

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

SECOND DECLARATION OF SAYFE KIAEI, PH.D.

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I, Sayfe Kiaei, declare as follows:

I. INTRODUCTION

1. I submitted in this matter a prior Declaration, which I understand was filed as Exhibit 1002 on July 24, 2023. My prior Declaration was in support of HIMPP's Petition challenging the patentability of U.S. Patent No. 10,117,014 ("the '014 patent"). My background and qualifications remain as stated in paragraphs 1–14 and Exhibit A of that Declaration.

2. In addition to the materials listed in my prior Declaration, I have reviewed the following papers and exhibits from each of IPR2023-01204 (the present IPR proceeding), IPR2023-01150 (related IPR proceeding challenging U.S. Patent No. 9,843,853 ("the '853 patent"), to which the '014 patent claims priority), and IPR2023-01205 (related IPR proceeding challenging U.S. Patent No. 10,397,688 ("the '688 patent"), which claims priority to the '014 patent): HIMPP's Petition, Patent Owner's Preliminary Response ("POPR"), the Board's Institution Decision ("DI"), Patent Owner's Motion to Amend ("MTA"), and the exhibits referenced in the MTA. Hereinafter, I refer to the Petition, POPR, DI, MTA, and exhibits in the present IPR2023-01204 unless I state otherwise. I have also reviewed the Board's Preliminary Guidance concerning Patent Owner's MTA in IPR2023-01150 and all exhibits referenced in this second Declaration of mine.

3. I confirm that my technical analysis, my understanding of the relevant legal principles stated in paragraphs 17–24, and my appraisal of a person of ordinary skill in the art (“POSITA”) stated in paragraph 25 included in my prior Declaration (Exhibit 1002) remain unchanged.

II. RELEVANT LAW

4. My understanding of the relevant law as explained in paragraphs 17–24 of my prior declaration of July 24, 2023 remains unchanged.

5. I am not an attorney. For the purposes of this second Declaration, I have been informed by HIMPP’s counsel about certain additional aspects of the law that are relevant to my opinions. My understanding of the law is as follows:

6. I have been informed and understand that an amendment proposed in a motion to amend may not enlarge the scope of the claims of the patent or introduce new subject matter.

7. I have been informed and understand that a proposed amended claim in a motion to amend must be described by the specification of the patent understandably to a POSITA. I also understand that a claim is indefinite when it contains words or phrases whose meaning is unclear to a POSITA in light of the patent specification and the prosecution history.

8. I have been informed and understand that a patent specification must contain a written description of the claimed invention. I also have been informed

and understand that the patent specification must describe the manner and process for making and using the claimed invention, in such full, clear, concise, and exact terms as to enable any POSITA to which it pertains, or with which it is most nearly connected, to make and use the invention.

9. To satisfy the “written description” requirement, the disclosure of the patent must convey with reasonable clarity to a POSITA that, as of the priority date sought, the inventors were in possession of the claimed invention. In this sense, the written description constitutes an adequate description if it describes the full scope of what is claimed and conveys to a POSITA that the patentee actually invented what is claimed. A claim is invalid for lack of written description where the patent’s disclosure does not convey to a POSITA that the inventors invented or had possession of the full breadth of the claimed subject matter as of the priority date of the patent.

III. PATENT OWNER’S MTA INTRODUCES NEW MATTER

10. The original disclosure does not reasonably convey to a POSITA that the inventors had possession of Patent Owner’s proposed claim amendment “the smart case comprises[/comprising] a rechargeable battery configured to receive charge inductively” recited directly or indirectly by substitute claims 17, 19, 20, and 23–26. Neither Patent Owner nor its expert (Dr. Darrin Young) explains why or how the original specification supports this proposed claim limitation. I have

reviewed Patent Owner’s citations to the specification of U.S. Patent Application No. 15/245,031 (“the ’031 Application”; Exhibit 1008 at 1–16)—the parent application to the ’014 patent—and Dr. Young’s chart purportedly containing supporting excerpts of the specification of the ’031 Application and find them insufficient. *See* MTA at 5 (citing 3:27–29; 5:3–15; 6:6–20; 7:5–13; 9:14–20; 9:26–10:2 of the specification of the ’031 Application); Exhibit 2001 (Young Declaration) at 27–30.

11. A POSITA reading these cited portions of the specification of the ’031 Application would have understood that discussions of “inductive charging” in the patent refer to charging of the batteries of the wireless earpieces, not the battery of the smart case. I note that the 3:27–29 citation should be read in the context of the sentences surrounding it. The specification of the ’031 Application (Exhibit 1008) at 3:23–4:2 discloses:

The wireless earpieces may interact with a smart case to perform various actions. For example, the smart case may be utilized to preserve the battery life of the wireless earpieces by interacting with the wireless earpieces while in a low power mode or state. In addition, the smart cases may ensure that the wireless earpieces are charged to a desired level. Charging may be performed utilizing contact or wirelessly (e.g., inductive charging). The smart case may communicate with the wireless earpieces through physical interactions (e.g., magnetic contact points, physical switches, etc.) or through wireless connections, standards, or protocols (e.g., near field communications, Bluetooth, Wi-Fi, etc.).

