Trials@uspto.gov
571-272-7822

Paper No. 35
Entered: January 3, 2022

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

BAYERISCHE MOTOREN WERKE AKTIENGESELLSCHAFT & BMW OF NORTH AMERICA, LLC,

Petitioner,

v.

PAICE LLC & THE ABELL FOUNDATION, INC.,

Patent Owner.

IPR2020-01299
Patent 8,630,761 B2

Before SALLY C. MEDLEY, KALYAN K. DESHPANDE, and ARTHUR M. PESLAK, *Administrative Patent Judges.*

PESLAK, *Administrative Patent Judge*

JUDGMENT
Final Written Decision
Determining All Challenged Claims Unpatentable
35 U.S.C. § 318(a)

I. INTRODUCTION

Bayerische Motoren Werke Aktiengesellschaft and BMW of North America, LLC, (collectively "Petitioner" or "BMW") filed a Petition (Paper 1, "Pet.") requesting an *inter partes* review of claims 1–12 (the "challenged claims") of U.S. Patent No. 8,630,761 B2 (Ex. 1001, "the '761 patent"). Petitioner submitted the Declaration of Dr. Gregory W. Davis in support of the Petition. Ex. 1008. Patent Owner, Paice LLC and the Abell Foundation, Inc., timely filed a Preliminary Response (Paper 8, "Prelim. Resp."). Taking into account the arguments presented in Patent Owner's Preliminary Response, we determined there was a reasonable likelihood Petitioner would prevail in its contention that at least one of the challenged claims of the '761 patent is unpatentable under 35 U.S.C. § 103(a). On January 15, 2021, we instituted this *inter partes* review as to the challenged claims and all grounds presented in the Petition. Paper 10 ("Dec.").

During the course of trial, Patent Owner filed a Patent Owner Response. Paper 18 ("PO Resp."). Patent Owner also filed a Declaration of Dr. Mahdi Shahbakhti in support of its response. Ex. 2016. Petitioner filed a Reply to Patent Owner's Response. Paper 23 ("Pet. Reply"). Petitioner filed a Reply Declaration of Dr. Gregory W. Davis with its Reply. Ex. 1088. Patent Owner filed a Sur-reply. Paper 27 ("Sur-reply"). An oral hearing was held on October 19, 2021 and a transcript of the hearing has been entered into the record. Paper 33 ("Tr.").

We have jurisdiction under 35 U.S.C. § 6. This is a Final Written Decision under 35 U.S.C. § 318(a) as to the patentability of the challenged claims of the '761 patent. For the reasons discussed below, we determine

Petitioner establishes by a preponderance of the evidence that claims 1–12 of the '761 patent are unpatentable.

A. Related Matters

The parties state the '761 patent is asserted in *Paice LLC et al. v. Bayerische Motoren Werke Aktiengesellschaft*, 1:19-cv-03348-SAG (D. Md.). Pet. 74; Paper 5, 2.

B. Real Parties in Interest

Petitioner and Patent Owner each identifies itself as the only real party in interest. Pet. 74; Paper 5, 2.

C. The '761 Patent (Ex. 1001)

The '761 patent issued on January 14, 2014, and is titled "Hybrid Vehicles." Ex. 1001, codes (45), (54). The '761 patent issued from U.S. Patent Application 13/573,728 filed on October 5, 2012 and claims priority through a series of applications to U.S. Provisional Patent Applications 60/100,095, filed on September 14, 1998 and 60/122,296, filed on March 1, 1999. *Id.* at codes (21), (22), (60).

The '761 patent generally relates to hybrid vehicles "in which both an internal combustion engine and one or more electric motors are provided to supply torque to the driving wheels of the vehicle … [for] achieving substantially improved fuel economy and reduced pollutant emissions." Ex. 1001, 1:16–24. The '761 patent describes various modes of operation of the hybrid vehicle powertrain that are "controlled by microprocessor 48 [as] a function of the state of charge of the battery bank, the instantaneous road load, and time." *Id.* at 35:61–66. The '761 patent further describes that "microprocessor 48 controls the vehicle's mode of operation at any given

time in dependence on 'recent history,' as well as on the instantaneous road load and battery charge state." *Id.* at 36:23–26.

Figure 6 of the '761 patent, reproduced below, schematically illustrates an embodiment of the claimed invention.

