

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

SECOND DECLARATION OF SAYFE KIAEI, PH.D.

HIMPP 1017
IPR2023-01150
HIMPP v. Bragi

TABLE OF CONTENTS

I.	INTRODUCTION	1
II.	RELEVANT LAW	1
III.	PATENT OWNER’S MTA INTRODUCES NEW MATTER.....	3
IV.	THE SUBSTITUTE CLAIMS ARE INDEFINITE	6
V.	THE PRIOR ART ANTICIPATES OR RENDERS OBVIOUS THE SUBSTITUTE CLAIMS	9
A.	Marks	9
B.	Ground 1: Brown in view of Marks renders substitute claims 31 and 35 obvious.....	10
C.	Ground 2: Hain anticipates substitute claims 22–24 and 26	15
D.	Ground 3: Steinbrecher in view of Marks renders substitute claims 31 and 42 obvious	18
E.	Grounds 4 and 5: Shaffer in view of Hain and/or Sorensen renders substitute claims 22–30 obvious.....	20
F.	Grounds 6 and 7: Shaffer in view of Steinbrecher, Sorensen, and/or Marks renders substitute claims 31–42 obvious	21
VI.	AVAILABILITY FOR CROSS EXAMINATION.....	25
VII.	RIGHT TO SUPPLEMENT	25
VIII.	JURAT	26

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 13, 2023. 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 HIMPP’s Petition, Patent Owner’s Preliminary Response (“POPR”), the Board’s Institution Decision (“DI”), Patent Owner’s Motion to Amend (“MTA”), the exhibits referenced in the MTA, and the 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 13, 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 "a smart case comprising a rechargeable battery configured to receive charge inductively," recited directly or indirectly by substitute claims 31–41 and similarly by substitute claim 42. 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 original specification and Dr. Young's chart purportedly containing supporting excerpts of the original specification 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 original specification); Exhibit 2001 at 32–35.

11. A POSITA reading these cited portions of the original specification 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 original specification 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 original specification explains that the battery in the smart case is used to charge the wireless earpieces through “direct contact or wirelessly.” *See* original specification 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 original specification 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 original specification is clear that charging the battery of the smart case is through a “hardware interface” or “connector.” *See* original specification 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 original specification would not have conveyed to a POSITA that the inventors were in possession of such a feature.

IV. THE SUBSTITUTE CLAIMS ARE INDEFINITE

13. 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 '853 patent and its prosecution history, I note that the term "in-ear" does not appear in the specification of the '853 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.

14. 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*?

15. In his declaration in support of Patent Owner's MTA, Dr. Young testified that Brown's hearing aid 10 is not an "in-ear" wireless earpiece. Exhibit 2001 at ¶¶ 61–62. 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.” *Id.* 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 1019 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, the Board, in its Institution Decision, 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.” *See* 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.”

