



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/803,605	03/14/2013	Ryosuke TSUII	CANO-2286	6861
37013	7590	09/17/2020	EXAMINER	
Rossi, Kimms & McDowell LLP 20609 Gordon Park Square Suite 150 Ashburn, VA 20147			GADOMSKI, STEFAN J	
			ART UNIT	PAPER NUMBER
			2485	
			NOTIFICATION DATE	DELIVERY MODE
			09/17/2020	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

EOfficeAction@rkmlp.com
mail@rkmlp.com

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte RYOSUKE TSUJI

Appeal 2019-001232
Application 13/803,605
Technology Center 2400

Before CAROLYN D. THOMAS, MICHAEL J. STRAUSS, and
RUSSELL E. CASS, *Administrative Patent Judges*.

CASS, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellant¹ appeals under 35 U.S.C. § 134(a) from the Examiner's decision to reject claims 1, 5–7, 9, 12, 14, and 20. Appeal Br. 3, 6.² Claims 2–4, 8, 10–11, 13, and 15–19 have been cancelled. *Id.* at 15–18. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

¹ We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42. Appellant lists Canon Kabushiki Kaisha as the real party in interest. Appeal Brief filed June 4, 2018 (“Appeal Br.”) 1.

² Rather than repeat the Examiner's positions and Appellant's arguments in their entirety, we refer to the above mentioned Appeal Brief, as well as the following documents for their respective details: the Final Action mailed January 11, 2018 (“Final Act.”); the Examiner's Answer mailed September 28, 2018 (“Ans.”); and the Reply Brief filed November 28, 2018 (“Reply Br.”).

BACKGROUND

The present invention relates to a subject area detection apparatus for extracting a subject area from an image. Spec. ¶ 1. Appellant's Specification explains that systems are known that automatically detect a face area from an image, and optimize focus and exposure using the detection result. *Id.* ¶ 2. However, according to the Specification, it is difficult to detect a face in certain circumstances, such as when a person faces rearward or wears an accessory on the face. *Id.* ¶ 4. In such cases, the human body of a subject may be detected, and the face area estimated based on the detection result on the body. *Id.* ¶ 6. However, because face and human body detection are different techniques that are performed independently from each other, there may be cases where it cannot be determined whether face area and human body detection results are for the same or different persons. *Id.* ¶ 7.

According to the Specification, Appellant seeks to overcome this problem by providing a subject area detection apparatus that detects a first subject area (such as a face), and a second subject area including the first subject area (such as a human body including the face area). *Id.*, Abstr. An estimated area is obtained by estimating, in the second subject area, an area corresponding to the first subject area. *Id.* The first subject area and the estimated area are compared with each other to obtain a correlation result. *Id.* The apparatus outputs a subject area detection result based on the correlation result. *Id.*

Claim 1 is illustrative of the claims at issue:

1. A subject area detection apparatus, comprising:
at least one non-transitory memory device;

at least one processor;

a first detection unit configured to detect a face area of a human subject in the image;

a second detection unit configured to detect a body area of a human subject in the image, the body area detected by the second detection unit including a portion of a human body that is not included in the face area detected by the first detection unit;

an area estimation unit configured to estimate an estimated area based on the body area detected by the second detection unit and a positional relationship between a face area and a body area different from the face area of a human, the estimated area estimated by the area estimation unit being different from the face area detected by the first detection unit;

a determination unit configured to compare the face area detected by the first detection unit and the estimated area estimated by the area estimation unit with each other to determine that the face area detected by the first detection unit and the estimated area estimated by the area estimation unit are related to the same human subject based on at least positions of the face area detected by the first detection unit and the estimated area estimated by the area estimation unit in the image; and

a selection unit configured to select and output information relating to the face area detected by the first detection unit with respect to the human subject in the image, in response to the determination unit determining that the face area detected by the first detection unit and the estimated area estimated by the area estimation unit are related to the same human subject,

wherein the first detection unit, the second detection unit, the area estimation unit, the determination unit, and the selection unit are implemented by the at least one processor executing at least one program recorded on the at least one non-transitory memory device.