This passage is about the interaction between the smart case and the wireless earpieces, including “wirelessly” or “inductively” charging the wireless earpieces. The specification of the ’031 Application explains that the battery in the smart case is used to charge the wireless earpieces through “direct contact or wirelessly.” *See* Exhibit 1008 (specification of the ’031 Application) at 5:3–5 (“The smart case 102 encloses a battery, and various other circuitry (not shown). The battery of the smart case 102 may be utilized to charge the wireless earpieces 142, 144 through direct contact or wirelessly.”). The specification of the ’031 Application further discloses that interfaces 108, 110 within receptacles 104, 106—which receive the wireless earpieces—may include inductive chargers for charging the wireless earpieces. *Id.* at 6:6–11 (“The smart case includes interfaces 108, 110 within the receptacles 104, 106. . . . The interfaces 108, 110 may alternatively include inductive chargers for charging the wireless earpieces 142, 144.”). A POSITA would understand that such inductive chargers would have a relatively small form factor to fit into or around receptacles 104, 106. A POSITA would **not** expect such inductive chargers to be used to charge the battery of the smart case.

12. To the contrary, a POSITA would find that the specification of the ’031 Application is clear that charging the battery of the smart case is through a “hardware interface” or “connector.” *See* Exhibit 1008 (specification of the ’031 Application)

at 9:14 (“the smart case 402 may include a battery 404”), 9:26–10:2 (“The battery 404 may itself be charged through an interface 410. The **interface 410 is a hardware interface** for connecting the smart case to a power supply or other electronic device. The interfaces 410 may be utilized for charging as well as communications with externally connected devices. For example, the **interface 410 may represent a mini-USB, micro-USB or other similar miniature standard connector.**”), 7:5–7 (“The smart case 102 may also include a port 112. The port 112 may be utilized to interface with the smart case 102. For example, the port 112 may be utilized with a connector to charge the battery of the smart case 102.”). In Figure 3 of the original disclosure, port 112 is depicted as a USB port included in smart case 102. A POSITA would have no doubt that a physical power cord has to be plugged into port 112 to charge the battery of smart case 102. There is no indication that the inventors contemplated inductively charging the battery of the smart case and the specification of the ’031 Application would not have conveyed to a POSITA that the inventors were in possession of such a feature.

13. Therefore, the specification of the ’031 Application lacks written description support for Patent Owner’s proposed claim amendment “the smart case comprises[/comprising] a rechargeable battery configured to receive charge inductively.” I note that the Board agreed with this assessment of the disclosure of the ’031 Application in the related IPR proceeding challenging the ’853 patent,

which is related to and shares the same specification as the '014 patent at issue in this IPR proceeding. Exhibit 1025 (IPR2023-01150, Paper 24, Board's Preliminary Guidance) at 6 ("On this record, we agree with Petitioner's position that Patent Owner's Motion does not appear to sufficiently set forth written description support for proposed substitute claims 31–42 because Patent Owner's citations do not reasonably convey that the inventors had possession of the claimed smart case comprising 'a rechargeable battery configured to receive charge inductively' recited in proposed substitute claims 31 and 42.").

IV. THE SUBSTITUTE CLAIMS ARE INDEFINITE

14. Patent Owner's proposed claim amendment "in-ear" fails to inform a POSITA regarding the scope of the claimed invention. Based on my review of the specification of the '014 patent and its prosecution history, I note that the term "in-ear" does not appear in the specification of the '014 patent and was never a point of contention during its prosecution. I also reviewed the rest of the language of the substitute claims and found the remaining claim language did not shed any light on the term "in-ear." As such, a POSITA would not understand the metes and bounds of what constitutes an "in-ear" wireless earpiece when read in light of the specification, the prosecution history, and the substitute claims.

15. For a "wireless earpiece" to be "in-ear," it is unclear how much and/or what portion of the earpiece must be in the ear to qualify as "in-ear." For example,

is an earpiece “in-ear” if a *portion* of it is in the ear? Or only if the *entirety* of the earpiece is in the ear? Or if *more than half* of the earpiece is in the ear? To be “in” the “ear,” does that mean *within the periphery or boundary of the ear* as defined by the edge of the ear as a whole? Or *within a specific portion* of the ear, such as *within the ear canal*?

