

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT5714990

<b>SUBMISSION TYPE:</b>	CORRECTIVE ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	Corrective Assignment to correct the NAME OF AN INVENTOR AND ADDRESS OF AN ASSIGNEE previously recorded on Reel 049852 Frame 0690. Assignor(s) hereby confirms the ASSIGNMENT.
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
SHIGEMI NAGANAWA	07/01/2019
NORIYOSHI TUCHIYA	06/26/2019
KUNIAKI SHIMADA	06/21/2019
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	THE UNIVERSITY OF TOKYO
<b>Street Address:</b>	3-1, HONGO 7-CHOME
<b>Internal Address:</b>	BUNKYO-KU
<b>City:</b>	TOKYO
<b>State/Country:</b>	JAPAN
<b>Postal Code:</b>	113-8654
<b>Name:</b>	TOHOKU UNIVERSITY
<b>Street Address:</b>	2-1-1, KATAHIRA, AOBA-KU
<b>City:</b>	SENDAI-SHI, MIYAGI
<b>State/Country:</b>	JAPAN
<b>Postal Code:</b>	9808577
<b>Name:</b>	TEISEKI DRILLING CO., LTD
<b>Street Address:</b>	7F SHINJUKU TX BLDG., 3-21, OKUBO, 1 CHOME
<b>Internal Address:</b>	SHINJUKU-KU
<b>City:</b>	TOKYO
<b>State/Country:</b>	JAPAN
<b>Postal Code:</b>	169-0072
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
Application Number:	16480631
<b>CORRESPONDENCE DATA</b>	
Fax Number:	
<i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent</i>	

***using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.***

**Phone:** 2123194900  
**Email:** tmcdonald@hhpatent.com  
**Correspondent Name:** HOLTZ, HOLTZ & VOLEK PC  
**Address Line 1:** 630 NINTH AVE  
**Address Line 2:** SUITE 1010  
**Address Line 4:** NEW YORK, NEW YORK 10036

<b>ATTORNEY DOCKET NUMBER:</b>	19262
<b>NAME OF SUBMITTER:</b>	TAYLER MCDONALD
<b>SIGNATURE:</b>	/Tayler McDonald/
<b>DATE SIGNED:</b>	09/12/2019
	This document serves as an Oath/Declaration (37 CFR 1.63).

**Total Attachments: 6**

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source=19262\_DEC\_ASSIGN#page2.tif  
source=19262\_DEC\_ASSIGN#page3.tif  
source=Full page photo#page1.tif  
source=Notice#page1.tif  
source=Notice#page2.tif

## Combined Declaration and Assignment

**Title of Invention** WELL DRILLING BIT AND WELL DRILLING METHOD USING THE SAME

As the below named inventor, I hereby declare that:

This declaration is directed to: ☐ The attached application, or  
☒ United States application or PCT international application number PCT/JP2017/044523 filed on December 12, 2017.

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.

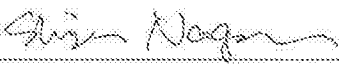
In consideration of value received, I sell and assign to (1) THE UNIVERSITY OF TOKYO, (2) TOHOKU UNIVERSITY, & (3) TEISEKI DRILLING CO., LTD., having business addresses at, (1) 3-1, Hongo 7-chome, Bunkyo-ku, Tokyo, 113-8654, JAPAN, (2) 2-1-1, Katahira, Aoba-ku, Sendai-shi, Miyagi 9808577, JAPAN, & (3) 7F Shinjuku TX Bldg., 3-21, Okubo, 1 Chome, Shinjuku-ku, Tokyo, 169-0072, JAPAN, respectively, their successors, assigns or nominees, hereinafter referred to as "Assignees", my entire right, title and interest in and to said invention, and in and to all applications for patent and patents for said invention, in all countries of the world, including all divisions, reissues, continuations, substitutions and extensions thereof and all rights arising under or pursuant to any and all international agreements, treaties or laws relating to the protection of intellectual property, including rights of priority, resulting from the filing of any of said applications.

I authorize said Assignees to file and prosecute an application or applications for patent for said invention as the applicant, and I request any official whose duty it is to issue patents, to issue any patent on said invention to said Assignees.

I agree that on request and without further consideration, but at the expense of said Assignees, I will communicate to said Assignees or their representatives all facts known to me respecting said invention and testify in any legal proceeding, sign all lawful papers, execute all divisional, continuing, reissue, or other applications, make all rightful oaths and declarations, and generally do everything possible to aid said Assignees to obtain and enforce proper patent protection for said invention in all countries.

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.

