UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

BOSE CORPORATION,
Petitioner,

v.

INGENIOSPEC, LLC,
Patent Owner.

Case No. IPR2025-01548
Patent No. 11,829,518

PETITION FOR *INTER PARTES* REVIEW
UNDER 35 U.S.C. §§ 311-319 AND 37 C.F.R. § 42.1 *et seq.*

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1003	Declaration of Andrew P. DeJaco
1004	CV of Andrew P. DeJaco
1005	WIPO Patent Application Publication No. WO 03/056790 A1 ("Goh")
1006	WIPO Patent Application Publication No. 2004/093490 A1
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1008	WIPO Patent Application Publication No. WO 02/39600 A2 ("Griffin")
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I. MANDATORY NOTICES

A. Real Party-In-Interest – § 42.8(b)(1)

Petitioner Bose Corporation is the real party-in-interest.

B. Related Matters – § 42.8(b)(2)

1. United States Patent & Trademark Office

The application from which U.S. Patent No. 11,829,518 ("the '518 patent") issued (U.S. Patent Application No. 18/224,793) is a Divisional of U.S. Patent Application No. 18/129,660 (U.S. Patent No. 11,803,069), filed March 31, 2023, which is a Continuation of U.S. Patent Application No. 16/424,018 (U.S. Patent No. 11,630,331), filed May 28, 2019, which is a Continuation of U.S. Patent Application No. 13/831,419 (U.S. Patent No. 10,345,625), filed March 14, 2013, which is a Continuation of U.S. Patent Application No. 13/291,020 (U.S. Patent No. 8,430,507), filed November 7, 2011, which is a Continuation of U.S. Patent Application No. 12/803,732 (U.S. Patent No. 8,434,863), filed July 1, 2010, which is a Continuation of U.S. Patent Application No. 11/546,685 (U.S. Patent No. 7,806,525), filed October 11, 2006, which is a Continuation-in-part of U.S. Patent Application No. 11/183,256 (U.S. Patent No. 7,500,747), filed July 15, 2005.

The following applications claim the benefit of priority to U.S. Patent No. 11,829,518:

(*i*) U.S. Patent Application No. 18/519,802 (U.S. Patent No. 12,001,599), filed November 27, 2023; (*ii*) U.S. Patent Application No. 18/680,434 (U.S. Patent No. 12,238,494, filed May 31, 2024.

U.S. Patent No. 11,829,518 also claims priority to U.S. Provisional Application No. 60/846,150, filed on September 20, 2006, U.S. Provisional Application No. 60/787,850, filed on April 1, 2006, U.S. Provisional Application No. 60/725,999, filed on October 11, 2005, U.S. Provisional Application No. 60/725,896, filed on October 11, 2005, U.S. Provisional Application No. 60/647,826, filed on January 31, 2005, U.S. Provisional Application No. 60/647,836, filed on January 31, 2005, U.S. Provisional Application No. 60/620,238, filed on October 18, 2004, U.S. Provisional Application No. 60/618,107, filed on October 12, 2004, U.S. Provisional Application No. 60/605,191, filed on August 28, 2004, and U.S. Provisional Application No. 60/592,045, filed on July 28, 2004.

2. District Court Matters

The ’518 patent is asserted in the following pending cases:

- *IngenioSpec, LLC v. Sony Group Corp.*, 2:24-cv-00820 (E.D. Tex.);
- *IngenioSpec, LLC v. LG Elecs., Inc.*, 2:24-cv-00823 (E.D. Tex.);
- *Bose Corp. v. IngenioSpec, LLC*, 1:25-cv-12531 (D. Ma.).

The ’518 patent was also asserted in the following case which was dismissed without prejudice[1]:

- *IngenioSpec, LLC v. Bose Corp.*, 2-24-cv-00822 (E.D. Tex.).

The ’518 patent was also asserted in the following case which was dismissed with prejudice:

- *IngenioSpec, LLC v. Samsung Elecs. Co.*., 2:24-cv-00819 (E.D. Tex.)

C. Counsel and Service Information – § 42.8(b)(3) and (b)(4)

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[1] Prior to its dismissal, 2:24-cv-0082 was consolidated with 2:24-cv-00819 and 2:24-cv-00823 and designated as the lead case. The district court ordered that 2:24-cv-00822 be kept open as the lead case despite its dismissal.

A power of attorney is submitted with this petition. Counsel for Petitioner consents to service of all documents via electronic mail.

Petitioner requests *inter partes* review of claims 1-20 of the ’518 patent.

II. CERTIFICATION OF STANDING

The ’518 patent is available for IPR and Petitioner is not barred or estopped from requesting IPR. 37 C.F.R. §42.104(a).

III. TABLE OF GROUNDS

Petitioner requests cancellation of claims 1-20 as follows and all on the basis of obviousness.[2]

Ground	Reference(s)	Claim(s)
1A	Bodley, Griffin	1, 3, 15-16
1B	Bodley, Griffin, Taenzer	2
1C	Bodley, Griffin, Gillespie	4
1D	Bodley, Griffin, Irvin	5-6, 9, 11
1E	Bodley, Griffin, Glezerman	7-8, 10, 17
1F	Bodley, Griffin, Glezerman, Taenzer	12, 18
1G	Bodley, Griffin, Glezerman, Taenzer, Irvin	13, 19-20
1H	Bodley, Griffin, Glezerman, Gillespie	14
2A	Goh, Dyer, Hollemans	1-5, 9, 12-16
2B	Goh, Dyer, Hollemans, Irvin	5-6, 11, 13

[2] Several grounds rely on more than two references due to the dependent claims’ recitation of a hodge-podge of conventional features that POSAs routinely implemented in headsets. *KSR Int’l. Co. v. Teleflex, Inc.*, 550 U.S. 398, 417 (2007) (explaining claims directed to the “predictable use of prior art elements according to their established functions” are obvious).

2C	Goh, Dyer, Hollemans, Glezerman	7-8, 10, 17-19
2D	Goh, Dyer, Hollemans, Glezerman, Irvin	20
2E	Goh, Dyer, Bryan	1-5, 9, 12-16
2F	Goh, Dyer, Hollemans, Irvin, Glezerman, Andrea	3, 10, 12-14, 16-20
3A	Griffin, Hollemans	1, 3-5, 9, 15-16
3B	Griffin, Hollemans, Schrager	2
3C	Griffin, Hollemans, Irvin	6, 11

Each reference is analogous to the challenged patent. DeJaco-Decl., ¶¶39-40. Each reference is prior art as identified below even if the '518 patent is afforded its earliest claimed priority date (*i.e.*, July 28, 2004), and none of the references were cited during prosecution:

Reference(s)	Pre-AIA Prior Art Status
Bodley	§§102(a), (e)
Griffin	§102(b)
Taenzer	§102(b)
Gillespie	§102(b)
Irvin	§102(b)
Glezerman	§§102(a), (e)
Goh	§102(b)
Dyer	§102(e)
Hollemans[3]	§102(e)

[3] Hollemans is prior art under pre-AIA 35 U.S.C. §102(e)(2) as an issued U.S. patent that matured from a PCT application filed April 15, 2004, in the English language, designating the United States. EX1006.

Bryan	§102(b)
Andrea	§102(b)
Schrager	§102(e)

IV. THE ’518 PATENT

The ’518 patent introduces its invention by claiming that although conventional mobile phones “support both voice calls and text messages,” using both functionalities simultaneously can be difficult. EX1001, 3:44-55. For example, when making a call with a mobile phone, “the user often holds the mobile phone against their ear,” preventing the user from reading a text message on the phone. *Id.*, 3:45-51. And even if a conventional wireless headset is used with the phone so that a user can conduct calls in a “hands-free manner” (which the patent acknowledges was known), “the user would need to view a screen of the mobile phone to participate in text messaging.” *Id.*, 3:51-55.

As shown below, the challenged claims do little to solve the alleged problem(s) that the patent identified.

A. Challenged Claims

Independent claim 1 is reproduced below with labels added:

1[PRE] A head-worn wireless electronic apparatus at least configured for producing audio outputs for a user comprising:

[1A] a speaker in the head-worn wireless electronic apparatus;

[1B] an electrical connector at the head-worn wireless electronic apparatus, wherein the electrical connector includes at least two conductive pads, with the at least two conductive pads both on at least a surface of the head-worn wireless electronic apparatus, and wherein the at least two conductive pads are configured to removably couple to corresponding conductive contacts of a counterpart connector external to and separate from the head-worn wireless electronic apparatus, at least via spring-force, to at least enable each of the at least two conductive pads electrically connected to its corresponding conductive contact;

[1C] a rechargeable battery in the head-worn wireless electronic apparatus;

[1D] a microphone in the head-worn wireless electronic apparatus; and

[1E] a touch-sensitive input surface on the head-worn wireless electronic apparatus, wherein the touch-sensitive input surface is configured to generate at least an electrical signal for an operation of the head-worn wireless electronic apparatus based on receiving at least a touch input.

At a high-level, claim 1 recites a "*head-worn electronic apparatus*"—*e.g.*, a headset—with electronic components like a speaker, microphone, and re-chargeable battery, all of which were routinely found in wireless headsets ***long*** before 2004. EX1003 ("DeJaco-Decl."), ¶34 (citing EX1020 (issued 1992), EX1021 (issued 1989), and EX1022 (issued 1996) as examples). The claimed apparatus also includes "*conductive pads*," *e.g.*, for charging of its battery, and a "*touch-sensitive* *input surface*" for controlling an operation of the headset. As this Petition demonstrates, these latter aspects of the claimed apparatus were also known. Claim 1 recites nothing novel or non-obvious. DeJaco-Decl., ¶35.

The dependent claims likewise recite well-known features of conventional headsets, such as requiring "*wireless communication circuitry"* (claim 2), or limiting where the microphone is "*positioned*" on the apparatus (claim 3). DeJaco-Decl., ¶36.

B. Person of Ordinary Skill in the Art

POSAs would have had a bachelor's degree in electrical engineering, mechanical engineering, signal processing, or a related field, and at least two years of experience with designing personal wireless communication devices. DeJaco-Decl., ¶27.

C. Prosecution History

The originally-filed claims were rejected for non-statutory double patenting over U.S. Patent Appl. No 18/129,660 and several third-party prior-art references. EX1002, 204-214. The Examiner said the claims would be allowed if a terminal disclaimer was filed because the closest prior art allegedly did not disclose the "*conductive pads*," "*rechargeable battery*," "*microphone,*" and "*touch-sensitive input surface*" limitations of the then-pending (now-issued) claims. *Id.*, 214-215; *supra* Section V.A.

The applicant filed a terminal disclaimer (EX1002, 257-258), and the claims were allowed (*id.*, 282-284).

V. CLAIM INTERPRETATION

Claim terms are construed according to their ordinary meaning in light of the specification and prosecution history. 37 C.F.R. §42.100(b).

VI. UNPATENTABILITY GROUNDS: The Bodley-Based Grounds

A. Ground 1A: Bodley in view of Griffin Renders Claims 1, 3, and 15-16 Obvious

1. Bodley (EX1007)

Bodley discloses a "wireless headset" that communicates with a cellular telephone or personal digital assistant via Bluetooth. Bodley, Abstract, [0015], [0021]. Bodley's headset includes conventional components like a speaker, microphone, and rechargeable battery. *Id.*, Abstract, [0016], [0019]-[0020], [0024]. The headset also includes an "integral display" that can be "touch sensitive" for "data input" like "dialing using a virtual numeric keypad." *Id.*, [0019]; *see also* DeJaco Decl., ¶¶42-44.

Figures 1 and 2 (below) depict a "generic headset 100 that includes the display means 103 of the present invention." Bodley, [0015]. Element 111 is a microphone and element 109 is a speaker (*id.*, [0016]):

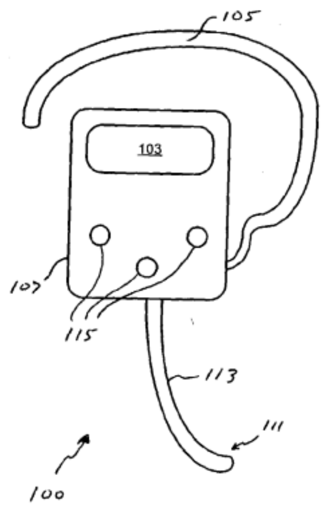

FIG. 1

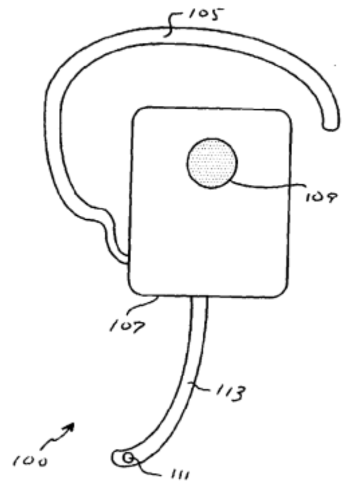

FIG. 2

Bodley explains its headset can be “coupled to a charger port” (*id*., [0024]), but provides no details regarding its port or how its headset is coupled to it. As discussed below, such implementation details were known.

2. Griffin (EX1008)

Griffin discloses a communication device with two components: a first communication module and a second communication module that is sized to fit inside the first module. Griffin, 4:13-5:5; FIGS. 1-2; *see also* DeJaco-Decl., ¶¶45-53. Among other things, the first module charges the second module, which is a wireless headset. Griffin, 6:14-18, 8:3-12; FIGS. 3-5; DeJaco-Decl., ¶¶47-48.

The first module is shown in Figure 3 below and it includes a cavity into which the second module (headset) is designed to fit as illustrated in Figure 6 (also below). Griffin, 5:1-5.

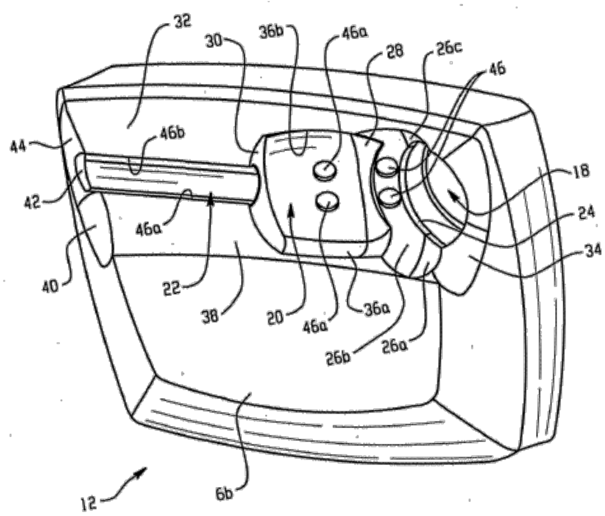

Fig. 3

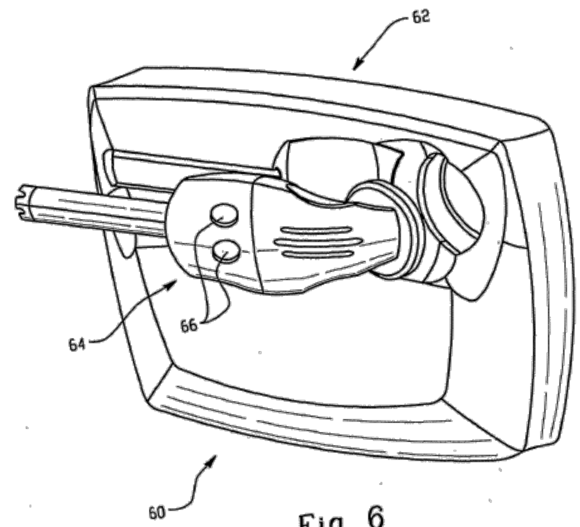

Fig. 6

Griffin identifies various ways that the headset can be retained in the first module, including the use of "springs." Giffin, 5:24-6:2; *see also id.*, 11:11-12:6. POSAs would have been familiar with the use of springs as a means for retaining and pressing electrical contacts together—for example, the small spring used to press a battery against electrical contacts in a TV remote control. DeJaco-Decl., ¶49.

Griffin further explains that when the headset is put into the first module the "charging terminals 56" on the headset (*see* Figure 5 below) "mate with corresponding charging terminals 46 on the first communication module 12 shown in Fig. 3." Griffin, 8:3-12. The charging terminals allow a "rechargeable power source," *e.g.*, battery, within the headset to be recharged. Griffin, 8:6-12; *see also id.*, 16:9 ("rechargeable battery"); claim 2.

