Trials@uspto.gov
571-272-7822

Paper 12
Entered: October 26, 2015

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

FORD MOTOR COMPANY,
Petitioner,

v.

PAICE LLC and THE ABELL FOUNDATION, INC.,
Patent Owner.

Case IPR2015-00801
Patent 7,237,634 B2

Before JAMESON LEE, SALLEY C. MEDLEY, and
CARL M. DEFRANCO, *Administrative Patent Judges*.

LEE, *Administrative Patent Judge*.

DECISION
Institution of *Inter Partes* Review
37 C.F.R. § 42.108

I. INTRODUCTION

A. Background

Petitioner filed a Petition ("Pet.") for *inter partes* review of U.S. Patent No. 7,237,634 B2 ("the '634 patent"). Paper 1. The Petition challenges the patentability of claims 80, 111, 114, 144, 241, 264, 266, 267, 278–280, and 282–291. Patent Owner filed a Preliminary Response ("Prelim. Resp.").[1] After considering the Petition and Preliminary Response, we are persuaded, under 35 U.S.C. § 314(a), that Petitioner has demonstrated a reasonable likelihood that claims 111, 144, 241, 264, 266, 267, 278–280, and 282–291 are unpatentable. Pursuant to our authority under 37 C.F.R. § 42.4(a), we institute an *inter partes* review of claims 111, 144, 241, 264, 266, 267, 278–280, and 282–291.

Claims 80 and 114, however, have been challenged by the Petitioner on the same ground of unpatentability in IPR2014-01416, in which trial already was instituted on March 12, 2015. We decline to consider claims 80 and 114 in this proceeding.

B. Related Matters

Petitioner and Patent Owner collectively identify the following civil actions in which the '634 patent has been asserted: (1) *Paice LLC et al. v. Ford Motor Company*, Case No. 1-14-cv-00492 (D. Md.); (2) *Paice LLC et al. v. Hyundai Motor America, et al.*, Case No. 1:2012-cv-00499 (D. Md.).

---

[1] A confidential version was filed as Paper 9, subject to a Motion to Seal (Paper 11), and a public redacted version was filed as Paper 10.

Papers 1, 5. The '634 patent also is the patent involved in the following *inter partes* review proceedings: IPR2014-00904, IPR2014-01416, IPR2015-00606, IPR2015-00722, IPR2015-00758, IPR2015-00784, IPR2015-00785, IPR2015-00787, IPR2015-00790, IPR2015-00791, IPR2015-00799, and IPR2015-00800.

C. The '634 Patent

The '634 patent describes a hybrid vehicle with an internal combustion engine, at least one electric motor, and a battery bank, all controlled by a microprocessor that directs torque transfer between the engine, the motor, and the drive wheels of the vehicle. Ex. 1851, 17:17–56, Fig. 4. The microprocessor compares the vehicle's torque requirements and the engine's torque output against a predefined setpoint and uses the results of the comparison to control the vehicle's mode of operation, e.g., straight-electric, engine-only, or hybrid. *Id*. at 40:16–49. The microprocessor utilizes a hybrid control strategy that operates the engine only in a range of high fuel efficiency, which occurs when the instantaneous torque required to drive the vehicle, or road load (RL), reaches a setpoint (SP) of approximately 30% of the engine's maximum torque output (MTO). *Id*. at 20:61–67; *see also id*. at 13:64–65 ("the engine is never operated at less than 30% of MTO, and is thus never operated inefficiently"). Operating the engine in a range above the setpoint but substantially less than the maximum torque output maximizes fuel efficiency and reduces pollutant emissions of the vehicle. *Id*. at 15:55–58.

Of the challenged claims, independent claims 241 and 267 are illustrative, and are reproduced below.

> 241. A method for controlling a hybrid vehicle, comprising:
> determining instantaneous road load (RL) required to propel the hybrid vehicle responsive to an operator command;
> operating at least one electric motor to propel the hybrid vehicle when the RL required to do so is less than a setpoint (SP);
> operating an internal combustion engine of the hybrid vehicle to propel the hybrid vehicle when the RL required to do so is between the SP and a maximum torque output (MTO) of the engine, wherein the engine is operable to efficiently produce torque above the SP, and wherein the SP is substantially less than the MTO; and
> operating both the at least one electric motor and the engine to propel the hybrid vehicle when the torque RL required to do so is more than the MTO;
> controlling said engine such that combustion of fuel within the engine occurs substantially at a stoichiometric ratio, wherein said controlling the engine comprises limiting a rate of change of torque output of the engine; and
> if the engine is incapable of supplying instantaneous torque required to propel the hybrid vehicle, supplying additional torque from the at least one electric motor.

Id. at 81:33–58.

> 267. A method for controlling a hybrid vehicle, comprising:
> determining instantaneous road load (RL) required to propel the hybrid vehicle responsive to an operator command;
> operating at least one electric motor to propel the hybrid vehicle when the RL required to do so is less than a setpoint (SP);
> operating an internal combustion engine of the hybrid vehicle to propel the hybrid vehicle when the RL required to do so is between the SP and a maximum torque output (MTO) of the engine, wherein the engine is operable to efficiently produce

torque above the SP, and wherein the SP is substantially less than the MTO;

operating both the at least one electric motor and the engine to propel the hybrid vehicle when the torque RL required to do so is more than the MTO; and

rotating the engine before starting the engine such that its cylinders are heated by compression of air therein.

Id. at 83:60–84:11.

D. Evidence Relied Upon

Prior Art References		Date	Exhibit
Severinsky '970	U.S. Pat. No. 5,343,970	Sept. 6, 1994	Ex. 1854
Yamaguchi	U.S. Pat. No. 5,865,263	Feb. 2, 1999	Ex. 1855
Lateur	U.S. Pat. No. 5,823,280	Oct. 20, 1998	Ex. 1856
Suga	U.S. Pat. No. 5,623,104	Apr. 22, 1997	Ex. 1857
Vittone	Oreste Vittone et al., *Fiat Conceptual Approach to Hybrid Car Design*, The 12th International Electric Vehicle Symposium (EVS-12), Vol. 2, pp. 458–469 (1994)	1994	Ex. 1858
Frank	U.S. Pat. No. 5,842,534	Dec. 1, 1998	Ex. 1859

Petitioner also relies on the Declaration of Dr. Jeffrey L. Stein. Ex. 1852.

DOCKET ALARM

Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts

Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research

With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips

Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS
Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS
Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS
Sync your system to PACER to automate legal marketing.