

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

FREE STREAM MEDIA CORP.,
D/B/A SAMBA TV,
Petitioner,

v.

GRACENOTE, INC.,
Patent Owner.

IPR2020-00216
Patent 9,066,114 B2

Before MICHELLE N. ANKENBRAND, GARTH D. BAER, and
AARON W. MOORE, *Administrative Patent Judges*.

BAER, *Administrative Patent Judge*.

DECISION
Denying Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

Free Stream Media Corp. d/b/a Samba TV (“Petitioner”) requests an *inter partes* review of claims 1–14 and 16–24 of U.S. Patent No. 9,066,114 B2 (“the ’114 patent,” Ex. 1001). Paper 1 (“Pet.”). Gracenote, Inc. (“Patent Owner”) filed a Preliminary Response. Paper 12 (“Prelim. Resp.”).

We have authority to determine whether to institute an *inter partes* review. 35 U.S.C. § 314(b); 37 C.F.R. § 42.4(a). We may not institute an *inter partes* review “unless . . . 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).

Applying that standard, and upon considering the information presented in the Petition and the Preliminary Response, we determine Petitioner does not show a reasonable likelihood that it would prevail in showing the unpatentability of at least one challenged claims. Accordingly, we do not institute an *inter partes* review of claims 1–14 and 16–24 of the ’114 patent.

II. BACKGROUND

A. *The ’114 Patent*

The ’114 patent, titled “Method and Device for Generating and Detecting a Fingerprint Functioning as a Trigger Marker in a Multimedia Signal,” issued on June 23, 2015. Ex. 1001, [45], [54]. The ’114 patent relates to a method and device for associating and detecting trigger information with a multimedia signal. *Id.* at 1:14–21.

The written description explains that more interactive television viewing or music listening experiences are created by “‘connecting’ external actions to a piece of video and/or audio content.” *Id.* at 1:22–26. Facilitating this function requires enabling “reliable detection of time points

in a television program, a movie, a music piece, etc. where such additional information is relevant.” *Id.* at 1:29–32. Previous methods of marking time points suffered from disadvantages such as relying on broadcaster cooperation to insert time triggers, cooperation of all actors in a broadcast chain to not destroy time marking, or altering the video/audio through watermarking. *Id.* at 1:33–2:35.

The ’114 patent purportedly enables “simple, reliable and accurate localisation of a given part of a multimedia signal” and “detection of trigger actions without modifying the multimedia signal.” *Id.* at 2:40–45. The ’114 patent purportedly achieves this by using a fingerprint as a time marker to trigger actions. *Id.* at 3:7–11. To do this, a fingerprint is generated “on the basis of a part, segment, etc. . . . of the multimedia signal (101), where the segment of the multimedia signal (101) is unambiguously related with the given time point.” *Id.* at 4:15–19. The fingerprint is stored for later use in a database, memory, storage, and/or the like. *Id.* at 5:5–10. The fingerprint serves as “an identifier which is computed over that piece of audio or video and which does not change even if the content involved is subsequently transcoded, filtered or otherwise modified.” *Id.* at 3:20–24.

According to the ’114 patent, detection of the fingerprint occurs during playback of the multimedia signal on a playback device. *Id.* at 5:43–48. During playback, a fingerprint stream is generated from the multimedia signal. *Id.* at 5:48–55. Upon detecting a match between a segment of the fingerprint stream and a fingerprint in the database, the invention determines the time point indicated by the fingerprint and executes the actions associated with that time point. *Id.* at 5:65–6:24.

B. Illustrative Claims

Petitioner challenges claims 1–14 and 16–24 of the '114 patent.

Pet. 1. Of the challenged claims, claims 1, 8, 10, 11, 20, and 21 are independent. Claim 1 is illustrative of the subject matter in claims 1–10 and recites:

1. A method comprising:

determining a plurality of trigger fingerprints from content being played back on a playback device, each trigger fingerprint identifying a corresponding trigger time point of a sequence of trigger time points in the content and at which trigger time point at least one corresponding action is to be triggered, the determining being performed by a processor;

accessing a database that includes a plurality of reference fingerprints, previously derived from the content, and a plurality of reference actions, each reference fingerprint identifying at least one corresponding reference action to be performed at a reference time point identified by the reference fingerprint;

identifying the corresponding reference action by obtaining a match in the database between a trigger fingerprint among the plurality of trigger fingerprints and a reference fingerprint among the plurality of reference fingerprints; and

performing a reference action that corresponds to the reference fingerprint on the playback device.

Ex. 1001, 8:6–26.

