

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GOOGLE LLC,
Petitioner,

v.

138 EAST LCD ADVANCEMENTS LIMITED,
Patent Owner.

IPR2024-00960
Patent 7,486,807 B2

Before KRISTEN L. DROESCH, GEORGE R. HOSKINS, and
KEVIN C. TROCK, *Administrative Patent Judges*.

DROESCH, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining All Challenged Claims Unpatentable
35 U.S.C. § 318(a)
Dismissing Petitioner's Motion to Exclude
37 C.F.R. § 42.64

I. INTRODUCTION

This Final Written Decision is issued pursuant to 35 U.S.C. §§ 6, 318(a) and 37 C.F.R. § 42.73. For the reasons that follow, Petitioner has established by a preponderance of the evidence that claims 1–14 of U.S. Patent No. 7,486,807 B2 (Ex. 1001, “’807 patent”) are unpatentable.

A. Procedural History

Google LLC (“Petitioner”) filed a Petition requesting *inter partes* review of claims 1–14 of the ’807 patent. Paper 1 (“Pet.”). 138 East LCD Advancements Limited (“Patent Owner”) timely filed a Preliminary Response. Paper 6. With our authorization and to address an issue of claim construction, Petitioner filed a Preliminary Reply to the Preliminary Response (Paper 7), and Patent Owner filed a Sur-reply to the Preliminary Reply (Paper 8). Pursuant to 35 U.S.C. § 314, we instituted trial on January 6, 2025, as to all of the challenged claims and all of the grounds raised in the Petition. Paper 9 (“Institution Decision,” “Dec. on Inst.”).

After institution of trial, Patent Owner filed a Response (Paper 17, “PO Resp.”), Petitioner filed a Reply to the Response (Paper 22, “Pet. Reply”), and Patent Owner filed a Sur-reply (Paper 25, “PO Sur-reply”).

Petitioner relies on a Declaration of Robert Stevenson Ph.D., (Ex. 1003) in support of its Petition and Patent Owner relies on a Declaration of Nikolaos Papanikolopoulos, Ph.D., (Ex. 2001) to support its Response. Dr. Stevenson was cross-examined during trial, and a transcript of Dr. Stevenson’s deposition is included in the record. Ex. 2006.

Petitioner filed a Motion to Exclude Exhibits 2004 and 2005. Paper 28 (“Mot.”). Patent Owner filed an Opposition to Petitioner’s Motion

to Exclude (Paper 32), and Petitioner filed a Reply in Support of the Motion to Exclude (Paper 35).

Oral argument was held on September 30, 2025. A transcript of the oral argument is included in the record. Paper 37 (“Tr.”).

B. Real Parties-In-Interest

Petitioner indicates that Google LLC is the real party-in-interest. Pet. 76. Patent Owner indicates that 138 East LCD Advancements Limited and Longitude Licensing Limited are the real parties-in-interest. Paper 4, 1.

C. Related Matters

The parties indicate that the ’807 patent is involved in the following district court litigation: *Longitude Licensing Ltd. v. Google LLC*, 3:23-cv-03046 (N.D. Cal.). Pet. 76; Paper 4, 1.

Petitioner filed six other IPR challenges to patents owned by Patent Owner. They are IPR2024-00955 (U.S. Patent No. 7,668,365 B2); IPR2024-00956 (U.S. Patent No. 8,355,574 B2); IPR2024-00957 (U.S. Patent No. 7,454,056 B2); IPR2024-00958 (U.S. Patent No. 8,482,638 B2); IPR2024-00959 (U.S. Patent No. 7,428,082 B2); and IPR2024-00961 (U.S. Patent No. 7,945,109 B2).

D. The ’807 Patent (Ex. 1001)

The ’807 patent is directed to “an image retrieving device for classifying and retrieving a digital image, a method for adding keywords in the image retrieving device, and a computer program therefor[e].” Ex. 1001, 1:13–16. The described invention makes it “possible to add keywords to the image efficiently by detecting an object (for example, a human) in the image during retrieving and classifying the image.” *Id.* at 1:20–22.

Fig. 1 of the '807 patent is reproduced below.

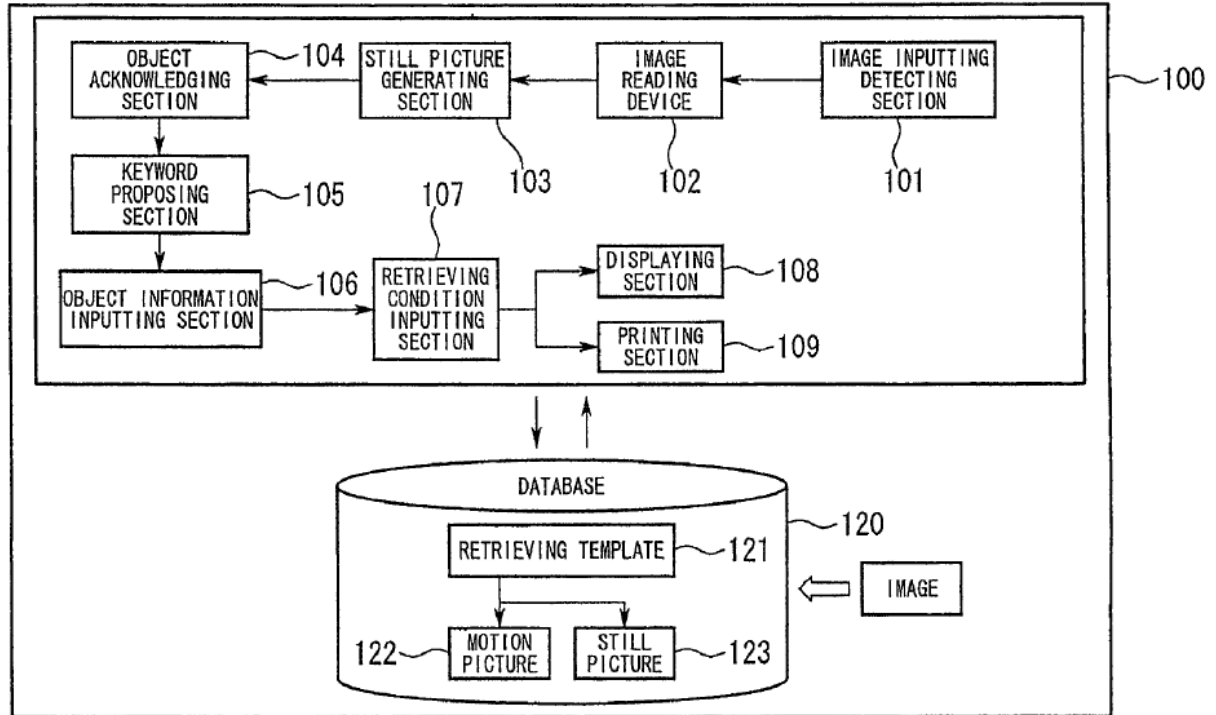


Figure 1 depicts a block diagram of the structure within an image retrieving device. *See* Ex. 1001, 6:18–20, 7:12–14. As shown in Figure 1, the image retrieving device may include image inputting detecting section 101 for detecting a new image. *See id.* at 7:18–21. Image reading device 102 may read pixel values that form the image, and still picture generating section 103 may generate a still picture if the image is part of a motion picture. *See id.* at 7:22–28. “[O]bject acknowledging section 104 acknowledges whether o[r] not a specific object is contained in the image by analyzing the image.” *Id.* at 7:29–33. “[K]eyword proposing section 105 extracts a keyword which relates to an object by referring to a database when the object is detected so as to propose the keywords to the user.” *Id.* at 7:34–37. “[O]bject information inputting section 106 serves for a user to select an object information among the proposed keywords or to input/update the keywords.” *Id.* at 7:40–43. “[R]etrieving condition

inputting section 107 serves for inputting a retrieving condition for the image which is supposed to be retrieved.” *Id.* at 7:46–49. A retrieved result may be displayed or printed via displaying section 108 or printing section 109. *See id.* at 7:53–56.

The ’807 patent provides that although “explanations are made for an example in which a keyword is added under condition[s] that the object which is supposed to be classified in the image is a face image (human),” “the present invention is not limited to such an example; that is, it is possible to add keywords by detecting the object such as a car and an animal which are supposed to be classified.” Ex. 1001, 13:13–20.

E. Illustrative Claim

Claims 1, 7, and 8 are independent, and claims 2–6 and 9–14 depend directly or indirectly therefrom. *See* Ex. 1001, 13:32–16:7. Claim 1 is illustrative and reproduced below:

1. An image retrieving device for classifying and retrieving an image by detecting an object in the image and adding a keyword, the image retrieving device comprising:

an image storing section for storing the image which is supposed to be classified and retrieved together with the keyword in a database and an object of the image being previously contained in the database;

an image inputting detecting section that detects an inputted image that is newly inputted to the image retrieving device;

an object acknowledging section for acknowledging an inputted object in the inputted image that has been detected by the image inputting detecting section;

a keyword proposing section for proposing the keyword on a display, the keyword which relates to the inputted object which is acknowledged by the object acknowledging section; and

an object information inputting section for confirming by the user, adding, and correcting the keyword which is proposed by the keyword proposing section when the inputted object acknowledged by the object acknowledging section is similar to the object of the image previously contained in the database.

