

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

K/S HIMPP,
Petitioner,

v.

BRAGI GmbH,
Patent Owner.

IPR2023-01205
Patent 10,397,688 B2

Before LARRY J. HUME, STACEY G. WHITE, and GARTH D. BAER,
Administrative Patent Judges.

WHITE, *Administrative Patent Judge.*

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

K/S HIMPP (“Petitioner”) filed a Petition requesting an *inter partes* review of claims 1–14 of U.S. Patent No. 10,397,688 (Ex. 1001, “the ’688 patent”). Paper 3 (“Pet.”). Bragi GmbH (“Patent Owner”) filed a Preliminary Response. Paper 7 (“Prelim. Resp.”).

Under 35 U.S.C. § 314, an *inter partes* review may not be instituted “unless . . . there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” Upon consideration of the Petition in view of the present record and for the reasons explained below, we determine that Petitioner has shown a reasonable likelihood of prevailing with respect to at least one of the challenged claims. Accordingly, we institute an *inter partes* review on all grounds set forth in the Petition.

A. Related Matters

Petitioner states that the ’688 patent is a continuation of U.S. Patent No. 10,117,014 (“the ’014 patent”), which is at issue in *K/S HIMPP v. BRAGI GmbH*, IPR2023-01204. Pet. 4. Petitioner also states that the ’014 patent is a continuation of U.S. Patent No. 9,843,853 (“the ’853 patent”), which is at issue in *K/S HIMPP v. BRAGI GmbH*, IPR2023-01150. *Id.*

B. The ’688 Patent

The ’688 patent titled, “Power Control for Battery Powered Personal Area Network Device System and Method,” describes a “system and method for managing wireless earpieces” that “are powered utilizing a high-power mode in response to detecting a magnetic field is not applied to one or more of the wireless earpieces” and “alter[ing] to a low power mode in response to detecting the magnetic field is applied to one or more of the wireless

earpieces.” Ex. 1001, codes (54), (57); *see also id.* at 1:45–52. As described in the specification, the “growth of wearable devices” is “fostered by the decreasing sizes of . . . components,” and “[w]earable devices are necessarily dependent upon their batteries to complete their desired function.” *Id.* at 1:28–32. Challenges arise because the “overall utility of wearable devices is directly proportional to the battery life of the devices.” *Id.* at 1:32–34; *see also id.* at 1:34–41. The present invention endeavors to “provide a system, method, and wireless earpieces for managing and preserving battery life.” *Id.* at 2:44–46. The ’688 patent achieves this with the “wireless earpieces [that] may interact with a smart case” that “preserve[s] the battery life of the wireless earpieces by interacting with the wireless earpieces while in a low power mode or state” and “ensure[s] the wireless earpieces are charged to a desired level.” *Id.* at 2:46–51.

Figure 1 of the ’688 patent, showing a pictorial representation of an exemplary smart case and wireless earpieces (*id.* at 2:28–30), is reproduced below.

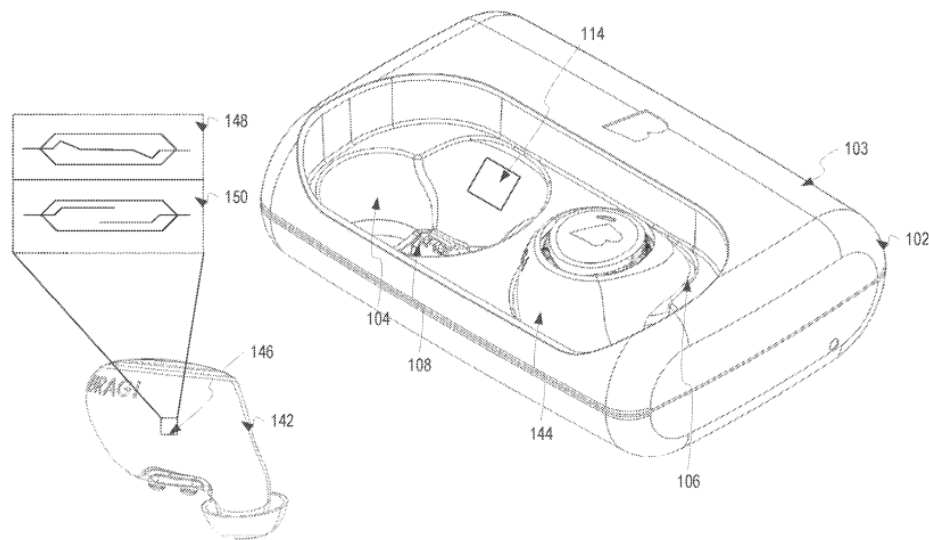


FIG. 1

Figure 1, reproduced above, illustrates smart case 102 and wireless earpieces 142, 144. *Id.* at 3:5–7. “The smart case includes interfaces 108, 110 within the receptacles 104, 106” that are “hardware interfaces for electrically connecting the wireless earpieces 142, 144 to the smart case 102” and may include any number of contact points, busses, wires, or other physical connectors, or may include inductive chargers, for interfacing with the wireless earpieces 142, 144 with the smart case 102. *Id.* at 4:13–22. “The interfaces 108, 110 may be utilized to charge the earpieces 142, 144.” *Id.* at 4:29–30. The interfaces 108, 110 “may each include a magnet activating the corresponding reed switch (i.e., reed switch 146 . . .) to power off or initiate a low power mode (e.g., lower power state or mode) for one or both of the wireless earpieces 142, 144 when one or more of the wireless earpieces are placed within the receptacles 104, 106.” *Id.* at 4:36–42.

The ’688 patent explains that the “the wireless earpiece may move to a low power mode to preserve battery life when the reed switch is activated potentially indicating the wireless earpiece is within the smart case,” and the “wireless earpiece may also send a command to communication to the second wireless earpiece to change power mode or otherwise act in response to the reed switch being opened.” *Id.* at 9:5–13. “[B]y moving the device to a low power mode . . . the wireless earpiece is prepared to be charged.” *Id.* at 9:13–15. “The low power mode maintains the earpieces with minimal functionality to charge and synchronize data,” and “[a]s a result, the battery of the wireless earpieces may be maintained in an optimal state” and “the transition from the low power mode to a high-power mode may be

implemented upon detecting the wireless earpieces have been removed from the smart case.” *Id.* at 10:28–36.

