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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte AKIRA TAKAHASHI, TAKUYA IMAI, RYUJI MONDEN,
YASUAKI WAKIZAKA, and TAKASHI SATO¹

Appeal 2018-002349
Application 14/232,409
Technology Center 1700

Before BRADLEY R. GARRIS, ADRIENE LEPIANE HANLON, and
SHELDON M. McGEE, *Administrative Patent Judges*.

GARRIS, *Administrative Patent Judge*.

DECISION ON APPEAL

Pursuant to 35 U.S.C. § 134, Appellants appeal from the Examiner's rejection under 35 U.S.C. § 103 of claims 1, 2, and 15–20 as unpatentable over Monden (US 2011/0020729 A1, pub. Jan. 27, 2011). We have jurisdiction under 35 U.S.C. § 6.

We AFFIRM.

¹ Showa Denko K.K. is identified as the real party in interest (Br. 2).

Appellants claim an oxygen reduction catalyst comprising titanium, carbon, nitrogen, and oxygen as constituent elements having certain ranges (i.e., in which each of the constituent elements (titanium: carbon: nitrogen: oxygen) is represented by 1: x: y: z) and wherein the catalyst exhibits certain peak intensities in XRD measurement that satisfy relationships described in expressions (1) and (2) as defined in the claim (sole independent claim 1).

A copy of representative claim 1, taken from the Claims Appendix of the Appeal Brief, appears below.

An oxygen reduction catalyst comprising titanium, carbon, nitrogen, and oxygen as constituent elements, wherein $0.6 \leq x \leq 7$, $0.05 \leq y \leq 2$, and $0.05 < z \leq 1.5$ are met when a ratio of the number of atoms of each of the constituent elements (titanium: carbon: nitrogen: oxygen) is represented by 1: x: y: z; in XRD measurement using a Cu-K α ray, peaks are each present in at least regions A and B among regions A to D which occupy 2θ ranges described below:

A: 42° to 43° ,

B: 36.5° to 37° ,

C: 25° to 26° , and

D: 27° to 28° ; and

each of maximum peak intensities I_A , I_B , I_C , and I_D in the regions A to D satisfies both relationships described in expressions (1) and (2) described below:

$$I_A > I_B \quad (1), \text{ and}$$

$$0.7 \leq (I_A / (I_A + I_C + I_D)) \leq 1 \quad (2).$$

Appellants do not present separate arguments specifically directed to dependent claims 2 and 15–20 (*see* Br. 7–15). Therefore, the dependent claims will stand or fall with their parent independent claim 1.

We sustain the Examiner's rejection for the reasons given in the Final Action and the Answer with the following comments added for emphasis and completeness.

The Examiner finds that Monden teaches oxygen reduction catalysts comprising titanium, carbon, hydrogen, and oxygen as constituent elements in preferred ranges that overlap the claimed ranges and that Monden further teaches exemplary embodiments wherein the constituent elements are within or very close to the claimed ranges (Final Action 3–4 (citing Monden ¶ 22 and Examples 1, 3, 5, and 7 of Table 1)). Based on these findings, the Examiner concludes that the ranges of constituent elements defined by claim 1 would have been obvious (*id.* at 4). As for the claimed relationships of XRD peak intensities, the Examiner finds that Monden does not expressly teach a single embodiment having such relationships in combination with the claimed constituent element ranges (*id.* at 4–5). However, the Examiner additionally finds that Monden's Figures teach intensity peaks lying within or close to those required by claim 1 and that Monden's paragraph 122 teaches manipulating catalyst crystallinity via a heating protocol, whereby a variety of XRD peak intensity profiles would have been expected (*id.* at 5). These circumstances lead the Examiner to determine that the catalysts taught or suggested by Monden include those having the constituent element ranges and peak intensity relationships required by claim 1 (*id.*).

Appellants argue that “Monden does not render obvious the presently recited oxygen reduction catalyst composition in view of the unexpectedly superior results achieved by the presently claimed invention” (Br. 11 (emphasis removed); *see also id.* at 11–13 (citing Spec. examples involving inventive versus comparative catalysts)).

In response, the Examiner determines that the Specification evidence cited by Appellants lacks persuasive merit because it is not commensurate in scope with claim 1 due to the inventive examples being “significantly narrower in scope than the claimed embodiment” (Ans. 8). We emphasize that Appellants do not dispute the Examiner’s determination in the record of this appeal (i.e., no Reply Brief has been filed). Moreover, we observe that the Specification disclosures cited as showing “unexpectedly superior results” fail to characterize the results as unexpected. In the appeal record, only the attorney who wrote the Appeal Brief states that the results in question are unexpected, and such an attorney statement is merely an argument unsupported by evidence and therefore inadequate to establish unexpected results. *See In re Geisler*, 116 F.3d 1465, 1471 (Fed. Cir. 1997) (explaining that argument by counsel cannot take the place of evidence). For these reasons, the above quoted argument is unconvincing.

Appellants also state that “none of the Examples of Monden satisfy the claimed ranges of x, y, and z” (Br. 11) and argue without embellishment that “a person of ordinary skill in the art would not have arrived at the claimed values of x, y, and z based on the extremely broad disclosure of Monden” (*id.*).

The Examiner responds to Appellants’ statement by finding that Example 3 of Monden satisfies the claimed x, y, and z values (Ans. 7). As above, we emphasize that Appellants do not challenge this finding in the record before us. Further, Appellants’ unembellished argument is not convincing because it fails to address, and accordingly fails to show error in, the rationale of the Examiner in reaching a conclusion of obviousness.

Finally, Appellants argue that Monden's disclosure including the cited Examples do not teach or suggest the cubic structure said to be exhibited by the claim 1 catalyst (Br. 13–15).

We agree with the Examiner that Monden's collective teachings (e.g., the constituent element ranges of paragraph 22 and Example 3 as well as Figures 7 and 8 in combination with paragraph 122) support a determination that the catalysts taught or suggested by Monden apparently are identical to those of claim 1 and therefore necessarily have the same properties and parameters including the claimed constituent element ranges and peak intensity relationships (Ans. 10–11; *see also* Final Action 5). Appellants proffer no evidence supporting their burden of proving otherwise as correctly noted by the Examiner (Ans. 11).

For the reasons expressed above and given by the Examiner, Appellants fail to show error in the rejection of claim 1 as unpatentable over Monden.

The decision of the Examiner 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).

AFFIRMED