United States Court of Appeals for the Federal Circuit

GOOGLE LLC,
Appellant

v.

KONINKLIJKE PHILIPS N.V.,
Appellee

2018-2213

Appeal from the United States Patent and Trademark Office, Patent Trial and Appeal Board in No. IPR2017-00437.

Decided: October 23, 2019

DAVID M. KRINSKY, Williams & Connolly LLP, Washington, DC, argued for appellant. Also represented by KEVIN HARDY, AARON P. MAURER.

JUSTIN J. OLIVER, Venable LLP, Washington, DC, argued for appellee.

Before MOORE, BRYSON, and CHEN, *Circuit Judges*.

CHEN, *Circuit Judge*.

Google appeals from the final written decision of the United States Patent and Trademark Office Patent Trial and Appeal Board (Board) in the above-captioned *inter partes* review proceeding. The Board found that petitioner-appellant Google failed to meet its burden of establishing that challenged claims 10–16, 20, and 21 of U.S. Patent No. 6,772,114 (the '114 patent) are unpatentable on either of two grounds: (1) anticipation by Patent Cooperation Treaty (PCT) International Application Publication No. 98/52187 (Tucker), or (2) obviousness over Tucker in view of well-known art. We agree with the Board as to both grounds and therefore *affirm*.

The '114 patent generally relates to an encoding scheme for transmitting audio signals. *See* '114 patent at Abstract. The challenged claims all require a "second decoder" that "applies a *high-pass filter* . . . to a noise signal to generate" a reconstructed signal within a high-frequency range. *See id.* at claims 10, 20 (emphasis added). Independent claim 10 is representative of the challenged claims and recites the disputed "high-pass filter":

10. A transmission system, comprising:

a transmitter including

      a splitter for splitting up a transmission signal into a low frequency signal within a low frequency range and a high frequency signal within a high frequency range, the low frequency range being lower than the high frequency range,

      a first coder for deriving a first coded signal within the first frequency range from the low frequency signal, and

a second coder for deriving a second coded
signal within the high frequency range
from the high frequency signal;

a receiver in electrical communication with said
transmitter to receive the first coded signal and the
second coded signal, said receiver including

a first decoder for sequentially applying a
narrow-band decoder, an up-sampler and a
low-pass filter to the first coded signal to
generate a first reconstructed signal within
the first frequency range, and

a second decoder, wherein, based on the
second coded signal, said second decoder
sequentially applies a *high-pass filter*, a
LPC synthesis filter and an amplifier to a
noise signal to generate the second recon-
structed signal.

'114 patent at claim 10 (emphasis added).

A. Anticipation

Anticipation is a question of fact reviewed for substan-
tial evidence. *Synopsys, Inc. v. Mentor Graphics Corp.*, 814
F.3d 1309, 1317 (Fed. Cir. 2016). The central dispute on
appeal is whether Tucker's disclosure of a low-pass filter
and reflection step is the claimed high-pass filter.

Under the Board's construction, which is not disputed
on appeal, the claimed high-pass filter "transmits frequen-
cies *above* a given cutoff frequency and substantially atten-
uates all others." J.A. 4814 (emphasis added). Google
argues that Tucker's low-pass filter and reflection steps to-
gether disclose the claimed "high-pass filter" because these
steps collectively transmit the desired high-band portion of
the input signal while attenuating the low-band portion of
the input. We disagree. Google concedes that the Board
correctly found that Tucker's low-pass filter transmits

frequencies *below* a given cutoff frequency. Appellant's Br. at 52–53; *see also* J.A. 14. And Tucker's reflection step merely takes the low-frequency band output of its low-pass filter and moves that content to the high-frequency band. *See* Tucker at 14, ll. 16–27. Collectively, then, Tucker's low-pass filter and reflection steps transmit the *low-frequency content* of an input signal (albeit in the high-frequency band), and do not transmit the input signal's high-frequency content. Google's expert admitted as much. *See* J.A. 5261, 66:5–17 (conceding that a low-pass filter whose output is reflected to the upper band does not transmit the high-frequency components of an input signal). Thus, substantial evidence supports the Board's finding that Tucker's low-pass filter and reflection steps do not disclose the claimed "high-pass filter," because Tucker does not transmit the high-frequency content of an input signal.

Google additionally argues that Tucker's low-pass and reflection steps are collectively the claimed "high-pass filter" because they achieve the same result as a high-pass filter. We are unpersuaded. The similarity of the resulting information that is produced by Tucker's system to what would have been produced if Tucker had actually employed a high-pass filter does not convert Tucker's low-pass filter and reflection steps into a high-pass filter that transmits the high-band content. To the contrary, Tucker's process discards the high-band content of the input signal.

Though the design of a high-pass filter may include a low-pass filter, the inclusion of a low-pass filter does not alter the functionality of the high-pass filter. The '114 patent discloses one such example in which the output of a low-pass filter is used to remove, by subtraction, the low-frequency components of the input signal. '114 patent at col. 4, ll. 8–12 (explaining that "the low frequency range in the difference signal is absent"). In other words, the low-pass filter is used to attenuate the portion of the input signal below a cut-off frequency, leaving only frequencies above the cut-off to be transmitted—precisely the

functionality that the claimed high-pass filter performs. In contrast, Tucker's low-pass and reflection process only transmits the portion of the input signal that is below a cut-off frequency. Google's reliance on the '114 patent's inclusion of a low-pass filter in its high-pass filter is thus misplaced.

In sum, we agree with the Board that Tucker's low-pass and reflection process cannot be the claimed "high-pass filter" because this process does not transmit frequencies above a given cutoff frequency and does not substantially attenuate all others. The Board's conclusion that Google failed to meet its burden to establish that the challenged claims are anticipated by Tucker is supported by substantial evidence.

B. Google's Untimely Arguments Before the Board

On appeal, Google argues that the Board abused its discretion in failing to consider Google's argument that it would have been obvious to include a high-pass filter in Tucker's receiver in place of its low pass filter and reflection process. We disagree.

Google's petition for *inter partes* review argued that the claims at issue were obvious over Tucker in view of the alleged knowledge of a person of skill in the art. J.A. 94. Although the Board instituted the *inter partes* review proceedings on this separate ground, the Board in its final written decision declined to consider Google's argument that it would have been obvious to include a high-pass filter in Tucker's receiver. J.A. 19–20. The Board explained that this argument was raised for the first time in Google's Reply briefing, and thus patent owner Koninklijke did not have a fair and meaningful opportunity to respond. *Id.*

We review the Board's decision not to consider an untimely argument for abuse of discretion. *Intelligent Bio-Systems, Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1367 (Fed. Cir. 2016). Although Google argues that the

obviousness of filters was raised at the depositions of the parties' experts, Google concedes that it never raised this theory of including a high-pass filter in Tucker's receiver in its petition for *inter partes* review. *See* Oral Arg. at 11:44–12:11, http://oralarguments.cafc.uscourts.gov/default.aspx?fl=2018-2213.mp3; J.A. 5461. We find that the Board was within its discretion in declining to consider this obviousness theory that was outside the scope of the petition for *inter partes* review.[1]

CONCLUSION

We have considered Google's remaining arguments and find them unpersuasive. For the reasons stated above, we *affirm* the Board's conclusion that Google failed to meet its burden of showing that the challenged claims are anticipated by Tucker or obvious over Tucker and the well-known art.

AFFIRMED

---

[1]   The Board also rejected Google's untimely arguments as unpersuasive. J.A. 20 n.8. Because we agree with the Board that Google's arguments were untimely, we do not reach the issue of whether it would have been obvious to include a high-pass filter in Tucker's decoder.