C. Illustrative Claim

Petitioner challenges the patentability of claims 1–14. Claims 1 and 9 are independent. Claim 1 is reproduced below.

1. [1 Preamble] A method for power control for a wireless earpiece, comprising:

[1A] powering circuitry of the wireless earpiece utilizing a low power mode in response to detecting a magnetic field is applied to the wireless earpiece;

[1B] powering circuitry of the wireless earpieces utilizing a high-power mode in response to detecting a magnetic field is not applied to one or more of the wireless earpieces;

[1C] 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;

[1D] altering the power sent to the circuitry of the wireless earpieces to a low power mode in response to detecting a magnetic field is applied to one or more of the wireless earpieces; and

[1F] charging an onboard battery of the wireless earpiece in response to detecting a magnetic field is applied to the wireless earpiece.

Ex. 1001, 10:59–11:11; *see also* Pet. 17–27 (numbering the claim limitations).

D. Asserted Grounds of Unpatentability

Petitioner, supported by a declaration of Sayfe Kiaei, Ph.D. (Ex. 1002), asserts the following grounds of unpatentability (Pet. 6)¹:

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1, 2, 4	102	Hain ²
1–6, 8–12, 14	103	Hain, Shaffer ³
3, 5–7, 9–14	103	Hain, Shaffer, Sørensen ⁴

II. ANALYSIS

A. Level of Ordinary Skill in the Art

To determine whether an invention would have been obvious, we consider the level of ordinary skill in the pertinent art at the critical time. *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966). Resolution of this question is important because it allows us to “maintain[] objectivity in the obviousness inquiry.” *Ryko Mfg. Co. v. Nu-Star, Inc.*, 950 F.2d 714, 718 (Fed. Cir. 1991). In assessing the level of ordinary skill in the art, various factors may be considered, including the “type of problems encountered in the art; prior art solutions to those problems; rapidity with which innovations are made; sophistication of the technology; and educational level of active workers in the field.” *In re GPAC, Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995)

¹ We apply the AIA version of 35 U.S.C. §§ 102, 103 because it appears the challenged claims have an effective filing date after March 16, 2013, the effective date of the Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011). *See* Ex. 1001, codes (22), (86), (60).

² DE Pat. App. No. 102007039455, published Feb. 26, 2009 (Ex. 1004, “Hain”).

³ U.S. Pat. Pub. No. 2015/0245126, published Aug. 27, 2015 (Ex. 1003, “Shaffer”).

⁴ U.S. Pat. No. 8,265,315, issued Sep. 11, 2012 (Ex. 1005, “Sørensen”).

(quotation omitted). Generally, it is easier to establish obviousness under a higher level of ordinary skill in the art. *Innovention Toys, LLC v. MGA Entm't, Inc.*, 637 F.3d 1314, 1323 (Fed. Cir. 2011) (“A less sophisticated level of skill generally favors a determination of nonobviousness . . . while a higher level of skill favors the reverse.”).

Petitioner asserts that a person of ordinary skill in the art “would have had a bachelor’s degree in Electrical Engineering, or equivalent experience, and one to two years of experience in the field of wireless electronic devices and battery systems, particularly wireless earpieces such as wireless headphones and hearing aids.” Pet. 17 (citing Ex. 1002 ¶ 25).

Patent Owner does not challenge Petitioner’s description of the level of ordinary skill in the art, and instead “applies Petitioner’s definition of a” person of ordinary skill in the art. Prelim. Resp. 13. We are persuaded that Petitioner’s description is consistent with the prior art and patent specification. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001). For purposes of this Decision, we adopt Petitioner’s description.

B. Claim Construction

In an *inter partes* review proceeding, a patent claim shall be construed using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. § 282(b). 37 C.F.R. § 42.100(b) (as amended Oct. 11, 2018). Our rule adopts the same claim construction standard used by Article III federal courts, which follow *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc), and its progeny. Under this standard, the words of a claim are generally given their “ordinary and customary meaning,” which is the meaning the term would have to a person

of ordinary skill at the time of the invention, in the context of the entire patent including the specification. *See Phillips*, 415 F.3d at 1312–13.

Petitioner asserts that “no terms need to be construed to resolve the issues raised in this Petition.” Pet. 13. Patent Owner agrees⁵ that no “construction of any claim term is required to resolve the specific disputes raised in this Petition.” Prelim. Resp. 14.

We determine that no claim terms require express construction for purposes of this Decision. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017).

C. Overview of the Asserted Prior Art
1. Hain (Ex. 1004)

Hain is a certified English translation of German Patent Application No. DE 10 2007 039 455 A1, titled “Hearing aid system with magnetic field sensors,” filed on August 21, 2007, and published on February 26, 2009. Ex. 1004, codes (10), (22), (43), (54); *see also* Ex. 1009 (copy of original reference in German).

⁵ Patent Owner includes construction of terms smart case and earpieces for the purpose of consistency within the family of patents. Prelim. Resp. 14–15. We decline to provide express construction of these terms because we find that an express construction is not necessary to resolve the disputes before us. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017).

Figure 1 of Hain is reproduced below.

FIG 1

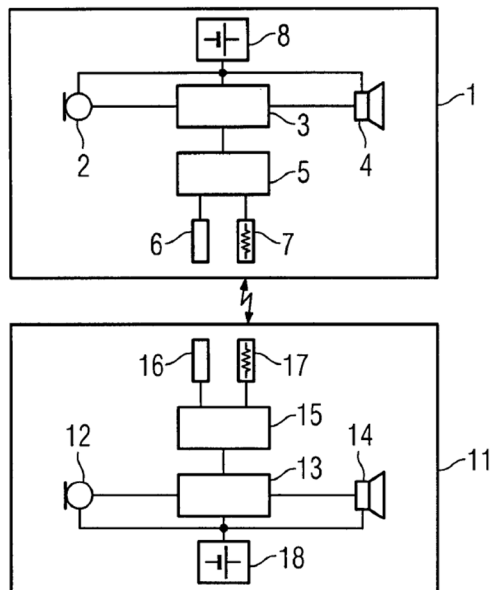


Figure 1 is a diagram of a hearing aid system. Ex. 1004 ¶ 16. Figure 1 shows a hearing aid system having a first hearing aid 1 and a second hearing aid 11 that each can be worn on the head of a user. *Id.* ¶ 18. Hain explains that “hearing aids (1, 11) have sensor devices (6, 16) . . . which are used in order to detect whether the relevant hearing aid (1, 11) is in a magnetic field that exceeds a specific field strength.” Ex. 1004, code (57). The sensor devices are reed contacts or other magnetic field sensors, such as Hall sensors. *Id.* ¶ 10. “If the reed contacts 6 or 16 are in the immediate vicinity of a magnetic field whose field strength exceeds a certain threshold value, the reed contacts 6 or 16 close.” *Id.* ¶ 18. “[T]he status of reed contacts 6 and 16 can be queried by the signal transmission and control units 5 and 15, respectively.” *Id.*