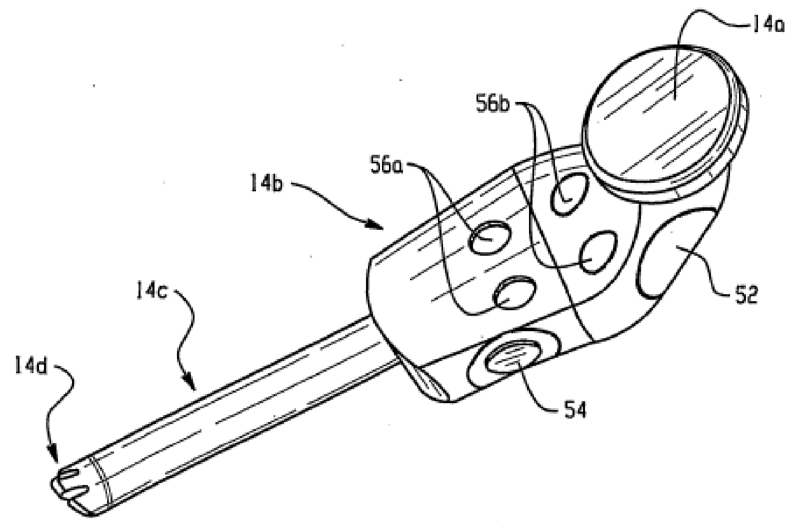

Fig. 5

Apart from its charging-station teachings, Griffin also teaches that the headset provides "higher quality speech signal" via "a noise cancellation circuit with a background noise microphone 48 as shown in Fig. 4." Griffin, 7:8-13. Griffin explains "[t]he background noise microphone 48 preferably detects background noise signals which are then subtracted from the corrupted speech received by the microphone 14d in the noise cancellation circuit." *Id.*

As seen in Figure 4, the headset's microphone 14d is positioned closer to where the user's mouth would be during use than background noise microphone 48:

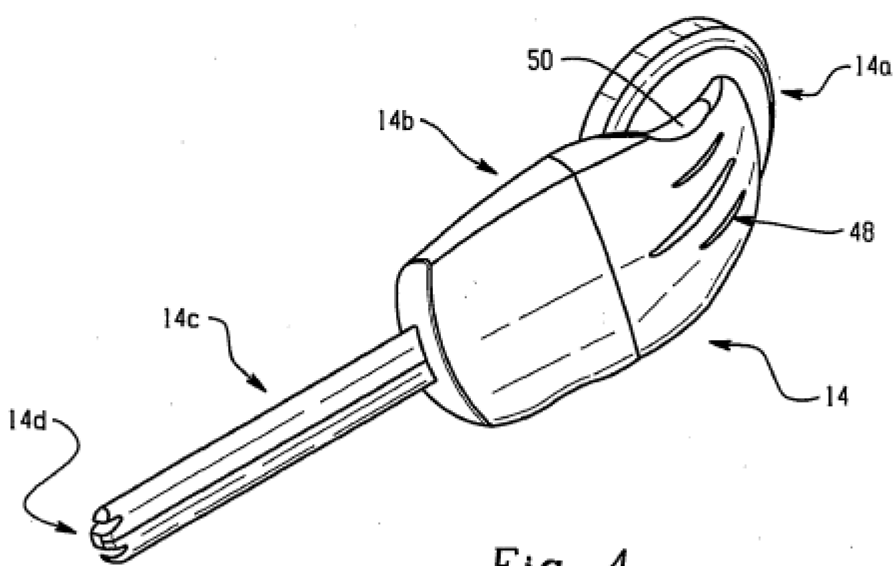

Fig. 4

See also Griffin, 7:1-3.

3. The Combination

Bodley's headset can be "coupled to a charger port" that charges a "power sub-system" which, in turn, "provid[es] power for the headset electronics." Bodley, [0024]. Bodley also discloses the use of a rechargeable battery (*see infra* limitation [1C]), and POSAs would have understood that the headset's "power sub-system" would be a rechargeable battery that is recharged via coupling to the charger port. DeJaco-Decl., ¶¶55, 70. Bodley, however, provides no details on its "charger port" and imposes no restrictions on how its wireless headset is "coupled" to that port, leaving those implementation details to POSAs' routine skill.

Griffin teaches a technique for charging a wireless headset, and POSAs would have looked to Griffin for implementation details on how to couple a power source to Bodley's headset to recharge its battery. By leaving the details of recharging its headset to POSAs' knowledge, Bodley motivates POSAs to utilize known recharging techniques like Griffin's technique. DeJaco-Decl., ¶56.

Separately, Griffin motivates POSAs to incorporate a "background noise microphone" into Bodley's headset so as to provide "a higher quality speech signal." Griffin, 7:8-10. POSAs would have readily appreciated the synergy between Griffin's teaching and Bodley's headset as Bodley's headset (like Griffin's headset) positions a microphone at the end of a boom thereby positioning the microphone close to a user's mouth and allowing room for a second microphone to be located elsewhere on the headset apart from the user's mouth. *Compare* Bodley, FIGS. 1-2 (microphone 111) *with* Griffin FIG. 4 (microphone 14d). For example, in one obvious implementation, the second microphone would be located on either the earhook of Bodley's headset or near the top of the headset's body so as to isolate it from the user's mouth. DeJaco-Decl., ¶¶57-58 (explaining known advantages to locating noise-canceling microphone apart from the user's mouth).

In the Bodley-Griffin combination, Bodley's headset would have been designed to fit inside a charging station like Griffin's first module so that the charging station could recharge Bodley's battery. DeJaco-Decl., ¶59. In the combination, Bodley's headset would also be modified to include multiple charging terminals that mate with charging terminals in the charging station, and the charging station would include springs to retain the headset within the charging station during the charging process thereby pressing the charging terminals into contact. DeJaco-Decl., ¶59.

The headset in the Bodley-Griffin combination would also be designed to include a background noise microphone positioned apart from Bodley's microphone 111 (*e.g.*, on the earhook or top of the headset's body) as well as a noise cancellation circuit that subtracts background noise from the speech received by Bodley's microphone 111. Griffin, 7:1-10 DeJaco-Decl., ¶60.

POSAs would have had a reasonable expectation of success in implementing the Bodley-Griffin combination as it requires mere routine engineering skill to modify Bodley's headset such that it includes the conventional design features and electrical components described in Griffin. DeJaco-Decl., ¶61.

4. Claim 1

a. [1PRE]: "A head-worn wireless electronic apparatus at least configured for producing audio outputs for a user comprising:"

The Bodley-Griffin combination uses Bodley's "wireless headset" which is used for telephone, *i.e.*, audio, communication. Bodley, Abstract ; FIGS. 1-7; claims 24-25. DeJaco-Decl., ¶62.

b. [1A]: "a speaker…;"

Bodley's headset includes a "*speaker*." Abstract ("The wireless headset…includes…an output transducer (e.g., a speaker)…"); [0004]; [0016]; claim 4; FIGS. 1-2. DeJaco-Decl., ¶63.

c. [1B1]: "an electrical connector at the head-worn wireless electronic apparatus, wherein the electrical connector includes at least two conductive pads, with the at least two conductive pads both on at least a surface of the head-worn wireless electronic apparatus, and"

As discussed above, Bodley's headset in the Bodley-Griffin combination includes charging terminals like those seen below in Figure 5 from Griffin, *i.e.*, elements 56a and 56b. Griffin, 8:15-21; DeJaco-Decl., ¶64

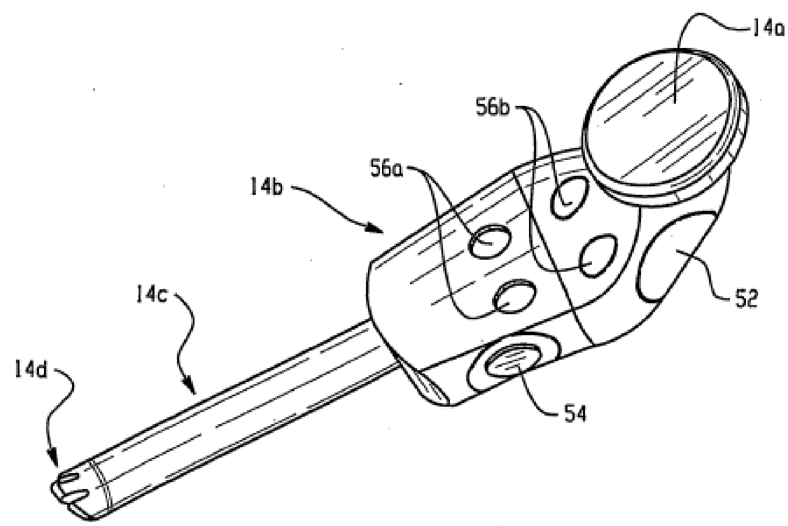

Fig. 5

POSAs would have understood the charging terminals to be "*conductive pads*" because they are depicted as pads and conductive materials (*e.g.*, metal) is needed to cause electrons to flow from a power source to the rechargeable battery within the headset. DeJaco-Decl., ¶65. As seen in Figure 5, Griffin's headset uses four "*conductive pads*" that are on "*a surface*" of Griffin's headset, giving POSAs reason to use at least four pads on Bodley's surface too. DeJaco-Decl., ¶66.

d. [1B2]: "wherein the at least two conductive pads are configured to removably couple to corresponding conductive contacts…at least via spring-force, to at least enable each of the at least two conductive pads electrically connected to its corresponding conductive contact"

As discussed above, Bodley's headset in the Bodley-Griffin combination includes charging terminals that electrically connect with corresponding charging terminals in a separate device like charging terminals 46 on Griffin's first module shown below in Figure 3 (below). DeJaco-Decl., ¶67.

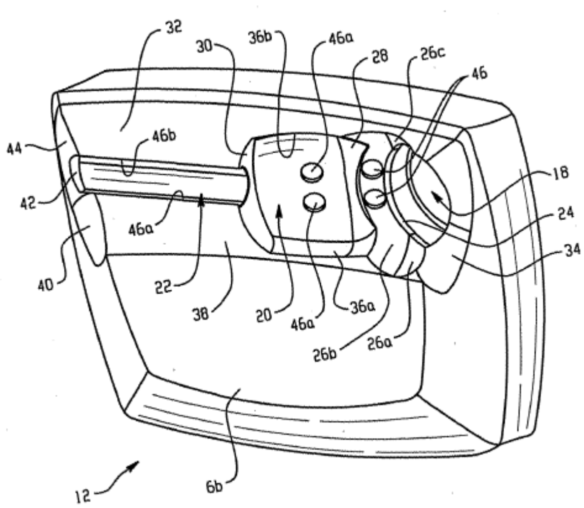

Fig. 3

In the Bodley-Griffin combination, "*the at least two conductive pads*" on the headset "*are configured to removably couple to corresponding conductive contacts*" on the separate device because they coupled to those corresponding contacts via one or more springs, *i.e.*, "*via spring force*," that retain the headset in the separate device. Griffin, 5:24-6:2; DeJaco-Decl., ¶68.

Separately, Griffin discloses the use of a "door" on the first module that is biased toward a closed position via a spring. Griffin, 11:11-12:6. The spring-biased door would have also retained (and protected) the headset when it was placed in the first module for charging, and thus would "*removably couple*" the two modules' "*conductive contacts…via spring force*." DeJaco-Decl., ¶69.

e. [1C]: "a rechargeable battery…"

Bodley discloses that its headset's display provides information regarding the headset including its "battery level" as well as its "charge level." Bodley, [0004]; [0019] ("headset battery level"); [0020] ("battery…strength"); [0024] ("battery status, charge level"). Bodley likewise discloses that its headset is "typically coupled to a "charger port." Bodley, [0025]. In view of these disclosures, POSAs would have understood that Bodley's headset includes a battery, and that the battery is rechargeable, *e.g.*, via the "charger port." DeJaco-Decl., ¶70.

If Patent Owner argues that Bodley does not teach or suggest the use of a "rechargeable battery," then the use of such a power source in Bodley's wireless headset would have been obvious in view of Griffin which teaches the use of a "rechargeable battery" for a wireless headset (like Bodley's headset) that can be recharged using Griffin's first communication module. Griffin, 8:6-12; 16:9 ("rechargeable battery"); claim 2. Using Griffin's rechargeable battery in Bodley's headset would have been a routine design choice for POSAs. DeJaco-Decl., ¶71.

f. [1D]: "a microphone…"

Bodley's headset in the Bodley-Griffin combination maintains its microphone that is positioned at the end of a boom. Bodley, Abstract ("The wireless headset…includes an input transducer (e.g., a microphone)…"); [0004]; [0016]; claim 2; FIG. 1 (element 111); DeJaco-Decl., ¶72.

g. [1E]: "a touch-sensitive input surface…, wherein the touch-sensitive input surface is configured to generate at least an electrical signal for an operation of the [headset] based on receiving at least a touch input."

As explained above, Bodley's headset includes a display 103 that is seen in Figure 1 (below) (Bodley, [0015]):

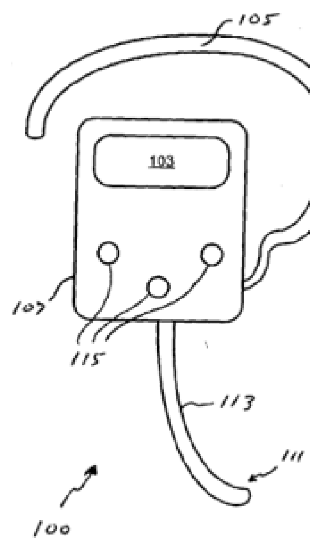

FIG. 1

Bodley's display 103 is a "*touch-sensitive input surface*" as claimed because a user can touch icons on the screen to input data such as a phone number. Bodley, [0019] ("display 103 can be ***touch sensitive***, thus providing a touch screen for data input (e.g., phone numbers into a phone list, dialing using a virtual numeric keypad)."); claim 19 ("said display means is a touch sensitive display"); DeJaco-Decl., ¶¶73-74.

5. Claim 3

a. [3PRE]

See [1PRE] in Ground 1A.

b. [3A]: "at least another microphone…"

As discussed *supra* §VI.A.3, Bodley's headset in the Bodley-Griffin combination includes a second background-noise microphone per Griffin's teachings. Griffin, 7:1-13, claim 7, FIG. 4 (element 48). DeJaco-Decl., ¶76.

c. [3B]: "wherein the microphone is configured to be positioned closer to mouth of the user and the another microphone is configured to be positioned further from the mouth of the user, when the head-worn wireless electronic apparatus is worn by the user, and"

As discussed *supra* §VI.A.3, Bodley's original microphone, *i.e.*, "*the microphone*," would remain at the end of a boom where it is positioned close to the user's mouth "at the end of a boom member 113." Bodley, [0016], FIGS. 1-2 (element 111).

In the Bodley-Griffin combination, Bodley's headset would be modified to include a background noise microphone, *i.e.*, "*the another microphone*." Griffin, 7:1-13, FIG. 4, claim 7. As explained *supra* §VI.A.3, the background noise microphone in the combination would be "*positioned further from the mouth of the user*" than the original microphone, *e.g.*, on earhook 105 or body 107 of Bodley's headset. Such positioning ensures that the sound the background-noise microphone captures consists primarily of background-noise, not the user's voice, which improves noise-cancellation. DeJaco-Decl., ¶¶77-79.

d. [3C]: "wherein at least the microphone and the another microphone are configured to receive audio inputs, with at least some noise in the audio inputs configured to be cancelled based on using at least the microphone and the another microphone."

As discussed *supra* §VI.A.3, Bodley's headset in the Bodley-Griffin combination includes a "noise cancellation circuit" that "subtract[s]," *i.e.*, "*cancel[s]*," background noise signals from the speech received by Bodley's original microphone at the end of the boom. Griffin, 7:1-10. DeJaco-Decl., ¶80.

6. Claim 15: "…configured to be worn in an ear of the user."

Bodley describes its headset as "generic" and provides no details as to how the speaker for its headset is designed. Bodley, [0006]-[0007], [0015]. Bodley thus imposes no restrictions on the particular design that its headset or speaker takes so long as the headset otherwise has room for Bodley's touchscreen display. DeJaco-Decl., ¶81.

