504706181 12/28/2017

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT4752903

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
STEPHEN CRAVEN	12/20/2017
JEFFREY D. KERNWEIN	12/20/2017

RECEIVING PARTY DATA

Name:	WESTINGHOUSE AIR BRAKE TECHNOLOGIES CORPORATION
Street Address:	1001 AIR BRAKE AVENUE
City:	WILMERDING
State/Country:	PENNSYLVANIA
Postal Code:	15148

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	15855427

CORRESPONDENCE DATA

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ATTORNEY DOCKET NUMBER:	4293-1709651
NAME OF SUBMITTER:	RICHARD L. BYRNE
SIGNATURE:	/Richard L. Byrne/
DATE SIGNED:	12/28/2017

Total Attachments: 4

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> PATENT REEL: 044497 FRAME: 0335

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ASSIGNMENT

WHEREAS, as a below named inventor, I have invented certain new and useful improvements in
REAL-TIME KINEMATICS FOR END OF TRAIN
(Invention Title)
for which a United States Provisional Patent application was filed on(mm/dd/yyyy) and bears Application Number (hereinafter "said application"). AND/OR
X for which I have this day executed an application for a United States Patent (hereinafter "said application"). AND/OR
for which an application for a United States Patent was filed on (mm/dd/yyyy) and bears Application Number (hereinafter "said application"). AND/OR
for which an international patent application was filed under the Patent Cooperation Treaty on(mm/dd/yyyy), bearing Application No (hereinafter "said application").
AND, WHEREAS, WESTINGHOUSE AIR BRAKE TECHNOLOGIES CORPORATION, a corporation of Delaware, having a place of business at 1001 Air Brake Avenue, Wilmerding, PA 15148, hereinafter called the "assignee", is desirous of acquiring the entire right, title, and interest in and to said application and the inventions and improvements therein disclosed.
NOW, THEREFORE, for good and valuable consideration paid to me by said assignee, the receipt of which is hereby acknowledged, I as the inventor or as one of the inventors, hereinafter the assignor(s), do hereby assign, sell and transfer unto said assignee the full and exclusive right, title and interest in and to said application and the inventions and improvements therein disclosed for the United States and all foreign countries, including rights of priority under the International Convention of Paris (1883) as amended, and any Letters Patent which may issue therefor in the United States and all foreign countries and all divisionals, non-provisionals, reissues, continuations, continuations-in-part, renewals and/or extensions thereof. Such assignment extends to the full ends of the terms of these applications and patents as fully and entirely as the same would have been held and enjoyed by me had this Assignment not been made.
I hereby authorize and request any attorney associated with The Webb Law Firm, Customer No. 28289, to insert here in parentheses (Application No. 15/855, 427, filed 12/27/2017) the filing date and application number of said application when known.
I covenant that I am the lawful owner(s) of said application, inventions and improvements, that the same are unencumbered, that no license has been granted to make, use or vend the said inventions or improvements or any of them, and that I have the full right to make this Assignment.

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Attorney Docket No. <u>4293-1709651</u>

And for the consideration aforesaid, I agree individually and, if applicable, jointly that I will communicate to said assignee or the representatives thereof any facts known to me respecting said inventions and improvements, and will, upon request but without expense to me, testify in any legal proceedings, sign all lawful papers, execute all divisional, non-provisional reissue, continuation, continuation-in-part, renewal and/or extension applications, make all rightful oaths, and generally do all other and further lawful acts deemed necessary or expedient by said assignee or by counsel for said assignee to assist or enable said assignee to obtain and enforce full benefits from the rights and interests herein assigned. This Assignment shall be binding upon my heirs, executors, administrators and/or assigns, and shall inure to the benefit of the heirs, executors, administrators, successors and/or assigns, as the case may be, of said assignee.

FULL NAME OF ASSIGNOR: Stephen Craven	RESIDENCE: Hiawatha, IA
EXECUTED this 20 day of Do centre	SIGNATURE

WITNESS: Victi Rocho
Name:

X Checked Box indicates 2 additional page(s).

Application No. <u>15/855, 427</u>
Attorney Docket No. <u>4293-1709651</u>

FULL NAME OF ASSIGNOR: Jeffrey D. Kernwein	RESIDENCE: Cedar Rapids, IA
EXECUTED this 20 day of December 2	24, 2017 All
	SIGNATURE

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Application No. <u>/5/855, 42 /</u> Attorney Docket No. <u>4293-1709651</u>

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, 2017		
	SIGNATURE	
	Name:	
	Title:	
	,2017	SIGNATURE Name: