503323722 05/27/2015

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT3370340

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
Kenichi TAKAGI	03/24/2015
Masanori ISHIGAKI	03/24/2015
Takahide SUGIYAMA	03/24/2015
Takaji UMENO	03/24/2015
Kenichiro NAGASHITA	05/14/2015
Takahiro HIRANO	05/14/2015
Jun MUTO	05/14/2015

RECEIVING PARTY DATA

Name:	KABUSHIKI KAISHA TOYOTA CHUO KENKYUSHO
Street Address:	41-1, Yokomichi
City:	Nagakute-shi, Aichi-ken
State/Country:	Japan
Postal Code:	480-1192
N1	TOYOTA UDOOLIA KADUOLIIKI KAIOLIA
Name:	TOYOTA JIDOSHA KABUSHIKI KAISHA
Street Address:	1, Toyota-cho
Street Address:	1, Toyota-cho

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	14630051

CORRESPONDENCE DATA

Fax Number: (703)836-2787

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: 703-836-6400
Email: email@oliff.com
Correspondent Name: JAMES A. OLIFF
Address Line 1: OLIFF PLC
Address Line 2: P.O. BOX 320850

503323722 REEL: 035783 FRAME: 0701

PATENT

Address Line 4: AL	EXANDRIA, VIRGINIA 22320-4850
ATTORNEY DOCKET NUMBER:	164995
NAME OF SUBMITTER:	SCOTT DODGE
SIGNATURE:	/Scott Dodge/
DATE SIGNED:	05/27/2015
Total Attachments: 1	•

