

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

EPAS ID: PAT6041573

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT
CONVEYING PARTY DATA	
Name	Execution Date
CHRISTOPHER CHARLES OSTERWOOD	10/08/2019
DAVID ARTHUR LAROSE	10/09/2019
ZACHARY IRVIN PARKER	10/04/2019
ADAM RICHARD WILLIAMS	10/10/2019
STEPHEN PAUL ELIZONDO LANDERS	10/04/2019
MICHAEL JASON RAMSAY	10/04/2019
BRIAN DANIEL BEYER	10/04/2019
RECEIVING PARTY DATA	
Name:	CARNEGIE ROBOTICS, LLC
Street Address:	4501 HATFIELD STREET
City:	PITTSBURGH
State/Country:	PENNSYLVANIA
Postal Code:	15201
PROPERTY NUMBERS Total: 2	
Property Type	Number
Application Number:	16534515
PCT Number:	US2019045443
CORRESPONDENCE DATA	
Fax Number:	
<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>	
Phone:	6123052475
Email:	ahoernemann@mrgs.com
Correspondent Name:	VINCENT L. PHAM
Address Line 1:	111 WASHINGTON AVENUE SOUTH
Address Line 2:	SUITE 700
Address Line 4:	MINNEAPOLIS, MINNESOTA 55401
ATTORNEY DOCKET NUMBER:	0206.000205US01/WO01
NAME OF SUBMITTER:	VINCENT L. PHAM
SIGNATURE:	/Vincent L. Pham/

PATENT

DATE SIGNED:	04/01/2020
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Total Attachments: 11

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Docket No. 206.02050160
Docket No. 206.02050161
Docket No. 0206.000205US01
Docket No. 0206.000205WO01

ASSIGNMENT

This Assignment is by and among:

(1) The Toro Company (hereinafter "Toro"), a corporation of Delaware, having its principal office at 8111 Lyndale Avenue South, Bloomington, MN 55420-1196, United States of America;

(2) Carnegie Robotics, LLC (hereinafter "CRL"), a limited liability company, having its registered office at 4501 Hatfield Street, Pittsburgh, PA 15201, United States of America; and

(3) Christopher Charles Osterwood, David Arthur LaRose, Zachary Irvin Parker, Adam Richard Williams, Stephen Paul Elizondo Landers, Michael Jason Ramsay, and Brian Daniel Beyer (hereinafter "the CRL Joint Inventors"), each being employed by, having been employed by, or obligated to assign to CRL.

Whereas Toro and CRL entered into a Master Services Agreement signed by CRL on May 4, 2018, with services to be provided by CRL (hereinafter collectively referred to as the "Agreement").

Whereas the CRL Joint Inventors wish to transfer, and/or memorialize the prior transfer of, certain rights described herein to CRL.

Whereas CRL wishes to transfer, and/or memorialize the prior transfer of, certain rights described herein to Toro.

Whereas CRL Joint Inventors acknowledge Toro's ownership of the inventions and applications identified herein by virtue of their current or former employment by CRL.

Whereas Toro wishes to acquire, and/or memorialize the prior receipt of, the certain rights described herein from CRL and/or the CRL Joint Inventors.

In consideration of the foregoing, the CRL Joint Inventors, in the course of their normal duties as employees of CRL, has, along with Alexander Steven Frick, Jason Thomas Kraft, and Ryan Douglas Ingvalson, made inventions in

AUTONOMOUS MACHINE NAVIGATION AND TRAINING USING VISION SYSTEM

Filed: August 7, 2019

U.S. Application No.: 16/534,515

Filed: August 7, 2019

International Application No.: PCT/US2019/045443

and executed an application for Letters Patent of the United States of America based thereon and as described in the above-identified patent application filed under the Patent Cooperation Treaty, each of which claims priority to and/or the benefit of at least the following applications:

