505795522 11/27/2019

EPAS ID: PAT5842351

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

SUBMISSION TYPE: NEW ASSIGNMENT

NATURE OF CONVEYANCE: ASSIGNMENT

CONVEYING PARTY DATA

| Name | Execution Date |
|---------------|----------------|
| YUICHI TOYAMA | 11/06/2019 |
| ATSUSHI MURAI | 11/06/2019 |

RECEIVING PARTY DATA

| Name: | HITACHI AUTOMOTIVE SYSTEMS, LTD. | |
|-----------------|----------------------------------|--|
| Street Address: | 2520 TAKABA | |
| City: | HITACHINAKA-SHI, IBARAKI | |
| State/Country: | JAPAN | |
| Postal Code: | 312-8503 | |

PROPERTY NUMBERS Total: 1

| Property Type | Number |
|---------------------|----------|
| Application Number: | 16617654 |

CORRESPONDENCE DATA

Fax Number: (202)628-8844

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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Correspondent Name: CROWELL & MORING LLP

Address Line 1: P.O. BOX 14300

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| ATTORNEY DOCKET NUMBER: | 106250.PC890US | |
|-------------------------|---------------------|--|
| NAME OF SUBMITTER: | MICHAEL H. JACOBS | |
| SIGNATURE: | /Michael H. Jacobs/ | |
| DATE SIGNED: | 11/27/2019 | |

Total Attachments: 2

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PATENT 505795522 REEL: 051129 FRAME: 0937

ASSIGNMENT AND DECLARATION UNDER 37 C.F.R. § 1.63

(For Use with Signed Application Data Sheet)

Title of Invention:

DEVICE AND METHOD FOR COOLING INTERNAL COMBUSTION

ENGINE

This assignment and declaration are directed to (check one):

the attached application;

the application identified by the attorney docket no. and title of invention given above;

☑ United States Application or PCT International Application No. PCT/JP2018/011676 ,

filed March 23, 2018.

ASSIGNMENT

For good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, as a below-named inventor I have sold and assigned, and by these presents hereby sell and assign, unto:

Name of Assignee:

Hitachi Automotive Systems, Ltd.

Address of Assignee: 2520 Takaba, Hitachinaka-shi, Ibaraki 312-8503 Japan

(hereinafter ASSIGNEE) all my right, title, and interest for the United States, its territories, and possessions in and to the above-identified invention and United States patent application, including any and all divisions or continuations thereof, and in and to any and all Letters Patent of the United States that may issue on any such application or for said invention, including any and all reissues or extensions thereof, to be held and enjoyed by said ASSIGNEE, its successors, or assigns to the full end of the term or terms for which any and all such Letters Patent may be granted as fully and entirely as would have been held and enjoyed by me had this Assignment not been made.

I hereby authorize and request the Director of the U.S. Patent and Trademark Office to issue any and all such Letters Patent to said ASSIGNEE, its successors, or assigns in accordance herewith.

I warrant and covenant that I have the full and unencumbered right to sell and assign the interests herein sold and assigned and that I have not executed and will not execute any document or instrument in conflict herewith.

I further covenant and agree that I will communicate to said ASSIGNEE, its successors, legal representatives, or assigns all information known to me relating to said invention or patent application and that I will execute and deliver any papers, make all rightful oaths, testify in any legal proceedings, and perform all other lawful acts deemed necessary or desirable by said ASSIGNEE, its successors, legal representatives, or assigns to perfect title to said invention, to said application including divisions and continuations thereof and to any and all Letters Patent that may be granted therefor or thereon, including reissues or extensions, in said ASSIGNEE, its successors, or assigns, or to assist said ASSIGNEE, its successors, legal representatives, or assigns in obtaining, reissuing, or enforcing Letters Patent of the United States for said invention.

DECLARATION

As a below-named inventor, I hereby declare that:

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.

Signature:

Inventor:

Yuichi Foyama Movember 6,2019

DATE

PATENT REEL: 051129 FRAME: 0938

ASSIGNMENT AND DECLARATION UNDER 37 C.F.R. § 1.63

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Name of Assignee:

Hitachi Automotive Systems, Ltd.

Address of Assignee: 2520 Takaba, Hitachinaka-shi, Ibaraki 312-8503 Japan

(hereinafter ASSIGNEE) all my right, title, and interest for the United States, its territories, and possessions in and to the above-identified invention and United States patent application, including any and all divisions or continuations thereof, and in and to any and all Letters Patent of the United States that may issue on any such application or for said invention, including any and all reissues or extensions thereof, to be held and enjoyed by said ASSIGNEE, its successors, or assigns to the full end of the term or terms for which any and all such Letters Patent may be granted as fully and entirely as would have been held and enjoyed by me had this Assignment not been made.

I hereby authorize and request the Director of the U.S. Patent and Trademark Office to issue any and all such Letters Patent to said ASSIGNEE, its successors, or assigns in accordance herewith.

I warrant and covenant that I have the full and unencumbered right to sell and assign the interests herein sold and assigned and that I have not executed and will not execute any document or instrument in conflict herewith.

I further covenant and agree that I will communicate to said ASSIGNEE, its successors, legal representatives, or assigns all information known to me relating to said invention or patent application and that I will execute and deliver any papers, make all rightful oaths, testify in any legal proceedings, and perform all other lawful acts deemed necessary or desirable by said ASSIGNEE, its successors, legal representatives, or assigns to perfect title to said invention, to said application including divisions and continuations thereof and to any and all Letters Patent that may be granted therefor or thereon, including reissues or extensions, in said ASSIGNEE, its successors, or assigns, or to assist said ASSIGNEE, its successors, legal representatives, or assigns in obtaining, reissuing, or enforcing Letters Patent of the United States for said invention.

DECLARATION

As a below-named inventor, I hereby declare that:

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.

Signature: Inventor:

Itsushi Murai Atsushi MURAI

November6, 2019

PATENT REEL: 051129 FRAME: 0939

RECORDED: 11/27/2019