source=Assignment 1#page1.tif

PATENT REEL: 035783 FRAME: 0702

ASSIGNMENT

	Insert	(1)	Kenichi TAKAGI	(2)	Masanori ISHIGAKI	
(1-8)	Legal Name(s)	(3)	Takahide SUGIYAMA	(4)	Takaji UMENO	
	of inventor(s)	(S)	Kenichim NAGASHITA	(6)	Takahiro HIRANO	·····
		(7)	Jun MUTO	(8)		·····
		the ur	isideration of the sum of one dollar idensigned, the receipt and sufficien it, and hereby does assign, transfer a	ey of which are		
(9)	Insert Name of Assignee	(9)	1) KABUSHIKI KAISHA TOY 2) TOYOTA JIDOSHA KABUS		NKYUSHO	
(10)	Insert Address of Assignee	(10)	1) 41-1, Yokomichi, Nagakute- 2) 1, Toyota-cho, Toyota-shi, A		* * * * * * * * * * * * * * * * * * * *	
		the en inven- contin	nafter designated as the Assignee) a stire right, title and interest for the k tion, and in all applications for pate mation, international, substitute and examination certificates that may b	inited States of A at including any I reissue applicat	merica as defined in 35 U.S.C. §1 and all provisional, non-provision ion(s), and all Letters Patent, exter	00, in the al, divisional,
(11)	Insert Identification such as Title, Case	(11)	ELECTRIC POWER CON	VERSION C	IRCUIT SYSTEM	
	Number, or Foreign Application Number	(Atto	mcy Docket Na.		filed on even date herewith or as	
(12)	Alternative	(12)	U.S. Application Number 14	/630,051		
	Identification for	ov			A 4 4 9	
	filed applications	filed	r'e.	bruary 24	, 2015	
declare and goi claims	ute separate assignments in a 2) Each undersigned agre d concerning any application ing forward with such interfe 3) Each undersigned agre or provisions of the Internati 4) Each undersigned agre	connection es to exect or patent rence or p es to exect onal Con- es to perfe	alle all papers and documents and vention for Protection of Industrial orm all affirmative acts which may	ts as the Assignation with any in a with the Assign perform any act I Property or sim	e may deem necessary, erference or post-grant proceedir tee in every way possible in obta- which may be necessary in conne- ilar agreements.	ng which may be ining evidence action with
declare and goi claims reexam resultir entire i this ass	ute separate assignments in a 2) Each undersigned agre d concerning any application ing forward with such interfe 3) Each undersigned agre or provisions of the Internati 4) Each undersigned agre intation a grant of a valid Un 5) Each undersigned auth ing from said application(s) to interest herein assigned, and i ignment is binding on Assig 6) Each undersigned here	connection es to exect to repatent trence or p es to exect innal Com- tes to perfe ited State- torizes and that he or nor and A by grants	with such applications and paten- use all papers necessary in connect for the invention and to cooperate osst-grant proceeding, use all papers and documents and rention for Protection of Industrial orm all affirmative acts which may a patent to the Assignee. I requests the Commissioner of the Assignee, as Assignee of the entire she has not executed, and will not ssignor's heirs, successors, assigns the firm of OLIFF PLC the power t	ts as the Assigna- tion with any into e with the Assign perform any act I Property or sim y be necessary to e U.S. Patent and e interest, and co execute, any ag and legal repre- to insert on this is	e may deem necessary. erference or post-grant proceedir tee in every way possible in obta- which may be necessary in conne- ilar agreements. obtain, maintain or confirm by n Trademark Office to issue any a venants that he or she has full rig reement(s) in conflict herewith, a senignment any further identificat	ig which may be ining evidence tection with cissue or all patents to convey the ind agrees that ion that may be
declare and goi claims reexam resultir entire i this ass	ute separate assignments in a 2) Each undersigned agre d concerning any application ing forward with such interfe 3) Each undersigned agre or provisions of the Internati 4) Each undersigned agre intation a grant of a valid Un 5) Each undersigned auth agreement assigned, and itignment is binding on Assig 6) Each undersigned here ary or desirable in order to co	connection es to executor or patent erence or p erence or p eres to executor es to perfe ited States orizes and other said other and A by grants omply with	with such applications and paten- use all papers necessary in connect for the invention and to cooperate osst-grant proceeding, use all papers and documents and vention for Protection of Industrial orm all affirmative acts which may a patent to the Assignee. I requests the Commissioner of the Assignee, as Assignee of the entire she has not executed, and will not ssignor's heirs, successors, assigns the firm of OLIF FLC the power the the rules of the United States Pate	ts as the Assigna- tion with any into with the Assign perform any act I Property or sim y be necessary to e U.S. Patent and c interest, and co execute, any ag s and legal repre- to insert on this i	e may deem necessary. erference or post-grant proceedir tee in every way possible in obta- which may be necessary in conne- ilar agreements. obtain, maintain or confirm by n Trademark Office to issue any a venants that he or she has full rig reement(s) in conflict herewith, a semanives. assignment any further identificat ark Office for recordation of this	ig which may be ining evidence tection with cissue or all patents to convey the ind agrees that ion that may be