AUTONOMOUS MACHINE NAVIGATION USING VISION SYSTEM

Filed: August 8, 2018

U.S. Application No.: 62/716,208

Filed: August 9, 2018

U.S. Application No.: 62/716,716

Now, therefore, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the CRL Joint Inventors have agreed to assign and transfer and does hereby assign and transfer unto CRL, its successors and assigns, their entire right, title, and interest in and to said inventions and applications, and in and to any division or continuation (in whole or in part) of said applications, and in and to any patentable material that was created or conceived, individually or jointly with others (provided such material arose out of the performance of the Agreement), and in and to any and all Letters Patent, reexaminations, reissues, or extensions thereof, of the United States of America and countries foreign thereto (including the right to apply for Letters Patent, Utility Models, or Inventors' Certificates 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), which have been or may be granted thereon or on any divisional, continuation (in whole or in part), renewal, reexamination, reissue, or other or further application based in whole or in part upon said invention, to be held and enjoyed as fully and exclusively as they would have been by the CRL Joint Inventors had this assignment and transfer not been made;

Further, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, CRL has agreed to assign and transfer and does hereby assign and transfer unto Toro, its successors and assigns, CRL's entire right, title, and interest in and to said inventions and applications, and in and to any division or continuation (in whole or in part) of said applications, and in and to any patentable material that CRL (including CRL's personnel, affiliates, and subcontractors) created or conceived, individually or jointly with others (provided such material arose out of the performance of the Agreement), and in and to any and all Letters Patent, reexaminations, reissues, or extensions thereof, of the United States of America and countries foreign thereto (including the right to apply for Letters Patent, Utility Models, or Inventors' Certificates 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), which have been or may be granted thereon or on any divisional, continuation (in whole or in part), renewal, reexamination, reissue, or other or further application based in whole or in part upon said invention, to be held and enjoyed as fully and exclusively as they would have been by CRL had this assignment and transfer not been made;

The CRL Joint Inventors (and their heirs, executors, and administrators) and CRL (and its successors and assigns) further agree, that they, individually and/or collectively, will, without further consideration but at the expense of Toro (except that Toro shall not incur expenses for the performance of minor ministerial tasks), execute and deliver any further applications, assignments, and documents, and perform such other acts as the CRL Joint Inventors and CRL lawfully may, that may be deemed necessary by Toro, its successors and assigns, fully to secure Toro's right, title, and interest as aforesaid and to obtain, maintain, and enforce Letters Patent, Utility Models, or Inventors' Certificates in any and all countries;

And the CRL Joint Inventors and CRL do hereby authorize and request the Commissioner of Patents to issue any and all Letters Patent which may be granted upon any of said applications, to Toro or its successors, assigns, and nominees as the assignee of the entire right, title, and interest therein.

For: AUTONOMOUS MACHINE NAVIGATION USING VISION SYSTEM and
AUTONOMOUS MACHINE NAVIGATION AND TRAINING USING VISION SYSTEM

In witness whereof, we have hereunto signed our names on the days and years set forth below.

CC Osterwood
Name: Christopher Charles Osterwood
Residence: Exeter, NH
Citizenship: US

10/8/19
Date

STATE OF New Hampshire)
COUNTY OF Rockingham) ss.

On this 8 day of October 2019, before me personally appeared Christopher Charles Osterwood, to me known to be the person described in and who executed the foregoing instrument, and he/she executed the same for the uses and purposes therein set forth.

Leeann Simpson
Notary Public



For: AUTONOMOUS MACHINE NAVIGATION USING VISION SYSTEM and
AUTONOMOUS MACHINE NAVIGATION AND TRAINING USING VISION SYSTEM

David Arthur LaRose

Name: David Arthur LaRose
Residence: Pittsburgh, PA
Citizenship: US

2019-10-09

Date

STATE OF Pennsylvania)

) ss.

