# 506975470 11/12/2021

# PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT7022309

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

### **CONVEYING PARTY DATA**

Name	Execution Date
DAVID BIXBY	01/11/2016
FREDERICK STURM	01/12/2016
EDMUND CAREY	01/08/2016
STEN ANDERSON	01/11/2016
VIVEK KONDAVEETI	01/11/2016
THOMAS LORD	01/12/2016

### **RECEIVING PARTY DATA**

Name:	CHICAGO MERCANTILE EXCHANGE INC.
Street Address:	20 SOUTH WACKER DRIVE
City:	CHICAGO
State/Country:	ILLINOIS
Postal Code:	60606

### **PROPERTY NUMBERS Total: 1**

Property Type	Number
Application Number:	17525299

### **CORRESPONDENCE DATA**

Fax Number:

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:** 3122910860

**Email:** docket-us@lsk-iplaw.com

Correspondent Name: LEMPIA SUMMERFIELD KATZ LLC

Address Line 1: 20 SOUTH CLARK STREET

Address Line 2: SUITE 600

Address Line 4: CHICAGO, ILLINOIS 60603

ATTORNEY DOCKET NUMBER:	004672-15016C-US
NAME OF SUBMITTER:	JAMES L. KATZ
SIGNATURE:	/James L. Katz/
DATE SIGNED:	11/12/2021

PATENT 506975470 REEL: 058100 FRAME: 0648

# Total Attachments: 11 source=Assignment#page1.tif source=Assignment#page2.tif source=Assignment#page3.tif source=Assignment#page4.tif source=Assignment#page5.tif source=Assignment#page6.tif source=Assignment#page7.tif source=Assignment#page8.tif source=Assignment#page9.tif source=Assignment#page11.tif

PATENT REEL: 058100 FRAME: 0649

## ASSIGNMENT

WHEREAS, David Bixby, Frederick Sturm, Edmund Carey, Sten Anderson, Vivek Kondaveeti, and Thomas Lord, and, hereinafter called the "Assignors", have made the invention described in the United States patent application entitled SYSTEMS AND METHODS FOR ITERATIVE OPTIMIZATION OF RELATED OBJECTS, executed by Assignors on the same date as, or on a date prior to, this Assignment;

WHEREAS, CHICAGO MERCANTILE EXCHANGE INC., a corporation organized and existing under the laws of the State of Illinois, having a place of business at 20 South Wacker Drive, Chicago, IL 60606, hereinafter called the "Assignee", desires to acquire the entire right, title and interest in and to the invention and the patent application identified above, and all patents which may be obtained for said invention, as set forth below:

NOW, THEREFORE, in consideration of the sum of One Dollar (\$1.00), and other valuable and legally sufficient consideration, the receipt of which by the Assignors from the Assignee is hereby acknowledged, the Assignors have sold, assigned and transferred, and by these presents do sell, assign and transfer to the Assignee, the entire right, title and interest for the United States in and to the invention and the patent application identified above, and any patents that may issue for said invention in the United States; together with the entire right, title and interest in and to said invention and all patent applications and patents issuing therefrom in all countries foreign to the United States, including the full right to claim for any such application all benefits and priority rights under any applicable convention; together with the entire right, title and interest in and to all continuations, divisions, renewals and extensions of any of the patent applications and patents defined above; together with the right to recover all damages, including, but not limited to, a reasonable royalty, by reason of past, present, or future infringement or any other violation of patent or patent application rights; to have and to hold for the sole and exclusive use and benefit of the Assignee, its successors and assigns, to the full end of the term or terms for all such patents.

-1-

The Assignors hereby covenant and agree, for both the Assignors and the Assignors' legal representatives, that the Assignors will assist the Assignee in the prosecution of the patent application identified above; in the making and prosecution of any other patent applications that the Assignee may elect to make covering the invention identified above; in vesting in the Assignee like exclusive title in and to all such other patent applications and patents; and in the prosecution of any interference which may arise involving said invention, or any such patent application or patent; and that the Assigner will execute and deliver to the Assignee any and all additional papers which may be requested by the Assignee to carry out the terms of this Assignment.

The Commissioner of Patents and Trademarks is hereby authorized and requested to issue patents to the Assignee in accordance with the terms of this Assignment.

IN TESTIMONY WHEREOF, the Assignors have executed this agreement.