In view of Griffin, POSAs would have known that one design for a speaker, like Bodley's speaker 109, was an in-the-ear earbud design in which the speaker is worn in a user's ear. Griffin, 6:17-18 (describing FIG. 4 and explaining that "the speaker 14a is placed in the ear…"); *see also* Abstract ("the [headset] is physically dimensioned so that it may be fitted into or onto an ear…"), claim 16. It would thus have been a routine design choice, in view of Griffin, to implement the headset in Bodley-Griffin such that it was "*configured to be worn in an ear of the user*," like Griffin's headset designs. DeJaco-Decl., ¶82.

7. Claim 16

See claims 3, 15. DeJaco-Decl., ¶¶83-86.

B. Ground 1B: The Bodley-Griffin Combination in View of Taenzer Renders Claim 2 Obvious.

1. Taenzer (EX1009)

Taenzer discloses an earphone(s) with a microphone(s) and a personal communications node wirelessly connected to the earphone that "processes signals received via the [earphone's] microphone(s)" including "voice commands to control [a] cellular telephone." Taenzer, 7:13-16, Abstract; DeJaco-Decl., ¶88.

To provide its voice-control functionality, Taenzer teaches the use of a "voice recognition command manager 138" that can be software and which "interprets voice commands from the user." *Id.*, 7:49-65. "The voice recognition command manager 138 matches a voice command to a particular control function in a library or lookup table" that is stored in memory, and "[a]fter matching the voice command to a particular control function and a particular remote device, the voice recognition command manager 138 can issue an appropriate control code" to the device being controlled, *e.g.*, a phone. *Id.*, 7:66-8:6, 5:41-59; DeJaco-Decl., ¶89.

2. The Combination

The headset in the Bodley-Griffin combination includes Bodley's "voice dialing" functionality (Bodley, Abstract, [0004], claim 16), but Bodley does not provide details on how its voice-dialing functionality is implemented. Taenzer provides such details, and teaches that such functionality can be provided by a processor executing voice-recognition software and a lookup table stored in memory that compares spoken commands with control functions. Taenzer, 7:52-8:7; DeJaco-Decl., ¶91.

Given that Bodley leaves the implementation details for its "voice dialing" functionality to POSAs' routine skills, POSAs would have had reason to look for references explaining how voice-dialing can be provided in electronic devices similar to Bodley's wireless headset, and Taenzer is one such reference. DeJaco-Decl., ¶92. Although Taenzer uses a device separate from its wireless earpiece to perform its voice-command functionality (*i.e.*, a "personal communication node" or PCN, Taenzer, 6:52-54, 7:12-28), POSAs would have recognized that the same functionality is suitable in Bodley's headset alone because it already includes both a controller (in the form of a processor) for executing Taenzer's voice-control software and memory for storing the relevant software. Bodley, [0023] ("at least one controller (e.g., processor, microcontroller, …or ASIC, etc.)"); [0028] ("memory resident within the headset"); DeJaco-Decl., ¶92.

In the combination, Bodley's voice-dialing functionality is implemented using a lookup table of pre-stored commands and voice-recognition software, both of which are stored in "memory resident within the headset." Bodley, [0028]; Taenzer, 7:66-8:6. POSAs would have had a reasonable expectation of success in implementing the Bodley-Griffin-Taenzer combination because Taenzer's voice-control technique works with voice signals that a microphone on an earpiece/headset captures and requires only routine engineering skills to implement. DeJaco-Decl., ¶¶90, 93-94.

3. Claim 2

a. [2PRE]

See [1PRE] (Ground 1A).

b. [2A]: "wireless communication circuitry…for coupling to at least a Bluetooth network…"

Bodley's headset includes "a Bluetooth enabled wireless networking module" for transmitting and receiving signals from "a Bluetooth enabled cellular telephone." Bodley, claim 25; *see also* Abstract ("a wireless networking subsystem"); [0021] (citing and incorporating by reference the Bluetooth standard). DeJaco-Decl., ¶96.

c. [2B]: "a storage medium configured to store at least computer program codes for facilitating voice recognition to facilitate recognizing at least a word received by at least the microphone for an operation of the head-worn wireless electronic apparatus."

Bodley's headset, which is used in Bodley-Griffin-Taenzer, includes "memory" (Bodley, [0028]), *i.e.*, "*a storage medium*." In the Bodley-Griffin-Taenzer combination, Bodley's memory would include Taenzer's voice-recognition software and lookup table, *i.e.*, "*computer program codes for facilitating voice recognition*," to perform voice-dialing, *e.g.*, to initiate a call. Taenzer, 7:49-8:6. The Bodley-Griffin-Taenzer combination therefore meets limitation [2B]. DeJaco-Decl., ¶97.

C. Ground 1C: The Bodley-Griffin Combination in View of Gillespie Renders Claim 4 Obvious.

1. Gillespie (EX1015)

Gillespie discloses a touchscreen the size of a laptop's touchpad. Gillespie, [0036], FIG. 1 (element 106). Similar to Bodley's display, Gillespie's touchscreen "can be a liquid crystal display." Gillespie, [0038]; Bodley, [0029].

Gillespie discloses several usage modes for its touchscreen, including an "iconic" mode that is depicted below in Figure 4 (Gillespie, [0048]-[0049]):

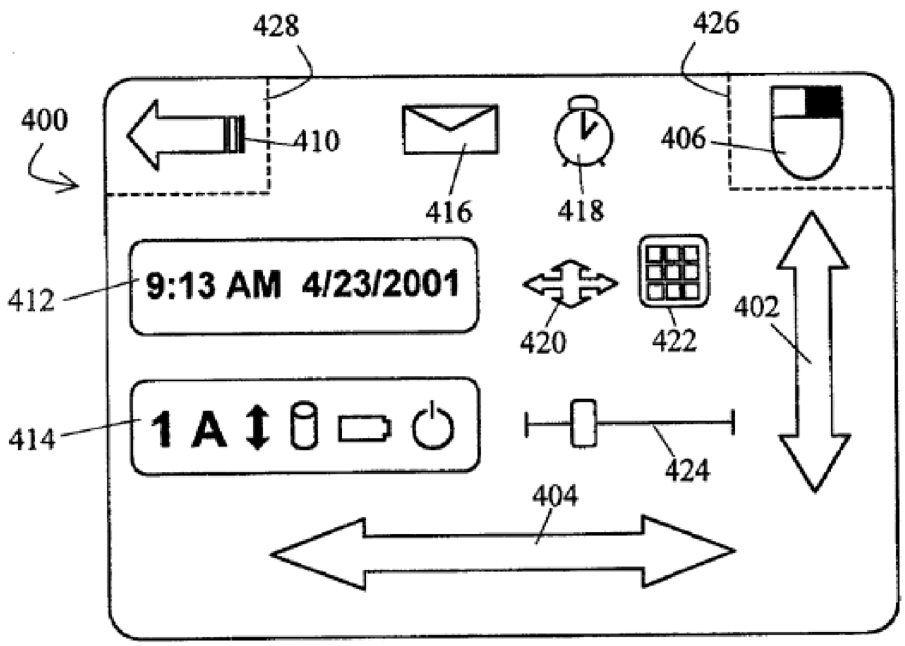

Figure 4

The graphical icon 424 shown above "represents the volume control for the sound system and speakers of [a] computer. Icon 424 includes a visual slider and 'thumb.'" *Id.*, [0057]; *see also id.*, [0060]. "When the touch screen is in the activated state, finger motions within the volume control region can move the thumb to a different location on the slider to adjust the volume level." *Id.*, [0057]. That is, using a finger, a user can slide the visual thumb on the virtual slider left or right to decrease or increase volume. *Id.*, [0044]; [0049], FIG. 4; DeJaco-Decl., ¶¶99-101. The user can also perform similar touch-based controls using directional arrows 402 and 404. *Id.*, [0050], FIG. 4; DeJaco-Decl., ¶101.

2. The Combination

Bodley teaches that, among other uses, its integral display can be used to "to adjust or set…headset volume." Bodley, [0019]; *see also id.*, [0004].

Bodley's exemplary embodiments use physical "volume keys" as "input means" to adjust volume. *Id.*, [0019]-[0020]; FIG. 1 (elements 115). In view of Gillespie, however, POSAs would have known other forms of input means existed, including graphical icons presented on a touchscreen. Implementing Bodley's headset in the Bodley-Griffin combination such that the headset's touch-sensitive display presented users with a visual slider like Gillespie's icon 424 to adjust the headset's volume (or another setting) would have been the simple substitution of one conventional input means (Bodley's volume keys) for another conventional input means (Gillespie's visual slider) to obtain predictable results (a headset with inputs means for adjusting its volume). DeJaco-Decl., ¶¶103-104; *KSR Int'l Co. v. Teleflex Inc.,* 550 U.S. 398, 416-417 (2007).

POSAs would have had a reasonable expectation of success in implementing the combination as Bodley's display is already touch sensitive and is thus a touchscreen similar to the one Gillespie discloses. Bodley, [0019], claim 19; Gillespie, [0038]. Modifying Bodley's display to include Gillespie's icon 424 (or scrolling region 402/404) would have required only routine software programming, well within POSAs' capabilities. DeJaco-Decl., ¶105.

In the Bodley-Griffin-Gillespie combination, users can adjust the volume of Bodley's headset by touching the thumb on Gillespie's visual slider and sliding the thumb left or right by sliding their finger left or right on the integral display to decrease or increase volume. Alternatively, the user can perform the same basic function using scrolling region 402/404. DeJaco-Decl., ¶¶102, 106.

3. Claim 4

As discussed above, the headset in Bodley-Griffin-Gillespie headset is Bodley's headset which includes an "on-board processor (also referred to as a controller or an interface controller)." Bodley, [0018]; *see also id.*, [0004], [0023], claim 21. Bodley's controller is configured to "program and/or modify the functionality of the headset." *Id.*, [0023].

In the Bodley-Griffin-Gillespie, Bodley's controller would be "*configured to identify a sliding action across at least a portion of the touch-sensitive input surface*," *i.e.*, a left or right slide of the user's finger on the screen to move the thumb on a visual slider left or right (or to move left/down or right/up along a directional arrow). The controller would also "*facilitate a first or a second operation of the [headset]*," *i.e.*, a volume increase operation or a volume decrease operation, *"based on identifying whether the sliding action is in a first direction*," *i.e.*, to the right (or up), *"or a direction opposite from the first direction*," *i.e.*, to the left (or down) *"across the at least a portion of the touch-sensitive input surface*." DeJaco-Decl., ¶¶107-108.

D. Ground 1D: The Bodley-Griffin Combination in View of Irvin Renders Claims 5-6, 9, and 11 Obvious.

1. Irvin (EX1011)

Irvin discloses a wireless headset that includes a sensor for detecting whether the headset is being worn by a user so the headset can automatically be placed into an active (or inactive) state to conserve battery power. Irvin, Abstract, 2:29-31. Irvin's wireless headset is suitable for use with a "cellular telephone," and "draws essentially no power" when in an inactive state. Irvin, 2:32-3:2; *see also* Abstract.

Irvin teaches that its sensor for detecting whether the headset is being used "may be based on a variety of technologies" so long as it "provide[s] a signal responsive to a natural stimulus associated with use of the headset by a user." Irvin, 7:10-14. One such sensor Irvin identifies is an "accelerometer" that can detect movement of the headset. Irvin, 7:14-17. An alternative sensor is a "contact sensor," *e.g.*, a force or pressure sensor, that detects when the headset contacts the user's head. Irvin, Abstract, 8:28-9:8, claim 11; DeJaco-Decl., ¶¶110-111.

2. The Combination

In view of Irvin, POSAs would have had reason to add a sensor to the headset in the Bodley-Griffin combination that outputs data indicating when the headset is in use so as to conserve the headset's rechargeable battery. *Supra* Ground 1A (discussing limitation [1C]); DeJaco-Decl., ¶112. As Irvin explains, "battery life is a key component of operator convenience," and therefore "it is important that wireless headset design incorporates provisions maximizing battery life." Irvin, 2:17-21. Irvin's teachings explicitly motivate the combination, and are consistent with Bodley's teaching that "battery level" is important information to display for users. Bodley, [0004], [0019].

In an obvious implementation, the sensor would be either an accelerometer that detects movement of the headset or a contact sensor like a force sensor that detects when the user's head is in contact with the headset. Irvin, 7:14-17, Abstract, 8:28-9:8, claim 11. The choice between the two would be a simple and routine design choice for POSAs, and either implementation would have been obvious to pursue. DeJaco-Decl., ¶113. Data from either sensor would be used by the controller/processor in Bodley's headset to control whether the headset should transition from an inactive to an active state. Bodley, [0018] ("headset on-board processor (also referred to as a controller[)]"), [0019] ("headset processor"); [0023]; claim 25 ("a controller"); Irvin, Abstract, 2:29-3:10, 10:13-27; *see also* DeJaco-Decl., ¶¶112-114.

3. Claim 5: "…a controller configured to determine whether the…apparatus is being used based on outputs from a sensor…."

As discussed above, the Bodley-Griffin-Irvin combination includes Bodley's headset which has an "on-board processor (also referred to as a controller or an interface controller)," *i.e.*, "*a controller*." Bodley, [0018]; *see also id.*, [0004], [0023], claim 21. Bodley's controller is configured to "program and/or modify the functionality of the headset." *Id.*, [0023].

As discussed above, the Bodley-Griffin-Irvin combination includes Irvin's sensor for detecting whether Bodley's headset is being worn by a user, and in the combination Bodley's controller would have been configured to determine, "*based on outputs from a sensor*", *i.e.*, Irvin's sensor, whether the headset is being worn, *i.e.*, "*used*." DeJaco-Decl., ¶¶115-116.

4. Claim 6: "…an accelerometer."

As discussed *supra* §VI.D.2, an obvious implementation of the Bodley-Griffin-Irvin combination uses an "accelerometer" as the sensor for detecting whether headset is being used. Irvin, 7:15-17. DeJaco-Decl., ¶117

5. Claim 9: "…a force sensor."

As discussed *supra* §VI.D.2, an obvious implementation of the Bodley-Griffin-Irvin combination uses a "contact sensor" as the sensor for detecting whether headset is being used. Irvin, Abstract, 6:3-19, claim 9. POSAs would have considered Irvin's "contact sensor" to be a "*force sensor*" because it senses a contact force (or lack thereof) applied by physical contact of the user with the sensor. Irving 8:28-9:8, claim 32; DeJaco-Decl., ¶118 (discussing breadth of "*force sensor*," and citing EX1001, 38:61-65, 5:54-55, Fig. 28).

6. Claim 11: "…an accelerometer."[4]

Supra claim 6; *see also* claim 3 (Ground 1A).

E. Ground 1E: The Bodley-Griffin Combination in View of Glezerman Renders Claim 7-8, 10, and 17 Obvious.

1. Glezerman (EX1012)

Glezerman discloses a headset that provides users with the ability to utilize different attachments for securing the headset to their head. Glezerman, [0027]. "Through these different modes of attachment, the headset can be directly and easily

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[4] Claim 11 lacks an antecedent basis for "*claim*," but the immediately preceding claim 10 depends from claim 3, and thus Petitioner treats claim 11 as depending from claim 3. For the reasons set forth in Ground 1D, however, claim 11 would be obvious regardless of what claim it depends from.

secured around a user's ear or attached to the frame of a pair of eyeglass or sunglasses." *Id.* A first attachment 110 for attaching the headset to the user's glasses is depicted in FIG. 1, and a second attachment 160 for attaching the headset to the user's ears is depicted in FIG. 2. *Id.*, [0013]-[0014].

