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BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte JULIE A. MORRIS and JOSEPH A. MURRAY

Appeal 2021-000563
Application 15/795,171
Technology Center 3600

Before BENJAMIN D. M. WOOD, SUSAN L. C. MITCHELL, and LISA M. GUIJT, *Administrative Patent Judges*.

GUIJT, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellant[1] seeks our review under 35 U.S.C. § 134(a) of the rejection of claims 1, 3–5, 7–12, 14–16, and 18–22.[2] We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

[1] We use the word "Appellant" to refer to "applicant" as defined in 37 C.F.R. § 1.42. Appellant identifies IH IP HOLDINGS LIMITED as the real party in interest. Appeal Br. 2.

[2] Claims 2, 6, 13, and 17 have been cancelled. Amend. (dated Dec. 23, 2019).

THE INVENTION

Appellant's invention relates to "Monitoring and Controlling Exothermic Reactions Using Photon Detection Devices." Spec., Title. Claims 1 and 12 are the independent claims on appeal. Claim 1, reproduced below, is illustrative of the subject matter on appeal.

> 1. A method of activating an exothermic reaction, the method comprising:
> vacuuming an inside of a reactor container;
> flowing a gaseous material into the inside of the reactor container;
> heating the reactor container;
> applying a voltage to an electrode passing through the inside of the reactor container;
> monitoring, with a spectrometer, at least a portion of the reactor container;
> detecting, by monitoring at least the portion of the reactor container with the spectrometer, a first light peak in a first wavelength range and a second light peak in a second wavelength range; and
> determining whether an exothermic reaction is activated by determining whether a third light peak is detected in a third wavelength range at least a portion of which is intermediate the first wavelength range and second wavelength range.

THE REJECTIONS

The Examiner relies upon the following as evidence in support of the rejections:

Name	Reference(s)	Date
Kawamura	US 2015/0124920 A1	May 7, 2015
Mizuno	US 2016/0155518 A1	June 2, 2016

The following rejections are before us for review:

I. Claims 1, 3–5, 7–12, 14–16, and 18–22 stand rejected under 35 U.S.C. § 101 as inoperative and lacking utility.

II. Claims 1, 3–5, 7–12, 14–16, and 18–22 stand rejected under 35 U.S.C. § 112(a) as failing to comply with the enablement requirement.

III. Claims 12, 14–16, and 18–22 stand rejected under 35 U.S.C. § 103 as being unpatentable over Mizuno and Kawamura.

OPINION

Rejection I

Appellant argues claims 1, 3–5, 7–12, 14–16, and 18–22 as a group. Appeal Br. 4–8. We select claim 1 as representative, and claims 3–5, 7–12, 14–16, and 18–22 stand or fall therewith. *See* 37 C.F.R. § 41.37(c)(1)(iv).

The Examiner finds that "the disclosed invention is inoperative and therefore lacks utility." Final Act. 7. The Examiner determines that although the claims recite activating "an exothermic reaction," Appellant's Specification only discloses one embodiment of the invention, which involves "'a low energy reaction (LENR) system.'" Ans. 3. The Examiner relies on, *inter alia*, "[a] 2004 review conducted by the Department of Energy"[3] (referred to herein as "the 2004 DOE Report") to establish that the claimed invention involves implausible scientific principles. *Id.* at 10.

Appellant argues that the Examiner "falsely summarizes the claimed invention as directed solely [to] LENR and '*cold fusion*,' despite that the claims are directed to a method of (claim 1) and a system for (claim 12)

[3] Titled, "Report of the Review of Low Energy Nuclear Reactions," dated December 1, 2004.

activating an exothermic reaction," wherein "[i]n each, a gaseous material flows into a reactor container, and a voltage is applied to an electrode." Appeal Br. 4; Reply Br. 2. In support, Appellant submits that "[g]iven that [Appellant's Specification] . . . discloses that the gaseous material can be deuterium, a species of hydrogen (flammable), cold fusion need not be achieved for an exothermic reaction to occur." *Id.* (citing Spec. 6:9–10, 7:7–8). Appellant also submits that "[h]ydrogen is a known, indeed highly flammable, fuel for exothermic reactions." Reply Br. 2.