declare and goi claims reexam resulting entire in this ass necessar	ute separate assignments in a 2) Each undersigned agre d concerning any application ing forward with such interfe 3) Each undersigned agre or provisions of the Internati 4) Each undersigned agre intation a grant of a valid Un 5) Each undersigned auth agreement assigned, and itignment is binding on Assig 6) Each undersigned here ary or desirable in order to co	connection es to exect to r patent prence or p ess to exect ional Com- es to perfe ited States orizes and that he or mor and A by grants omply with sted by th	with such applications and paten- use all papers necessary in connect for the invention and to cooperate osst-grant proceeding, use all papers and documents and rention for Protection of Industrial orm all affirmative acts which may a patent to the Assignee. I requests the Commissioner of the Assignee, as Assignee of the entire she has not executed, and will not ssignor's heirs, successors, assigns the firm of OLIFF PLC the power t	ts as the Assignation with any interest and act of Property or simply be necessary to e. U.S. Patent and a interest, and co execute, any as and legal repreto insert on this stent and Tradem.	e may deem necessary. erference or post-grant proceedir tee in every way possible in obta- which may be necessary in conne- ilar agreements. obtain, maintain or confirm by n Trademark Office to issue any a venants that he or she has full rig reement(s) in conflict herewith, a semanives. assignment any further identificat ark Office for recordation of this	ig which may be ining evidence tection with cissue or all patents to convey the ind agrees that ion that may be
declare and goi claims reexam resulting entire in this ass necessar	ute separate assignments in a 2) Each undersigned agre d concerning any application ing forward with such interfe 3) Each undersigned agre or provisions of the Internati 4) Each undersigned agre ination a grant of a valid Un 5) Each undersigned auth ag from said application(s) to nterest herein assigned, and i ignment is binding on Assig 6) Each undersigned here iry or desirable in order to co	connection es to exec to r patent brence or p ess to exec to nate to exec to nate to exec to nate to exec to the said to the said that he or mor and A by grants the death the death the death the said that he or that he or that the or that the fill that the that the or that the said that the	with such applications and patentiate all papers necessary in connect for the invention and to cooperate post-grant proceeding, and all papers and documents and sention for Protection of Industrial form all affirmative acts which may a patent to the Assignee. I requests the Commissioner of the Assignee, as Assignee of the entire she has not executed, and will not satignor's heirs, successors, assigns the firm of OLIF PLC the power to the rules of the United States Pate undersigned on the date(s) opposition of the Control of the United States and European Signature.	ts as the Assignation with any interest and act of Property or sime to every be necessary to every be necessary to execute, any act and eagair represonment of the network	e may deem necessary. erference or post-grant proceedir tee in every way possible in obta- which may be necessary in conne- ilar agreements. obtain, maintain or confirm by n Trademark Office to issue any a venants that he or she has full rig reement(s) in conflict herewith, a semanives. assignment any further identificat ark Office for recordation of this signed name(s). Azil	ig which may be ining evidence tection with existing or all patents to convey the address that ion that may be document.
declare and goi claims reexam resulting entire in this assumenessand.	ute separate assignments in a 2) Each undersigned agre d concerning any application ing forward with such interfe 3) Each undersigned agre or provisions of the Internati 4) Each undersigned agre ination a grant of a valid Un 5) Each undersigned auth ag from said application(s) to interest herein assigned, and i ignment is binding on Assig 6) Each undersigned here ary or desirable in order to co In witness whereof, execu-	connection es to exec t or patent brence or p ess to exec tenal Com- tes to perfei ted States orizes and that he or mor and A by grants outply with sted by th	with such applications and patentiate all papers necessary in connect for the invention and to cooperate post-grant proceeding, and all papers and documents and sention for Protection of Industrial form all affirmative acts which may a patent to the Assignee. I requests the Commissioner of the Assignee, as Assignee of the entire she has not executed, and will not satignor's heirs, successors, assigns the firm of OLIF PLC the power to the rules of the United States Pate undersigned on the date(s) opposition of the Control of the United States and European Signature.	