

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

K/S HIMPP
Petitioner

v.

BRAGI GmbH
Patent Owner

Case IPR2023-01204
U.S. Patent No. 10,117,014

**PETITIONER'S SUR-REPLY TO PATENT OWNER'S REPLY TO
PETITIONER'S OPPOSITION TO PATENT OWNER'S REVISED
MOTION TO AMEND**

TABLE OF CONTENTS

I. INTRODUCTION 1

II. SUBSTITUTE CLAIMS ARE OBVIOUS 2

 A. Combinations with Rass 2

 1. Rass is analogous art 2

 2. Rass is combinable with Hain 4

 3. Rass is combinable with Steinbrecher or Shaffer 7

 B. Combinations with Aumer 7

 1. Aumer is analogous art 7

 2. Aumer is combinable with Hain, Steinbrecher, or Shaffer 8

III. SUBSTITUTE CLAIMS ARE NOT ENABLED 9

IV. CONCLUSION 12

I. INTRODUCTION

The patentability argument in Patent Owner (“PO”) Bragi’s Revised Motion to Amend (“RMTA”) rests solely on a single limitation—“wireless earpiece [] configured to read user biometrics.” PO admits that “[a] POSITA would have known how to implement a sensor for reading various user biometrics,” (PO Reply at 11), specifically that “[t]echniques to read biometrics that would be implemented in an earpiece, such as heartbeat or temperature, were known in the art and within the skill level of a POSITA to implement as of the priority date.” Ex-1034 (PO Reply in IPR2023-01150¹) at 10.² PO also admits that adjusting the power of an earpiece based on temperature measured by a sensor of the earpiece was known. *Id.* at 5 (PO admitting prior art reference Rass (Ex-1033) “discloses the **ability to power up or down a hearing aid based on temperature** of the hearing aid or shell, registered by a temperature sensor”). Thus, there is no dispute that it was known, before the ’014 patent, how to configure a wireless earpiece to read user biometrics and that such a configuration may be desirable, such as for managing power levels of the wireless earpiece. Moreover, PO does not dispute that the specification does

¹ IPR2023-01150 challenges US9843853 (“the ’853 patent”), which shares the same specification as and is the parent of the US10117014 (“the ’014 patent”).

² Emphasis added throughout unless otherwise indicated.

not enable configuring wireless earpieces to read DNA sequencing, retinal scans, vein patterns, or facial features (PO Reply at 9–11)—all types of user biometrics—and thus does not dispute that the full scope of user biometrics is not enabled. As explained below, the arguments actually raised by PO fail to establish that the substitute claims are patentable and, therefore, PO’s RMTA should be denied.

II. SUBSTITUTE CLAIMS ARE OBVIOUS

As noted above, PO admits that the sole claim feature that forms the basis of its patentability argument—“wireless earpiece [] configured to read user biometrics”—was known in the art before the ’014 patent, (Ex-1034 at 10; PO Reply at 11), and that a motivation to incorporate this feature into a wireless earpiece, namely the ability to adjust the power of a wireless earpiece based on temperature measured by a sensor of the earpiece, was known. Ex-1034 at 5. Instead, despite amending the claim to recite an earpiece that reads user biometrics, PO argues that a reference about a hearing aid’s “body heat” “temperature sensor” (Ex-1033-Rass, Abstract) and a reference about “wearable biometric monitoring devices” (Ex-1027-Aumer, Title) are not analogous art.

A. Combinations with Rass

1. Rass is analogous art

In its Opposition, supported by Prof. Kiaei’s testimony, Petitioner set out reasons why Rass is analogous art to the ’014 patent under both the field-of-endeavor

and reasonable-pertinence tests. *See* Pet. RMTA Opp. at 6–8; Ex-1026-Kiaei-Decl., ¶¶15–20, 29–34, 43–48.