Appeal Br. 14 (Claims Appendix).

THE EXAMINER’S REJECTIONS

In the Final Office Action, the Examiner rejected claims 1, 5–7, 9, 12, 14, and 20 under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. Final Act. 3–5.

For the rejections under 35 U.S.C. § 103, the Examiner relied upon the prior art set forth in the following table:

Name	Reference	Date
Kinjo	US 5,629,552	May 13, 1997
Luo	US 2008/0075336 A1	Mar. 27, 2008
Terashima	US 2008/0074529 A1	Mar. 27, 2008
Funamoto	US 2008/0158407 A1	Jul. 3, 2008
Moon	US 7,742,623 B1	Jun. 22, 2010

Final Act. 7–20.

Specifically, the Examiner rejected claims 1, 12, and 14 under 35 U.S.C. § 103 as being unpatentable over Luo in view of Kinjo and Terashima.³ *Id.* at 5. The Examiner also rejected claims 5–7 and 20 under 35 U.S.C. § 103 as being unpatentable over Luo, Kinjo, and Terashima further in view of Funamoto. *Id.* at 13. The Examiner additionally rejected claim 9 under 35 U.S.C. § 103 as being unpatentable over Luo, Kinjo, and Terashima further in view of Moon. *Id.* at 18.

³ The header of the Examiner’s rejection refers to “Uehara” instead of Terashima, but this appears to be a typographical error because the body of the rejection goes on to discuss Terashima and does not mention Uehara, and the Examiner later states that the claims have been rejected “with a new reference replacing the previously presented Uehara, specifically Terashima.” Final Act. 5–9, 19

ANALYSIS

The Section 112 Rejection

The Examiner finds that the specification does not provide written description support for the limitation in claim 1 reciting “*an area estimation unit configured to estimate an estimated area based on the body area detected by the second detection unit and a positional relationship between a face area and a body area different from the face area of a human.*” Final Act. 3. The Examiner provides two different bases for this finding.

For the first basis, the Examiner finds that Appellant’s Specification “supports a positional relationship between the face area detected **by the first detection unit** (face area detection) and the second detection unit body area detection),” but that “[t]he claim language attempts to claim a broader scenario than what is supported by the specification because the claim language does not limit the face area of the positional relationship to the face area detected by the first detection unit.” Ans. 4. Appellant disagrees, arguing that paragraphs 6 and 43 of the Specification and Figure 3 disclose a “‘face area’ that is not detected by the first detection unit,” because the Specification describes estimating a face area based on a human body detection result, not a face detection result. Reply Br. at 1–2 (citing Spec. ¶¶ 6, 43).

We are not persuaded by Appellant’s argument. Claim 1 refers to “the face area detected by the first detection unit” but then later states that the “area estimation unit” estimates an estimated area based on “a positional relationship between a face area and a body area different from the face area of a human.” We agree with the Examiner that this language encompasses having the area estimation unit estimate the face area based on a positional

relationship between a body area and a face area that is different from the face area detected by the first detection unit, which Appellant does not appear to dispute. *See* Ans. 4–5; Reply Br. 1–2. Paragraphs 6 and 43, which Appellant relies on, merely disclose that, as a general matter, a face area may be estimated based on the detection result of the human body. Spec. ¶¶ 6, 43. Similarly, Figure 3 and the accompanying description in the specification merely disclose estimating face areas based on human body detection results. *Id.* at Fig. 3, ¶¶ 49–53. These portions of the Specification and Figure 3, however, do not disclose estimating an estimated area based on a positional relationship between a face area other than the one detected by the “first detection unit” and a body area different from the face area. Therefore, we find that this basis supports the Examiner’s § 112 rejection.

