

NOTE: This disposition is nonprecedential.

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

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**JERRY HARVEY AUDIO HOLDING, LLC,**  
*Appellant*

v.

**1964 EARS, LLC,**  
*Appellee*

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2019-1967, 2019-1968

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Appeals from the United States Patent and Trademark Office, Patent Trial and Appeal Board in Nos. IPR2017-01091, IPR2017-01092.

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Decided: April 10, 2020

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DANIEL RAVICHER, Ravicher Law Firm, Coral Gables, FL, for appellant. Also represented by DAVID GARROD, Pittsburgh, PA.

HILLARY ANNE BROOKS, Brooks Quinn, LLC, Kirkland, WA, for appellee. Also represented by DELFINA SARAH HOMEN.

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Before CHEN, SCHALL, and HUGHES, *Circuit Judges*.

PER CURIAM.

In two *inter partes* reviews, the Patent Trial and Appeals Board denied Jerry Harvey Audio Holding's motions to amend U.S. Patent Nos. 8,925,674 and 9,197,960 to include proposed substitute claims 22–41 and 19–26, respectively, holding that these claims would have been obvious. See *1964 Ears, LLC v. Jerry Harvey Audio Holding, LLC*, No. IPR2017-01091, 2019 WL 1486751, at \*26 (P.T.A.B. Apr. 2, 2019) (“*Board Decision*”); *1964 Ears, LLC v. Jerry Harvey Audio Holding, LLC*, No. IPR2017-01092, 2019 WL 1486754, at \*30 (P.T.A.B. Apr. 2, 2019).<sup>1</sup> Jerry Harvey appeals these decisions, arguing that the Board misconstrued the claims and that the Board's alternative obviousness findings, which apply Jerry Harvey's proposed claim construction, are not supported by substantial evidence. Because the Board's alternative obviousness findings are supported by substantial evidence, we affirm the Board's decision.

## I

1964 Ears, LLC petitioned for *inter partes* review of Jerry Harvey's '674 and '960 patents. Both patents describe canalphones<sup>2</sup> where a high audio signal is phase corrected with respect to a low audio signal. For example, claim 1 of the '674 patent, representative of the petitioned claims relevant on appeal, recites:

1. A system comprising:

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<sup>1</sup> Because substantively identical decisions were entered in both cases, we hereinafter cite solely to the Board's decision in IPR2017-01091.

<sup>2</sup> Canalphones “are personal listening devices that are substantially smaller than a person's outer ear.” '960 Patent col. 1 ll. 26–28.

a high audio driver carried by a canalphone housing;

a low audio driver carried by the canalphone housing adjacent to the high audio driver; and

an acoustical-timer to phase correct a high audio signal from the high audio driver directed to the outside of the canalphone housing with delivery of a low audio signal from the low audio driver directed to the outside of the canalphone housing.

'674 Patent col. 12 ll. 30–38.

1964 Ears challenged the claims' validity based on several references, including U.S. Patent No. 7,317,806 (Harvey '806). Harvey '806 describes a canalphone using two drivers, each feeding an output to its respective sound tube that then produces an audible output to the user. Harvey '806 col. 1 ll. 24–26, col. 1 l. 59–col. 2 l. 5, col. 2 ll. 29–34, col. 6 ll. 3–8. When employing two drivers, the canalphone splits an input signal at a crossover frequency into a high frequency and a low frequency component, where each component is then fed to a different driver. *Id.* col. 1 l. 66–col. 2 l. 5, col. 3 ll. 46–50. Harvey '806 teaches that frequency division between the drivers causes an unwanted phase shift between their outputs that is “inherent” to a two-driver, frequency-divided design. *Id.* col. 6 ll. 12–52. But Harvey '806 teaches correcting this inherent phase shift by optimizing the lengths of the sound tubes receiving each driver's output. *Id.* col. 6 ll. 37–65. As an example, Harvey '806 provides that if the phase shift “inherent in [a] specific [canalphone] design is 45 degrees” and “assuming that the center of the frequency range of interest is 11.5 kHz,” then an adjustment in a driver's sound tube's length (an “offset of 3.75 mm”) corrects that phase shift. *Id.* col. 6 ll. 55–61; *see also id.* col. 7 ll. 2–7.

After considering 1964 Ears' petitions, the Board instituted *inter partes* review of both patents. Jerry Harvey

then filed contingent motions to amend the '674 and '960 patents to include substitute claims for the Board's consideration if it held any of the originally petitioned claims unpatentable. The proposed substitute claims modified independent claims from each patent, of which the '674 patent's claim 1 is representative, to further specify "wherein the phase corrected response is between 90 degrees and -90 degrees from 31.5Hz to 16kHz." *Board Decision* at \*24; *see also* J.A. 396–98 (providing substitute independent claims 22 and 30 for the '674 patent), 1797–98 (providing substitute independent claim 19 for the '960 patent).

