

1 QUINN EMANUEL URQUHART & SULLIVAN, LLP  
Charles K. Verhoeven (Bar No. 170151)

2  
charlesverhoeven@quinnemanuel.com  
David A. Perlson (Bar No. 209502)

3  
davidperlson@quinnemanuel.com  
Melissa Baily (Bar No. 237649)

4  
melissabaily@quinnemanuel.com  
John Neukom (Bar No. 275887)

5  
johnneukom@quinnemanuel.com  
Jordan Jaffe (Bar No. 254886)

6  
jordanjaffe@quinnemanuel.com  
50 California Street, 22nd Floor  
7 San Francisco, California 94111-4788

Telephone:  
(415) 875-6600

8 Facsimile:  
(415) 875-6700

9 Attorneys for WAYMO LLC  
10

UNITED STATES DISTRICT COURT

11

NORTHERN DISTRICT OF CALIFORNIA, SAN FRANCISCO DIVISION

12 WAYMO LLC,  
Plaintiff,

13

vs.

UBER TECHNOLOGIES, INC.;

14 OTTOMOTTO LLC; OTTO TRUCKING  
LLC,

15

Defendants.

CASE NO. \_\_\_\_\_  
COMPLAINT

1. VIOLATION OF DEFENSE OF  
TRADE SECRETS ACT

16

2. VIOLATION OF CALIFORNIA  
UNIFORM TRADE SECRET ACT

17

3. PATENT INFRINGEMENT

18

4. VIOLATION OF CAL. BUS & PROF.  
CODE SECTION 17200

19

20

DEMAND FOR JURY TRIAL

21

22

23

24

25

26

27

28

Case No. \_\_\_\_\_

COMPLAINT

Case 3:17-cv-00939 Document 1 Filed 02/23/17 Page 2 of 28

1

Plaintiff Waymo LLC ("Waymo"), by and through their attorneys, and for their  
Complaint

2 against Uber Technologies, Inc. ("Uber"), Ottomotto LLC, and Otto Trucking  
LLC (together,

3 "Otto") (collectively, "Defendants"), hereby allege as follows:

4 I.

INTRODUCTION

5

1.

This is an action for trade secret misappropriation, patent infringement, and  
unfair

6 competition relating to Waymo's self-driving car technology. Waymo strongly  
believes in the

7 benefits of fair competition, particularly in a nascent field such as self-  
driving vehicles. Self-driving cars have the potential to transform mobility  
for millions of people as well as become a

9 trillion dollar industry. Fair competition spurs new technical innovation,  
but what has happened

10 here is not fair competition. Instead, Otto and Uber have taken Waymo's  
intellectual property so

11 that they could avoid incurring the risk, time, and expense of  
independently developing their own

12 technology. Ultimately, this calculated theft reportedly netted Otto  
employees over half a billion

13 dollars and allowed Uber to revive a stalled program, all at Waymo's  
expense.

14

2.

Waymo developed its own combination of unique laser systems to provide critical

15 information for the operation of fully self-driving vehicles. Waymo  
experimented with, and  
16 ultimately developed, a number of different cost-effective and high-  
performing laser sensors  
17 known as LiDAR. LiDAR is a laser-based scanning and mapping technology  
that uses the  
18 reflection of laser beams off objects to create a real-time 3D image of  
the world. When mounted  
19 on a vehicle and connected to appropriate software, Waymo's LiDAR sensors  
enable a vehicle to  
20 "see" its surroundings and thereby allow a self-driving vehicle to detect  
traffic, pedestrians,  
21 bicyclists, and any other obstacles a vehicle must be able to see to drive  
safely. With a 360-degree  
22 field of vision, and the ability to see in pitch black, Waymo's LiDAR  
sensors can actually detect  
23 potential hazards that human drivers would miss. With a goal of bringing  
self-driving cars to the  
24 mass market, Waymo has invested tens of millions of dollars and tens of  
thousands of hours of  
25 engineering time to custom-build the most advanced and cost-effective  
LiDAR sensors in the  
26 industry. Thanks in part to this highly advanced LiDAR technology, Waymo  
became the first  
27 company to complete a fully self-driving trip on public roads in a vehicle  
without a steering wheel

28  
-2-

Case No. \_\_\_\_\_  
COMPLAINT

Case 3:17-cv-00939 Document 1 Filed 02/23/17 Page 3 of 28

1 and foot pedals. Today, Waymo remains the industry's leader in self-driving  
hardware and  
2 software.

3  
3.

Waymo was recently - and apparently inadvertently - copied on an email from  
one

4 of its LiDAR component vendors. The email attached machine drawings of what  
purports to be an  
5 Uber LiDAR circuit board. This circuit board bears a striking resemblance  
to Waymo's own  
6 highly confidential and proprietary design and reflects Waymo trade  
secrets. As this email shows,

7 Otto and Uber are currently building and deploying (or intending to deploy)  
8 LiDAR systems (or  
9 system components) using Waymo's trade secret designs. This email also  
10 shows that Otto and  
11 Uber's LiDAR systems infringe multiple LiDAR technology patents awarded to  
12 Waymo.

13

4.

Waymo has uncovered evidence that Anthony Levandowski, a former manager in

11 Waymo's self-driving car project - now leading the same effort for Uber -  
12 downloaded more than

13 14,000 highly confidential and proprietary files shortly before his  
14 resignation. The 14,000 files

15 included a wide range of highly confidential files, including Waymo's  
16 LiDAR circuit board

17 designs. Mr. Levandowski took extraordinary efforts to raid Waymo's design  
18 server and then

19 conceal his activities. In December 2015, Mr. Levandowski specifically  
20 searched for and then

21 installed specialized software onto his company-issued laptop in order to  
22 access the server that

23 stores these particular files. Once Mr. Levandowski accessed this server,  
24 he downloaded the

25 14,000 files, representing approximately 9.7 GB of highly confidential  
26 data. Then he attached an

27 external drive to the laptop for a period of eight hours. He installed a  
28 new operating system that

29 would have the effect of reformatting his laptop, attempting to erase any  
30 forensic fingerprints that

31 would show what he did with Waymo's valuable LiDAR designs once they had  
32 been downloaded

33 to his computer. After Mr. Levandowski wiped this laptop, he only used it  
34 for a few minutes, and

35 then inexplicably never used it again.

36

5.

In the months leading to the mass download of files, Mr. Levandowski told

25 colleagues that he had plans to set up a new, self-driving vehicle  
26 company. In fact, Mr.

27 Levandowski appears to have taken multiple steps to maximize his profit  
28 and set up his own new

29 venture - which eventually became Otto - before leaving Waymo in January  
30 2016. In addition to

31 downloading Waymo's design files and proprietary information, Mr.

32 Levandowski set up a

33

Case No. \_\_\_\_\_

COMPLAINT

1 competing company named "280 Systems" (which later became Otto) before he  
left, under the  
2 pretense that 280 Systems would not compete with Waymo.

3

6.

A number of Waymo employees subsequently also left to join Anthony

4 Levandowski's new business, downloading additional Waymo trade secrets in  
the days and hours

5 prior to their departure. These secrets included confidential supplier  
lists, manufacturing details

6 and statements of work with highly technical information, all of which  
reflected the results of

7 Waymo's months-long, resource-intensive research into suppliers for highly  
specialized LiDAR

8 sensor components.

9

7.

Otto launched publicly in May 2016, and was quickly acquired by Uber in  
August

10 2016 for \$680 million. (Notably, Otto announced the acquisition shortly  
after Mr. Levandowski

11 received his final multi-million dollar compensation payment from Google.)

As was widely

12 reported at the time, "one of the keys to this acquisition[] could be the  
LiDAR system that was

13 developed in-house at Otto."

14

8.

