# PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT5448067

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

# **CONVEYING PARTY DATA**

Name	Execution Date
JODY AKANA	01/09/2019
MOLLY ANDERSON	01/28/2019
BARTLEY K. ANDRE	01/28/2019
SHOTA AOYAGI	01/29/2019
ANTHONY MICHAEL ASHCROFT	01/09/2019
MARINE C. BATAILLE	01/09/2019
JEREMY BATAILLOU	01/09/2019
MARKUS DIEBEL	01/11/2019
M. EVANS HANKEY	02/08/2019
JULIAN HOENIG	01/09/2019
RICHARD P. HOWARTH	01/29/2019
JONATHAN P. IVE	01/29/2019
JULIAN JAEDE	01/11/2019
DUNCAN ROBERT KERR	01/10/2019
PETER RUSSELL-CLARKE	01/10/2019
BENJAMIN ANDREW SHAFFER	01/09/2019
MIKAEL SILVANTO	03/06/2019
SUNG-HO TAN	01/29/2019
CLEMENT TISSANDIER	01/11/2019
EUGENE ANTONY WHANG	01/29/2019
RICO ZÖRKENDÖRFER	01/11/2019

# **RECEIVING PARTY DATA**

Name:	APPLE INC.
Street Address:	ONE APPLE PARK WAY
City:	CUPERTINO
State/Country:	CALIFORNIA
Postal Code:	95014

**PROPERTY NUMBERS Total: 1** 

PATENT REEL: 048744 FRAME: 0556

505401273

Property Type	Number
Application Number:	29650588

# **CORRESPONDENCE DATA**

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ATTORNEY DOCKET NUMBER:	3607.2490000(P39144US1)
NAME OF SUBMITTER:	IVY CLARICE ESTOESTA
SIGNATURE:	/Ivy Clarice Estoesta, #74,612/
DATE SIGNED:	03/29/2019

# **Total Attachments: 42**

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PATENT REEL: 048744 FRAME: 0557

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PATENT REEL: 048744 FRAME: 0559



	Date:	Signature of Inventor:	Name:
3.		<u>√</u>	Bartley K. ANDRE
4.		√	Shota AOYAGI
5.		٧	Anthony Michael ASHCROFT
6.		<u> </u>	Marine C. BATAILLE
7.		٧	Jeremy BATAILLOU
8.	/_/_	٧	Markus DIEBEL
9.		√	M. Evans HANKEY
10.		√	Julian HOENIG
11.	_ / _ /	√	Richard P. HOWARTH
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14.		<u>√</u>	Duncan Robert KERR
15.		√	Peter RUSSELL-CLARKE
16.		<u>√</u>	Benjamin Andrew SHAFFER
17.		<u>√</u>	Mikael SILVANTO
<i>:</i> 18.	/	<b>√</b>	Sung-Ho TAN
19.		<b>V</b>	Clement TISSANDIER
20.		V	Eugene Antony WHANG
21.		1	Rico ZÖRKENDÖRFER



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	IN WITNESS WHEREOF, executed by the undersigned inventors on the dates opposite the undersigned names.		
	Date:	Signature of Inventor:	Name:
1.		<u>√</u>	Jody AKANA
2.	1 R8/19	Mallem	Molly ANDERSON PATENT
			DEEL • 0/87// EDAME• 0564



	Date:	Signature of Inventor:	Name:
3.		<u>√</u>	Bartley K. ANDRE
4.		٧	Shota AOYAGI
5.		<u>√</u>	Anthony Michael ASHCROFT
6.		√	Marine C. BATAILLE
7.		√	Jeremy BATAILLOU
8.		<u>√</u>	Markus DIEBEL
9.		√	M. Evans HANKEY
10.		√	Julian HOENIG
11.		√	Richard P. HOWARTH
12.		<u>√</u>	Jonathan P. IVE
13.		V	Julian JAEDE
14.		<u>√</u>	Duncan Robert KERR
15.		√	Peter RUSSELL-CLARKE
16.		<u> </u>	Benjamin Andrew SHAFFER
17.		٧	Mikael SILVANTO
18.		<u>√</u>	Sung-Ho TAN
19.	_ / _ /	<u>√</u>	Clement TISSANDIER
20.		<u>√</u>	Eugene Antony WHANG
21.		<u>√</u>	Rico ZÖRKENDÖRFER