FIG. 1

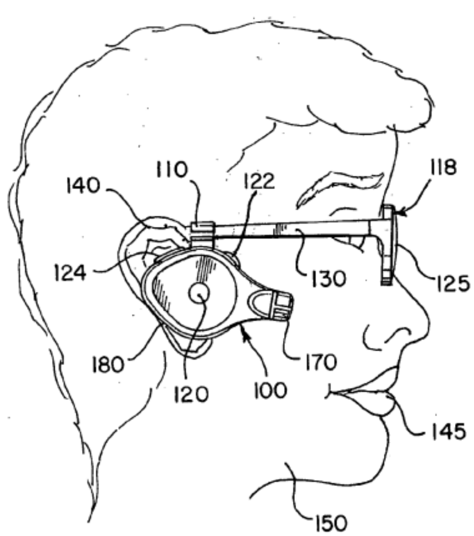
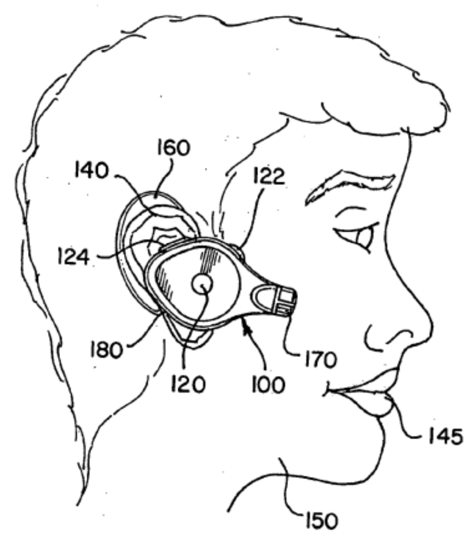


FIG. 2



In Figure 8 (below), Glezerman depicts an embodiment in which its attachments are connected to the headset via a magnet 800 on the headset that magnetically attaches to metal portions on the attachments (Glezerman, [0045]-[0046]). *See also* DeJaco-Decl., ¶¶121-122.

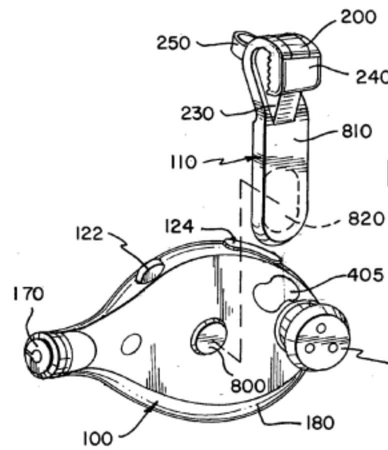
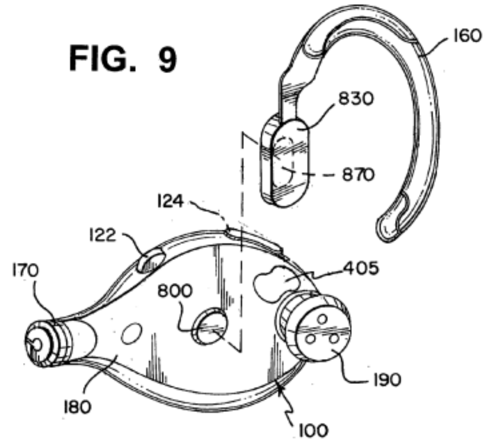


FIG. 8

FIG. 9



2. The Combination

In view of Glezerman, POSAs would have been motivated to design Bodley's headset in the Bodley-Griffin combination such that the headset's body included a magnet to which different attachments (*e.g.*, an earhook, a loop for glasses) could attach. This design would make the earhook for Bodley's headset removable such that it could be replaced with an attachment more suitable for use with eyeglasses like Glezerman's attachment 110. Glezerman, [0033]-[0034]; *see also* FIGS. 8, 11, claim 1. Making the earhook removable would also beneficially allow Bodley's headset to be used more effectively as an earbud (*i.e.*, without any attachment), a design that Griffin motivates as discussed above in Ground 1A regarding claim 15. DeJaco-Decl., ¶123.

Glezerman explicitly motivates the combination as it touts its design as "offer[ing] versatility to a user" by allowing changes in different modes of attachment "quickly and easily." Glezerman, [0006]. For example, with Glezerman's design, a user could switch from using Bodley's earhook to using Glezerman's attachment 110 for glasses when the user puts on a pair of "sunglasses." Glezerman, [0033]. Likewise, a user could elect to use no attachment, consistent with the earbud-design shown in Griffin. *Supra* VI.A.6; DeJaco-Decl., ¶124.

POSAs would have had a reasonable expectation of success in implementing the Bodley-Griffin-Glezerman combination as it requires routine engineering skill to modify Bodley's headset such that it includes the design features described in Glezerman. DeJaco-Decl., ¶125. For example, the design would require simply adding a magnet to the body of Bodley's headset and including magnetic material (*e.g.*, metal) on Bodley's earhook 105 or Glezerman's attachment 110 so that they can attach to the magnet.

3. Claim 7: "…an area configured for attachment via magnetic force."

As explained above, the headset in the Bodley-Griffin-Glezerman combination includes a magnet that is configured for attachment with, *e.g.*, Bodley's earhook 105 or Glezerman's attachment 110 "*via magnetic force*." Glezerman, [0045]-[0046]; DeJaco Decl., ¶126.

4. Claim 8: "…a magnet in the area."

Supra claim 7.

5. Claim 10: "…an area configured for attachment via magnetic force."

Supra claim 7; *see also* claim 3 (Ground 1A).

6. Claim 17

Supra claim 7; *see also* claim 16 (Ground 1A).

F. Ground 1F: The Bodley-Griffin-Glezerman Combination in Further View of Taenzer Renders Claims 12 and 18 Obvious.

1. Claim 12

Claims 12 and 18, respectively, limit claims 10 and 17 in the same manner that claim 2 limits claim 1. As established immediately above in Ground 1E, the Bodley-Griffin-Glezerman combination renders claims 10 and 17 obvious.

For the same reasons as discussed above in Ground 1B, Taenzer would have given POSAs reason to include voice-control functionality in Bodley's Bluetooth headset in the Bodley-Griffin-Glezerman combination. The resulting Bodley-Griffin-Glezerman-Taenzer combination renders claims 12 and 18 obvious for the same reasons as discussed in regard to claim 2 (Ground 1B) and claims 10 and 17 (Ground 1E). DeJaco Decl., ¶¶130-137.

G. Ground 1G: The Bodley-Griffin-Glezerman-Taenzer Combination in Further View of Irvin Renders Claim 13 and 19-20 Obvious.

Claim 13 limits claim 12 in the same manner that claim 5 limits claim 1. Likewise, claims 19 and 20 limit claim 18 in the same manner that claims 5-6 limit claim 1. As established immediately above in Ground 1F, the Bodley-Griffin-Glezerman-Taenzer combination renders claims 12 and 18 obvious.

For the same reasons as discussed above in Ground 1D, Irvin would have given POSAs reason to include an accelerometer in Bodley's headset in the Bodley-Griffin-Glezerman-Taenzer combination to detect when the headset is in use so as to conserve battery power. *Supra* §VI.D.2. The resulting Bodley-Griffin-Glezerman-Taenzer-Irvin combination renders claim 13 and 19-20 obvious. DeJaco-Decl., ¶¶138-139.

H. Ground 1H: The Bodley-Griffin-Glezerman Combination in Further View of Gillespie Renders Claim 14 Obvious.

Claim 14 limits claim 12 in the same manner that claim 4 limits claim 1. As established above in Ground 1F, the Bodley-Griffin-Glezerman-Taenzer combination renders claim 12 obvious.

For the same reasons as discussed above in Ground 1C, Gillespie would have given POSAs reason to include a visual slider in the Bodley-Griffin-Glezerman combination that a user would slide left or right with their finger to adjust the volume on the combination's headset. *Supra* §VI.C.2. The resulting Bodley-Griffin-

Glezerman-Gillespie combination renders claim 14 obvious. DeJaco-Decl., ¶¶140-141.

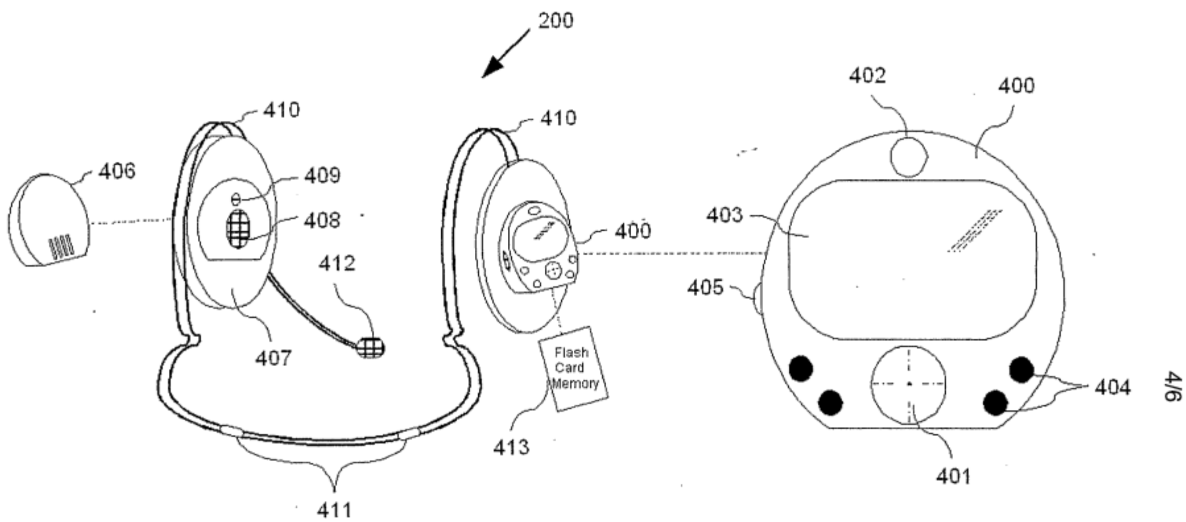
VII. UNPATENTABILITY GROUNDS: The Goh-Based Grounds

A. Ground 2A: Goh in View of Dyer and Hollemans Renders Claims 1-5, 9, and 12-16 Obvious

1. Goh (EX1005)

Goh discloses a wireless headset. Goh, Title, 5:11-12. The headset includes conventional headset components like a speaker, a microphone, a rechargeable battery, and a short-range wireless network interface, *e.g.*, Bluetooth, that allows the headset to communicate wirelessly with nearby electronic devices like a personal digital assistant or mobile phone. *Id.*, 3:28-29, 5:11-12, 9:18-22, 11:21-27, 17:26-18:2, 19:20-22, claim 1; FIG. 2.

An embodiment of Goh's headset is depicted in Figure 4. As seen below, that embodiment includes "a controller 400" on the side of the headset and the controller includes, *inter alia*, "a display 403," "function buttons 404," and "multifunctional control button 401." *Id.*, 16:15-17. "For controlling the headset 200 all relevant settings can be chosen via the display 403 as well as the multifunctional control button 401 and the function buttons 404." *Id.* at 16:17-20.



Goh's headset includes "an integrated power source like a battery or an accumulator." *Id.*, 6:18-20. In the context of electronic devices, POSAs would have known that an accumulator is another term for a rechargeable battery. DeJaco-Decl., ¶146 (citing EX1023-EX10125 as corroboration). Goh further discloses the use of a "docking station" for "re-charging" the headset's power source "via a re-charging interface, if the power source [] is re-chargeable." *Id.*, 7:3-8; 12:24-13:3; *see also* DeJaco Decl., ¶¶143-147.

2. Dyer (EX1013)

Dyer discloses devices "for conveniently…recharging wireless headsets." Dyer, Abstract. One device is "wireless headset holder 705," which is depicted in Figure 9 (below) alongside a wireless headset 310 and an electrical adapter 905. *Id.*, 4:49-56; 5:16-21.

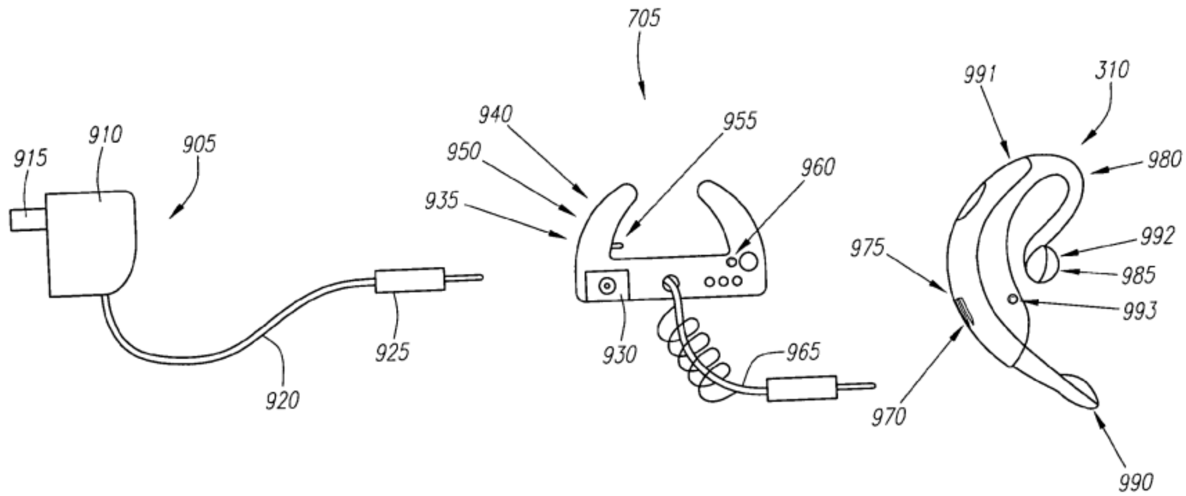


FIG. 9

The electrical adapter 905 plugs into a standard electrical outlet and supplies power to the headset holder 705 via connector plug 925 and jack 930. *Id.*, 5:14-21. As seen in Figure 9, the headset holder includes “spring loaded pins 955,” and the headset includes corresponding “contacts 970.” *Id.*, 5:21-25. When contacts 970 of the wireless headset “are engaged with spring loaded pins 955,” the headset holder “recharge[s] battery 975 of wireless headset 310.” *Id.*; *see also* Abstract; DeJaco Decl., ¶¶148-150.

3. Hollemans (EX1014)

Hollemans discloses a remote-control device that takes the form of an earbud-type headphone with a touch-sensitive surface. Hollemans, Abstract, 1:44-49, 1:63-2:4, FIG. 2, claim 10. The earbud detects “temporal patterns” that a user makes on the touch-sensitive surface and controls the functionality of a remote device, *e.g.*, a mobile phone or MP3 player, based on those detected patterns. *Id.*, 1:12-19, 2:5-18, 3:9-17. "An example is a single short tap for pause/play, double short tap for next track, triple short tap for next artist/album and a long tap for adjusting the volume." *Id.*, 2:15-18.

Hollemans touts its touch-sensitive design over prior-art remote control designs that relied on "tiny button[s] to active the desired function" and which "require[] considerable time and attention from the user, which may lead to dangerous situations when the user takes part in traffic." *Id.*, 1:28-40; *see* DeJaco-Decl., ¶¶151-153.

4. The Combination

Dyer and Hollemans, respectively, demonstrate that the use of (a) spring-loaded pins to recharge wireless headsets and (b) touch-sensitive surfaces on a headset for controlling/adjusting functions were both known to POSAs. In view of Dyer and Hollemans, POSAs had reason (a) to implement Goh's pre-existing docking station as a spring-loaded recharging station, and (b) to augment Goh's pre-existing controller by adding to the controller a touch-sensitive surface that a user could touch to control the functionality of the headset and/or the electronic device(s) with which the headset is wirelessly connected. DeJaco-Decl., ¶156.

Starting with Dyer, Goh discloses a docking station with an interface "for re-charging an integrated power source," *i.e.*, a rechargeable battery, within the headset.

Goh, claim 12; *see also* FIG. 1 (element 121). Goh, however, does not provide details regarding how to implement its docking station, leaving that to POSAs' routine skill. DeJaco-Decl., ¶157. And while Goh's Figure 4 depicts "a detachable power source 406 for supplying the headset 200 with power," it does not provide details regarding that power source and POSAs thus would have had reason to look for known designs for recharging the headset, including designs like Dyer's spring-loaded design. Goh, 17:12-13; DeJaco-Decl., ¶157.

As for Hollemans, POSAs would have recognized that Hollemans' touch-sensitive surface would beneficially allow users to adjust the functionality of Goh's headset and/or the electronic device to which it is wirelessly connected in a convenient manner that did not require locating and pressing small physical buttons. DeJaco-Decl., ¶159. Hollemans explicitly motivates the use of its touch-sensitive surface to increase user safety in scenarios such as driving. Hollemans, 1:28-40. The use of Hollemans' touch-sensitive surface on Goh's headset is merely the use of a known technique to improve similar devices in the same way. *KSR*, 550 U.S. at 416-417.