Uber's own attempts to develop self-driving cars started earlier in February  
2015

15 with the announcement of a strategic partnership with Carnegie Mellon  
University and the

16 creation of the Uber Advanced Technologies Center in Pittsburgh. Reports  
attribute Uber CEO

17 Travis Kalanick's interest in this technology to a ride in a Google, now  
Waymo, self-driving car.

18 Uber's CEO has described self-driving cars as "existential" to the  
survival of his company.<sup>1</sup> He

19 told reporters: "the entity that's in first, then rolls out a ride-sharing  
network that is far cheaper or

20 far higher-quality than Uber's, then Uber is no longer a thing." However,  
by March 2016 reports

21 surfaced that the partnership between CMU and Uber had "stalled."

22

9.

Meanwhile, Waymo had devoted seven years to research and development. It had  
23 amassed nearly one and a half million miles of self-driving experience on  
public roads and billions  
24 of miles of test data via simulation. By May 2015, Waymo had also designed  
and built, from the  
25 ground up, the world's first fully self-driving car without a steering  
wheel and foot pedals. These  
26  
1

Biz Carson, "Travis Kalanick on Uber's bet on self-driving cars: 'I can't be  
wrong,'" Business  
Insider, Aug. 18, 2016, available at <http://www.businessinsider.com/travis-kalanick-interview-on28-self-driving-cars-future-driver-jobs-2016-8>.  
27

-4-

Case No. \_\_\_\_\_  
COMPLAINT

Case 3:17-cv-00939 Document 1 Filed 02/23/17 Page 5 of 28

1 vehicles were equipped with Waymo's own in-house hardware and sensors,  
including its  
2 uniquely-designed LiDAR.  
3

10.

Instead of developing their own technology in this new space, Defendants  
stole

4 Waymo's long-term investments and property. While Waymo developed its  
custom LiDAR  
5 systems with sustained effort over many years, Defendants leveraged stolen  
information to  
6 shortcut the process and purportedly build a comparable LiDAR system in  
only nine months. As  
7 of August 2016, Uber had no in-house solution for LiDAR - despite 18 months  
with their faltering  
8 Carnegie Mellon University effort - and they acquired Otto to get it. By  
September 2016, Uber  
9 represented to regulatory authorities in Nevada that it was no longer using  
an off-the-shelf, or  
10 third-party, LiDAR technology, but rather using an "[i]n-house custom  
built" LiDAR system. The  
11 facts outlined above and elaborated further in this complaint show that  
Uber's LiDAR technology  
12 is actually Waymo's LiDAR technology.  
13

11.

In light of Defendants' misappropriation and infringement of Waymo's LiDAR

14 technology, Waymo brings this Complaint to prevent any further misuse of  
its proprietary  
15 information, to prevent Defendants from harming Waymo's reputation by  
misusing its technology,  
16 to protect the public's confidence in the safety and reliability of self-  
driving technology that  
17 Waymo has long sought to nurture, and to obtain compensation for its  
damages and for  
18 Defendants' unjust enrichment resulting from their unlawful conduct.  
19 II.

PARTIES

20

12.

Plaintiff Waymo LLC is a subsidiary of Alphabet Inc. with its principal place  
of

21 business located in Mountain View, California 94043. Waymo is a self-  
driving technology  
22 company with a mission to make it safe and easy for people and things to  
move around. Waymo  
23 LLC owns all of the patents, trade secrets, and confidential information  
infringed or  
24 misappropriated by Defendants.  
25

13.

Defendant Uber Technologies, Inc. ("Uber") is a Delaware company with its

26 principal place of business at 1455 Market Street, San Francisco,  
California.

27

28

-5-

Case No. \_\_\_\_\_

COMPLAINT

Case 3:17-cv-00939 Document 1 Filed 02/23/17 Page 6 of 28

1

14.

Waymo is informed and believes that Defendant Ottomotto LLC (f/k/a 280

2 Systems Inc.) is a Delaware limited liability company with its principal  
place of business located

3 at 737 Harrison Street, San Francisco, California.

4

15.

Waymo is informed and believes that Defendant Otto Trucking LLC (f/k/a 280  
5 Systems LLC) is a limited liability company with its principal place of  
business located at 737  
6 Harrison Street, San Francisco, California.  
7

16.

Waymo is informed and believes that Uber acquired Defendants Ottomotto LLC  
8 and Otto Trucking LLC in approximately August 2016.  
9

17.

Waymo is informed and believes that each Defendant acted in all respects  
pertinent

10 to this action as the agent of the other Defendant, carried out a joint  
scheme, business plan or  
11 policy in all respects pertinent hereto, and that the acts of each  
Defendant are legally attributable  
12 to each of the other Defendants.  
13 III.

#### JURISDICTION, VENUE & INTRADISTRICT ASSIGNMENT

14

18.

This Court has subject matter jurisdiction over Waymo's claims for patent  
15 infringement pursuant to the Federal Patent Act, 35 U.S.C. § 101 et seq.  
and 28 U.S.C. §§ 1331  
16 and 1338(a). This Court has subject matter jurisdiction over Waymo's  
federal trade secret claim  
17 pursuant to 18 U.S.C. §§ 1836-39 et seq. and 28 U.S.C. §§ 1331 and 1343.  
The Court has  
18 supplemental jurisdiction over the state law claim alleged in this  
Complaint pursuant to 28 U.S.C.  
19 § 1367.  
20

19.

As set forth above, at least one Defendant resides in this judicial district,  
and all

21 Defendants are residents of the State of California. In addition, a  
substantial part of the events or  
22 omissions giving rise to the claims alleged in this Complaint occurred in  
this Judicial District.  
23 Venue therefore lies in the United States District Court for the Northern  
District of California  
24 pursuant to 28 U.S.C. §§ 1391(b)(1) and (2).



25

20.

A substantial part of the events giving rise to the claims alleged in this Complaint

26 occurred in the City and County of San Francisco. For purposes of intradistrict assignment under 27 Civil Local Rules 3-2(c) and 3-5(b), this Intellectual Property Action will be assigned on a district-wide basis.

-6-

Case No. \_\_\_\_\_  
COMPLAINT

Case 3:17-cv-00939 Document 1 Filed 02/23/17 Page 7 of 28

1 IV.

FACTUAL ALLEGATIONS

2

A.

Google Pioneers The Self-Driving Car Space

3

21.

Google was the first major U.S. technology firm to recognize the transformative

4 potential and commercial value of vehicle automation, which promises to make transportation

5 safer, cleaner, more efficient, and more widely available.

6

22.

Google initiated its self-driving car project in 2009. Before long, Google's self-

7 driving cars had navigated from the Bay Area to Los Angeles, crossed the Golden Gate Bridge,

8 drove the Pacific Coast Highway, and circled Lake Tahoe, logging over 140,000 miles - a first in

9 robotics research at the time.

10

23.

Google made its self-driving car project public in 2010, with the following

11 announcement: "Larry and Sergey founded Google because they wanted to help  
12 solve really big  
13 problems using technology. And one of the big problems we're working on  
14 today is car safety  
15 and efficiency. Our goal is to help prevent traffic accidents, free up  
16 people's time and reduce  
17 carbon emissions by fundamentally changing car use. So we have developed  
18 technology for cars  
19 that can drive themselves."

24.

In 2014, Google unveiled its own reference vehicle, a two-door fully  
autonomous

17 car without pedals or a steering wheel. A year later, this prototype made  
the first ever fully self18 driving trip in normal traffic on public roads.  
19

25.

In 2016, Google's self-driving car program became Waymo, a stand-alone

20 company operating alongside Google and other technology companies under  
the umbrella of

21 Alphabet Inc.2

22

26.

