

Petitioner's Sur-Reply to Patent Owner's Reply to Petitioner's
Opposition to Patent Owner's Revised Motion to Amend
IPR2023-01150 (U.S. Patent No. 9,843,853)

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

K/S HIMPP
Petitioner

v.

BRAGI GmbH
Patent Owner

Case IPR2023-01150
U.S. Patent No. 9,843,853

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

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Opposition to Patent Owner’s Revised Motion to Amend
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I. INTRODUCTION

The patentability argument in Patent Owner (“PO”) Bragi’s Revised Motion to Amend (“RMTA”) rests solely on a single limitation—“wireless earpiece[s] [] configured to read user biometrics.” In its Reply, 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” (PO Reply at 10)¹; and admits that adjusting the power of an earpiece based on user biometrics, such as temperature, was known (*id.* at 5 (describing Rass (Ex. 1028))). Thus, there is no dispute that it was known, before the ’853 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. Also, PO does not dispute that the specification does not enable configuring wireless earpieces to read DNA sequencing, retinal scans, vein patterns, or facial features (*id.* at 8–11)—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 thus PO’s RTMA should be denied.

¹ Emphasis added throughout unless otherwise indicated.

II. SUBSTITUTE CLAIMS ARE OBVIOUS

In its Reply, PO admits that the sole claim feature that forms the basis of its patentability argument—"wireless earpiece[s] [] configured to read user biometrics"—was known in the art before the '853 patent. PO Reply at 10 (*"Techniques 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."*). PO also admits that a motivation to incorporate this feature into a wireless earpiece, namely the ability to adjust the power of a wireless earpiece based on measured user biometrics, was known. *Id.* at 5 (PO admitting prior art reference Rass (Ex. 1028) "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."). Instead, PO argues that a reference about "wearable biometric monitoring devices" (Ex-1022-Aumer, Title) is not analogous art, when contemplating a claim directed to an earpiece that reads user biometrics. Aumer is analogous art under the field-of-endeavor test and/or the reasonable-pertinence test. *Airbus S.A.S. v. Firepass Corp.*, 941 F.3d 1374, 1379 (Fed. Cir. 2019) (quoting *In re Bigio*, 381 F.3d 1320, 1325 (Fed. Cir. 2004)).

First, Aumer is from the same field of endeavor. *See Airbus*, 941 F.3d at 1380 ("To determine the applicable field of endeavor, the factfinder must consider

‘explanations of the invention’s subject matter in the patent application, including the embodiments, function, and structure of *the claimed invention*.’”) (quoting *Bigio*, 381 F.3d at 1325); *see also Netflix, Inc. v. DivX, LLC*, 80 F.4th 1352, 1359 (Fed. Cir. 2023) (“field of endeavor may be broadly defined because it relies on ‘the *complete disclosure of all embodiments* in the patent’s specification’”) (quoting Jeffrey T. Burgess, *The Analogous Art Test*, 7 BUFF. INTEL. PROP. L.J. 63, 72 (2009)). PO acknowledges that the ’853 patent broadly “relates to wireless electronics and battery systems,” and “*not exclusively* . . . to wireless earpieces that manage and extend battery life.” PO Reply at 4 (citing ’853 patent). Because Aumer, like the ’853 patent, discloses wearable biometric monitoring devices and in particular wireless earpieces, it shares the ’853 patent’s general field of endeavor—wireless electronics, including wireless earpieces. *See Netflix*, 80 F.4th at 1359 (“We have affirmed findings of analogous art where the references shared a general field of endeavor.”).

In addition, the only point of novelty that PO identifies is the requirement that the wireless earpieces are configured to read user biometrics. As such, although the field of endeavor is “not limited to the specific point of novelty” (*Unwired Planet, LLC v. Google Inc.*, 841 F.3d 995, 1001 (Fed. Cir. 2016)), the field of endeavor should at least include the alleged point of novelty—wireless earpieces configured

to read biometrics. Likewise, Aumer describes its “field of the invention” as “monitoring devices and methods for measuring physiological information,” as PO notes (PO Reply at 4), and predominantly focuses on wireless earpieces, given that “[t]he ear is an ideal location for wearable health and environment monitors.” Ex-1022-Aumer, ¶¶2, 64; *see also id.*, ¶¶77–81, Figures 2A–2B, 5A–8B.

