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BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte MELVIN FREDERICK VINTON and DEREK JOHN FRAY

Appeal 2017-011392
Application 13/823,084[1]
Technology Center 1700

Before KAREN M. HASTINGS, JENNIFER R. GUPTA, and SHELDON M. McGEE, *Administrative Patent Judges*.

McGEE, *Administrative Patent Judge.*

DECISION ON APPEAL

Pursuant to 35 U.S.C. § 134, Appellants seek our review of the Examiner's rejection of claims 1–16 and 18–31. App. Br. 11–34.

We have jurisdiction. 35 U.S.C. § 6.

We affirm.

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[1] Appellants identify Inotec AMD Limited as the real party in interest. App. Br. 3.

BACKGROUND

The claimed subject matter on appeal is directed to an oxygen concentrator apparatus (claim 1).

Figure 1 illustrates the claimed subject matter of sole independent claim 1 and is copied below from Appellants' Drawings:

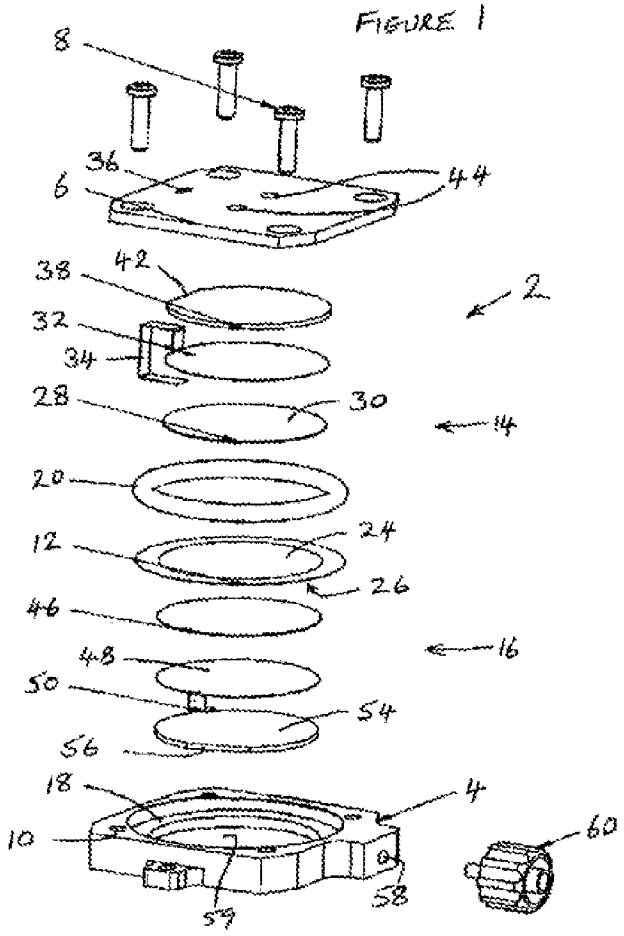

Figure 1 depicts "an exploded view of an oxygen concentrator." Spec. 16:31.

Sole independent claim 1 is illustrative of the appealed subject matter, and is copied below from the Claims Appendix to the Appeal Brief, with emphasis added to relevant limitations at issue in this appeal and brackets added to identify certain structural features appearing in Figure 1:

1. An oxygen concentrator [2] comprising:

a proton-conducting membrane [12];

a cathode [24] contacting a first side of the membrane;

an anode [26] contacting a second side of the membrane;

a catalytic apparatus comprising a catalyst [30] and a diffusion layer [28], the diffusion layer spacing the catalyst from the cathode; and

a housing [4, 6] defining a cathode chamber, the catalytic apparatus being contained within the cathode chamber and the housing defining one or more vents enabling air to flow to the catalyst, *the housing being configured so as not to contain a water reservoir for the proton-conducting membrane*;

absence of the water reservoir for the proton-conducting membrane requiring the oxygen concentrator to continue to operate, after beginning its operation, *using water sourced solely from recycling*, at the catalyst, of cathode-generated hydrogen by reaction with atmospheric oxygen.

App. Br. A-36.

REJECTIONS

I. Claims 1–16 and 18–31 are rejected under 35 U.S.C. § 112, first paragraph as failing to comply with both the written description and enablement requirements (Final 2–4); and

II. Claims 1–16 and 18–31 are rejected under 35 U.S.C. § 103(a) as unpatentable over Fray (WO 2006/092612 A2, published Sept. 8, 2006) in view of Maruyama (US 2004/0253494 A1, published Dec. 16, 2004), either with or without additional prior art (Final 4–27).

OPINION

The Rejections under 35 U.S.C. § 112, first paragraph

i. Written description

The Examiner finds that the Specification lacks sufficient written description support to reasonably convey that the inventors had possession of an oxygen concentrator that, "after beginning its operation, us[es] water sourced solely from recycling" as recited in claim 1. Final 3.

