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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* KENNETH L. LEVY and GEOFFREY B. RHOADS

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Appeal 2018-006159
Application 11/932,839
Technology Center 3600

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Before ST. JOHN COURTENAY III, DENISE M. POTHIER, and BETH Z. SHAW, *Administrative Patent Judges*.

COURTENAY, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellant[1] appeals under 35 U.S.C. § 134(a) from the Examiner's Final Rejection of claims 17–36 and 38–40, which constitute all the claims pending in this application. Claims 1–16 and 37 are canceled. We have jurisdiction over the pending claims under 35 U.S.C. § 6(b).

We reverse.

[1] We use the word Appellant to refer to Applicant as defined in 37 C.F.R. § 1.42(a). According to Appellant, the real party in interest is "DIGIMARC CORPORATION (AN OREGON CORPORATION)." Appeal Br. 2.

## STATEMENT OF THE CASE [2]

Disclosed embodiments of Appellant's invention "relate[] to linking audio and other multimedia data objects with metadata and actions via a communication network, e.g., computer, broadcast, wireless, etc." Spec. 1, ll. 16–18.

*Illustrative Claim*

17. A method comprising:

receiving a content signal at a server via a network;

computing a fingerprint from audio or visual content within the content signal,

wherein the fingerprint is derived from a portion of the audio or visual content;

assigning an object ID to the fingerprint to associate an object ID with the content signal;

storing an association between the object ID and metadata in a database to link the metadata with the content signal;

receiving a query comprising a first audio or visual portion of the content signal and context information, wherein the context information comprises a type of distribution of the content signal;

[L1] *extracting the fingerprint* from the first audio or visual portion of the content signal;
[L2] *determining a watermark decoder based upon the fingerprint*;

[2] We herein refer to the Final Office Action, mailed May 10, 2017 ("Final Act."); Appeal Brief, filed Nov. 13, 2017 ("Appeal Br."); Examiner's Answer, mailed Mar. 27, 2018 ("Ans."); and the Reply Brief, filed May 29, 2018 ("Reply Br.").

> determining, using the watermark decoder, the object ID for the content signal;
>
> logging a transaction record comprising the fingerprint and the context information; and
>
> obtaining the metadata associated with the object ID from the database the metadata comprising an age appropriateness indicator and rules for rendering the content signal.

Appeal Br. 21–22 (Claims Appendix) (emphasis added regarding the disputed limitations L1 and L2 under 35 U.S.C. § 103(a)).

*Rejections*[3]

A. Claims 17–20, 24–31, 35, 36, 38, and 40 are rejected under pre-AIA 35 U.S.C. § 103(a) as being obvious over the combined teachings and suggestions of Rhoads (US 6,122,403, iss. Sept. 19, 2000), in view of King et al. (US 6,477,707 B1, iss. Nov. 5, 2002) ("King"), and further in view of Jones et al. (US 6,304,523 B1, iss. Oct. 16, 2001) ("Jones").

B. Claims 21–23 and 32–34 are rejected under pre-AIA 35 U.S.C. § 103(a) as being obvious over the combined teachings and suggestions of Rhoads, King, and Jones, and further in view of Oka et al. (US 6,615,252 B1, iss. Sept. 2, 2003) ("Oka").

C. Claim 39 is rejected under pre-AIA 35 U.S.C. § 103(a) as being obvious over the combined teachings and suggestions of Rhoads, King, and Jones, and further in view of Hoffert et al. (US 6,370,543 B2, iss. Apr. 9, 2002) ("Hoffert").

[3] The Examiner withdrew the rejection under 35 U.S.C. § 101. Ans. 3. Therefore, this rejection is not before us on appeal.

ANALYSIS

We have considered all of Appellant's arguments and any evidence presented. We have reviewed Appellant's arguments in the Briefs, the Examiner's obviousness rejections, and the Examiner's responses to Appellant's arguments. In our analysis below, we highlight and address specific findings and arguments.