We are not persuaded by Appellant's argument. First, the claims require "a reactor container," wherein the Specification states that

> [m]any types of reactors have been built and tested to create exothermic reactions. These reactors range from wet cells using electrolysis to solid state reactors to plasma reactors. Each reactor type requires specific materials, activation procedures, and triggering methods. This disclosure focuses on the plasma reactor system, more specifically for the plasma reactor system.

Spec. 1:16–20. The Examiner is correct that the sole embodiment disclosed in the Specification involves a low energy nuclear reaction (LENR) system. *See, e.g.*, Spec. 2:5–10; 3:1–7, 23–28, Fig. 2 (LENR device 12). Deuterium is referenced with respect to Figure 3, in the context of a plasma reactor. Spec. 6:9–10. The term "hydrogen" does not appear in the Specification or claims, as originally filed, nor is there a description in the Specification of combusting hydrogen (or more particularly, deuterium) as a fuel for exothermic reactions other than in the context of an LENR system. *See also* Ans. 4 (finding that the Specification fails to disclose "a source of oxygen that would be required for hydrogen combustion" or "an ignition mechanism"). In other words, combusting hydrogen as a fuel for exothermic reactions within a reactor container, other than in an LENR system, and

detecting light peaks using a spectrometer is not a utility that is disclosed in the Specification.[4]

Appellant also argues that the Examiner "does not establish an accurate portrayal of the knowledge of one of *contemporary* ordinary skill at the time the invention was made with regard to such subject matter" and improperly "shift[s] any burden to [Appellant] with regard to providing any rebuttal evidence." Appeal Br. 5. Regarding the Examiner's reliance on the 2004 DOE Report, Appellant submits that the report is "over a decade old as of the priority date (***2016***) of this application and thus does not represent *current scientific knowledge*." Reply Br. 5. Appellant submits that "[i]n a more timely report (2017), a U.S. Congressional committee acknowledged '*recent positive developments in developing low-energy nuclear reactions (LENR)*," wherein Congress was "concerned about the operability of LENR technology and its implications toward national security should the U.S. fall behind in this emerging field of knowledge and implementation." *Id.* (citing, in particular, page 87) (hereinafter "the 2017 Report").

Whether an application discloses a utility for a claimed invention is a question of fact. *In re Ziegler*, 992 F.2d 1197, 1200 (Fed. Cir. 1993); *Raytheon Co. v. Roper Corp.*, 724 F.2d 951, 956 (Fed. Cir. 1983). "The PTO may establish a reason to doubt an invention's asserted utility when the written description 'suggest[s] an inherently unbelievable undertaking or involve[s] implausible scientific principles.'" *In re Cortright*, 165 F.3d 1353, 1357 (Fed. Cir. 1999) (quoting *In re Brana*, 51 F.3d 1560, 1566 (Fed. Cir. 1995)) (alteration in original). Stated differently, the Examiner must

[4] Notably, the claims were amended to replace the recitation of a low energy nuclear reaction (LENR) system or device with the recitation of a reactor container. *See* Amend. (dated Dec. 23, 2019).

present the evidence necessary to establish a reason for one of ordinary skill in the art to question the objective truth of the statement of utility. *Id.* Once the examiner has provided evidence showing that one of ordinary skill in the art would reasonably doubt the asserted utility, then the burden shifts to Appellant to submit evidence sufficient to convince such a person of the invention's asserted utility. *Brana*, 51 F.3d at 1566. *See e.g.*, *In re Swartz*, 232 F.3d 862, 864 (Fed. Cir. 2000) ("the PTO provided several references showing that results in the area of cold fusion were irreproducible").