16. In his declaration in support of Patent Owner’s MTA in IPR2023-01150, Dr. Young testified that hearing aid 10, described in GB Patent Application No. 1254017 (“Brown”) (Exhibit 1007), is not an “in-ear” wireless earpiece. Exhibit 1024 (IPR2023-01150, Exhibit 2001-Young Declaration) at ¶¶ 61–62. I note that, although Brown is not part of any grounds raised by Petitioner in the present IPR2023-01204, the discussion of “in-ear” and Dr. Young’s characterization of Brown’s hearing aid in IPR2023-01150 are relevant here because the ’014 patent challenged here is a continuation of and shares the same specification as the ’853 patent challenged in IPR2023-01150 and because Patent Owner likewise proposed the same amendment, to change the claim term “wireless earpieces” to “in-ear wireless earpieces,” in IPR2023-01150. *See, e.g.*, Exhibit 1023 (IPR2023-01150, Paper 12, PO’s MTA) at Appendix A. Brown’s Figure 1, depicting hearing aid 10 (red), is reproduced below. Dr. Young opined that “Brown discloses a hearing aid that is worn on the ear, not a hearing aid configured to fit inside of a user’s ears.” Exhibit 1024 (IPR2023-01150, Exhibit 2001-Young Declaration) at ¶ 62.

Nevertheless, Dr. Young, while acknowledging that a portion of Brown’s hearing aid is “outside the ear,” recognized that the remaining portion of Brown’s hearing aid 10—namely “earmould (13) and part of the sound tube (11)”—is inside the ear. *Id.* (“Figure 1 of Brown, reproduced below, illustrates that all of the circuitry and associated parts of the hearing aid *except* for the earmould (13) and part of the sound tube (11) are housed in the portion of Brown’s hearing aid that sits *outside* the ear.”) (emphasis in original). Dr. Young further testified, during his deposition, that an in-ear wireless earpiece is “a wireless earpiece that is inserted in the ear, in the ear canal.” Exhibit 1020 (Young Deposition Transcript) at 25:25–26:3; *see also id.* at 77:12–13 (“it’s earpieces that, you know, I said kind of fit into the ear canal of a user”). Therefore, it seems that Patent Owner’s and Dr. Young’s interpretation of “in-ear” requires that the earpiece be entirely contained within the ear canal. By contrast, in its Institution Decision in IPR2023-01150, the Board noted that “earmould 13, illustrated in Brown’s Figure 1, is configured to fit into the user’s ear, and is a constituent part of hearing aid 10.” Exhibit 1022 (IPR2023-01150, Paper 8, DI) at 41. As such, under the Board’s reasoning, an earpiece having a portion, *e.g.*, Brown’s earmould 13, configured to fit into an ear would constitute the claimed “in-ear wireless earpiece.”

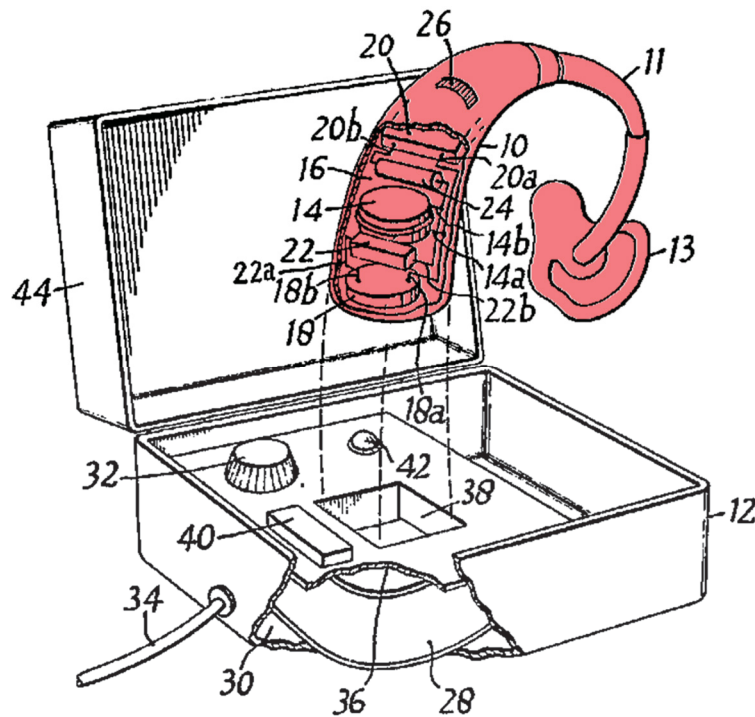


Exhibit 1007 (Brown), Figure 1 (annotated)