ts as the Assignation with any interest and act of Property or simply be necessary to e. U.S. Patent and a interest, and content and tradem of the mand Tradem consite the under the mand Tradem of the content and Tradem of the content and Tradem of the under the mand Tradem of the under	e may deem necessary. erference or post-grant proceedir tee in every way possible in obta- which may be necessary in conne- ilar agreements. obtain, maintain or confirm by n Trademark Office to issue any a venants that he or she has full rig reement(s) in conflict herewith, a semanives. assignment any further identificat ark Office for recordation of this signed name(s). Akri Con Toward All Caki	ig which may be ining evidence tection with existing or and all patents that to convey the agrees that ion that may be document. (SEAL)
declare and goi claims reexam resulting entire in this assumenessa. Date Date	ute separate assignments in a 2) Each undersigned agre d concerning any application ing forward with such interfe 3) Each undersigned agre or provisions of the Internati 4) Each undersigned agre ination a grant of a valid Un 5) Each undersigned auth ag from said application(s) to neterest herein assigned, and i ignment is binding on Assig 6) Each undersigned here ary or desirable in order to co In witness whereof, execu- March 24, 2019 March 24, 2019	connection es to exec or patent erence or p erence or	with such applications and patentiate all papers necessary in connect for the invention and to cooperate post-grant proceeding, and all papers and documents and sention for Protection of Industrial orm all affirmative acts which may a patent to the Assignee. I requests the Commissioner of the Assignee, as Assignee of the entire she has not executed, and will not satignor's heirs, successors, assigns the firm of OLIFF PLC the power to the rules of the United States Pate undersigned on the date(s) opposition of the Inventor Signature Inventor Signature	ts as the Assignation with any interview with the Assign perform any act of Property or simply be necessary to every service to the execute, any segment on this content and Tradem posite the under the execute of the	e may deem necessary. erference or post-grant proceedir tee in every way possible in obta- which may be necessary in conne- ilar agreements. obtain, maintain or confirm by n Trademark Office to issue any a venants that he or she has full rig reement(s) in conflict herewith, a semanives. assignment any further identificat ark Office for recordation of this signed name(s). Akri Con Toward All Caki	ig which may be ining evidence tection with existing or and all patents his to convey the ind agrees that ion that may be document. (SEAL) (SEAL)
declare and goi claims reexam resulting entire in this assumenessand Date Date	ute separate assignments in a 2) Each undersigned agre d concerning any application ing forward with such interfe 3) Each undersigned agre or provisions of the Internati 4) Each undersigned agre ination a grant of a valid Un 5) Each undersigned auth g from said application(s) to necrest herein assigned, and ignment is binding on Assig 6) Each undersigned here ry or desirable in order to co In witness whereof, execut March 24, 2015 March 24, 2015 March 24, 2015 March 24, 2015 May 14, 2015	connection es to exec or patent erence or p erence or	with such applications and patentiate all papers necessary in connect for the invention and to cooperate post-grant proceeding, and all papers and documents and remains for Protection of Industrial ormall affirmative acts which may a patent to the Assignee. It requests the Commissioner of the Assignee, as Assignee of the entire she has not executed, and will not satignor's heirs, successors, assigns the firm of OLIFF PLC the power to the rules of the United States Pair and endersigned on the date(s) opportunity of the Inventor Signature Inventor Signature Inventor Signature	ts as the Assignation with any interview with the Assign perform any act I Property or sime to be U.S. Patent and interest, and execute, any again and legal represonant Tradem. We will be a sand legal represonant and Tradem. We will be a sand legal represonant and Tradem. We will be a sand legal represonant and Tradem. We will be a sand legal represonant and Tradem. We will be a sand legal represonant and Tradem. We will be a sand legal represonant and Tradem. We will be a sand legal represonant and Tradem. We will be a sand legal represonant and Tradem. Takaharangan and the sand legal represonant and tradem.	e may deem necessary. erference or post-grant proceedir tee in every way possible in obta- which may be necessary in conne- ilar agreements. obtain, maintain or confirm by n Trademark Office to issue any a venants that he or she has full rig cement(s) in conflict herewith, a sematives. assignment any further identificat ark Office for recordation of this signed name(s). Activate Alai Control Toward Alai Alai Control Toward Alai	ig which may be ining evidence tection with existing or and all patents his to convey the ind agrees that ion that may be document. (SEAL) (SEAL)