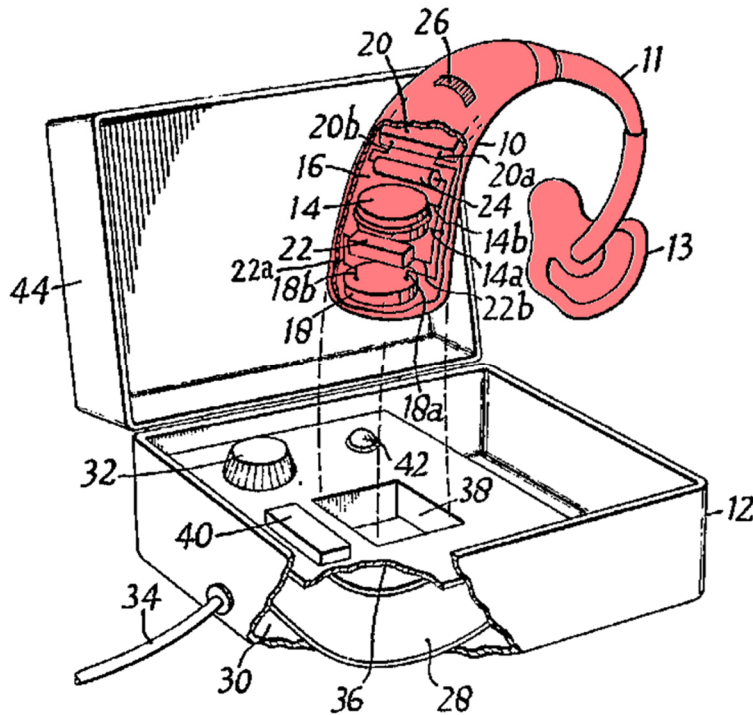
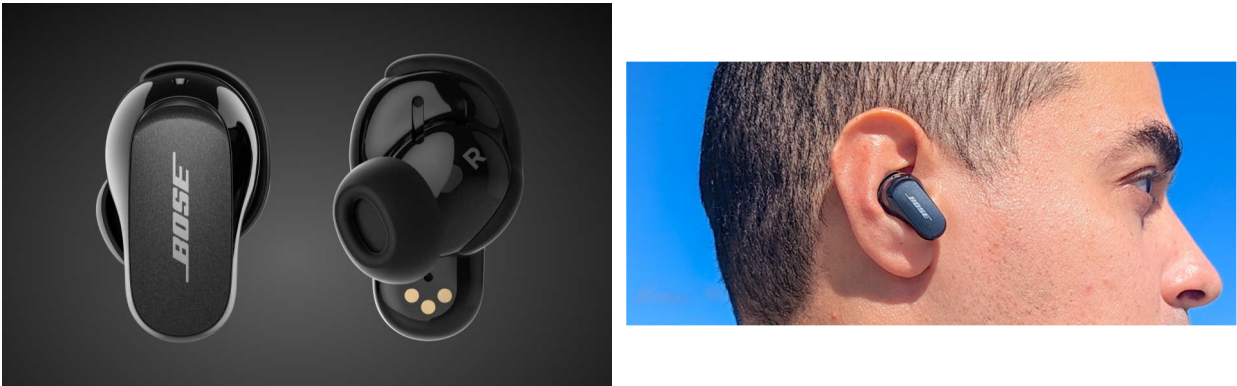


Exhibit 1007, Figure 1 (annotated)

16. 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 1020. 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 1019 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.



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

17. 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 22–42.

A. Marks

18. 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 ’853 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 1018 at ¶ 2.

19. 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: Brown in view of Marks renders substitute claims 31 and 35 obvious

20. For the reasons that I provided in my prior Declaration, original claims 10 and 14 are anticipated by Brown. In its MTA, Patent Owner has proposed claims 31 and 35 to substitute for claims 10 and 14, respectively. Substitute claims 31 and 35 include the following proposed amendments: (1) an “in-ear” wireless earpiece, (2) “wherein the powering circuitry is housed within the in-ear wireless earpiece,” and (3) “a smart case comprising a rechargeable battery configured to receive charge inductively and to charge the in-ear wireless earpiece.” As I explain next, Brown alone or in combination with Marks renders obvious each of these proposed amendments.

1. In-ear wireless earpiece

21. As I discussed above in Section IV, the metes and bounds of an “in-ear” wireless earpiece are unclear. To the extent “in-ear” wireless earpieces include earpieces having a portion of the earpiece that fits into a user’s ear, then, as the Board explained in its Institution Decision, Brown discloses such an earpiece. DI at 41 (“[W]e note 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 Thus, it appears that Brown’s earmould 13, a part of hearing aid 10, fits into a user’s ear.”). To the extent “in-ear” wireless earpieces require the earpiece to wholly fit into the user’s ear, it would have been obvious to have such an earpiece, as taught by Brown itself and the other prior art references. For example, Brown discloses that its invention “relates to miniature hearing aids such as worn in the ear, on the ear, or otherwise supported at ear level.” Exhibit 1007 at 1:9–11. Hain, Steinbrecher, Sorensen, and Shaffer all disclose earpieces that fit entirely into the user’s ear. *See, e.g.*, Exhibit 1004 at ¶ 1 (“hearing aid that can be worn on or in the ear of a user”); Exhibit 1006 at ¶ 24 (“an in-the-ear device”); Exhibit 1005 at 1:23–26 (“in-the-ear (ITE) type hearing instruments, such as completely-in-the-ear-canal (CIC) type hearing instruments, where all the normal functionality of the hearing instrument is contained in a device located in the ear canal of a user”); Exhibit 1003 at Figure 3 (depicting earbuds 34

and 35), Figure 10 (depicting earbuds 1010 and 1012), ¶ 32 (“The term “earbud” refers to a device designed to fit within the ear of a human...”).

