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**UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF WASHINGTON
AT SEATTLE**

CONRAD O. GARDNER, Individually,)
)
) Plaintiff,)
)
) v.)
)
) **TOYOTA MOTOR CORPORATION**, a)
) Japanese Corporation, and **TOYOTA**)
) **MOTOR SALES, U.S.A, INC.**, a California)
) Corporation,)
)
) Defendants.)

No. C 08-0632 RAJ

**SECOND AMENDED COMPLAINT
FOR PATENT INFRINGEMENT**

JURY DEMAND

1. IDENTITY OF PARTIES

1.1 Plaintiff. Plaintiff Conrad O. Gardner (“Gardner”) is a United States citizen residing at 654 5th Avenue S., Suite 201, Edmonds, Washington, 98020. At all times relevant to this action, Conrad O. Gardner has been the inventor and owner of the United States Letters Patent No. 7,290,627 (the “627 Patent”) titled “Extended range motor vehicle having ambient pollutant processing.”

1.2 Defendant Toyota Motor Corporation. Defendant Toyota Motor Corporation (“TMC”) is, upon information and belief, a Japanese corporation having a principal place of business at 1 Toyota-Cho, Toyota City, Aichi Prefecture 471-8571, Japan.

1 requires a recharge. By contrast, a vehicle powered by both an I.C. and an electric motor
2 (“hybrid”) can combine the advantages of both. The hybrid can increase gas mileage and
3 reduce pollution, as electric vehicles do, yet provide the range and performance of a
4 traditionally powered car when needed. Efficiencies and energy savings are accomplished by
5 using the I.C. only when it is most efficient to do so.

6 **3.2** The hybrid may use the electric motor when the car is moving slowly, and the
7 I.C. to power the vehicle during cruise or highway speeds. The hybrid may also use the motor
8 and the I.C. together for rapid acceleration. The hybrid may also use the I.C. to recharge the
9 vehicle’s battery, extending electric motor mode’s useful range. The hybrid’s control computer
10 commander these representative combinations of power sources as “operating modes.”

11 ***Plaintiff Gardner’s Development of Patented Pioneering Hybrid Technology.***

12 **3.3** Plaintiff Conrad Gardner is an engineer, patent attorney, and inventor of
13 environmentally friendly technologies for the automobile. Gardner’s engineering innovations
14 have spanned several decades and are marked by such pioneering milestones as the
15 Electronically Controlled Exhaust Gas Recirculation Valve, U. S. Patent No. 3,788,284; the
16 Feedback Modulation of Exhaust Gases in Internal Combustion Engines (a key component
17 of the first automobile emission reduction systems and licensed to major automobile
18 manufacturers). A copy U. S. Patent No. 3,788,284 is attached as Exhibit A.

19 ***The Technology Protected by Plaintiff Gardner’s Pioneering ‘627 Patent.***

20 **3.4** Gardner’s most recent environmentally friendly and innovative invention is
21 certain pioneering hybrid automobile technology embodied in United States Letters Patent
22 No. 7,290,627 (“the 627 patent”), titled “Extended Range Motor Vehicle Having Ambient
23 Pollutant Processing,” and attached as Exhibit B to this Complaint and by this reference
24 incorporated into this paragraph as though set forth.

25 **3.5** Gardner’s ‘627 patent teaches a hybrid vehicle control system comprised of: a
26 computer; at least one sensor to sense the vehicles running state; a battery; an I.C.; two

1 electric motors for generating power and driving forces; and a device for transferring the
2 driving forces produced by the I.C. and electric motor to the wheels in response to the
3 computer commands based on the vehicles running state. In '627, the computer controls the
4 mixing or contribution of the driving force from an I.C. with that from two electric motors.
5 Because '627 is equipped with more than one source of power, '627 requires a device to
6 transfer the driving forces of the respective power sources to the wheels.

7 **3.6** The '627 patent further teaches the use of a computerized control system to
8 optimize this mix and transfer of driving forces to the wheels in response to sensed system and
9 environmental parameters, indicative of the vehicles running state, such as cruise, idle,
10 acceleration or battery charge. Depending on the running state, the control system may
11 command either the I.C., electric motor or both to drive the vehicle. Further, it may also
12 command the transfer of the I.C.'s driving force to an electric motor to recharge of the battery.

13 **3.7** Mr. Gardner's '627 patent's advances and validity were underscored by the
14 examination and approval of its claims by a three judge panel during prosecution of the patent
15 application, prior to the United States Patent and Trademark Office's ("USPTO") issuance
16 of the '627 patent on November 6, 2007.