declare and goi claims reexam resulting entire in this assuments and the Date Date Date Date	ute separate assignments in a 2) Each undersigned agre d concerning any application ing forward with such interfe 3) Each undersigned agre or provisions of the Internati 4) Each undersigned agre ination a grant of a valid Un 5) Each undersigned auth g from said application(s) to nterest herein assigned, and ignment is binding on Assig 6) Each undersigned here ry or desirable in order to co In witness whereof, execut March 24, 2015 March 24, 2015 March 24, 2015 May 14, 2015 May 14, 2015	connection es to exec or patent erence or p erence or	with such applications and patentiate all papers necessary in connect for the invention and to cooperate post-grant proceeding, and all papers and documents and remain for Protection of Industrial orm all affirmative acts which may a patent to the Assignee. I requests the Commissioner of the Assignee, as Assignee of the entire she has not executed, and will not satignor's heirs, successors, assigns the firm of OLIFF PLC the power to the rules of the United States Pair and endersigned on the date(s) opportunity of the Inventor Signature Inventor Signature Inventor Signature Inventor Signature	ts as the Assignation with any interview with the Assign perform any act of Property or simply be necessary to every service to the execute, any segment on this content and Tradem posite the under the execute of the	e may deem necessary. erference or post-grant proceedir tee in every way possible in obta- which may be necessary in conne- ilar agreements. obtain, maintain or confirm by n Trademark Office to issue any a venants that he or she has full rig cement(s) in conflict herewith, a sematives. assignment any further identificat ark Office for recordation of this signed name(s). Activate Control Toward Alari Limmo Agaslita AASHITA AASHITA	ig which may be ining evidence ection with cissue or and all patents to convey the ind agrees that ion that may be document. (SEAL) (SEAL) (SEAL)
declare and goi claims reexam resulting entire in this assuments and the declare Date Date Date Date Date Date	ute separate assignments in a 2) Each undersigned agre d concerning any application ing forward with such interfe 3) Each undersigned agre or provisions of the Internati 4) Each undersigned agre ination a grant of a valid Un 5) Each undersigned auth g from said application(s) to necrest herein assigned, and ignment is binding on Assig 6) Each undersigned here ry or desirable in order to co In witness whereof, execut March 24, 2015 March 24, 2015 March 24, 2015 March 24, 2015 May 14, 2015	connection es to exec or patent erence or p erence or	with such applications and patentiate all papers necessary in connect for the invention and to cooperate post-grant proceeding, and all papers and documents and sention for Protection of Industrial orm all affirmative acts which may a patent to the Assignee. It requests the Commissioner of the Assignee, as Assignee of the entire she has not executed, and will not seignor's heirs, successors, assigns the firm of OLIF FLC the power to the rules of the United States Patenther and the rules of the United States Patenther Signature Inventor Signature	ts as the Assignation with any interest and act of Property or simply be necessary to every content and conterest, and content and Tradem content	e may deem necessary. erference or post-grant proceedir tee in every way possible in obta- which may be necessary in conne- ilar agreements. obtain, maintain or confirm by n Trademark Office to issue any a venants that he or she has full rig cement(s) in conflict herewith, a sematives. assignment any further identificat ark Office for recordation of this signed name(s). Activate Control Toward Alari Limmo Agaslita AASHITA AASHITA	ig which may be ining evidence betton with eissue or and all patents hi to convey the ind agrees that ion that may be document. (SEAL) (SEAL) (SEAL) (SEAL) (SEAL)
declare and goi claims reexam resulting entire in this ass necessare. Date Date Date Date Date Date Date Date	ute separate assignments in a 2) Each undersigned agre d concerning any application ing forward with such interfe 3) Each undersigned agre or provisions of the Internati 4) Each undersigned agre ination a grant of a valid Un 5) Each undersigned auth g from said application(s) to nterest herein assigned, and ignment is binding on Assig 6) Each undersigned here ry or desirable in order to co In witness whereof, execut March 24, 2015 March 24, 2015 March 24, 2015 May 14, 2015 May 14, 2015	connection es to exec or patent erence or p erence or	with such applications and patentiate all papers necessary in connect for the invention and to cooperate post-grant proceeding, and all papers and documents and sention for Protection of Industrial orm all affirmative acts which may a patent to the Assignee. It requests the Commissioner of the Assignee, as Assignee of the entire she has not executed, and will not seignor's heirs, successors, assigns the firm of OLIF FLC the power to the rules of the United States Patenther and the rules of the United States Patenther Signature Inventor Signature	ts as the Assignation with any interest of the Assignation with the Assignation with the Assignation of the Control of the Con	e may deem necessary. erference or post-grant proceedir ire in every way possible in obta- which may be necessary in conne- ilar agreements. obtain, maintain or confirm by no Trademark Office to issue any a venants that he or she has full rig reement(s) in conflict herewith, a sentiatives. ussignment any further identificat ark Office for recordation of this signed name(s). May Control Towgahi HICAKI Linguyama GIYAMA	ig which may be ining evidence betton with eissue or and all patents hi to convey the ind agrees that ion that may be document. (SEAL) (SEAL) (SEAL) (SEAL) (SEAL)
