

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.,
Petitioner,

v.

SAINT LAWRENCE COMMUNICATIONS LLC,
Patent Owner.

Case IPR2017-01075
Patent 7,151,802 B1

Before ROBERT J. WEINSCHENK, SCOTT C. MOORE, and
MICHELLE N. ANKENBRAND, *Administrative Patent Judges*.

WEINSCHENK, *Administrative Patent Judge*.

DECISION
Denying Institution of *Inter Partes* Review
37 C.F.R. § 42.108

I. INTRODUCTION

Apple Inc. (“Petitioner”) filed a Petition (Paper 3, “Pet.”) requesting an *inter partes* review of claims 1–3, 8–11, 16, 25–27, 32–35, 40, 49, 50, 52, and 53 of U.S. Patent No. 7,151,802 B1 (Ex. 1001, “the ’802 patent”). Saint Lawrence Communications LLC (“Patent Owner”) filed a Preliminary Response (Paper 7, “Prelim. Resp.”) to the Petition. An *inter partes* review may not be instituted unless “the information presented in the petition . . . and any response . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a).

For the reasons set forth below, Petitioner does not demonstrate a reasonable likelihood of prevailing in showing the unpatentability of claims 1–3, 8–11, 16, 25–27, 32–35, 40, 49, 50, 52, and 53 of the ’802 patent. Accordingly, the Petition is denied, and no trial is instituted.

A. *Related Proceedings*

The parties indicate that the ’802 patent is the subject of several district court cases, including: *Saint Lawrence Communications LLC v. Apple Inc.*, No. 2:16-cv-00082 (E.D. Tex.). Pet. 2; Paper 5, 2. Petitioner indicates that the ’802 patent was the subject two other petitions for *inter partes* review in IPR2015-01874 and IPR2016-00704. Pet. 3.

B. *The ’802 Patent*

The ’802 patent relates to speech coding. Ex. 1001, 1:16–21. The ’802 patent explains that prior speech coding applications typically used telephone band signals, which have bandwidths in the range of 200 Hz to 3400 Hz. *Id.* at 1:21–23. But, in order to increase the intelligibility and naturalness of the speech, there was a growing demand for speech coding

applications to use wideband signals, which have bandwidths in the range of 50 Hz to 7000 Hz. *Id.* at 1:23–27. According to the '802 patent, one of the best coding techniques for telephone band signals is Code Excited Linear Prediction (“CELP”). *Id.* at 1:39–41. However, some difficulties arise when applying CELP to wideband signals, and, thus, additional features are needed to obtain high quality wideband signals. *Id.* at 2:17–20.

Specifically, the '802 patent explains that, in order to improve the coding of a wideband signal using CELP, the input wideband signal is down-sampled before encoding to reduce its bandwidth below 7000 Hz. *Id.* at 2:46–53. This down-sampling reduces the required bit rate and maintains a high quality signal. *Id.* at 2:49–53. After the signal is decoded, though, the high frequency content needs to be recovered and reintroduced in order to produce a full-spectrum wideband signal. *Id.* at 2:54–62.

To address that issue, the '802 patent describes a high-frequency content recovering device that recovers the high frequency content of a down-sampled wideband signal and reintroduces that content to produce a full-spectrum wideband signal. *Id.* at 3:18–23. The high-frequency content recovering device includes a noise generator for producing a noise sequence, a spectral shaping unit for shaping the noise sequence based on parameters representative of the down-sampled wideband signal, and a signal injection circuit for injecting the spectrally-shaped noise sequence into the decoded signal to produce a full-spectrum wideband signal. *Id.* at 3:23–30.

C. *Illustrative Claim*

Claims 1, 9, and 25 are independent. Claim 1 is reproduced below.

1. A decoder for producing a synthesized wideband signal, comprising:

- a) a signal fragmenting device for receiving an encoded version of a wideband signal previously down-sampled during encoding and extracting from said encoded wideband signal version at least pitch codebook parameters, innovative codebook parameters, and linear prediction filter coefficients;
- b) a pitch codebook responsive to said pitch codebook parameters for producing a pitch codevector;
- c) an innovative codebook responsive to said innovative codebook parameters for producing an innovative codevector;
- d) a combiner circuit for combining said pitch codevector and said innovative codevector to thereby produce an excitation signal;
- e) a signal synthesis device including a linear prediction filter for filtering said excitation signal in relation to said linear prediction filter coefficients to thereby produce a synthesized wideband signal, and an oversampler responsive to said synthesized wideband signal for producing an over-sampled signal version of the synthesized wideband signal; and
- f) a high-frequency content recovering device comprising:
 - i) a random noise generator for producing a noise sequence having a given spectrum;
 - ii) a spectral shaping unit for shaping the spectrum of the noise sequence in relation to linear prediction filter coefficients related to said down-sampled wideband signal; and
 - iii) a signal injection circuit for injecting said spectrally-shaped noise sequence in said over-sampled synthesized signal version to thereby produce said full-spectrum synthesized wideband signal.

Ex. 1001, 19:55–20:22.

D. *Evidence of Record*

Petitioner submits the following references and declarations (Pet. 11–12):

Reference or Declaration	Exhibit No.
Declaration of Jordan Cohen, Ph.D. (“Cohen Declaration”)	Ex. 1003
Jürgen Schnitzler, <i>A 13.0 KBIT/S Wideband Speech Codec Based on SB-ACELP</i> , Proceedings of the 1998 IEEE International Conference on Acoustics, Speech and Signal Processing 157–60 (“Schnitzler”)	Ex. 1005
Aryn Alexandra Pyke, <i>Extrapolation of Wideband Speech From the Telephone Band</i> , Graduate Department of Electrical and Computer Engineering, The University of Toronto (“Pyke”)	Ex. 1010
Declaration of Ingrid Hsieh-Yee, Ph.D. (“Hsieh-Yee Declaration”)	Ex. 1027
Declaration of Frank R. Kschischang, Ph.D. (“Kschischang Declaration”)	Ex. 1028

Patent Owner submits the Declaration of Oded Gottesman, Ph.D. (Ex. 2004, “Gottesman Declaration”).