17. During his deposition, Dr. Young was also shown two pictures, reproduced below, of a popular earbud by Bose and how the earbud is worn by a user. *See* Exhibit 1021 (Young Deposition, Exhibit 4). Like Brown’s hearing aid 10, Dr. Young agreed that a portion of the Bose earbud “goes inside the ear” and another portion “is outside the ear.” Exhibit 1020 (Young Deposition Transcript) at 28:11–12, 30:9–15, 30:19–31:1, 31:9–15, 47:17–48:2. However, unlike for Brown’s hearing aid 10, Dr. Young could not conclude whether the Bose earbud is “in-ear” or not. *See id.*, 31:20–32:3, 33:9–16, 49:3–50:3. Dr. Young stated that he would need to review additional technical documents to come to a conclusion, but could not identify specific documents. *See id.*, 47:17–48:2. Because it is unclear what

additional information would be needed to understand the scope of the term “in-ear” when describing a wireless earpiece, Dr. Young’s inability to articulate the meaning of this term without unspecified documented technical information confirms that the term “in-ear” is indefinite to a POSITA. I note that the Board agreed that the term “in-ear” appears to render the claims indefinite in the related IPR proceeding challenging the ’853 patent, which is related to and shares the same specification as the ’014 patent at issue in this IPR proceeding. Exhibit 1025 (IPR2023-01150, Paper 24, Board’s Preliminary Guidance) at 7–8 (“proposed substitute claims 22–42 [reciting ‘in-ear’] appear to be indefinite”).



V. THE PRIOR ART ANTICIPATES OR RENDERS OBVIOUS THE SUBSTITUTE CLAIMS

18. Regardless of my discussion in Sections III and IV above regarding lack of written description and indefiniteness, as I discuss next, the prior art anticipates or renders obvious Patent Owner’s proposed substitute claims 14–26.

A. Marks

19. U.S. Patent Application Publication No. 2015/0200554 to Marks et al. (“Marks”) was published on July 16, 2015. I understand that Marks is prior art to the ’014 patent. Marks is directed to a portable case that includes a rechargeable battery capable of charging an electronic device when stored in the portable case. *See* Exhibit 1019 (Marks) at ¶ 2.

20. More particularly, Marks discloses a portable case 100 for a wearable electronic and/or computing device 110. *Id.* at ¶ 18, Figure 1. Although Marks depicts device 110 as an optical computing device 112 in Figure 1, Marks makes clear that examples of device 110 include “hearing aids.” *See id.* at ¶ 19. Marks explains that “an auxiliary battery 131 embedded within the portable case” charges a main battery 120 of the device 110. *Id.* at ¶ 18. Marks further discloses wirelessly charging the auxiliary battery 131 using a plurality of wireless components 174 so that “no cable is needed.” *Id.* at ¶ 30. The wireless components 174 “may be configured to accomplish wirelessly charging inductively.” *Id.* at ¶ 38.

B. Ground 1: Hain anticipates substitute claims 14–16 and 18

21. For the reasons that I provided in my prior Declaration, original claims 1–3 and 5 are anticipated by Hain. In its MTA, Patent Owner has proposed substitute claims 14–16 and 18 corresponding to claims 1–3 and 5, respectively.

22. Claim 14 includes Patent Owner’s proposed “in-ear” and “wherein the powering circuitry is housed within the in-ear wireless earpieces” amendments. Patent Owner does not dispute that Hain discloses these amendments. Instead, Patent Owner argues that “Hain does not disclose ‘powering circuitry of the in-ear wireless earpieces utilizing a low power mode in response to detecting a magnetic field is applied to one or more of the in-ear wireless earpieces’ and ‘altering the power sent to the circuitry of the in-ear wireless earpiece to a high power mode in response to detecting a magnetic field is not applied to one or more of the in-ear wireless earpieces.’” MTA at 10. Patent Owner incorrectly states that “Petitioners appear to map the ‘high power mode’ of the claims to Hain’s ‘telephone mode.’” *Id.* at 8. Based on this incorrect statement, Patent Owner argues that “Hain teaches that when a single hearing aid detects a magnetic field (and importantly, the other hearing aid does not detect a magnetic field), the hearing aid detecting the magnetic field operates in high power mode” whereas the ’014 patent requires that “the wireless earpiece will utilize a high power mode in response to detecting the absence of a magnetic field, and a low power mode in response to detecting the presence of a magnetic field in one ear piece.” *Id.* at 7–8. But Patent Owner’s arguments fail for the reasons that follow.