Claim 11 is illustrative of the subject matter in claims 11–14 and 16–24 and recites:

11. A method comprising:

accessing segments of content, a segment among the segments being associated with a corresponding action to be triggered during playback of the segment;

generating a reference fingerprint of the segment associated with the corresponding action, the generating being performed by a processor;

assigning the reference fingerprint of the segment to the corresponding action that is to be triggered during playback of the segment of the content;

providing access to the reference fingerprint of the segment to a playback device configured to match the reference fingerprint to a playback fingerprint derived from the segment by the playback device; and

providing the identifier of the corresponding action to the playback device based on the reference fingerprint matching the playback fingerprint, the provided identifier causing the playback device to trigger the corresponding action during the playback of the segment.

Id. at 9:34–52.

C. The Asserted Ground of Unpatentability

Petitioner challenges the patentability of 1–14 and 16–24 of the ’114 patent based on the following ground:

Claims Challenged	35 U.S.C. § ¹	References
1–14, 16–24	103	Murphy ² and Brunk ³

Pet. 15–20. Petitioner relies on the Declaration of Ahmed H. Tewfik, Sc.D. (Ex. 1007) to support its asserted grounds of unpatentability. In arguing against the asserted grounds of unpatentability, Patent Owner relies on the Declaration from Dr. Pierre Moulin (Ex. 2001).

¹ Because the claims at issue have an effective filing date before March 16, 2013, the effective date of the applicable provisions of the Leahy Smith America Invents Act, Pub. L. No. 112–29, 125 Stat. 284 (2011) (“AIA”), we apply the pre-AIA version of 35 U.S.C. §§ 102 and 103 in this decision.

² GB 2 375 907 A, published Nov. 27, 2002 (Ex. 1011, “Murphy”).

³ US 2002/0126872, published Sept. 12, 2002 (Ex. 1012, “Brunk”).

III. ANALYSIS

A. *Level of Ordinary Skill in the Art*

Petitioner asserts that a person of ordinary skill in the art on July 11, 2003, would “have a bachelor’s degree in computer science, electrical engineering, or a related discipline and two years of experience in the relevant technical field—multimedia signal processing, including watermarking, fingerprinting and their applications—or the equivalent.” Pet. 8 (citing Ex. 1007 ¶ 54). Patent Owner asserts that, in addition to the experience identified by Petitioner, “[a]dditional experience could substitute for formal education, or additional formal education could substitute for experience in the relevant technical field.” Prelim. Resp. 12.

For purposes of this decision, we agree with the parties’ proposed definition of ordinary skill in the art and further agree with Patent Owner that additional experience could substitute for formal education and formal education for experience because they are consistent with the prior art. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001) (explaining that specific findings regarding ordinary skill level are not required “where the prior art itself reflects an appropriate level and a need for testimony is not shown” (quoting *Litton Indus. Prods., Inc. v. Solid State Sys. Corp.*, 755 F.2d 158, 163 (Fed. Cir. 1985))).

B. *Claim Construction*

Petitioner provides proposed constructions for “a processor” and “multimedia,” and, to the extent necessary, identifies structure for the terms “fingerprint detector configured to . . .,” “fingerprint module configured to . . .,” and “input module configured to . . .” Pet. 11–15. Patent Owner contends that “Petitioner’s claim constructions provided at the Petition, pages 11–14, do not impact Patent Owner’s arguments provided in this

paper.” Prelim. Resp. 12. Patent Owner does not propose any specific constructions. *See generally id.*

We decline to construe the claim terms Petitioner proposes because no express claim construction is necessary for our determination of whether to institute *inter partes* review. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co. Ltd.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017).

C. Asserted Prior Art

Before turning to Petitioner’s asserted grounds of unpatentability, we provide a brief summary of the asserted references.

1. Murphy (Ex. 1011)

Murphy relates to an automated recognition system that detects audio cues in a broadcast signal. Ex. 1011, Abstract. Murphy recognizes that program makers and broadcasters typically place an audio cue, such as a piece of music or jingle, immediately before a program to alert the user that a particular program is about to begin. *Id.* at 3:10–14. The automated recognition system uses the audio cue to automatically generate information about the program being broadcast and insert up-to-date information about the programs in the audio signal. *Id.* at 3:17–23. Thus, information about the programs are generated with reference to the actual broadcast signal in real-time. *Id.* at 2:6–11.

The automated recognition system contains a database storing information on audio cues that the system is required to recognize. *Id.* at 6:27–7:11. Specifically, the database contains a signature for the audio cue. *Id.* at 6:27–7:11, 8:33–9:8, 14:6–15.