To date, Waymo's fleet of self-driving vehicles has logged over 2.5 million  
miles

23 in autonomous mode on public roads. Measured in time, that equates to over  
300 years of human

24 driving experience. And in 2016 alone, Waymo's systems logged over a  
billion miles of

25 simulated driving, a feat made possible by Waymo's in-house simulator and  
the power of

26 Google's massive data centers.

27

2

Further references to "Waymo" refer to the self-driving car project from its  
inception in

28 2009 to the present.

-7-

Case No. \_\_\_\_\_  
COMPLAINT

27.

Waymo uses the data collected from these real-world and simulated miles to

2 (among other things) constantly improve the safety of its system, including  
its hardware and

3 sensors. This focus on testing and safety has allowed Waymo's self-driving  
cars to become

4 increasingly capable and robust, with less need for human intervention. As  
just one illustration of

5 this, the rate of Waymo's safety-related disengagements has fallen from 0.8  
disengagements per

6 thousand miles in 2015 to 0.2 disengagements per thousand miles in 2016,  
representing a four-fold

7 improvement in Waymo's self-driving technology in just 12 months. Today,  
Waymo believes its

8 self-driving cars are the safest on the road.

9

B.

Waymo Develops Its Own Proprietary LiDAR System Tailored For MassMarketed  
Self-Driving Cars

28.

Self-driving cars must be able to detect and understand the surrounding

10

11

environment. With respect to this aspect of vehicle automation, LiDAR - or  
"Light Detection

12

And Ranging" - uses high-frequency, high-power pulsing lasers to measure  
distances between one

13

or more sensors and external objects.

14

29.

LiDAR hardware built for autonomous vehicles is typically mounted on the

15

exterior of a vehicle and scans the surrounding environment (sometimes in 360  
degrees) with an

16

array of lasers. The laser beams reflect off surrounding objects, and data  
regarding the light that

17

bounces back to designated receivers is recorded. Software analyzes the data  
in order to create a

18

three-dimensional view of the environment, which is used to identify objects,  
assess their motion

19

and orientation, predict their behavior, and make driving decisions.

20

30.

LiDAR systems are made up of thousands of individual hardware and software

21

components that can be configured in virtually limitless combinations and designs. LiDAR

22

systems adapted for use in self-driving cars became commercially available in approximately

23

2007. Today, most firms in the self-driving space purchase LiDAR systems from third-party

24

providers.

25

31.

Waymo, on the other hand, uses its own LiDAR systems that are carefully tailored

26

- based on Waymo's extensive research and testing - for use in fully autonomous vehicles in

27

which there is no driver intervention required. Waymo's proprietary LiDAR systems improve the

28

-8-

Case No. \_\_\_\_\_  
COMPLAINT

Case 3:17-cv-00939 Document 1 Filed 02/23/17 Page 9 of 28

1 ability of self-driving cars to navigate safely in all environments, including city environments and

2 highly unusual driving scenarios.

3

32.

Moreover, by designing its own LiDAR systems, Waymo has driven down costs, a

4 well-known barrier to commercializing self-driving technology. Waymo's improved LiDAR

5 designs are now less than 10% of the cost that benchmark LiDAR systems were just a few years

6 ago, and Waymo expects that mass production of their technology will make it even more

7 affordable.

8

33.

One way that Waymo pioneered LiDAR systems with improved performance at

9 lower cost was by innovating a design that, in part, uses a single lens -  
rather than multiple sets of  
10 lenses - to both transmit and receive the collection of laser beams used  
to scan the surrounding  
11 environment. This design greatly simplifies the manufacturing process by  
eliminating the need to  
12 painstakingly align pairs of transmit and receive lenses, with even a  
slight mis-calibration of a lens  
13 pair affecting the accuracy of the system. Waymo was awarded a patent on  
its design in 2014:  
14 United States Patent No. 8,836,922 ("the '922 patent") entitled "Devices  
and Methods for a  
15 Rotating LiDAR Platform with a Shared Transmit/Receive Path."  
16

34.

Another way that Waymo improved the performance and lowered the cost of

17 LiDAR systems for autonomous vehicles was by simplifying the design of the  
laser diode firing  
18 circuit that is at the heart of any LiDAR system. Waymo invented a design  
that elegantly  
19 simplified the circuit to control the charging and discharging paths of  
the lasers compared to the  
20 more complicated circuit designs otherwise used by the industry. Waymo  
obtained a patent on  
21 this aspect of its LiDAR design in 2016: United States Patent No.  
9,368,936 ("the '936 patent")  
22 entitled "Laser Diode Firing System."  
23

35.

As one more example of how Waymo fundamentally advanced LiDAR systems for

24 use in autonomous vehicles, Waymo developed a simplified design for "pre-  
collimating" (or  
25 making parallel) the light output of each laser diode separately before  
the beams are combined.  
26 The increased compactness of this design increases the resolution of the  
overall LiDAR system.  
27 Waymo was awarded a patent on this aspect of its design in 2015: United  
States Patent No.

28  
-9-

Case No. \_\_\_\_\_  
COMPLAINT

Case 3:17-cv-00939 Document 1 Filed 02/23/17 Page 10 of 28

1 9,086,273 ("the '273 patent") entitled "Microrod Compressions of Laser Beam  
in Combination  
2 with Transmit Lens."  
3

36.

While patenting these fundamental advances in LiDAR technology, Waymo also

4 accumulated confidential and proprietary intellectual property that it uses  
in the implementation

5 and manufacture of its LiDAR designs to optimize performance, maximize  
safety, and minimize

6 cost. Waymo also created a vast amount of confidential and proprietary  
intellectual property via

7 its exploration of design concepts that ultimately proved too complex or  
too expensive for the

8 mass market; Waymo's extensive experience with "dead-end" designs continues  
to inform the

9 ongoing development of Waymo's LiDAR systems today. The details actually  
used in Waymo's

10 LiDAR designs as well as the lessons learned from Waymo's years of  
research and development

11 constitute trade secrets that are highly valuable to Waymo and would be  
highly valuable to any

12 competitor in the autonomous vehicle space.

13

37.

Waymo's substantial and sustained investment in LiDAR technology over nearly

14 seven years - and the intellectual property that resulted - have made  
Waymo's current LiDAR

15 technology the most advanced in the industry. It is unparalleled in  
performance and safety in all

16 driving environments, including in the most challenging city environments.  
Yet it is more than

17 90% cheaper than prior benchmark systems, a key driver toward mass market  
adoption. For these

18 reasons and others, Waymo's LiDAR technology and the intellectual property  
associated with it

19 are some of Waymo's most valuable assets.

20

C.

Uber Is Late To Enter The Self-Driving Car Market

21

38.

Whereas Waymo began developing its self-driving cars in 2009, on information

22 and belief, Uber's first serious foray into automation was not until six  
years later when - in

23 February 2015 - Uber announced a partnership with Carnegie Mellon  
University. According to

24 public reports of the partnership, Uber hired at least 40 CMU faculty  
members, researchers, and

25 technicians - including the former head of CMU's National Robotics  
Engineering Center - to help  
26 jump-start an Uber vehicle automation program.  
27

39.

By early 2016, Uber had hired hundreds of engineers and robotics experts to  
28 support the original team from Carnegie Mellon. But the research and  
development process was  
-10-

Case No. \_\_\_\_\_  
COMPLAINT

Case 3:17-cv-00939 Document 1 Filed 02/23/17 Page 11 of 28

1 slow.3 And with respect to LiDAR technology, Uber's program appeared to  
rely solely on a third<sup>2</sup> party, off-the-shelf LiDAR system manufactured by  
Velodyne Inc. (the HDL-64E). On  
3 information and belief, Uber's program did not make any significant  
advances toward designing or  
4 manufacturing its own LiDAR technology for improved performance or lower  
cost.  
5

40.