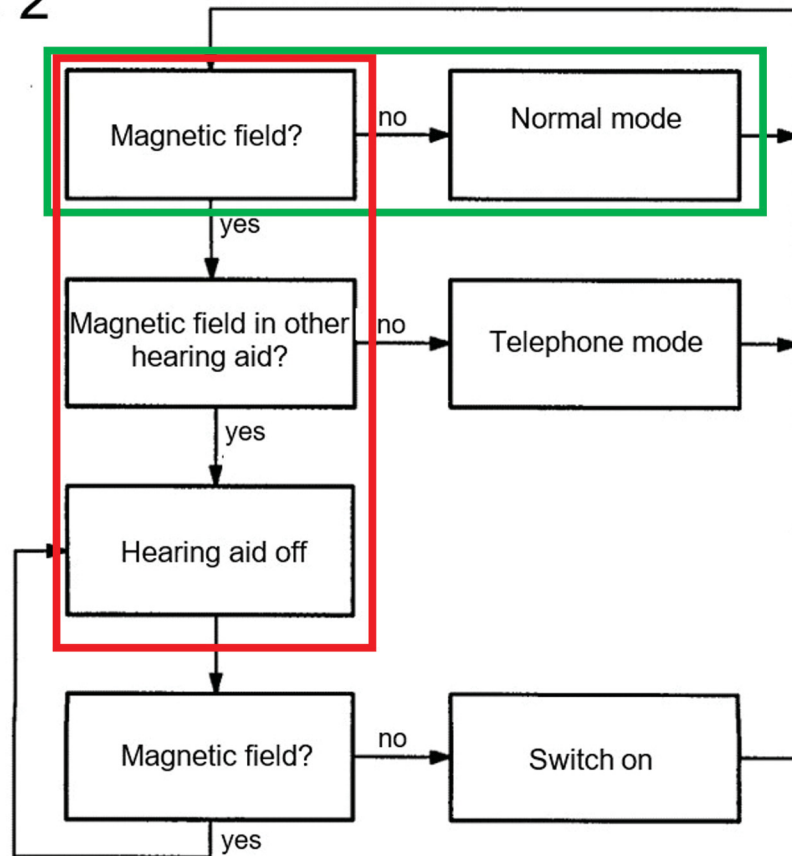
23. First, I have reviewed HIMPP’s Petition and nowhere did Petitioner rely on Hain’s telephone mode. Nor did I rely on Hain’s telephone mode in my prior

Declaration (Exhibit 1002). Both Petitioner and I mapped the claimed “high power mode” to Hain’s “normal mode.” *See* Petition at 22–25; Exhibit 1002 at ¶¶ 46–49.

24. Second, Patent Owner seems to contend that “one or more” should be interpreted as only one. But the Board was clear that “one or more” is written in the alternative. DI at 38–39. In particular, the Board found that the “altering the power sent to the circuitry of the wireless earpiece to a high power mode in response to detecting a magnetic field is not applied to one or more of the wireless earpieces” claim limitation “may be met by a system in which either one earpiece goes into high power mode when a magnetic field is not detected, or a system in which more than one earpiece goes into high power mode when a magnetic field is not detected.” *Id.* at 39. Under the Board’s logic, the claim limitation that requires one or more of the wireless earpieces to enter the low power mode when detecting a magnetic field may be met by a system in which either one earpiece goes into low power mode when a magnetic field is detected, or a system in which more than one earpiece goes into low power mode when a magnetic field is detected.

25. Third, the Board further correctly noted that “Petitioner’s annotation of [Hain’s] Figure 2 in red indicates the logic flow when a magnetic field is applied to both earpieces, resulting in a low-power mode, and the annotation in green indicates the earpiece is in a high-power or normal mode when a magnetic field is not applied to the earpieces.” *Id.* at 39–40.

FIG 2



26. Accordingly, Hain discloses both “powering circuitry of the in-ear wireless earpiece utilizing a low power mode in response to detecting a magnetic field is applied to one or more of the in-ear wireless earpiece[s]” (red box above) and “altering the power sent to the circuitry of the in-ear wireless earpiece to a high power mode in response to detecting a magnetic field is not applied to one or more of the in-ear wireless earpieces” (green box above), as recited by substitute claim 14.

27. Patent Owner does not argue any deficiency in Hain with respect to substitute claims 15, 16, and 18. Therefore, Hain anticipates substitute claims 14–16 and 18.

C. Ground 2: Steinbrecher in view of Marks renders substitute claims 23 and 24 obvious

28. For the reasons that I provided in my prior Declaration, original claims 10 and 11 are anticipated by Steinbrecher. In its MTA, Patent Owner has proposed claims 23 and 24 to substitute for claims 10 and 11, respectively.

29. Regarding substitute claims 23 and 24, Patent Owner does not dispute that Steinbrecher discloses the proposed “in-ear” amendment. But Patent Owner argues that Steinbrecher does not disclose “the smart case comprises a rechargeable battery configured to receive charge inductively and to charge the left and right in-ear wireless earpieces.” MTA at 11–12. However, before the priority date of the ’014 patent, a POSITA would have found it obvious in view of Marks’s teachings (*see* Section V.A) to modify Steinbrecher’s charging shell 1 (*i.e.*, “a smart case”) to include a rechargeable battery configured to receive charge inductively and to charge the wireless earpiece.

