

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte STEFAN BONEBERG,
BERND MONZEL and THOMAS STARK

Appeal 2008-1241
Application 10/269,933
Technology Center 1700

Decided: April 28, 2008

Before THOMAS A. WALTZ, LINDA M. GAUDETTE, and
MICHAEL P. COLAIANNI, *Administrative Patent Judges*.

COLAIANNI, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134 the final rejection of claims 3, 5, and 6. We have jurisdiction over the appeal pursuant to 35 U.S.C. § 6(b).¹

¹ A hearing was held in this appeal on April 9, 2008.

We REVERSE.

INTRODUCTION

Appellants claim a fuel cell system comprising, in relevant part, a recombiner wherein the recombiner comprises a catalyst coating applied on an interior surface of the housing (claim 3). Appellants also claim a fuel cell system comprising, in relevant part, a recombiner wherein the recombiner is thermally connected to receive a flow of heat from a component of the fuel cell system that reaches operating temperature during cold-start (claim 6).

Claims 3 and 6 are illustrative:

3. A fuel cell system comprising:

a housing capable of containing leaked fluids originating from a component of the fuel cell system;

a recombiner that is disposed in said housing, and is capable of converting the leaked fluids into a non-explosive mixture; and

at least one other component of the fuel cell system;

wherein the recombiner comprises a catalyst coating applied on an interior surface of the housing.

6. A fuel cell system comprising:

a housing capable of containing leaked fluids originating from a component of the fuel cell system;

a recombiner that is disposed in said housing, and is capable of converting the leaked fluids into a non-explosive mixture; and

at least one other component of the fuel cell system;

wherein the recombiner is thermally connected to receive a flow of heat from a component of the fuel cell system that reaches operating temperature during cold-start.

The Examiner relies on the following prior art references as evidence of unpatentability:

Winsel (as translated) ²	EP 442042 A2	Aug. 21, 1991
Stockburger	5,429,885	Jul. 4, 1995

The rejections as presented by the Examiner are as follows:

1. Claims 3, 5, and 6 are rejected under 35 U.S.C. § 103 as being unpatentable over Stockburger in view of Winsel.

Appellants separately argue independent claims 3 and 6.

OPINION

CLAIM 3

The Examiner finds that Stockburger discloses all the features of claim 3, except that the recombiner comprises a catalyst coating on an interior of the housing (Ans. 3). The Examiner finds that Winsel discloses catalytically recombining hydrogen and oxygen by using a metal catalyst supported on an electrolyte-resistant support, which constitutes a coating (Ans. 3-4). Based on these findings, the Examiner concludes that it would have been obvious to use the catalyst and support of Winsel as the

² We rely on the February 2006 translation provided by Schreiber Translations, Inc. to the United States Patent and Trademark Office. The Winsel pagination referenced in the Decision reflects that of the translation and not the pagination of the original foreign language document.

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recombiner of Stockburger's fuel cell system. The Examiner states that though Stockburger does not teach the specific location of the recombiner, it would have been within the skill of the artisan to place the recombiner where hydrogen is likely to be present (Ans. 4).

Appellants argue that nothing in Stockburger or Winsel teaches or suggests that the recombiner comprises a catalyst coating applied on an interior surface of the housing (Br. 6). We agree.

We begin our analysis by construing Appellants' claim phrase "the recombiner comprises a catalyst coating applied on an interior surface of the housing."

During examination, claim terms are given their broadest reasonable interpretation consistent with the Specification. *In re Am. Acad. of Sci. Tech Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004). The Patent and Trademark Office applies to the claim terms the broadest reasonable meaning of the words in their ordinary usage as they would be understood by one of ordinary skill in the art, taking into account whatever enlightenment by way of definitions or otherwise that may be afforded by the written description contained in the applicant's Specification. *In re Morris*, 127 F.3d 1048, 1054 (Fed. Cir. 1997).

The Examiner construes the claim language "the recombiner comprises a catalyst" as not precluding other components such that the claim does not require the simplification (i.e., merely a catalyst coating on the interior surface of the housing) as compared to the prior art. However, the Examiner's construction fails to take into account the ordinary meaning of the claim language and Appellants' description of the argued claim phrase in the Specification.

Appellants' Specification describes various ways to position the recombiner within the housing (Spec. 5). One of the ways described in the Specification includes a catalyst coated on an interior portion of the housing (Spec. 5). The Specification indicates an alternative and different way to attach the catalyst to the housing that includes applying the catalyst to a support such as a wire mesh and then attaching the wire mesh to the interior of the housing (Spec. 5). The Specification clearly differentiates between a catalyst coated *on* an interior portion of the housing and a catalyst applied to a support (e.g., a wire mesh), which is subsequently attached to the interior of the housing.