Thus, although Uber came to view its entry into the self-driving car space as  
an

6 "existential" imperative,<sup>4</sup> as of mid-2016, Uber remained more than five  
years behind in the race  
7 to develop vehicle automation technology suitable for the mass market.  
8

D.

Unbeknownst To Waymo, Anthony Levandowski Lays The Foundation For  
Defendants To Steal Waymo's Intellectual Property Rather Than Compete  
Fairly In The Autonomous Vehicle Space

41.

While Uber's partnership with CMU was floundering, Waymo was continuing to

9  
10

11 develop its next-generation proprietary LiDAR technology. But, unbeknownst  
to Waymo at the  
12 time, Waymo manager Anthony Levandowski was also secretly preparing to  
launch a competing  
13 vehicle automation venture - a company named "280 Systems," which later  
would become Otto.  
14

42.

By November 2015, an internet domain name for the new venture had been

15 registered. And by January 2016, Mr. Levandowski had confided in some  
Waymo colleagues that

16 he planned to "replicate" Waymo's technology at a Waymo competitor. As  
Waymo would later

17 learn, Mr. Levandowski went to great lengths to take what he needed to  
"replicate" Waymo's

18 technology and then to meet with Uber executives, all while still a Waymo  
employee.

19

43.

On December 3, 2015, Mr. Levandowski searched for instructions on how to  
access

20 Waymo's highly confidential design server. This server holds detailed  
technical information

21 related to Waymo's LiDAR systems, including the blueprints for its key  
hardware components,

22 and is accessible only on a need-to-know basis.

23

44.

On December 11, 2015, Mr. Levandowski installed special software on his Waymo

24 laptop to access the design server. Mr. Levandowski then download over  
14,000 proprietary files

25

3

Heather Somerville, "After a year, Carnegie Mellon and Uber research  
initiative is stalled,"

26 Reuters, Mar. 21, 2016, available at <http://www.reuters.com/article/us-uber-tech-researchidUSKCN0WN0WR>.

Max Chafkin, "Uber's First Self-Driving Fleet Arrives in Pittsburgh This  
Month,"

27 4

Bloomsberg, Aug. 18, 2016, available at

<http://www.bloomberg.com/news/features/2016-0828-18/uber-s-first-self-driving-fleet-arrives-in-pittsburgh-this-month-is06r7on>.

-11-

Case No. \_\_\_\_\_  
COMPLAINT

Case 3:17-cv-00939 Document 1 Filed 02/23/17 Page 12 of 28

1 from that server. Mr. Levandowski's download included 9.7 GBs of sensitive,  
secret, and



2 valuable internal Waymo information. 2 GBs of the download related to  
Waymo's LiDAR  
3 technology. Among the downloaded documents were confidential specifications  
for each version  
4 of every generation of Waymo's LiDAR circuit boards.  
5

45.

On December 14, 2015, Mr. Levandowski attached a removable media device (an  
6 SD Card) to the laptop containing the downloaded files for approximately  
eight hours.  
7

46.

On December 18, 2015, seven days after Mr. Levandowski completed his  
8 download of confidential Waymo information and four days after he removed  
the SD Card, he  
9 reformatted the laptop, attempting to erase any evidence of what happened  
to the downloaded  
10 files. After wiping the laptop clean, Mr. Levandowski used the reformatted  
laptop for a few  
11 minutes and then never used it again.  
12

47.

Around the same time, Mr. Levandowski used his Waymo credentials and security  
13 clearances to download additional confidential Waymo documents to a  
personal device. These  
14 materials included at least five highly sensitive internal presentations  
containing proprietary  
15 technical details regarding the manufacture, assembly, calibration, and  
testing of Waymo's LiDAR  
16 sensors.  
17

48.

After downloading all of this confidential information regarding Waymo's  
LiDAR  
18 systems and other technology and while still a Waymo employee, Waymo is  
informed and  
19 believes that Mr. Levandowski attended meetings with high-level executives  
at Uber's  
20 headquarters in San Francisco on January 14, 2016.  
21

49.

The next day, January 15, 2016, Mr. Levandowski's venture 280 Systems - which

22 became OttoMotto LLC - was officially formed (though it remained in  
stealth mode for several  
23 months). On January 27, 2016, Mr. Levandowski resigned from Waymo without  
notice. And on

24 February 1, 2016, Mr. Levandowski's venture Otto Trucking was officially  
formed (also

25 remaining in stealth mode for several months).

26

27

28

-12-

Case No. \_\_\_\_\_

COMPLAINT

Case 3:17-cv-00939 Document 1 Filed 02/23/17 Page 13 of 28

1

E.

Otto Continues To Misappropriate Waymo's Intellectual Property After Its  
Public Launch With Mr. Levandowski At The Helm

50.

Otto publicly launched in May 2016 with the stated goal of developing  
hardware

2

3

and software for autonomous vehicles.

4

51.

In July 2016, a Waymo supply chain manager resigned from Waymo and joined

5

Otto. This supply chain manager was one of several Waymo employees who had  
spent many

6

months vetting a particular vendor that Waymo ultimately engaged to provide  
manufacturing

7

services for its self-driving car technology. The vendor's identity and its  
work for Waymo was

8

and is confidential: Waymo and the vendor entered into a confidentiality  
agreement that precludes

9

either party from disclosing the existence of their business relationship.

10

52.

Approximately a month before the supply chain manager resigned and despite  
his

11  
confidentiality obligations to Waymo, he downloaded from Waymo's secure  
network Waymo's  
12  
confidential supply chain information and other confidential manufacturing  
information, including  
13  
Statements of Work (or SOWs) for particular components - all of which  
reflected the results of  
14  
Waymo's months-long, resource-intensive research into suppliers for highly  
specialized LiDAR  
15  
sensor components.  
16  
53.

Also in July 2016, a certain Waymo hardware engineer resigned. On the same  
day

17  
that he resigned from Waymo, and despite his confidentiality obligations to  
Waymo, this engineer  
18  
downloaded from Waymo's secure network three files containing confidential  
research into  
19  
various potential hardware vendors for highly specialized LiDAR components  
and manufacturing  
20  
services. On information and belief, this hardware engineer left Waymo to  
join Otto.  
21  
54.

In the same time period that these former Waymo employees were downloading

22  
Waymo's confidential information regarding its manufacturing and hardware  
vendors and  
23  
resigned, Otto contacted the most-extensively vetted (and confidential) Waymo  
vendor and  
24  
attempted to order manufacturing services for LiDAR components similar to  
those the vendor  
25  
provides to Waymo.  
26  
27  
28  
-13-

Case No. \_\_\_\_\_  
COMPLAINT

1

F.

After Only Six Months Of Official Existence, Otto Is Acquired By Uber For More Than Half A Billion Dollars

55.

In August 2016, shortly after Mr. Levandowski received his final multi-million

2

3

dollar payment from Google, Uber announced a deal to acquire Otto. Otto's purchase price was

4

reported as \$680 million, a remarkable sum for a company with few assets and no marketable

5

product. As Forbes reported at the time, "one of the keys to this acquisition[] could be the LIDAR

6

system that was developed in-house at Otto."5

7

56.

In recognition of the central role of Otto's technology within Uber, Uber named

8

Otto co-founder Mr. Levandowski as its vice president in charge of Uber's self-driving car project.

9

Uber rechristened Otto's existing San Francisco office as Uber's new self-driving research and

10

development center.

11

G.

Waymo Verifies Its Growing Suspicion That Otto And Uber Stole Its Intellectual Property

57.

The sudden resignations from Waymo, Otto's quick public launch with Mr.