17 **3.8** Gardner's invention is pioneering because the application for the patent-in-suit
18 claims the benefit of the domestic priority of its parent patent application that was filed in
19 1992. Toyota and the automobile industry's interest in hybrid automotive technology
20 commenced years after Gardner applied for and obtained his first patent in this nascent field
21 of technology. For example, in a 1994 letter to Mr. Gardner, an officer of Honda Corporation
22 advised Mr. Gardner that Honda had no interest in hybrid vehicle technology and no plans to
23 develop a hybrid vehicle in the foreseeable future.

24 ***Toyota's Early Knowledge of Gardner's Patented Hybrid Technology.***

25 **3.9** The Toyota Defendants first began investigating the development of a
26 commercial hybrid automobile in November, 1994, two years after Gardner had applied for

1 his first hybrid technology patent. In fact, the USPTO rejected Toyota's January 24, 1994
2 patent application for hybrid automobile technology, described in patent application ser. no.
3 08/185,407 on the ground that the claim was anticipated by Gardner. Copies of USPTO
4 documents stating this decision are attached as Exhibit C and incorporated into this
5 Complaint by this reference as though fully set forth in this paragraph.

6 ***Toyota's Development of Infringing Hybrid Technology***

7 **3.10** Toyota initiated its first project for a mass produced hybrid vehicle in late 1995,
8 that resulted in the introduction into the United States market of the "Japanese Prius" in
9 1997, and the "Prius I" in 2000. Toyota later introduced the second generation "Prius II,"
10 which gained certain efficiencies by the use of high voltage and low current. The Prius II
11 hybrid control system is also present in the Toyota Camry and Highlander.

12 **3.11** The Prius II hybrid control system is comprised of all the corresponding
13 structural or functional elements that are taught by the claims in the '627 patent, including:
14 a computer; at least one sensor to sense the vehicles running state; a battery; an I.C.; two
15 electric motors for generating power and driving forces; a device called for transferring the
16 driving forces produced by the I.C. and electric motors in response to the computer commands
17 and sensed operating state of the vehicle. Descriptions and schematics of Toyota's hybrid
18 technology system are contained in Exhibits D, E & E1 to this Complaint, which descriptions
19 and schematics are hereby incorporated into this paragraph by this reference.

20 **3.12** The drive train of the Prius II, uses a "planetary gear unit" ("PGU") as a device
21 that combines an I.C. generated driving force with an electric motor driving force that can
22 transfer the sum of this driving force to the wheels. See Exhibit E & E1

23 **3.13** The "planetary gear unit," has a "sun" gear that meshes with several
24 "planetary" gears which are supported in their relative orbits about the "sun" gear by a
25 "planetary carrier," which in turn mesh with a peripheral ring gear. In operation, a first
26 electric motor's ("MG2") driving force is fed directly into the ring gear. The I.C.'s driving force

1 is fed to the planetary carrier. This arrangement can add the I.C.'s driving force to MG2's
2 driving force on the ring gear of the planetary gear unit, the sum of which can be transferred
3 to the wheels of the car.

4 **3.14** The PGU is a device that can transfer variable amounts of driving force to the
5 wheels as driving conditions, and the corresponding combinations of I.C. and electric motor
6 driving forces, in the various driving modes change.

7 **3.15** A second electric motor, ("MG1") is connected to the "sun" gear and is
8 commanded by the Prius hybrid control system to control the relative mix and transfer of the
9 I.C. driving force and the electric motor driving force that is transferred through the PGU to
10 the wheels, by acting as an electronic variable friction clutch. The variable electronic "friction"
11 produced by MG1 can control the speed of its sun gear in response to commands by the Prius
12 hybrid control computer.

13 **3.16** The gear ratio between the planetary gears (connected to the I.C.) and the ring
14 gear (connected to the wheels) can be continuously adjusted through the by electrically
15 controlling the speed of the sun gear.

16 **3.17** MG1 can be used as a starter motor for the I.C.

17 **3.18** The Prius hybrid computer control system can command an operational mode
18 that charges the battery when the vehicle is at idle.

19 **3.19** The Prius hybrid computer control system can command the start of the I.C. at
20 idle by commanding MG2 to hold the PGU to selectively prevent the I.C.'s driving force from
21 being transferred to the wheels so that MG1 can start the I.C.

22 **3.20** During I.C. start mode at idle, the MG2 acts as an electronic clutch while MG1
23 acts as a starter.

24 **3.21** During the I.C. start mode at idle, the vehicle can remain stationary because
25 MG2 acts as an electronic clutch.

