Director of the U.S. Patent and Trademark Office Box Assignments Washington, D.C. 20231 06-27-2001

101761829

U.S. DEPARTMENT OF COMMERCE
Patent and Trademark Office

Attorney Docket No.

109130

	To	o the Director of the U.S. Patent and Trademark Office: P	lease r	ecor	d the attached original document or copy thereof.				
1.	A.	Name of conveying parties: Shizuo SASAKI Kouji YOSHIZAKI Masato GOTOH Takekazu ITO	2.	Α.	Name and address of receiving party: TOYOTA JIDOSHA KABUSHIKI KAISHA 1, TOYOTA-CHO, TOYOTA-SHI, AICHI-KEN, 471-8571, JAPAN				
	B.	Additional name(s) of conveying party(ies) attached?  ☐ Yes ☒ No							
3.	A.	Nature of conveyance:		В.	Additional name(s) & address(es) attached?  ☐ Yes ☐ No				
	$\boxtimes$	Assignment							
		Security Agreement							
		Other							
	B.	Execution Date: June 4, 2001							
4.	A.	If this document is being filed together with a new appl	ication	, the	execution date of the application is: <u>June 4, 2001</u>				
	В.	Patent Application No.(s)		C.	Patent No.(s)				
	19	/880//0 Additional numbers atta	 nched?		Yes 🛮 No				
5.		ne and address of party to whom correspondence cerning document should be mailed:	6.	Tota	al number of applications and patents involved: 1				
	Na	me: James A. Oliff	7.	A.	Total fee (37 CFR 3.41)\$ 40.00				
				В.	Enclosed (Check No. 119925_)				
	Ad	idress: OLIFF & BERRIDGE, PLC P.O. Box 19928 Alexandria, VA 22320	8.		dit any overpayment or charge any underpayment to osit account number 15-0461.				
9.	To i	tement and signature. the best of my knowledge and belief, the foregoing inform original dicument.	Wedge and belief, the foregoing information is true and correct and any attached copy is a true copy of						
		nes A. Oliff Registration No. 27,075 hard S. Elias Registration No. P-48,806			Date: June 14, 2001				
		_	ncludii	ng co	over sheet, attachments, and document: 2				