*Issues on Appeal*

***Issues***: Under pre-AIA 35 U.S.C. § 103(a), did the Examiner err by finding the cited combination of Rhoads, King, and Jones would have taught or suggested contested limitations L1 and L2:

"computing *a fingerprint* from audio or visual content within the content signal, wherein the fingerprint is *derived from a portion of the audio or visual content*; . . . [and]

> [L1] *extracting the fingerprint* from the first audio or visual portion of the content signal; [and]
> [L2] *determining a watermark decoder based upon the fingerprint*; . . . [,]

within the meaning of independent claim 17?[4] (emphasis added).

*Claim Construction*

At the outset, and as an initial matter of claim construction, we focus our analysis on the recited claim terms "fingerprint" and "watermark." Although "watermark" is not recited as a stand-alone term in claim 17 (or in any other claim on appeal), it is used as the first word of the claim term

[4] We give the contested claim limitations the broadest reasonable interpretation ("BRI") consistent with the Specification. *See In re Morris*, 127 F.3d 1048, 1054 (Fed. Cir. 1997).

"watermark decoder." In considering the broadest reasonable interpretation of Appellant's claims in light of the Specification, we initially seek to clarify the specific differences between a "fingerprint" and a "watermark."

*"Fingerprint"*

A "fingerprint" is not defined in the claims in terms of *what it is*, but rather is claimed in terms of *how it is computed* and *how it is used*. *See* Claim 17. In terms of *how* the "fingerprint" is computed, we note the second step of independent claim 17 expressly requires: "computing a fingerprint *from audio* or *visual content within the content signal*, wherein the fingerprint is *derived from a portion of the audio or visual content*." (emphasis added). Disputed limitation L2 of claim 17 specifies *how* the fingerprint is used: "determining a watermark decoder *based upon the fingerprint*." (emphasis added). Turning to the Specification for *context*, Appellant defines a fingerprint (at least with respect to audio media), as follows: "The fingerprint is a number *derived from a digital audio signal* that serves as a statistically unique identifier of that signal, meaning that there is a high probability that the fingerprint was derived from the audio signal in question." Spec. 15, ll. 10–13.

*"Watermark" and "Watermark Decoder"*

The Specification broadly describes "watermarks" in the following exemplary sentence: "using steganographic methods, such as digital *watermarking* or other data hiding techniques." Spec. 3, ll. 13–14 (emphasis

added). We note steganography is the practice of concealing information within a data file.[5]

Because Appellant's disclosure focuses on various media types, "namely audio signals (e.g., music, sound tracks of audio visual works, voice recordings, etc. . . . including video, still images, graphical models, etc.)," we broadly but reasonably construe the claim term "watermark" as including any data that is *hidden* within media data in the application of steganography. Spec. 2, l. 26–3, l. 2.

In steganography, hidden information (e.g., author or copyright information), hidden encrypted messages, or other information could be distributed, inserted, embedded, or encoded throughout the still image, audio, or video media data file in a manner that would not be discernable to the viewer and/or listener, because the watermark would ideally be imperceptible or invisible "noise" in the media data file. *See infra* n.5. *See* Spec. 3, ll. 12–14: "Another way to associate the identifier is to embed it as auxiliary data in the audio signal using steganographic methods, such as digital watermarking or other data hiding techniques." *See also* Spec. 13, ll. 2–3:

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[5] *See* Microsoft Computer Dictionary, Fifth Edition, 2002, p. 498:

> **steganography** *n.* A "hide-in-plain-sight" technique for concealing information by embedding a message within an innocuous cover message. In steganography, bits of unnecessary data within an image, sound, text, or even a blank file are replaced with bits of invisible information. The term steganography comes from the Greek for "covered writing" and has traditionally included any method of secret communication that conceals the existence of the message. Because steganography cannot be detected by decryption software, it is often used to replace or supplement encryption.

> The steganographic embedding method may also be performed at the time of transmission of an electronic file or broadcast of the audio object. In the case of distribution via a network such as the Internet (e.g., streaming or file download), real time embedding enables the embedding process to also embed context information that is specific to the consumer (or the consumer's computer) that has electronically ordered the object.

Spec. 13, ll. 2–3.