2. Powering circuit housed within the in-ear wireless earpiece

22. Patent Owner admits that Brown discloses powering circuitry housed within the hearing aid 10 (*i.e.*, a “wireless earpiece”). *See* MTA at 7 (“the powering circuitry is housed in a portion of the hearing aid”). As I discussed above in Section V.B.1, Brown discloses or renders obvious an “in-ear” wireless earpiece. Moreover, nothing in substitute claims 31 and 35 requires that the powering circuitry be housed in a portion of the earpiece that is within the ear. Substitute claims 31 and 35 merely require that the powering circuitry be housed within the in-ear wireless earpieces, without specifying a particular location within the earpiece. Thus, Brown discloses or at least renders obvious “wherein the powering circuitry is housed within the in-ear wireless earpiece.”

3. Smart case comprising a rechargeable battery configured to receive charge inductively and to charge the in-ear wireless earpiece

23. Brown does not disclose that its case 12 (*i.e.*, “a smart case”) includes a rechargeable battery configured to receive charge inductively and to charge the in-ear wireless earpiece. However, before the priority date of the ’853 patent, a POSITA would have found it obvious in view of Marks’s teachings (*see* Section

V.A) to modify Brown's case 12 to include a rechargeable battery configured to receive charge inductively and to charge the wireless earpiece.

(a) **Motivation to combine Brown and Marks**

24. A POSITA would have been motivated to modify Brown's case 12 according to and informed by Marks's teachings to include a rechargeable battery configured to receive charge inductively and to charge hearing aid 10.

25. First, Brown and Marks are from the same field of endeavor. Both references are directed to a case that charges an electronic device when stored therein. Brown discloses case 12 for charging hearing aid 10. Exhibit 1007 at 1:88–2:66, Figure 1. Similarly, as I discussed above, Marks discloses portable case 100 for charging device 110 (*e.g.*, “hearing aids”). Exhibit 1018 at ¶¶ 18–19, Figure 1. A POSITA would have therefore considered the teachings of Brown and Marks and would have readily been motivated to combine their teachings.

26. Second, implementing Brown's case 12 to include a rechargeable battery configured to receive charge inductively and to charge hearing aid 10 as taught by Marks would have yielded expected, predictable results. Brown discloses case 12 with circuitry to charge hearing aid 10. Exhibit 1007 at 1:88–2:66, Figure 1. Marks discloses portable 100 with auxiliary battery 131 that can be charged inductively via wireless components 174 and that charges device 110. Exhibit 1018 at ¶¶ 18, 30, 38, Figure 1. A POSITA would have combined the elements taught by

Brown and Marks—namely, case 12 as taught by Brown, and portable case 100 with auxiliary battery 131 and wireless components 174 as taught by Marks—using known and routine electronic device design and manufacturing techniques to modify Brown’s case 12 to include a rechargeable battery configured to receive charge inductively and to charge hearing aid 10. 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.

27. Third, Marks expressly discloses the benefit of wirelessly charging a battery of a case—“no cable is needed to enable the charging.” Exhibit 1018 at ¶ 30. Accordingly, implementing Brown’s case 12 to include a rechargeable battery configured to receive charge inductively as taught by Marks would free Brown’s case 12 of cable 34, thereby making case 12 portable like Mark’s portable case 100.

28. Fourth, a POSITA would have had a reasonable expectation of success in applying Marks’s teachings to Brown’s case 12. 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 Brown’s case 12 and well within the knowledge and skillset of a POSITA.

29. Therefore, Brown in view of Marks renders obvious substitute claims 31 and 35.

C. Ground 2: Hain anticipates substitute claims 22–24 and 26

30. 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 22–24 and 26 corresponding to claims 1–3 and 5, respectively.

31. Claim 22 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. Rather, like in its POPR, Patent Owner conflates limitations [1A] and [1B]. Patent Owner starts arguing that the Petition statement that “Hain discloses limitation [1B] . . . is incorrect” but ends its argument with “Hain does not disclose ‘powering circuitry of the wireless earpieces utilizing a high power mode in response to detecting a magnetic field is not applied to **one** of the wireless earpieces,’” which appears to correspond to limitation [1A]. *See* MTA, Section VII.B (“Ground 2 – Hain”) at 9–12; *see also* DI at 49 (“Based upon this incongruent argument, it appears that Patent Owner has conflated and mistakenly argued limitation [1A] . . . instead of limitation [1B] . . .”). Limitation [1A] recites “**one or more** of the wireless earpieces,” not “**one** of the wireless earpieces.” Patent Owner’s quote does not match substitute claim 22 either. Claim 22 recites “**one or more** of the **in-ear** wireless earpieces.”