During operation, the audio recognition system continuously analyzes and compares an audio signal to audio cues or jingles corresponding to programs in the database. *Id.* at 10:1–9, 15:15–21. When the audio

recognition system detects a match, it generates an event flag. *Id.* at 10:16–17, 10:32–11:4, 12:8–16, 13:21–26. The event flags are used to generate a data signal containing information for the program. *Id.* at 10:9–12, 10:32–11:4, 12:8–16, 13:21–26. The data signal allows receivers to display additional information or provide additional functionality to users, such as changing the channel, trail auditing, and automated recording. *Id.* at 10:13–11:34, 13:22–26. To perform automated recording, the automated recognition system uses audio cues in a program to generate start flags and end flags. *Id.* at 10:32–11:4, 13:21–26, 14:1–3. A recording system uses the event flags to start and stop recording of the program. *Id.* at 11:33–12:16, 13:15–14:3.

2. *Brunk (Ex. 1012)*

Brunk relates to a method of generating identifying information, specifically content signatures, from data. Ex. 1012 ¶ 3. Content signatures are derived “as a function of the content item itself. The content signature can be derived through a manipulation (e.g., a transformation, mathematical representation, hash, etc.) of the content data.” *Id.* ¶ 5. The content signatures are also known as “robust hashes” or “fingerprints.” *Id.*

Content signatures may be stored in databases and used to access additional data. *Id.* ¶ 6. For example, the content signatures may be used to associate the content signature with data specifying actions related to the signature. *Id.* ¶ 28–29. Actions may include providing a URL, licensing information or rights, or verifying content and access. *Id.*

D. *Legal Standard*

A patent claim is unpatentable as obvious if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a

person having ordinary skill in the art to which said subject matter pertains. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) objective evidence of nonobviousness.⁴ *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

“In an [*inter partes* review], the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (requiring *inter partes* review petitions to identify “with particularity . . . the evidence that supports the grounds for the challenge to each claim”)). Petitioners cannot satisfy their burden of proving obviousness by employing “mere conclusory statements.” *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016).

E. Obviousness Analysis

Petitioner asserts that the subject matter of claims 1–14 and 16–24 would have been obvious over Murphy in view of Brunk and the knowledge of a POSITA. Pet. 15–16, 20–70. Patent Owner disagrees. Prelim. Resp. 12–37. Having considered the information and evidence Petitioner provides, including the relevant portions of Dr. Tewfik’s declaration, we determine Petitioner does not show a reasonable likelihood of prevailing on its obviousness challenges based on Murphy in view of Brunk for the reasons explained below.

⁴ Neither party presents any objective evidence of nonobviousness or any related arguments for us to consider at this stage of the proceeding.

1. “reference time point” (*Claims 1–10*)

Claims 1–10 require “each reference fingerprint identifying at least one corresponding reference action to be performed at a reference time point.” Petitioner asserts that Murphy discloses the claimed a reference time point. Pet. 24–31. In particular, Petitioner asserts that “Murphy discloses taking actions (e.g., display information, start recording, stop recording) at a time referenced to the location of the cues in the signal, for example, the time the cue is recognized.” *Id.* at 29 (citing Ex. 1011, 13:8–14, 13:20–26, 13:33–34, 14:2–3; Ex. 1007 ¶¶ 132, 134–135). Petitioner asserts that Murphy’s fingerprint recognition system triggers actions by recognizing a particular audio cue and then generating an action-specific event flag. *Id.* at 30. Petitioner contends that “a POSITA would understand that the event flag may be a ‘start recording’ event flag based on the database linking: (i) the signature of an audio cue identifying the start of a program, and (ii) the code used to signify that the user wants the associated program to be recorded.” *Id.* (citing Ex. 1007 ¶¶ 132–133, 148–150).

Patent Owner argues that Murphy fails to teach the recited reference time point identified by the reference fingerprint. Prelim. Resp. 12–17. Specifically, Patent Owner argues that Murphy’s stored audio cue signature does not identify a specific time point, i.e. a reference time point, to perform the corresponding reference action. *Id.* at 13–14. Patent Owner contends that Murphy’s audio cue signature stored in the database may be used to detect repeated occurrences of the audio cue during the program, and thus has no relationship or otherwise identify a reference time point for actions in the broadcast. *Id.* at 14–16.

We agree with Patent Owner that Murphy does not teach or suggest “a reference time point identified by the reference fingerprint” at which a

reference action is to be performed, as claims 1, 8, and 10 require. Rather than identifying a specific reference time at which an action is taken, Murphy discloses performing the reference action in real time, i.e., when it detects the audio cue signature. *See* Ex. 1011, 13:33–14:1 (describing that “[t]he recording system 82 would be activated when it detected an event flag associated with that code”). In addressing the reference time limitation, Petitioner’s expert, Dr. Tewfik identifies only taking actions at “the time the cue is recognized,” Ex. 1007 ¶ 148, rather than at some specified reference time. *See id.* ¶ 170 (explaining that in Murphy, “the process of recognizing the [audio] cues takes time and then causes the immediate triggering of the action”).