E. *Asserted Ground of Unpatentability*

Petitioner asserts that claims 1–3, 8–11, 16, 25–27, 32–35, 40, 49, 50, 52, and 53 are unpatentable under 35 U.S.C. § 103(a)¹ over the combination of Schnitzler and Pyke. Pet. 11–12.

II. ANALYSIS

Petitioner argues that claims 1–3, 8–11, 16, 25–27, 32–35, 40, 49, 50, 52, and 53 would have been obvious over Schnitzler and Pyke. Pet. 11–12. We have reviewed the parties’ assertions and supporting evidence. For the reasons discussed below, Petitioner does not demonstrate a reasonable

¹ The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, which was enacted on September 16, 2011, made amendments to 35 U.S.C. §§ 102, 103. AIA § 3(b), (c). Those amendments became effective eighteen months later on March 16, 2013. *Id.* at § 3(n). Because the application from which the ’802 patent issued was filed before March 16, 2013, any citations herein to 35 U.S.C. §§ 102, 103 are to their pre-AIA versions.

likelihood of prevailing in showing that claims 1–3, 8–11, 16, 25–27, 32–35, 40, 49, 50, 52, and 53 would have been obvious over Schnitzler and Pyke.

Petitioner argues that Pyke is prior art to the '802 patent under 35 U.S.C. § 102(a) because it “was submitted to and indexed, catalogued, and made publicly available by the University of Toronto Library in 1997.”² Pet. 20 (citing Ex. 1028 ¶¶ 3–6). Patent Owner responds that Petitioner has not shown sufficiently that Pyke is prior art to the '802 patent. Prelim. Resp. 29–35. We agree with Patent Owner.

Pyke is a master's thesis submitted by Aryn Alexandra Pyke to the Graduate Department of Electrical and Computer Engineering at the University of Toronto. Ex. 1010, 1; Ex. 1028 ¶ 3. Petitioner relies on the Kschischang Declaration to show that Pyke was publicly accessible in 1997. Pet. 20 (citing Ex. 1028 ¶¶ 3–6). Dr. Frank Kschischang testifies that Ms. Pyke's thesis issued in 1997. Ex. 1028 ¶ 4. He does not, however, provide an approximation of *when* in 1997 the thesis issued. *Id.* Dr. Kschischang testifies that, after a thesis issues, “it was standard and customary practice to submit a hard copy to the Engineering Library within a couple of months.” *Id.* Dr. Kschischang further explains that, after a thesis is submitted to the Engineering Library, it “was a regular and customary practice of the Department” to add the thesis to a searchable index on the University of Toronto Library website. *Id.* He does not, however, provide an approximation of *how long* it typically took to add a

² The earliest priority date identified on the face of '802 patent is October 27, 1998. Ex. 1001 [30].

thesis to the searchable index after it was submitted to the Engineering Library.³ *Id.*

We acknowledge that Petitioner may rely on evidence of routine business practices, and that Petitioner does not have to show a specific date on which Pyke was publicly accessible. *See In re Hall*, 781 F.2d 897, 899 (Fed. Cir. 1986). Here, though, Petitioner does not submit evidence from which we can even approximate when Pyke became publicly accessible. As discussed above, Petitioner’s evidence indicates only that Pyke was completed *at some point* in 1997, submitted to the Engineering Library “within a couple of months,” and then added to a searchable index *at some point* thereafter.⁴ Ex. 1028 ¶ 4; *see In re Lister*, 583 F.3d 1307, 1317 (Fed. Cir. 2009) (“[T]he evidence shows that *at some point* in time Westlaw and Dialog incorporated the Copyright Office’s automated catalog information about the Lister manuscript,” but “[t]here is no indication as to when that occurred or whether it was prior to the critical date.”) (emphasis added). Thus, Petitioner’s evidence does not show sufficiently when Pyke was added to the searchable index or whether that occurred before the priority date of the ’802 patent. *See Lister*, 583 F.3d at 1317 (“[A]bsent any evidence pertaining to . . . the typical time that elapses between copyright registration . . . and subsequent incorporation into one of the commercial databases, any presumption along those lines would be pure speculation.”).

³ Appendix B to the Kschischang Declaration indicates that a searchable index was available on December 11, 1997, but does not indicate that Pyke had been added to the searchable index as of that date. Ex. 1028, 107.

⁴ In contrast, Petitioner submits detailed evidence to show when Schnitzler was publicly accessible. Ex. 1027 ¶¶ 14–23.

For the foregoing reasons, Petitioner has not shown sufficiently that Pyke is prior art to the '802 patent under 35 U.S.C. § 102(a). Therefore, Petitioner does not demonstrate a reasonable likelihood of prevailing in showing that claims 1–3, 8–11, 16, 25–27, 32–35, 40, 49, 50, 52, and 53 would have been obvious over Schnitzler and Pyke.

III. CONCLUSION

Petitioner does not demonstrate a reasonable likelihood of prevailing in showing the unpatentability of claims 1–3, 8–11, 16, 25–27, 32–35, 40, 49, 50, 52, and 53 of the '802 patent.

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that the Petition is denied, and no trial is instituted.

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