(a) Motivation to combine Steinbrecher and Marks

30. A POSITA would have been motivated to modify Steinbrecher’s charging shell 1 according to and informed by Marks’s teachings to include a

rechargeable battery configured to receive charge inductively and to charge hearing aid H. I note that, in the related IPR proceeding challenging the '853 patent, the Board agreed that a POSITA would have had reason to combine Steinbrecher and Marks. Exhibit 1025 (IPR2023-01150, Paper 24, Board's Preliminary Guidance) at 14 ("Petitioner's Opposition appears to show that a person of ordinary skill in the art would have had reason to combine Steinbrecher and Marks.").

31. First, Steinbrecher and Marks are from the same field of endeavor. Both references are directed to a case that charges an electronic device when stored therein. Steinbrecher discloses charging shell 1 for charging hearing aid H. Exhibit 1006 (Steinbrecher) at ¶¶ 24–25, Figures 1–2. Similarly, Marks discloses portable case 100 for charging device 110 (*e.g.*, "hearing aids"). Exhibit 1019 (Marks) at ¶¶ 18–19, Figure 1. A POSITA would have therefore considered the teachings of Steinbrecher and Marks and would have readily been motivated to combine their teachings.

32. Second, implementing Steinbrecher's charging shell 1 to include a rechargeable battery configured to receive charge inductively and to charge hearing aid H as taught by Marks would have yielded expected, predictable results. Steinbrecher discloses charging shell 1 to charge hearing aid H. Exhibit 1006 (Steinbrecher) at ¶¶ 34–25, Figures 1–2. Marks discloses portable 100 with battery 131 that can be charged inductively via wireless components 174 and that charges

device 110. Exhibit 1019 (Marks) at ¶¶ 18, 30, 38, Figure 1. A POSITA would have combined the elements taught by Steinbrecher and Marks—namely, charging shell 1 as taught by Steinbrecher, and portable case 100 with battery 131 and wireless components 174 as taught by Marks—using known and routine electronic device design and manufacturing techniques to modify Steinbrecher’s charging shell 1 to include a rechargeable battery configured to receive charge inductively and to charge hearing aid H. This modification would have been readily predictable and recognized by a POSITA and would have been well within the knowledge and skillset of a POSITA.

33. Third, Marks expressly discloses the benefit of wirelessly charging a battery of a case—“no cable is needed to enable the charging.” Exhibit 1019 (Marks) at ¶ 30. Accordingly, implementing Steinbrecher’s charging shell 1 to include a rechargeable battery configured to receive charge inductively as taught by Marks would free Steinbrecher’s charging shell 1 of the cable with mains plug 3, thereby making charging shell 1 portable like Mark’s portable case 100.

34. Fourth, a POSITA would have had a reasonable expectation of success in applying Marks’s teachings to Steinbrecher’s charging shell 1. As explained above, Marks’s implementation of a portable case that includes a rechargeable battery that can be charged inductively and that charges a device such as a hearing

aid is directly applicable to Steinbrecher's charging shell 1 and well within the knowledge and skillset of a POSITA.

35. For the above reasons, Steinbrecher in view of Marks renders obvious substitute claims 23 and 24. I note that, in the related IPR proceeding challenging the '853 patent, the Board preliminarily opined "that Petitioner has established a reasonable likelihood that the combined teachings of Steinbrecher and Marks would have rendered proposed substitute claims 31 and 42 obvious," where Patent Owner argued that Steinbrecher does not disclose a "smart case comprising a rechargeable battery configured to receive charge inductively and to charge the in-ear wireless earpiece" as recited by these substitute claims 31 and 42. Exhibit 1025 (IPR2023-01150, Paper 24, Board's Preliminary Guidance) at 13–14.

D. Grounds 3 and 4: Shaffer in view of Hain and/or Sorensen renders substitute claims 14–16, 18, 21, and 22 obvious, and Shaffer in view of Hain, Sorensen, and/or Marks renders substitute claims 17, 19, and 20 obvious

36. For the reasons that I provided in my prior Declaration, original claims 1–9 would have been obvious over the teachings of Shaffer in view of Hain and/or Sorensen. In its MTA, Patent Owner has proposed claims 14–22 to substitute for claims 1–9, respectively.