12

13

14 Levandowski at the helm, and Uber's near-immediate acquisition of Otto for more than half a

15 billion dollars all caused Waymo grave concern regarding the possible  
misuse of its intellectual  
16 property. Accordingly, in the summer of 2016, Waymo investigated the  
events surrounding the  
17 departure of Waymo employees for Otto and ultimately discovered Mr.  
Levandowski's 14,00018 document download, his efforts to hide the disposition  
of those documents, and the downloading  
19 of other Waymo confidential materials by Mr. Levandowski and other former  
Waymo employees.  
20

58.

Then, in December 2016, Waymo received evidence suggesting that Otto and Uber  
21 were actually using Waymo's trade secrets and patented LiDAR designs. On  
December 13,  
22 Waymo received an email from one of its LiDAR-component vendors. The  
email, which a  
23 Waymo employee was copied on, was titled OTTO FILES and its recipients  
included an email  
24 alias indicating that the thread was a discussion among members of the  
vendor's "Uber" team.  
25 Attached to the email was a machine drawing of what purported to be an  
Otto circuit board (the  
26

5

Sarwant Singh, "Uber Acquiring Otto Could Be the Lead Domino: Autonomous  
Vehicles to

27 Spur M&A Activity," Forbes, Aug. 24, 2016, available at  
<http://www.forbes.com/sites/sarwantsingh/2016/08/24/uber-acquiring-otto-could-be-the-lead-domino-autonomous-vehicles-to-spur-ma-activity/#3337f0c0f65ae>.

-14-

Case No. \_\_\_\_\_  
COMPLAINT

Case 3:17-cv-00939 Document 1 Filed 02/23/17 Page 15 of 28

1 "Replicated Board") that bore a striking resemblance to - and shared  
several unique characteristics  
2 with - Waymo's highly confidential current-generation LiDAR circuit board,  
the design of which  
3 had been downloaded by Mr. Levandowski before his resignation.  
4

59.

The Replicated Board reflects Waymo's highly confidential proprietary LiDAR  
5 technology and Waymo trade secrets. Moreover, the Replicated Board is  
specifically designed to  
6 be used in conjunction with many other Waymo trade secrets and in the  
context of overall LiDAR

7 systems covered by Waymo patents.

8

60.

With greatly heightened suspicion that Otto and Uber were actually using Waymo's

9 intellectual property for their own purposes (and to Waymo's detriment), Waymo endeavored to

10 find a way to confirm whether Defendants were using Waymo's patented and trade secret LiDAR

11 designs. Ultimately, Waymo received such confirmation in response to a public records request it

12 made to the Nevada Governor's Office of Economic Development and Department of Motor

13 Vehicles on February 3, 2016.

14

61.

Among the documents Waymo received on February 9, 2016 in response to that

15 request were submissions made by Otto to Nevada regulatory authorities. In one such submission,

16 dated less than one month after the Otto acquisition and while Uber was refusing to publicly

17 identify the supplier of its LiDAR system,<sup>6</sup> Otto privately represented that it had "developed in

18 house and/or currently deployed" an "[i]n-house custom built 64-laser" LiDAR system. This was

19 the final piece of the puzzle: confirmation that Uber and Otto are in fact using a custom LiDAR

20 system with the same characteristics as Waymo's proprietary system.

21

H.

Waymo Has Been, And Will Be, Severely Harmed By Defendants' Infringement Of Waymo's Patents And Misappropriation Of Waymo's Confidential And Proprietary Trade Secret Information

62.

Waymo developed its patented inventions and trade secrets at great expense, and

22

23

24 through years of painstaking research, experimentation, and trial and error. If Defendants are not

25 enjoined from their infringement and misappropriation, they will cause severe and irreparable

26 harm to Waymo.

27

Mike Murphy, "This is the week self-driving cars became real," Quartz, Sept. 17, 2016, 28 available at <https://qz.com/780606/this-is-the-week-self-driving-cars-became-real/>.

-15-

Case No. \_\_\_\_\_  
COMPLAINT

Case 3:17-cv-00939 Document 1 Filed 02/23/17 Page 16 of 28

1

63.

The markets for self-driving vehicles are nascent and on the cusp of rapid development. The impending period of drastic market growth, as autonomous car technology matures and is increasingly commercialized, will set the competitive landscape for the industry going forward. The growth, profitability, and even survival of individual firms will likely be determined by what happens in the next few years. Defendants' exploitation of stolen intellectual property greatly harms Waymo during this embryonic market formation process and deforms the creation of a fair and competitive industry. Allowing the conduct to continue, and awarding monetary compensation after the fact, will not sufficiently unravel the harm caused to Waymo directly and indirectly by Defendants' conduct.

10

64.

With respect to Waymo's trade secrets, there is also the threat that Waymo's confidential and proprietary information will be disclosed by Defendants, which will destroy the trade secret value of the technology. This may occur either voluntarily by Defendants for its own publicity purposes or because a regulatory agency requires disclosure for permitting purposes.

14

65.

With this action, Waymo seeks to vindicate its rights, prevent any further infringement of its patents, preclude any further misuse of its confidential, proprietary, and trade secret information, and obtain compensation for its damages and for Defendants' unjust enrichment resulting from their unlawful conduct.

18

FIRST CAUSE OF ACTION

19

Violation of Defense of Trade Secret Act  
(Against All Defendants)

20  
66.

Waymo incorporates all of the above paragraphs as though fully set forth herein.

67.

Waymo owns and possesses certain confidential, proprietary, and trade secret

21  
22

information, as alleged above. One example of the trade secret information is reflected in printed

23

circuit board designs contained in certain design files that Anthony Levandowski downloaded

24

from Waymo's system. Various aspects of the printed circuit board designs for the current

25

generation of Waymo's LiDAR system are Waymo's trade secrets, including the position and

26

orientation of the laser diodes and photodetectors mounted on the printed circuit boards.

27

Waymo's trade secret information also includes the selection, materials, size, position, and

28

-16-

Case No. \_\_\_\_\_

COMPLAINT

Case 3:17-cv-00939 Document 1 Filed 02/23/17 Page 17 of 28

1 orientation of optical elements that are used to manipulate and modify laser beams that are

2 transmitted and detected by Waymo's current generation LiDAR system. Waymo's trade secret

3 information further includes the resolution profile that is achieved through its proprietary

4 positioning and orientation of laser diodes and optical elements in its current generation LiDAR

5 system, and the know-how associated with using the resolution profile to accurately detect objects



6 in the environment. Another example of Waymo's trade secrets is the rate at  
which the current  
7 generation LiDAR system pulses and fires the laser diodes into the  
environment, and the know8 how associated with using the pulse rate and fire  
rate to accurately detect objects in the  
9 environment. None of these trade secrets is disclosed in any published  
Waymo patents or patent  
10 applications.  
11

68.

Waymo's confidential, proprietary, and trade secret information relates to  
products

12 and services used, sold, shipped and/or ordered in, or intended to be  
used, sold, shipped and/or  
13 ordered in, interstate or foreign commerce.  
14

69.

Waymo has taken reasonable measures to keep such information secret and

15 confidential.  
16

70.

Waymo has at all times maintained stringent security measures to preserve the

17 secrecy of its LiDAR trade secrets. For example, Waymo restricts access to  
confidential and  
18 proprietary trade secret information to only those who "need to know."  
That is, employees  
19 working on projects unrelated to self-driving cars have not had and do not  
have access to  
20 Waymo's schematics, supply chain information, or other categories of  
confidential and proprietary  
21 information. All networks hosting Waymo's confidential and proprietary  
information have been  
22 and continue to be encrypted and have at all times required passwords and  
dual-authentication for  
23 access. Computers, tablets, and cell phones provided to Waymo employees  
are encrypted,  
24 password protected, and subject to other security measures. And Waymo  
secures its physical  
25 facilities by restricting access and then monitoring actual access with  
security cameras and guards.  
26

71.