DATED:

Thomas Lord

STATE OF LUN NOUS )
STATE OF COOK ) ss.
I, ANG PHAGINA , a Notary Public in and for the County and State aforesaid, do hereby certify that David Bixby, personally known to me to be the same person whose name is subscribed to the foregoing instrument, appeared before me this day in person and acknowledged that (s)he signed, sealed and delivered the said instrument as his/her free and voluntary act for the uses and purposes therein set forth.  IN WITNESS WHEREOF, I have hereunto set my hand and Notarial Seal, this day of
My Commission Expires:  OFFICIAL SEAL JANET P HABINA Notary Public - State of Illinois My Commission Expires Sep 26, 2017
STATE OF )
COUNTY OF ) ss.
I,
Notary Public
My Commission Expires:

$\widetilde{I}_{i}$	
STATE OF LUANIS )	
STATE OF LUNDIS ) ss.	
County and State aforesaid, do hereby certify that to be the same person whose name is subscribed before me this day in person and acknowledged the said instrument as his/her free and voluntary set forth.  IN WITNESS, WHEREOF, I have hereunto day of, 2016.	t Edmund Carey, personally known to me to the foregoing instrument, appeared lat (s)he signed, sealed and delivered act for the uses and purposes therein
	tary Public
No.	tary Public
My Commission Expires: 0/20/17	
STATE OF 1221NOS) COUNTY OF COOK)  SS.  JAWET PHABINA	OFFICIAL SEAL JANET P HABINA Notary Public - State of Illinois My Commission Expires Sep 25, 2017
JANKT PHABINA	a Notary Public in and for the
County and State aforesaid, do hereby certify that me to be the same person whose name is subappeared before me this day in person and acknow delivered the said instrument as his/her free appropriate the said instrument as	scribed to the foregoing instrument, viedged that (s)he signed, sealed and and voluntary act for the uses and
	Jours Hulsoni
No	tary Public
My Commission Expires: 9/26/17	
	OFFICIAL SEAL JANET P HABINA Notary Public - State of Illinois My Commission Expires Sep 26, 2017

STATE OF LLINDIS )
COUNTY OF COOK ) ss.
I, ANGEL HARDING, a Notary Public in and for the County and State aforesaid, do hereby certify that Vivek Kondaveeti, personally known to me to be the same person whose name is subscribed to the foregoing instrument, appeared before me this day in person and acknowledged that (s)he signed, sealed and delivered the said instrument as his/her free and voluntary act for the uses and purposes therein set forth.  IN WITNESS WHEREOF, I have hereunto set my hand and Notarial Seal, this day of
South Kellen
(Notary Public
My Commission Expires: 9/26/2017  OFFICIAL SEAL JANET P HABINA Notary Public - State of Illinois My Commission Expires Sep 26, 2017  STATE OF COOK  Ss.
I, ANG PHABINA, a Notary Public in and for the County and State aforesaid, do hereby certify that Thomas Lord, personally known to me to be the same person whose name is subscribed to the foregoing instrument, appeared before me this day in person and acknowledged that (s)he signed, sealed and delivered the said instrument as his/her free and voluntary act for the uses and purposes therein set forth.  IN WITNESS WHEREOF, I have hereunto set my hand and Notarial Seal, this day of, 2016.
My Commission Expires: 9/20/2011
OFFICIAL SEAL JANET P HABINA Notary Public - State of Illinois My Commission Expires Sep 26, 2017

### ASSIGNMENT

WHEREAS, David Bixby, Frederick Sturm, Edmund Carey, Sten Anderson, Vivek Kondaveeti, and Thomas Lord, and, hereinafter called the "Assignors", have made the invention described in the United States patent application entitled SYSTEMS AND METHODS FOR ITERATIVE OPTIMIZATION OF RELATED OBJECTS, executed by Assignors on the same date as, or on a date prior to, this Assignment;

WHEREAS, CHICAGO MERCANTILE EXCHANGE INC., a corporation organized and existing under the laws of the State of Illinois, having a place of business at 20 South Wacker Drive, Chicago, IL 60606, hereinafter called the "Assignee", desires to acquire the entire right, title and interest in and to the invention and the patent application identified above, and all patents which may be obtained for said invention, as set forth below:

NOW, THEREFORE, in consideration of the sum of One Dollar (\$1.00), and other valuable and legally sufficient consideration, the receipt of which by the Assignors from the Assignee is hereby acknowledged, the Assignors have sold, assigned and transferred, and by these presents do sell, assign and transfer to the Assignee, the entire right, title and interest for the United States in and to the invention and the patent application identified above, and any patents that may issue for said invention in the United States; together with the entire right, title and interest in and to said invention and all patent applications and patents issuing therefrom in all countries foreign to the United States, including the full right to claim for any such application all benefits and priority rights under any applicable convention; together with the entire right, title and interest in and to all continuations, divisions, renewals and extensions of any of the patent applications and patents defined above; together with the right to recover all damages, including, but not limited to, a reasonable royalty, by reason of past, present, or future infringement or any other violation of patent or patent application rights; to have and to hold for the sole and exclusive use and benefit of the Assignee, its successors and assigns, to the full end of the term or terms for all such patents.