Hain’s hearing aid system includes “an automatic detection of the hearing situation ‘telephoning’ and an automatic switching off of the hearing aids (1, 11) when they are removed from the head.” *Id.* at code(57).

According to Hain, “[t]he setting of the parameters of the individual hearing programs as well as the settings for the individual compensation of the hearing loss of a user takes place by means of the signal transmission and control units 5 or 15, to which the transmitting and receiving coils 7 or 17 are connected for wireless data transmission, in conjunction with an external programming unit (not shown).” *Id.* ¶ 18.

Figure 2 of Hain is reproduced below.

FIG 2

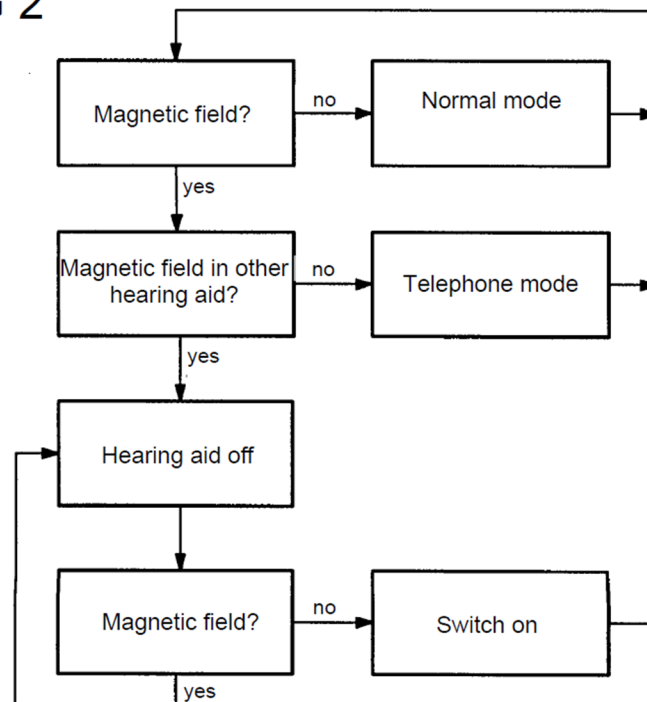


Figure 2 of Hain is a flow chart depicting a method “for automatically detecting the hearing situation ‘telephoning’ and for automatically switching off two hearing aids of a hearing aid system.” Ex. 1004 ¶ 21. Figure 2 shows that the “telephoning” operating mode can be set when one of the hearing aids detects “a telephone receiver emitting a magnetic field.” *Id.* ¶ 4. “If only one of the two hearing aids . . . detects a magnetic field, it can be deduced that the hearing situation is ‘telephoning.’” *Id.* at code (57). In such an example, “only the hearing aid that supplies the ear to which the

telephone receiver is held is automatically switched to telephoning mode. The hearing aid that supplies the other ear, on the other hand, is not automatically switched to telephoning mode immediately.” *Id.* ¶ 10.

Figure 2 also shows that the hearing aids may be automatically switched off immediately after use when they are placed in the storage box, or automatically switched on when they are removed from the storage box. Ex. 1004 ¶¶ 11, 22. “For example, there is a permanent magnet in a storage box for the hearing aid in question, a corresponding sensor device can also determine here that the hearing aid is located in the storage box, so that the hearing aid is switched off automatically.” *Id.* ¶ 11. “[I]f both hearing aids detect a relatively strong magnetic field in their immediate vicinity, then this is an indication that the hearing aids are located in the storage box and can be switched off.” *Id.* ¶ 13. When the hearing aids are on, they remain in “normal operation” for as long as no magnetic field is detected. *Id.* ¶ 21.

The hearing aids can distinguish between telephoning and storage in the box by a wireless signal transmission between the two hearing aids. Ex. 1004 ¶ 13. “At least one of the hearing aids transmits to the other hearing aid the information as to whether an external magnetic field is detected. It therefore provides the information about the presence of an external magnetic field from both hearing aids.” *Id.*

To summarize, Hain describes a hearing aid system with a storage box in which the hearing aids are automatically turned on or off based on whether the hearing aids are in the storage box because the storage box contains at least one magnet which emits a magnetic field that opens or closes a reed sensor switch in each hearing aid.

2. *Shaffer (Ex. 1003)*

Shaffer is a U.S. patent application publication titled “Earbud Charging Case for Mobile Device,” filed on October 9, 2014, and published on August 27, 2015. Ex. 1003, codes (12), (22), (43), (54). Shaffer describes “[a] case for a mobile electronic device [that] includes a portion configured to receive power via induction charging, an aperture configured to receive an earbud, and circuitry configured to simultaneously charge the earbud and the mobile electronic device.” *Id.* at code (57).

Figure 3A of Shaffer is reproduced below.

