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EXAMINER	
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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte YIBING MICHELLE WANG

Appeal 2019-003311
Application 14/992,671
Technology Center 3600

Before LINDA E. HORNER, CHARLES N. GREENHUT, and WILLIAM A. CAPP, *Administrative Patent Judges*.

CAPP, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellant[1] seeks our review under 35 U.S.C. § 134(a) of the final rejection of claims 1, 2, 11, 12, and 21 under 35 U.S.C. § 102(a)(1) as anticipated by Kamon (US 2001/0046317 Al, pub. Nov. 29, 2001) and claims 8, 9, 18, and 19 as unpatentable under 35 U.S.C. § 103 over Kamon.[2] We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

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[1] We use the word "Appellant" to refer to "Applicant" as defined in 37 C.F.R. § 1.42(a). Appellant identifies Samsung Electronics Co., Ltd., as the Applicant and real party in interest. Appeal Br. 1.

[2] Claims 3–7, 10, 13–17, and 20 are objected to as being dependent upon a rejected base claim. Final Action 4.

THE INVENTION

Appellant's invention is a range sensor that uses energy in the light wavelength spectrum to determine range. Spec. ¶ 2. Claim 11, reproduced below, is illustrative of the subject matter on appeal.

> 11. A method of a range sensor, comprising:
>
> projecting, by a light source, a sheet of light at an angle within a field of view (FOV);
>
> offsetting an image sensor from the light source;
>
> collecting, by collection optics, the sheet of light reflected off objects; and
>
> determining, by a controller connected to the light source, the image sensor, and the collection optics, a range of a distant object based on direct time-of-flight and a range of a near object based on triangulation.

OPINION

Anticipation of Claims 1, 2, 11, 12, and 21 by Kamon

Claim 11

The Examiner finds that Kamon discloses each and every limitation of the invention. Final Action 2–3. In particular, the Examiner finds that Kamon determines a range of a distant object based on time-of-flight and the range of a near object based on triangulation. *Id.* at 2.

Appellant essentially concedes that Kamon discloses determining the range of a distant object based on time-of-flight and the range of a near object based on triangulation, but argues that the claim further requires that both distant and near determinations are determined simultaneously, i.e., from a single sheet of light. Appeal Br. 5–6. Appellant argues that Kamon fails to disclose such a feature. *Id.*

In response, the Examiner concedes that Kamon does not determine the range of a distant object and the range of a near object simultaneously, but construes the claim as not requiring such. Ans. 5. According to the Examiner, "the claims, as written, do not limit the sheet of light to a single sheet of light for both measurement[s]." *Id.*

In reply, Appellant directs our attention to the claim's recital of projecting "a" sheet of light and, subsequently, collecting "the" sheet of light. Reply Br. 2. Appellant argues that the recital of "determining . . . a range of a distant object . . . and a range of a near object" is in the context of "the" sheet of light, which should be construed as a single sheet of light. *Id.* at 3.

The dispute between Appellant and the Examiner is one of claim construction. If the claim, properly construed, requires both near and distant range determination from a single sheet of light, it is undisputed that Kamon lacks such a feature. If the claim does not require such simultaneous range determination, it is undisputed that claim 11 reads on Kamon.

During examination of a patent application, pending claims are given their broadest reasonable construction consistent with the specification. *In re Am. Acad. of Sci. Tech Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004). Under the broadest reasonable interpretation standard, claim terms are given their ordinary and customary meaning as would be understood by one of ordinary skill in the art in the context of the entire disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

The PTO is required to consult the specification during examination in order to determine the permissible scope of the claim. *In re Morris*, 127 F.3d 1048, 1055 (Fed. Cir. 1997). However, a claim construction analysis

begins with, and is centered on, the claim language itself. *See Interactive Gift Express, Inc. v. Compuserve, Inc.*, 256 F.3d 1323, 1331 (Fed. Cir. 2001). In the instant case, the claimed method comprises projecting "a sheet of light." Claims App. Ordinarily, use of the indefinite article "a" is interpreted as "one or more." *Tate Access Floors, Inc. v. Interface Architectural Res., Inc.*, 279 F.3d 1357, 1370 (Fed. Cir. 2002). The method then entails collecting "the sheet of light" that is reflected off objects. Claims App. The range sensor then determines: (1) "a range of a distant object;" – "and" – (2) a range of a near object." Claims App. The recited claim language presents two issues for us to resolve. First, does recitation of the definite article "the" before the second recital of "sheet of light" narrow the scope of the indefinite article "a" before the first recital of "sheet of light" such that the indefinite article "a" should be construed as "one" instead of "one or more." Second, does recital of the conjunctive connector "and" interposed between recitals of a direct time-of-flight technique and a triangulation technique indicate that the range determinations are taken from the same sheet of light or does it simply indicate that one technique is used for distant measurements and another technique is used for near measurements?

