UNITED STATES PATENT AND TRADEMARK OFFICE

_____

BEFORE THE PATENT TRIAL AND APPEAL BOARD

_____

FORD MOTOR COMPANY,
Petitioner,

v.

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

_____

Case IPR2015-00758
Patent 7,237,634 B2

_____

Before SALLY C. MEDLEY, KALYAN K. DESHPANDE, and
CARL M. DEFRANCO, *Administrative Patent Judges.*

DEFRANCO, *Administrative Patent Judge.*

DECISION TO INSTITUTE
37 C.F.R. § 42.108

I. INTRODUCTION

This is a preliminary proceeding to decide the threshold question of whether *inter partes* review of U.S. Patent No. 7,237,634 B2 ("the '634 patent") should be instituted under 35 U.S.C. § 314(a). Specifically, Ford Motor Company ("Ford") filed a Petition ("Pet.") seeking *inter partes* review of claims 80–90, 114–124, 161–171, 215–225, and 294 of the '634 patent, which is owned by Paice LLC & The Abell Foundation, Inc. (collectively, "Paice"). Paper 1. Paice filed a Preliminary Response ("Prelim. Resp.") requesting that we deny institution of *inter partes* review. Paper 11. After considering the Petition and Preliminary Response, we conclude that Ford has demonstrated a reasonable likelihood of prevailing with respect to the challenged claims. Accordingly, we authorize institution of an *inter partes* review of claims 80–90, 114–124, 161–171, 215–225, and 294.

II. BACKGROUND

A.   *The '634 Patent* [1]

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 the transfer of torque from the engine and/or motor to the drive wheels of the vehicle. Ex. 1201, 17:17–56, Fig. 4. The microprocessor "monitors the rate at which the operator depresses pedals [for acceleration and braking] as well as the degree to which [the pedals] are depressed." *Id*. at 27:36–38. These "operator input

---

[1] The '634 patent is involved in several co-pending district court actions, including *Paice LLC v. Ford Motor Co.*, No. 1:14-cv-00492 (D. Md.), filed Feb. 19, 2014, and *Paice LLC v. Hyundai Motor Co.,* No. 1:12-cv-00499 (D. Md.), filed Feb. 16, 2012. Pet. 3.

commands" are provided to the microprocessor "as an indication that an amount of torque" from the engine "will shortly be required" to drive the vehicle. *Id*. at 27:26–27:57. The microprocessor then compares the vehicle's torque requirement 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. For instance, the microprocessor may utilize a control strategy that runs the engine only in a range of high fuel efficiency, such as when the 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, 37:24–44; *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 this manner maximizes fuel efficiency and reduces pollutant emissions of the vehicle. *Id*. at 15:55–58.

B.   *The Challenged Claims*

Of the challenged claims, five are independent—claims 80, 114, 161, 215, and 294. Common among the challenged claims, particularly the dependent claims, is their relation to the electrical current and/or DC voltage supplied by the battery to the motor. For example, many of the challenged dependent claims recite limitations along the lines of "a maximum DC voltage supplied from said battery is at least approximately 500 volts," "a maximum current supplied from said battery is less than approximately 150 amperes," and "a ratio of maximum DC voltage to maximum current supplied is at least 2.5." In our analysis of the claims, we adopt the parties' short-hand reference to these voltage and current-related limitations as the "electrical limitations."

Claims 80 through 83 are illustrative of the claims being challenged:

80.   A method for controlling a hybrid vehicle, comprising:

determining instantaneous road load (RL) required to propel the hybrid vehicle responsive to an operator command;

monitoring the RL over time;

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

wherein said operating the internal combustion engine to propel the hybrid vehicle is performed when: the RL>the SP for at least a predetermined time; or the RL>a second setpoint (SP2), wherein the SP2 is a larger percentage of the MTO than the SP; 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.

81.   The method of claim 80, wherein said operating the at least one electric motor comprises supplying power from a battery; wherein a ratio of maximum DC voltage to maximum current supplied is at least 2.5.

82.   The method of claim 81, wherein the maximum DC voltage is at least approximately 500 volts.

83.   The method of claim 81, wherein the maximum current is less than approximately 150 amperes.

Ex. 1201, 65:11–42.

C.   *The Asserted Grounds of Unpatentability*

Ford asserts three grounds of unpatentability under 35 U.S.C. § 103, namely, that claims 161–166 and 215–220 are unpatentable as obvious over Severinsky,[2] that claims 80–85 and 114–119 are unpatentable as obvious over the combination of Severinsky and Frank,[3] and that claims 86–90, 120–124, 167–171, 221–225, and 294 are unpatentable as obvious over the combination of Severinsky, Frank, Field,[4] and SAE 1996.[5] Pet. 4.

III. ANALYSIS

In this preliminary proceeding, we decide whether Ford has made a threshold showing, supported by sufficient evidence, of a reasonable likelihood that the challenged claims are unpatentable. As our decision is preliminary, we construe the claims only to the extent necessary without making a final determination until the parties have had a full and fair opportunity to present all evidence and argument in support of their case.

A.   *Claim Construction*

In an *inter partes* review, claim terms in an unexpired patent are given their broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b). This standard involves determining the ordinary and customary meaning of the claim terms as would be understood by one of ordinary skill in the art reading the patent's entire written disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). Any special definition for a claim term must be set forth

---

[2] U.S. Patent No. 5,343,970, iss. Sept. 6, 1994 (Ex. 1203).
[3] U.S. Patent No. 5,842,534, iss. Dec. 1, 1998 (Ex. 1204).
[4] PCT Int'l Pub. WO 93/23263, pub. Nov. 25, 1993 (Ex. 1242).
[5] Kozo Yamaguchi, *Development of a New Hybrid System—Dual System*, SAE SPECIAL PUBLICATION SP-1156, pub. Feb. 1996 (Ex. 1230).

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.