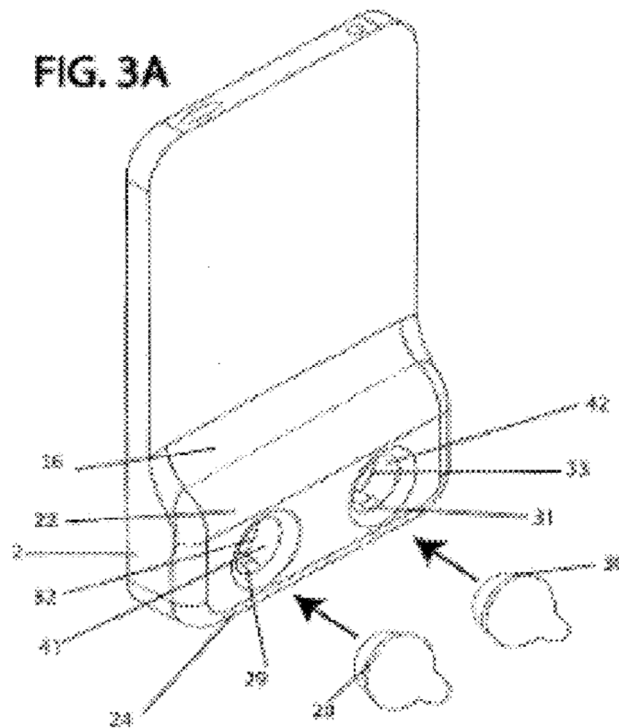


Figure 3A of Shaffer depicts a rear view of a mobile device case with an earbud dock and the mobile device removed from the case with earbuds entering the case. Ex. 1003 ¶¶ 14, 18. Figure 3A includes a mobile device case and earbuds that have magnetized earbud aperture rings (28, 30). *Id.* ¶ 42. “Examples of earbuds include in-ear headphones, hearing aids and the like.” *Id.* ¶ 32. The mobile device case has solid rear connection (22) with

lower portion (24), middle portion (22), and upper portion (16). *Id.* ¶ 41. The solid rear connection provides housing for the earbuds in earbud receiving apertures (32, 33) that contain earbud electrical contacts (29, 31) and aperture magnetic contact strips (41, 42). *Id.* ¶¶ 40–42. Shaffer explains that the earbud electrical contacts provide electrical charge to the earbuds, but the aperture magnetic contact strips “may also serve as electrical contacts, delivering charge directly to the earbud magnetic contact strips from the plug without the need for additional prongs or leaders” in some embodiments. *Id.* ¶¶ 40, 42.

Shaffer’s Figure 10 is reproduced below.

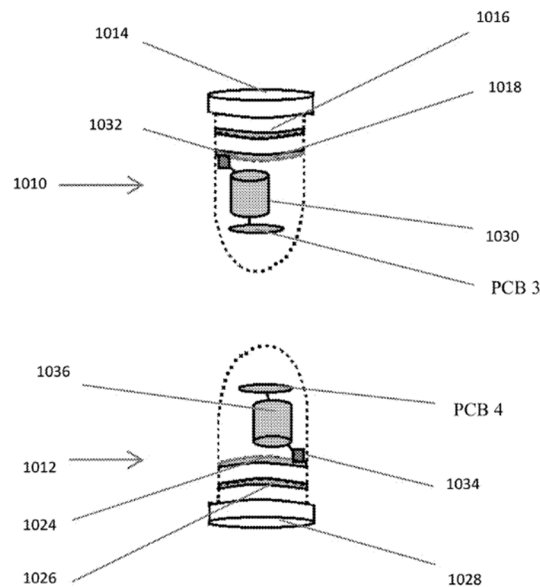


Fig. 10

Shaffer’s Figure 10 depicts “various features of an embodiment of a set of earbuds.” Ex. 1003 ¶ 29. “FIG. 10 illustrates an embodiment in which the earbuds are equipped with features that enable them to automatically trigger on and off.” *Id.* ¶ 62. “[E]arbuds 1010 and 1012 include earbud rechargeable batteries 1030 and 1036 and earbud electrical contacts 1032 and 1034. The earbuds are outfitted with magnetic rings 1016 and 1026 that

allow a connection with magnetized earbud aperture rings to ensure the earbuds remain securely retained within earbud apertures.” *Id.* “Wireless earbuds typically include internal components, such as a transmitter/receiver (e.g., Bluetooth®, or near field communication equipped) that communicates wirelessly with a mobile smart phone or other device” and “may be connected to printed circuit boards PCB 3 and PCB 4 within the earbuds and may contain encoded firmware or other programming instructions to automatically trigger on when the earbuds are removed from the earbud apertures, and turn off upon return to the apertures.” *Id.*

¶¶ 62–63. Shaffer explains:

Each earbud may include one or more contact sensors, such as pressure sensors or magnetic sensors that detect when the earbud is in (or out of) the aperture and which send a corresponding signal to the earbud PCBs. Firmware embedded within the earbud PCBs could cause a circuit that includes the rechargeable earbud batteries 930 and 934 to switch on or off, or return them to a low-energy consumption idle mode.

Id.

To summarize, Shaffer describes “a mobile device case that serves as an electrical charger and storage dock for rechargeable wireless audio earbuds.” *Id.* ¶ 2.

3. *Sørensen (Ex. 1005)*

Sørensen is a U.S. patent titled “Listening System Comprising a Charging Station with a Data Memory,” filed on October 12, 2009, and issued on September 11, 2012. Ex. 1005, codes (12), (22), (45), (54). Sørensen describes “[a] listening system, e.g., a hearing aid system, including a charging station and one or more listening devices, e.g., hearing instruments.” *Id.* at code (57). Sørensen’s hearing aid system includes:

a) a hearing instrument including a rechargeable battery for energizing the hearing instrument, and a volatile data memory, wherein basic data for the configuration of the hearing instrument are stored during normal operation, b) a charging station adapted for allowing a hearing instrument to be mounted and the battery to be recharged without removing the battery from the hearing instrument, and c) a connection allowing communication between the charging station and the hearing instrument, to allow the basic data for the configuration of the hearing instrument to be transferred from the data memory of the charging station to the data memory of the hearing instrument, when the hearing instrument is mounted in the charging station.

Id.

Sørensen explains that the hearing instrument may include “an input transducer for picking up an input sound in the environment and converting it to an electric input signal and an output transducer for converting an electric output signal to an output sound adapted for being presented to a user wearing the hearing instrument.” Ex. 1005, 2:36–41. The hearing instrument may also include “a signal processor electrically connected to the input and output transducers and adapted to perform signal processing on the electric input signal using at least some of the basic data for the configuration of the hearing instrument read from the volatile memory of the hearing instrument” so that the hearing instrument can be adapted to the user’s hearing impairment. *Id.* at 2:42–51.