In its Final Written Decisions, the Board found the relevant petitioned claims of the '674 and '960 patents to be anticipated or obvious. Next, the Board denied Jerry Harvey's contingent motions to amend, holding that even under Jerry Harvey's proposed construction—that the phase correction be "through the frequency range from 31.5Hz to 16kHz"—the proposed substitute claims would be obvious. *Board Decision* at \*26. The Board found Harvey '806 to teach phase correction over an audible range of frequencies, of which "20Hz to above 11.5kHz" is representative, where the two-driver system is less than 45 degrees out-of-phase at its crossover. *Id.* at \*25. And 45 degrees out-of-phase is "less out of phase than 90 degrees," as the substitute claims require. *Id.* Thus, the Board concluded that the teachings of Harvey '806 "concerning phase correction within th[e] range [of audible frequencies] would establish prima facie obviousness, which [Jerry Harvey] makes no attempt to rebut." *Id.* at \*26 (citing *In re Peterson*, 315 F.3d 1325, 1329 (Fed. Cir. 2003)). The Board therefore denied the requested amendment.

Jerry Harvey appeals the Board's denial of its motions to amend. We have jurisdiction under 28 U.S.C. § 1295(a)(4)(A) and 35 U.S.C. § 141(c).

## II

Obviousness is a question of law based on underlying questions of fact. *See Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966). Underlying questions of fact include the scope and content of the prior art, the differences between the prior art and the claimed invention, and the existence of a motivation to combine prior art references. *See Belden Inc. v. Berk-Tek LLC*, 805 F.3d 1064, 1073 (Fed. Cir. 2015). And in considering prima facie obviousness, “[w]hether an invention has produced unexpected results and whether a reference teaches away from a claimed invention are questions of fact.” *In re Peterson*, 315 F.3d at 1328. We review the Board’s legal decisions de novo and its factual determinations for substantial evidence. *See Belden*, 805 F.3d at 1073. Substantial evidence “means such relevant evidence as a reasonable mind might accept as adequate to support a conclusion.” *Consol. Edison Co. v. N.L.R.B.*, 305 U.S. 197, 217 (1938).

On appeal, Jerry Harvey argues that the Board’s alternative obviousness findings applying Jerry Harvey’s proposed construction are not supported by substantial evidence. To start, Jerry Harvey argues that Harvey ’806 fails to teach a “phase corrected response between 90 degrees and -90 degrees from 31.5Hz to 16kHz,” particularly because 1964 Ears’ expert witness admitted that Harvey ’806 does not teach how to determine “how much phase shift is existing in [a] system.” Appellant’s Br. at 18–19 (citing J.A. 1539). Assuming Harvey ’806’s lack of explicit teachings, Jerry Harvey next argues that the Board also fails to describe a motivation to produce a phase corrected response in the claimed frequency range or a reasonable expectation of success in doing so. Appellant’s Br. at 21–24 (citing *Board Decision* at \*25–26).

We disagree. First, substantial evidence supports the Board’s finding that Harvey ’806 teaches phase correction

over a frequency range, as Jerry Harvey's proposed construction requires. *See* Harvey '806 col. 6 l. 59 (stating that phase correction is performed across a "frequency range of interest"). Moreover, Harvey '806 teaches that the phase correction performed "compensate[s] for [a] phase shift" of 45 degrees, which is well within the claimed phase shift range of 90 degrees to -90 degrees. *Id.* col. 6 ll. 55–61. And contrary to Jerry Harvey's assertions, whether Harvey '806 teaches how to calculate a system's phase shift is irrelevant to its teachings of phase correction over a frequency range. Thus, because the phase shift and frequency teachings of Harvey '806 are encompassed by the claimed phase shift range over the claimed frequency range, Harvey '806 establishes prima facie obviousness. *See In re Peterson*, 315 F.3d at 1329 ("In cases involving overlapping ranges, we and our predecessor court have consistently held that even a slight overlap in range establishes a prima facie case of obviousness."). A patent owner may overcome a prima facie case of obviousness by showing that a claimed range achieves unexpected results or that the prior art teaches away from the claimed range. *See id.* at 1330–31. But Jerry Harvey "makes no attempt to rebut" the prima facie obviousness. *Board Decision* at \*26.

Substantial evidence also supports the Board's findings on reasonable expectation of success and motivation to produce the claimed phase corrected response. Foremost, as recognized by the Board, Jerry Harvey admits that phase correction across the claimed frequency range can be achieved through routine experimentation. *See Board Decision* at \*25 (citing J.A. 719 (Jerry Harvey admitting at IPR hearing that phase correction "as defined in the patent" is "something that basically has to be played with in

the lab” and is not “beyond routine experimentation”<sup>3</sup>; *see also In re Ethicon*, 844 F.3d 1344, 1350 (Fed. Cir. 2017) (holding that “an explicit teaching, suggestion, or motivation in the references is not necessary to support a conclusion of obviousness”). And if routine experimentation provides for optimizing the phase shift across a frequency range, then we find a motivation to produce a phase corrected response in the claimed frequency range and a reasonable expectation of success in doing so.

Thus, substantial evidence supports the Board’s findings that, applying Jerry Harvey’s proposed claim construction, Harvey ’806 renders the proposed substitute claims obvious. We therefore need not consider the Board’s alternative obviousness finding based on U.S. Patent Application 2011/0058702. *See Board Decision* at \*26. Similarly, we need not consider the Board’s construction of the proposed substitute claims. *See id.*

### III

We have considered Jerry Harvey’s remaining arguments and find them unpersuasive. Because substantial evidence supports the Board’s finding that Jerry Harvey’s proposed substitute claims would have been obvious, we affirm the Board’s decisions.

### **AFFIRMED**

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<sup>3</sup> Jerry Harvey’s admission that the claimed range was nothing more than routine experimentation also further supports our earlier finding that the claimed range itself would have been obvious.