Second, Aumer is reasonably pertinent to the particular problem with which the inventors were involved. As noted above, the only point of novelty that PO identifies is the requirement that the wireless earpieces are configured to read user biometrics. Likewise, Aumer is directed to solving the problem of how to implement a wearable biometric monitoring device, such as a wireless earpiece. Ex-1022-Aumer, Title, Abstract (“A wearable biometric monitoring device is configured to assess the biometric signal quality of one or more sensors associated with the monitoring device . . .”), ¶¶2, 64. If a POSITA is faced with the problem of how to configure a wireless earpiece to read user biometrics, then a POSITA would consider a reference, such as Aumer, that is directed to improving signal quality in a wearable biometric monitoring device, such as a wireless earpiece. *See Netflix*, 80 F.4th at 1361–1362 (“[A] prior art reference is reasonably pertinent only if ‘a person of ordinary skill would reasonably have consulted those references and applied their teachings in seeking a solution to the problem that the inventor was attempting to

solve.”) (quoting *In re GPAC Inc.*, 57 F.3d 1573, 1578 (Fed. Cir. 1995)); *see also In re Clay*, 966 F.2d 656, 659 (“If a reference disclosure has the same purpose as the claimed invention, the reference relates to the same problem, and that fact supports use of that reference in an obviousness rejection.”). Even if the inventors were involved in using biometric readings to manage wireless earpiece battery life, a POSITA would still reasonably consider references directed to how to configure wireless earpieces to read user biometrics, like Aumer, to ensure the earpieces manage battery life based on accurate biometric readings.²

The rest of PO's arguments regarding obviousness likewise fail.

PO argues that implementing earpieces as taught by Brown—or, by reference, Hain, Steinbrecher, or Shaffer—would not have been a “predictable result” because Aumer is not from the same field of endeavor as Brown, Hain, Steinbrecher, Shaffer, or the '853 patent. PO Reply at 5. But, as explained above for Aumer, the remaining prior art references are all also from the same field of endeavor as the '853 patent: wireless electronics, namely wireless earpieces. *See* Pet. Opp. to RMTA at 6, 10, 13, 16–17.

² Notably, none of the substitute claims recite any limitations directed to adjusting power, or otherwise managing battery life, based on biometric readings.

PO discounts motivations to combine that existed at the time of Aumer, and narrowly focuses on the problems described in Brown. PO Reply at 5. There is no requirement that motivations to combine are limited to the time of or problems described in a specific reference. In fact, an obviousness determination simply must be “before the effective filing date of the claimed invention.” 35 U.S.C. § 103. There is no dispute that all the references predate the '853 patent.

PO acknowledges that Rass discloses powering up or down a hearing aid based on temperature, and inexplicably arrives at the conclusion that such a disclosure means that a POSITA would not be motivated to incorporate a biometric sensor, like a temperature sensor, in a wireless earpiece like a hearing aid. PO Reply at 5–6; *cf.* Ex-1021-Kaiei-Decl., ¶19 (“Such a feature would provide the added benefit of saving battery life of Brown’s hearing aid 10.”).

Lastly, PO argues that a POSITA would not have had a reasonable expectation of success in combining references because there was no motivation to combine them. But, as discussed above, there were several motivations to combine them.

III. SUBSTITUTE CLAIMS ARE NOT ENABLED

Petitioner, in its Opposition to PO’s RMTA, supported by Prof. Kiaei’s declaration, explained why the '853 patent specification fails to enable the full scope of PO’s amendment “wireless earpiece[s] [] configured to read user biometrics,”

recited directly or indirectly in all substitute claims 22–42, under 35 U.S.C. § 112(a). See Pet. Opp. to RMTA 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 broadly means “biological, physiological or chemical characteristics of the user.” Ex-1027-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. Opp. to RMTA 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. Ex-1021-Kaiei-Decl., ¶51.

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 8–11; 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”). In particular, PO argues that the claims require that the biometric be both “appropriate for use in an earpiece worn within the ear” and “[appropriate] for performing associated functions, which would include powering

down.” *Id.* at 9. 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-1027-Young-2ndTr., 15:2–14 (PO’s expert testifying that the term “user biometrics” in the context of the ’853 patent 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 the earpieces themselves or another device in communication with the earpieces. *See* Ex-1027-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 ’853 patent). In addition, despite PO alleging that the “reading of user biometrics is confined to the structure of the earpiece” (PO Reply at 9), the

substitute claims merely recite that “a portion of the wireless earpiece fits within the ear canal,” 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. Furthermore, nowhere do the substitute claims recite any use of, such as earpiece functions that depend on, any measured 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 “appropriate for use in an earpiece worn within the ear” and “[appropriate] for performing associated functions, which would include powering down,” as required by PO. PO Reply at 9. It is unclear what is meant by “appropriate” 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 “powering down,” let alone what is “appropriate” 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-1027-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 ’853 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. AMENDMENTS DO NOT RESPOND TO GROUNDS

PO’s substitute claims include amendments that do not respond to any ground of unpatentability involved in this IPR, and thus PO’s RMTA should be denied. 37 C.F.R. § 42.121(a)(2)(i) (“A motion to amend may be denied where . . . [t]he amendment does not respond to a ground of unpatentability involved in the trial.”). Both PO and its expert merely alleged that “Substitute Claims 22-42 respond to the grounds . . . by including the limitation ‘the wireless earpieces are configured to read user biometrics.’” PO Reply at 11; Ex-2007-Young-3rdDecl., ¶93. However, this limitation is only one of three claim limitations that PO added in its RMTA, and neither PO nor its expert explains how the other added limitations respond to any ground involved in this IPR, or are otherwise necessary for patentability. *See Lectrosonics, Inc. v. Zaxcom, Inc.*, IPR2018-01129, Paper 15 at 6 (PTAB Feb. 25, 2019) (precedential) (PO “may include additional limitations to address potential § 101 or § 112 issues, if necessary”).

