

NOTE: This disposition is nonprecedential.

**United States Court of Appeals  
for the Federal Circuit**

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**KOSS CORPORATION,**  
*Appellant*

v.

**KATHERINE K. VIDAL, UNDER SECRETARY OF  
COMMERCE FOR INTELLECTUAL PROPERTY  
AND DIRECTOR OF THE UNITED STATES  
PATENT AND TRADEMARK OFFICE,**  
*Intervenor*

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2022-2091, 2022-2115

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Appeals from the United States Patent and Trademark Office, Patent Trial and Appeal Board in Nos. IPR2021-00305, IPR2021-00381.

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Decided: July 31, 2024

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MARK G. KNEDEISEN, K&L Gates LLP, Pittsburgh, PA, argued for appellant. Also represented by RAGAE GHABRIAL, LAUREN S. MURRAY, CHRISTOPHER MICHAEL VERDINI, MICHELLE WEAVER.

MICHAEL S. FORMAN, Office of the Solicitor, United States Patent and Trademark Office, Alexandria, VA,

argued for intervenor. Also represented by BENJAMIN T. HICKMAN, FARHEENA YASMEEN RASHEED.

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Before HUGHES, STOLL, and CUNNINGHAM, *Circuit Judges*.  
HUGHES, *Circuit Judge*.

In this consolidated appeal, Koss Corp. appeals the Patent Trial and Appeal Board's decisions in IPR2021-00305 and IPR2021-00381, which found claims 1–4, 9, 10, and 14–17 of U.S. Patent No. 10,506,325 and claims 1–5 and 14–18 of U.S. Patent No. 10,491,982 unpatentable under 35 U.S.C. § 103. Both patents are assigned to Koss Corp. The two patents, which disclose various types of wireless earphones, have identical written descriptions and figures. For the reasons stated below, we dismiss Koss Corp.'s appeal as to U.S. Patent No. 10,506,325 and affirm the Board's decision as to U.S. Patent No. 10,491,982.

#### I. THE '325 PATENT

In November 2022, after Koss Corp. (Koss) filed a timely notice of appeal for IPR2021-00305, a district court infringement action invalidated U.S. Patent No. 10,506,325 (the '325 patent) after finding the challenged claims ineligible under 35 U.S.C. § 101. *See Koss Corp. v. Plantronics Inc.*, No. 21-cv-03854-JST, 2022 WL 19975244, at \*1, \*9 (N.D. Cal. Nov. 16, 2022). That same district court order, after finding the challenged claims invalid under § 101, also invalidated the claims of at least three other Koss patents for wireless earphones—U.S. Patent No. 10,368,155 (the '155 patent), U.S. Patent No. 10,469,934 (the '934 patent), and U.S. Patent No. 10,206,025 (the '025 patent), none of which are at issue in this appeal. *Id.*

Like the '325 patent at issue here, Koss also filed appeals with this court challenging three inter partes review (IPR) decisions in which the Board held certain claims of

the '155, '934, and '025 patents unpatentable. *See* Appeal Nos. 23-1173, 23-1179, 23-1180, 23-1191. Koss' appeals related to the '155, '934, and '025 patents were consolidated into a single appeal before this court. *See Koss Corp. v. Bose*, No. 22-2090 (Fed. Cir. July 19, 2024). In that consolidated appeal, this court recently dismissed each of the underlying appeals as moot “[b]ecause all the claims in the patents at issue were invalidated in prior district court litigation.” *Id.*, slip op. at 2. (dismissing as moot Appeal Nos. 22-2090, 23-1173, 23-1179, 23-1180, and 23-1191). As those claims were found invalid in the same district court order, we find the mootness issue in *Koss Corp. v. Bose* dispositive here. *Id.* Therefore, with respect to the '325 patent, we dismiss the appeal as moot.

## II. THE '982 PATENT

### A

U.S. Patent No. 10,491,982 (the '982 patent) describes wireless earphones that can receive and play streamed digital audio content via wireless networks. '982 patent at 2:64–66, 3:7–10. Each earphone has a body with a downwardly extending elongated portion and an earbud portion that is inserted into the user's ear canal. *Id.* at 3:16–27, 3:54–56, 18:14–28. To receive and play the streamed content, each wireless earphone comprises a “transceiver circuit,” which may be implemented as a single integrated circuit—such as a system-on-chip (SOC)—and may be housed in the body portion of the earphone. *Id.* at 3:40–46, 6:34–49.