The hearing aid system may be adapted to monitor the battery voltage of the hearing instrument using a monitoring unit that is located in the hearing instrument or the charging station. *Id.* at 2:52–59. “In an embodiment, the hearing aid system is adapted to provide that data transfer between the charging station and the hearing instrument is initiated

automatically, when the hearing instrument is mounted in the charging station (e.g., electrically connected to the charging station).” *Id.* at 3:48–52. The connection between the hearing instrument and the charging station may be wired or wireless, such that data transfer and charging can be accomplished using a wired connection via galvanic contact, or using a wireless connection via induction. *Id.* at 3:59–4:23.

Sørensen’s Figure 1 is reproduced below.

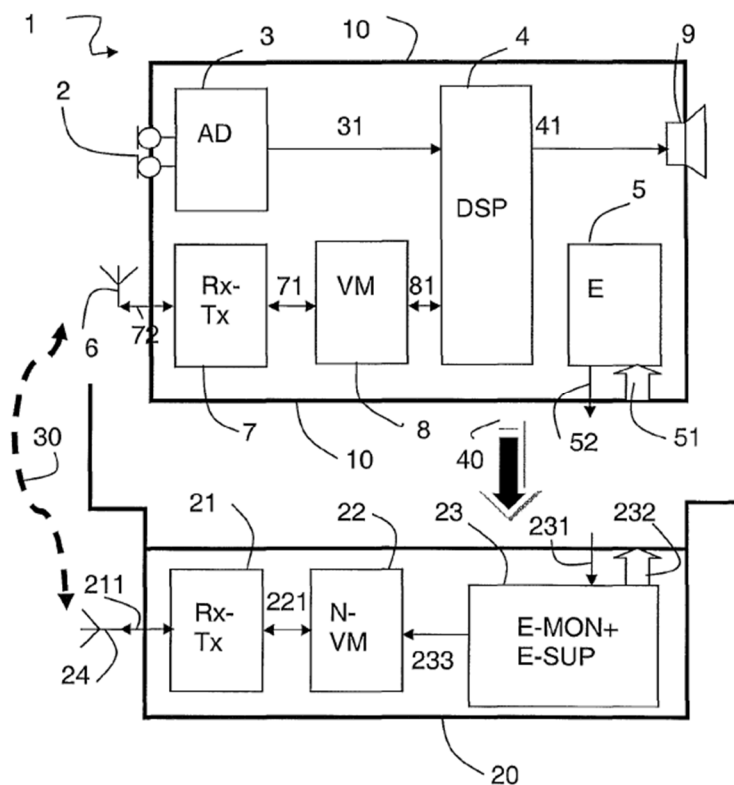


Fig. 1

Sørensen’s Figure 1 depicts “a hearing aid system comprising a hearing instrument and a charging station for recharging a rechargeable battery of the hearing instrument.” Ex. 1005, 6:1–3. The hearing aid system in Figure 1 includes a hearing instrument 10 and its functional blocks, and a charging station 20 for recharging a rechargeable battery of the hearing instrument and its functional blocks. *Id.* at 6:26–37. The hearing instrument

includes rechargeable batteries 5, a microphone unit 2, an AD-converter 3, a signal processor 4, a speaker 9, a volatile data memory 8, transceivers 6 and 7, and connections 51 and 52. *Id.*; *see also id.* at 6:64–7:20. The charging station includes a data memory 22, transceivers 21 and 24, and a source of electric energy 23. *Id.* at 7:26–54. When the hearing instrument is mounted 40 to the charging station, the devices are wirelessly connected 30 and two-way wireless communication and charging can occur. *Id.* at 6:37–57. “The wireless signal 30 can e.g., be an inductive signal (based on two electric coils that are coupled inductively with each other) or an electromagnetic RF-signal, e.g., based on a communications standard, e.g. Bluetooth or be an optical 20 signal (e.g. comprising or constituted by infrared light).” *Id.* at 8:16–20.

To summarize, Sørensen describes “a system comprising a hearing instrument comprising a rechargeable energy source and a charging station for recharging the rechargeable energy source” and “a memory for storing the basic data of the hearing instrument (i.e. the data that are necessary for the hearing instrument to work properly, such as identification data, configuration data, program data, etc.).” *Id.* at 1:50–56.

D. Discretionary Denial under 35 U.S.C. § 325(d)

Citing *Advanced Bionics*,⁶ Patent Owner argues we should exercise discretion under § 325(d) and deny institution because the Shaffer reference (*see supra* 10 n.3) was considered during examination. Prelim. Resp. 21–26. Petitioner opposes. Pet. 11–13. For the reasons discussed below, we do not invoke our discretion to deny institution under § 325(d).

⁶ *Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH*, IPR2019-01469, Paper 6 at 7 (PTAB Feb. 13, 2020) (precedential).

In determining whether to institute an *inter partes* review, “the Director may take into account whether, and reject the petition or request because, the same or substantially the same prior art or arguments previously were presented to the Office.”⁷ 35 U.S.C. § 325(d). Our § 325(d) analysis employs a two-prong framework: (1) whether the prior art and arguments presented in the petition are the same or substantially the same as those previously presented to the Office; and (2) if so, whether the petitioner has demonstrated a material error by the Office in its prior consideration of those prior art and arguments. *Advanced Bionics*, Paper 6 at 8.

We consider several non-exclusive factors as set forth in *Becton, Dickinson & Co. v. B. Braun Melsungen AG*, IPR2017-01586, Paper 8 (Dec. 15, 2017) (precedential as to § III.C.5, first paragraph) (“*Becton, Dickinson*”), which “provide useful insight into how to apply the framework” under § 325(d). *Advanced Bionics*, Paper 6 at 9. These non-exclusive factors include:

- (a) the similarities and material differences between the asserted art and the prior art involved during examination;
- (b) the cumulative nature of the asserted art and the prior art evaluated during examination;
- (c) the extent to which the asserted art was evaluated during examination, including whether the prior art was the basis for rejection;
- (d) the extent of the overlap between the arguments made during examination and the manner in which Petitioner relies on the prior art or Patent Owner distinguishes the prior art;
- (e) whether Petitioner has pointed out sufficiently how the Examiner erred in its evaluation of the asserted prior art; and

⁷ The Board institutes trial on behalf of the Director. 37 C.F.R. § 42.4(a).

