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EXAMINER	
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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte CHIHIRO WAKE and KOICHIRO MIYATA

Appeal 2015-005973
Application 11/563,895
Technology Center 1700

Before JEFFREY T. SMITH, KAREN M. HASTINGS, and MICHAEL P. COLAIANNI, *Administrative Patent Judges*.

SMITH, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

This is an appeal under 35 U.S.C. § 134 from a final rejection of claims 8–14. We have jurisdiction under 35 U.S.C. § 6.

We REVERSE.

Appellants' appealed invention is illustrated by independent claim 8, reproduced below:

> 8. A start up control method for a fuel cell operated for power generation consuming a fuel gas supplied to an anode and an oxygen-containing gas supplied to a cathode and receiving a start up signal for starting operation of said fuel cell and a stop signal for stopping operation of said fuel cell, the start up control method comprising the steps of:
>
> determining that the fuel gas at said anode has been replaced by a scavenging gas; and
>
> prohibiting the start up of said fuel cell before the fuel gas at said anode has been replaced by the scavenging gas, when the start up signal is received during scavenging of said anode being performed in response to the stop signal.

Appellants request review of the Examiner's rejection of claims 8–14 under 35 U.S.C. § 103(a) as unpatentable over Goebel (US 2005/0221148 A1, published October 6, 2005), Inai et al. (US 2005/0136297 A1, published June 23, 2005) ("Inai") and Meredith et al. (US 2004/0146755 A1, published July 29, 2004) ("Meredith"). *See* Appeal Brief, *generally*.

OPINION

Prior Art Rejection [1]

After review of the respective positions provided by Appellants and the Examiner, we REVERSE the Examiner's prior art rejection of claims 8–14 for the reasons presented by Appellants. We add the following.

[1] We limit our discussion to independent claim 8.

Independent claim 8 is directed to a start up control method to prepare a fuel cell for the start of the next operation of the fuel cell which includes a scavenging step for an anode of the fuel cell system. Spec. 1–2. The method of claim 8 specifically requires a step of prohibiting the start up of said fuel cell before the fuel gas at said anode has been replaced by the scavenging gas when a start up is attempted once the scavenging of the anode is initiated in response to the stop signal. *Id.* at 6, 30–31.

We refer to the Examiner's Final Action for a statement of the rejection. Final Act. 2–5.[2]

Appellants argue the Examiner has not established that it would have been obvious to incorporate a determining and prohibiting step into the fuel cell system of Goebel in light of the teachings of Inai because Inai does not recognize a relationship between water discharge and fuel gas being replaced with scavenging gas. App. Br. 4–5. According to Appellants, Inai's pressure sensors 41 and 61 are used to determine if the discharge of remaining water has been completed and not to determine that the fuel gas at the anode has been replaced by a scavenging gas as claimed. App. Br. 5; Inai ¶ 72. That is, Appellants argue Inai uses the pressure sensors 41, 61 to determine whether or not any remaining water in the anode has been discharged, a step that has nothing to do with whether the fuel gas is completely replaced with the scavenging gas. App. Br. 5.

[2] A discussion of Meredith is unnecessary for disposition of this appeal. According to the Examiner's Final Action, the relevance of Meredith hinges on the appropriateness of the combination of Goebel and Inai in rendering obvious the incorporation of a prohibiting step as claimed based on the disclosure of Inai. Final Act. 3–5.

We agree with Appellants. The Examiner found Goebel teaches a process of purging residual hydrogen from a fuel cell's anode at any time of a fuel cell system's operation, such as startup, to inhibit the formation of high voltage potential that could damage the fuel cell. Final Act. 2–3; Goebel Abstract, ¶ 26. The Examiner found Goebel does not disclose the determining and prohibiting steps recited in claim 8. Final Act. 3. To overcome this difference, the Examiner relied on Inai as disclosing a fuel cell scavenging method using pressure sensors at the inlet and outlet of an anode to determine if the water discharge from the anode has been completed. Final Act. 3; Ans. 11; Inai Figure 2, ¶¶ 24, 69–72. The Examiner found that the pressure sensors inherently determine that the fuel gas has been replaced by a scavenging gas. Final Act. 3. According to the Examiner, one skilled in the art would have modified the fuel cell scavenging method of Goebel to incorporate the claimed determining and prohibiting steps in view of Inai's disclosure. Final Act. 4. However, the Examiner directs us to no portion of Inai that equates Inai's pressure measurements for determining the water discharge status to the status of the fuel gas in the anode. In addition, the Examiner has not provided an adequate technical explanation of why Inai's water discharge determination is necessarily a determination that the fuel gas in Inai's fuel cell has been replaced by a scavenging gas. Thus, the Examiner has not adequately explained how one skilled in the art would have modified Goebel's fuel cell scavenging method to include the claimed determining and prohibiting steps.

Under these circumstances, we cannot conclude that the Examiner has met the minimum threshold of establishing obviousness under 35 U.S.C.

§ 103(a). *See In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992); *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007) (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)).

Accordingly, we reverse the Examiner's prior art rejection under 35 U.S.C. § 103(a) for the reasons presented by Appellants and given above.

ORDER

The Examiner's prior art rejection of claims 8–14 reversed.

REVERSED