Waymo also requires all employees, contractors, consultants, vendors, and

27 manufacturers to sign confidentiality agreements before any confidential  
or proprietary trade

28 secret information is disclosed to them. Every outside vendor and manufacturer that has received

-17-

Case No. \_\_\_\_\_  
COMPLAINT

Case 3:17-cv-00939 Document 1 Filed 02/23/17 Page 18 of 28

1 confidential and proprietary trade secret information related to Waymo's  
2 LiDAR technology has  
3 executed at least one written non-disclosure agreement. As a further  
4 precaution, Waymo  
5 purchases the components for its LiDAR systems from numerous, different  
6 vendors and conducts  
7 the final assembly in-house at Waymo. As a result, no single Waymo vendor  
8 has full knowledge  
9 of Waymo's proprietary LiDAR systems.  
10

72.

Due to these security measures, Waymo's confidential and proprietary trade secret

7 information is not available for others in the automated vehicle industry -  
8 or any other industry -  
9 to use through any legitimate means.  
10

73.

Waymo's confidential, proprietary, and trade secret information derives  
10 independent economic value from not being generally known to, and not  
11 being readily  
12 ascertainable through proper means by, another person who could obtain  
13 economic value from the  
14 disclosure or use of the information.  
15

74.

In violation of Waymo's rights, Defendants misappropriated Waymo's  
14 confidential, proprietary and trade secret information in the improper and  
15 unlawful manner as  
16 alleged herein. Defendants' misappropriation of Waymo's confidential,  
17 proprietary, and trade  
18 secret information was intentional, knowing, willful, malicious,  
19 fraudulent, and oppressive.  
20 Defendants have attempted and continue to attempt to conceal their  
21 misappropriation.  
22

75.

On information and belief, if Defendants are not enjoined, Defendants will continue

19 to misappropriate and use Waymo's trade secret information for their own benefit and to Waymo's  
20 detriment.

21

76.

As the direct and proximate result of Defendants' conduct, Waymo has suffered

22 and, if Defendants' conduct is not stopped, will continue to suffer, severe competitive harm,

23 irreparable injury, and significant damages, in an amount to be proven at trial. Because Waymo's

24 remedy at law is inadequate, Waymo seeks, in addition to damages, temporary, preliminary, and

25 permanent injunctive relief to recover and protect its confidential, proprietary, and trade secret

26 information and to protect other legitimate business interests. Waymo's business operates in a

27 competitive market and will continue suffering irreparable harm absent injunctive relief.

28

-18-

Case No. \_\_\_\_\_  
COMPLAINT

Case 3:17-cv-00939 Document 1 Filed 02/23/17 Page 19 of 28

1

77.

Waymo has been damaged by all of the foregoing and is entitled to an award of

2 exemplary damages and attorney's fees.

3

SECOND CAUSE OF ACTION

4

Violation of California Uniform Trade Secret Act, Cal. Civ. Code § 3426 et seq.

(Against All Defendants)

5

78.

Waymo incorporates all of the above paragraphs as though fully set forth herein.

79.

Waymo's technical information, designs, and other "know how" related to its

6

7

LiDAR constitute trade secrets as defined by California's Uniform Trade Secrets Act. Waymo

8

owns and possesses certain confidential, proprietary, and trade secret information, as alleged

9

above. One example of the trade secret information is reflected in printed circuit board designs

10

contained in certain design files that Anthony Levandowski downloaded from Waymo's system.

11

Various aspects of the printed circuit board designs for the current generation of Waymo's LiDAR

12

system are Waymo's trade secrets, including the position and orientation of the laser diodes and

13

photodetectors mounted on the printed circuit boards. Waymo's trade secret information also

14

includes the selection, materials, size, position, and orientation of optical elements that are used to

15

manipulate and modify laser beams that are transmitted and detected by Waymo's current

16

generation LiDAR system. Waymo's trade secret information further includes the resolution

17

profile that is achieved through its proprietary positioning and orientation of laser diodes and

18

optical elements in its current generation LiDAR system, and the know-how associated with using

19

the resolution profile to accurately detect objects in the environment. Another example of

20

Waymo's trade secrets is the rate at which the current generation LiDAR system pulses and fires

21

the laser diodes into the environment, and the know-how associated with using the pulse rate and

22

fire rate to accurately detect objects in the environment. None of this information is disclosed in

23

any published Waymo patents or patent applications, and the information has actual or potential

24

independent economic value from not being generally known to the public or other persons who

25

could obtain economic value from their disclosure or use.

26

80.

Waymo's asserted trade secrets are different than Waymo's asserted patent rights.

27

By way of example, only: (i) Waymo's asserted patents relate to a prior generation of Waymo's

28

-19-

Case No. \_\_\_\_\_

COMPLAINT

Case 3:17-cv-00939 Document 1 Filed 02/23/17 Page 20 of 28

1 proprietary LiDAR designs, whereas Waymo's trade secrets include elements for subsequent and

2 as of today un-patented and confidential LiDAR designs; and (ii) Waymo's trade secrets include

3 specific parameters and measurements for Waymo's LiDAR designs that are not disclosed in any

4 asserted Waymo patents. Examples of trade secret information that is not covered or disclosed by

5 any asserted Waymo patents include the specific parameters or measurements for vertical beam

6 spacing, distribution of beam elevations and orientations, the beams' field of view measurements,

7 the pitch or orientations between diodes, pitch measurements for optical cavities, pulse rates, and

8 fire rates for beam returns.

9

81.

Waymo has undertaken efforts that are reasonable under the circumstances to

10 maintain the secrecy of the trade secrets at issue. These efforts include, but are not limited to, the

11 use of passwords and encryption to protect data on its computers, servers, and source code

12 repositories, the maintenance of a Code of Conduct that emphasizes all employees' duties to

13 maintain the secrecy of Waymo's confidential information, and the use of confidentiality

14 agreements and non-disclosure agreements to require vendors, partners, contractors, and

15 employees to maintain the secrecy of Waymo's confidential information.

16

82.

Defendants knew or should have known under the circumstances that the

17 information misappropriated by Defendants were trade secrets.  
18

83.

Defendants misappropriated and threaten to further misappropriate trade secrets at

19 least by acquiring trade secrets with knowledge of or reason to know that the trade secrets were

20 acquired by improper means, and Defendants are using and threatening to use the trade secrets

21 acquired by improper means without Waymo's knowledge or consent.

22

84.

As a direct and proximate result of Defendants' conduct, Waymo is threatened with

23 injury and has been injured in an amount in excess of the jurisdictional minimum of this Court and

24 that will be proven at trial. Waymo has also incurred, and will continue to incur, additional

25 damages, costs and expenses, including attorney's fees, as a result of Defendants'

26 misappropriation. As a further proximate result of the misappropriation and use of Waymo's trade

27 secrets, Defendants were unjustly enriched.

28

-20-

Case No. \_\_\_\_\_  
COMPLAINT

Case 3:17-cv-00939 Document 1 Filed 02/23/17 Page 21 of 28

1

85.

The aforementioned acts of Defendants were willful, malicious and fraudulent.

2 Waymo is therefore entitled to exemplary damages under California Civil Code § 3426.3(c).

3

86.

Defendants' conduct constitutes transgressions of a continuing nature for which

4 Waymo has no adequate remedy at law. Unless and until enjoined and restrained by order of this

5 Court, Defendants will continue to retain and use Waymo's trade secret information to enrich

6 themselves and divert business from Waymo. Pursuant to California Civil  
Code § 3426.2, Waymo  
7 is entitled to an injunction against the misappropriation and continued  
threatened misappropriation  
8 of trade secrets as alleged herein and further asks the Court to restrain  
Defendants from using all  
9 trade secret information misappropriated from Waymo and to return all trade  
secret information to  
10 Waymo.  
11

87.

