b>ATTORNEY DOCKET NUMBER:</b>	007131.01782
<b>NAME OF SUBMITTER:</b>	KENNETH F. SMOLIK
<b>SIGNATURE:</b>	/Kenneth F. Smolik/
<b>DATE SIGNED:</b>	05/04/2016

PATENT

**Total Attachments: 12**

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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)**

<b>Title of Invention</b>	<b>PREDICTING ECONOMIC CONDITIONS</b>
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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-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, Timothy J. Bendel ("Assignor"), a citizen of the United States (Country), residing in Charlotte, NC (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. 14/078,197, filed November 12, 2013

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 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: Timothy J. BendelDate: 10/29/13Signature: Tim J. Bendel

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**ASSIGNMENT**

WHEREAS, I, Mark V. Krein ("Assignor"), a citizen of the USA (Country), residing in Charlotte, NC (City, NC 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.

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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 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**Inventor: Mark V. KreinDate: 10/29/2013Signature: 

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

**Title of  
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As the below named inventor, I hereby declare that:

This declaration  
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The attached application, or



United States application or PCT international application number \_\_\_\_\_  
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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, David N. Joffe ("Assignor"), a citizen of the United States (Country), residing in Charlotte, NC (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.

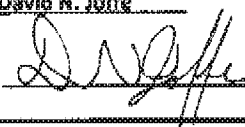
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NOW, THEREFORE, TO WHOM IT MAY CONCERN, be it known that, for good and valuable consideration, including salary or payment for the making of inventions, or employee benefits, the receipt and sufficiency of which is hereby acknowledged, I said Assignor, 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 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**Inventor: David N. JoffeDate: 10-26-2013Signature: 



**COMBINED DECLARATION (37 CFR 1.63) AND ASSIGNMENT FOR UTILITY OR DESIGN  
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Title of  
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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, Sandi Setiawan ("Assignor"), a citizen of the UK (Country), residing in CHARLOTTE, NC (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.

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**LEGAL NAME OF INVENTOR**Inventor: Sandi SetiawanDate: 10/28/2013Signature:  \_\_\_\_\_

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

Title of  
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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, William Anthony Nobill ("Assignor"), a citizen of the United States (Country), residing in Charlotte, 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.

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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 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**

Inventor: William Anthony Nobili

Date: 11/8/13

Signature: 

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**ASSIGNMENT**

WHEREAS, I, David Joa ("Assignor"), a citizen of United States (Country), residing in San Francisco, CA (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. 15/146,345, filed 05/04/2016

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## LEGAL NAME OF INVENTOR

Inventor: David JoaDate: 5-2-2016Signature: 