As the second basis for the § 112 rejection, the Examiner finds that the Specification does not support the claimed “area estimation unit” because “the claim defines the invention in functional language specifying a desired result but the specification does not sufficiently identify **how** the inventor has devised the function to be performed or result achieved,” and “[t]here is no algorithm describing how an area estimation unit estimated an area.” Final Act. 4.

Appellant disagrees, arguing that “the area estimation unit may perform . . . a known technique,” pointing to the statement in paragraph 43 that “[e]xemplary techniques for estimation by the area estimation unit 203 include estimation through linear transformation based on the relationship in in the area between the face detection unit 109 and the human body detection unit 110.” Appeal Br. 3 (citing Spec. 43); *see* Reply Br. 4. Appellant also asserts that the claimed functionality of the area estimation

unit may be found, for example, in the prior art Kinjo reference, referring to Kinjo's Figure 19, which shows that a face candidate region (Fig. 24B) is estimated on the basis of sets of lines of a body's contour. *Id.* at 6 (citing Kinjo, Fig. 2A, 34:37–35:46).

The Examiner responds that the general mathematical concept of “linear transformation” does not provide sufficient support for the specialized function of estimating a face area with an estimation unit, and that the Specification does not provide any algorithms or steps to perform this specialized function. Ans. 7. The Examiner further determines that Kinjo does not mention “linear transformation,” and that the face estimation algorithm disclosed in Kinjo does not appear to utilize the generic mathematical concept of “linear transformation.” *Id.* at 7–8.

As the USPTO has recently explained, “[i]n order to satisfy the written description requirement set forth in 35 U.S.C. 112(a), the specification must describe the claimed invention in sufficient detail such that one skilled in the art can reasonably conclude that the inventor had possession of the claimed invention at the time of filing.” Examining Computer-Implemented Functional Claim Limitations for Compliance With 35 U.S.C. 112, 84 Fed. Reg. 57, 61 (Jan. 7, 2019) (“112 Guidance”) (citing, e.g., *Vasudevan Software, Inc. v. Microstrategy, Inc.*, 782 F.3d 671, 682 (2015); *Ariad Pharm., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir.2010) (en banc)). For computer-implemented functional claim limitations, the “specification must describe the claimed invention in

sufficient detail (*e.g.*, by disclosure of an algorithm⁴) to establish that the applicant had possession of the claimed invention as of the application filing date.” *Id.* “If the specification does not provide a disclosure of the computer and algorithm(s) in sufficient detail to demonstrate to one of ordinary skill in the art that the inventor possessed the invention that achieves the claimed result, a rejection under 35 U.S.C. 112(a) for lack of written description” is appropriate. *Id.* at 62. “It is not enough that one skilled in the art could theoretically write a program to achieve the claimed function, rather the specification itself must explain how the claimed function is achieved to demonstrate that the applicant had possession of it.” *Id.* (citing *Vasudevan*, 782 F.3d at 682–83).

Here, we agree with the Examiner that “the claim defines the invention in functional language specifying a desired result,” namely “estimating an estimate area based on the body area detected by the second detection unit and a positional relationship between a face area and a body area different from the face area of a human.” *See* Final Act. 4. We also agree with the Examiner that paragraph 43 of the Specification, upon which Appellant relies, does not sufficiently describe an algorithm for carrying out this function. Paragraph 43 states as follows:

The area estimation unit 203 obtains a human body detection result from the human body detection result obtainment unit 202, and based on the human body detection result, estimates a partial area corresponding to a detection area (that is, a face area) obtained by the face detection unit 109, and outputs an estimation result (also referred to as an estimated area).

⁴ “An algorithm is defined, for example, as ‘a finite sequence of steps for solving a logical or mathematical problem or performing a task.’” 112 Guidance at 61–62 (citing *Microsoft Computer Dictionary* (5th ed. 2002)).

Exemplary techniques for estimation by the area estimation unit 203 include estimation through linear transformation based on the relationship in detection area between the face detection unit 109 and the human body detection unit 110.

Spec. ¶ 43 (emphasis added).