Pursuant to California Civil Code § 3426.4 and related law, Waymo is entitled  
to

12 an award of attorneys' fees for Defendants' misappropriation of trade  
secrets.  
13

### THIRD CAUSE OF ACTION

14

Infringement of Patent No. 8,836,922  
(Against All Defendants)

15  
88.

Waymo incorporates all of the above paragraphs as though fully set forth  
herein.

89.

The '922 patent, entitled "Devices and Methods for a Rotating LIDAR platform

16  
17

with a Shared Transmit/Receive Path," was duly and lawfully issued on  
September 16, 2014. A

18  
true and correct copy of the '922 patent is attached to this Complaint as  
Exhibit A.

19  
90.

Waymo is the owner of all rights, title, and interest in the '922 patent,  
including the

20  
right to bring this suit for injunctive relief and damages.

21  
91.

The '922 patent is valid and enforceable.

92.

Defendants have infringed, and continue to infringe, literally and/or through the

22

23

doctrine of equivalents, one or more claims of the '922 patent, including but not limited to claim

24

1, pursuant to 35 U.S.C. § 271(a), by making, using, selling, offering to sell, and/or importing

25

within the United States, without authority, certain LiDAR devices ("Accused LiDAR Devices").

26

93.

On information and belief, the Accused LiDAR Devices, such as those using the

27

Replicated Board, comprise a LiDAR device with a single lens that transmits light pulses

28

-21-

Case No. \_\_\_\_\_

COMPLAINT

Case 3:17-cv-00939 Document 1 Filed 02/23/17 Page 22 of 28

1 originating from one or more light sources and receiving light pulses that are then detected by one

2 or more detectors. Defendants infringe at least claim 1 of the '922 patent for at least the following

3 reasons:

4

94.

Defendants' Accused LiDAR Devices are LiDAR devices.

5

95.

On information and belief, Defendants' Accused LiDAR Devices have a lens

6 mounted to a housing, wherein the housing is configured to rotate about an axis and has an interior

7 space that includes a transmit block, a receive block, a transmit path, and a receive path, wherein

8 the transmit block has an exit aperture in a wall that comprises a reflective surface, wherein the

9 receive block has an entrance aperture, wherein the transmit path extends from the exit aperture to



10 the lens, and wherein the receive path extends from the lens to the  
11 entrance aperture via the  
12 reflective surface.

96.

On information and belief, Defendants' Accused LiDAR Devices have a plurality  
13 of light sources in the transmit block, wherein the plurality of light  
14 sources are configured to emit  
15 a plurality of light beams through the exit aperture in a plurality of  
16 different directions, the light  
17 beams comprising light having wavelengths in a wavelength range.

97.

On information and belief, Defendants' Accused LiDAR Devices have a plurality  
18 of detectors in the receive block, wherein the plurality of detectors are  
19 configured to detect light  
20 having wavelengths in the wavelength range.

98.

On information and belief, Defendants' Accused LiDAR Devices have a lens that  
is

21 configured to receive the light beams via the transmit path, collimate the  
22 light beams for  
23 transmission into an environment of the LIDAR device, collect light  
24 comprising light from one or  
25 more of the collimated light beams reflected by one or more of the  
26 collimated light beams  
27 reflected by one or more objects in the environment of the LIDAR device,  
28 and focus the collected  
29 light onto the detectors via the receive path.

99.

Defendants' infringement of the '922 patent has been willful and deliberate  
because

30 Defendants knew or should have known about the '922 patent and their  
31 infringement of that patent  
32 but acted despite an objectively high likelihood that such acts would  
33 infringe the patent. On  
34 information and belief, at least three of the individuals who developed  
35 the Accused LiDAR  
-22-

1 Devices are named inventors of the '922 patent who - while Waymo employees,  
and on behalf of  
2 Waymo, which owns the '922 patent - were involved in the conception and/or  
reduction to  
3 practice of the '922 patent and have had knowledge of the patent since it  
issued in September  
4 2014.  
5

100.

As the direct and proximate result of Defendants' conduct, Waymo has suffered  
6 and, if Defendants' conduct is not stopped, will continue to suffer, severe  
competitive harm,  
7 irreparable injury, and significant damages, in an amount to be proven at  
trial. Because Waymo's  
8 remedy at law is inadequate, Waymo seeks, in addition to damages,  
temporary, preliminary, and  
9 permanent injunctive relief. Waymo's business operates in a competitive  
market and will continue  
10 suffering irreparable harm absent injunctive relief.  
11

FOURTH CAUSE OF ACTION

12

Infringement of Patent No. 9,368,936  
(Against All Defendants)

13  
101.

Waymo incorporates all of the above paragraphs as though fully set forth  
herein.

102.

The '936 patent, entitled "Laser Diode Firing System," was duly and lawfully

14  
15  
issued on June 14, 2016. A true and correct copy of the '936 patent is  
attached to this Complaint

16  
as Exhibit B.  
17  
103.

Waymo is the owner of all rights, title, and interest in the '936 patent,  
including the

18  
right to bring this suit for injunctive relief and damages.

19  
104.

The '936 patent is valid and enforceable.

105.

Defendants have infringed, and continue to infringe, literally and/or through the

20

21

doctrine of equivalents, one or more claims of the '936 patent, including but not limited to claim

22

1, pursuant to 35 U.S.C. § 271(a), by making, using, selling, offering to sell, and/or importing

23

within the United States, without authority, the Accused LiDAR devices.

24

106.

On information and belief, Defendants' Accused LiDAR Devices, such as those

25

using the Replicated Board, comprise a laser diode firing circuit for a LiDAR device, which

26

utilizes an inductor and a charging capacitor, where both the charging and discharge path are

27

28

-23-

Case No. \_\_\_\_\_  
COMPLAINT

Case 3:17-cv-00939 Document 1 Filed 02/23/17 Page 24 of 28

1 controllable via a single transistor and gate signal. Defendants infringe at least claim 1 of the '936

2 patent for at least the following reasons:

3

107.

On information and belief, Defendants' Accused LiDAR Devices have a voltage

108.

On information and belief, Defendants' Accused LiDAR Devices have an inductor

4 source.

5

6 coupled to the voltage source, wherein the inductor is configured to store energy in a magnetic

7 field.

8

109.

On information and belief, Defendants' Accused LiDAR Devices have a diode or

9 equivalent coupled to the voltage source via the inductor.

10

110.

On information and belief, Defendants' Accused LiDAR Devices have a transistor

11 configured to be turned on and turned off by a control signal.

12

111.

On information and belief, Defendants' Accused LiDAR Devices have a light

13 emitting element coupled to the transistor.

14

112.

On information and belief, Defendants' Accused LiDAR Devices Circuit Boards

15 have a capacitor coupled to a charging path and a discharge path, wherein the charging path

16 includes the inductor and the diode, and wherein the discharge path includes the transistor and the

17 light emitting element.

18

113.

On information and belief, Defendants' Accused LiDAR Devices have, responsive

19 to the transistor being turned off, a capacitor configured to charge via the charging path such that a

20 voltage across the capacitor increases from a lower voltage level to a higher voltage level and an

21 inductor configured to release energy stored in the magnetic field such that a current through the

22 inductor decreases from a higher current level to a lower current level.

23

114.

On information and belief, Defendants' Accused LiDAR Devices have, responsive

24 to the transistor being turned on, a capacitor configured to discharge through the discharge path

25 such that the light emitting element emits a pulse of light and the voltage across the capacitor

26 decreases from the higher voltage level to the lower voltage level and the  
inductor is configured to  
27 store energy in the magnetic field such that the current through the  
inductor increases from the  
28 lower current level to the higher current level.