Ex. 1001, 13:32–13:54 (including corrections from Certificate of Correction).

F. Asserted Challenges to Patentability and Asserted Prior Art

Petitioner asserts that claims 1–14 would have been unpatentable based on the following grounds (Pet. 1):

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1–14	102/103(a) ¹	Stubler ²
2–4, 9–12 ³	103(a)	Stubler, Wang ⁴

II. ANALYSIS

A. Level of Ordinary Skill in the Art

Petitioner asserts that “a person of ordinary skill in the art (‘POSITA’) in the field of the ’807 patent would have had at least a bachelor’s degree in electrical engineering, computer science, or related discipline, and two years of experience in digital image analysis,” and that “[r]elevant work

¹ The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011), amended 35 U.S.C. §§ 102 and 103 effective March 16, 2013. Because the ’807 patent claims an effective filing date prior to the effective date of the applicable AIA amendment, we refer to the pre-AIA versions of §§ 102 and 103.

² US 2002/0188602 A1, published December 12, 2002 (Ex. 1005, “Stubler”).

³ The grounds of unpatentability identified on page 1 of the Petition include claim 5. The substance of this patentability challenge, however, does not include claim 5. *See* Pet. 59–73.

⁴ US 6,038,333, issued March 14, 2000 (Ex. 1006, “Wang”).

experience can substitute for formal education and additional education could substitute for work experience.” Pet. 4 (citing Ex. 1003 ¶ 49). Patent Owner does not dispute Petitioner’s proposed definition of a person of ordinary skill in the art. *See* PO Resp. *generally*.

Based on our review of the record, we find that Petitioner’s proposed definition of a person of ordinary skill in the art is consistent with the level of skill reflected in the prior art references of record. *See Daiichi Sankyo Co. v. Apotex, Inc.*, 501 F.3d 1254, 1256 (Fed. Cir. 2007) (listing the type of problems encountered in the art, prior art solutions to those problems, and the sophistication of the technology as factors that may be considered in determining the level of ordinary skill in the art); *see also 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”). Accordingly, we adopt Petitioner’s definition of a person of ordinary skill in the art.

B. Claim Construction

In an *inter partes* review proceeding, the Board applies the same claim construction standard as that applied in federal courts in a civil action under 35 U.S.C. § 282(b), which is generally referred to as the *Phillips* standard. *See* 37 C.F.R. § 42.100(b); *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). Under the *Phillips* standard, “words of a claim ‘are generally given their ordinary and customary meaning.’” *Phillips*, 415 F.3d at 1312. “[T]he ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date

of the patent application.” *Phillips*, 415 F.3d at 1313. “In determining the meaning of the disputed claim limitation, we look principally to the intrinsic evidence of record, examining the claim language itself, the written description, and the prosecution history, if in evidence.” *DePuy Spine, Inc. v. Medtronic Sofamor Danek Inc.*, 469 F.3d 1005, 1014 (Fed. Cir. 2006) (citing *Phillips*, 415 F.3d at 1312–17). Extrinsic evidence may be useful, but it is unlikely to result in a reliable interpretation of patent claim scope unless considered in the context of the intrinsic evidence. *Phillips*, 415 F.3d at 1317.

Though understanding the claim language may be aided by the explanations contained in the written description, it is important not to import limitations into a claim that are not a part of the claim. For example, a particular embodiment appearing in the written description may not be read into a claim when the claim language is broader than the embodiment. *Superguide Corp. v. DirecTV Enters.*, 358 F.3d 870, 875 (Fed. Cir. 2004); *see also Hill–Rom Servs., Inc. v. Stryker Corp.*, 755 F.3d 1367, 1371 (Fed. Cir. 2014) (“While we read claims in view of the specification, of which they are a part, we do not read limitations from the embodiments in the specification into the claims.”). It is further improper to add to a claim an “extraneous” limitation appearing in the specification, and “extraneous” means a limitation read into a claim from the specification wholly apart from any need to do so. *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994) (citing *E.I duPont de Nemours & Co. v. Phillips Petroleum Co.*, 849 F.2d 1430, 1433 (Fed. Cir. 1988)).

The specification may reveal a special definition given to a claim term by the patentee, or the specification or prosecution history may reveal an intentional disclaimer or disavowal of claim scope by the inventor. *See*

Phillips, 415 F.3d at 1316; *see also Hill–Rom Servs.*, 755 F.3d at 1372 (providing examples of when the Federal Circuit has found disclaimer and disavowal). A disavowal of claim scope “require[s] a clear and explicit statement by the patentee.” *Thorner v. Sony Comput. Entm’t Am. LLC*, 669 F.3d 1362, 1367–68 (Fed. Cir. 2012). “Even when the specification describes only a single embodiment, the claims of the patent will not be read restrictively unless the patentee has demonstrated a clear intention to limit the claim scope using ‘words or expressions of manifest exclusion or restriction.’” *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 906 (Fed. Cir. 2004) (quoting *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1327 (Fed. Cir. 2002)).

Petitioner asserts that “[n]o terms need construction to resolve the unpatentability issues in this Petition.” Pet. 5. Patent Owner contends that a person of ordinary skill in that art “would have understood the phrase ‘similar to the object of the image previously contained in the database,’” recited in claim 1, “when read in light of the claims, specification, and prosecution history to mean ‘sufficiently similar to identify the specific object of the image previously contained in the database.’”⁵ PO Resp. 14 (citing Ex. 2001 ¶ 56); *see* PO Sur-reply 2. Patent Owner further asserts that Dr. Papanikolopoulos’s un rebutted testimony supports Patent Owner’s proposed construction. *See* PO Sur-reply 1–2.

⁵ Although Patent Owner mentions prosecution history, Patent Owner does not substantively address prosecution history in the context of claim construction. *See* PO Resp. 13–21; *accord* Tr. 32:5–6 (Patent Owner’s counsel stating that there is no relevant prosecution history).

Following the guidance of controlling case law, we look first to the intrinsic evidence, beginning with the '807 patent Specification because it provides context for the disputed claim language, followed by the claim language, and, last, we look to the extrinsic evidence.

The '807 Patent Specification

Patent Owner contends that the '807 patent Specification supports the proposed construction. *See* PO Resp. 15–19. According to Patent Owner, “the specification describes ‘similarity’ using language that makes clear to a POSITA that the level of ‘similarity’ is higher than generic similarity; it is similarity to the level of a *specific object*.” *Id.* at 15 (citing Ex. 2001 ¶ 58). In support, Patent Owner cites disclosures of accurately and efficiently retrieving images which contain a specific object or specific person from numerous images. *See id.* (citing Ex. 1001, 4:22–24, 4:51–53; Ex. 2001 ¶ 58). According to Patent Owner, a person of ordinary skill in the art “would readily understand that references to a ‘specific object’ and a ‘specific person’ means more than high-level, categorical similarity.” *Id.* at 14–15 (citing Ex. 2001 ¶ 58). In support of its proposed construction, Patent Owner also cites disclosures of the image retrieving device determining whether the face image coincides to, or is very similar to, the face image which is contained previously. *See id.* at 15 (citing Ex. 1001, 9:18–20; Ex. 2001 ¶ 59); *see* PO Sur-reply 10–11 (citing Ex. 1001, 9:14–15, 9:19–22, Fig. 3). Patent Owner further directs attention to the Specification disclosure of detailed database entry records identifying a specific person “Jiro.” *See id.* at 18–19 (reproducing Ex. 1001, Fig. 6; citing Ex. 2001 ¶ 63).

Patent Owner further contends that the disclosure of a two-step process for analyzing incoming images to identify similar objects to those

previously stored in the database also supports its proposed construction. *See* PO Resp. 16 (citing Ex. 2001 ¶ 60); *see* PO Sur-reply 3 (citing PO Resp. 12; Ex. 2001 ¶ 53). According to Patent Owner, “[i]n the first described step, the image retrieving device detects a **general** type of object, such as a human face,” and “[o]nce a human is detected, the system proceeds to the second step where the detected human face is compared to determine whether a similar (*i.e.*, specific or ‘very similar’) human face has previously been stored in the database.” PO Resp. 16–17 (citing Ex. 1001, 7:29–31, 8:14–21, 8:60–67, 9:18–20, Fig. 1, Fig. 2 (elements 111, 112, 113)), Fig. 3; Ex. 2001 ¶¶ 60–61), 19 (citing Ex. 1001, 9:18–22; Ex. 2001 ¶ 64); *see* PO Sur-reply 3 (citing PO Resp. 12; Ex. 2001 ¶ 53), 10–11 (citing Ex. 1001, 9:14–15, 9:19–22, Fig. 3). Patent Owner asserts that “[t]he specification’s description of this two-step process further supports the construction because the second step would be unnecessary if ‘generic’ similarity was all that was required.” PO Resp. 17 (citing Ex. 2001 ¶ 62); *see id.* at 18 (citing Ex. 1001, 3:32–34; Ex. 2001 ¶ 62). According to Patent Owner a person of ordinary skill in the art

would understand based on the two-step process of identifying an object generally and then comparing it to previously stored objects to determine whether it is similar to any of the previously stored objects to support the construction of “similar to the object of the image previously contained in the database” to mean “sufficiently similar to identify the specific object of the image previously contained in the database.”