26 **3.22** During battery charge mode at idle, the Prius hybrid control system commands

1 MG2 to act as an electronic clutch while it commands the I.C. driving force to be transferred
2 to MG1 which in turn is commanded to act as a generator to charge the battery.

3 ***Toyota's Knowledge of its Infringing Conduct and Refusal to Buy a License to***
4 ***Use Mr. Gardner's Patented Technology or Cease Infringing Upon It.***

5 **3.23** Conrad O. Gardner is the inventor and owner of all right, title and interest in
6 the technology protected by the '627 patent.

7 **3.24** Defendants were indirectly made aware of the '627 patent prior to its issuance,
8 when the '627 patent's parent patent, United States Letters Patent No. 5,301,764, was cited
9 as prior art against the Defendants United States Letters Patent No. 5,495,906, during its
10 prosecution in 1995. See Exhibit C.

11 **3.25** Defendants were made directly aware of Toyota's infringement of the '627
12 patent when Gardner offered Defendants an opportunity to license use of the technology
13 protected by the '627 patent. Gardner has given Toyota notice of its infringing conduct and
14 has afforded Toyota an opportunity to examine the technology covered by the '627 patent and
15 to accept Gardner's offer to grant Toyota a license to use the technology rather than
16 continuing to infringe the '627 patent.

17 **3.26** After examining Gardner's '627 patent, and the history of its prosecution and
18 issuance, Toyota was fully aware of Toyota's ongoing infringement of Gardner's patented
19 technology and fully aware of the revenues and profits that Toyota has generated through the
20 manufacture, marketing and sale of infringing products. Defendants nonetheless continued
21 infringing on the technology covered by the '627 patent and continued refusing to negotiate
22 in good faith to acquire a license to use the technology covered by Gardner's '627 patent.
23 Gardner finally had no choice but to initiate this lawsuit to enjoin Toyota from further conduct
24 that infringes on the '627 patent and to obtain damages for Toyota's past and present
25 infringing conduct.

26 //

1 **4. CAUSES OF ACTION**

2 **4.1 Violation of 35 U. S. C. § 271**

3 **4.1.1** Plaintiff Conrad Gardner realleges the factual allegations stated in
4 paragraphs 3.1 through 3.26 of this Complaint as though fully set forth in this paragraph.

5 **4.1.2** Defendants' actions constitute the manufacturing, importing, using,
6 offering to sell and selling of vehicles employing hybrid technology that infringes upon the '627
7 patent owned by plaintiff Conrad Gardner. Toyota's infringing hybrid vehicles are
8 manufactured under the names of "Prius," "Camry," and "Highlander."

9 **4.1.2** Defendants have been, and are now, contributing to the infringement
10 of and/or actively inducing the infringement of the '627 patent by others by, among other
11 things, distributing or offering for sale hybrid vehicles and literature that teaches third parties
12 to operate hybrid vehicles in a manner that directly infringes the '627 patent.

13 **4.1.2** Defendants have had actual knowledge of the '627 patent and their
14 infringement is willful.

15 **4.1.2** Defendants' past and continuing acts of infringement have injured and
16 continue to injure Plaintiff Gardner by depriving Gardner of royalties to which he is entitled
17 as owner of the technology exploited by the '627 patent , by invading Gardner's exclusive right
18 as patent owner to control the exploitation of the patented technology, and by propagating and
19 encouraging widespread acts of infringement that cause devaluation of the value of the
20 Gardner patent. The full amount of Plaintiff's damaged from Defendant Toyotas acts of
21 infringement are not yet known, but will be established at trial.

22 **4.1.2** Defendants' acts of infringement of the '627 patent have caused and
23 continue to cause Plaintiff Gardner irreparable harm and to divest Plaintiff of the exclusive
24 rights in the technology afforded by its U. S. Patent. Defendants will continue engaging in
25 infringing conduct causing Gardner irreparable harm unless this Court enjoins them from
26 doing so.

1 **DATED** this 13th Day of August, 2008.

2 **JOHN W. HATHAWAY, PLLC**

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4 By

5 _____
John W. Hathaway,

6 4600 Columbia Center
7 701 Fifth Avenue
8 Seattle, WA 98104
9 (206)624-7100

10 Attorneys for Plaintiff Conrad O. Gardner

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JOHN W. HATHAWAY, PLLC
ATTORNEYS AT LAW
701 FIFTH AVENUE, SUITE 4600
SEATTLE, WA 98104
206.624.7100/206.624.9292 FAX