PO argues that Petitioner’s stated field of endeavor—wireless electronics, namely wireless earpieces—is “oversimplified.” PO Reply at 3. But the ’014 patent itself discloses that its “invention relates to *wireless electronics... but not exclusively... to wireless earpieces.*” Ex-1001-USP014, 1:17–20; *see also id.*, 3:15–27 (“[W]ireless earpieces 142, 144 may represent *wireless devices that may be ingested or implanted into a user.*”). Notably, the “field of endeavor may be broadly defined.” *Netflix, Inc. v. DivX, LLC*, 80 F.4th 1352, 1359 (Fed. Cir. 2023)); *see also id.* at 1359 (“We have affirmed findings of analogous art where the references shared a general field of endeavor.”). PO does not dispute that Rass (or any of Hain, Steinbrecher, and Shaffer) discloses a wireless earpiece.

PO instead asserts that the ’014 patent’s field of endeavor is narrower—“wireless electronics and *battery systems* [and] more specifically . . . wireless earpieces managing and extending battery life,” whereas Rass “focuses on turning the device on and off.” PO Reply at 3 (emphasis in original). PO mischaracterizes Rass, which explicitly discloses “*extend[ing] the useful life or endurance of the hearing aid battery.*” Pet. RMTA Opp. at 6–7 (citing Ex-1033-Rass, 2:27–31).

Similarly, PO asserts that Rass is not reasonably pertinent to “*the* problem with which the inventor of the ’014 Patent is involved,” namely “managing and

extending battery life of wireless electronics through the variation of power modes and methods of charging.”³ PO Reply at 3. But, in its Opposition, Petitioner preempted PO’s assertion: “to the extent PO argues that the inventors of the ’014 patent were faced with the problem of managing and extending battery life of a wireless earpiece, Rass discloses techniques to ‘extend[] the useful life or endurance of the hearing aid battery.’” Pet. RMTA Opp. at 8 (citing Ex-1033-Rass, 2:27–31, Abstract, 2:5–8, 2:64–3:2, Fig. 1.). Rass explains that this extension in battery life results from “the switching on and off operations [which] include switching to or from standby mode”—that is, variation of power modes. Ex-1033-Rass, 2:27–31.

2. Rass is combinable with Hain

First, PO argues that “implementing a magnetic-field hearing aid system as taught by Hain to include a temperature sensor would not have been a ‘predictable result’ because [] Rass is not in the same field of endeavor as Hain.” PO Reply at 4.

But the field-of-endeavor test is relevant to determining whether a reference is “analogous to the claimed invention,” not other references. *In re Bigio*, 381 F.3d 1320, 1325 (Fed. Cir. 2004); *see also* M.P.E.P. §2141.01(a)(I) (“*it is not required*

³ Notably, PO disregards configuring a wireless earpiece to read user biometrics as being a problem faced by the inventors—a problem to which Rass is pertinent (*see* Pet. RMTA Opp. at 7–8)—despite relying solely on this feature for patentability.

that the references be analogous art to each other") (citing *Sanofi-Aventis Deutschland GmbH v. Mylan Pharms. Inc.*, 66 F.4th 1373, 1380 (Fed. Cir. 2023); *Corephotonics, Ltd. v. Apple Inc.*, 84 F.4th 990, 1007 (Fed. Cir. 2023)). PO does not dispute that Hain is analogous to the '014 patent or PO's proposed substitute claims. Regardless, Prof. Kiaei explained that Hain, just like Rass (*see* Section II.A.1), is analogous art. *See* Ex-1026-Kiaei-Decl., ¶¶15, 16, 19.

