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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/789,803	03/08/2013	Mark John Jennings	83338876	2533
28395	7590	11/17/2016	EXAMINER	
BROOKS KUSHMAN P.C./FGTL 1000 TOWN CENTER 22ND FLOOR SOUTHFIELD, MI 48075-1238			LEONG, JONATHAN G	
			ART UNIT	PAPER NUMBER
			1725	
			NOTIFICATION DATE	DELIVERY MODE
			11/17/2016	ELECTRONIC

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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* MARK JOHN JENNINGS<sup>1</sup>

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Appeal 2015-004658  
Application 13/789,803  
Technology Center 1700

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Before CHUNG K. PAK, JEFFREY T. SMITH, and  
WESLEY B. DERRICK, *Administrative Patent Judges*.

DERRICK, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on an appeal under 35 U.S.C. § 134(a) from the Examiner's maintained final rejection of claims 1 and 3.<sup>2</sup> We have jurisdiction pursuant to 35 U.S.C. § 6(b).

We AFFIRM.

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<sup>1</sup>According to Appellant, the Real Party in Interest is Ford Global Technologies, LLC. Appeal Brief filed September 25, 2014 ("App. Br."), 2.

<sup>2</sup> Claims 4 and 5 stand withdrawn from consideration. Final Office Action entered April 25, 2014 ("Final Act."), 2.

### CLAIMED SUBJECT MATTER

Appellant's claimed invention is generally directed to a method for controlling a vehicle that includes a fuel cell system and an energy storage unit. Spec. Abstract.

Claim 1 is illustrative:

1. A method for controlling a vehicle including a fuel cell system and an energy storage unit, the method comprising:  
selecting, while the fuel cell system is not charging the energy storage unit, a target operating power for the fuel cell system that generally minimizes drive cycle hydrogen consumption based on vehicle power demand and a ratio of a change in energy stored in the energy storage unit to a mass of hydrogen consumed to generate the change in energy stored, wherein the ratio is based on a mass of hydrogen consumed by the fuel cell system while charging the energy storage unit; and  
operating the fuel cell system to generate the selected target operating power.

App. Br. Claims Appendix.

### REJECTION

The Examiner maintains the final rejection of claims 1 and 3 under 35 U.S.C. § 103(a) as obvious over Brigham et al. (US 5,820,172, issued October 13, 1998) ("Brigham") in view of Paganelli et al., *Optimizing Control Strategy for Hybrid Fuel Cell Vehicle* (2002) ("Paganelli").<sup>3</sup>

### DISCUSSION

Having reviewed the Examiner's rejection in light of arguments advanced by Appellant in the Appeal Brief and Reply Brief,<sup>4</sup> we are not

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<sup>3</sup> Examiner's Answer entered January 16, 2015 ("Ans.").

<sup>4</sup> Reply Brief filed March 20, 2015.

persuaded that the Examiner errs reversibly in concluding that claims 1 and 3 are unpatentable for obviousness. We add the following for emphasis.

Appellant argues claims 1 and 3 as a group on the basis of claim 1, to which we limit our discussion. App. Br. 2–3.

The Examiner finds that Brigham discloses a method for controlling the main power unit (HPU) of a hybrid vehicle, where the HPU can be a fuel cell, and an energy storage system (ESS), where the ESS can be battery, that involves selecting, while the fuel cell is not charging the energy storage system, an operating strategy (a target operating power) for the fuel cell that generally minimizes fuel cost (drive cycle fuel consumption). Ans. 2–3 (citing, *inter alia*, Brigham Abstract, col. 3, ll. 45–48, col. 4, ll. 13–16, 30–36, 40–43, Fig. 3). As explained by the Examiner, the disclosed method takes into account the efficiency of producing power directly using the HPU and the charging efficiency of the ESS for power that is available to be drawn from the ESS, and, based on motive demand power (vehicle power demand), determines the target operating power of the fuel cell (as well as the power to be drawn from the ESS) to minimize fuel consumption and then operates the fuel cell at that power. Ans. 3.

The Examiner acknowledges that Brigham does not explicitly disclose that the fuel for the fuel cell is hydrogen, and relies on Paganelli’s disclosure of hydrogen as a fuel being used in similar fuel cell and energy storage unit for use in hybrid vehicles to shown its use in such was well known in the art at the time of the invention. Ans. 3.

The Examiner concludes that the combined disclosures of Brigham and Paganelli would have led one of ordinary skill in the art at the time of the invention to the method recited in claim 1. Ans. 3.