(f) the extent to which additional evidence and facts presented in the Petition warrant reconsideration of the prior art or arguments.

Becton, Dickinson, Paper 8 at 17–18 (formatting added). “If, after review of factors (a), (b), and (d), it is determined that the same or substantially the same art or arguments previously were presented to the Office, then factors (c), (e), and (f) relate to whether the petitioner has demonstrated a material error by the Office.” *Advanced Bionics*, Paper 6 at 10.

1. Whether the Prior Art and Arguments Are the Same or Substantially the Same

Patent Owner argues “Petitioner did not address the *Advanced Bionics* framework” (Prelim. Resp. 23 (citing Pet. 12–13)) and “Petitioner (1) relies on a prior art reference previously considered by the Examiner and (2) Petitioner made no attempt to show a material error in the prosecution of the patent with respect to the Examiner’s consideration of the same prior art that Petitioner relies on in the Petition. Thus, discretionary denial is appropriate.” Prelim. Resp. 23.⁸ Specifically, Patent Owner argues Shaffer was presented to the Office and considered by the Examiner and “[a]s a result, the first part of the *Advanced Bionics* framework is satisfied.” *Id.* at 24.

Petitioner acknowledges that several new references, including Shaffer, were cited by the Examiner on a form PTO-892⁹ during prosecution of the ’688 patent and the related¹⁰ ’014 and ’853 patents, but “the examiner

⁸ We disagree with Patent Owner’s assertion that Petitioner did not adequately address the *Advanced Bionics* framework. *See* Pet. 11–13.

⁹ Notice of References Cited.

¹⁰ The ’688 patent is a continuation of the ’014 patent which is a continuation of the ’853 patent. Ex. 1001, code (63).

did not mention any of the cited references in any office action or notice of allowance.” Pet. 11. Petitioner notes that instead, “[i]n the ’853 patent’s first office action allowance, the examiner’s statements simply mirrored an earlier-issued International Written Opinion, which did not cite Shaffer.” *Id.*

While we acknowledge that Shaffer was before the Office, that alone is not sufficient to meet the first prong of the *Advanced Bionics* test. Factor (b) under *Becton, Dickinson*, which is also considered under the first prong of *Advanced Bionics*, examines “the cumulative nature of the asserted art and the prior art evaluated during examination.” *Advanced Bionics*, Paper 6 at 9 n.10. We note that there is no evidence or argument that Hain or Sørensen were previously considered by the Office or cumulative of art that was in front of the Office. Although one reference, Shaffer, was previously presented to the Office, in each asserted ground, Petitioner relies on either Hain or Hain in combination with Sørensen. Because neither of those references was before the office, Patent Owner has not satisfied the first prong of the *Advanced Bionics* test.

2. *Whether Petitioner Has Demonstrated Material Error*

Beyond Patent Owner’s failure to satisfy prong one, we also find Petitioner has demonstrated a material error by the Office under the second prong of *Advanced Bionics* “Although Shaffer was cited by the examiner during prosecution of each of the ’688 patent, ’014 patent, and the ’853 patent, Shaffer was not discussed in any meaningful regard on the record, as explained above.” Pet. 11. Petitioner cites *Advanced Bionics*’ holding that, “[i]f the record of the Office’s previous consideration of the art is not well-developed or silent, then a petitioner may show the Office erred by overlooking something persuasive.” *Id.* (citing *Advanced Bionics*, Paper 6 at

10) (emphasis omitted). Petitioner specifically asserts the Examiner erred because

Shaffer discloses the precise features that the examiner identified as novel (high-power and low-power modes), which, in combination with the art teaching other known features (e.g., a reed switch), demonstrates that the challenged claims are unpatentable. By overlooking the specific teachings of Shaffer in allowing the challenged claims, the examiner committed a material error even if it could be argued that Shaffer was considered.

Pet. 12 (internal citations omitted); *see Advanced Bionics*, Paper 6 at 8 n.9 (“An example of a material error may include misapprehending or overlooking specific teachings of the relevant prior art where those teachings impact patentability of the challenged claims.”).

We find that Petitioner has demonstrated a material error by the Office in the prior consideration of Shaffer. Under the second prong of *Advanced Bionics*, we consider “the extent to which the asserted art was evaluated during examination, including whether the prior art was the basis for rejection.” *Becton, Dickinson*, Paper 8 at 17. Here, we agree with Petitioner that, although Shaffer was cited by the Examiner on a form PTO-892, Shaffer was not applied as a prior art reference in any rejection because claims 1–14 in the application leading to the ’688 patent were only rejected on the ground of non-statutory double patenting over claims 2–9 of the ’014 patent. *See* Ex. 1018, 50–52; *see also* Pet. 10–11. The applicant filed a terminal disclaimer and overcame the rejection. Ex. 1018, 853–854, 860–867. In both the office action and the Notice of Allowability, the Examiner stated that “[n]othing in the prior art showed or suggested the specific limitations of these claims.” *Id.* at 52, 881.

For reasons discussed below, Petitioner's arguments and evidence regarding the teachings of Shaffer as applied to the '688 patent claims are enough to demonstrate that the examiner erred. Petitioner has persuaded us for the purposes of this Decision that Shaffer discloses a method for power control for a wireless earpiece in which wireless earbuds are configured to automatically power down when placed into the storage case. *See, e.g.,* Pet. 29–35. On the current record, we are persuaded that Shaffer in combination with the teachings of Hain and Sørensen renders obvious the limitations of claims 1–14 of the '688 patent. As such, Petitioner has shown sufficiently under part two of the *Advanced Bionics* framework that the Office materially erred in failing to appreciate teachings of Shaffer as applied to the '688 patent claims.

3. *Conclusion as to Discretionary Denial*

For the foregoing reasons, we decline to exercise discretion to deny institution under § 325(d).

E. Anticipation by Hain

Petitioner asserts that claims 1, 2, and 4 are unpatentable under 35 U.S.C. § 102 as anticipated by Hain, citing the Declaration of Dr. Kiaei for support. Pet. 17–29 (citing Ex. 1002). Patent Owner contends Petitioner's challenge is insufficient and thus should fail. Prelim. Resp. 16–21. We discuss Petitioner's and Patent Owner's arguments below.