Second, PO takes the position that Rass's temperature sensor measures the temperature of the hearing aid or its shell, and thus does not measure a user biometric. PO Reply at 4 ("[T]he temperature sensor is detecting an increase in heat, which could be the result of power dissipation of the hearing aid device itself."); 7–8 ("[Rass] mentions using *the temperature of the hearing aid or shell* to turn a hearing aid on or off, *not the direct body temperature of the user.*"). PO's position is in direct contradiction with Rass's explicit disclosure, which states that its hearing aid temperature sensor "detect[s] the *body heat of the hearing aid wearer.*" Ex-1033-Rass, Abstract. PO thus appears to be arguing that Rass fails to enable a hearing aid temperature sensor that detects user temperature. *See* IPR2023-01150, Paper 43 (Oral Hearing Transcript) at 42:9–11 (PO stating that "reading a description of the [Rass] invention there's nothing limiting in this sense that there's no description of how Rass would limit the detection of heat to biometrics"). However, the '014 patent likewise has no disclosure or teaching regarding how to limit the

detection of heat to that of a user, rather than from other alleged heat sources. In fact, when arguing that the challenged patent enables the substitute claims, even PO admits that “[t]echniques to read biometrics that would be implemented in an earpiece, such as heartbeat or temperature, were known in the art and within the skill level of a POSITA to implement as of the priority date.” Ex-1034 at 10; Ex-1032-Young-2ndTr., 17:7–18:22 (PO’s expert agreeing a POSITA “would know how to include a sensor in a wireless earpiece to measure the temperature of a user”).

Third, PO appears to contend that a temperature sensor is incompatible with Hain’s telephone mode. PO Reply at 4 (alleging an “interference signal” from “the magnetic field emitted...when [the telephone] is being held next to the user’s ear” causing “a wrong temperature reading”). As an initial matter, PO provides no support or further explanation for how or why a magnetic field would interfere with a temperature sensor, other than citing to an expert declaration that merely parrots the Reply language verbatim. Ex-2006, ¶68. Furthermore, Hain’s telephone mode is irrelevant because at no point during this proceeding did Petitioner rely on Hain’s telephone mode for its obviousness positions or otherwise.

Fourth, PO’s argument that the combination of Hain and Rass suffers from hindsight bias (PO Reply at 5) also fails. As discussed above and in Petitioner’s Opposition, there were several motivations to combine them, including all the benefits that Rass disclosed *at least a decade before* the priority date of the ’014

patent. *See* Pet. RMTA Opp. at 5–10; Ex-1026-Kiaei-Decl., ¶¶14–24.

3. Rass is combinable with Steinbrecher or Shaffer

PO contends that “a POSITA would not have been motivated to combine Steinbrecher with Rass because they are not directed to solving the same problems or the same technological fields” and similarly that “a POSITA would not have been motivated to combine Rass with Shaffer.” PO Reply at 5–6. PO appears to argue that Steinbrecher and Rass or Shaffer and Rass are not analogous to each other. But, as explained above, the test is whether a reference is “analogous to the claimed invention,” not other references. PO does not dispute that Steinbrecher or Shaffer is analogous to the ’014 patent or PO’s proposed substitute claims. Nevertheless, Prof. Kiaei explained that Steinbrecher and Shaffer, just like Rass (*see* Section II.A.1), are analogous to the ’014 patent, including the proposed substitute claims. *See* Ex-1026-Kiaei-Decl., ¶¶29, 30, 33, 43, 44, 47. A POSITA would have been motivated to combine Steinbrecher or Shaffer with Rass. *Id.*, ¶¶35, 49.

B. Combinations with Aumer

1. Aumer is analogous art

Like for Rass, Petitioner provided reasons why Aumer is analogous to the ’014 patent. *See* Pet. RMTA Opp. at 14–16; *see also* Ex-1026-Kiaei-Decl., ¶¶63, 65, 67, 77, 79, 81, 91, 93, 95. Yet again, taking a narrow read of the ’014 patent and its proposed substitute claims, PO asserts that “managing and extending battery life