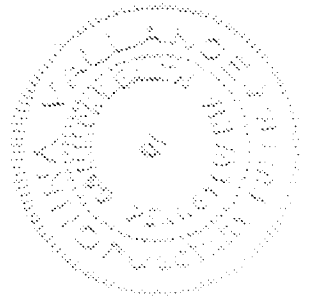
COUNTY OF Allegheny)

On this 9th day of October, 2019, before me personally appeared David Arthur LaRose, to me known to be the person described in and who executed the foregoing instrument, and he/she executed the same for the uses and purposes therein set forth.

Jonna Vallance

Notary Public

Commonwealth of Pennsylvania - Notary Seal
JONNA VALLANCE, Notary Public
Allegheny County
My Commission Expires June 3, 2023
Commission Number 1236216



For: AUTONOMOUS MACHINE NAVIGATION USING VISION SYSTEM and
AUTONOMOUS MACHINE NAVIGATION AND TRAINING USING VISION SYSTEM

Michael Jason Ramsay

10/4/2019

Name: Michael Jason Ramsay
Residence: Verona, PA
Citizenship: US

Date

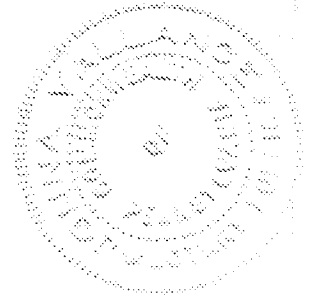
STATE OF Pennsylvania)
) ss.
COUNTY OF Allegheny)

On this 4th day of October, 2019, before me personally appeared Michael Jason Ramsay, to me known to be the person described in and who executed the foregoing instrument, and he/she executed the same for the uses and purposes therein set forth.

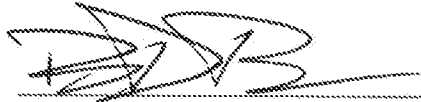
Jonna Vallance

Notary Public

Commonwealth of Pennsylvania - Notary Seal
JONNA VALLANCE, Notary Public
Allegheny County
My Commission Expires June 3, 2023
Commission Number 1236216



For: AUTONOMOUS MACHINE NAVIGATION USING VISION SYSTEM and
AUTONOMOUS MACHINE NAVIGATION AND TRAINING USING VISION SYSTEM

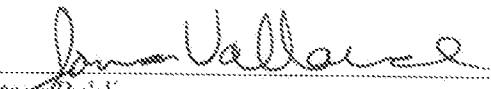


Name: Brian Daniel Beyer
Residence: Pittsburgh, PA
Citizenship: US

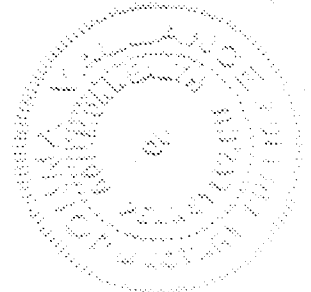
10/4/2019
Date

STATE OF Pennsylvania)
) ss.
COUNTY OF Allegheny)

On this 4th day of October 2019, before me personally appeared Brian Daniel Beyer, to me known to be the person described in and who executed the foregoing instrument, and he/she executed the same for the uses and purposes therein set forth.


Notary Public

Commonwealth of Pennsylvania - Notary Seal
JONNA VALLANCE, Notary Public
Allegheny County
My Commission Expires June 3, 2023
Commission Number 1236216



For: AUTONOMOUS MACHINE NAVIGATION USING VISION SYSTEM and
AUTONOMOUS MACHINE NAVIGATION AND TRAINING USING VISION SYSTEM

FOR AND ON BEHALF OF
THE TORO COMPANY

Cal Kosieracki

10/15/2019

Date

Name: Cal Kosieracki

Date

Position: IP ATTORNEY

STATE OF MINNESOTA)

) ss.

COUNTY OF HENNEPIN)

On this 15th day of October, 2019, before me personally appeared
Cal Kosieracki, to me known to be the person described in and who executed the
foregoing instrument, and he/she executed the same for the uses and purposes therein set forth.

Debra C Schommer
Notary Public