The '982 patent includes twenty claims, with claim 1 being the sole independent claim. Claim 1 recites:

1. A system comprising:

headphones comprising a pair of first and second wireless earphones to be worn simultaneously by a user, wherein the first and second earphones are separate such that when the headphones are

worn by the user, the first and second earphones are not physically connected, wherein each of the first and second earphones comprises:

a body portion that comprises:

a wireless communication circuit for receiving and transmitting wireless signals;

a processor circuit in communication with the wireless communication circuit; and

an ear canal portion that is inserted into an ear of the user when worn by the user; and

at least one acoustic transducer connected to the processor circuit; and

an elongated portion that extends away from the body portion such that the elongated portion extends downwardly when the ear canal portion is inserted in the ear of the user;

a microphone connected to the processor circuit and for picking up utterances of a user of the headphones;

an antenna connected to the wireless communication circuit; and

a rechargeable power source; and

a mobile, digital audio player that stores digital audio content and that comprises a wireless transceiver for transmitting digital audio content to the headphones via Bluetooth wireless communication links, such that each earphone receives and plays audio content received wirelessly via the

Bluetooth wireless communication links from the mobile, digital audio player.

*Id.* at 18:8–40.

## B

Apple Inc. petitioned for IPR of claims 1–5 and 14–20 of the '982 patent, challenging patentability under 35 U.S.C. § 103. Apple asserted six different grounds for obviousness, with each ground containing a combination of at least prior art references Rosener<sup>1</sup> and Hankey.<sup>2</sup> Rosener relates to wireless communication between an external data or audio device, such as a cell phone or MP3 player, and two earphones, with a focus on wireless earbuds. J.A. 75. Hankey describes a headset within a small compact unit, specifically describing techniques for integrating electronic components into the limited space of a headset's earbud and primary housing body. J.A. 77. For its proposed combination, Apple “relie[d] on Rosener as teaching two earpieces/ earphones . . . in wireless communication with an audio source,” while relying on Hankey to “provide[] techniques to package electronics within a small compact unit to alleviate the size and shape hassles of conventional headsets.” J.A. 80–81 (internal quotations omitted).

The Board instituted IPR on the challenged claims, and after a hearing, issued a final written decision holding claims 1–5 and 14–18 unpatentable and claims 19 and 20 not unpatentable. *See Apple Inc. v. Koss Corp.*, No. IPR2021-00381, 2022 WL 2314983 (P.T.A.B. June 27, 2022). In relevant part, the Board found that “a person of ordinary skill in the art would have had reason to combine Hankey’s ‘small form factors’ with Rosener’s earphones.” J.A. 82. Koss appeals. Apple withdrew from the appeal and the Director of the United States Patent and Trademark

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<sup>1</sup> U.S. Patent App. Pub. No. 2008/0076489.

<sup>2</sup> U.S. Patent App. Pub. No. 2008/0166001.

Office (USPTO) intervened pursuant to 35 U.S.C. § 143 to defend the Board’s decision. We have jurisdiction under 35 U.S.C §§ 141–44, 319, and 28 U.S.C. § 1295(a)(4)(A).

### C

An appellant has the burden to prove the existence of harmful error. *In re Watts*, 354 F.3d 1362, 1369 (Fed. Cir. 2004). Obviousness is a question of law based on underlying facts. *WBIP, LLC v. Kohler Co.*, 829 F.3d 1317, 1326 (Fed. Cir. 2016). We review the Board’s ultimate determination of obviousness de novo and its underlying factual findings for substantial evidence. *See Pers. Web Techs., LLC v. Apple, Inc.*, 848 F.3d 987, 991 (Fed. Cir. 2017) (citing *In re Gartside*, 203 F.3d 1305, 1312 (Fed. Cir. 2000)). What a reference teaches and whether a person of ordinary skill would have been motivated to combine references are questions of fact. *In re Constr. Equip. Co.*, 665 F.3d 1254, 1255 (Fed. Cir. 2011). Likewise, whether a skilled artisan would have had a reasonable expectation of success in making the claimed invention is a question of fact. *Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1366 (Fed. Cir. 2016).