of wireless electronics[/earpieces]” is both the field of endeavor and the problem faced by the inventors of the ’014 patent. PO Reply at 6–7. However, PO improperly sets aside its only alleged point of novelty: wireless earpieces configured to read user biometrics. *See Unwired Planet, LLC v. Google Inc.*, 841 F.3d 995, 1001 (Fed. Cir. 2016). As Petitioner explained, Aumer is not only from the ’014 patent’s general field of endeavor (wireless electronics; wireless earpieces) but also from this alleged specific point of novelty. Pet. RMTA Opp. at 14–15. Aumer is also reasonably pertinent because it discloses techniques for configuring an earpiece to include sensors to read user biometrics and improving the biometric signal quality from the sensors. *Id.*, 15–16 (citing Ex-1027-Aumer, Title, Abstract, ¶¶2, 64, Figs. 2A–2B, 5A–8B); *see also Netflix*, 80 F.4th, 1361–1362; *In re Clay*, 966 F.2d 656, 659 (Fed. Cir. 1992). Because Aumer is from the same field of endeavor and/or reasonably pertinent to a problem faced by the inventors of the ’014 patent, Aumer is analogous art.

2. Aumer is combinable with Hain, Steinbrecher, or Shaffer

PO argues that combining primary reference Hain—and similarly Steinbrecher or Shaffer—with Aumer would not have been a “predictable result” essentially because Aumer is not from the same field of endeavor as these primary references. PO Reply at 6–7. But, as explained above for Rass, the test is whether a reference is “analogous to the claimed invention,” not other references. PO does

not dispute that Hain, Steinbrecher, or Shaffer is analogous to the ’014 patent or PO’s proposed substitute claims. Even then, Prof. Kiaei explained that these references, just like Aumer (*see* Section II.B.1), are analogous art. *See* Ex-1026-Kiaei-Decl., ¶¶63–68, 77–82, 91–96.

PO also discounts motivations to combine that existed at the time of Aumer, narrowly focusing on the problems described in Hain and mischaracterizing Rass. PO Reply at 7–8. But motivations to combine should not be limited to the problems described in a specific reference. *See KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 420–421 (2007) (“familiar items may have obvious uses beyond their primary purposes, and in many cases a person of ordinary skill will be able to fit the teachings of multiple patents together like pieces of a puzzle”). And PO’s arguments regarding Rass are wrong for reasons discussed in Section II.A.

III. SUBSTITUTE CLAIMS ARE NOT ENABLED

Petitioner, in its Opposition, supported by Prof. Kiaei’s declaration, explained why the ’014 patent specification fails to enable the full scope of PO’s amendment “wireless earpiece [] configured to read user biometrics,” recited directly or indirectly in all substitute claims 14–26, under 35 U.S.C. § 112(a). *See* Pet. RMTA Opp. at § III (citing *Amgen Inc. v. Sanofi*, 598 U.S. 594, 610 (2023)). According to PO’s expert, the term “user biometrics” in the context of the ’853 patent, which shares the same specification as the ’014 patent, broadly means “biological,

physiological or chemical characteristics of the user.” Ex-1032-Young-2ndTr., 15:18–22; *see also id.*, 15:2–14. As explained in Petitioner’s Opposition, the specification fails to enable how to make wireless earpieces configured to read the entire class of user biometrics. Pet. RMTA Opp. at § III. For example, as PO does not dispute, it fails to enable wireless earpieces configured to read DNA sequencing, retinal scans, vein patterns, or facial features.

In response, PO artificially limits the claim scope to arbitrarily exclude some types of user biometrics, then limits its arguments, including its analysis of the *Wands* factors, to this arbitrarily narrowed set of user biometrics, while failing to provide any argument for why the entire class of user biometrics, as not arbitrarily limited, is enabled. PO Reply at 9–11; *see, e.g., id.* at 10 (“DNA sequencing, facial recognition, and retinal scans is irrelevant as these techniques would not be employed in an earpiece or in any other embodiment listed in the specification”). In particular, PO argues that the claims require that the biometric be both “suitable for an earpiece worn within the ear” and “[suitable] for performing associated functions, which would include controlling various power modes.” *Id.* at 10. This argument fails for the following reasons.