We agree with the Examiner that the cursory mention of “estimation through linear transformation” does not provide an algorithm for estimating a face area based on the body area detected by the second detection unit and a positional relationship between a face area and a body area different from the face area of a human, as the claim requires, much less an algorithm including sufficient detail such that one skilled in the art could reasonably conclude that the inventor had possession of the claimed invention at the time of filing. We further find that Appellant has failed to sufficiently demonstrate that methods for carrying out the claimed “estimation using linear transformation” were well-known in the art at the time of filing. As for Appellant’s reliance on Kinjo, Kinjo is not mentioned in Appellant’s Specification and Appellant has failed to sufficiently establish that Kinjo describes estimating a face area using a method of linear transformation. We remind Appellant that mere attorney argument and conclusory statements, which are unsupported by factual evidence, are entitled to little probative value. *In re Geisler*, 116 F.3d 1465, 1470 (Fed. Cir. 1997); *In re De Blauwe*, 736 F.2d 699, 705 (Fed. Cir. 1984). Attorney argument is not evidence. *In re Pearson*, 494 F.2d 1399, 1405 (CCPA 1974). Nor can such argument take the place of evidence lacking in the record.

Consequently, we affirm the Examiner’s rejection of claim 1 for lack of written description under 35 U.S.C. § 112. We also affirm the Examiner’s rejection of independent claims 12 and 14, which include similar

language and are not separately argued, as well as claims 5–7, 9, and 20, which are dependent on claims 1, 12, or 14.

The Section 103 Rejections

Claim 1

The Examiner finds that Luo discloses the claimed “subject area detection apparatus,” “at least one non-transitory memory device,” “at least one process,” “first detection unit,” “second detection unit,” and implementation of the first and second detection unit by a processor. Final Act. 5–6. The Examiner finds that Kinjo discloses the claimed “area estimation unit,” and that Terashima discloses the claimed “determination unit” and “selection unit.” *Id.* at 7–8. The Examiner finds that one of ordinary skill would have been motivated to combine Kinjo’s region estimation technique with Luo’s face detection method in order to divide an image into proper regions. *Id.* at 8. The Examiner further finds that

[i]t would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the well-known auto-focusing process, as disclosed by Terashima, with the well-known face detection processing component 12 and auxiliary identification region processing component 14 of Luo and the well-known region estimation process of Kinjo, resulting in an apparatus that detects two areas (face and body), estimates a third area[,] and selects an area based on a comparison of two areas.

Ans. 9–10; *see* Final Act. 9.

Appellant argues that Terashima fails to disclose the claimed “determination” and “selection” units. Appeal Br. 9–10. According to Appellant, Terashima discloses a detailed auto-focusing process in which in-focus positions are decided for each of measurement frames 381, 382, and

383 (depicted by reference characters “A,” “B,” and “C,” respectively) and then a final in-focus position is decided based on these three in-focus positions. *Id.* at 9 (citing Terashima Fig. 6, ¶¶ 86–89, 94, 136). Appellant argues that “not a single one of the in-focus positions A, B, and C remotely discloses or suggests ‘an estimated area’, as recited in claim 1.” *Id.* at 9. Appellant further argues that Terashima does not determine “whether the in-focus positions A, B, and C ‘are related to the same human subject.’” *Id.* at 9–10. Appellant further argues that the Examiner fails to articulate a sufficient motivation to support the combination of Luo, Kinjo, and Terashima. *Id.* at 7–8.

The Examiner responds that Appellant “attacks the Terashima reference individually without taking into consideration the combination of the Terashima reference with the Luo and Kinjo references.” Ans. 9. In reply, Appellant argues that “Terashima, and only Terashima” is relied on to teach the claimed “determination unit” and “selection unit,” and that Terashima does not teach all of the limitations contained in those claim elements. Reply Br. 6–7.