1. *Independent Claim 1*

Petitioner's contentions regarding the teachings of Hain in regards to claim one are summarized as follows: Petitioner asserts that Hain teaches

the preamble¹¹ of claim 1, which recites a method for power control of a wireless earpiece. Pet. 17–19. Petitioner contends that Hain’s hearing aids 1 and 11 include circuitry that is powered down when the hearing aids are placed into their storage box. *Id.* at 19–20. Specifically, Petitioner argues that Hain’s hearing aid circuitry enters a residual or low power mode in response to detecting a magnetic field. *Id.* at 21–22. Petitioner further contends Hain’s hearing aid circuitry goes into a “normal” or high power mode in response to detecting that a magnetic field is not applied. *Id.* at 22–24. According to Petitioner, Hain’s Figure 2 illustrates that Hain’s hearing aids switch on (move from low power mode to high power mode) when they no longer detect a magnetic field. *Id.* at 25. Petitioner asserts Hain also discloses the opposite situation, moving from high power to low power mode, when the hearing aid detects a magnetic field after not previously detecting a magnetic field. *Id.* at 26. Finally, Petitioner argues Hain discloses charging an onboard battery, voltage sources 8 and 18 of hearing aids 1 and 11, in response to detecting the magnetic field is applied to the hearing aids. *Id.* at 27.

In reply, Patent Owner argues the prior art is missing three elements of independent claim 1. *See, e.g.*, Prelim. Resp. 16–21. As to the first missing element, Patent Owner argues Hain is missing “powering circuitry of the wireless earpieces utilizing a high-power mode in response to detecting a magnetic field is not applied to one or more of the wireless earpieces.” *Id.* at 16–18. As to the second missing element, Patent Owner

¹¹ On this record, we find Petitioner’s evidence and argument to be sufficient to show that the ’688 preamble was taught by the cited art. As such, we need not determine whether the preamble is limiting.

argues Hain is missing “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.” *Id.* at 18–19. As to the third missing element, Patent Owner argues Hain is missing “altering the power sent to the circuitry of the wireless earpieces to a low power mode in response to detecting a magnetic field is applied to one or more of the wireless earpieces.” *Id.* at 19–21.

All of these arguments center on the claim language’s recitation of “one or more of the wireless earpieces.” *Id.* at 16. Patent Owner agrees with Petitioner that “[i]f *both* hearing aids detect a magnetic field, such as by being located in the disclosed storage box, the hearing aids are automatically switched off.” *Id.* at 17; *see also* Ex. 1004 ¶ 13 (“[I]f both hearing aids detect a relatively strong magnetic field in their immediate vicinity, then this is an indication that the hearing aids are located in the storage box and can be switched off.”). Patent Owner does not appear to dispute that Hain teaches a high power mode when both earpieces do not detect a magnetic field. *See* Prelim. Resp. 17; *see also* Ex. 1004 ¶ 21 (“For as long as no magnetic field is detected, the hearing aid is in ‘normal operation.’”). On the current record, we are thus persuaded that Hain discloses a low power mode when both earpieces detect a magnetic field and a high power mode when both earpieces do not detect a magnetic field.

The parties’ dispute centers on the mixed situation when one earpiece detects a magnetic field and one does not. Patent Owner directs us to Hain’s disclosure of a “telephone mode” when “there is a magnetic field applied to *one* hearing aid but not the other, such as by a telephone receiver emitting a magnetic field.” Prelim. Resp. 16. According to Patent Owner, in order

“[t]o anticipate the claims, Hain must disclose an earpiece that switches to a high power mode when only it – and not both it and its pair – no longer detects a magnetic field.” *Id.* at 17. Patent Owner, however, also asserts that “to anticipate the claims, Hain must disclose an earpiece that switches to a low power mode when only it – and not its pair – detects a magnetic field.” *Id.* at 21. Thus, we understand Patent Owner to be arguing that each earpiece must independently move to a high or low power state based on whether it detects a magnetic field. We, however, are not persuaded that the claim language is so limited.

Limitation 1B recites “powering circuitry of the wireless earpieces utilizing a high-power mode in response to detecting a magnetic field is not applied to one or more of the wireless earpieces.” Limitation 1C recites “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.” Thus, the disputed portions of these limitations are met if “one or more” of the earpieces detects that a magnetic field is not present and goes into a high power mode. As noted above, on the current record, we are persuaded that Hain discloses that an earpiece goes to a high power state if it does not detect a magnetic field. *See Ex. 1004* ¶ 21 (“For as long as no magnetic field is detected, the hearing aid is in ‘normal operation.’”).

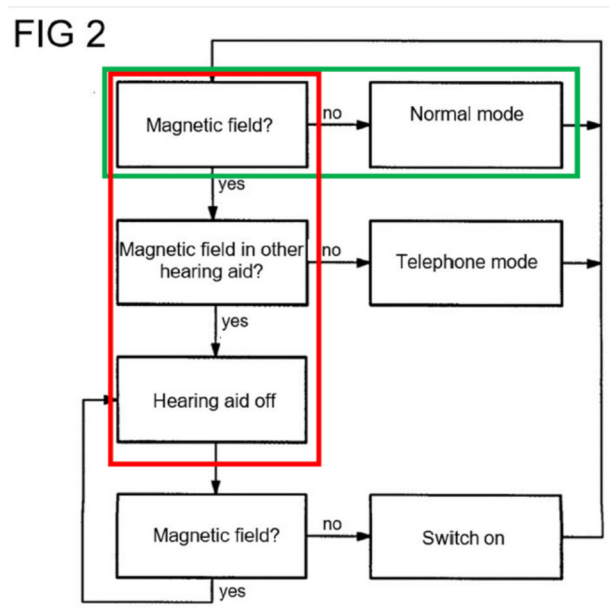
Limitation 1D requires altering the power to a low power mode in response to detecting a magnetic field is applied to one or more of the earpieces. Thus, the disputed portion of this limitation is met if “one or more” of the earpieces goes into a low power mode if a magnetic field is detected. As noted above, on the current record, we are persuaded that Hain

discloses that the earpieces go into low power mode if a magnetic field is detected. *See id.* ¶ 13 (“[I]f both hearing aids detect a relatively strong magnetic field in their immediate vicinity, then this is an indication that the hearing aids are located in the storage box and can be switched off.”).