PATENT REEL: 011918 FRAME: 0975

## ASSIGNMENT

(1-8)									
	Insert	(2)	Kouji Yoshizaki		-				
	Name(s) of Inventor(s)	(3)	Gotoh Masato						
		(4)			42.				
		each o	In consideration of the sum of one of the undersigned, each undersigned	Jollar (\$1.00) and oth	er good and valuable cor	nsideration paid to			
(9)	Insert Name of Assignee	(9)	TOYOTA JIDOSHA KABUSH	IWI & AICYIA					
(10)	Insert Address of Assignee	(10)							
	Assignee		1, Toyota-cho, Toyota-shi, Aich						
		entire invent contin	(hereinafter designated as the Assignee) and Assignee's heirs, successors, assigns and legal representatives, the entire right, title and interest for the United States of America as defined in 35 U.S.C. §100, in the invention, and in all applications for patent including any and all provisional, non-provisional, divisional, continuation, substitute, and reissue application(s), and all Letters Patent, extensions, reissues and reexamination certificates that may be granted on the invention known as						
(11)	Insert	(11)	INTERNAL COMBUSTION	ENGINE AND	METHOD FOR REX	CIRCULATIN			
	Identification such as Title, Case		EXHAUST GAS						
	Number, or Foreign								
	Application Number								
			ich the undersigned has (have) exec ate herewith or	uted an application to	r patent in the United Sta	ites of America on			
(12)	Insert Date of	(13)	In / 2001						
	Signing of Application	(12)	on June 4, 2001						
(13)	Alternative	(13)	U.S. application Serial Number						
	Identification for filed applications	filed	June 14, 2001		70-00-10-0				
	P. C.								
and pate	ents as the Assignee may dee 2) Each undersigned agree- ion or continuation or divisi- e in every way possible in o	em necess es to execu ion thereo obtaining e	ary. He all papers necessary in connection f, or any patent or reissue application vidence and going forward with suc	on with any interference based thereon, for the interference.	the invention, and to coo	ed concerning any operate with the			
and pate applicat Assigned or provi- reexamile resulting interest is bindir that may	ents as the Assignee may dec 2) Each undersigned agree ion or continuation or divisis e in every way possible in o 3) Each undersigned agree sions of the International Ct 4) Each undersigned agree nation a grant of a valid Un 5) Each undersigned author g from said application(s) to herein assigned, and that he ng on him and his heirs, suc 6) Each undersigned hereby be necessary or desirable int.	em necess es to execu- ion thereo obtaining e sto execu- convention es to perfo- ited States orizes and o the said / e has not e- cessors, as oy grants the n order to	ary,  the all papers necessary in connection  f, or any patent or reissue application  to any patent or reissue application  to all papers and documents and perfor Protection of Industrial Property  the all affirmative acts which may be	on with any interference on based thereon, for the interference. Form any act which may or similar agreemente necessary to obtain that to issue any and a naterest, and covenants greements in conflict the power to insert on I States Patent and Transite the undersigned	ce which may be declare the invention, and to coo- ay be necessary in connects. , maintain or confirm by Il Letters Patents of the Is is that he has full right to herewith, and agrees that it this assignment any furt ademark Office for recon-	ed concerning any operate with the ection with claims reissue or United States convey the entire at this assignment ther identification			
and pate applicat Assigned or provi- reexami- resulting interest is bindir that may documen	ents as the Assignee may dec 2) Each undersigned agree ion or continuation or divisis e in every way possible in o 3) Each undersigned agree sions of the International Ct 4) Each undersigned agree nation a grant of a valid Un 5) Each undersigned author g from said application(s) to herein assigned, and that he ng on him and his heirs, suc 6) Each undersigned hereby be necessary or desirable int.	em necess es to execu- ion thereo obtaining e sto execu- convention es to perfo- ited States orizes and o the said / e has not e- cessors, as oy grants the n order to	ary.  Ite all papers necessary in connectic f, or any patent or reissue application vidence and going forward with such te all papers and documents and per for Protection of Industrial Property rm all affirmative acts which may be patent to the Assignee.  requests the Commissioner of Patents assignee, as Assignee of the entire if executed, and will not execute, any a ssigns and legal representatives.  The firm of OLIFF & BERRIDGE, PLC comply with the rules of the United	on with any interference based thereon, for the based thereon, for the based thereon, for the based thereon. The based thereone are necessary to obtain the sto issue any and a naterest, and covenants greements in conflict the power to insert on a States Patent and Transite the undersigned.	ce which may be declare the invention, and to cook any be necessary in connects.  It is, maintain or confirm by the less that he has full right to herewith, and agrees that this assignment any furnademark Office for reconstruction.  I name(s).  Lasaki	ed concerning any operate with the ection with claims reissue or United States convey the entire at this assignment ther identification			
