

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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FORD MOTOR COMPANY,  
Petitioner,

v.

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

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Case IPR2015-00767  
Patent 7,455,134 B2

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

MEDLEY, *Administrative Patent Judge*.

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

I. INTRODUCTION

Petitioner, Ford Motor Company, filed a Petition requesting an *inter partes* review of claims 1, 2, 4–6, 16–20, 27, 40, 41, 43, 44, 53–55 and 57–60 of U.S. Patent No. 7,455,134 B2 (Ex. 1101, “the ’134 patent”). Paper 2 (“Pet.”). Patent Owner, Paice LLC & The Abell Foundation, Inc., filed a Preliminary Response in both unredacted and redacted forms. Papers 11, 12

(“Prelim. Resp.”).<sup>1</sup> Patent Owner also filed a Motion to Seal. Paper 13 (“Mot. to Seal.”). We have jurisdiction under 35 U.S.C. § 314(a), which provides that an *inter partes* review may not be instituted “unless . . . the information presented in the petition . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.”

Based on the facts before us, we exercise discretion to deny review under 35 U.S.C. § 325(d).

#### A. *Related Proceedings*

The ’134 patent is involved in *Paice LLC v. Ford Motor Co.*, No. 1-14-cv-00492, filed on February 19, 2014, in the United States District Court for the District of Maryland. Pet. 1. Petitioner twice filed an earlier Petition for *inter partes* review of the ’134 patent, but we did not institute trial. *Ford Motor Co. v. Paice LLC & The Abell Foundation, Inc.*, Case IPR2014-00568 (PTAB Sept. 8, 2014) (Paper 12), and *Ford Motor Co. v. Paice LLC & The Abell Foundation, Inc.*, Case IPR2014-00852 (PTAB Nov. 20, 2014) (Paper 11).

#### B. *The ’134 Patent (Ex. 1201)*

The ’134 patent describes a hybrid vehicle with an internal combustion engine, a traction motor, a starter motor, and a battery bank, all controlled by a microprocessor. Ex. 1201, Abs. Figure 4, reproduced below, shows a block diagram of a hybrid vehicle. *Id.* at Fig. 4.

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<sup>1</sup> Citations are to the redacted version of Patent Owner’s Preliminary Response (Paper 12, “Prelim. Resp.”).

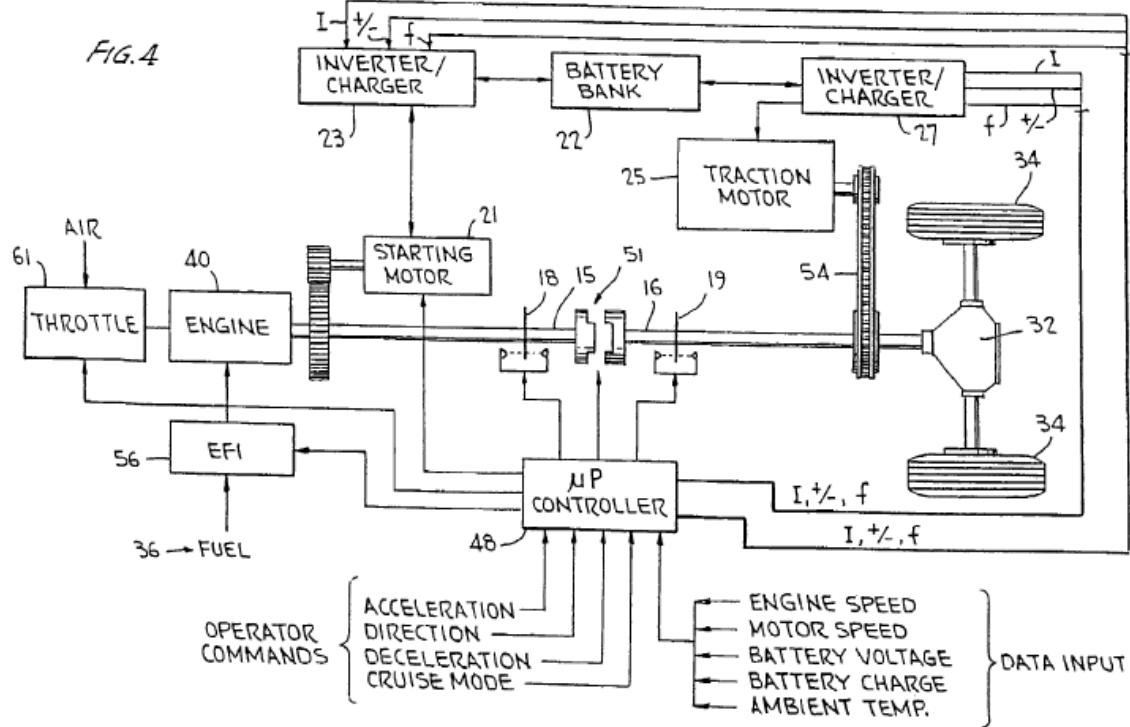


Figure 4 illustrates a block diagram of a hybrid vehicle.