V. RMTA IMPROPERLY BROADENS CLAIM SCOPE

Petitioner noted in its Opposition that the limitation “the magnetic field is applied by a smart case” has been deleted in substitute claim 32, without being added elsewhere in claim 32 or in independent claim 31, from which claim 32 depends. Pet. Opp. to RMTA at 25 (citing RMTA at APPX A-3). In response, PO merely concludes that its substitute claims do not broaden the claim scope, without any explanation. PO Reply at 12. PO’s expert asserts that the limitation deleted from claim 32 is instead present in its base claim 31. Ex-2007-Young-3rdDecl., ¶98. But the below excerpt from PO’s RMTA at APPX A-3 (*see also* Ex-2007-Young-3rdDecl. at 22–23) clearly shows that the limitation “the magnetic field is applied by a smart case” is *not* present in claim 31. Although claim 31 recites a “magnetic field,” claim 31 is silent about any “smart case,” meaning the “magnetic field” could be applied by something other than a smart case.

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Claim 31. [Proposed substitute for claim 10] A wireless earpiece,
comprising:

circuitry operating the wireless earpiece, wherein a portion of the wireless
earpiece fits within the ear canal opening and the wireless earpiece is configured to
read user biometrics, and

a battery powering the circuitry of the wireless earpiece; and

a reed switch connecting the battery to the circuitry, wherein:

the reed switch connects the circuitry to the battery when a magnetic
field is not detected; ~~and wherein~~

the reed switch disconnects the circuitry from the battery when a
magnetic field is detected.

Claim 32. [Proposed substitute for claim 11] The wireless earpiece of
claim ~~10~~31, ~~wherein the magnetic field is applied by a smart case;~~
wherein the smart case is configured to receive the wireless earpiece,
and powers the wireless earpiece when received in the smart case.

Because the magnetic field is no longer limited to being applied by a smart case, in
either claim 31 or 32, the scope of original claim 11 has been improperly broadened.

VI. 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 '853 patent.

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Respectfully submitted,

/Haixia Lin/

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Table of Exhibits for IPR2023-01150

Exhibit	Description
1001	U.S. Patent No. 9,843,853 ("853 patent")
1002	Declaration of Sayfe Kiaei, Ph.D.
1003	U.S. Patent Application Publication No. 2015/0245126 ("Shaffer")
1004	Certified English translation of DE Patent Application No. 102007039455 ("Hain")
1005	U.S. Patent No. 8,265,315 ("Sorensen")
1006	Certified English translation of EP Patent Application No. 1727395 ("Steinbrecher")
1007	GB Patent Application No. 1254017 ("Brown")
1008	File History for U.S. Patent No. 9,843,853 ("853 FH")
1009	DE Patent Application No. 102007039455 (original German version of Hain)
1010	Affidavit of James Doing (Certificate of Translation for Hain)
1011	EP Patent Application No. 1727395 (original German version of Steinbrecher)
1012	Affidavit of James Doing (Certificate of Translation for Steinbrecher)
1013	U.S. Patent Application Publication No. 2013/0007484
1014	Colburn, "The Resilience of the Reed Relay," IEEE Spectrum (August 28, 2015) [https://spectrum.ieee.org/the-resilience-of-the-reed-relay]
1015	U.S. Patent No. 2,264,746
1016	Hamlin Application Note AN104: Reed Switch and Reed Sensor Activation (2008) [https://www.sparkfun.com/datasheets/Components/Buttons/AN104.pdf]
1017	Second Declaration of Sayfe Kiaei, Ph.D.
1018	U.S. Patent Application Publication No. 2015/0200554 ("Marks")

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Exhibit	Description
1019	Transcript of Deposition of Darrin Young (7/15/2024)
1020	Exhibit 4 to Deposition of Darrin Young
1021	Third Declaration of Sayfe Kiaei, Ph.D.
1022	U.S. Patent Application Publication No. 2016/0094899 ("Aumer")
1023	U.S. Provisional Application No. 62/056,510 ("Aumer-Provisional1")
1024	U.S. Provisional Application No. 62/110,655 ("Aumer-Provisional2")
1025	U.S. Patent Application Publication No. 2014/0275852
1026	U.S. Patent Application Publication No. 2013/0072765
1027	Transcript of Second Deposition of Darrin Young (9/27/2024)
1028	U.S. Patent No. 7,522,739

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CERTIFICATE OF SERVICE

I hereby certify that on November 12, 2024, 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:

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Respectfully Submitted

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