UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte LAWRENCE SHORE,
WOLFGANG F. RUETTINGER, and
ROBERT J. FARRAUTO

Appeal 2008-2030
Application 10/100,472
Technology Center 1700

Decided: April 30, 2008

Before CHUNG K. PAK, 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 1-3, 5-14, and 39-44. We have jurisdiction over the appeal pursuant to 35 U.S.C. § 6(b).

We AFFIRM.

INTRODUCTION

Appellants claim a carbon monoxide oxidation catalyst consisting essentially of from about 1 to 10 wt.% of a ruthenium oxide for selectively oxidizing carbon monoxide, and from about 0.5 to 10 wt.% of zinc oxide for suppressing methanation of the carbon monoxide in the input gas stream (claim 1).

Claim 1 is illustrative:

> 1. A carbon monoxide oxidation catalyst consisting essentially of:
>
> from about 1 to 10 wt. % of a ruthenium oxide for oxidizing selectively carbon monoxide in an input gas stream comprising hydrogen, carbon monoxide, and water;
>
> from about 0.5 to 10 wt. % of zinc oxide for suppressing methanation of the carbon monoxide in the input gas stream;
>
> optionally a refractory oxide support on which at least some of the ruthenium oxide and the zinc oxide is supported; and
>
> optionally a binder.

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

McArthur	4,034,061	Jul. 5, 1977

The rejections as presented by the Examiner are as follows:

1. Claims 1-3, 5-14 and 39-44 are rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over McArthur.

Appellants separately argue independent claim 1 only.

OPINION

35 U.S.C. § 102(b) REJECTION OVER McARTHUR

Appellants argue that McArthur's disclosure of catalysts that may be combined or used alone on the catalyst support is too broad (i.e., not sufficiently specific) to anticipate Appellants' claimed catalyst combination (Amended App. Br. 5 and 6). We agree.

For a compound to be anticipated within the meaning of 35 U.S.C. § 102, the prior art must disclose the compound with sufficient specificity to constitute a description of the compound. *In re Schaumann*, 572 F.2d 312, 315 (CCPA 1978).

McArthur discloses a catalyst support made of aluminum oxide and boron oxide (McArthur, col. 6, ll. 42-68; col. 7, ll. 1-3). McArthur uses the catalyst support for the conversion of carbon monoxide (McArthur, col. 8, ll. 63-66). McArthur discloses oxides and sulfides of any one or more of the metals from the Groups IB, IIB, VB, VIB, VIIB, and VIII of the Periodic Table may be used as the catalysts on the support (McArthur, col. 7, ll. 4-8). McArthur discloses that exemplary metals may include, among others, ruthenium and zinc (McArthur, col. 7, ll. 8-12). McArthur does not exemplify a catalyst having ruthenium oxide and zinc oxide.

Based on McArthur's disclosures, we find that McArthur fails to describe with sufficient specificity a catalyst consisting essentially of ruthenium oxide and zinc oxide. Though McArthur suggests that oxides of ruthenium and zinc may be combined, patentee does not disclose with sufficient specificity making such a combination within the meaning of § 102. In fact, none of McArthur's examples include ruthenium oxide and zinc oxide.

Accordingly, we cannot sustain the Examiner's § 102 rejection of claims 1-3, 5-14 and 39-44 over McArthur.

35 U.S.C. § 103 REJECTION OVER McARTHUR

Appellants argue that McArthur's disclosure of a myriad of combinations does not suggest any one of those combinations, such as ruthenium oxide and zinc oxide (Br. 7). Appellants further argue that based on McArthur's disclosure there would have been no motivation for one skilled in the art to fabricate a carbon monoxide conversion catalyst consisting essentially of ruthenium oxide and zinc oxide (Br. 8). Appellants contend that McArthur discloses a methanation catalyst not a carbon monoxide catalyst (Br. 8).

We have considered all of Appellants' arguments and are unpersuaded for the reasons below.