Turning now to the Specification, Appellant states that its disclosure relates "generally" to an apparatus and method for determining range based on direct time-of-flight and triangulation "simultaneously." Spec. ¶ 2. Elsewhere, Appellant discloses that, in step 807, collected light from distant objects is measured and recorded using time-of-flight data. *Id.* ¶¶ 80–83. Then, in step 809, collected light from near objects is measured and recorded using triangulation data. *Id.* ¶¶ 84, 90. Steps 807 and 809 occur

"simultaneously." *Id.* ¶ 84. Thus, paragraphs 80 through 90 of the Specification lend some support for Appellant's narrower interpretation of the claim 11.

On the other hand, paragraph 82 teaches that light is collected from "at least" light source 101, which suggests that data may be collected from more than a single sheet of light. *Id.* ¶ 82. Paragraph 85 teaches that sections of the field of view are imaged by projecting "at least one additional sheet of light." *Id.* ¶ 85; *see also id.* ¶ 33 ("To illuminate more of the FOV, the light source 100 may project at least one additional sheet of light within another predetermined angle of the FOV."), ¶ 37 (describing that controller 107 controls "the number and angle of additional sheets of light projected").

In weighing the competing positions of Appellant and the Examiner, we are mindful that claims need not encompass everything that is taught in the Specification. *See Broadcom Corp. v. Qualcomm, Inc.*, 543 F.3d 683, 689 (Fed. Cir. 2008) (explaining that when the claim addresses only some of the features disclosed in the specification, it is improper to limit the claim to other, unclaimed features). Thus, "it is improper to read limitations from a preferred embodiment described in the specification—even if it is the only embodiment—into the claims absent a clear indication in the intrinsic record that the patentee intended the claims to be so limited." *Liebel–Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 913 (Fed. Cir. 2004). Courts recognize that the distinction between interpreting the meaning of a claim and importing limitations from the Specification can be a difficult one to apply in practice. *Phillips v. AWH Corp.,* 415 F.3d 1303, 1323 (Fed. Cir. 2005) (en banc). Nevertheless, we determine that there is substantial merit to the

Examiner's position that the claims, as written, do not limit the sheet of light to a single sheet of light for both measurements. Ans. 5.

Under the facts and circumstances of this case, we determine that it is the better approach to adopt the Examiner's construction as a broad, but reasonable, construction. In the final "determining" step of claim 11, there is no mention of determining the range of distant and near objects simultaneously. Claims App. claim 11. There is also no mention in this step of determining the range of both distant and near objects based on "the sheet of light" collected in the preceding step. Thus, we construe the "determining" step as merely requiring that the range of distant objects is based on time-of-flight and the range of near objects is based on triangulation to be reasonable and, therefore, comports with our standard of broad but reasonable construction. *Am. Acad.*, 367 F.3d at 1364. Even if we were to find that Appellant's narrower construction is reasonable (which we do not expressly find for purposes of this appeal), the Examiner's broader, but reasonable, construction controls the outcome here. In that regard, we are mindful that construing claims broadly during prosecution is not unfair to Appellant, because Appellant has the opportunity to amend the claims to obtain more precise claim coverage. *Id.*

In view of the foregoing discussion, we determine the Examiner's findings of fact are supported by a preponderance of the evidence and, accordingly, we sustain the Examiner's unpatentability rejection of claim 11.

Claims 1, 2, 12, and 21

Claims 1 and 21 are independent claims and are not separately argued apart from relying on the same arguments that we fully considered and found unpersuasive with respect to claim 11 above. Appeal Br. 8. Claims 2

and 12 depend from claims 1 and 11 respectively and are also not argued separately. *Id.* For essentially the reasons detailed above with respect to claim 11, we sustain the Examiner's anticipation rejection of claims 1, 2, 12, and 21. *See* 37 C.F.R. § 41.37(c)(1)(iv) (failure to separately argue claims).

Unpatentability of Claims 8, 9, 18, and 19 over Kamon

These claims depend from either independent claim 1 or independent claim 11 and are not separately argued apart from noting their respective dependencies. Claims App. We sustain the Examiner's unpatentability rejection of claims 8, 9, 18, and 19.

CONCLUSION

In summary:

Claims Rejected	§	**Reference(s)/Basis**	**Aff'd**	**Rev'd**
1, 2, 11, 12, 21	102	Kamon	1, 2, 11, 12, 21	
8, 9, 18, 19	103	Kamon	8, 9, 18, 19	
Overall Outcome			1, 2, 8, 9, 11, 12, 18, 19, 21	

DECISION

The decision of the Examiner to reject claims 1, 2, 8, 9, 11, 12, 18, 19, and 21 is affirmed.

AFFIRMED