Id. at 18 (citing Ex. 2001 ¶ 62).

With reference to the database entry of Figure 6, Patent Owner further asserts:

According to the two-step process discussed above, when a new image of “Jiro” is detected and ready to be classified, the

image retrieving device must first conclude that the image (1) contains an image of a human and (2) contains the ***specific person***, “Jiro,” before recommending that the new image be categorized as containing “Jiro.” As discussed above, the ’807 patent presents the information for “Jiro,” only “if it is determined . . . that the face image is ***very similar*** to the face image which is contained previously.”

Id. at 19 (citing Ex. 1001, 9:18–22; Ex. 2001 ¶ 64); *see* PO

Sur-reply 10–11 (citing Ex. 1001, 9:14–15, 9:19–22).

In Reply, Petitioner contends that Patent Owner’s proposed claim construction is contradicted by the Specification, narrows the claims to one disclosed example from the Specification, and imparts ambiguity. *See* Pet. Reply 2–15. Petitioner contends that Patent Owner’s arguments ignore the Specification’s embodiments that demonstrate that “similar to the object of the image previously stored in the database” may be an object such as a human or a car and does not have to identify a unique object such as a specific person or car. *See* Pet. Reply 4. In support of its argument, Petitioner points out that the Specification uses parenthetical examples for a human or a car in the disclosures of detecting the object of the image with an object acknowledgment section, and the application of a keyword proposing section. *See id.* at 4–5 (citing Ex. 1001, 3:21–27, 4:7–13, 6:49–54).

Petitioner further asserts that the Specification explains that a specific object may be a human or a car, which, according to Petitioner, “mak[es] clear that ‘human’ or ‘car’ is considered ‘specific’ for purposes of the claims.” *Id.* at 5 (citing Ex. 1001, 5:56–58), *see id.* at 9 (similar argument, citing Ex. 1001, 5:54–6:3). Petitioner further points out that the Specification discloses that the suggested keywords for an image may be categories such as family, relative, or friend, and need not be a unique person, as argued by Patent

Owner. *See* Pet. Reply 5 (citing Ex. 1001, 6:64–67, 7:1–3, 7:48–51; PO Resp. 6, 19, 29).

Petitioner also directs attention to Figures 3 and 4 which disclose a display for inputting human information that asks the user to input human information for the purpose of similarity, and may include keywords of family or friend, and need not identify a unique human object (e.g., “Jiro”). *See* Pet. Reply 5–7 (reproducing Ex. 1001, Figs. 3–4 (with Petitioner’s annotations added); citing Ex. 1001, 9:7–13). Petitioner argues that Patent Owner’s citations to the Specification do not require unique object identification as argued by Patent Owner. *See id.* at 6–9 (citing PO Resp. 15–19; Ex. 1001, 4:7–10, 4:22–24, 4:40–47, 9:18–20, 9:30–40, 9:47–54, 11:29–41, 13:62–65, Figs. 3, 4, 6). According to Petitioner, “neither the specification nor claims require a particular degree of similarity or efficiency to comport with the objective of efficiently ‘adding keywords.’” *Id.* at 10 (citing Ex. 1001, 1:16–22).

In the Sur-reply, Patent Owner asserts that Petitioner’s argument that there is no need to identify a unique instance of the objects previously contained in the database fails because it is based on a rewriting of the Specification and misrepresents the teachings of the specification as a POSITA would understand them. *See* PO Sur-reply 6. According to Patent Owner, “[t]he Reply frames its argument by parroting a number of selective, out of context quotes from the ’807 patent’s specification that Petitioner alleges demonstrate that the ’807 patent’s use of ‘specific’ simply means the general class of object (such as human or car).” *Id.* (citing Pet. Reply 4–5). Patent Owner asserts that none of the citations provided in the Reply support Petitioner’s arguments. *See* PO Sur-reply 6–12 (citing Ex. 1001, 1:58–2:17,

3:1–27, 4:7–13, 4:30–33, 4:49–68, 5:56–58, 8:22–9:67, Figs. 3, 4; Pet. Reply 4–7).

We do not agree with Patent Owner’s proposed construction that qualifies the words “similar to the object” with “*sufficiently* similar to *identify* the *specific* object,” based on the disclosures of the ’807 Patent Specification. We acknowledge the ’807 Patent Specification discloses the words “the specific object” in the context of acknowledging or detecting the specific object in the image with the object acknowledgement section and retrieving an image from the database that contains the specific object after keywords are added to the image. *See* Ex. 1001, 4:18–24, 5:54–6:3, 7:28–31. Similarly, the Specification discloses the term “specific person” in the context of retrieving an image from the database that contains the specific person after keywords are added to the image. *See* Ex. 1001, 4:48–54. We further acknowledge that the Specification discloses a face image similarity determining section to determine if a face image is similar to a face image stored in the database. Ex. 1001, 4:30–34, 4:40–44, 8:60–67, 9:18–22, 10:19–22, 11:58–67. The Specification further includes a passage, cited by Patent Owner, that discloses “if it is determined that the face image coincides to the face image which is contained previously [in a database] or is very similar to the face image which is contained previously, the information for such a human is proposed so as to expedite the user to confirm.” Ex. 1001, 9:18–22; *see* PO Resp. 16, 17, 19. Finally, we also acknowledge that the Specification further discloses an example of a database record that includes keywords, such as “Jiro” and “second eldest brother” for a human, and further discloses retrieving items from the database with the keyword “Jiro.” *See* Ex. 1001, 9:47–54, 10:41–58, Figs. 6, 9.

These aforementioned disclosures of the '807 patent Specification, however, do not rise to the level of disclaimer or a disavowal of the full scope of the claim term “similar to the object of the image previously contained in the database.” For example, Patent Owner does not direct us to any explicit statements or disclosures in the '807 patent Specification that indicate a clear intention to limit “similar to the object” to “sufficiently similar to identify the specific object” using words or expressions of manifest exclusion or restriction. *See Hill–Rom Servs.*, 755 F.3d at 1372; *Thorner*, 669 F.3d at 1367–68; *Liebel-Flarsheim*, 358 F.3d at 906. Therefore, absent disclaimer or disavowal of claim scope, we decline to import limitations into “similar to the object of the image previously contained in the database,” recited in claim 1, on the basis of the Specification.

The Claim Language

Patent Owner does not present arguments directly addressing the plain language of claim 1 and independent claims 7 and 8 in support of its proposed claim construction. *See* PO Resp. 13–21. Patent Owner’s arguments instead focus on dependent claims 2 and 5, as supporting the proposed construction. *See* PO Resp. 20–21 (citing Ex. 2001 ¶¶ 66–69); PO Sur-reply 2–3. More specifically, Patent Owner points to dependent claim 2, which recites “wherein the object acknowledging section includes: . . . a face image similarity determining section for detecting a face image which is detected by the face image detection so as to detect a similar face image stored in the database according to the detected face image[.]” Ex. 1001, 13:55–67; *see* PO Resp. 20 (citing Ex. 2001 ¶ 67). According to Patent Owner, “[t]his recitation must go beyond mere generic similarity because

substantially *all* faces share *generically* similar features (*e.g.*, two eyes, a nose, a mouth, all features placed in roughly the same location, within a certain range of color tones, etc.).” PO Resp. 20 (citing Ex. 2001 ¶ 67). “Thus, if mere generic similarity were all that the claim required, every single face in the database would be determined to be ‘similar’ to every other face.” *Id.*

In Reply, Petitioner contends that Patent Owner’s proposed claim construction is contradicted by the claims. *See* Pet. Reply 3. According to Petitioner, “the alleged ‘two-step’ process (generic object detection and face similarity determination) that Patent Owner attempts to read into claim 1 is recited in dependent claim 2, making it improper to import into dependent claim 1.” *Id.* (citing *Hill-Rom Servs.*, 755 F.3d at 1374, 1376). Petitioner further asserts that Patent Owner’s reliance on dependent claim 5 also fails because “claim 5 makes clear that the argued [face] similarity determination is not required by claim 1.” *See id.* at 3–4.