The hybrid vehicle includes two wheels 34 operable to propel the vehicle, traction motor 25, starting motor 21, and engine 40 coupled to starting motor 21. *Id.* Inverter/charger 27 is coupled to traction motor 25 and inverter/charger 23 is coupled to starting motor 21. *Id.* Battery bank 22 is coupled to inverter/charger 23, as well as inverter/charger 27. Controller 48 controls the operation of engine 40 and motors 21 and 25. *Id.* The components of the vehicle “are to be sized so that the ratio between battery voltage under load to peak current is at least about 2.5, and preferably is at least 3.5 to 4:1.” *Id.* at 50:5–9.

### C. Claims

Petitioner challenges independent claim 1 and dependent claims 2, 4–6, 16–20, 27, and 40, which depend directly or indirectly from claim 1.

Petitioner also challenges independent claim 41 and dependent claims 43, 44, 53–55, and 57, which depend either directly or indirectly from claim 41.

Petitioner also challenges independent claim 58 and dependent claims 59 and 60 which depend directly from claim 58. Claim 1 reads:

1. A hybrid vehicle, comprising:
  - at least two wheels, operable to receive power to propel said hybrid vehicle;
  - a first alternating current (AC) electric motor, operable to provide power to said at least two wheels to propel said hybrid vehicle;
  - a second AC electric motor;
  - an engine coupled to said second electric motor, operable to provide power to said at least two wheels to propel the hybrid vehicle, and/or to said second electric motor to drive the second electric motor to generate electric power;
  - a first alternating current-direct current (AC-DC) converter having an AC side coupled to said first electric motor, operable to accept AC or DC current and convert the current to DC or AC current respectively;
  - a second AC-DC converter coupled to said second electric motor, at least operable to accept AC current and convert the current to DC;
  - an electrical storage device coupled to a DC side of said AC-DC converters, wherein the electrical storage device is operable to store DC energy received from said AC-DC converters and provide DC energy to at least said first AC-DC converter for providing power to at least said first electric motor; and
  - a controller, operable to start and stop the engine to minimize fuel consumption;
  - wherein a ratio of maximum DC voltage on the DC side of at least said first AC-DC converter coupled to said first electric motor to current supplied from said electrical storage device to at least said first AC-DC converter, when maximum current is so supplied, is at least 2.5.

*Id.* at 56:43–57:7.

*D. Asserted Grounds of Unpatentability*

Petitioner contends that claims 1, 2, 4–6, 16–20, 27, 40, 41, 43, 44, 53–55 and 57–60 of the '134 patent are unpatentable under 35 U.S.C. § 103 based on the following specific grounds:

Reference[s]	Basis	Challenged Claim(s)
'455 PCT publication <sup>2</sup> and Severinsky <sup>3</sup>	§ 103	1, 2, 4–6, 19, 20, 27, 40, 41, 43, 44, 57, and 58
'455 PCT publication, Severinsky, and Furutani <sup>4</sup>	§ 103	16–18, 53–55, and 60
'455 PCT publication, Severinsky, and Sasaki <sup>5</sup>	§ 103	59

II. ANALYSIS

*A. Exercising Discretion to Deny Institution*

An issue in this proceeding is whether we should exercise our discretion and deny institution under 35 U.S.C. § 325(d). Pet. 2–4; Prelim. Resp. 10–20. That section states, in relevant part, that “[i]n determining whether to institute or order a proceeding under this chapter, chapter 30, or chapter 31, the Director may take into account whether, and reject the petition or request because, the same or substantially the same prior art or arguments previously were presented to the Office.”

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<sup>2</sup> PCT International Publication Number WO 00/015455, published Mar. 23, 2000 (Ex. 1203) (“the '455 PCT publication”).

<sup>3</sup> U.S. Patent No. 5,343,970, issued Sept. 6, 1994 (Ex. 1206) (“Severinsky”).

<sup>4</sup> U.S. Patent No. 5,495,906, issued Mar. 5, 1996 (Ex. 1205) (“Furutani”).

<sup>5</sup> S. Sasaki et al., *Toyota's Newly Developed Electric-Gasoline Engine Hybrid Powertrain System*, 14<sup>th</sup> International Electronic Vehicle Symposium and Exposition (Dec. 1997) (Ex. 1207) (“Sasaki”).

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