Although both watermarks and fingerprints can be types of metadata (i.e., data about data), watermarks are typically *hidden* metadata. *See* Spec. 3, ll. 12–14. In contrast, fingerprints, as used in Appellant's claims and Specification, are *derived* (i.e., computed) *from* the audio or video media content itself. Although a fingerprint might be unique (or expected to be unique) with respect to the particular data content of a media file, "unique" fingerprints are not claimed here.[6]

Thus, independent claim 17 recites, in pertinent part: "computing a fingerprint *from audio or visual content within the content signal,* wherein the fingerprint is derived from a portion of the audio or visual content;

> [and] . . .
>
> [L1] *extracting the fingerprint* from the first audio or visual portion of the content signal;
>
> [L2] *determining a watermark decoder based upon the fingerprint*;

[6] *Cf.* Spec. 16, ll. 21-22: "One type of identifier is a unique identifier for an audio object. Another type of identifier is one that identifies some attribute of the audio object, but does not uniquely identify it, such as a distributor or broadcaster identifier. This type of identifier requires additional context information to uniquely identify the audio object at the time of linking it to actions or metadata."

> determining, *using the watermark decoder*, the object ID for the content signal;

Claim 17 (emphasis added).

Given the above discussion, we broadly but reasonably construe the claim term "fingerprint" in terms of how it is computed (i.e., derived from the media content — *see* "computing" step of claim 17), and how it is used: it is extracted from the audio/video media content signal to determine (i.e., select) a watermark decoder based upon the fingerprint — *see* limitation L2. *See* Claim 17.

We broadly but reasonably construe the claim term "watermark decoder" as being determined (i.e., selected) based upon the fingerprint, and being used to determine the object ID for the content signal. *See* Claim 17.

*The Examiner's Findings*

In the Final Action, the Examiner initially finds the "Creator ID" of Rhoads teaches or suggests the claim 17 "fingerprint" limitation, mapped as follows: "computing a fingerprint ('Creator ID,' C.71, L.39) from audio or visual content within the content signal (C.70, L.1-2), wherein the fingerprint is derived from a portion of the audio or visual content (C.70, L.1-2)." Final Act. 4.

However, the Examiner additionally finds the claim 17 "fingerprint" limitation L1 ("extracting the fingerprint from the first audio or visual portion of the content signal") is taught or suggested by Rhoads, at column 66, line 56. Rhoads describes, at column 66, lines 41–42, encoding "a bit-mapped image file with an *identification code* (URL address, for example),"

in which the identification code is *extracted*, at column 66, line 56, as mapped by the Examiner. *See* Final Act. 4 (emphasis added).

This portion of Rhoads particularly describes:

> The foregoing portions of this description also detailed a technique for reading or *decoding steganographically embedded information* (see, generally, FIG. 3 and the text associated therewith) that is readily adapted to implement the present technology. In this regard, the otherwise conventional user software 1010 is enhanced to include, for example, the *capability to analyze encoded bit-mapped files and* **extract** *the identification code* (URL address, for example).

Rhoads, col. 66, ll. 49–57 (emphasis added).

We find this description (*id*.) of analyzing encoded bit-mapped files to extract the identification code (e.g., a URL address), in accordance with steganographic techniques, is more akin to a watermark in accordance with our claim construction above. Because the identification code (URL address) is not directly computed and *derived* from a portion of the audio or visual content, we conclude it is not reasonably mapped to the recited "fingerprint" in accordance with our claim construction above. *See* Rhoads, col. 66, ll. 49–57. In the Answer, the Examiner does not further address Rhoads' extracted identification code (e.g., a URL), as described by Rhoads at column 66, line 56.

However, the Examiner explains in the Answer that the "'creator ID' in Rhoads is a *fingerprint* because it is an *identifier* embedded in an image to uniquely identify [the image] (C.69, L.1-8, C.69, L.41-43, C.71, L.44-46)." Ans. 4 (emphasis added).

Regarding the question of whether the "creator ID" in Rhoads is a *fingerprint*, the Examiner goes on to describe the "creator ID" as being

contained within a *watermark*: "Thus, in Rhoads when the 'Creator ID' *in the watermark* of the image is read by PictureMarc it triggers the MarcCentre Locator Service to retrieve information from a database pertaining to the 'Creator ID.'" Ans. 4, last paragraph, last sentence (emphasis added).