In arguing this rejection, Appellants present arguments only directed to independent claim 1. We, therefore, select this claim as representative and decide the propriety of this rejection on the basis of claim 1 alone. 37 C.F.R. § 41.37(c)(1)(iv). Specifically, Appellants allege that the Examiner's finding is erroneous because, in the passages of the Specification that discuss "continued operation" of the oxygen concentrator apparatus, there is "no mention of atmospheric humidity being used." App. Br. 14; *see also id.* at 13 ("the passage says nothing about atmospheric humidity playing a role in continuing the operation of the oxygen concentrator"). Appellants further contend that "the Examiner looks selectively at one portion of the specification, and ignores other portions of the specification." *Id.* at 14.

The dispositive issue, then, is whether a preponderance of the evidence supports the Examiner's finding that, at the time of the invention, Appellants did not possess an oxygen concentrator that "after beginning its operation, us[es] water sourced *solely* from recycling" as recited in claim 1. (emphasis added). We answer this question in the affirmative and sustain the rejection.

> Adequate written description means that, in the specification, the applicant must "convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the [claimed] invention." *Vas-Cath, Inc. v.*

> *Mahurkar*, 935 F.2d 1555, 1563–64 (Fed. Cir. 1991). When no such description can be found in the specification, the only thing the PTO can reasonably be expected to do is to point out its nonexistence.

Hyatt v. Dudas, 492 F.3d 1365, 1370 (Fed. Cir. 2007).

This is precisely what the Examiner does here. Final 3. The Examiner also refers to several locations in the Specification to support the finding that atmospheric humidity is in fact required to operate the recited oxygen concentrator — "after beginning its operation" — in order to avoid inducing failure. *Id.* at 28 (citing Spec. 11:14–29); Ans. 3; *see also id.* at 4 (citing Spec. 6:4–8 (explaining how "the *combination of ambient humidity* entering the cathode chamber *and* the efficient *recycling of water* by the catalytic apparatus are sufficient to enable continuous oxygen generation at a very wide range of ambient humidity," and how "[t]he concentrator may not be able to operate at extremely low ambient humidity." (emphasis added))); *id.* at 5 (citing Spec. 3:19–23 (noting how "the oxygen concentrator can operate continuously[,] with no water supply *other than atmospheric humidity*," and how the "concentrator advantageously does not need a water reservoir and can electrolyse water derived *only from humidity in the air and from the catalyst*." (emphasis added))). The Examiner's citation to page 11 of the Specification (Final 28; Ans. 3) is particularly noteworthy because it discusses the oxygen concentrator's function *after* operation has begun, which is the point in time that claim 1 recites, i.e., "requiring the oxygen concentrator to *continue to operate, after beginning its operation*." (emphasis added). This portion of the Specification expressly states that "a failure mode of the cell may be if the ambient atmosphere is of extremely low humidity" because "the water content of the proton-conducting membrane may progressively reduce and the resistance of the cell may rise."

Spec. 11:26–29. Appellants' argument (App. Br. 14–15) that this particular disclosure "focuses on operation of the oxygen concentrator based on water recycling from the catalyst to the proton-conducting membrane" does not sufficiently explain how the referenced disclosure fails to apply to operation of the oxygen concentrator "after beginning its operation" as recited in claim 1.

Furthermore, Appellants' arguments (Reply Br. 2–4) that the Examiner somehow selected portions of the Specification dealing with alternative embodiments not covered by the appealed claims lack persuasive merit. Appellants point to no portion of the Specification that delineates between embodiments that use ambient humidity and those that do not.

Therefore, on this record, the preponderance of the evidence supports the Examiner's finding that the recitation "water sourced solely from recycling" is new matter.

ii. Enablement

The Examiner also determines that the Specification does not enable the skilled artisan to make and/or use the claimed oxygen concentrator "[b]ecause the person having ordinary skill in the art would not be able to discern from Applicants' specification how to make the concentrator stop using the air's water." Final 3.

Appellants again focus their arguments on claim 1 (App. Br. 15–19), which we again select as representative. 37 C.F.R. § 41.37(c)(1)(iv). Specifically, Appellants argue that the Examiner "misapprehended the role of atmospheric humidity in the" oxygen concentrator's operation because "[a]s long as the proton conducting membrane has enough water to operate at the beginning," the oxygen concentration process continues, resulting in

"no need for any external atmospheric water (humidity) to be required for the device to continue to operate." App. Br. 17. According to Appellants, the continued electrolysis "constitutes the mechanism by which atmospheric humidity is stopped from being used or even needed." *Id.*

This line of argument does not reveal error in the rejection. "[T]o be enabling, the specification of a patent must teach those skilled in the art how to make and use the full scope of the claimed invention without 'undue experimentation.'" *In re Wright*, 999 F.2d 1557, 1561 (Fed. Cir. 1993). Furthermore,

> [w]hen rejecting a claim under the enablement requirement of section 112, the PTO bears an initial burden of setting forth a reasonable explanation as to why it believes that the scope of protection provided by that claim is not adequately enabled by the description of the invention provided in the specification of the application; this includes, of course, providing sufficient reasons for doubting any assertions in the specification as to the scope of enablement. If the PTO meets this burden, the burden then shifts to the applicant to provide suitable proofs indicating that the specification is indeed enabling.