Appellant argues that the significant amount of time that elapsed between the publication of Brigham (“more than a decade”) and the filing date of the instant application provides evidence of the non-obviousness of the method of claim 1. App. Br. 2–3.

We find this argument wholly without persuasive merit as it fails to identify reversible error in the Examiner’s factual findings or conclusion of obviousness. Moreover, the age of a prior art reference alone is insufficient to establish non-obviousness. *In re Wright*, 569 F.2d 1124, 1127 (CCPA 1977) (“The mere age of the references is not persuasive of the unobviousness of the combination of their teachings, absent evidence that, notwithstanding knowledge of the references, the art tried and failed to solve the problem.”).

Appellant also argues that the combined disclosures of Brigham and Paganelli “cannot yield the claimed invention” because Brigham teaches that that the quantity of fuel consumed to provide the energy stored in the energy storage system is initially estimated, and is then incremented or decremented based on subsequent operating conditions, rather than based on an amount of fuel consumed by the fuel cell while actually charging the energy storage system, and because Paganelli does not disclose or suggest selecting a target operating power by determining the energy stored in an energy storage system based on the amount of fuel consumed by a fuel cell to achieve the level of stored energy (the charge) of the energy storage system. App. Br. 3 (citing Brigham col. 14, ll. 21–22, 38–55).

We find Appellant’s arguments unpersuasive of reversible error because, *inter alia*, they fail to address the rejection as set forth by the Examiner and what is reasonably taught or suggested by the cited prior art.

Appellant’s assertions regarding what Brigham “teaches” do not address the portions of Brigham relied on by the Examiner, but are rather directed solely to the language of Brigham’s claim 1.<sup>5</sup> However, Brigham’s disclosures are not so limited, and the entirety of Brigham’s disclosures must be evaluated for what they would have fairly suggested to one of ordinary skill in the art at the time of the invention. *Merck & Co. v. Biocraft Labs., Inc.*, 874 F.2d 804, 807 (quoting *In re Lamberti*, 545 F.2d 747, 750 (CCPA 1976)) (“[T]he fact that a specific [embodiment] is taught to be preferred is not controlling, since all disclosures of the prior art, including unpreferred embodiments, must be considered.”); *In re Boe*, 355 F.2d 961, 965 (CCPA 1966) (All of the disclosures in a prior art reference “must be evaluated for what they fairly teach one of ordinary skill in the art.”); *In re Preda*, 401 F.2d 825, 826 (CCPA 1968) (it is well established that in evaluating references, “it is proper to take into account not only the specific teachings of the references but also the inferences which one skilled in the art would reasonably be expected to draw therefrom.”). As such, Appellant’s arguments regarding Paganelli fail to address the basis for the Examiner’s reliance on this reference.

Further, we emphasize that we agree with the Examiner that Paganelli’s disclosure of using hydrogen as a fuel source for a fuel cell in a hybrid vehicle (Paganelli Abstract; 2, col. 2), in combination with Brigham’s disclosure of selecting an operating strategy for a hybrid vehicle that minimizes fuel usage while the vehicle’s fuel cell is not charging the

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<sup>5</sup> Appellant cites col. 14, ll. 21–22, 38–55 of Brigham, which refer to portions of Brigham’s claim 1. App. Br. 3.

vehicle's energy storage system based on the motive demand power (vehicle power demand) by accounting for the quantity of fuel used to charge the energy storage system, in addition to the quantity of fuel consumed by the fuel cell, and operating the vehicle according to the operating strategy (*see, e.g.*, Brigham col. 4, ll. 13–45), reasonably would have led one of ordinary skill in the art at the time of the invention to the method of claim 1.

Accordingly, Appellant's arguments do not establish reversible error in the Examiner's conclusion that one of ordinary skill in the art reasonably would have arrived at the method of claim 1 in view of the combined disclosures of Brigham and Paganelli. *In re Jung*, 637 F.3d 1356, 1365–66 (Fed. Cir. 2011) (explaining that even if the examiner had failed to make a prima facie case, it has long been the Board's practice to require an appellant to identify the alleged error in the examiner's rejections). We accordingly sustain the Examiner's rejection of claims 1 and 3 under 35 U.S.C. § 103(a).

#### DECISION

In view of the foregoing, the Examiner's rejection of claims 1 and 3 under 35 U.S.C. § 103(a) is AFFIRMED.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1).

AFFIRMED