Appellants' Specification further indicates that using a catalytic coating is advantageous because such can be applied to the housing interior using well-known coating processes of low complexity, such as dipping or spray coating (Spec. 5). Appellants argue that using the catalytic coating of the claimed invention provides a simplification over the prior art (Br. 5 and 6).

Based on Appellants' Specification and arguments, we construe such claim phrase "the recombiner comprises a catalyst coating applied on an interior surface of the housing" by its ordinary meaning that the catalyst coating is applied on the interior surface such that the coating is in direct, physical contact with the interior surface of the housing. In other words, Appellants' "alternatively" disclosed method of catalyst attachment by applying the catalyst to a support and then attaching the support to the interior of the housing is excluded from the argued claim phrase.

The Examiner relies on Winsel to show forming a catalytic coating. Winsel discloses that the catalyst metal is located on a hydrophobized

electrolyte-resistant support (Winsel 9). Winsel further discloses that the electrolyte-resistant support is formed by rolling out the carrier material and PTFE powder into a catalyst part (Winsel 9). Winsel discloses that the catalyst part is preferably either rolled out or pasted into the meshes of a metallic net (Winsel 9). Winsel discloses that the catalysts are then arranged in the gas flow paths to purify the oxygen flow from one fuel cell to the next (Winsel 8 and 9). Accordingly, Winsel discloses mounting the catalyst onto a support (i.e., the wire mesh and/or the electrolyte resistant support), which is then mounted in the gas flow path.

Based on our claim construction, Winsel's disclosure to apply the catalyst to a wire mesh support and/or on an electrolyte-resistant support is not a catalytic coating in direct, physical contact with the interior of the wall forming the gas flow path. Moreover, Winsel only discloses that the catalyst is formed into a "catalyst part" that is mounted "in" the gas flow path, and not that a catalytic coating is formed on the walls of the gas flow path (Winsel 8 and 9). The Examiner admits that Stockburger does not disclose that the catalyst is a coating on an interior surface of the housing (Ans. 3).

Therefore, Stockburger and Winsel fail to disclose or suggest the argued claim feature. However, to establish a prima facie case of obviousness all the claim features must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 985 (CCPA 1974). Accordingly, we cannot sustain the Examiner's § 103 rejection of claims 3 and 5 over Stockburger in view of Winsel.

CLAIM 6

The Examiner finds that Stockburger discloses all the features of claim 6, except that “the recombiner is thermally connected to receive a flow of heat from a component of the fuel cell system that reaches operating temperature during cold-start” (Ans. 3). The Examiner relies on Winsel as disclosing that the catalyst recombiner is thermally connected to the cooling water circuit of the fuel cells (Ans. 3-4). The Examiner finds that Winsel’s coolant system would also be a component able to reach operating temperature upon cold startup (Ans. 4). The Examiner concludes that it would have been obvious to thermally connect the recombiner of Stockburger to coolant water as shown by Winsel (Ans. 4).

Appellants argue that the claim feature “the recombiner is thermally connected to receive a flow of heat from a component of the fuel cell system that reaches operating temperature during cold start” is not taught or suggested by Stockburger or Winsel (Br. 7). Appellants contend that Winsel discloses that the cooling water removes heat from the recombiner such that the claim feature that the recombiner “receive a flow of heat” is missing from the prior art (Br. 7). We agree.

Winsel plainly indicates that the recombinators (i.e., recombiners) produce heat and that the recombinators (i.e., recombiners) are connected to the electrolyte circuit for cooling the recombinators (i.e., recombiners) (Winsel 10). In other words, Winsel discloses that heat is removed from the recombinators (i.e., recombiners) by using the electrolyte cooling circuit. This disclosure is the direct opposite of Appellants’ claim feature that requires the recombiner “receive a flow of heat.”

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The Examiner attempts to rebut Appellants' argument by stating that Winsel's "cooling circuit" would be able to transfer heat to the recombiners because the electrolyte circuit flows through the fuel cell which would be operating at a higher temperature because it uses more hydrogen than recombinder (Ans. 5). However, the Examiner has provided no objective evidence to support the theory that Winsel's recombimator (i.e., recombinder) would receive heat from the electrolyte circuit. In fact, the only objective evidence of record, Winsel's disclosure, indicates the exact opposite.

Because the argued claim feature is neither taught nor suggested by the prior art, no *prima facie* case of obviousness has been established. *Royka*, 490 F.2d at 985. Accordingly, we cannot sustain the Examiner's § 103 rejection of claim 6 over Stockburger in view of Winsel.

DECISION

The Examiner's decision is reversed.

REVERSED

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CROWELL & MORING LLP
INTELLECTUAL PROPERTY GROUP
P.O. BOX 14300
WASHINGTON, DC 20044-4300