Wright, 999 F.2d at 1561–2.

Here, the Examiner satisfies this burden, and Appellants have not provided sufficient evidence in rebuttal that demonstrates enablement. Ans. 8–12. Upon review of the appeal record before us, we agree with the Examiner (*id.* at 10) that Appellants have failed to point to any disclosure regarding "how to exclude the humidity in the air."

Thus, for the reasons set forth by the Examiner in the Final Action and the Answer, we sustain the rejection of claims 1–16 and 18–31 as failing to comply with the enablement requirement of 35 U.S.C. § 112, first paragraph.

The Rejections under 35 U.S.C. § 103

Claims 1, 7–12, 15, 16, and 18–31

In arguing the obviousness rejections of these claims, Appellants present arguments only directed to independent claim 1. App. Br. 19–30. Again, we select this claim as representative. 37 C.F.R. § 41.37(c)(1)(iv).

Relevant to the appeal of this rejection, the Examiner finds, and Appellants do not dispute, that Fray discloses an oxygen concentrator comprising the structural components recited in claim 1, except that Fray's concentrator contains a water reservoir. Final 4–6.[2] The Examiner addresses this difference in several ways.

First, the Examiner finds that Maruyama teaches the use of air moisture as a water source for a water electrolysis reaction, and that such use was known to reduce needed maintenance. *Id.* at 6 (citing Maruyama ¶¶ 157–165; Fig. 14). Based on this finding, the Examiner determines that the skilled artisan would have "recognize[d] that air humidity would be a suitable substitute for a water reservoir as a water source for a water electrolysis." *Id.* The Examiner also determines that it would have been obvious to have substituted Fray's water reservoir with Maruyama's teaching of using humidity as a water source for the purpose of reducing needed maintenance. *Id.*

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[2] The Examiner additionally finds that Fray does not expressly teach the limitation regarding "using water sourced solely from recycling." Final 6–7. Because this limitation lacks written descriptive support, and is not enabled under 35 U.S.C. § 112, first paragraph, however, we need not address the Examiner's findings or Appellants' arguments regarding this limitation for purposes of deciding the propriety of the Examiner's obviousness rejections.

Additionally, the Examiner finds that Fray's water reservoir 125 is not the only possible source of water. Ans. 14–19. Namely, the Examiner finds that Fray's inlet holes 106 serve as a water source because Fray teaches that air is fed through such inlets, and that the skilled artisan would have understood that a "water source" as referred to in Fray's Abstract is a broad term which encompasses not only water reservoirs, but also other types of water supplies. *Id.* at 14–16. The Examiner determines that "[b]ecause Maruyama teaches that both a reservoir and air humidity are both suitable water sources for feeding a water electrolysis reaction, a person having ordinary skill in the art would [have] recognize[d] that both are suitable substitutes for each other." *Id.* at 17. The Examiner also points to Fray's Figure 4 to support the finding that humidity in the air would reach catalyst 30. *Id.* at 18.

We have considered Appellants' arguments in support of patentability (App. Br. 19–30; Reply Br. 4–8) and are unpersuaded that Appellants have identified reversible error in the Examiner's rejections. *In re Jung*, 637 F.3d 1356, 1365–66 (Fed. Cir. 2011). Therefore, we sustain the obviousness rejections of claims 1, 7–12, 15, 16, and 18–31 based on the findings of fact, conclusions of law, and rebuttals to arguments expressed by the Examiner in the Final Action and in the Answer. We add the following.

Appellants focus their arguments on the premise that Fray requires a water reservoir. Such arguments, however, fail to address, much less reveal error in, the Examiner's findings regarding Fray's additional water source 106. Ans. 14–19. On this record, it is undisputed that Fray's inlet 106 acts as a water source by virtue of allowing the water present in air (i.e., humidity) to travel into Fray's membrane electrode assembly and to be utilized therein. *Id.* at 15–19. Such incomplete arguments that focus on

only one of three water sources identified by the Examiner fail to identify reversible error in the rejection.

It follows that we sustain the obviousness rejections of these claims.

Claims 2–6, 13, and 14

Appellants' arguments regarding these claims largely focus on the same premise as those for claim 1, i.e., that Fray requires a water reservoir for operation. App. Br. 30–33. We find such arguments unpersuasive because they do not address the full scope of the Examiner's findings regarding Fray's water sources. Ans. 14–19. As to Appellants' other arguments regarding the size and shape of the vents and ventilation parameters, we find such arguments unpersuasive for the well-stated reasons given by the Examiner. Ans. 36–45.

We, therefore, sustain the Examiner's rejection of these claims.

DECISION

The Examiner's final decision to reject claims 1–16 and 18–31 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