In the Sur-reply, Patent Owner asserts that the claims do not contradict the proposed construction because the two step-process discussed in the Patent Owner Response is explicit in claim 1. *See* PO Sur-reply 3. Specifically, Patent Owner asserts the second step is recited in “when the inputted object acknowledged by the object acknowledging section is similar to the object of the image previously contained in the database,” of claim 1 and “makes clear that a similarity determination takes place in addition to the object acknowledgement.” *Id.* at 3–4.

As an initial matter, the language of claims 1, 7, and 8 does not suggest or require a particular level or degree of similarity or otherwise qualify the words “similar to the object of the image previously contained in the database.” Ex. 1001, 13:32–54, 14:17–59. Patent Owner’s argument

that claim 1 requires more than generic similarity based on the dependent claim 2 recitation of a face image similarity determining section as well as the limitations of claim 5 is belied by the doctrine of claim differentiation in which two claims of a patent are presumptively of different scope. Thus, based on the doctrine of claim differentiation, the face image similarity determination section and associated functions recited in dependent claims 2 and 5 is presumed to not be required by claim 1. Likewise, we find that, because face image similarity determination is presumed to not be required by claim 1, Patent Owner's suggestion that "beyond mere generic similarity" for determining similarity of face images also is not required by claim 1. Accordingly, we find Patent Owner's proposed construction is not supported by the claim language.

Extrinsic Evidence

In support of its proposed claim construction, Patent Owner cites the testimony of Dr. Papanikolopoulos. *See* PO Resp. 14–21; Ex. 2001 ¶¶ 56–69. In a footnote, Petitioner contends that "Patent Owner's extrinsic conclusory testimony of Dr. Papanikolopoulos cannot override the intrinsic record." Pet. Reply 10 n.3 (citing *Sequoia Tech., LLC v. Dell, Inc.*, 66 F.4th 1317, 1325 (Fed. Cir. 2023); *Finisar Corp. v. DirecTV Grp., Inc.*, 523 F.3d 1323, 1328 (Fed. Cir. 2008)). In the Sur-reply, Patent Owner contends that the un rebutted testimony of Dr. Papanikolopoulos supports Patent Owner's construction. *See* PO Sur-reply 1–2, 12–14. According to Patent Owner, "Petitioner does not explain how Dr. Papanikolopoulos' testimony is 'conclusory' despite citing to multiple supporting excerpts from the '807 patent throughout his declaration." *Id.* at 13 (citing Ex. 2001 ¶¶ 56–69). Patent Owner asserts that "Dr. Papanikolopoulos' testimony is thoroughly

supported by the intrinsic evidence, as well as reasoned explanation from the perspective of a POSITA,” and “is unrebutted.” *Id.* Patent Owner faults Petitioner for not submitting a supplemental declaration of its witness, not deposing Dr. Papanikolopoulos, and relying on pure attorney argument, which cannot rebut evidence. *See* PO Sur-reply 13–14 (citing Paper 21 (Notice of Withdrawal of Deposition); *Epic Games, Inc. v. IngenioShare, LLC*, IPR2022-00295, Paper 27, 15 (PTAB May 19, 2023); *Gemtron Corp. v. Saint-Gobain Corp.*, 572 F.3d 1371, 1380 (Fed. Cir. 2009); *GSI Tech., Inc. v. Cypress Semiconductor Corp.*, IPR2014-00121, Paper 46, 16 (PTAB Apr. 9, 2015)). According to Patent Owner, “[b]ecause Dr. Papanikolopoulos’ testimony is reasoned, supported by relevant citations, and unrebutted, his testimony should be given significant weight.” *Id.* at 14.

Although “extrinsic evidence may be useful . . . it is unlikely to result in a reliable interpretation of patent claim scope unless considered in the context of the intrinsic evidence.” As explained in the previous sections, the intrinsic evidence (i.e., the claims and Specification) does not support Patent Owner’s proposed construction. Dr. Papanikolopoulos’ testimony regarding the proposed claim construction is at odds with the claim construction mandated by the claims themselves and the Specification and, therefore, Dr. Papanikolopoulos’ testimony cannot supersede the intrinsic evidence. *See Phillips*, 415 F.3d at 1308.

Conclusion

Based on the record, we do not agree that “similar to the object of the image previously contained in the database,” should be construed as “sufficiently similar to *identify* the *specific* object of the image previously

contained in the database” when read in light of the Specification and the claims. As demonstrated in the analysis of the prior art below, we need not provide an explicit claim construction for “similar to the object of the image previously contained in the database.” Instead, we give the words “similar to the object of the image previously contained in the database,” recited in claims 1, 7, and 8, their ordinary and customary meaning, as they would be understood by a person or ordinary skill in the art at the time of the invention. *See Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019) (“The Board is required to construe ‘only those terms . . . that are in controversy, and only to the extent necessary to resolve the controversy.’” (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))). As demonstrated in the analysis below, we need not explicitly construe any other claim terms or phrases to resolve any additional disputes between the parties. *See Realtime*, 912 F.3d at 1375.

C. Principles of Law

“Under 35 U.S.C. § 102 a claim is anticipated ‘if each and every limitation is found either expressly or inherently in a single prior art reference.’” *King Pharm., Inc. v. Eon Labs, Inc.*, 616 F.3d 1267, 1274 (Fed. Cir. 2010) (quoting *Celeritas Techs. Ltd. v. Rockwell Int’l Corp.*, 150 F.3d 1354, 1360 (Fed. Cir. 1998)). “Anticipation requires the presence in a single prior art disclosure of all elements of a claimed invention arranged as in the claim.” *Therasense, Inc. v. Becton, Dickinson & Co.*, 593 F.3d 1325, 1332 (Fed. Cir. 2010) (quoting *Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542, 1548 (Fed. Cir. 1983)).

A claim is unpatentable under 35 U.S.C. § 103(a) 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 the 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 skill in the art; and (4) if in evidence, so-called secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).⁶

D. Challenge to Claims 1–14 over Stubler

1. Overview of Stubler (Ex. 1005)

Stubler is directed to “[a] method of generating captions or semantic labels for an acquired image[, which] is based upon similarity between the acquired image and one or more stored images that are maintained in an image database environment, where the stored images have preexisting captions or labels associated with them.” Ex. 1005, code (57). More specifically, Stubler discloses the following steps:

a) acquiring an image for evaluation with respect to the stored images; b) automatically extracting metadata from the acquired image without requiring user interaction in the image database environment; c) automatically selecting one or more stored images having metadata similar to the extracted metadata, thereby providing one or more selected stored images with metadata similar to the acquired image; and d) generating one or more captions or labels for the acquired image from one or more preexisting captions or labels associated with the selected stored images.

Id. ¶ 9.

⁶ The parties do not present evidence or arguments addressing secondary considerations.

Figure 3 is reproduced below.

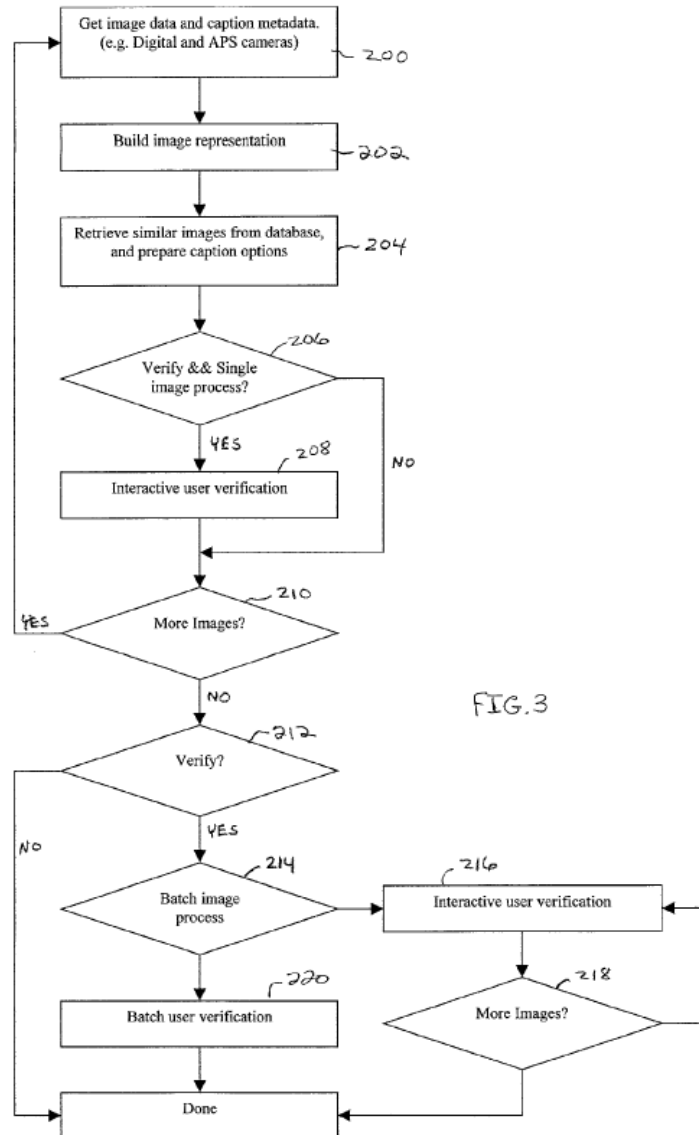


Figure 3 depicts a flow chart of a preferred embodiment. *See* Ex. 1005 ¶ 16. As shown in Figure 3, after acquiring image data and extracting metadata in step 200, and after building an image representation in step 202, Stubler’s method involves, in step 204, searching a database for similar images and preparing “a set of caption or semantic label options.” *Id.* ¶ 37. The caption or semantic label preparation may include searching either “caption metadata (e.g., time/date, GPS, user defined events),” “global metadata (based

on color histograms, texture, etc.),” or “region metadata (e.g., face, sky, grass, skin, open space, etc.) similar to that of the acquired images.” *Id.* ¶¶ 39–40. If verification is desired as indicated in step 206, an interactive user verification in step 208 allows a user to select or edit the captions or labels. *See id.* ¶¶ 37, 41.