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	Date:	Signature of Inventor:	Name:
1.		<u>√</u>	Jody AKANA
2.	_ / _ /	<u>√</u>	Molly ANDERSON PATENT
			REEL: 048744 FRAME: 0563



	Date:	Signature of Inventor:	Name:
3	12019	SOURCE	_ Bartley K. ANDRE
4.			Shota AOYAGI
5.			Anthony Michael ASHCROFT
6,	<u></u>		Marine C. BATAILLE
7.			Jeremy BATAILLOU
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[9,	<u>. 1 1 1</u>		Clement TISSANDIER
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21.	- 1944 - <u>- 1</u>		Rico ZÖRKENDÖRFER



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1.		<u>√</u>	Jody AKANA
2.		<u> </u>	Molly ANDERSON PATENT
			REEL: 048744 FRAME: 0565



	Date:	Signature of Inventor:	Name:
3.		<u>√</u>	_ Bartley K. ANDRE
4.	1 129,19	, 青柳 别大	_ Shota AOYAGI
5.		<u>√</u>	_ Anthony Michael ASHCROFT
6.	//	٧	_ Marine C. BATAILLE
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			REEL: 048744 FRAME: 0567



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8.		<u> </u>	Markus DIEBEL
9.		√	M. Evans HANKEY
10.		<u>√</u>	Julian HOENIG
11.		<u>√</u>	Richard P. HOWARTH
12.		√	Jonathan P. IVE
13.		√	Julian JAEDE
14.		<u>√</u>	Duncan Robert KERR
15.		√	Peter RUSSELL-CLARKE
16.		√	Benjamin Andrew SHAFFER
17.		<u>√</u>	Mikael SILVANTO
18.		<u>√</u>	Sung-Ho TAN
19.		V	Clement TISSANDIER
20.	/	V	Eugene Antony WHANG
21.		<u>√</u>	Rico ZÖRKENDÖRFER



#### ASSIGNMENT

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	Date:	Signature of Inventor:	Name:
1.		√	Jody AKANA
2.		<u> </u>	Molly ANDERSON PATENT



	Date:	Signature of inventor:	Name:
3.		<u>√</u>	Bartley K. ANDRE
4.		<u>√</u>	Shota AOYAGI
5.		٧	Anthony Michael ASHCROFT
6.	01/03/19	V PAR	Marine C. BATAILLE
7.	_ / _ /	V	Jeremy BATAILLOU
8.		<u>√</u>	Markus DIEBEL
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16.	_ / _ / _	<u>√</u>	Benjamin Andrew SHAFFER
17.		<u>V</u>	Mikael SILVANTO
18.		<u>v</u>	Sung-Ho TAN
19.	_ / _ / _	√	Clement TISSANDIER
20.		<u>√</u>	Eugene Antony WHANG
21.	_ / _ /	<b>V</b>	Rico ZÖRKENDÖRFER



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	Date:	Signature of Inventor:	Name:
1.		<u>√</u>	Jody AKANA
2.		<u>√</u>	Molly ANDERSON PATENT
			REFL: 0/187// FRAME: 0571



	Date:	Signature of Inventor:	Name:
3.		<u>√</u>	Bartley K. ANDRE
4.		<u>√</u>	Shota AOYAGI
5.		<u>√</u>	Anthony Michael ASHCROFT
6.	/	√	Marine C. BATAILLE
7.	0/19/19	1 807	Jeremy BATAILLOU
8.		<u>√</u>	Markus DIEBEL
9.	//	√	M. Evans HANKEY
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	Date:	Signature of Inventor:	Name:
1.		<u>√</u>	Jody AKANA
2.		<u>√</u>	Molly ANDERSON  PATENT  REFL: 048744 FRAME: 0573



	Date:	Signature of Inventor:	Name:
3.		<u> </u>	Bartley K. ANDRE
4.		<u>√</u>	Shota AOYAGI
5.		√	Anthony Michael ASHCROFT
6.		<u>√</u>	Marine C. BATAILLE
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1.		<u>√</u>	Jody AKANA
2.		<u>√</u>	Molly ANDERSON PATENT
			REEL: 048744 FRAME: 0575