The language of limitations 1B, 1C, and 1D is written in the alternative. As such, each limitation may be met in one of two ways. For example, limitation 1B may be met by (1) utilizing a high power mode when one earpiece does not detect a magnetic field or (2) utilizing a high power mode when more than one earpiece does not detect a magnetic field.

This accords with Federal Circuit holdings that have found that claim language written in the alternative may be anticipated by a reference that discloses either alternative. *See, e.g., Brown v. 3M*, 265 F.3d 1349, 1353 (Fed. Cir. 2001) (interpreting “at least one of two-digit, three-digit, or four-digit year-date representations”); *In re Theresa*, 720 Fed. Appx. 634, 637 (Fed. Cir. 2018) (interpreting “preset words or pre-set symbols”). As such, the disputed limitation may be met by a system that discloses either of the stated alternatives.

Based on the current record, we are persuaded that Figure 2 of Hain discloses at least one of the recited alternatives for each of Limitations 1B, 1C, and 1D. Petitioner’s annotated Figure 2 is reproduced below.



Pet. 21. Figure 2 of Hain is a flow chart depicting a method “for automatically detecting the hearing situation ‘telephoning’ and for automatically switching off two hearing aids of a hearing aid system.”

Ex. 1004 ¶ 21. Petitioner annotated Figure 2 to include a green box illustrating when it alleges Hain to disclose a high power mode. *Id.* at 24 (“Hain teaches processes (green box below) where the earpiece circuitry enters the high-power mode (e.g., normal mode) in response to detecting a magnetic field is not applied to the earpieces.”); *see also id.* at 25 (altering the power to enter a high power mode). In other words, Hain describes a system in which when one earpiece does not detect a magnetic field the earpiece is on high power. *see id.* at 24 (citing Ex. 1004 ¶ 21) (“For as long as no magnetic field is detected, **the hearing aid** is in ‘normal operation.’”) (emphasis added). In addition, if both earpieces do not detect a magnetic field, then both earpieces will be in high power mode. *See* Ex. 1004, Fig. 2; *see also* Pet. 22 (“under normal operation, the circuitry in **hearing aids 1 and 11** is powered using a high-power mode”) (emphasis added). Based on

the current record, these two scenarios each are individually sufficient to meet the language of Limitations 1B and 1C.

Petitioner also annotated Figure 2 to include a red box illustrating when it alleges Hain to disclose a low power mode. Pet. 21 (“Hain teaches processes (red box below) where the earpiece circuitry enters the residual power state (i.e., low power mode) in response to detecting a magnetic field applied to the earpieces.”); *see also id.* at 26 (altering the power to enter a low power mode). On this record, we are persuaded that this is sufficient to support Petitioner’s allegation that Hain discloses Limitation 1D.

Upon consideration of Petitioner’s evidence and argument in light of Patent Owner’s opposition, we are persuaded that Petitioner has shown sufficiently for purposes of this Decision that Hain discloses all of the limitations recited in claim 1.

2. Dependent Claims 2 and 4

Petitioner asserts that claims 2 and 4 are unpatentable under 35 U.S.C. § 102 as anticipated by Hain, citing the Declaration of Dr. Sayfe Kiaei for support. Pet. 17, 27–29 (citing Ex. 1002). Patent Owner’s Preliminary Response does not separately address these dependent claims. *See* Prelim. Resp. 21.

Based on the evidence in the present record, we are persuaded that Petitioner has shown sufficiently for purposes of this Decision that Hain discloses all of the limitations recited in claims 2 and 4.

F. Obviousness over Hain and Shaffer

Petitioner asserts that claims 1–6, 8–12, and 14 are unpatentable under 35 U.S.C. § 103 as obvious over Hain and Shaffer, citing the Declaration of Dr. Kiaei for support. Pet. 29–61 (citing Ex. 1002). Patent Owner argues

that this ground must fail because Shaffer was previously presented to the Office and it reiterates its arguments addressed above regarding the disclosures of Hain. Prelim. Resp. 21–26. For reasons discussed above, we are not persuaded by those arguments.

We have reviewed Petitioner’s arguments and evidence and based on the evidence in the present record, we are persuaded that Petitioner has shown sufficiently for purposes of this Decision that the combination of Hain and Shaffer teaches all of the limitations recited in claims 1–6, 8–12, and 14.

G. Obviousness over Hain, Shaffer, and Sørensen

Petitioner asserts that claims 3, 5–7, and 9–14 are unpatentable under 35 U.S.C. § 103 as obvious over Hain, Shaffer, and Sørensen, citing the Declaration of Dr. Sayfe Kiaei for support. Pet. 61–67 (citing Ex. 1002). Patent Owner argues that this ground must fail because Shaffer was previously presented to the Office and it reiterates its arguments addressed above regarding the disclosures of Hain. Prelim. Resp. 27. For reasons discussed above, we are not persuaded by those arguments.

We have reviewed Petitioner’s arguments and evidence and based on the evidence in the present record, we are persuaded that Petitioner has shown sufficiently for purposes of this Decision that the combination of Hain, Shaffer, and Sørensen teaches all of the limitations recited in claims 3, 5–7, and 9–14.

III. CONCLUSION

For the foregoing reasons, we determine that the arguments and evidence presented in the Petition have demonstrated that there is a reasonable likelihood that Petitioner would prevail with respect to at least

one of challenged claims 1–14 of the ’688 patent. We therefore institute trial on all challenged claims and grounds raised in the Petition. At this stage of the proceeding, we have not made a final determination as to the patentability of any challenged claim or as to the construction of any claim term. Any final determination will be based on the record developed during trial. We place Patent Owner on express notice that any argument not asserted in a timely-filed Response to the Petition, or in another manner permitted during trial, may be deemed waived, even if that argument was presented in the Preliminary Response.

IV. ORDER

For the foregoing reasons, it is

ORDERED that pursuant to 35 U.S.C. § 314(a), an *inter partes* review is hereby instituted for the asserted grounds:

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1, 2, 4	102	Hain
1–6, 8–12, 14	103	Hain, Shaffer
3, 5–7, 9–14	103	Hain, Shaffer, Sørensen

FURTHER ORDERED that pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial; the trial will commence on the entry date of this Decision.

IPR2023-01205
Patent 10,397,688

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