-24-

Case No. \_\_\_\_\_  
COMPLAINT

Case 3:17-cv-00939 Document 1 Filed 02/23/17 Page 25 of 28

1

115.

As the direct and proximate result of Defendants' conduct, Waymo has suffered  
2 and, if Defendants' conduct is not stopped, will continue to suffer, severe  
competitive harm,  
3 irreparable injury, and significant damages, in an amount to be proven at  
trial. Because Waymo's  
4 remedy at law is inadequate, Waymo seeks, in addition to damages,  
temporary, preliminary, and  
5 permanent injunctive relief. Waymo's business operates in a competitive  
market and will continue  
6 suffering irreparable harm absent injunctive relief.

7

FIFTH CAUSE OF ACTION

8

Infringement of Patent No. 9,086,273  
(Against All Defendants)

9

116.

Waymo incorporates all of the above paragraphs as though fully set forth  
herein.

117.

The '273 patent, entitled "Microrod Compression of Laser Beam in Combination

10

11

with Transmit Lens," was duly and lawfully issued on July 21, 2015. A true  
and correct copy of

12

the '273 patent is attached to this Complaint as Exhibit C.

13

118.

Waymo is the owner of all rights, title, and interest in the '273 patent,  
including the

14  
right to bring this suit for injunctive relief and damages.  
15  
119.

The '273 patent is valid and enforceable.

120.

Defendants have infringed, and continue to infringe, literally and/or through  
the

16  
17  
doctrine of equivalents, one or more claims of the '273 patent, including but  
not limited to claim  
18  
1, pursuant to 35 U.S.C. § 271(a), by making, using, selling, offering to  
sell, and/or importing  
19  
within the United States, without authority, the Accused LiDAR Devices.  
20  
121.

On information and belief, Defendants' Accused Lidar Devices, such as those  
using

21  
the Replicated Board and the Uber Custom LiDAR described in Uber's Nevada  
regulatory filing,  
22  
comprise a LiDAR device with a single lens that both (i) collimates the light  
from one or more  
23  
light sources to provide collimated light for transmission into an  
environment of the LiDAR  
24  
device, and (ii) focuses the reflected light onto one or more photodetectors,  
and with cylindrical  
25  
lenses associated with each laser diode that pre-collimate the uncollimated  
laser beam.

26  
Defendants infringe at least claim 1 of the '273 patent for at least the  
following reasons:

27  
28  
-25-

Case No. \_\_\_\_\_  
COMPLAINT

122.

On information and belief, Defendants' Accused LiDAR Devices are LiDAR

2 devices.

3

123.

On information and belief, Defendants' Accused LiDAR Devices have at least one

4 laser diode, wherein the at least one laser diode is configured to emit an uncollimated laser beam

5 comprising light in a narrow wavelength range, wherein the uncollimated laser beam has a first

6 divergence in a first direction and a second divergence in a second direction, and wherein the first

7 divergence is greater than the second divergence.

8

124.

On information and belief, Defendants' Accused LiDAR Devices have at least one

9 cylindrical lens, wherein the at least one cylindrical lens is configured to pre-collimate the

10 uncollimated laser beam that has a third divergence in the first direction and a fourth divergence in

11 the second direction, wherein the third divergence is less than the fourth divergence and the fourth

12 divergence is substantially equal to the second divergence.

13

125.

On information and belief, Defendants' Accused LiDAR Devices have at least one

14 detector, wherein the at least one detector is configured to detect light having wavelengths in the

15 narrow wavelength range.

16

126.

On information and belief, Defendants' Accused LiDAR Devices have an objective

17 lens, wherein the objective lens is configured to (i) collimate the partially collimated laser beam

18 for transmission into an environment of the LiDAR device and (ii) focus object reflected light onto

19 the at least one detector, wherein the object-reflected light comprises light from the collimated

20 laser beam in the environment of the LiDAR device.

21

127.

Defendants' infringement of the '273 patent has been willful and deliberate because

22 Defendants knew or should have known about the '273 patent and their infringement of that patent

23 but acted despite an objectively high likelihood that such acts would infringe the patent. At least

24 one individual who developed the Accused LiDAR Devices is a named inventor on the '273 patent

25 who - while a Waymo employee, and on behalf of Waymo, which owns the '273 patent - was

26 involved in the conception and/or reduction to practice of the '273 patent and therefore has had

27 knowledge of the patent since it issued in July 21, 2015.

28

-26-

Case No. \_\_\_\_\_  
COMPLAINT

Case 3:17-cv-00939 Document 1 Filed 02/23/17 Page 27 of 28

1

128.

As the direct and proximate result of Defendants' conduct, Waymo has suffered

2 and, if Defendants' conduct is not stopped, will continue to suffer, severe competitive harm,

3 irreparable injury, and significant damages, in an amount to be proven at trial. Because Waymo's

4 remedy at law is inadequate, Waymo seeks, in addition to damages, temporary, preliminary, and

5 permanent injunctive relief. Waymo's business operates in a competitive market and will continue

6 suffering irreparable harm absent injunctive relief.

7

SIXTH CAUSE OF ACTION

8

Violation of California Bus. & Prof. Code § 17200  
(Against All Defendants)

9

129.

Waymo incorporates all of the above paragraphs as though fully set forth herein.

130.



Defendants engaged in unlawful, unfair, and fraudulent business acts and practices.

10

11

Such acts and practices include, but are not limited to, misappropriating Waymo's confidential and

12

proprietary information.

13

131.

Defendants' business acts and practices were unlawful as described above.

132.

Defendants' business acts and practices were fraudulent in that a reasonable person

14

15

would likely be deceived by their material misrepresentations and omissions. Defendants have

16

acquired and used Waymo's confidential and proprietary trade secret information through material

17

misrepresentations and omissions.

18

133.

Defendants' business acts and practices were unfair in that the substantial harm

19

suffered by Waymo outweighs any justification that Defendants may have for engaging in those

20

acts and practices.

21

134.

Waymo has been harmed as a result of Defendants' unlawful, unfair, and fraudulent

22

business acts and practices. Waymo is entitled to (a) recover restitution, including without

23

limitation, all benefits that Defendants received as a result of their unlawful, unfair, and fraudulent

24

business acts and practices and (b) an injunction restraining Defendants from engaging in further

25

acts of unfair competition.

26

PRAYER FOR RELIEF

27

WHEREFORE, Waymo respectfully requests the following relief:

28

-27-

Case No. \_\_\_\_\_

COMPLAINT

Case 3:17-cv-00939 Document 1 Filed 02/23/17 Page 28 of 28

1

135.

Judgment in Waymo's favor and against Defendants on all causes of action alleged

136.

For damages in an amount to be further proven at trial, including trebling of all

2 herein;

3

4 damages awarded with respect to infringement of the '922 and '273 patents;

5

137.

For preliminary and permanent injunctive relief;

6

138.

For judgment that this is an exceptional case;

7

139.

For punitive damages;

8

140.

For restitution;

9

141.

For costs of suit incurred herein;

10

142.

For prejudgment interest;

11

143.

For attorneys' fees and costs; and

12

144.

For such other and further relief as the Court may deem to be just and proper.

13

DEMAND FOR JURY TRIAL

14

Waymo hereby demands trial by jury for all causes of action, claims, or issues in this

15 action that are triable as a matter of right to a jury

16 DATED: February 23, 2017

17

18

19

QUINN EMANUEL URQUHART & SULLIVAN,  
LLP  
By

/s/ Charles K. Verhoeven  
Charles K. Verhoeven  
Attorneys for WAYMO LLC

20

21

22

23

24

25

26

27

28

-28-

Case No. \_\_\_\_\_  
COMPLAINT