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3.		<u>√</u>	Bartley K. ANDRE
4.		<u>√</u>	Shota AOYAGI
5.		√	Anthony Michael ASHCROFT
6.		<u>√</u>	Marine C. BATAILLE
7.		<u>√</u>	Jeremy BATAILLOU
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9.	2,819		M. Evans HANKEY
10.		<u>√</u>	Julian HOENIG
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2.		<u>√</u>	Molly ANDERSON PATENT
			REFI · 048744 FRAME · 0577



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	Date:	Signature of Inventor:	Name:
1.		<u>√</u>	Jody AKANA
2.		<u>√</u>	Molly ANDERSON PATENT
			REEL: 048744 FRAME: 0579



	Date:	Signature of Inventor:	Name:
3.		<u> </u>	Bartley K. ANDRÉ
4.		√	Shota AOYAGI
5.		√	Anthony Michael ASHCROFT
6.		<u>√</u>	Marine C. BATAILLE
7.		√	Jeremy BATAILLOU
8.		<u>√</u>	Markus DIEBEL
9.		<u>√</u>	M. Evans HANKEY
10.		<u>J</u>	Julian HOENIG
11.	1 29,19	HENDO	Richard P. HOWARTH
12.		√	Jonathan P. IVE
13.		√	Julian JAEDE
14.		<u>√</u>	Duncan Robert KERR
15.		٧	Peter RUSSELL-CLARKE
16.		٧	Benjamin Andrew SHAFFER
17.	/	<b>V</b>	Mikael SILVANTO
18.		V	Sung-Ho TAN
19.		V	Clement TISSANDIER
20.		√	Eugene Antony WHANG
21.		<u>√</u>	Rico ZÖRKENDÖRFER



#### **ASSIGNMENT**

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- (b) in any and all application(s) that claim the benefit of the patent application listed above in part (a), including non-provisional applications, continuing (continuation, divisional, or continuation-in-part) applications, reissues, extensions, renewals and reexaminations of the patent application or Letters Patent therefor listed above in part (a), to the full extent of the term or terms for which Letters Patents issue, and
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	Date:	Signature of Inventor:	Name:
1.		<u>√</u>	Jody AKANA
2.		<u>√</u>	Molly ANDERSON PATENT
			RFFI · 048744 FRAMF · 0581



	Date:	Signature of Inventor:	Name:
3.		<u>√</u>	Bartley K. ANDRE
4.		<u>v</u>	Shota AOYAGI
5.		√	Anthony Michael ASHCROFT
6.		<u>√</u>	Marine C. BATAILLE
7.		<u> </u>	Jeremy BATAILLOU
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9.		٧	M. Evans HANKEY
10.		V	Julian HOENIG
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12.	129.19	<u>\</u>	Jonathan P. IVE
13.		<u> </u>	Julian JAEDE
14.		<u> </u>	Duncan Robert KERR
15.		V	Peter RUSSELL-CLARKE
16.		<u>\( \) \( \)</u>	Benjamin Andrew SHAFFER
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18.		<u>√</u>	Sung-Ho TAN
19.	_ / /	<u>√</u>	Clement TISSANDIER
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21.		<u>√</u>	Rico ZÖRKENDÖRFER



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	Date:	Signature of Inventor:	Name:
1.		√	Jody AKANA
2.		<u>√</u>	Molly ANDERSON PATENT
			REFI · 048744 FRAME · 0583



	Date:	Signature of Inventor:	Name:
3.		٧	Bartley K. ANDRE
4.		٧	Shota AOYAGI
5.		٧	Anthony Michael ASHCROFT
6.		<u>√</u>	Marine C. BATAILLE
7.		٧	Jeremy BATAILLOU
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9.		<u>√</u>	M. Evans HANKEY
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12.		√	Jonathan P. IVE
13.	01/11/19	/wa/ll	Julian JAEDE
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21.	/ /	√	Rico ZÖRKENDÖRFER



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	Date:	Signature of Inventor:	Name:
1.		<u>√</u>	Jody AKANA
2.		<u>√</u>	Molly ANDERSON PATENT
			REEL: 048744 FRAME: 0585