and pate applicat Assigned or provide reexamineresulting interest is bindir that may document	ents as the Assignee may dec 2) Each undersigned agree ion or continuation or divisi e in every way possible in o 3) Each undersigned agree sions of the International Co 4) Each undersigned agree nation a grant of a valid Un 5) Each undersigned author g from said application(s) to herein assigned, and that he ag on him and his heirs, suc 6) Each undersigned hereby be necessary or desirable int.	em necess es to execu- ion thereo obtaining e sto execu- convention es to perfo- ited States orizes and o the said / e has not e- cessors, as oy grants the n order to	ary, the all papers necessary in connection for any patent or reissue application of the connection of	on with any interference on based thereon, for the interference. Form any act which may or similar agreemente necessary to obtain that to issue any and a naterest, and covenants greements in conflict the power to insert on I States Patent and Transite the undersigned	ce which may be declare the invention, and to cook ay be necessary in connects.  I Letters Patents of the less that he has full right to herewith, and agrees that this assignment any furlademark Office for record name(s).  Lasaki  Gradizoki	ed concerning any operate with the ection with claims reissue or United States convey the entire at this assignment ther identification relation of this			
and pate applicat Assigned or provid reexamit resulting interest is bindir that may documen  Date Date	ents as the Assignee may dec 2) Each undersigned agree ion or continuation or divisi- e in every way possible in of 3) Each undersigned agree sions of the International Co 4) Each undersigned agree mation a grant of a valid Un- 5) Each undersigned author g from said application(s) to herein assigned, and that he age on him and his heirs, suc- 6) Each undersigned hereby be necessary or desirable int. In witness whereof, execu- June 4, 2001	em necess es to execu- ion thereo obtaining e sto execu- convention es to perfo- ited States orizes and o the said / e has not e- cessors, as oy grants the n order to	ary.  Ite all papers necessary in connectic f, or any patent or reissue application vidence and going forward with sucte all papers and documents and per for Protection of Industrial Property rm all affirmative acts which may be patent to the Assignee. requests the Commissioner of Patentssignee, as Assignee of the entire in executed, and will not execute, any a ssigns and legal representatives. The firm of OLIFF & BERRIDGE, PLC comply with the rules of the United the undersigned on the date(s) opportunities.  Inventor Signature	on with any interference on based thereon, for the interference. It is not a constant to issue any and a neterest, and covenants greements in conflict the power to insert on I States Patent and Transite the undersigned Shizub	ce which may be declare the invention, and to cook any be necessary in connects.  It is, maintain or confirm by the less that he has full right to herewith, and agrees that this assignment any furnademark Office for reconstruction.  I name(s).  Lasaki	ed concerning any operate with the ection with claims reissue or United States convey the entire at this assignment ther identification rdation of this			
and pate applicat Assigned or provide reexamineresulting interest is bindir that may document  Date Date Date	ents as the Assignee may decept a procession or continuation or division or continuation or division or continuation or division of the International Continuation of the International Continuation a grant of a valid Unstructure of the International Continuation of the Internation of the International Continuation of the Internation of t	em necess es to execu- ion thereo obtaining e sto execu- convention es to perfo- ited States orizes and o the said / e has not e- cessors, as oy grants the n order to	ary.  Ite all papers necessary in connectice, or any patent or reissue application vidence and going forward with such all papers and documents and perfor Protection of Industrial Property and affirmative acts which may be patent to the Assignee.  Trequests the Commissioner of Patents as Assignee of the entire in executed, and will not execute, any assigns and legal representatives.  The firm of OLIFF & BERRIDGE, PLC comply with the rules of the United the undersigned on the date(s) oppositions.  Inventor Signature	on with any interferent on based thereon, for the interference. form any act which may or similar agreement to obtain the interest, and covenants greements in conflict the power to insert on I States Patent and Transite the undersigned Stayun Houje	ce which may be declare the invention, and to cook ay be necessary in connects.  It is, maintain or confirm by the less that he has full right to herewith, and agrees that it this assignment any furtademark Office for record name(s).  I name(s).  Jasaki Grochizohi  Jeth	ed concerning any operate with the ection with claims reissue or United States convey the entire at this assignment ther identification redation of this (SEAL) (SEAL)			
