505383055 03/19/2019

PATENT ASSIGNMENT COVER SHEET

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| SUBMISSION TYPE: | NEW ASSIGNMENT |
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| NATURE OF CONVEYANCE: | ASSIGNMENT |

CONVEYING PARTY DATA

| Name | Execution Date |
|---------------------|----------------|
| KAY HEINZE | 04/17/2018 |
| MICHAEL EBEL | 04/05/2018 |
| IGOR SIKORSKI | 04/05/2018 |
| MANFRED BAUMGARTNER | 04/17/2018 |
| IVO SZARVASY | 04/05/2018 |

RECEIVING PARTY DATA

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| State/Country: | GERMANY |
| Postal Code: | 15827 |

PROPERTY NUMBERS Total: 1

| Property Type | Number |
|---------------------|----------|
| Application Number: | 16358353 |

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| DATE SIGNED: | 03/19/2019 |

Total Attachments: 2 source=01051338#page1.tif

PATENT 505383055 REEL: 048640 FRAME: 0645

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PATENT REEL: 048640 FRAME: 0646

NONPROVISIONAL PATENT ASSIGNMENT

Assignee Reference No. EM 80355 // RR370

Please return notice of recordation to:

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For good and valuable consideration paid to each of the undersigned, the receipt and sufficiency of which are hereby acknowledged by the undersigned, to wit:

| INSERT | 1 | Dr. Kay HEINZE | 4 | Dr. Manfred BAUMGARTNER |
|----------|---|----------------|---|------------------------------|
| INVENTOR | 2 | Michael EBEL | 5 | Dr. Ivo SZARVASY |
| NAME(S) | 3 | Igor SIKORSKI | | X box if continued on page 2 |

the undersigned hereby sell(s), assign(s) and transfer(s) unto and at the request of:

| INSERT | Rolls-Royce Deutschland Ltd & Co KG | |
|-------------|-------------------------------------|--|
| ASSIGNEE(S) | Eschenweg 11 | |
| NAME & | 15827 Blankenfelde-Mahlow | |
| ADDRESS | GERMANY | |

(hereinafter "ASSIGNEE"), the entire right, title and interest in the invention in the United States ("US"), its territorial possessions and all foreign countries, including all applications therefor, including any and all previously filed applications, and any and all future divisions, continuations, substitutes, reissues, renewals, foreign and PCT applications thereof (including the right to claim priority under the terms of the International Convention and other relevant International Treaties and Arrangements from said applications), and any and all resulting patents, the invention known as:

| INVENTION | Combustion chamber assembly with different curvatures for a combustion chamber |
|-----------|--|
| | wall and a combustion chamber shingle fixed thereto |
| | |

The undersigned hereby authorize(s) and request(s) patent office officials in the US, its territorial possessions and all foreign countries, to issue any and all said patents to ASSIGNEE (including its successors and assigns) for its sole use and benefit; the undersigned agree(s) that the attorney of record in said applications shall hereinafter act on behalf of ASSIGNEE (including its successors and assigns).

The undersigned hereby agree(s) to testify, make oaths, execute papers and assist in any manner ASSIGNEE (including its successors and assigns) and its representatives, as deemed necessary by ASSIGNEE (including its successors and assigns) for ASSIGNEE'S (including its successors and assigns) full protection and title in and to the invention in the US, its territorial possessions and all foreign countries.

The undersigned hereby authorize(s) Shuttleworth & Ingersoll, PLC of the above address to insert hereon any further identification necessary or desirable for recordation of this document.

| INVENTOR | DATE SIGNED | WITNESS |
|----------------------|-------------|--|
| Va Veiro | 17.4.2018 | |
| Name: Dr. Kay HEINZE | | I SAUDRA LAUG |
| | | and the second s |
| | | |
| - 10-9al Qu | 542018 | |
| Name: Michael EBEL | | SANDRA CANG |

PATENT REEL: 048640 FRAME: 0647 INVENTOR DATE SIGNED WITNESS

| Jan | <u>51418</u> | - Rowales | |
|---|--------------|-----------------|-------|
| Name: Igor SIKORSKI | <u> </u> | Tijana Ficipova | J |
| 4. 1-1- | 17.4 2018 | | Arra, |
| Name: Dr. Manfred BAUMGARTNER | | SALVOLA LALVA | |
| Aus Summann | 5.4.2017 | | |
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PATENT REEL: 048640 FRAME: 0648