1. Substitute claims 14–16, 18, 21, and 22

37. Patent Owner does not point to any deficiency in Shaffer or Sorensen as to substitute claims 14–16, 18, 21, and 22. Instead, Patent Owner notes that Grounds 3 and 4 include Hain and, like for Ground 1, argues that “Hain does not disclose ‘powering circuitry of the in-ear wireless earpieces utilizing a low power mode in response to detecting a magnetic field is applied to one or more of the in-ear wireless earpieces,’ and ‘altering the power sent to the circuitry of the in-ear wireless earpiece to a high power mode in response to detecting a magnetic field is not applied to one or more of the in-ear wireless earpieces.’” MTA at 13. As I discussed above in Section V.B, Hain discloses both “powering circuitry of the in-ear wireless earpiece utilizing a low power mode in response to detecting a magnetic field is applied to one or more of the in-ear wireless earpiece[s]” and “altering the power sent to the circuitry of the in-ear wireless earpiece to a high power mode in response to detecting a magnetic field is not applied to one or more of the in-ear wireless earpieces,” as recited by substitute claim 14. Accordingly, Shaffer in view of Hain and/or Sorensen renders substitute claims 14–16, 18, 21, and 22 obvious.

2. Substitute claims 17, 19, and 20

38. Substitute claims 17 and 19 recite “the smart case comprises a rechargeable battery configured to receive charge inductively and to charge the in-ear wireless earpieces.” Substitute claim 20 recites “the smart case comprising a

rechargeable battery configured to receive charge inductively and to charge the in-ear wireless earpieces.” For the reasons that follow, Shaffer, alone or in combination with Marks, renders these limitations obvious.

39. First, Shaffer’s storage case 11 (*i.e.*, “a smart case”) contains “an internal rechargeable battery 109.” Exhibit 1003 (Shaffer) at ¶ 56, Figure 4. Shaffer discloses that battery 109 “can supply charge to case 11 electrical earbud contacts 29 and 31 in order to charge rechargeable batteries 39 and 27” of earbuds 34 and 35, respectively. *Id.* at ¶ 57; *see also id.* at ¶ 42, Figure 3D. Therefore, Shaffer discloses “the smart case comprises[/comprising] a rechargeable battery configured . . . to charge the in-ear wireless earpiece.”

40. Second, Shaffer discloses that the rechargeable battery 109 can be charged when electrical components within the case 11 transfer charge from “a power source via plug 19” via PCB 1004 to battery 109. *See* Exhibit 1003 (Shaffer) at ¶ 57. To the extent the specification of the ’031 Application disclosure of charging the battery 404 of the smart case 402 using a hardware interface or connector provides written description support for “a smart case comprising a rechargeable battery configured to receive charge inductively” (*see* discussion at Section III), then Shaffer, like the specification of the ’031 Application, discloses “a smart case comprises[/comprising] a rechargeable battery configured to receive charge inductively.”

41. Third, notwithstanding the preceding second point, before the priority date of the '014 patent, a POSITA would have found it obvious in view of Marks's teachings (*see* Section V.A) to modify Shaffer's case 11 (*i.e.*, "a smart case") such that its rechargeable battery 109 is configured to receive charge inductively.

(a) **Motivation to combine Shaffer and Marks¹**

42. A POSITA would have been motivated to modify Shaffer's case 11 according to and informed by Marks's teachings such that rechargeable battery 109 contained in case 11 is configured to receive charge inductively. I note that, in the related IPR proceeding challenging the '853 patent, the Board agreed that a POSITA would have had reason to combine Shaffer and Marks. Exhibit 1025 (IPR2023-01150, Paper 24, Board's Preliminary Guidance) at 16 ("Petitioner's Opposition appears to show that a person of ordinary skill in the art would have had reason to combine Shaffer, Steinbrecher, Sørensen, and/or Marks.").

43. First, Shaffer and Marks are from the same field of endeavor. Both references are directed to a case that charges an electronic device when stored

¹ The reasons that I provided in my first declaration (Exhibit 1002) as to why a POSITA would have been motivated to combine Shaffer with Hain and/or Sorensen with a reasonable expectation of success apply equally here.

therein. Shaffer discloses case 11 for charging earbuds 34 and 35. *See, e.g.*, Exhibit 1003 (Shaffer) at ¶¶ 39–47, Figures 2A–3D. Similarly, Marks discloses portable case 100 for charging device 110 (*e.g.*, “hearing aids”). Exhibit 1019 (Marks) at ¶¶ 18–19, Figure 1. A POSITA would have therefore considered the teachings of Shaffer and Marks and would have readily been motivated to combine their teachings.

44. Second, implementing Shaffer’s case 11 such that its rechargeable battery 109 is configured to receive charge inductively as taught by Marks would have yielded expected, predictable results. Shaffer discloses case 11 containing rechargeable battery 109. Exhibit 1003 (Shaffer) at ¶ 56, Figure 4. Marks discloses portable 100 with battery 131 that can be charged inductively via wireless components 174. Exhibit 1019 (Marks) at ¶¶ 18, 30, 38, Figure 1. A POSITA would have combined the elements taught by Shaffer and Marks—namely, case 11 with rechargeable battery 109 as taught by Shaffer, and portable case 100 with battery 131 and wireless components 174 as taught by Marks—using known and routine electronic device design and manufacturing techniques to modify Shaffer’s case 11 such that its rechargeable battery 109 is configured to receive charge inductively. This modification would have been readily predictable and recognized by a POSITA and would have been well within the knowledge and skillset of a POSITA.