and pate applicat Assigned or provide reexamineresulting interest is bindir that may document  Date Date Date Date Date	ents as the Assignee may decept a procession or continuation or divising in every way possible in on a procession of the International Continuation of the International Continuation and Continu	em necess es to execu- ion thereo ibtaining e sto execu- ion vention es to perfo ited States orizes and o the said / e has not e- cessors, as oy grants the n order to  atted by the	ary.  Ite all papers necessary in connectic f, or any patent or reissue application vidence and going forward with such te all papers and documents and per for Protection of Industrial Property rm all affirmative acts which may be patent to the Assignee. requests the Commissioner of Patentssignee, as Assignee of the entire in executed, and will not execute, any a ssigns and legal representatives. The firm of OLIFF & BERRIDGE, PLC comply with the rules of the United the undersigned on the date(s) opportune Inventor Signature Inventor Signature Inventor Signature Inventor Signature Inventor Signature	on with any interference on based thereon, for the interference. It is interference, form any act which may or similar agreemente necessary to obtain that to issue any and a interest, and covenants greements in conflict the power to insert on a States Patent and Transite the undersigned bloomy to be a blo	ce which may be declare the invention, and to cook ay be necessary in connects.  In a maintain or confirm by the less that he has full right to herewith, and agrees that it this assignment any furtademark Office for record in the less that he has full right to herewith, and agrees that it this assignment any furtademark Office for record in the less that he has full right to herewith and agrees that it has assignment any furtademark Office for record in the less than here with the	ed concerning any operate with the ection with claims reissue or United States convey the entire at this assignment ther identification redation of this (SEAL) (SEAL) (SEAL) (SEAL)			
and pate applicat Assigned or provide reexamin resulting interest is bindir that may documen  Date Date Date Date Date Date	ents as the Assignee may decept a process of the International Company of	em necess es to execu- ion thereo bataining e es to execu- convention es to perfo ited States orizes and the said the execu- cossors, as by grants the n order to  atted by the	ary.  Ite all papers necessary in connectic f, or any patent or reissue applicatic f, or any patent or reissue applicatio f, or any patent or reissue applicatio to and going forward with sue te all papers and documents and per for Protection of Industrial Property rm all affirmative acts which may be patent to the Assignee. requests the Commissioner of Patentssignee, as Assignee of the entire is executed, and will not execute, any a ssigns and legal representatives. The firm of OLIFF & BERRIDGE, PLC comply with the rules of the United to undersigned on the date(s) opposite the undersigned on the date(s) opposite the undersigned of the United the undersigned of the date of the United the undersigned of the United of the U	on with any interference on based thereon, for the interference. For any act which may or similar agreement the necessary to obtain that to issue any and a necessary to obtain the power to insert on a States Patent and Transite the undersigned States Patent and Transite the undersigned Shayub Houji  Masarte  Jahehagu	ce which may be declare the invention, and to cook ay be necessary in connects.  In Letters Patents of the less that he has full right to herewith, and agrees that this assignment any furlademark Office for record name(s).  Lasaki  Lyoshizohi  Loth	ed concerning any operate with the ection with claims reissue or United States convey the entire at this assignment ther identification rdation of this (SEAL) (SEAL) (SEAL) (SEAL) (SEAL)			
and pate applicat Assigned or provid reexamin resulting interest is bindir that may documen  Date Date Date Date Date Date Date Dat	ents as the Assignee may decept a procession or continuation or division or continuation or division or continuation or division or continuation or division of the energy way possible in on a procession of the International Continuation and Con	em necess es to execu- ion thereo obtaining e es to execu- convention es to perfo ited States orizes and o the said / e has not e- cessors, as oy grants the n order to  atted by the	ary.  Ite all papers necessary in connectic f, or any patent or reissue application vidence and going forward with such te all papers and documents and per for Protection of Industrial Property rm all affirmative acts which may be patent to the Assignee. requests the Commissioner of Patentssignee, as Assignee of the entire in secuted, and will not execute, any a seigns and legal representatives. The firm of OLIFF & BERRIDGE, PLC comply with the rules of the United the undersigned on the date(s) opposite  Inventor Signature	on with any interference on based thereon, for the interference. It is not any act which may or similar agreement the necessary to obtain that to issue any and a necessary to conflict the power to insert on a States Patent and Transite the undersigned Lizub Kouji  Masarte  Jakekaju	ce which may be declare the invention, and to cook ay be necessary in connects.  In maintain or confirm by the less that he has full right to herewith, and agrees that this assignment any furtademark Office for record name(s).  Lasaki  Lochizohi  Atoh	ed concerning any operate with the ection with claims reissue or United States convey the entire at this assignment ther identification redation of this (SEAL) (SEAL) (SEAL) (SEAL) (SEAL) (SEAL) (SEAL)			