In the Goh-Dyer-Hollerman combination, Goh's headset would be designed to include Dyer's "contacts 970" and Goh's docking station would be designed to include Dyer's "spring loaded pins" for recharging Goh's battery. DeJaco-Decl., ¶160. The headset would also include, *e.g.*, on the surface of controller 400, a touch-sensitive surface and the headset would use that surface to detect touch-based commands from a user for adjusting the functionality, *e.g.*, volume, of the headset or of the electronic device to which the headset is connected, *e.g.*, a mobile phone. DeJaco-Decl., ¶161. Such a touch-sensitive surface would either replace one or more of the physical buttons on Goh's controller or be added to the controller as another means to control the headset's functionality in situations where the physical buttons are not easily accessed, *e.g.*, when driving. *Id.*, ¶161.

POSAs would have had a reasonable expectation of success in the combination as it involves the use of conventional components for their conventional and intended purposes such that implementing the combination was within POSAs' routine engineering skills. DeJaco-Decl., ¶¶154-155, 162.

5. Claim 1

a. [1PRE]

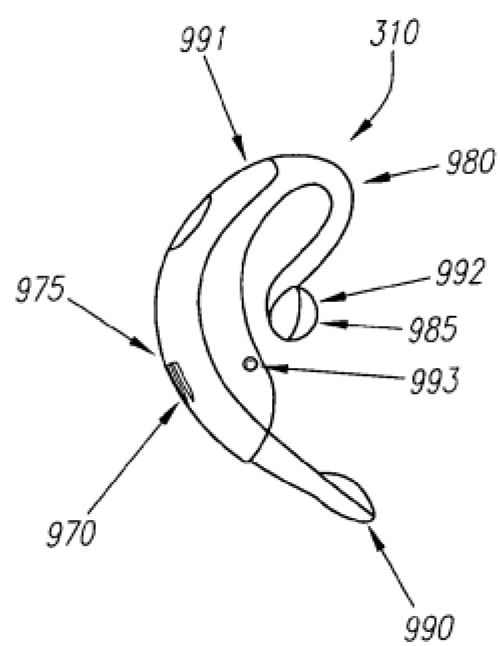
Goh discloses a "digital wireless headset" that includes "at least one speaker" for playing an "audio signal," *e.g.*, for "a phone call" or "music." 5:11-25; *see also* Abstract; 7:27-8:10 (explaining the "headset…is arranged to work as an audio player, e.g., a MP3 player, which is able to play music"); 11:1-10; 14:4-10; DeJaco-Decl., ¶163.

b. [1A]: "a speaker…;"

Goh's headset includes a speaker. Abstract; 5:18-22; 11:3-5; FIG. 1 (element 110); FIG. 4 (elements 408, 409); DeJaco-Decl., ¶164.

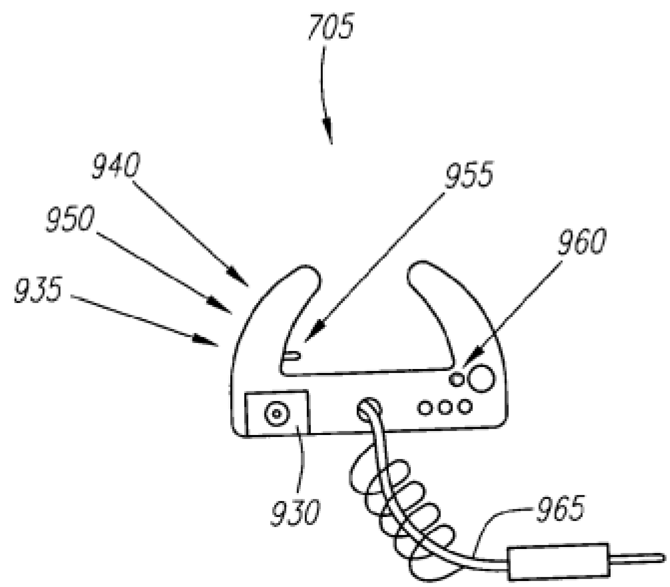
c. [1B1]: "…two conductive pads both on at least a surface of the [headset]"

As discussed above, in the Goh-Dyer-Hollemans combination Goh's headset would include Dyer's "contacts 970" which are depicted in Figure 9 as being on the surface of the headset. POSAs would have known the contacts were "*conductive pads*" as this was the conventional manner by which batteries were recharged, *i.e.*, by applying an electric current to the battery from a power source via conduction. DeJaco-Decl., ¶¶165, 34.



d. **[1B2]: "…corresponding conductive contacts of a counterpart connector external to and separate from the [headset]…"**

As discussed above, in the Goh-Dyer-Hollemans combination Goh's headset would be charged by a docking station designed similar to Dyer's headset holder and the docking station would include Dyer's "spring loaded pins 955" for recharging Goh's battery. POSAs would have known these spring-loaded pins were "*conductive contacts*" as this was the conventional manner by which batteries were recharged. DeJaco-Decl., ¶¶165-166.



e. **[1C]: "a rechargeable battery…"**

Goh's headset includes "a power source 104" in the form of a rechargeable accumulator which POSAs understood to be another term for a rechargeable battery.

Goh, 9:20-22; DeJaco-Decl., ¶¶167-168 (citing EX1023-1025); *see also* Goh, 13:2-3, claim 10.

f. [1D]: "a microphone…"

Goh's headset includes a microphone. Abstract; 5:18; 11:11-14; FIG. 1 (element 111); FIG. 4 (element 412), FIGS. 5-6, claim 1; DeJaco-Decl., ¶169.

g. [1E]: "a touch-sensitive input surface…"

As discussed above, in the Goh-Dyer-Hollemans combination, Goh's headset would include Hollemans' touch-sensitive surface, *e.g.*, a surface on controller 400, and a user would tap or otherwise touch that surface to control or adjust "*an operation of the [headset]based on receiving at least a touch input*," *e.g.*, volume of a telephone call, the song being played on a connected MP3 player, and/or a mode of operation for the headset. Hollemans, 2:17-18 ("a long tap for adjusting volume"); claim 15; *see also id.*, 2:15-19 (describing other temporal patterns and functions to be controlled), 4:46-56 (same), 5:55-6:60 (same); DeJaco-Decl., ¶170.

6. Dependent Claims 2-5, 9, 12-16

a. Claim 2

(1) [2PRE]

Supra claim 1.

(2) [2A]: "…Bluetooth…"

Goh's headset includes a "short-range wireless network interface [that] connects the headset via a short- range wireless network communication, e.g. a

Bluetooth™ network communication, with the surrounding communication devices." Goh, 7:9-15; *see also id.*, 1:19-2:5 (describing prior-art Bluetooth headsets), 11:21-27; 13:16, 14:27-15:6; DeJaco, Decl., ¶172.

(3) [2B]: "…computer program codes for facilitating voice recognition…."

Goh's headset includes a "memory device," *i.e.*, "*a storage medium*," to which the headset's central processing unit (CPU) is connected. Goh, Abstract, 5:20, 9:23-10:16, FIG. 1, claim 1. Goh's CPU "can recognize voice commands of a user" and "can control the headset…via recognized voice commands." Goh, claim 2; *see also id.*, 7:22-24, 11:11-20, 15:9-10 ("the headset 200 can be controlled via function buttons…as well as via user voice commands"), 17:5-6; DeJaco-Decl., ¶173.

Goh explains that "voice commands" are conventionally provided via "a software library or a look-up table" that is stored in memory on the device providing the voice-control functionality. *Id.*, 2:25-3:4. POSAs would have understood that Goh's voice-command functionality is facilitated by similar software, *i.e.*, "*computer program codes*," and that such software is stored in Goh's memory device because the headset is providing the voice-command functionality in Goh's system. DeJaco-Decl., ¶¶174-175; Goh, 2:25-3:4 (describing drawbacks of prior-art systems that offloaded voice-control functionality to external devices).

Alternatively, implementing Goh's headset such that the software for its voice-control functionality is stored in Goh's memory would have been a routine design choice given Goh's teaching that such an implementation was known. DeJaco-Decl., ¶176; Goh, 2:25-3:4; *see also id.*, 10:17-29 (describing advanced audio processing that the headset can perform based on programs stored in memory).

b. Claim 3

(1) [3PRE]

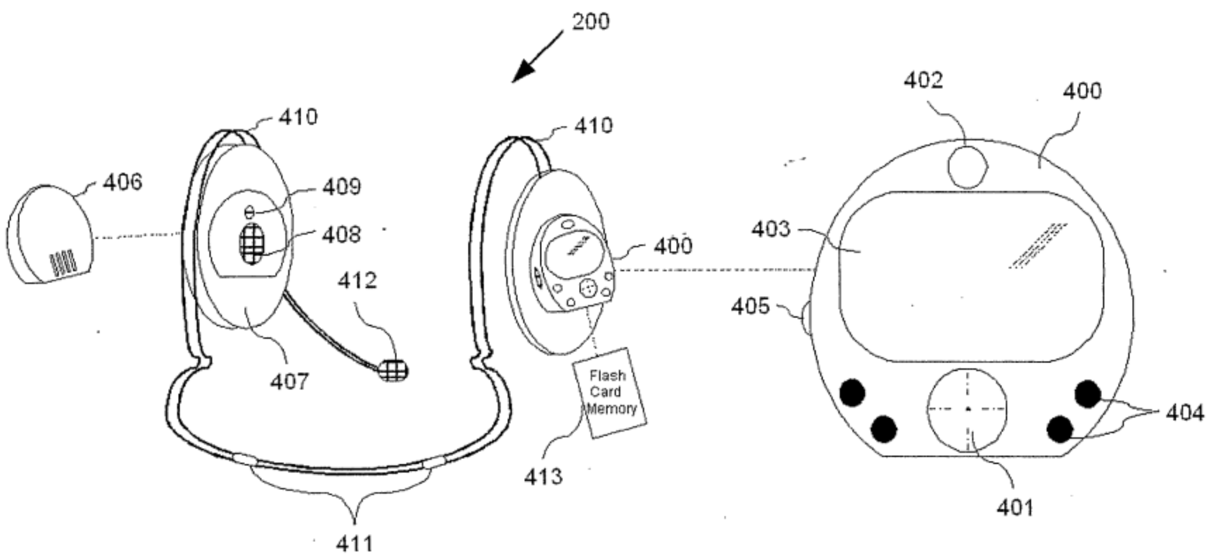
See claim 1.

(2) [3A]: "…at least another microphone…"

Goh discloses embodiments in which its headset includes a second microphone, *i.e.*, "*at least another microphone*," to "offer more convenience to the user." Goh, 12:11-23; *see also id.*, 17:6-11, FIG. 1 (element 118), FIG. 4 (element 402). Goh's second microphone captures "sounds generated in the adjacent real world," *i.e.*, ambient noise. Goh, 12:11-23; DeJaco-Decl., ¶178.

(3) [3B]: "wherein the microphone is configured to be positioned closer to mouth of the user and the another microphone is configured to be positioned further from the mouth of the user…"

In Goh's Figure 4 embodiment, the second microphone is element 402 and it is located on controller 400 apart from the first microphone 412 which is located on a mouthpiece. Goh, 17:6-11, 18:9-13, FIG. 4. The first microphone 412, *i.e.*, "*the microphone*" is thus configured to be closer to the user's mouth than the second microphone 402, *i.e.*, "*the another microphone*." DeJaco-Decl., ¶179.



(4) [3C]: "…the microphone and the another microphone are configured to receive audio inputs, with at least some noise in the audio inputs configured to be cancelled…"

Goh's headset performs "advanced audio processing," including "real-time acoustic noise reduction." Goh, 10:17-29. As Mr. DeJaco explains, a common form of real-time noise reduction uses a microphone to detect ambient sounds, and then subtracts those sounds from speech audio captured by a microphone positioned closer to a user's mouth thereby canceling ambient noise from the captured speech audio. DeJaco-Decl., ¶183 (citing EX1010, EX1026 as corroboration). POSAs thus would have understood Goh's disclosure of "real-time acoustic noise reduction" to disclose that one use of Goh's second microphone is to capture ambient noise so that the noise can be canceled out from speech audio captured by the first microphone positioned at the end of a boom, *e.g.*, the user's voice during a phone call. DeJaco-Decl., ¶¶180-183.

Alternatively, implementing Goh's headset such that the ambient noise captured by its second microphone was used to perform Goh's real-time acoustic noise reduction would have been the use of a known technique to a known device ready for improvement. DeJaco-Decl., ¶184. Although Goh discloses an embodiment in which the ambient noise is added to the audio output by the headset's speaker so that a user can hear the real-world environment, POSAs would have understood that there are scenarios, *e.g.*, during a phone call, when a user would want to use that same captured ambient noise to cancel out the noise from the speech audio captured by the microphone closer to the user's mouth. DeJaco-Decl., ¶184; *see also infra* §VII.F.

c. Claim 4: "…identify a sliding action…."

As discussed above for claim 1, Goh's headset would include Hollemans' touch-sensitive surface. In an obvious implementation of Goh-Dyer-Hollemans, Goh's CPU, *i.e.*, "*a controller*," would be "*configured to identify a sliding action across at least a portion of the touch-sensitive input surface*."

Hollemans explains that its touch-sensitive surface "is used for picking up a gesture made on the [surface] with e.g., …a finger." Hollemans, 6:14-15. The gestures that the touch-sensitive surface can detect include a "planar gesture," and the gesture can be used to "scroll[] content on a display." Hollemans, 6:21-35. In view of these teachings, POSAs would have had reason to implement the Goh-Dyer-Hollemans combination such that a user could scroll content (*e.g.*, a list of phone numbers) shown on either Goh's display 403 (or on a display of a phone being controlled by Goh's headset) by sliding his or her finger up and down on the touch-sensitive surface. DeJaco-Decl., ¶¶185-188. Implemented in this manner, the combination's headset changes between "*a first or a second operation*," *i.e.*, scroll up or scroll down, "*based on identifying whether the sliding action is in a first direction or a direction opposite from the first direction across the at least a portion of the touch-sensitive input surface*."

d. Claim 5: "…determine whether the head-worn wireless electronic apparatus is being used…."

As discussed *supra* VII.A.4, Goh's headset would include Hollemans' touch-sensitive surface.

Hollemans teaches that its earbud preferably includes a second touch-sensitive surface that is positioned such that it is "touched substantially by the ear when the controller is substantially worn in or by a human ear." Hollemans, 2:19-32. Hollemans explains that "a control signal" from the earbud (*e.g.*, to control a function of a connected device like a phone) is only sent if the second touch-sensitive surface "is touched," which "prevent[s] unwanted activation of the device [being controlled by the earbud] and unnecessary battery exhaustion." *Id.* That is, the earbud's ability to change or adjust functions of a connected device only occurs when the earbud is being worn as detected by the second touch-sensitive surface. DeJaco-Decl., ¶190.

Adding Hollemans' second touch-sensitive surface, *e.g.*, "an ordinary pressure sensor" (Hollemans, 3:42, claim 7), to Goh's headset would have preserved the battery of the mobile device being used with the headset (*e.g.*, a phone or MP3 player) by preventing unwanted activation of its functions when the headset was not being worn. DeJaco-Decl., ¶191. The resulting Goh-Dyer-Hollemans combination would include Goh's CPU for executing the headset's various operations, and the CPU would be "*configured to determine whether the head-worn wireless electronic apparatus is being used based on outputs from a sensor at least partially in the*" headset, *i.e.*, Hollemans' pressure sensor performing as a second touch-sensitive surface in the headset. DeJaco-Decl., ¶¶189-191.

e. Claim 9: "…a force sensor."

As discussed for claim 5, the Goh-Dyer-Hollemans combination includes a pressure sensor, and a pressure sensor is a type of "*force sensor*." *Supra* claim 5; DeJaco-Decl., ¶192.

f. Claim 12

See claims 2, 10; DeJaco-Decl., ¶¶193-195.

g. Claim 13

See claims 5, 12.

h. Claim 14

See claims 4, 12.

i. Claim 15: "…in an ear of the user."

Goh discloses that the speaker for known headsets "can be placed next to an ear of a user or ***inside of the ear***." Goh, 1:20-22. Therefore, while Goh's illustrated embodiments use speakers placed near an ear, Goh explicitly taught that alternative designs were known including designs in which the headset's speaker is positioned "inside" the ear. Both Hollemans and Dyer reinforce this teaching as each discloses an earbud-type design in which a speaker is worn inside the user's ear. Hollemans, 4:21-22 ("worn in or by a human ear"), FIG. 2; Dyer, 5:39-42 (explaining "speaker 985" is designed "for comfortable insertion into a user's ear"), FIG. 9.

