504672574 12/05/2017

PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
ELLIOT HAMBURGER	03/14/2016
JONATHAN S. HARRIS	03/14/2016
JEFFREY A. LITVIN	03/15/2016
SAUHARD SAHI	03/14/2016
JOHN D. VALOIS	03/16/2016
ARA BASIL	03/14/2015
RANDALL B. FRADIN	03/14/2016

RECEIVING PARTY DATA

Name:	BLACKROCK FINANCIAL MANAGEMENT, INC.
Street Address:	55 EAST 52ND STREET
City:	NEW YORK
State/Country:	NEW YORK
Postal Code:	10055

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	15604540

CORRESPONDENCE DATA

Fax Number: (650)938-5200

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.

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ATTORNEY DOCKET NUMBER:	22869-36992/US
NAME OF SUBMITTER:	DANIEL R. BROWNSTONE, REG. NO. 46581
SIGNATURE:	/Daniel R. Brownstone 46581/
DATE SIGNED:	12/05/2017

504672574 PATENT REEL: 044304 FRAME: 0526

Total Attachments: 3

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PATENT REEL: 044304 FRAME: 0527

ASSIGNMENT

For good and valuable consideration, the receipt of which is hereby acknowledged, the person(s) named below (referred to as "INVENTOR" whether singular or plural) has sold, assigned, and transferred and does hereby sell, assign, and transfer to **BlackRock Financial Management, Inc.**, a Delaware corporation, having a place of business at 55 East 52nd Street, New York, NY 10055 ("ASSIGNEE"), for itself and its successors, transferees, and assignees, the following:

- 1. The entire worldwide right, title, and interest in all inventions and improvements ("SUBJECT MATTER") that are disclosed in the following provisional or non-provisional application filed under 35 U.S.C. § 111, design application filed under 35 U.S.C. § 171, international application filed according to the Patent Cooperation Treaty (PCT), or U.S. national phase application filed under 35 U.S.C. § 371 ("APPLICATION"):
 - Application No. 15/011,334, entitled "Authenticating Connections and Program Identity in a Messaging System," filed on January 29, 2016, which claims priority from a provisional application, filed on January 29, 2015, now bearing US Application No. 62/109,512.
- 2. The entire worldwide right, title, and interest in and to:
 (a) the APPLICATION; (b) all applications claiming priority from the APPLICATION;
 (c) all provisional, utility, divisional, continuation, substitute, renewal, reissue, and other applications related thereto that have been or may be filed in the United States or elsewhere in the world; (d) all patents (including reissues and re-examinations) that may be granted on the applications set forth in (a), (b), and (c) above; and (e) all right of priority in the APPLICATION and in any underlying provisional or foreign application, together with all rights to recover damages for infringement of provisional rights.

INVENTOR agrees that ASSIGNEE may apply for and receive patents for SUBJECT MATTER in ASSIGNEE's own name.

INVENTOR agrees to do the following, when requested, and without further consideration, in order to carry out the intent of this Assignment: (1) execute all oaths, assignments, powers of attorney, applications, and other papers necessary or desirable to fully secure to ASSIGNEE the rights, titles and interests herein conveyed; (2) communicate to ASSIGNEE all known facts relating to the SUBJECT MATTER; and (3) generally do all lawful acts that ASSIGNEE shall consider desirable for securing, maintaining, and enforcing worldwide patent protection relating to the SUBJECT MATTER and for vesting in ASSIGNEE the rights, titles, and interests herein conveyed. INVENTOR further agrees to provide any successor, assign, or legal representative of ASSIGNEE with the benefits and assistance provided to ASSIGNEE hereunder.

INVENTOR represents that INVENTOR has the rights, titles, and interests to convey as set forth herein, and covenants with ASSIGNEE that the INVENTOR has not made and will not

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22869/32980/DOCS/3909813.1

Title:	Authenticating Connec	ctions and Program	Identity in a M	essaging System	
Contract to the second	January 29, 2016			Docket #: 228/	9-32980
Application #:	15/011,334		Client Ref	·#;	

hereafter make any assignment, grant, mortgage, license, or other agreement affecting the rights, titles, and interests herein conveyed.

INVENTOR grants the attorney of record the power to insert on this Assignment any further identification that may be necessary or desirable in order to comply with the rules of the United States Patent and Trademark Office or other authority for recordation of this document.

This Assignment may be executed in one or more counterparts, each of which shall be deemed an original and all of which may be taken together as one and the same Assignment.

By signing below, INVENTOR further attests to the following:

- The APPLICATION was made or authorized to be made by INVENTOR.
- INVENTOR believes that INVENTOR is the original inventor or an original joint inventor of a claimed invention in the APPLICATION.

INVENTOR hereby acknowledges that any willful false statement made in this document is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

Name and Signature/	Date of Signature
ESH WW	3/14/16
Elliot Hamburger	
Name and Signature	Date of Signature
	3/14/16
Jonathan S. Harris	
Name and Signature	Date of Signature
alkas A Ram	3/15/14
Jeffrey A. Litvin	
Name and Signature	Date of Signature
Bound Fori	3/14/16
Sauhard Sahi	

le:	Authenticating Connections and Program Identity in a Messaging System			
ed:	January 29, 2016	Attorney Docket #:	22869-32980	
plication #:	15/011,334	Client Ref#:		
Name ar	d Signature	Date of Signature		
- Tolk	DV-	3/16/2016		
John D.	Valois			
Name ar	nd Signature	Date of Signature		
Ź,		3/14/15		
Ara Bas	il			
Name ar	nd Signature	Date of Signature		
Roll EX		3/14/2016		
Randall	B. Fradin			