and pate applicat Assigned or provide reexamin resulting interest is bindir that may documen  Date Date Date Date Date Date Date Dat	ents as the Assignee may decept a process of the International Company of	em necess es to execu- ion thereo bataining e es to execu- convention es to perfo ited States orizes and the said the cessors, as by grants the n order to  atted by the	ary.  Ite all papers necessary in connectic f, or any patent or reissue application vidence and going forward with sucte all papers and documents and per for Protection of Industrial Property rm all affirmative acts which may be patent to the Assignee. requests the Commissioner of Patentssignee, as Assignee of the entire is executed, and will not execute, any assigns and legal representatives. The firm of OLIFF & BERRIDGE, PLC comply with the rules of the United the undersigned on the date(s) opposite Inventor Signature	on with any interferent on based thereon, for the interference. form any act which may or similar agreement on the necessary to obtain that to issue any and a interest, and covenants greements in conflict the power to insert on a States Patent and Transite the undersigned by the base of the same of the sa	ce which may be declare the invention, and to cook ay be necessary in connects.  In maintain or confirm by the less that he has full right to herewith, and agrees that this assignment any furtademark Office for record name(s).  Lasaki  Lochizohi  Atoh	ed concerning any operate with the ection with claims reissue or United States convey the entire at this assignment ther identification rdation of this (SEAL) (SEAL) (SEAL) (SEAL) (SEAL) (SEAL) (SEAL) (SEAL) (SEAL)			
and pate applicat Assigned or provide reexamin resulting interest is bindir that may documen  Date Date Date Date Date Date Date Dat	ents as the Assignee may dec. 2) Each undersigned agree ion or continuation or divisine in every way possible in on 3) Each undersigned agree sions of the International Co. 4) Each undersigned agreemation a grant of a valid Un. 5) Each undersigned author agrows and application(s) to therein assigned, and that he agon him and his heirs, suc. 6) Each undersigned hereby be necessary or desirable int.  In witness whereof, execution.  June 4, 2001	em necess es to execu- ion thereo betaining e- es to execu- convention es to perfo- ited States orizes and the said / e- has not e- cessors, as by grants the n order to  atted by the	ary.  In all papers necessary in connectic f, or any patent or reissue applicatic f, or any patent or reissue applicatic f, or any patent or reissue applicatic te all papers and documents and per for Protection of Industrial Property rm all affirmative acts which may be patent to the Assignee. requests the Commissioner of Paten sesignee, as Assignee of the entire in executed, and will not execute, any a ssigns and legal representatives. The firm of OLIFF & BERRIDGE, PLC comply with the rules of the United the undersigned on the date(s) opposite Inventor Signature	on with any interference on based thereon, for the interference. Form any act which may or similar agreement the necessary to obtain that to issue any and a interest, and covenants greements in conflict the power to insert on States Patent and Transite the undersigned Mayor Market against the Large Mayor Market against the U.S.A. of	ce which may be declare the invention, and to cook ay be necessary in connects.  It is, maintain or confirm by the last the has full right to herewith, and agrees that this assignment any furnademark Office for reconstruction.  I name(s).  Lasaki  Lychizohi  Atoh	ed concerning any operate with the ection with claims reissue or United States convey the entire at this assignment ther identification relation of this (SEAL)			
and pate applicat Assigned or provide reexamin resulting interest is bindir that may documen  Date Date Date Date Date Date Date Dat	ents as the Assignee may dec. 2) Each undersigned agree ion or continuation or divisine in every way possible in on 3) Each undersigned agree sions of the International Co. 4) Each undersigned agreemation a grant of a valid Un. 5) Each undersigned author agrows and application(s) to therein assigned, and that he agon him and his heirs, suc. 6) Each undersigned hereby be necessary or desirable int.  In witness whereof, execution.  June 4, 2001	em necess es to execu- ion thereo betaining e- es to execu- convention es to perfo- ited States orizes and the said / e- has not e- cessors, as by grants the n order to  atted by the	ary.  In all papers necessary in connectic f, or any patent or reissue applicatic f, or any patent or reissue applicatic f, or any patent or reissue applicatic te all papers and documents and per for Protection of Industrial Property rm all affirmative acts which may be patent to the Assignee. requests the Commissioner of Paten sesignee, as Assignee of the entire in executed, and will not execute, any a ssigns and legal representatives. The firm of OLIFF & BERRIDGE, PLC comply with the rules of the United the undersigned on the date(s) opposite Inventor Signature	on with any interference on based thereon, for the interference. Form any act which may or similar agreement the necessary to obtain that to issue any and a interest, and covenants greements in conflict the power to insert on States Patent and Transite the undersigned Mayor Market against the Large Mayor Market against the U.S.A. of	ce which may be declare the invention, and to cook ay be necessary in connects.  I Letters Patents of the less that he has full right to herewith, and agrees that this assignment any furtademark Office for record name(s).  Lasaki  Lochizohi  Atoh	ed concerning any operate with the ection with claims reissue or United States convey the entire at this assignment ther identification relation of this (SEAL)			

**RECORDED: 06/14/2001** 

PATENT REEL: 011918 FRAME: 0976