2. Analysis of Claim 1

a. *[preamble] An image retrieving device for classifying and retrieving an image by detecting an object in the image and adding a keyword, the image retrieving device comprising:*

Petitioner asserts that Stubler discloses the preamble recitation based on Stubler’s disclosure of a computer for clustering an image by detecting and extracting regional features or regional metadata in the image and adding captions or semantic labels to the image. *See* Pet. 9–15 (reproducing Ex. 1005, Figs. 2–3 (with Petitioner’s added annotations); citing Ex. 1003 ¶¶ 69–71; Ex. 1005 ¶¶ 2, 9, 11, 12, 21, 23, 30, 35, 37, 39–41, Figs. 2–5).

Patent Owner does not address Petitioner’s showing for the preamble of claim 1. *See* PO Resp. 27–42. Nonetheless, the burden remains on Petitioner to demonstrate unpatentability. *See Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015). Based on the record, we determine Petitioner shows by a preponderance of the evidence that Stubler discloses the preamble of claim 1. *See* Pet. 9–15.

b. *[1a] an image storing section for storing the image which is supposed to be classified and retrieved together with a keyword in a database and an object of the image being previously contained in the database;*

Petitioner asserts that Stubler discloses this limitation based on Stubler’s disclosure of a software program for storing in a database the acquired image and preexisting captions or labels associated with the selected stored images, and disclosure that one or more stored images have

metadata similar to extracted metadata, which Petitioner equates to “an object of the image being previously contained in the database.” *See* Pet. 15 (citing Ex. 1003 ¶ 76; Ex. 1005 ¶¶ 9, 12, 21, 24, 35, 39–41). According to Petitioner, Stubler “discloses storing the newly acquired image with a previously contained/previously acquired object of the image because . . . the newly acquired images are stored and classified with previously [ob]tained images containing the same ‘regional metadata’ (object).” Pet. 20 (citing Ex. 1003 ¶ 81; Ex. 1005 ¶¶ 35, 41, claim 25). Petitioner further points to Stubler’s disclosure of searching the database for any images with region metadata (e.g., face, sky, grass, open space, etc.) similar to the region metadata of the acquired images. *See* Pet. 20–21 (citing Ex. 1003 ¶ 81; Ex. 1005 ¶ 40, Fig. 5 (elements 256, 258, 260), claim 25).

Patent Owner contends that “Stubler fails to disclose the claimed image storing section because Stubler does not disclose storing an image to be classified together with a keyword and ‘an object previously contained in the database.’” PO Resp. 28. More specifically, Patent Owner asserts that “the claimed ‘object previously contained in the database’ must be usable to determine whether the image to be classified includes an object that is ‘similar to the object of the image previously contained in the database,’ as a POSITA would understand that phrase.” *Id.* (citing Ex. 2001 ¶ 76). Patent Owner reiterates that “a POSITA would understand ‘similar to the object of the image previously contained in the database’ to mean ‘sufficiently similar to identify the specific object of the image previously contained in the database,’” as highlighted above in Section II.B. *Id.* (citing Ex. 2001 ¶ 76); *see id.* at 29–33 (reproducing Ex. 1001, Fig. 6; citing Ex. 1001, 4:22–24, 4:51–53, 9:18–20, 9:47–54, 9:58–62, claim 1; Ex. 2001 ¶¶ 80–84; Ex. 2004 ¶ 8). According to Patent Owner, “Stubler does **not** disclose such an object”

because “Stubler discloses ‘region metadata’ which merely consists of high-level textual descriptions of particular regions of an acquired image” and “lacks the necessary information to identify *specific* objects across images.” *Id.* at 28–29 (citing Ex. 2001 ¶ 76); *see id.* at 32–33 (similar arguments, citing Ex. 2001 ¶ 83), 37–41 (similar arguments, citing Ex. 1005 ¶¶ 11, 28, 37, 40, Figs. 3, 5; Ex. 2001 ¶¶ 92–98); PO Sur-reply 22–23 (similar arguments). Patent Owner also argues that Stubler’s region metadata, including the incorporated by reference disclosures of Sung (Ex. 1007)⁷ and Yang (Ex. 1009),⁸ is not the object of the image itself, or a representation thereof. *See* PO Resp. 33–37 (citing Ex. 1005 ¶¶ 22, 28, 30; Ex. 1007, 1; Ex. 1008, 3:58–60; Ex. 1009, 1, 2, 4, 5; Ex. 2001 ¶¶ 86–91).

In Reply, Petitioner argues that Patent Owner’s arguments rely on Patent Owner’s incorrect proposed claim construction. *See* Pet. Reply 15–17. Petitioner asserts that “Patent Owner cannot refute Stubler’s teaching that it ‘measur[es] similarities between the images’ to propose labels and captions based on the ‘similarities.’” *Id.* at 17 (citing Ex. 1005 ¶¶ 9, 11, 12, 31, 34, 35, 39–41). According to Petitioner, “Patent Owner acknowledges that Stubler can ‘identify high-level, generic similarity (such as determining that two regions both generally contain images of human beings).’” *Id.* (quoting PO Resp. 28–29 (Petitioner’s emphasis)).

Petitioner further argues that Patent Owner’s contention that Stubler’s incorporated references Sung and Yang do not detect “the object itself,” is

⁷ Kah-Kay Sung & Tomaso Poggio, *Example-Based Learning for View-Based Human Face Detection*, 20 IEEE Transactions on Pattern Analysis and Machine Intelligence 39 (1998).

⁸ Jie Yand & Alex Waibel, *A Real-Time Face Tracker*, PROCEEDINGS OF THIRD IEEE WORKSHOP ON APPLICATIONS OF COMPUT. VISION, WACV, 1996 at 142.

inconsequential because the '807 patent explains, and Patent Owner confirms, that objects may be a representation of the object, like those disclosed in Sung and Yang. *See* Pet. Reply 19 (citing Ex. 1001, 2:22–33, 6:47–8:9, 8:25–28, 11:35–38, 11:59–67; PO Resp. 30, 34–35). According to Petitioner, “Patent Owner acknowledges Sung and Yang . . . are ‘similar’ to at least the '807 patent’s ‘face image detecting section’ and ‘face color area detecting section’ in Figure 2 (items 112/113), because each discloses ‘detecting a face image or a face color area.’” *Id.* at 20 (citing PO Resp. 36).

In the Sur-reply, Patent Owner reiterates that its proposed claim construction is correct. *See* PO Sur-reply 17–18. Patent Owner contends that “Petitioner makes no showing that the information detected in Sung and Yang can be used to determine whether a newly detected object is sufficiently similar to identify the specific object of the image previously contained in the database.” *Id.* at 21; *see id.* at 20–21 (citing Ex. 2001 ¶¶ 56–69).

We do not agree with Patent Owner’s arguments because they are premised on Patent Owner’s proposed claim construction for “similar to the object of the image previously contained in the database.” As explained above in Section II.B., we do not adopt Patent Owner’s proposed construction. We construe “similar to the object of the image previously contained in the database,” in accordance with its ordinary and customary meaning.

Accordingly, we find that that Stubler’s disclosure of images with region metadata stored in the database discloses “an object previously contained in the database.” *See* Pet. 15–21. We further find that Stubler’s disclosure of searching the database for any images with region metadata (e.g., face, sky, grass, open space, etc.) similar to the region metadata of the

acquired images further discloses that the region metadata stored in the database is usable to determine whether any newly acquired images to be classified include an object that is “similar to the object of the image previously contained in the database,” as construed in accordance with its ordinary and customary meaning. *See* Pet. 15–21. In addition, we reject Patent Owner’s argument that Stubler’s region metadata including incorporated disclosures of Sung and Yang is not the object of the image itself because it is not commensurate in scope with the limitations. Claim 1, 7, and 8 do not recite or require “the object of the image itself or representation thereof.” In any event, we further agree with Petitioner’s observation that Stubler discloses representations of objects that are similar to the ’807 patent’s disclosure of representations of objects. *Compare* Ex. 1005 ¶ 30, *with* Ex. 1001, 8:22–67.