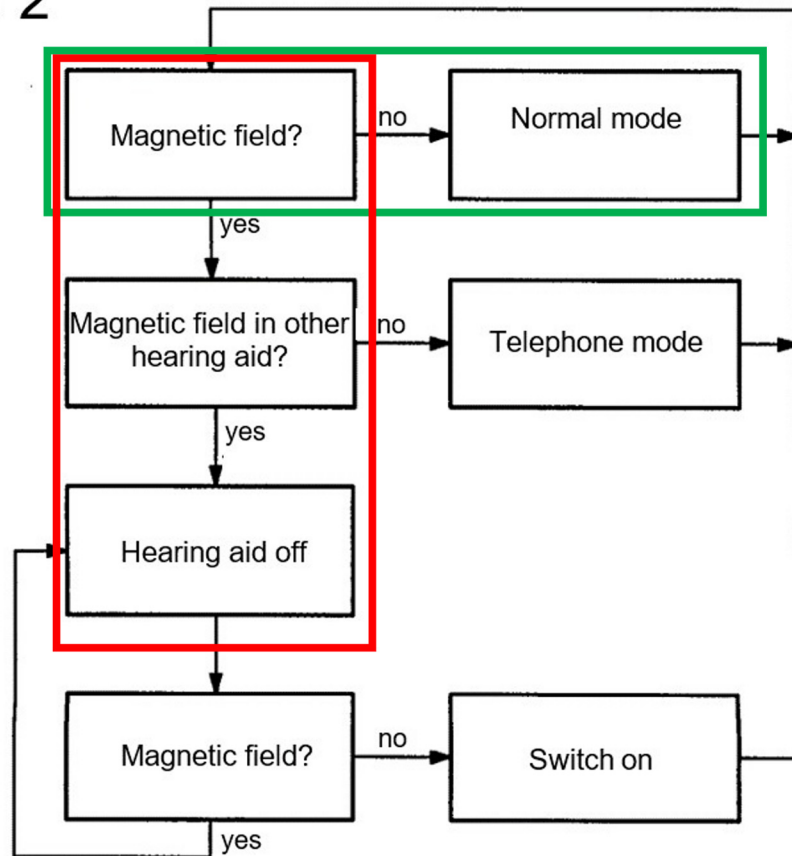
32. Like in its POPR, Patent Owner also contends that “one or more” wireless earpieces should be interpreted as a “singular” wireless earpiece. *See* MTA

at 11; *see also* DI at 50, n. 22 (“Patent Owner does not cite to any controlling case law in support of their contention that ‘one or more’ should be interpreted as ‘only one.’”). In its Institution Decision, the Board declined such an interpretation and concluded that “‘one or more wireless earpieces’ reads on plural (non-singular) wireless earpieces.” DI at 50.

33. 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 52.¹

¹ Patent Owner incorrectly states that “Petitioners appear to map the ‘high power mode’ of the claims to Hain’s ‘telephone mode.’” MTA at 10. 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).

FIG 2



34. Accordingly, Hain discloses both “powering circuitry of the in-ear wireless earpieces utilizing 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) and “altering the power sent to the circuitry of the in-ear wireless earpieces to a low power mode in response to detecting a magnetic field is applied to one or more of the in-ear wireless earpieces” (red box above), as recited by substitute claim 22.

35. Patent Owner does not argue any deficiency in Hain with respect to substitute claims 23, 24, and 26. Therefore, Hain anticipates substitute claims 22–24 and 26.

D. Ground 3: Steinbrecher in view of Marks renders substitute claims 31 and 42 obvious

36. For the reasons that I provided in my prior Declaration, original claims 10 and 21 are anticipated by Steinbrecher. In its MTA, Patent Owner has proposed claims 31 and 42 to substitute for claims 10 and 21, respectively. Regarding substitute claims 31 and 42, Patent Owner does not dispute that Steinbrecher discloses the proposed “in-ear” and “wherein the powering circuitry is housed within the in-ear wireless earpiece” amendments. However, Patent Owner argues 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.” MTA at 12–13. However, before the priority date of the ’853 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

37. 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.