Given the teachings of Goh, Dyer, and Hollemans, POSAs would have recognized that an obvious implementation of the Goh-Dyer-Hollemans combination would be one in which the speakers for Goh's headset are placed inside of the user's ear such that the headset is "*configured to be worn in an ear of the user*." Such an implementation would have been a design choice that POSAs routinely made through the exercise of ordinary skill. DeJaco-Decl., ¶¶198-201.

j. Claim 16

See claims 3, 15; DeJaco-Decl., ¶¶202-205.

B. Ground 2B: The Goh-Dyer-Hollemans Combination In View of Irvin Render Claims 5-6, 11, 13 and 20 Obvious.

1. Irvin

Irvin is discussed above in Ground 1D.

2. The Combination

As discussed in Ground 2A with respect to claim 5, POSAs would have implemented the Goh-Dyer-Hollemans combination such that it included a sensor, *e.g.*, a pressure sensor, that provided data which the headset's CPU uses to determine whether the headset was being worn so as to conserve power by, for example, preventing an electronic device connected to the headset from mistakenly being operated when the headset is not worn. DeJaco-Decl., ¶207.

POSAs would have considered Irvin's accelerometer-based approach to determining whether a headset is being worn to be an obvious substitution for Hollemans' use of a touch-sensitive surface / pressure sensor. For the reasons discussed in Ground 1D and Ground 2A (claim 5), POSAs would have recognized benefits to Goh's headset being able to determine whether it is being worn so that the headset's power and/or the power of the electronic device(s) that the headset communicates with would be preserved. DeJaco-Decl., ¶208.

POSAs would be motivated to implement the Goh-Dyer-Hollemans combination using Irvin's accelerometer as a replacement of Hollemans' pressure sensor (to better avoid false triggers) or in addition to Hollemans' pressure sensor (to provide better accuracy). DeJaco-Decl., ¶¶208-210. In both cases, the accelerometer would provide data to Goh's CPU allowing the CPU to determine whether the headset is being worn to conserve power. *Id*. The resulting Goh-Dyer-Hollemans-Irvin combination retains the features of Goh-Dyer-Hollemans discussed in Ground 2A, but uses an accelerometer rather than, or in addition to, a pressure sensor.

3. Claim 5

As discussed above, an obvious implementation of Goh-Dyer-Hollemans-Irvin would include Goh's CPU, *i.e.*, "*a controller*," which would be "*configured to determine whether the head-worn wireless electronic apparatus is being used based on outputs from a sensor at least partially in the*" headset, *i.e.*, Irvin's accelerometer by itself or in conjunction with Hollemans' pressure sensor. DeJaco-Decl., ¶211.

4. Claim 6: "…an accelerometer."

Supra claim 5.

5. Claim 11

Supra claim 6; *see also* claims 1 or 3 (Ground 2A)[5].

6. Claim 13

Supra claim 5; *see also* claim 12 (Ground 2A).

C. Ground 2C: The Goh-Dyer-Hollemans Combination in View of Glezerman Renders Claims 7-8, 10, and 17-19 Obvious.

1. Glezerman

Glezerman is discussed above in Ground 1E.

2. The Combination

Goh's headset "is formed in such a way that [it] can be comfortably worn by a user." Goh, 18:3. In Goh's Figure 4 embodiment, "the headset 200 comprises a frame 410, which wraps around the ears and the back of the head of the user. This secures the position of the headset 200 even if the user is in active movement." *Id.*, 8:3-6. Goh also discloses other techniques for wearing a headset, including the use of earhooks. Goh, 19:11-12 ("an earphone hook 512 to additionally secure the earphone 509 at the ear").

In view of Glezerman, POSAs would have had reason to implement Goh's headset (which is used in the Goh-Dyer-Hollemans combination) such that the left and right "earpiece housing" of the headset (Goh, 17:4-5, FIG. 4) includes a magnet

[5] *See* fn. 4.

to which different attachments (*e.g.*, an earhook, a loop for glasses) could attach. This design would beneficially allow a user to select between a conventional earhook attachment mechanism (like Goh's earhook 512) and an attachment more suitable for use with eyeglasses such as Glezerman's attachment 110. Glezerman, [0033]-[0034]; *see also* FIGS. 8, 11, claim 1; DeJaco-Decl., ¶218.

Glezerman explicitly motivates the combination as it touts its design as "offer[ing] versatility to a user" by allowing changes in different modes of attachment "quickly and easily." Glezerman, [0006]. For example, with Glezerman's design, a user could switch from using an earhook for Goh's headset to using Glezerman's attachment 110 for glasses when the user puts on a pair of "sunglasses." Glezerman, [0033]. DeJaco-Decl., ¶219.

POSAs would have had a reasonable expectation of success in implementing the Goh-Dyer-Hollemans-Glezerman combination as it requires mere routine engineering skill to modify Goh's headset such that it includes the design features described in Glezerman. DeJaco-Decl., ¶220. For example, the design would simply require adding a magnet to each earpiece housing of Goh's headset and including magnetic material (*e.g.*, metal) on an earhook like Goh's earhook 512 and on Glezerman's eyeglasses-attachment 110 so that they can each attach to the magnet on the earpieces. DeJaco-Decl., ¶¶216-217, 220.

3. Claim 7: "…an area configured for attachment via magnetic force."

As explained above, the headset in the Goh-Dyer-Hollemans-Glezerman combination includes a magnet that is configured for attachment with, *e.g.*, Goh's earhook 512 or Glezerman's attachment 110 "*via magnetic force*." Glezerman, [0045]-[0046]; DeJaco-Decl., ¶221.

4. Claim 8: "…a magnet in the area."

See claim 7.

5. Claim 10

Supra claim 7; *see also* claim 3 (Ground 2A).

6. Claim 17

Supra claim 7; *see also* claim 16 (Ground 2A).

7. Claim 18

Supra claim 17; *see also* claim 2 (Ground 2A).

8. Claim 19

Supra claim 18; *see also* claim 5 (Ground 2A).

D. Ground 2D: The Goh-Dyer-Hollemans-Glezerman Combination in View of Irvin Renders Claim 20 Obvious.

Claim 20 limits claim 19 in the same manner that claim 6 limits claim 1. As established immediately above in Ground 2C, the Goh-Dyer-Hollemans-Glezerman combination renders claim 19 obvious.

For the reasons discussed above in Ground 2B, Irvin would have given POSAs reason to include an accelerometer in Goh's headset in the Goh-Dyer-Hollemans-Glezerman combination to detect when the headset is in use so as to conserve battery power. *Supra* §VII.B.2. The resulting Goh-Dyer-Hollemans-Glezerman-Irvin combination renders claim 20 obvious. DeJaco-Decl., ¶¶227-228.

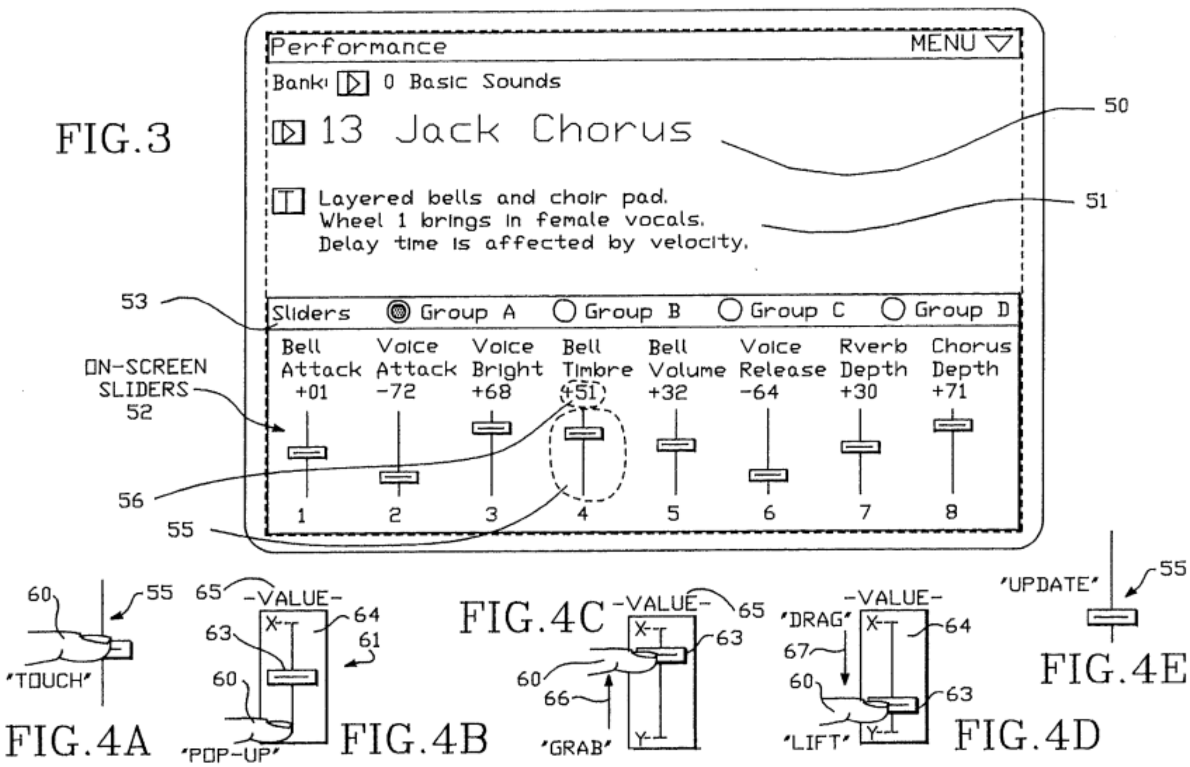
E. Ground 2E: The Goh-Dyer Combination in View of Bryan Renders Claims 1-5, 9, and 12-16 Obvious.

1. Bryan (EX1016)

Bryan discloses a touchscreen interface that can be used to adjust various parameters of a sound processing system using a pop-up slider. Bryan, Abstract, 1:9-12, 2:51-54. In introducing its invention, Bryan explains "the use of a relatively small, flat panel touchscreen" is desirable for adjusting parameters in sound systems, but that the small size of the screen can "limit[] the number of parameters that might be adjusted based on a single display." *Id.*, 1:36-45.

To address this limitation with small touchscreens, Bryan discloses an interface display in which a user selects a sound variable to be adjusted (*e.g.*, volume) by touching a slider icon associated with that variable. *Id.*, 6:21-24. If the user's finger remains on the icon for a short amount of time, then a pop-up slider appears that is larger than the initial icon that was selected. *Id.* The user can then drag, *i.e.*, slide, his finger up or down to adjust the selected variable (*e.g.*, increase or decrease volume), and when the user removes his finger from the touch screen the larger pop-up slider disappears. *Id.*, 6:24-33.

An example of Bryan's technique is depicted in FIGS. 3-4 below:



As seen above, "FIG. 4A illustrates an icon, such as icon 55 from FIG. 3. A fingertip 60 is shown schematically touching the icon 55." *Id.*, 5:44-45. Once the user's fingertips remain touching the icon, then a pop-up slider as seen in FIG. 4B appears on the touchscreen. *Id.*, 5:46-62. The user can then adjust the parameter corresponding to the pop-up slider (*e.g.*, timbre), by dragging the slider bar 63 up (FIG. 4C) or down (FIG. 4D). *Id.*, 5:65-6:7. "When the user moves the slider bar

63 to a position which corresponds to the value desired, then the user lifts the finger 60" and the pop-up slider disappears. *Id.*, 6:7-20; DeJaco-Decl., ¶¶230-233.

2. The Combination

Goh discloses that its headset's volume (or other headset settings) can be changed via either a "volume control button 405" (or "function buttons 404") or "voice commands." Goh, 16:24-17:6. In view of Bryan, however, POSAs would have known that an alternative (or supplement) to either form of control is the use of a touchscreen with user adjustable pop-up sliders. DeJaco-Decl., ¶235.

POSAs would have considered Bryan's particular touchscreen interface to be well-suited for use with Goh's headset because (a) Bryan touts its design as suitable for small touchscreens (Bryan, 3:16-21), and the need to comfortably wear Goh's headset on a user's head limits the size of its display, and (b) Bryan's design is intended for "sound-processing system[s]" (Bryan, Abstract), and Goh's headset already provides "advanced audio processing" (Goh, 10:19-20). DeJaco-Decl., ¶236.

With respect to (**a**), Bryan's exemplary touchscreen is 4-inches by 6-inches (Bryan, 4:25-27), but POSAs would have recognized that the screen could be significantly smaller (if needed). DeJaco-Decl., ¶237 (explaining the size of the touchscreen is a design choice, and a designer would merely reduce the number of selectable icons on the screen if the screen was smaller). POSAs would have also viewed Bryan's touchscreen controls to be more user friendly than requiring buttons to be "rotated or pushed" as was required for changing settings in Goh's unmodified headset. Goh, 16:24-26; DeJaco-Decl., ¶237.

In the combination, Goh's headset would be modified in view of Dyer for the reasons discussed in Ground 2A. Goh's headset would then be further modified in view of Bryan such that its display 403 includes a touch panel that would convert the display to a touchscreen. Bryan, 4:27-28. A user would then adjust the headset's volume (or other setting) by touching the screen to activate Bryan's pop-up slider and then dragging the slider bar up or down. Bryan, 6:22-34.

POSAs would have had a reasonable expectation of success in implementing the combination as converting Goh's display to a touchscreen requires only routine mechanical design skill, and providing Goh's headset with the software to operate (via its CPU) Bryan's touchscreen pop-up slider technique requires software programming skills well within POSAs' capabilities. DeJaco-Decl., ¶¶234, 238-239.

3. Claims 1-5, 9, and 12-16

The Goh-Dyer-Bryan combination renders claims 1-5, 9, and 12-16 obvious for the same reasons that Goh-Dyer-Hollemans combinations renders those claims obvious (*supra* §VII.A) with two exceptions: (**a**) the "*touch-sensitive input surface*" of limitation [1E] is met by Goh's integral display implemented in view of Bryan as a touch-screen display (rather than Hollemans' touch-sensitive surface), and (**b**) the "*sliding action*" control mechanism recited in dependent claim 4 is met by a user dragging a volume control pop-up slider on Goh's display up or down to adjust volume (rather than Hollemans' scrolling gesture). DeJaco-Decl., ¶240.

F. Ground 2F: The Ground 2A-2E Combinations in View of Andrea Renders Claims 3, 10, 12-14 and 16-20 Obvious

Claims 3, 10, 12-14, and 16-20 all directly (or via dependency) require that the "*head-worn wireless electronic apparatus*" have two microphones "*wherein at least the microphone and the another microphone are configured to receive audio inputs, with at least some noise in the audio inputs configured to be cancelled based on using at least the microphone and the another microphone*." As discussed above in Grounds 2A (and thus also in Ground 2B-2E), Goh discloses and/or renders obvious this limitation.

If, however, Patent Owner argues that Goh does not disclose and/or render obvious the limitation, then implementing Goh's headset such that the ambient noise captured by its second microphone was used to perform Goh's real-time acoustic noise reduction would have been obvious in view of Andrea for the reasons discussed below.

1. Andrea (EX1017)

Andrea discloses a technique "for reducing ambient noise for use with a headset or a boom headset attached to a boom microphone device or the like."

Andrea, Abstract. As Andrea explains, background noise is "undesirable" in numerous situations such as conducting a telephone conversation "in a noisy area" because, *inter alia*, "the person to whom the operator is communicating constantly hears the loud background noise." *Id.*, 1:63-2:17.

To address this issue, Andrea's technique uses "a noise cancellation microphone transmitter system having a first and second microphone arranged such that the first microphone receives a desired speech input and the background noise present in the vicinity of the speech, and the second microphone receives substantially only the background noise. The background noise from the second microphone is converted into a corresponding electrical signal and subtracted from a signal corresponding to the speech and background noise obtained from the first microphone so as to produce a signal representing substantial the speech." *Id.*, Abstract; *see also id.*, 1:35-39, 12:53-66 (describing technique in context of phone), 18:17-25 (describing technique in context of boom microphone for a headset), 19:26-37, DeJaco-Decl., ¶¶244-245.

2. The Combination

As explained in Ground 2A, Goh's headset performs "advanced audio processing," including "real-time acoustic noise reduction." Goh, 10:17-29. As also explained in Ground 2A, Goh's headset includes two microphones—a first microphone 412 that is depicted in Figure 4 as being positioned at the end of a boom near the user's mouth, and a second microphone 402 that is positioned away from the user's mouth and which captures "sounds generated in the adjacent real world," *i.e.*, ambient noise. Goh, 12:11-23; FIG. 4.