Assuming *arguendo* that Patent Owner’s proposed claim construction does apply to claim 1, Petitioner asserts that “the Petition shows that Stubler *does* perform a ‘determination of facial similarity’ using ‘known algorithms,’ such as Eigenfaces disclosed by Turk,⁹ among others.” Pet. Reply 17–18 (citing Pet. 39–43, 63–67). Petitioner contends that “Patent Owner also does not dispute that Stubler discloses using ‘known algorithms,’ such as ‘Eigenfaces,’ to determine or recognize ‘facial similarity’ using the region metadata.” Pet. Reply 20 (citing Ex. 1005 ¶ 34).

Patent Owner disagrees with Petitioner’s contention that Patent Owner does not dispute that Stubler discloses using known algorithms to determine facial similarity. *See* PO Sur-reply 22. According to Patent Owner, “[a]s

⁹ Matthew Turk & Alex Pentland, *Eigenfaces for Recognition*, 3 Journal of Cognitive Neuroscience 71 (1991).

explained in the [Response], in Stubler, the acquired images and stored images are clustered or grouped *before* any comparison between newly acquired images and stored images occurs.” *Id.* (citing PO Resp. 22). Patent Owner asserts that “Stubler never mentions using ‘known algorithms,’ ‘facial similarity,’ or ‘eigenfaces’ in its discussion of determining similarity between previously stored images and newly acquired images.” *See id.* (citing Ex. 1005 ¶ 31). On the foregoing bases, Patent Owner concludes that “Petitioner’s Reply does not dispute, and therefore concedes that Stubler’s disclosure of ‘known algorithms’ and ‘eigenfaces’ is related exclusively to image clustering and not to the detection of similarity between clustered images and newly acquired images.” *Id.*

We do not agree with Patent Owner’s contention that “Petitioner’s Reply . . . concedes that Stubler’s disclosure of ‘known algorithms’ and ‘eigenfaces’ is related exclusively to image clustering and not to the detection of similarity between clustered images and newly acquired images.” PO Sur-reply 22. Patent Owner’s basis for its argument is Petitioner’s failure to respond to a section of Patent Owner’s Response summarizing Stubler’s teachings. *See id.* (citing PO Resp. 22). Patent Owner’s summary of Stubler’s teaching, including that the acquired images and stored images are clustered or grouped *before* any comparison between the newly acquired images and stored images occurs, (*see* PO Resp. 22) does not amount to a colorable argument in the Response that Stubler’s disclosure of known algorithms or Eigenfaces is related only to image clustering and does not apply to detecting similarity between clustered images and newly acquired images. *Compare* PO Sur-reply 22, *with* PO Resp. 22.

Nevertheless, even if Patent Owner’s argument was presented in the Response, we do not agree that Stubler’s disclosure of determining facial

similarity using known algorithms, is exclusive to image clustering, and is not related to detecting similarity between clustered images and newly acquired images. Paragraph 34 of Stubler is reproduced below:

For other types of metadata, the data may already be represented in a form suitable for clustering. For instance, in the preferred embodiment time/date information is used and may be directly subjected to cluster analysis. In other cases, for example that of region metadata, the data may need to be processed for similarity by known algorithms. As an example, determination of facial similarity is described in M. Turk and A. Pentland, “Eigenfaces for Recognition”, *J. Cognitive Neurosci.* 3(1) 1991.

Ex. 1005 ¶ 34. We find that Stubler’s disclosure in paragraph 34 directed to time/date information, region metadata, and facial similarity is not limited to clustering because paragraph 31 of Stubler discloses:

Once the data is clustered or grouped, *the presence of any similarities are evaluated* (130) between the clusters and groups and the images within the database, or between the labeled regions of the clusters and groups and labeled regions of images within the database. *This evaluation may be based upon event similarity (e.g., date/time), global similarity (e.g., color or texture) or region similarity (e.g., faces).*

Ex. 1005 ¶ 31 (emphasis added).

In the Reply, Petitioner also asserts that Patent Owner only disputes whether Turk is incorporated by reference. Pet. Reply 20 (citing Ex. 1005 ¶ 34), 20 n.7 (citing PO Resp. 23 n.4). Petitioner asserts that Turk need not be incorporated by reference in Stubler because no particular algorithm or method is recited in the claims and none of Turk’s express steps are required to meet the claim language. *See id.* at 20 n.7 (citing *Sherwin-Williams Co. v. PPG Indus., Inc.*, Nos. 2022-2059, 2022-2102, 2024 WL 3534113, at *3 (Fed. Cir. July 25, 2024); Ex. 1001, 13:62–65).

Patent Owner contends that Turk must be incorporated by reference because Petitioner merely asserts that Turk’s algorithm was “known,” but not “well known.” *See* PO Sur-reply 18–19. According to Patent Owner “only background knowledge that is ‘well known’ need not be explicitly included in the ground of unpatentability asserted by Petitioner.” *Id.* at 19 (citing *Bank of America, N.A. v. Nant Holdings IP, LLC*, IPR2021-01304, Paper 42 at 55–56 (PTAB Feb. 1, 2023)).

On this incorporation by reference dispute, we find that, in this case, Stubler need not incorporate by reference the disclosure of Turk because Stubler itself discloses performing a determination of facial similarity using known algorithms, such as Turk’s “Eigenfaces for Recognition.” *See* Ex. 1005 ¶¶ 31, 34. Any detailed disclosure of Turk’s Eigenfaces facial similarity algorithm is unnecessary for the purpose of “an object of the image being previously contained in the database” and “similar to the object of the image previously contained in the database,” recited in claim 1, as construed in accordance with its ordinary and customary meaning.

Having considered both parties’ arguments and corresponding cited supporting evidence, we are persuaded that “an image storing section for storing the image which is supposed to be classified and retrieved together with a keyword in a database and an object of the image being previously contained in the database” is disclosed by Stubler. Based on the record, we determine Petitioner shows by a preponderance of the evidence that Stubler discloses this limitation of claim 1. *See* Pet. 15–21.

c. [1b] an image inputting detecting section that detects an inputted image that is newly inputted to the image retrieving device;

Petitioner contends that Stubler discloses this limitation based on Stubler’s disclosure of its software program that detects a newly inputted

image when the image is loaded for the first time from an external device or when the images have not yet been annotated or are unlabeled. *See* Pet. 22–24 (citing Ex. 1003 ¶¶ 83, 85; Ex. 1005 ¶¶ 6, 12, 21–23, 26, 28, 29, 35, Fig. 2, claims 5–6).

Patent Owner does not address Petitioner’s showing for this limitation of claim 1. *See* PO Resp. 27–42. In any event, the burden remains on Petitioner to demonstrate unpatentability. *See Dynamic Drinkware*, 800 F.3d at 1378. Based on the record, we determine Petitioner shows by a preponderance of the evidence that Stubler discloses this limitation of claim 1. *See* Pet. 22–24.

d. [1c] an object acknowledging section for acknowledging an inputted object in the inputted image that has been detected by the image inputting detecting section;

Petitioner asserts that Stubler discloses this limitation based on Stubler’s disclosure of its software program that detects regional features such as face, skin, sky, grass, open space, background vs. foreground, etc., in the newly acquired image using various well-known techniques. *See* Pet. 26 (citing Ex. 1003 ¶¶ 91–93, 85; Ex. 1005 ¶¶ 11, 21, 30). Petitioner further asserts that Stubler’s program can use algorithms to detect objects such as a human face in the newly acquired image including the algorithms described in Sung (Ex. 1007), Luo (Ex. 1008),¹⁰ and Yang (Ex. 1009), as well as histogram analysis to detect skin color in a chromatic space corresponding to a face contained in the inputted image. *See* Pet. 26–27 (citing Ex. 1005 ¶ 30). Petitioner points out that these well-known techniques are incorporated by reference in Stubler’s disclosure. *See* Pet. 27.

¹⁰ U.S. 6,282,317 B1, issued Aug. 28, 2001.

Patent Owner does not address Petitioner's showing for this limitation of claim 1. *See* PO Resp. 27–42. In any event, the burden remains on Petitioner to demonstrate unpatentability. *See Dynamic Drinkware*, 800 F.3d at 1378. Based on the record, we determine Petitioner shows by a preponderance of the evidence that Stubler discloses this limitation of claim 1. *See* Pet. 26–27.

e. [Id] a keyword proposing section for proposing the keyword on a display, the keyword which relates to the inputted object which is acknowledged by the object acknowledging section;

Petitioner asserts that Stubler discloses this limitation based on Stubler's disclosure of its software program that proposes captions or semantic labels to the objects identified by the detection of the regional features or region metadata as well as classification presented to the user for verification using a display device. *See* Pet. 27–32 (reproducing Ex. 1005, Figs. 5, 6 (with Petitioner's added annotations); citing Ex. 1003 ¶¶ 94–99; Ex. 1005 ¶¶ 12, 21, 24, 27, 31, 35, 36, 40, 41).