declare and goi claims reexam resultir entire i this ass necessa Date Date Date Date Date Date Date	ute separate assignments in a 2) Each undersigned agre d concerning any application ing forward with such interfe 3) Each undersigned agre or provisions of the Internati 4) Each undersigned agre ination a grant of a valid Un 5) Each undersigned auth gfrom said application(s) to neterest herein assigned, and ignment is binding on Assig 6) Each undersigned here ry or desirable in order to co In witness whereof, execut March 24, 2015 March 24, 2015 March 24, 2015 May 14, 2015 May 14, 2015 May 14, 2015 May 14, 2015 This assignment should pre This assignment should pre	connection es to exect to patent rence or p es to exect to sto exect to a constant to exect to execute the said that he or nor and A by grants that he or nor and A by gra	with such applications and patentiate all papers necessary in connect for the invention and to cooperate post-grant proceeding, and all papers and documents and remain for Protection of Industrial orm all affirmative acts which may a patent to the Assignee. It requests the Commissioner of the Assignee, as Assignee of the entire assigner as Assigner, as Assignee as Assigner as Assigner as the firm of OLIFF PLC the power to the rules of the United States Pair the rules of the United States Pair and endersigned on the date(s) opposite the firm of OLIFF PLC the power to the rules of the United States Pair and Pa	ts as the Assignation with any interest of the Assignation with the Assignation with the Assignation of the Control of the Con	e may deem necessary. erference or post-grant proceedir nee in every way possible in obta- which may be necessary in conne- ilar agreements. obtain, maintain or confirm by n Trademark Office to issue any a venants that he or she has full rig cement(s) in conflict herewith, a semastives. assignment any further identificat ark Office for recordation of this signed name(s). A. Takagi HICAN Limmo Limmo Lim	ig which may be ining evidence betton with ressure or and all patents the to convey the ind agrees that ion that may be document. (SEAL) (SEAL) (SEAL) (SEAL) (SEAL) (SEAL) (SEAL) (SEAL)
declare and goi claims reexam resultir entire i this ass necessa Date Date Date Date Date Date Date	ute separate assignments in a 2) Each undersigned agre d concerning any application ing forward with such interfe 3) Each undersigned agre or provisions of the Internati 4) Each undersigned agre ination a grant of a valid Un 5) Each undersigned auth gfrom said application(s) to neterest herein assigned, and ignment is binding on Assig 6) Each undersigned here ry or desirable in order to co In witness whereof, execut March 24, 2015 March 24, 2015 March 24, 2015 May 14, 2015 May 14, 2015 May 14, 2015 May 14, 2015 This assignment should pre This assignment should pre	connection es to exect to patent rence or p es to exect to sto exect to a constant to exect to execute the said that he or nor and A by grants that he or nor and A by gra	with such applications and patentus all papers necessary in connect for the invention and to cooperate toost-grant proceeding, and all papers and documents and sention for Protection of Industrial orm all affirmative acts which may a patent to the Assignee. I requests the Commissioner of the Assignee, as Assignee of the entire she has not executed, and will not essignor's heirs, successors, assigns the firm of OLIFF PLC the power to the rules of the United States Pale undersigned on the date(s) opposition of the United States Pale undersigned on the Olive Pale unders	ts as the Assignation with any interest of the Assignation with the Assignation with the Assignation of the Control of the Con	e may deem necessary. erference or post-grant proceedir nee in every way possible in obta- which may be necessary in conne- ilar agreements. obtain, maintain or confirm by n Trademark Office to issue any a venants that he or she has full rig cement(s) in conflict herewith, a semastives. assignment any further identificat ark Office for recordation of this signed name(s). A. Takagi HICAN Limmo Limmo Lim	ig which may be ining evidence betton with reissue or and all patents the following evidence that in convey the independent of the may be document. (SEAL) (SEAL) (SEAL) (SEAL) (SEAL) (SEAL) (SEAL) (SEAL)

PATENT REEL: 035783 FRAME: 0703

RECORDED: 05/27/2015