In view of Andrea, POSAs would have had reason to implement Goh's "real-time acoustic noise reduction" by using Andrea's noise-reduction technique which subtracts "background noise" received from one microphone from "a signal corresponding to the speech and background noise obtained" for a different microphone. Andrea, Abstract. As Andrea explains, its technique beneficially results in a "signal representing substantial[ly] the speech" (Andrea, Abstract), which would allow the person to whom the headset user is speaking to better hear the caller's voice. Andrea thus explicitly motivates the combination. Separately, implementing Goh's headset to use Andrea's technique would have been the use of a known technique to a known device ready for improvement. DeJaco-Decl., ¶248.

Although Goh discloses an embodiment in which captured ambient noise is added to the audio output by the headset's speaker so that a user can hear the real-world environment, POSAs would have understood that there are scenarios, *e.g.*, during a phone call, when a user would want to use that same captured ambient noise to cancel out the ambient noise from the speech audio captured by the microphone closer to the user's mouth. DeJaco-Decl., ¶249. Indeed, Andrea's technique allows for different modes of operation, including its noise-reduction/cancellation mode and a separate "talk-thru mode" in which ambient noise is not reduced or canceled but rather provided to the headset's speakers, underscoring the synergy between the two references. Andrea, 33:48-35:16.

In the combination, Goh's two microphones perform as they already do in Goh but the ambient noise that microphone 402 captures would be used to cancel ambient noise from the signal that microphone 412 captures, resulting in an audio signal comprising substantially the user's voice, not ambient noise. DeJaco-Decl., ¶250. POSAs would have expected success in implementing the combination as Andrea's technique is intended for headsets with a boom microphone (like Goh's headset), and Goh's CPU is already capable of performing advanced audio processing like "real-time acoustic noise reduction." DeJaco-Decl., ¶¶246-247, 251.

3. Claims 3, 10, 12-14, and 16-20

The Ground 2F combination renders claims 3, 10, 12-14, and 16-20 obvious for the same reason that Grounds 3A to 3D render those claims obvious with the limited exception that limitation 3C is met in Ground 2F because, in view of Andrea, Goh's headset would implement its noise-reduction functionality by canceling the ambient noise that Goh's second microphone already captures from the audio input captured by Goh's first microphone at the end of the headset's boom.

VIII. UNPATENTABILITY GROUNDS: The Griffin-Based Grounds

A. Ground 3A: Griffin in view of Hollemans Renders Claims 1, 3-5, 9, and 15-16 Obvious

1. Griffin

Griffin is discussed above in Ground 1A.

In addition to its docking-station and voice-cancellation teachings discussed above in Ground 1A, Griffin also provides details regarding its wireless headset (second communication module). For example, Griffin explains that its headset—an example of which is shown in FIG. 4 below—includes "includes a speaker 14a, a main body 14b, a boom 14c and a microphone 14d." Griffin, 6:15-16; *see also id.*, 15:3-4, FIG. 16 (block diagram). The headset also preferably includes a rechargeable power source such as a rechargeable battery. *Id.*, 9:3-5, 16:7-17; FIG. 16 (element 188); DeJaco-Decl., ¶254.

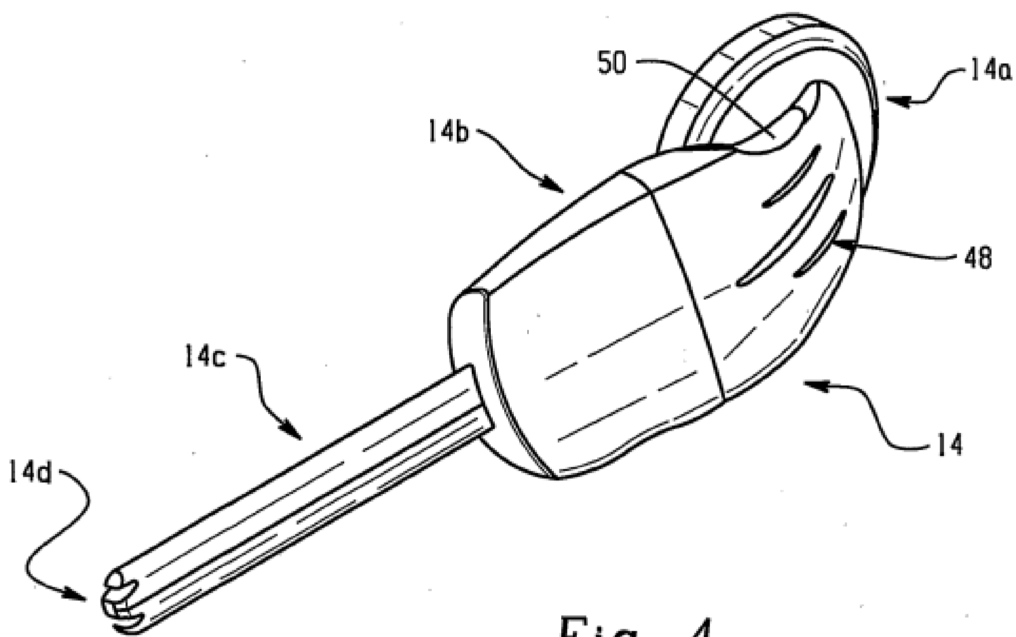


Fig. 4

2. Hollemans

Hollemans is discussed above in Ground 2A.

3. The Combination

In view of Hollemans, POSAs had reason to add a touch-sensitive surface to Griffin's headset so that a user could conveniently adjust the headset's functionality, *e.g.*, volume, via a simple touch command. DeJaco-Decl., ¶256. Hollemans explicitly motivates the use of its touch-sensitive surface to increase user safety in certain scenarios such as driving. Hollemans, 1:28-40. The use of Hollemans' touch-sensitive surface on Griffin's headset is also the obvious use of a known technique to improve similar devices in the same way. *KSR,* 550 U.S. at 416-417.

Moreover, Griffin explains that its headset has a physical "power switch 54," and explains that other headset functions—like mute—could be accessed by similar switches. Griffin, 7:21-8:2; *see also* FIG. 5. Because the headset is located in the user's ear, the user would have to locate correctly the right physical switch associated with the functionality the user wishes to switch—that is, the user needs to correctly press the mute switch, not the power switch, if she wishes to mute the microphone. DeJaco-Decl., ¶257. Incorporating Hollemans' touch-sensitive surface in Griffin's headset would therefore have beneficially allowed users to adjust the headset's functionality without needing to locate the right physical buttons on the headset's body and instead simply tap the headset or perform some other gesture that is associated with the corresponding function. DeJaco-Decl., ¶257; Hollemans, 1:20-40.

POSAs would have had a reasonable expectation of success in implementing the proposed combination as Hollemans' technique is designed to work with "mobile phones" (Hollemans, 1:11-19), which is the type of external device to which Griffin's headset is wirelessly connected (*e.g.*, Griffin, 7:25-8:2, 13:19-22, 17:10-14, 19:7-9, claim 13). DeJaco-Decl., ¶258. Adding Hollemans' touch-sensitive surface and associated control functionality to Griffin's headset would have been required only routine design skill and was well within POSAs' capabilities. DeJaco-Decl., ¶258.

4. Claim 1

a. [1PRE]

In the Griffin-Hollemans combination, Griffin's headset is a "voice communication device" that is used for, *inter alia*, conducting a voice call, *i.e.*, "*producing audio output for a user*," by receiving audio data from a cellular phone via a short-range wireless connection. Griffin, Abstract, 6:15; *see also id.*, 7:25-8:2, 13:19-22, 15:22-16:4, 17:10-14, 19:7-9, claim 13; DeJaco-Decl., ¶259.

a. [1A]: "a speaker…;"

Griffin's headset includes a speaker. Griffin, 6:16 ("speaker 14a"), 14:7 ("speaker 120a"), 16:8 ("a microphone and speaker 190"); FIGS. 4-5, FIG. 15, FIG. 16 (element 190); DeJaco-Decl., ¶260..

b. [1B1]: "…two conductive pads…"

Griffin's headset includes charging terminals 56a and 56b which are seen below in Figure 5 from Griffin:

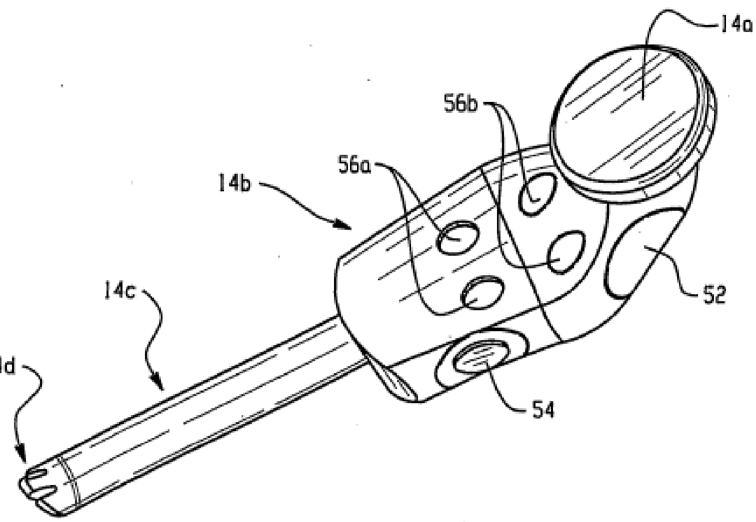


Fig. 5

As discussed above (*supra* §VI.A.4.c), POSAs would have understood Griffin's charging terminals to be "*conductive pads*." DeJaco-Decl., ¶¶64-66; 261-262. As seen in Figure 5, Griffin's headset uses four such "*conductive pads*" on the headset's surface. DeJaco-Decl., ¶263.

c. [1B2]: "…corresponding conductive contacts of a counterpart connector…"

Griffin's headset includes charging terminals that mate with corresponding charging terminals in a separate device like charging terminals 46 on Griffin's first module shown below in Figure 1 (below):

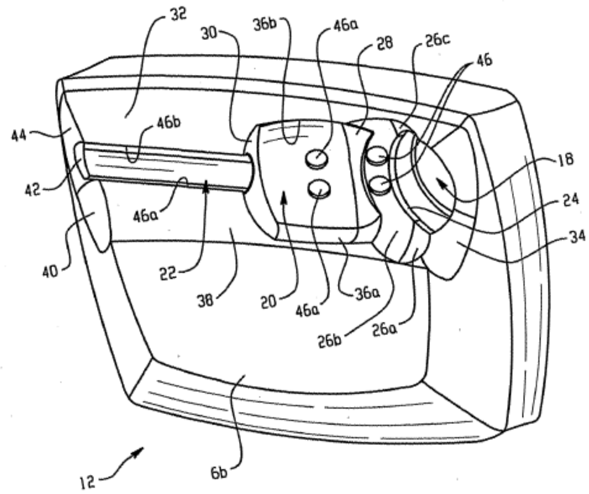


Fig. 3

In the Griffin-Hollemans' combination, "*the at least two conductive pads*" on the headset "*are configured to removably couple to corresponding conductive contacts*" on the separate device because they coupled to those corresponding contacts via one or more springs, *i.e.*, "*via spring force*," that retain the headset in the separate device. Griffin, 5:24-6:2; DeJaco-Decl., ¶265.

Separately, Griffin discloses the use of a "door" on the first module that is biased toward a closed position via a spring. Griffin, 11:11-12:6. The spring-biased door would have also retained (and protected) the headset when it was placed in the first module for charging, and thus would "*removably couple*" the two modules' "*conductive contacts…via spring force*." DeJaco-Decl., ¶266.

d. [1C]: "a rechargeable battery…"

Griffin's headset includes a rechargeable battery. Griffin, 9:3-5, 16:8-17; FIG. 16 (element 188); DeJaco-Decl., ¶267.

e. [1D]: "a microphone…"

Griffin's headset includes a microphone. Griffin, 6:16 ("microphone 14d"), 14:7 ("microphone 120d"), 16:8 ("a microphone and speaker 190"), FIGS. 4-5, FIG. 15, FIG. 16 (element 190); DeJaco-Decl., ¶268.

f. [1E]: "a touch-sensitive input surface…"

As discussed above, in the Griffin-Hollemans combination, Griffin's headset would include Hollemans' touch-sensitive surface, *e.g.*, a surface on main body 14b (Griffin, 6:16, FIG. 4), and a user would tap or otherwise touch that surface to control or adjust "*an operation of the [headset]based on receiving at least a touch input*," *e.g.*, change the volume of a telephone call, mute the microphone. Hollemans, 2:17-18 ("a long tap for adjusting volume"); claim 15; *see also id.*, 2:15-19 (describing other temporal patterns and functions to be controlled), 4:46-56 (same), 5:55-6:60 (same) ; DeJaco-Decl., ¶269.

5. Dependent Claims 3-5, 9, and 15-16

a. Claim 3

(1) [3PRE]

See claim 1.

(2) [3A]: "…at least another microphone…"

Griffin's headset includes "a noise cancellation circuit with a background noise microphone 48 as shown in Fig. 4…." Griffin, 7:8-14; ; DeJaco-Decl., ¶271.

(3) [3B]: "wherein the microphone is configured to be positioned closer to mouth of the user and the another microphone is configured to be positioned further from the mouth of the user,…"

Griffin's headset positions its microphone 14d, *i.e.*, "*the microphone*," at the end of boom 14c "such that the microphone 14d is located in the proximity of the communication device user's mouth when the module 14 is in use." Griffin, 7:1-3.

Griffin's headset then positions its "background noise microphone 48," *i.e.*, "*the another microphone*," further from the user's mouth as seen in Figure 4 where microphone 48 is depicted as being positioned closer to the user's ear than the end of boom 14c. DeJaco-Decl., ¶¶272-273.

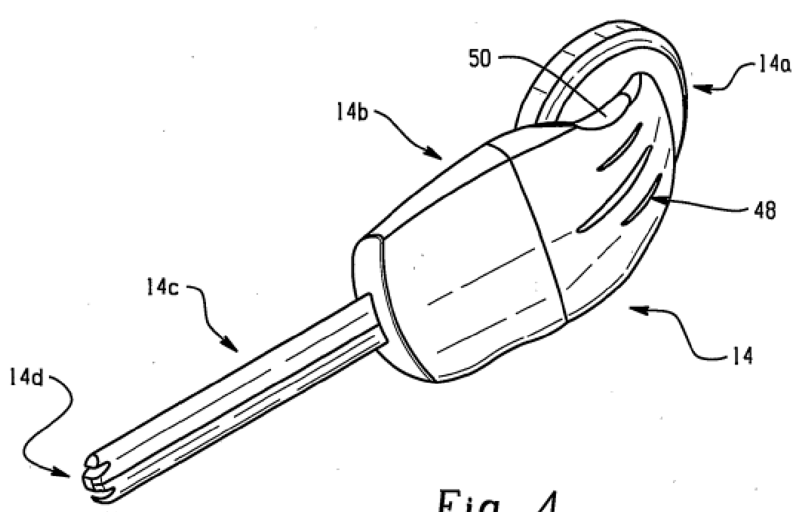


Fig. 4

(4) [3C]: "…some noise in the audio inputs configured to be cancelled…."

Griffin's headset includes "a noise cancellation circuit," and that circuit "subtract[s]," *i.e.*, "*cancel[s]*," background noise signals "from the corrupted speech received by the microphone 14d. In this manner, a higher quality speech signal is provided." Griffin, 7:8-14; DeJaco-Decl., ¶274.

b. Claim 4: "…identify a sliding action…."

As discussed above for claim 1, Griffin's headset would include Hollemans' touch-sensitive surface. In an obvious implementation of Griffin-Hollemans, the "integral processor 196" within Griffin's headset (Griffin, 16:9, FIG. 16), *i.e.*, "*a controller*," would be "*configured to identify a sliding action across at least a portion of the touch-sensitive input surface*."