Prior art that discloses a multitude of effective combinations of compounds does not render any particular formulation less obvious. *Merck v. Biocraft Lab. Inc.*, 874 F.2d 804, 807 (Fed. Cir. 1989). *See also*, *In re Corkill*, 771 F.2d 1496, 1500 (Fed. Cir. 1985).

We incorporate our findings regarding McArthur from our § 102 section of this Decision here. As noted previously, McArthur discloses that, among other combinations, a combination of oxides of ruthenium and zinc may be used as the catalyst on the alumina borate support (McArthur, col. 7, ll. 4-12). McArthur further indicates that Group VIII noble metals (e.g., ruthenium) are used as part of the catalyst composition in an amount of 0.5 to 2 percent by weight (McArthur, col. 7, ll. 20-23). McArthur discloses that Group IIB elements (e.g., zinc) are present in the catalyst in amounts of about 6 to 20 percent by weight based on the corresponding oxides (McArthur, col. 7, ll. 15-20).

Based on these findings, we are unpersuaded by Appellants' argument that there are too many catalyst combinations to conclude that McArthur would have suggested the particular ruthenium oxide and zinc oxide combination. Though the number of catalyst combinations is large, McArthur specifically discloses using ruthenium and zinc as "one or more of the transitional metals or compounds" that may be utilized as catalysts in their oxide form (McArthur, col. 7, ll. 4-8, 11). In other words, though McArthur's disclosure of possible catalyst combinations is large, it does not render the particular ruthenium oxide and zinc oxide catalyst combination less obvious. *Merck*, 874 F.2d at 807. *See also*, *Corkill*, 771 F.2d at 1500.

Moreover, McArthur discloses that the catalyst combinations may be used for the oxidation of carbon monoxide, the same use claimed by Appellants (McArthur, col. 7, ll. 51-54; col. 8, ll. 44-49, 63-66). This finding further supports a conclusion of obviousness. *Merck*, 874 F.2d at 807 (explaining that a multitude of effective combinations does not render any particular formulation less obvious especially because the claimed

composition is used for the identical purpose taught by the prior art). Furthermore, this McArthur disclosure undermines Appellants' argument that McArthur only discloses a methanation catalyst not a carbon monoxide oxidation catalyst.

Appellants' motivation argument appears to focus on the "consisting essentially of" transitional claim language (Br. 8). The argument appears to be that McArthur would not have motivated one of ordinary skill in the art to manufacture a catalyst consisting essentially of ruthenium oxide and zinc oxide. However, for the reasons noted above, we determine that McArthur would have suggested combining zinc oxide and ruthenium oxide to manufacture a catalyst.

With regard to Appellants' "consisting essentially of" transitional claim language, Appellants bear the burden to prove that additional materials in a prior art reference would materially affect the basic and novel characteristics of their claimed invention. *In re De Lajarte*, 337 F.2d 870, 874 (CCPA 1964). Appellants have not provided any objective evidence that additional materials would materially affect the basic and novel characteristics of the claimed invention. Appellants have not pointed to any definition or disclosure in their Specification that indicates which other materials would materially affect the basic and novel characteristics of the claimed invention within the meaning of "consisting essentially of." *PPG Indus. v. Guardian Indus. Corp.*, 156 F.3d 1351, 1355 (Fed. Cir. 1998). Accordingly, Appellants' argument is not persuasive.

For the above reasons, we sustain the Examiner's § 103 rejection of claims 1-3, 5-14 and 39-44 over McArthur.

DECISION

We do not sustain the Examiner's § 102 rejection of claims 1-3, 5-14 and 39-44 over McArthur.

We sustain the Examiner's § 103 rejection of claims 1-3, 5-14 and 39-44 over McArthur.

The Examiner's decision 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)(iv).

AFFIRMED

tf/ls

CHIEF PATENT COUNSEL
ENGELHARD CORPORATION
101 WOOD AVENUE
P.O. BOX 770
ISELIN, NJ 08830-0770