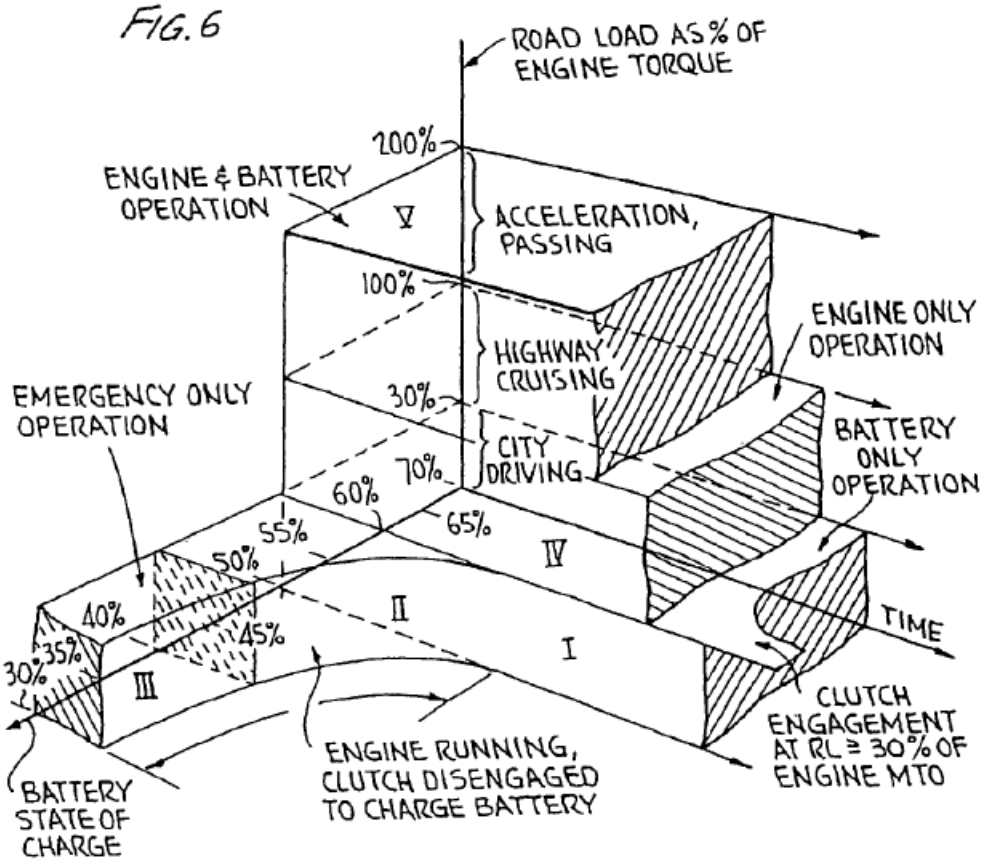

Figure 6 is a three-axis schematic with time on one axis, road load on a second axis, and battery state of charge on the third axis, illustrating that the mode of vehicle operation is a function of the state of charge of the battery bank, the instantaneous road load, and time. *Id.* 21:53–57.

As shown in Figure 6, "during city driving (mode I), defined in this example as driving where the vehicle's instantaneous torque requirements, or 'road load,' is up to 30% of the engine's maximum torque, the vehicle is

operated as a 'straight electric' car." *Id.* at 36:27–31. In mode I, "the clutch [is] disengaged and energy from the battery bank 22 [is] used to power traction motor 25 to propel the vehicle, as long as the battery remains charged to between 50 and 70% of its full charge." *Id.* at 36:31–34. "If the charge falls to below a given value … mode II is entered as indicated, the engine is started, and the starter motor 21 is operated as a generator to charge the battery to substantially full charge." *Id.* at 36:34–39. Mode III permits operation of the vehicle as an electric car "when the battery falls to below 40% of full charge, for example, if there is a fault in the engine or charging system, but only on an emergency basis; such deep discharge is harmful to battery life." *Id.* at 36:39–44. "During highway cruising, region IV, where the road load is between about 30% and 100% of the engine's maximum torque output, the engine alone is used to propel the vehicle." *Id.* at 36:45–47. "If the operator then calls for additional power, e.g. for acceleration or passing, region V is entered." *Id.* at 37:3–4. There, "the microprocessor detects that the road load exceeds 100% of the engine's maximum torque output, it controls inverter/charger 27 so that energy flows from battery bank 22 to traction motor 25, providing torque propelling the vehicle in addition to that provided by engine 40." *Id.* at 37:3–9.

The above embodiment includes a controlled transition from low-speed operation to highway cruising at a transition point or set point (i.e., between operation in modes I and IV). *Id.* at 39:41–46. Using a constant set point, however, can sometimes lead to undesirable engine starting and shut-off, until extended highway cruising is attained. *Id.* at 39:63–66. To address this potential undesirable effect, the '761 patent uses the microprocessor to monitor the vehicle's operation over a period of days or weeks and adjust the

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.