Hollemans explains that its touch-sensitive surface "is used for picking up a gesture made on the [surface] with e.g., …a finger." Hollemans, 6:14-15. The gestures that the touch-sensitive surface can detect include a "planar gesture," and the gesture can be used to "scroll[] content on a display." Hollemans, 6:21-35. In view of these teachings, POSAs would have had reason to implement the Griffin-Hollemans combination such that a user could scroll content (*e.g.*, a list of phone numbers) shown on a display of the phone (or PDA) to which Griffin's headset is wirelessly connected (Griffin, 13:19-22) by sliding his or her finger up and down on the touch-sensitive surface. DeJaco-Decl., ¶¶275-276. Implemented in this manner, the combination's headset changes between "*a first or a second operation*," *i.e.*, scroll up or scroll down, "*based on identifying whether the sliding action is in a first direction or a direction opposite from the first direction across the at least a portion of the touch-sensitive input surface*."

c. Claim 5: "…determine whether the [headset] is being used…."

As discussed *supra* §VIII.A.3, Griffin's headset would include Hollemans' touch-sensitive surface. In an obvious implementation of Griffin-Hollemans, Griffin's integral processor, *i.e.*, "*a controller*," would be "*configured to determine whether the head-worn wireless electronic apparatus is being used based on outputs from a sensor at least partially in the*" headset.

As discussed for claim 5 in Ground 2A, Hollemans teaches that its earbud preferably includes a second touch-sensitive surface that detects whether the earbud is being worn, and this second touch-sensitive surface is used to conserve battery life, *e.g.*, of the device with which the headset is connected. Hollemans, 2:19-32.

Adding Hollemans' second touch-sensitive surface, *e.g.*, "an ordinary pressure sensor" (Hollemans, 3:38-43, claim 7), to Griffin's headset would have (**a**) preserved the battery of the headset by turning it off when the headset was not being worn and/or (**b**) preserved the battery life of the device with which the headset is connected by ensuring it was not mistakenly activated when the headset was not being used. DeJaco-Decl., ¶279. Hollemans' explicitly motivates (**a**) (Hollemans, 2:19-32; DeJaco-Decl., ¶280), and Griffin motivates (**b**) because while Griffin discloses an embodiment in which its headset "turn[s] off automatically" when it is placed in its docking/charging station (Griffin, 7:18-21). Adding Hollemans' technique for determining whether the headset is being worn would augment Hollemans' technique by ensuring the headset was turned off in scenarios where it is not worn but the user has forgotten to put it in the docking/charging station. DeJaco-Decl., ¶281.

The resulting Griffin-Hollemans combination would include Griffin's integral processor for executing the headset's various operations, and the processor would be "*configured to determine whether the head-worn wireless electronic apparatus is being used based on outputs from a sensor at least partially in the*" headset, *i.e.*, Hollemans' pressure sensor performing as a second touch-sensitive surface in the headset. DeJaco-Decl., ¶282.

d. Claim 9: "…a force sensor."

As discussed for claim 5, the Griffin-Hollemans combination includes a pressure sensor, and a pressure sensor is a type of "*force sensor*." *Supra* claim 5; DeJaco-Decl., ¶283.

e. Claim 15: "…in an ear of the user."

Griffin's headset is "*configured to be worn in an ear of the user*." Griffin, 2:16-18 ("for insertion into the communication device user's ear"), 4:13-15 (same), 6:17-18, 14:20-21, FIG. 17, claim 1; DeJaco-Decl., ¶284.

f. Claim 16

See claims 3, 15; DeJaco-Decl., ¶¶285-288.

B. Ground 3B: The Griffin-Hollemans Combination in View of Schrager Renders Claim 2 Obvious.

1. Schrager (EX1018)

Schrager discloses a system for operating various multimedia devices, including a cellphone, "in a hands-free manner through the use of voice commands and speech recognition technology." Schrager, 2:13-28. As Schrager explains, a drawback of then-existing multimedia devices is the need for a user to "have one or more free hands to operate a given device" and the distraction that such hands-based operation creates. *Id.* 1:64-2:9.

Schrager's system includes a headset that communicates wirelessly with a base unit using Bluetooth. *Id.*, 5:3-5, 6:15-18. The base unit includes one or more multimedia devices, including a cellphone and/or a music player. *Id.*, 2:16-25, 6:62-67, FIG. 1. The base unit also includes a "speech recognition engine 185" that is "included in the memory of processor 150 or can be included within an additional memory 190 which is accessible by the processor." *Id.*, 7:21-28. "[T]he speech recognition engine 185 can receive digitized speech from the headset unit 105 and convert the received speech to text. The speech recognized text can be processed to determine one or more voice commands which can be executed by the processor 150." *Id.*, 7:28-32. Exemplary commands include increasing volume, answering or ending a telephone call, and making a telephone call. *Id.*, 10:58-60, 11:57-59, 12:29-31, 14:50-51.

Although Schrager's Figure 1 embodiment depicts its base unit as separate from the headset, Schrager explicitly teaches that "the base unit can be combined with the headset unit" such that Schrager's system "can be embodied as a single headset device capable of performing the various functions disclosed herein." *Id.*, 14:1-11; *see also* DeJaco-Decl., ¶¶290-292.

2. The Combination

Griffin's headset ("second communication module") is configured to transmit and receive "RF signals" over a wireless link (*e.g.*, Griffin, 2:9-11, claim 1), but Griffin does not specify what radio-frequency technology is used. Griffin also teaches that its headset (especially when used with a cellular telephone) can be adapted "for voice control" (Griffin, 19:6-13), but does not provide details on how such voice-control functionality is implemented. DeJaco-Decl., ¶294.

Griffin thus leaves to POSAs' routine skill the selection of the particular radio-frequency and voice-control technologies that are used to implement the headset.

DeJaco-Decl., ¶295. Schrager demonstrates two conventional approaches for implementing the design details that Griffin leaves to POSAs' skill.

First, Schrager discloses the use of Bluetooth as a well-known radio-frequency technology for transmitting audio from an external device to a headset. Schrager, 6:15-18. The use of Bluetooth as the technology that Griffin's headset uses for transmitting and receiving RF signals would have been the application of a known (indeed, standard) wireless technique to a known device (a wireless headset) to achieve a predictable result (a wireless headset that can transmit/receive audio signals). DeJaco-Decl., ¶296 (citing EX1019 at [0004] and EX10005, 7:9-12 as further corroboration that the use of Bluetooth for wireless headsets was known); *KSR*, 550 U.S. at 417.

Second, Schrager teaches that voice-control functionality can be provided by a "speech recognition engine 185" in the form of software stored in memory that a processor can access. Schrager, 7:28-32. Using Schrager's particular voice-control functionality would (again) be the mere application of a known technique to a known device to achieve a predictable result. DeJaco-Decl., ¶297; *KSR*, 550 U.S. at 417.

In the Griffin-Hollemans-Schrager combination, Griffin's headset would be implemented such that its "short-range RF transceiver 192" is a Bluetooth-enabled transceiver. Griffin, 16:8, FIG. 16. Additionally, Griffin's voice-control functionality would be implemented using Schrager's speech recognition engine stored in memory in or accessible to Griffin's "integral processor 196." Griffin, 16:9, FIG. 16. POSAs would have reasonably expected success in the proposed combination as it involves the use of conventional electronics (*e.g.*, a Bluetooth transceiver, a memory), and software that POSAs would have routinely used. DeJaco-Decl., ¶¶293, 298.

3. Claim 2

a. [2PRE]

See [1PRE] (Ground 3A).

b. [2A]: "…Bluetooth…"

As discussed above, Griffin's headset in the Griffin-Hollemans-Schrager combination includes a Bluetooth-enabled transceiver. Griffin, 16:8; Schrager, 6:15-18; DeJaco-Decl., ¶300.

c. [2B]: "…codes for facilitating voice recognition to facilitate recognizing at least a word …."

As discussed above, Griffin's headset in the Griffin-Hollemans-Schrager combination includes memory in or accessible to Griffin's integral processor, and that memory stores Schrager's "speech recognition engine 185" for recognizing voice commands that a user wearing the headset utters into the headset's microphone such as a command to increase volume or answer/make a call. Griffin, 16:9; 19:6-13; Schrager, 10:58-60, 11:57-59, 12:29-31, 14:50-51; DeJaco-Decl., ¶301.

C. Ground 3C: The Griffin-Hollemans Combination in View of Irvin Renders Claims 6 and 11 Obvious.

1. Irvin (EX1011)

Irvin is discussed above in Ground 1D

2. The Combination

As discussed in Ground 3A with respect to claim 5, POSAs would have implemented the Griffin-Hollemans combination such that it included a sensor, *e.g.*, a pressure sensor, that provided data which the headset's integral processor uses to determine whether the headset was being worn so as to conserve power by when the headset is not worn.

POSAs would have considered Irvin's accelerometer-based approach to determining whether a headset is being worn to be an obvious substitution for and/or addition to Hollemans' use of a touch-sensitive surface / pressure sensor. For the reasons discussed in Ground 1D and Ground 3A (claim 5), POSAs would have recognized benefits to Griffin's headset determining whether it is being worn so that the headset's power would be preserved. DeJaco-Decl., ¶304. POSAs thus reason to implement the Griffin-Hollemans combination using Irvin's accelerometer as a replacement of Hollemans' pressure sensor (to better avoid false triggers) or in addition to Hollemans' pressure sensor (to provide better accuracy) for the same reasons as discussed above regarding Ground 2B. DeJaco-Decl., ¶¶208-209, 303-305. The resulting Griffin-Hollemans-Irvin combination retains the features of

Griffin-Hollemans discussed in Ground 3A, but uses an accelerometer rather than a pressure sensor.

3. Claim 6: "…an accelerometer."

As discussed above, an obvious implementation of the Griffin-Hollemans-Irvin combination uses an "accelerometer" as the sensor for detecting whether Griffin's headset is being used. Irvin, 7:15-17; DeJaco-Decl., ¶306.

4. Claim 11[6]

Supra claim 6; *see also* claim 3 (Ground 3A).

IX. CONCLUSION

The Board should institute IPR.

Respectfully submitted,
Bose Corp.

Date: September 19, 2025 By: /Michael N. Rader/
Michael N. Rader (Reg. No. 52,146)
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[6] *See* fn. 4.

X. CLAIM LISTING

The following claim listing assigns element labels (e.g., [1A1], [1A2], etc.) to certain claims for clarity.

Claim 1
[1PRE] A head-worn wireless electronic apparatus at least configured for producing audio outputs for a user comprising:
[1A] a speaker in the head-worn wireless electronic apparatus;
[1B1] an electrical connector at the head-worn wireless electronic apparatus, wherein the electrical connector includes at least two conductive pads, with the at least two conductive pads both on at least a surface of the head-worn wireless electronic apparatus,
[1B2] and wherein the at least two conductive pads are configured to removably couple to corresponding conductive contacts of a counterpart connector external to and separate from the head-worn wireless electronic apparatus, at least via spring-force, to at least enable each of the at least two conductive pads electrically connected to its corresponding conductive contact;
[1C] a rechargeable battery in the head-worn wireless electronic apparatus;
[1D] a microphone in the head-worn wireless electronic apparatus; and
[1E] a touch-sensitive input surface on the head-worn wireless electronic apparatus, wherein the touch-sensitive input surface is configured to generate at least an electrical signal for an operation of the head-worn wireless electronic apparatus based on receiving at least a touch input.
Claim 2
[2PRE] A head-worn wireless electronic apparatus as recited in claim 1 comprising:
[2A] wireless communication circuitry in the head-worn wireless electronic apparatus configured for coupling to at least a Bluetooth network; and
[2B] a storage medium configured to store at least computer program codes for facilitating voice recognition to facilitate recognizing at least a word received by at least the microphone for an operation of the head-worn wireless electronic apparatus.

Claim 3
[3PRE] A head-worn wireless electronic apparatus as recited in claim 1 comprising
[3A] at least another microphone in the head-worn wireless electronic apparatus,
[3B] wherein the microphone is configured to be positioned closer to mouth of the user and the another microphone is configured to be positioned further from the mouth of the user, when the head-worn wireless electronic apparatus is worn by the user, and
[3C] wherein at least the microphone and the another microphone are configured to receive audio inputs, with at least some noise in the audio inputs configured to be cancelled based on using at least the microphone and the another microphone.
Claim 4
A head-worn wireless electronic apparatus as recited in claim 1 comprising a controller configured to identify a sliding action across at least a portion of the touch-sensitive input surface, and to facilitate a first or a second operation of the head-worn wireless electronic apparatus based on identifying whether the sliding action is in a first direction or a direction opposite from the first direction across the at least a portion of the touch-sensitive input surface.
Claim 5
A head-worn wireless electronic apparatus as recited in claim 1 comprising a controller configured to determine whether the head-worn wireless electronic apparatus is being used based on outputs from a sensor at least partially in the head-worn wireless electronic apparatus.
Claim 6
A head-worn wireless electronic apparatus as recited in claim 1 comprising an accelerometer.
Claim 7
A head-worn wireless electronic apparatus as recited in claim 1 comprising an area configured for attachment via magnetic force.
Claim 8
A head-worn wireless electronic apparatus as recited in claim 7 comprising a magnet in the area.
Claim 9
A head-worn wireless electronic apparatus as recited in claim 1 comprising a force sensor.

Claim 10
A head-worn wireless electronic apparatus as recited in claim 3 comprising an area configured for attachment via magnetic force.
Claim 11
A head-worn wireless electronic apparatus as recited in claim comprising an accelerometer.
Claim 12
[12PRE] A head-worn wireless electronic apparatus as recited in claim 10 comprising:
[12A] wireless communication circuitry in the head-worn wireless electronic apparatus configured for coupling to at least a Bluetooth network; and
[12B] a storage medium configured to store at least computer program codes for facilitating voice recognition to facilitate recognizing at least a word received at least by the microphone for an operation of the head-worn wireless electronic apparatus.
Claim 13
A head-worn wireless electronic apparatus as recited in claim 12 comprising a controller configured to determine regarding whether the head-worn wireless electronic apparatus is being used based on outputs from a sensor at least partially in the head-worn wireless electronic apparatus.
Claim 14
A head-worn wireless electronic apparatus as recited in claim 12, wherein the controller is configured to identify a sliding action across at least a portion of the touch-sensitive input surface, and to facilitate a first or a second operation of the head-worn wireless electronic apparatus based on identifying whether the sliding action is in a first direction or a direction opposite from the first direction across the at least a portion of the touch-sensitive input surface.
Claim 15
A head-worn wireless electronic apparatus as recited in claim 1, wherein the apparatus is configured to be worn in an ear of the user.
Claim 16
[16PRE] A head-worn wireless electronic apparatus as recited in claim 15 comprising
[16A] at least another microphone in the head-worn wireless electronic apparatus,

[16B] wherein the microphone is configured to be positioned closer to mouth of the user than the another microphone, when the head-worn wireless electronic apparatus is worn by the user, and
[16C] wherein at least the microphone and the another microphone are configured to receive audio inputs, with at least some noise in the audio inputs configured to be cancelled based on using at least the microphone and the another microphone.
Claim 17
A head-worn wireless electronic apparatus as recited in claim 16 comprising an area configured for attachment via magnetic force.
Claim 18
[18PRE] A head-worn wireless electronic apparatus as recited in claim 17 comprising:
[18A] wireless communication circuitry in the head-worn wireless electronic apparatus configured for coupling to at least a Bluetooth network; and
[18B] a storage medium configured to store at least computer program codes for facilitating voice recognition to facilitate recognizing at least a word received by at least the microphone for an operation of the head-worn wireless electronic apparatus.
Claim 19
A head-worn wireless electronic apparatus as recited in claim 18 comprising a controller configured to determine whether the head-worn wireless electronic apparatus is being used.
Claim 20
A head-worn wireless electronic apparatus as recited in claim 19 comprising an accelerometer.

CERTIFICATE OF SERVICE UNDER 37 C.F.R. § 42.6 (E)(4)

I certify that on September 19, 2025, I will cause a copy of the foregoing document, including any exhibits or appendices filed therewith, to be served via Overnight FedEx at the following correspondence address of record for the patent:

IPVENTURE, INC.
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Date: September 19, 2025

/MacAulay Rush/
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WOLF, GREENFIELD & SACKS, P.C.

CERTIFICATE OF WORD COUNT

Pursuant to 37 C.F.R. § 42.24, the undersigned certifies that the foregoing IPR petition contains 13,999 words excluding a table of contents, a table of authorities, Mandatory Notices under § 42.8, a certificate of service or word count, or appendix of exhibits or claim listing. Petitioners have relied on the word count feature of the word processing system used to create this paper in making this certification.

Date: September 19, 2025

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