The only reference in Murphy related to delayed action is Murphy’s teaching that “to avoid the possibility of losing the initial part of the programme, the automated recording system 76 may be configured to record a delayed version of the audio signal provided by a time delay unit 74.” Ex. 1011, 12:23–26. It is not apparent, however (and Petitioner does not explain), how recording a delayed version of an audio signal equates with or necessarily requires including a reference time for Murphy’s start/stop recording event in Murphy’s audio cue signature. *See* Pet. 29, 34–40. Thus, on the current record, Petitioner has not shown sufficiently that Murphy teaches or suggests the claimed reference time point. Accordingly, Petitioner has not established a reasonable likelihood of prevailing in its assertion that claims 1–10 would have been obvious over Murphy, Brunk, and a POSITA’s knowledge.

2. *“triggered during playback” (Claims 11–14 and 16–24)*

Claims 11–14 and 16–24 require an “action to be triggered during playback of the segment.” Ex. 1001, 9:36–37, 10:41–42, 10:59–60.

Petitioner asserts that Murphy discloses this limitation because “[a] POSITA would have understood that Murphy’s time delay can be employed to allow the action to be triggered during playback of the segment containing the fingerprint that triggers the action.” Pet. 48 (citing Ex. 1007 ¶ 218).

Elaborating on Petitioner’s theory, Dr. Tewfik states “one of ordinary skill in the art would have understood that Murphy’s teachings regarding use of a time delay enable the system to trigger an action during the content containing the fingerprint by setting the delay to slightly less than the length of the segment.” Ex. 1007 ¶ 218.

Patent Owner argues that Murphy’s receiver does not trigger actions during the playback of the segment associated with the fingerprinted segment. Prelim. Resp. 22. Patent Owner contends that Murphy’s system triggers actions after playback of the segment. *Id.* at 22–23. Patent Owner also contends that Dr. Tewfik does not provide a basis for triggering the action during playback. *Id.* at 23–25. Patent Owner argues further that incorporating a time delay would directly counter Petitioner’s motivation for modifying the receiver to incorporate the delay. *Id.* at 25–27. Patent Owner also argues that the delayed recording takes place after the audio signal is played over the loudspeaker, which is what Petitioner maps to the content that is played back. *Id.* at 27–29.

We agree with Patent Owner that Petitioner has not adequately explained how Murphy teaches or suggests triggering actions during segment playback as claims 11, 20, and 21 require. Murphy describes only a generic time delay, not a particular one such that Murphy’s action (start/stop recording) would be triggered during segment playback. *See* Ex. 1011, 12:23–26 (“to avoid the possibility of losing the initial part of the programme, the automated recording system 76 may be configured to record

a delayed version of the audio signal”). Although Dr. Tewfik’s proposed modification to Murphy—i.e., setting the delay to slightly less than the length of the segment (Ex. 1007 ¶ 218)—would result in the claimed action “triggered during playback,” neither the Petition nor Dr. Tewfik’s testimony explains *why* it would be obvious to configure Murphy in that particular way. Moreover, as Patent Owner notes, incorporating a time delay that is slightly less than the length of the segment runs counter to Dr. Tewfik’s opinion elsewhere that a skilled artisan would have set the delay to be the same as the segment’s length. *See* Prelim. Resp. 25–26 (quoting Ex. 1007 ¶¶ 175–176 (asserting that “one of ordinary skill in the art would find it obvious to configure the length of delay unit 74 **to be the same standardized length as the audio cue segment** to allow the recording action start at a time that includes the content that serves as the reference audio cue”). Given this deficiency, we find that Petitioner has not produced the required “articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *See KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007). Therefore, on this record, Petitioner has not shown a reasonable likelihood that it would prevail in establishing claims 11–14 and 16–24 would have been obvious over the asserted prior art.

F. 35 U.S.C. § 325(d)

Patent Owner argues that we should exercise discretion under 35 U.S.C. § 325(d) to deny institution of the proceeding because Murphy is cumulative of two references considered during prosecution and Brunk was cited and considered during prosecution of the ’114 patent. Prelim. Resp. 41–47. Because we deny the Petition on its merits, we do not reach Patent Owner’s request for discretionary denial.

IV. CONCLUSION

Taking account of the information presented in the Petition, the Preliminary Response, and the evidence of record, we determine that Petitioner fails to demonstrate a reasonable likelihood of prevailing at trial as to any challenged claim.

V. ORDER

In consideration of the foregoing, it is hereby:

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

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