45. Third, Marks expressly discloses the benefit of wirelessly charging a battery of a case—“no cable is needed to enable the charging.” Exhibit 1019 (Marks) at ¶ 30. Accordingly, implementing Shaffer’s case 11 such that its rechargeable battery 109 is configured to receive charge inductively as taught by Marks would allow charging the rechargeable battery 109 without the hassle of having to connect charging cable 1000 to inlet jack 36. *See* Exhibit 1003 (Shaffer) at ¶¶ 47, 49, Figures 5A and 5B.

46. Fourth, a POSITA would have had a reasonable expectation of success in applying Marks’s teachings to Shaffer’s case 11. As explained above, Marks’s implementation of a portable case that includes a rechargeable battery that can be charged inductively is directly applicable to Shaffer’s case 11 that contains rechargeable battery 109 and well within the knowledge and skillset of a POSITA.

47. For the above reasons, Shaffer in view of Hain, Sorensen, and/or Marks renders obvious substitute claims 17, 19, and 20.

E. Grounds 5 and 6: Shaffer in view of Steinbrecher, Sorensen, and/or Marks renders substitute claims 23–26 obvious

48. For the reasons that I provided in my prior Declaration, original claims 10–13 would have been obvious over the teachings of Shaffer in view of Steinbrecher and/or Sorensen. In its MTA, Patent Owner has proposed claims 23–26 to substitute for claims 10–13, respectively.

49. Patent Owner does not dispute that the combination of Shaffer with Steinbrecher and/or Sorensen discloses the proposed “in-ear” amendments in substitute claims 23–26. But Patent Owner argues that “none of these references disclose a smart case comprising ‘a rechargeable battery configured to receive charge inductively and to charge the left and right in-ear wireless earpieces’ as required by proposed substitute claim 23.” MTA at 13.

50. First, for at least the same reasons I discussed above in Section V.D.2, Shaffer discloses “the smart case comprises a rechargeable battery configured . . . to charge the left and right in-ear wireless earpieces,” as recited by substitute claim 23.

51. Second, as I discussed above in Section V.D.2, to the extent the specification of the ’031 Application provides written description support for “the smart case comprises a rechargeable battery configured to receive charge inductively” (*see* discussion at Section III), then Shaffer, like the specification of the ’031 Application, discloses “the smart case comprises a rechargeable battery configured to receive charge inductively.”

52. Third, notwithstanding the preceding second point, the combination of Shaffer, Steinbrecher, and/or Sorensen with Marks renders obvious “the smart case comprises a rechargeable battery configured to receive charge inductively.” As I discussed above in Section V.D.2, a POSITA would have been motivated to combine Shaffer’s and Marks’s teachings and would have had a reasonable expectation of

success in applying Marks's teachings to Shaffer's case 11.² I note that, in the related IPR proceeding challenging the '853 patent, the Board agreed that a POSITA would have had reason to combine Shaffer, Steinbrecher, Sorensen, and/or Marks. Exhibit 1025 (IPR2023-01150, Paper 24, Board's Preliminary Guidance) at 16 ("Petitioner's Opposition appears to show that a person of ordinary skill in the art would have had reason to combine Shaffer, Steinbrecher, Sørensen, and/or Marks.").

53. For the above reasons, Shaffer in view of Steinbrecher, Sorensen, and/or Marks renders obvious substitute claims 23–26.

VI. AVAILABILITY FOR CROSS EXAMINATION

54. In signing this declaration, I recognize that the declaration will be filed as evidence in a contested case before the Patent Trial and Appeal Board of the United States Patent and Trademark Office. I also recognize that I may be subject to cross examination in the case and that cross examination will take place within the United States. If cross examination is required of me, I will appear for cross examination within the United States during the time allotted for cross examination.

² The reasons that I provided in my first declaration (Exhibit 1002) as to why a POSITA would have been motivated to combine Shaffer with Steinbrecher and/or Sorensen with a reasonable expectation of success apply equally here.

VII. RIGHT TO SUPPLEMENT

55. I reserve the right to supplement my opinions in the future to respond to any arguments that the Patent Owner raises and to take into account new information as it becomes available to me.

VIII. JURAT

56. I declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

Dated: September 10, 2024

A handwritten signature in cursive script, appearing to read "Sayfe Kiaei".

Dr. Sayfe Kiaei