### LEGAL NAME OF INVENTOR

Shigemi NAGANAWA		1 July 2019
Noriyoshi TUCHIYA		
Kuniaki SHIMADA		
Inventor (printed name)	Signature	Date

**Holtz, Holtz & Volek PC**  
 630 Ninth Avenue, Suite 1010, New York, NY 10036-3744  
 Tel. (212) 319-4900 Fax. (212) 319-5101

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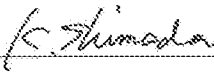
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### LEGAL NAME OF INVENTOR

Shigemi NAGANAWA		
Noriyoshi TUCHIYA		
Kuniaki SHIMADA		<u>6/21/2019</u>
Inventor (printed name)	Signature	Date

Holtz, Holtz & Volek PC  
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### LEGAL NAME OF INVENTOR

Shigemi NAGANAWA		
Noriyoshi TUCHIYA	土屋 範芳	26 June 2019
Kuniaki SHIMADA		
Inventor (printed name)	Signature	Date

**Holtz, Holtz & Volek PC**  
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## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT5635186

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT

## CONVEYING PARTY DATA

Name	Execution Date
SHIGEMI NAGANAWA	07/01/2019
NORIYUSHI TUCHIYA	06/26/2019
KUNIAKI SHIMADA	06/21/2019

## RECEIVING PARTY DATA

<b>Name:</b>	THE UNIVERSITY OF TOKYO
<b>Street Address:</b>	3-1, HONGO 7-CHOME, BUNKYO-KU
<b>City:</b>	TOKYO
<b>State/Country:</b>	JAPAN
<b>Postal Code:</b>	113-8654
<b>Name:</b>	TOHOKU UNIVERSITY
<b>Street Address:</b>	2-1-1, KATAHIRA, AOBA-KU
<b>City:</b>	SENDAI-SHI, MIYAGI
<b>State/Country:</b>	JAPAN
<b>Postal Code:</b>	980-8577
<b>Name:</b>	TEISEKI DRILLING CO., LTD.
<b>Street Address:</b>	7F SHINJUKU TX BLDG., 32-1, OKUBO, 1 CHOME
<b>City:</b>	SHINJUKU-KU, TOKYO
<b>State/Country:</b>	JAPAN
<b>Postal Code:</b>	169-0072

## PROPERTY NUMBERS Total: 1

Property Type	Number
<b>Application Number:</b>	16480631

## 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: 2123194900

Email: tbingham@hhpatent.com

Correspondent Name: HOLTZ, HOLTZ &amp; VOLEK PC

Address Line 1: 630 NINTH AVENUE

PATENT

REEL: 050355 FRAME: 0489



## UNITED STATES PATENT AND TRADEMARK OFFICE

UNDER SECRETARY OF COMMERCE FOR INTELLECTUAL PROPERTY AND  
DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE

JULY 25, 2019

PTAS

HOLTZ, HOLTZ & VOLEK PC  
630 NINTH AVENUE  
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NEW YORK, NY 10036

**505588386**

### UNITED STATES PATENT AND TRADEMARK OFFICE NOTICE OF RECORDATION OF ASSIGNMENT DOCUMENT

THE ENCLOSED DOCUMENT HAS BEEN RECORDED BY THE ASSIGNMENT RECORDATION BRANCH OF THE U.S. PATENT AND TRADEMARK OFFICE. A COMPLETE COPY IS AVAILABLE AT THE ASSIGNMENT SEARCH ROOM ON THE REEL AND FRAME NUMBER REFERENCED BELOW.

PLEASE REVIEW ALL INFORMATION CONTAINED ON THIS NOTICE. THE INFORMATION CONTAINED ON THIS RECORDATION NOTICE REFLECTS THE DATA PRESENT IN THE PATENT AND TRADEMARK ASSIGNMENT SYSTEM. IF YOU SHOULD FIND ANY ERRORS OR HAVE QUESTIONS CONCERNING THIS NOTICE, YOU MAY CONTACT THE ASSIGNMENT RECORDATION BRANCH AT 571-272-3350. PLEASE SEND REQUEST FOR CORRECTION TO: U.S. PATENT AND TRADEMARK OFFICE, MAIL STOP: ASSIGNMENT RECORDATION BRANCH, P.O. BOX 1450, ALEXANDRIA, VA 22313.

RECORDATION DATE: 07/24/2019

REEL/FRAME: 049852/0690  
NUMBER OF PAGES: 5

BRIEF: ASSIGNMENT OF ASSIGNORS INTEREST (SEE DOCUMENT FOR DETAILS).

DOCKET NUMBER: 19262

ASSIGNOR:  
NAGANAWA, SHIGEMI

DOC DATE: 07/01/2019

ASSIGNOR:  
TUCHIYA, ~~NORIYOSHI~~ NORIYOSHI

DOC DATE: 06/26/2019

ASSIGNOR:  
SHIMADA, KUNIAKI

DOC DATE: 06/21/2019

ASSIGNEE:  
THE UNIVERSITY OF TOKYO  
3-1, HONGO 7-CHOME, BUNKYO-KU  
TOKYO, JAPAN 113-8654

ASSIGNEE:  
TOHOKU UNIVERSITY  
2-1-1, KATAHIRA, AOBA-KU  
SENDAI-SHI, MIYAGI, JAPAN 980-8577

ASSIGNEE:

TEISEKI DRILLING CO., LTD.  
7F SHINJUKU TX BLDG., ~~32-1~~, OKUBO, 1  
CHOME 3-21  
SHINJUKU-KU, TOKYO, JAPAN 169-0072

APPLICATION NUMBER: 16480631

FILING DATE:

PATENT NUMBER:

ISSUE DATE:

TITLE: WELL DRILLING BIT AND WELL DRILLING METHOD USING THE SAME

ASSIGNMENT RECORDATION BRANCH  
PUBLIC RECORDS DIVISION