

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 IPR2014-00570  
Patent 8,214,097 B2

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

DEFRANCO, *Administrative Patent Judge*.

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

## I. INTRODUCTION

Ford Motor Company (“Ford”) filed a Petition requesting an *inter partes* review of claims 30–33, 35, 36, 38, and 39 of U.S. Patent No. 8,214,097 B2 (“the ’097 patent”). Paper 1 (“Pet.”). The owner of the ’097 patent, Paice LLC & The Abell Foundation, Inc. (“Paice”), filed a Preliminary Response. Paper 8 (“Prelim. Resp.”).<sup>1</sup> We have jurisdiction under 35 U.S.C. § 314(a), which provides that an *inter partes* review may not be instituted “unless . . . there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” After considering the Petition and Preliminary Response, we conclude that Ford has demonstrated a reasonable likelihood that it would prevail in showing unpatentability of all but one of the challenged claims. Accordingly, we authorize institution of an *inter partes* review as to claims 30–33, 35, 36, and 39 of the ’097 patent, but deny review as to claim 38.

## II. BACKGROUND

### A. *The ’097 Patent*<sup>2</sup>

The ’097 patent describes a hybrid vehicle with an internal combustion engine, an electric motor, and a battery bank, all controlled by a microprocessor that directs the transfer of electrical and mechanical power

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<sup>1</sup> Paice filed both redacted and unredacted versions of the Preliminary Response. Papers 7, 8. Our decision cites to the redacted version, i.e., Paper 8, which is marked “Public.”

<sup>2</sup> The ’097 patent is also the subject of a co-pending case, *Paice, LLC et al. v. Ford Motor Company*, No. 1-14-cv-00492, filed Feb. 19, 2014, in the U.S. District Court for the District of Maryland. Pet. 2.

between the engine, the motor, and the wheels of the vehicle. Ex. 1001, Abs., Fig. 4. The hybrid vehicle features a hybrid control strategy that limits the rate of increase of the engine's output torque so that fuel combustion in the engine occurs at a mixture near the stoichiometric air-fuel ratio. *Id.* at 37:2–42. By limiting the rate of increasing engine torque and maintaining a near stoichiometric air-fuel mixture, the hybrid control strategy of the '097 patent increases fuel efficiency and reduces undesirable emissions during start and operation of the vehicle. *Id.* at 38:62–39:14.

*B. Challenged Claims*

Ford challenges independent claim 30 and dependent claims 31–33, 35, 36, 38, and 39 of the '097 patent. Claim 30 is illustrative:

30. A hybrid vehicle, comprising:

- one or more wheels;
- an internal combustion engine operable to propel the hybrid vehicle by providing torque to the one or more wheels, wherein said engine has an inherent maximum rate of increase of output torque;
- at least one electric motor operable to propel the hybrid vehicle by providing torque to the one or more wheels;
- a battery coupled to the at least one electric motor, operable to provide electrical power to the at least one electric motor; and
- a controller, operable to control the flow of electrical and mechanical power between the engine, the at least one electric motor, and the one or more wheels, responsive to an operator command;
- wherein said controller controls said at least one electric motor to provide additional torque when the amount of torque being provided by said engine is less than the amount of torque required to operate the vehicle; and

wherein said controller controls said engine such that a rate of increase of output torque of said engine is limited to less than said inherent maximum rate of increase of output torque, and wherein the controller is operable to limit the rate of change of torque produced by the engine such that combustion of fuel within the engine occurs at a substantially stoichiometric ratio.

Ex. 1001, 60:4–29.

C. *Evidence of Record*

Ford relies upon the following prior art as its basis for challenging the claims of the '097 patent. Ford also proffers the Declaration of Dr. Jeffrey L. Stein. Ex. 1002.

References	Patents/Printed Publications	Date	Exhibit
'455 PCT publication	PCT INTERNATIONAL PUBLICATION No. WO 00/15455	Mar. 23, 2000	1004
Caraceni	A. Caraceni et al., <i>Hybrid Power Unit Development for Fiat Multipla Vehicle</i> , SAE TECHNICAL PAPER 981124	1998	1005
Anderson	C. Anderson & E. Pettit, <i>The Effects of APU Characteristics on the Design of Hybrid Control Strategies for Hybrid Electric Vehicles</i> , SAE TECHNICAL PAPER 950493	1995	1006
Yamaguchi	U.S. Patent No. 5,865,263	Feb. 2, 1999	1007
Katsuno	U.S. Patent No. 4,707,984	Nov. 24, 1987	1008
Severinsky	U.S. Patent No. 5,343,970	Sep. 6, 1994	1009
Boberg	U.S. Patent No. 5,959,420	Sep. 28, 1999	1012

*D. Asserted Grounds of Unpatentability*

Ford challenges the patentability of claims 30–33, 35, 36, 38, and 39 of the '097 patent based on the following specific grounds:

<b>Ground</b>	<b>Basis</b>	<b>Challenged Claims</b>
§ 102(b)	'455 PCT publication	38
§ 103	'455 PCT publication	38
§ 103	Caraceni	30, 31, 35, 36
§ 103	Caraceni and Boberg	30, 31, 35, 36
§ 103	Caraceni, Boberg, and Yamaguchi	32
§ 103	Caraceni, Boberg, Yamaguchi, and Katsuno	33
§ 103	Severinsky and Anderson	30, 31, 35, 36, 38, 39
§ 103	Severinsky, Anderson, and Yamaguchi	32
§ 103	Severinsky, Anderson, Yamaguchi, and Katsuno	33

### III. ANALYSIS

*A. Standing*

Paice contends that Ford is “barred or estopped” under 37 C.F.R. § 42.104(a) from requesting *inter partes* review of the '097 patent due to an alleged breach of an arbitration agreement between the parties. Prelim. Resp. 6–13. According to Paice, the arbitration agreement includes “unambiguous terms” that purportedly limit Ford’s ability to “challeng[e] the claims of the '097 patent.” *Id.* at 7, 9–10. Postulating that Ford is in breach of those terms, Paice asserts that Ford has failed to demonstrate the requisite standing to file the instant Petition. *Id.* at 11.

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