The Assignors hereby covenant and agree, for both the Assignors and the Assignors' legal representatives, that the Assignors will assist the Assignee in the prosecution of the patent application identified above; in the making and prosecution of any other patent applications that the Assignee may elect to make covering the invention identified above; in vesting in the Assignee like exclusive title in and to all such other patent applications and patents; and in the prosecution of any interference which may arise involving said invention, or any such patent application or patent, and that the Assigner will execute and deliver to the Assignee any and all additional papers which may be requested by the Assignee to carry out the terms of this Assignment.

The Commissioner of Patents and Trademarks is hereby authorized and requested to issue patents to the Assignee in accordance with the terms of this Assignment.

IN TESTIMONY WHEREOF, the Assignors have executed this agreement.

DATED:		David-Bixby
DATED:	12 January 2016	Frederick Sturm
DATED:		Edmund Carey
DATED:	<u>;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;</u>	Sten Anderson
DATED:		Vivek Kondaveeti
DATED:	<u></u>	Thomas Lord

Witnesses to signature of Frederick Sturm

STATE OF	)	
COUNTY OF	) ss. )	
to be the same person who before me this day in perso the said instrument as his/l set forth.	se name is subso on and acknowled her free and volui REOF, I have her	, a Notary Public in and for the ty that David Bixby, personally known to me cribed to the foregoing instrument, appeared ged that (s)he signed, sealed and delivered ntary act for the uses and purposes therein reunto set my hand and Notarial Seal, this 016.
		Notary Public
My Commission Expires:		<del></del>
STATE OF	) ) ss.	
COUNTY OF	)	
me to be the same perso appeared before me this da delivered the said instrument therein set forth.	on whose name in any in person and a set on the set of	, a Notary Public in and for the y that Frederick Sturm, personally known to is subscribed to the foregoing instrument, acknowledged that (s)he signed, sealed and and voluntary act for the uses and purposes reunto set my hand and Notarial Seal, this 016.
		Notary Public
My Commission Expires:		

PATENT REEL: 058100 FRAME: 0658

STATE OF	)	
COUNTY OF	) ss. )	
me to be the same persappeared before me this of delivered the said instrumentherein set forth.	iid, do hereby cert son whose name day in person and ent as his/her free EREOF, I have he	, a Notary Public in and for the ify that Edmund Carey, personally known to is subscribed to the foregoing instrument acknowledged that (s)he signed, sealed and and voluntary act for the uses and purposes preunto set my hand and Notarial Seal, this 2016.
		Notary Public
My Commission Expires:		
STATE OF	) ) ss.	
COUNTY OF	)	a Natan. Dublic in and for the
me to be the same persappeared before me this of delivered the said instrumentherein set forth.	son whose name day in person and ent as his/her free	, a Notary Public in and for the ify that Sten Anderson, personally known to is subscribed to the foregoing instrument acknowledged that (s)he signed, sealed and and voluntary act for the uses and purposes ereunto set my hand and Notarial Seal, this 1016.
		Notary Public
My Commission Evniros:		stocking i dono

PATENT REEL: 058100 FRAME: 0659

STATE OF	)	
COUNTY OF	) SS. )	
to me to be the same person appeared before me this day in delivered the said instrument as therein set forth.	hereby certify whose name is person and act his/her free an F, I have hereu	, a Notary Public in and for the that Vivek Kondaveeti, personally known subscribed to the foregoing instrument, knowledged that (s)he signed, sealed and did voluntary act for the uses and purposes unto set my hand and Notarial Seal, this 6.
		Notary Public
My Commission Expires:	***********************************	*******
STATE OF	) ) ss.	
COUNTY OF	)	
to be the same person whose neefore me this day in person are the said instrument as his/her feet forth.	iame is subscrib nd acknowledge iree and volunta F, I have hereu	, a Notary Public in and for the hat Thomas Lord, personally known to me bed to the foregoing instrument, appeared and that (s)he signed, sealed and delivered ary act for the uses and purposes therein unto set my hand and Notarial Seal, this 6.
		Notary Public
Mv Commission Expires:		

PATENT REEL: 058100 FRAME: 0660

**RECORDED: 11/12/2021**