38. 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 at ¶¶ 24–25, Figures 1–2. Similarly, Marks discloses portable case 100 for charging device 110 (*e.g.*, “hearing aids”). Exhibit 1018 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.

39. 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 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 1018 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.

40. Third, Marks expressly discloses the benefit of wirelessly charging a battery of a case—“no cable is needed to enable the charging.” Exhibit 1018 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.

41. 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.

42. For the above reasons, Steinbrecher in view of Marks renders obvious substitute claims 31 and 42.

E. Grounds 4 and 5: Shaffer in view of Hain and/or Sorensen renders substitute claims 22–30 obvious

43. 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 22–30 to substitute for claims 1–9, respectively. Patent Owner does not point to any deficiency in Shaffer or Sorensen as to substitute claims 22–30. Instead, Patent Owner notes that Grounds 4 and 5 include Hain and, like for Ground 2, argues that “Hain does not disclose ‘powering circuitry of the wireless earpieces utilizing a high power mode in response to detecting a magnetic field is not applied to one of the wireless earpieces.’” MTA at 14. As I discussed above in Section V.C, Hain discloses both “powering circuitry of the in-ear wireless earpieces utilizing a high power mode in response to detecting a magnetic field is not applied to one or more of the in-ear wireless earpieces” and “altering the power sent to the circuitry of the in-ear wireless earpieces to a low power mode in response to detecting a magnetic field is applied to one or more of the in-ear wireless earpieces,” as recited by substitute claim 22. Accordingly, Shaffer in view of Hain and/or Sorensen renders substitute claims 22–30 obvious.

F. Grounds 6 and 7: Shaffer in view of Steinbrecher, Sorensen, and/or Marks renders substitute claims 31–42 obvious

44. For the reasons that I provided in my prior Declaration, original claims 10–21 would have been obvious over the teachings of Shaffer in view of Steinbrecher and/or Sorensen. In its MTA, Patent Owner has proposed claims 31–42 to substitute for claims 10–21, respectively.

45. Patent Owner does not dispute that the combination of Shaffer with Steinbrecher and/or Sorensen discloses the proposed “in-ear” and “wherein the powering circuitry is housed within the in-ear wireless earpiece” amendments in substitute claims 31–42. 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 in-ear wireless earpiece.’” MTA at 15.

46. First, Shaffer’s storage case 11 (*i.e.*, “a smart case”) contains “an internal rechargeable battery 109.” Exhibit 1003 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 “a smart case comprising a rechargeable battery configured . . . to charge the in-ear wireless earpiece.”

47. 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 at ¶ 57. To the extent the ’853 patent’s original specification 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 original specification, discloses “a smart case comprising a rechargeable battery configured to receive charge inductively.”

48. Third, notwithstanding the preceding second point, before the priority date of the '853 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 Marks²**

49. 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.

50. 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 therein. Shaffer discloses case 11 for charging earbuds 34 and 35. *See, e.g.*, Exhibit 1003 at ¶¶ 39–47, Figures 2A–3D. Similarly, Marks discloses portable case 100 for charging device 110 (*e.g.*, “hearing aids”). Exhibit 1018 at ¶¶ 18–19, Figure 1. A

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.

POSITA would have therefore considered the teachings of Shaffer and Marks and would have readily been motivated to combine their teachings.

51. 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 at ¶ 56, Figure 4. Marks discloses portable 100 with battery 131 that can be charged inductively via wireless components 174. Exhibit 1018 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.

52. Third, Marks expressly discloses the benefit of wirelessly charging a battery of a case—"no cable is needed to enable the charging." Exhibit 1018 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 at ¶¶ 47, 49, Figures 5A and 5B.

53. 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.

54. For the above reasons, Shaffer in view of Shaffer, Sorensen, and/or Marks renders obvious substitute claims 31–42.

VI. AVAILABILITY FOR CROSS EXAMINATION

55. 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.

VII. RIGHT TO SUPPLEMENT

56. 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

57. 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: July 18, 2024

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

Dr. Sayfe Kiaei