Substantial evidence is “such relevant evidence as a reasonable mind might accept as adequate to support” the conclusion reached. *Consol. Edison Co. v. NLRB*, 305 U.S. 197, 229 (1938).

On appeal, Koss argues that the Board made erroneous legal conclusions and factual findings with respect to independent claim 1 of the ’982 patent. According to Koss, these alleged errors warrant reversal of the Board’s decision. We disagree.

Koss argues that with respect to claim 1, the Board made two erroneous factual findings that are unsupported

by substantial evidence.<sup>3</sup> Appellant's Br. 47. Koss challenges the Board's finding of a motivation to combine and, specifically, its conclusions that (1) Rosener and Hankey would have supplied all information that a person of ordinary skill in the art would need to make the claimed invention because Rosener and the '982 patent had "the same level of disclosure," and (2) the challenged claims do "not include limitations regarding design and operability." Appellant's Br. 47 (quoting J.A. 87). We conclude that substantial evidence supports the Board's relevant findings.

As discussed above, Apple's proposed combination of Rosener and Hankey "relie[d] on Rosener as teaching two earpieces/earphones . . . in wireless communication with an audio source." J.A. 80 (internal quotations omitted). During its obviousness analysis in view of the proposed combination of Rosener and Hankey, the Board determined that the '982 patent includes the same level of disclosures for which Apple relied on Rosener (i.e., two wireless earphones communicating with an audio source). J.A. 87. This finding is supported by substantial evidence. As the Board stated:

We are not persuaded that the design and operational issues raised by Patent Owner would have precluded a person of ordinary skill in the art from understanding the references and any differences between the references and claim 1. Patent Owner does not allege the references teach away from the combination.

J.A. 88.

The Board's determination that claim 1 does "not include limitations regarding design and operability" is not,

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<sup>3</sup> Koss does not separately challenge the Board's factual findings regarding the other claims, so we treat claim 1 as representative.

as Koss urges, an “erroneous factual finding.” J.A. 87; Appellant’s Br. 47. The scope and meaning of a claim is a claim construction inquiry and thus a legal question. *See, e.g., Google LLC v. EcoFactor, Inc.*, 92 F.4th 1049, 1054, 1056 (Fed. Cir. 2024). We conclude that any error in the Board’s statement is harmless error, however. *See In re Watts*, 354 F.3d 1362, 1369 (Fed. Cir. 2004) (“the harmless error rule applies to appeals from the Board”); *Micrografx, LLC v. Google Inc.*, 672 F. App’x 988, 991 (Fed. Cir. 2016). The Board made this statement in the context of “what the combined teachings of the references would have suggested to those of ordinary skill in the art” and “the design and operational issues raised by [Koss],” J.A. 87–88, and substantial evidence supports the Board’s finding that “design and implementation details of the headphones would have been well-known.” J.A. 86. The Board credited expert testimony that: (1) an engineer seeking to implement “an audio transducer or equivalent to the speaker technology” would have “many references to describe the operation of such an element,” J.A. 8717–18 at 38:3–9, 39:8–17; and (2) “there was publicly available information about the properties, characteristics, and uses of” transducers, J.A. 7616–18 at 192:13–194:7.

Finally, Koss argues that the Board legally erred by citing *In re Keller* during its obviousness analysis. Appellant’s Br. 32, 45–47; *see also In re Keller*, 642 F.2d 413 (CCPA 1981). But the Board cited *In re Keller* to support its statement that “the test [for obviousness] is what the combined teachings of the references would have suggested to those of ordinary skill in the art.” J.A. 86–87 (citing *In re Keller*, 642 F.2d at 425). That is a correct statement of the law and not error.

### III

We have considered Koss’ remaining arguments and find them unpersuasive. Because we do not find any legal or factual errors, we affirm the Board’s decision as to the



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'982 patent. And because we find this court's recent decision in *Koss v. Bose*, No. 22-2090 dispositive here, we dismiss as moot the appeal as to the '325 patent.

**DISMISSED-IN-PART, AFFIRMED-IN-PART**

COSTS

No costs.