First, nowhere do the substitute claims limit the type of user biometrics, either explicitly or implicitly. They do not require that the wireless earpieces read user biometrics while they are worn within the ear, meaning the earpieces could read user

biometrics while not positioned within the ear. *See* Ex-1032-Young-2ndTr., 15:2–14 (PO's expert testifying that the term "user biometrics" relates to the individual "who *uses or wears* the wireless earpieces."), 15:18–22 (PO's expert defining "user biometrics in the context of the '853 patent" to mean "biological, physiological or chemical characteristics of the user" without any further constraints or qualifications), 15:23–16:1, 16:7–12. For example, contrary to PO's assertion that facial recognition and retinal scans are "irrelevant" (PO Reply at 10), PO fails to explain why a wireless earpiece could not be configured to perform retinal scans or facial recognition when *not* worn within the ear, such as by having sensor(s) in a wireless earpiece to scan the face or eyes while a user holds and looks into the wireless earpiece, to unlock or alter the power mode of the earpieces or another device in communication with the earpieces. *See* Ex-1026-Kiaei-Decl., ¶106; Ex-1032-Young-2ndTr., 15:18–17:1 (PO's expert testifying that "scanning an individual's retinal eye" is a type of biometric in the context of the '014 patent). In addition, the substitute claims merely recite that "a portion of the wireless earpiece fits within the ear canal opening," meaning they allow for a portion of the earpiece to be outside of the ear canal, and thus the earpiece could be structurally configured to house a wide variety of technology for reading a broad range of user biometrics.

Second, if PO's interpretation of the substitute claims were to be accepted, then they would be indefinite under 35 U.S.C. § 112(b), because it is unclear which

types of biometrics fall within the claims, namely are both “suitable for an earpiece worn within the ear” and “[suitable] for performing associated functions,” as required by PO. PO Reply at 10. It is unclear what is meant by “suitable” for an earpiece worn within the ear—how does a POSITA determine which user biometrics are suitable or proper for such an earpiece versus which are not—and what is meant by “associated functions” beyond “controlling various power modes,” let alone what is “suitable” for performing such functions—how does a POSITA determine what user biometrics are suitable or proper to some undefined earpiece functionality. Notably, even PO and PO’s expert disagree regarding which user biometrics are covered by the substitute claims, namely whether retinal scans fall within their scope. *Compare id.* at 10 (PO arguing “retinal scans” are “irrelevant”) *with* Ex-1032-Young-2ndTr., 15:18–17:1 (PO’s expert testifying that “scanning an individual’s retinal eye” is a type of biometric in the context of the ’014 patent).

Because PO’s attempts to narrow claim scope are flawed, and because the full claim scope is not enabled, PO’s RMTA should be denied.

IV. CONCLUSION

For the foregoing reasons, and the reasons presented in Petitioner’s Opposition to PO’s RMTA, Petitioner respectfully requests that the Board deny PO’s Revised Motion to Amend the claims of the ’014 patent.

Petitioner's Sur-Reply to Patent Owner's Reply
IPR2023-01204 (U.S. Patent No. 10,117,014)

Respectfully submitted,

/Haixia Lin/

Haixia Lin

Registration No. 61,318

CERTIFICATE OF SERVICE

I hereby certify that on January 17, 2025, I caused a true and correct copy of the foregoing materials:

- Petitioner's Sur-Reply to Patent Owner's Reply to Petitioner's Opposition to Patent Owner's Motion to Amend

to be served via electronic mail by consent on counsel of record at:

rkamprath@mckoolsmith.com

shejny@mckoolsmith.com

bjarrett@mckoolsmith.com

Bragi_IPR@mckoolsmith.com

Respectfully Submitted

/Trishan Eram/

Trishan Eram

Registration No. 74,075