Here, the Examiner has presented a detailed explanation with supporting evidence (i.e., the 2004 DOE Report) as to why one of ordinary skill in the art would reasonably doubt the asserted utility of the invention. Appellant's rebuttal evidence (i.e., the 2017 Report) fails to establish the invention's asserted utility, but rather, supports the Examiner's finding that LENR's operability is developmental and unproven. *See, e.g.*, the 2017 Report, p. 86 ("*if* LENR works it will be a 'disruptive technology'". . . (emphasis added)). Thus, upon review of the totality of the evidence on record and based on a preponderance of the evidence standard, we find that Appellant has not met its burden. In other words, LENR is not generally accepted as credible in the scientific community, essentially for the reasons articulated by the Examiner.

Finally, Appellant concludes that "[t]he utility of the claimed subject matter is established at least in [the Specification]." Appeal Br. 4 (citing Spec. 4:26–5:1). The excerpt on which Appellant relies states:

> [s]ince the device is not subjective, like a human eye, determining the true color being emitted becomes quantifiable. It also becomes consistent across different reactors. A person may think they see violet instead of blue, all very subject terms. However, the spectrometer allows the state of the glow discharge

> to be quantified into known intensity levels at known wavelength ranges. Therefore, reactors can be activated more consistently since the parameters governing activation become quantifiable, measurable values.

Spec. 4:26–5:1. However, the claims are much broader than the utility that comes with using a spectrometer to detect light intensity levels more consistently than by detecting light intensity with the human eye; as discussed *supra*, the claims require activating an exothermic reaction in a reactor container, and more particularly, as described in the Specification, within a LENR system, and measuring light peak wavelength ranges with a spectrometer in lieu of a human eye.

Accordingly, we sustain the Examiner's rejection of claim 1 under 35 U.S.C. § 101 as inoperative and lacking utility, and claims 3–5, 7–12, 14–16, and 18–22 fall therewith.

Rejection II

The Examiner finds that claims 1, 3–5, 7–12, 14–16, and 18–22 fail to comply with the enablement requirement. Final Act. 8. As stated by the Federal Circuit:

> Because it is for the invention as claimed that enablement must exist, and because the impossible cannot be enabled, a claim containing a limitation impossible to meet may be held invalid under § 112. Moreover, when a claim requires a means for accomplishing an unattainable result, the claimed invention must be considered inoperative as claimed and the claim must be held invalid under either § 101 or § 112 of 35 U.S.C.

Raytheon, 724 F.2d at 956.

Accordingly, we sustain the Examiner's rejection of claims 1, 3–5, 7–12, 14–16, and 18–22 under 35 U.S.C. § 112(a) as failing to comply with the enablement requirement.

Rejection III

Inasmuch as we sustain the Sections 101 and 112(a) rejections of all pending claims, we do not reach the Section 103 art rejections of such claims. *See* 37 C.F.R. § 41.50(a)(1) (explaining that the affirmance of the rejection of a claim on any of the grounds specified constitutes a general affirmance of the decision of the Examiner on that claim, except to any ground specifically reversed).

DECISION SUMMARY

In summary:

Claim(s) Rejected	**35 U.S.C. §**	**Reference(s)/Basis**	**Affirmed**	**Reversed**
1, 3–5, 7–12, 14–16, 18–22	101	Utility	1, 3–5, 7–12, 14–16, 18–22	
1, 3–5, 7–12, 14–16, 18–22	112(a)	Enablement	1, 3–5, 7–12, 14–16, 18–22	
12, 14–16, 18–22	103	Mizuno, Kawamura[5]		
Overall Outcome			1, 3–5, 7–12, 14–16, 18–22	

TIME PERIOD FOR RESPONSE

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv).

[5] As indicated above, we do not reach the Section 103 art rejections of such claims.

Appeal 2021-000563
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AFFIRMED