Patent Owner does not address Petitioner's showing for this limitation of claim 1. *See* PO Resp. 27–42. Nonetheless, the burden remains on Petitioner to demonstrate unpatentability. *See Dynamic Drinkware*, 800 F.3d at 1378. Based on the record, we determine Petitioner shows by a preponderance of the evidence that Stubler discloses this limitation of claim 1. *See* Pet. 27–32.

f. [1e] an object information inputting section for confirming by the user, adding, and correcting the keyword which is proposed by the keyword proposing section when the inputted object acknowledged by the object acknowledging section is similar to the object of the image previously contained in the database.

Petitioner asserts that Stubler discloses this limitation based on Stubler's disclosure of

an "interactive user verification" computer software/ program stored in the memory on the computer that allows the user to "verify" (e.g., confirm, add, and correct) the proposed caption or semantic label associated with the acquired image when the region metadata (object), e.g., a face in the image is similar to one previously contained in the database.

Pet. 32 (citing Ex. 1003 ¶ 100; Ex. 1005 ¶¶ 25, 37, 40, 41, Fig. 6); *see id.* at 32–36 (reproducing Ex. 1005, Figs. 5, 6 (with Petitioner's added annotations); citing Ex. 1003 ¶¶ 100–105; Ex. 1005 ¶¶ 25, 36, 37, 40, Figs. 3, 4, claim 30). In support of its argument, Petitioner reproduces paragraph 40 of Stubler's disclosure with emphasis as follows:

[i]f captioning or semantic labeling of the acquired images based on region metadata is desired (256 [in FIG. 5]), the database is searched (258 [in FIG. 5]) for any images with region metadata (e.g., face, sky, grass, skin, open space, etc.) similar to that of the acquired images, and repeated as needed (260 [in FIG. 5]) *for similar regions* until all images are analyzed. Then the *captions or semantic labels for the regional aspects* of the retrieved and *matched images are prepared as options*

Id. at 32–33 (reproducing Ex. 1005 ¶ 40) (alterations in original).

Patent Owner argues that "Stubler does not disclose a way to determine that 'the inputted object acknowledged by the object acknowledging section is similar to the object of the image previously contained in the database,' as a POSITA would understand that phrase."

According to Patent Owner, Stubler stores a high-level description or location of an object as regional metadata and does not store the object itself or representation thereof. *See* PO Resp. 41–42 (citing Ex. 2001 ¶ 100). Patent Owner further contends that Stubler does not disclose the claimed object because claim 1 determines whether the inputted object and the previously stored object are the same by comparing them. *Id.* at 42.

In the Reply, Petitioner asserts that Patent Owner’s arguments fail because they are based on Patent Owner’s incorrect claim construction, and divorced from the claim language. *See* Pet. Reply 23. Petitioner asserts that the term “same” does not appear in any claim. *See id.* (citing Ex. 1001, 13:32–16:7).

We do not agree with Patent Owner’s arguments because they are premised on Patent Owner’s proposed claim construction for “similar to the object of the image previously contained in the database,” that we do not adopt. As explained in Section II.B., we construe “similar to the object of the image previously contained in the database,” in accordance with its ordinary and customary meaning. We also agree that with Petitioner that a determination of sameness between the inputted object and the previously stored object is not commensurate in scope with the claim limitations. For the same reasons as those explained above in Section II.D.2.b., addressing the “image storage section” limitation, we do not agree with Patent Owner’s arguments that Stubler does not store the object itself or representation thereof. We find that Stubler’s disclosure of searching a database for images with similar region metadata as the acquired images discloses “similar to the object of the image previously contained in the database,” as recited in claim 1 and as construed in accordance with its ordinary and customary meaning. *See* Pet. 32–36.

Having considered both parties' arguments and corresponding cited supporting evidence, we are persuaded that Stubler discloses "an object information inputting section for confirming by the user, adding, and correcting the keyword which is proposed by the keyword proposing section when the inputted object acknowledged by the object acknowledging section is similar to the object of the image previously contained in the database," as recited in claim 1. Based on the record, we determine Petitioner shows by a preponderance of the evidence that Stubler discloses this limitation of claim 1. *See* Pet. 32–36.

g. Summary

For all of the foregoing reasons, based on the record, Petitioner shows by a preponderance of the evidence that claim 1 is anticipated by Stubler. For the same reasons, and because that which is anticipated is also obvious, Petitioner also shows by a preponderance of the evidence that claim 1 is unpatentable as obvious over Stubler. *See Realtime*, 912 F.3d at 1373 (a disclosure that anticipates under § 102 also renders a claim unpatentable under § 103).

3. Analysis of Independent Claims 7 and 8

Independent claims 7 and 8 recite limitations similar in scope to claim 1, but are directed to a method and computer readable medium, respectively, instead of the device of claim 1. *Compare* Ex. 1001, 14:17–59, *with* Ex. 1001, 13:32–54. Aside from addressing "a method" and "a computer readable medium," the substance of Petitioner's analysis addressing claims 7 and 8 incorporates by reference Petitioner's analysis addressing claim 1. *Compare* Pet. 53–57, *with* Pet. 9–38. Patent Owner

does not address the limitations of independent claims 7 and 8 apart from claim 1. *See* PO Resp. 27–42.

Based on the record and for the same reasons as those explained above addressing claim 1, Petitioner shows by a preponderance of the evidence that independent claims 7 and 8 are anticipated by Stubler, and that claims 7 and 8 are unpatentable as obvious over Stubler. *See Realtime*, 912 F.3d at 1373.

4. Analysis of Dependent Claims 2–6 and 9–14

Claims 2–6 and 9–12 ultimately depend from claim 1, claim 13 depends from independent claim 7, and claim 14 depends from independent claim 8. *See* Ex. 1001, 13:55–14:16, 14:60–16:7. Because Patent Owner’s claim construction arguments and arguments addressing the merits of the challenge to claim 1 are premised on similarity to a specific object, and claim 2 recites limitations directed to face image similarity, we specifically highlight Petitioner’s showing that Stubler discloses the limitations of dependent claim 2.

Petitioner asserts Stubler discloses “the object acknowledging section includes[] a human detection condition inputting section for setting up conditions for determining whether or not the image contains a human” and “a face image detecting section for detecting a face image in the image” as recited in claim 2, based on Stubler’s disclosure of software for acknowledging an object that detects human faces using well-known techniques including typical face detection methods described by Sung, Luo, and Yang, incorporated by reference in Stubler. *See* Pet. 39 (citing Ex. 1003 ¶ 111; Ex. 1005 ¶¶ 11, 30), Pet. 41–42 (citing Ex. 1003 ¶¶ 114–115; Ex. 1005 ¶ 30; Ex. 1007, 2; Ex. 1008, 13:19–32; Ex. 1009, 1). In support,

Petitioner directs attention to Sung’s disclosure of a generic human face detection system and a distribution-based generic face model algorithm that trains a decision procedure based on face and nonface examples. *See id.* at 39–40 (citing Ex. 1005 ¶ 30; Ex. 1007, 1, 2). Petitioner also directs attention to Luo’s disclosure of identifying a main subject in an image using a primitive face detection algorithm to output a belief in the location of faces in an image. *See id.* at 40 (citing Ex. 1005 ¶ 30; Ex. 1008, 13:19–32). Petitioner further directs attention to Yang’s disclosure of techniques for detecting human faces including using eigenfaces, clustering techniques and searching for skin color. *See id.* (citing Ex. 1005 ¶ 30; Ex. 1009, 1; Ex. 1010, 1). According to Petitioner, “[d]etecting a human’s face correlates to detecting human skin and faces.” *Id.* at 41 (citing Ex. 1003 ¶¶ 112–113); *see id.* at 41–42 (citing Ex. 1003 ¶¶ 114–115; Ex. 1005 ¶ 30; Ex. 1008, 13:19–32).

Petitioner asserts Stubler discloses “the object acknowledging section includes . . . a face image similarity determining section for detecting a face image which is detected by the face image detecting section so as to detect a similar face image stored in the database according to the detected face imaged,” as recited in claim 2, based on Stubler’s disclosure of its software that measures similarities between the images such as similarities between region metadata or faces in the images using known algorithms. *See* Pet. 42 (citing Ex. 1005 ¶¶ 11–12, 31, 34). Petitioner further explains that Stubler discloses storing previously acquired image objects or faces in a database, and searching the database for any images with region metadata (e.g. a face) similar to the region metadata (e.g., a face) of the acquired images. *See id.* (citing Ex. 1005 ¶¶ 35, 40, 41, claim 25, Fig. 5 (elements 256, 258, 260)). Petitioner also explains that Stubler discloses that a determination of facial

similarity may be ascertained using the algorithm described in Turk (Ex. 1010). *See id.* at 42–43 (citing Ex. 1003 ¶¶ 116–118; Ex. 1005 ¶ 34; Ex. 1010).