	Date:	Signature of Inventor:	Name:
3.		<u> </u>	Bartley K. ANDRE
4.		<u> </u>	Shota AOYAGI
5.		√	Anthony Michael ASHCROFT
6.		1	Marine C. BATAILLE
7.		1	Jeremy BATAILLOU
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9.		٧	M. Evans HANKEY
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13.		٧	Julian JAEDE
14.	01/10/209	Ver	Duncan Robert KERR
15.		√	Peter RUSSELL-CLARKE
16.		<u>√</u>	Benjamin Andrew SHAFFER
17.		<u> </u>	Mikael SILVANTO
18.		<u>v</u>	Sung-Ho TAN
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21.		<u>√</u>	Rico ZÖRKENDÖRFER



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	Date:	Signature of Inventor:	Name:
1.		<u>√</u>	Jody AKANA
2.		<u>√</u>	Molly ANDERSON PATENT
			REEL : 0/487/1/ ERAME: 0587



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3.		<u>√</u>	Bartley K. ANDRE
4.		<u>√</u>	Shota AOYAGI
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	Date:	Signature of Inventor:	Name:
1.		√	Jody AKANA
2.		<u>√</u>	Molly ANDERSON PATENT
			REEL: 048744 FRAME: 0589



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16.	1,9,19	v ()	Benjamin Andrew SHAFFER
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	Date:	Signature of Inventor:	Name:
1.		<u>√</u>	_ Jody AKANA
2.		4	_ Molly ANDERSON PATENT
			REEL : 0/87/1/ ERAME: 0591



	Date:	Signature of Inventor:	Name:
3,	<u>, j. j.</u>	ÿ.	Bartley K. ANDRE
4,		<u>Š</u>	Shota AOYAGI
5.		<u> </u>	Anthony Michael ASHCROFT
6.		<u> </u>	Marine C. BATAILLE
7,		<u>V</u>	Jeremy BATAILLOU
8.		<u>V</u>	Markus DIEBEL
9,.		3	M. Evans HANKEY
10.		ý	Julian HOENIG
Ĥ.	<u>i</u>	<u> </u>	Richard P. HOWARTH
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14.	<u>/ /</u>	Ŋ.	Duncan Robert KERR
15.		N.	Peter RUSSELL-CLARKE
16.	<u>ئىسلىسلىن</u>	<u> </u>	Benjamin Andrew SHAFFER
17.	3,6/1		Mikael SILVANTO
18,		Ÿ	Sung-Ho TAN
19.		<u>X</u>	Clement TISSANDIER
20.		<u>V</u>	Eugene Antony WHANG
21,		<u> </u>	Rico ZŐRKENDÖRFER



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	Date:	Signature of Inventor:	Name:
1.		<u>√</u>	Jody AKANA
2.		<u>√</u>	Molly ANDERSON PATENT
			REFI · 048744 FRAME · 0593



	Date:	Signature of Inventor:	Name:
3.		٧	Bartley K. ANDRE
4.		٧	Shota AOYAGI
5.		٧	Anthony Michael ASHCROFT
6.		<u> </u>	Marine C. BATAILLE
7.	_ / /	<u>√</u>	Jeremy BATAILLOU
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18.	12919	v Gh	Sung-Ho TAN
19.		<u>√</u>	Clement TISSANDIER
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21.		<u>√</u>	Rico ZÖRKENDÖRFER



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1.		<u>√</u>	Jody AKANA
2.		<u> </u>	Molly ANDERSON PATENT
			REEL : 0/487// ERAME: 0595



	Date:	Signature of Inventor:	Name:
3.		<u>√</u>	Bartley K. ANDRE
4.		√	_ Shota AOYAGI
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	Date:	Signature of Inventor:	Name:
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2.		<u>√</u>	Molly ANDERSON PATENT
			REEL: 048744 FRAME: 0597



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3.		<u> </u>	Bartley K. ANDRE
4.		<u>√</u>	Shota AOYAGI
5.		√	Anthony Michael ASHCROFT
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2.		<u>√</u> ,	Molly ANDERSON PATENT
			REEL: 048744 FRAME: 0599



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20.		1	Eugene Antony WHANG
21.	411/19	1	Rico ZÖRKENDÖRFER
		Page 2 of 2	

PATENT REEL: 048744 FRAME: 0600

**RECORDED: 03/29/2019**