However, Rhoads indicates that the "'creator ID' may provide a unique reference to the creator such that it "facilitates contact details." (Rhoads, col. 71, l. 34). Although the "creator ID" may be embedded in Rhoads' watermark, we find it cannot be the recited "fingerprint" within claim 17, because the "creator ID" was not "derived from a portion of the audio or visual content," as expressly required by claim 17. Rather, in Rhoads, "When subscribing, the **user** is given a unique Creator ID." Rhoads, col. 71, ll. 30–31 (emphasis added).

Appellant urges that both limitations L1 and L2 are not taught or suggested by the Examiner's proffered combination of Rhoads, King, and Jones because:

> Nothing in Rhoads discloses, suggests, or teaches that the "MarcCentre Locator Service" is determined based on a fingerprint, as claimed. The Office Action stated that the MarcCentre Locator Service is "determined based upon the 'creator ID' (C.72, L.61-62)." This statement is simply not true. The MarcCentre Locator Service looks up the creator ID, the MarcCentre Locator Service is not "determined" based on the creator ID.

Appeal Br. 18.

Based upon our review of the record, we find a preponderance of the evidence supports Appellant's contentions. As discussed above, we find the "creator ID" in Rhoads is not a *fingerprint* in accordance with our claim

construction, because Rhoads describes that when a user subscribes to MarcCenter ("an online locator service" col. 71, ll. 24–25), "the **user** is given a unique Creator ID." Rhoads, col. 71, ll. 30–31. Thus, the "creator ID" in Rhoads cannot be a fingerprint because it is not *derived from the media content*, as discussed above, and as claimed. *See* Claim 17. Instead, the "creator ID" is: (1) given to the user (i.e., the creator of the images), and (2) merely "links all of the user's images to facilitate contact details." Rhoads, col. 71, ll. 33–34.

We also find a preponderance of the evidence supports Appellant's additional contention that the "MarcCentre Locator Service is not 'determined' based on the creator ID." Appeal Br. 18. We agree with Appellant that because Rhoads only describes a single "MarcCentre Locator" (see Fig. 44), it logically follows that "Rhoads does not suggest there are more than one MarcCentre Locator Service to choose from (or to 'determine')" (e.g., the recited "determining a watermark decoder") based upon the fingerprint, as claim 17 recites. Reply Br. 5.

Based upon our review of the record, we find the Examiner has not established that the secondary King and Jones references remedy the aforementioned deficiencies of Rhoads regarding all claims rejected under Rejection A. Regarding disputed limitations L1 and L2 of independent claim 17, we note remaining independent claims 27 and 28 recite similar limitations of commensurate scope.

Nor has the Examiner established that the additional Oka reference (as relied upon in support of Rejection B), or the additional Hoffert reference (as relied upon in support of Rejection C) remedies the aforementioned

deficiencies of the Rhoads, King and Jones base combination, as relied upon as evidence in support of Rejection A.

Therefore, for essentially the same reasons argued by Appellant in the Briefs, as discussed above, we are constrained on this record to reverse the Examiner's obviousness rejections A, B, and C of claims 17–36 and 38–40 on appeal.

## CONCLUSION

The Examiner erred in rejecting claims 17–36 and 38–40, as being obvious under pre-AIA 35 U.S.C. § 103(a), over the combined teachings and suggestions of the cited prior art.

## DECISION SUMMARY

| **Claims Rejected** | **35 U.S.C. §** | **Reference(s)/Basis** | **Affirmed** | **Reversed** |
|---|---|---|---|---|
| 17–20, 24–31, 35, 36, 38, 40 | pre-AIA 103(a) | Rhoads, King, Jones | | 17–20, 24–31, 35, 36, 38, 40 |
| 21–23, 32–34 | pre-AIA 103(a) | Rhoads, King, Jones, Oka | | 21–23, 32–34 |
| 39 | pre-AIA 103(a) | Rhoads, King, Jones, Hoffert | | 39 |
| **Overall Outcome** | | | | 17–36, 38–40 |

REVERSED