For the foregoing reasons, including the reasons addressing claim 1, we find that Petitioner shows that Stubler discloses each of the limitations recited in dependent claim 2. *See* Pet. 39–43. We also have reviewed Petitioner’s contentions and cited supporting evidence addressing claims 3–6 and 9–14, and find that Stubler discloses, teaches, or suggests each of the limitations recited in dependent claims 3–6 and 9–14. *See* Pet. 43–53, 57–59.

Patent Owner contends the Petition fails to demonstrate that the dependent claims are unpatentable for the same reasons as the independent claims. *See* PO Resp. 43.

Based on the record, and including the same reasons as those explained above addressing independent claims 1, 7, and 8, Petitioner shows by a preponderance of the evidence that claims 2–6 and 9–14 are anticipated by Stubler, and that claims 2–6 and 9–14 are unpatentable as obvious over Stubler. *See Realtime*, 912 F.3d at 1373.

5. Summary

Based on the record and for all of the foregoing reasons, Petitioner shows by a preponderance of the evidence that claims 1–14 are anticipated under 35 U.S.C. § 102 by Stubler, and unpatentable under 35 U.S.C. § 103 over Stubler.

E. Challenge to Claims 2–4 and 9–12 over Stubler and Wang

1. Overview of Wang (Ex. 1006)

Wang is directed “to a person identifier and management system that can retrieve person-identifying information from a database based on an input face such that the input face can be identified.” Ex. 1006, 1:8–12. Wang discloses that an analysis system within the person identifier and management system may include face detection and feature extraction system 43, which receives an input face image from user interface 41 and “detects if the input face image contains any face.” *Id.* at 6:14–38, Fig. 4. System 43 uses eye location data to compute face feature data and, in one embodiment, “uses neural network-based face detection technology to detect the face in the input face image.” *Id.* at 6:38–45. Search engine 42 uses extracted face feature data “to find and locate any face feature data stored in the profile database 13 that matches or is similar to the extracted face feature data.” *Id.* at 7:29–35. “[S]earch engine 42 then retrieves the person-identifying data associated with the matching face feature data (i.e., the similar faces) from the profile database 13.” *Id.* at 7:50–52.

2. Analysis

Petitioner combines the teachings of Stubler and Wang specifically to address the limitations of dependent claims 2 and 3. *See* Pet. 61–71. Petitioner relies on additional teachings of Stubler to address the limitations of claims 4 and 9–11, which depend ultimately from claims 2 or 3. *See* Pet. 71–72. Claim 12 depends from claim 5, which Petitioner did not substantively address for this patentability challenge. *See* Pet. 61–71. We have reviewed Petitioner’s contentions and cited supporting evidence, and find that Petitioner has shown that the combined teachings of Stubler and

Wang teaches or suggests each of the limitations recited in dependent claims 2–4 and 9–11, but Petitioner has not shown that the combined teachings of Stubler and Wang teaches or suggests the limitations of dependent claim 12 due to its dependency from claim 5. *See* Pet. 61–73.

In addition, based on Petitioner’s citations to Stubler, Wang, and Dr. Stevenson’s testimony (Ex. 1003), we are persuaded Petitioner sets forth sufficient articulated reasoning with rational underpinning to support the conclusion that it would have been obvious to one of ordinary skill in the art to combine the teachings of Stubler and Wang with a reasonable expectation of success. *See* Pet. 65–67, 69–71; *KSR*, 550 U.S. at 418. In particular, with respect to dependent claim 2, Petitioner asserts “a POSITA would have been motivated to incorporate Wang’s face detection functionality into Stubler’s system” because “a POSITA would have . . . appreciated that Wang’s technology and functionality would have improved Stubler’s system because Wang’s ‘neural network-based face detection technology makes the face detection robust,’ ‘relatively fast,’ and ensures that ‘most faces’ are detected.” Pet. 66 (citing Ex. 1003 ¶ 176; Ex. 1006, 6:66–7:3). Regarding dependent claim 3, Petitioner contends that

a POSITA would have been motivated . . . to incorporate Wang’s teaching that the object information inputting section serves as a personal information inputting section for confirming, adding, and correcting a personal information (e.g., name, email, or telephone number) into Stubler, to better allow the user to classify and label the objects in the images (e.g., faces) using “personally meaningful” descriptors, as desired by Stubler.

Pet. 69 (citing Ex. 1003 ¶ 182; Ex. 1005 ¶¶ 4, 28, 37, 41; Ex. 1006, 4:27–40); *see id.* at 70 (citing Ex. 1003 ¶ 183; Ex. 1005 ¶¶ 4, 37, 41; Ex. 1006, 4:27–40).

Aside from Patent Owner's arguments against the unpatentability of independent claims 1, 7, and 8 based on Stubler alone, Patent Owner does not separately address or dispute Petitioner's arguments and cited supported evidence challenging the patentability of dependent claims 2–4 and 9–12 on the basis of the combined teachings of Stubler and Wang. *See* PO Resp. 44.

Based on the record and including the reasons explained above in Section II.D.2, through II.D.4., addressing claims 1–14, we determine Petitioner shows by a preponderance of the evidence that the subject matter of claims 2–4 and 9–11 is unpatentable as obvious over Stubler and Wang. *See* Pet. 61–73. Petitioner has not shown by a preponderance of the evidence that the subject matter of claim 12 is unpatentable as obvious over Stubler and Wang, apart from Petitioner's first ground.

3. Summary

Based on the record and for all of the foregoing reasons, Petitioner shows by a preponderance of the evidence that claims 2–4 and 9–11 are unpatentable under 35 U.S.C. § 103 over Stubler and Wang, but Petitioner has not shown by a preponderance of the evidence that claim 12 is unpatentable under 35 U.S.C. § 103 over Stubler and Wang.

III. MOTION TO EXCLUDE

Petitioner moves to exclude Exhibits 2004¹¹ and 2005¹² under 37 C.F.R. § 42.63(b), FRE 602, FRE 901, and the Consolidated Trial Practice Guide. *See* Mot. 1. More specifically, Petitioner contends that the declarant of Exhibit 2005 lacks personal knowledge as to the accuracy of the

¹¹ Translation of Japanese Unexamined Patent Application, First Publication No. Hei 8-221547

¹² Certificate of Translation for Japanese Unexamined Patent Application, First Publication No. Hei 8-221547

translation of Exhibit 2004 and Patent Owner did not make the declarant of Exhibit 2005 available for cross-examination. *See id.* at 3–7.

Patent Owner relies on Exhibit 2004 in the Response on the basis that the '807 patent cites Japanese Unexamined Patent Application, First Publication No. Hei 8-221547 for more detailed disclosure of several methods. *See* PO Resp. 9, 11, 30–31. Specifically, Patent Owner points out that the '807 patent references Japanese Unexamined Patent Application, First Publication No. Hei 8-221547 for disclosing methods of: (1) detecting the presence of a face using skin color detection (*see* PO Resp. 9 (citing Ex. 1001, 11:22–30; Ex. 2001 ¶ 50; Exs. 2003–2005)); (2) determining similarity of faces by forming a density image of a face so as to classify the category (*see* PO Resp. 11 (citing Ex. 1001, 18:63–67; Ex. 2001 ¶ 52; Exs. 2003, 2004); and (3) extracting facial region mosaic data (*see* PO Resp. 30–31 (citing Ex. 2001 ¶ 81; Ex. 2004 ¶ 8)). We have concluded, without excluding any evidence, that Petitioner has shown by a preponderance of the evidence that all of the challenged claims are unpatentable. Accordingly, Petitioner's Motion to Exclude Exhibits 2004 and 2005 is dismissed as moot.

IV. CONCLUSION

For the foregoing reasons, and after having analyzed the entire record and assigning appropriate weight to the cited supporting evidence, Petitioner has established by a preponderance of the evidence that claims 1–14 are unpatentable.

In summary:

Claims	35 U.S.C. §	Reference(s)/ Basis	Claims Shown Unpatentable	Claims Not Shown Unpatentable
1–14	102/103(a)	Stubler	1–14	
2–4, 9–12	103(a)	Stubler, Wang	2–4, 9–11	12
Overall Outcome			1–14	

V. ORDER

In consideration of the foregoing, it is hereby

ORDERED that, Petitioner’s Motion to Exclude Exhibits 2004 and 2005 is dismissed as moot;

FURTHER ORDERED that Petitioner has established by a preponderance of the evidence that claims 1–14 of the ’807 patent are unpatentable; and

FURTHER ORDERED that, because this is a Final Written Decision, parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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