As to the arguments based on the Examiner’s reliance on Terashima, Appellant is reading the Examiner’s rejection too narrowly. The Examiner relies on Luo to teach the “first detection unit configured to detect a face area,” and the “second detection unit configured to detect a body area,” and relies on Kinjo to teach the claimed “area estimation unit configured to estimate an estimated area.” Final Act. 6–7. Therefore, the Examiner relies on Luo and Kinjo for the language in the “determination unit” and “selection unit” elements referencing “the face area detected by the first detection unit,” “the estimated area estimated by the area estimation unit.” In light of

this, we agree with the Examiner that Appellant’s argument that Terashima does not disclose “an estimated area” improperly attacks the Terashima reference individually rather than in the combination relied on by the Examiner. *See In re Keller*, 642 F.2d 413, 425 (CCPA 1981) (One cannot show nonobviousness by attacking references individually when the rejection is based on a combination of references.).

Appellant also has not persuaded us that the Examiner erred in finding that Terashima determines whether the in-focus positions of the face and body “are related to the same human subject.” *See* Appeal Br. 9–10; Final Act. 8. Terashima states that “according to an embodiment of the invention, a measurement frame is set on the detected face area as well as a body area *of a person estimated from the face area* is estimated and a measurement frame is set on the body area.” Terashima ¶ 54 (emphasis added). Terashima discloses obtaining an in-focus position “A” (Ref 381, Fig. 6) for a face area and an in-focus position “C” for a body area (Ref. 382, Fig. 6). Terashima, Fig. 6, ¶¶ 140, 142. Terashima then discloses determining whether positions “A” and “C” are “matched,” which means that “A is nearly equal to C” within the depth of view R_a that corresponds to the distance D_f to the face based on the size of the face detected in the face detecting part.” *Id.* ¶¶ 181–185, Figs. 6, 23. We find that the Examiner has sufficiently shown that this “matching” process determines whether the face and body are related to the same human subjects based on the detected position of the face and body, and that Appellant has failed to provide sufficient argument or evidence to demonstrate otherwise.

Finally, Appellant has not persuaded us that the Examiner’s motivation to combine the references is insufficient. The Examiner provides

a motivation to combine the references that is supported by “some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *See KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007). Appellant’s argument focuses on the length of the Examiner’s analysis, but fails to persuasively articulate specific reasons why the Examiner’s stated motivation is flawed.

Consequently, we affirm the Examiner’s rejection of claim 1 as obvious under § 103. We also affirm the Examiner’s rejection of claims 5–7, 9, 12, and 14, which are not separately argued.

Claim 20

Claim 20 recites:

The subject area detection apparatus according to claim 1, wherein the selection unit selects and outputs the estimated area estimated by the area estimation unit with respect to the human subject in the image in response to the determination unit determining that the face area detected by the first detection unit and the estimated area estimated by the area estimation unit are not related to the same human subject.

The Examiner relies on paragraph 78 of Funamoto for the limitations of claim 20. The Examiner argues that “it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the comparison, as disclosed by Funamoto, with the invention disclosed by Luo and Kinjo and Terashima, the motivation being accurate face focusing.” Final Act. 17 (citing Funamoto ¶ 8).

Appellant argues that the cited portion of Funamoto is unrelated to the feature of claim 20. Appeal Br. 11. Funamoto’s invention, according to Appellant, relates to “technology for accurately focusing on a face in spite of subject movement, camera shake, and the like.” *Id.* at 12 (citing Funamoto

¶ 8). Appellant argues that “Funamoto’s paragraphs [0078]–[0080] disclose comparing the positions and sizes of detected face regions in subsequent through-images and then selecting a supply source of through-images based on a result of the comparison.” *Id.* at 13. Appellant asserts that “Funamoto does not disclose or suggest selection and output of an estimated area,” as recited in claim 20, or selecting and outputting anything “in response to the determination unit determining that the face area detected by the first detection unit and the estimated area estimated by the area estimation unit are not related to the same subject,” as also recited in claim 20. *Id.* at 12.

We agree with Appellant. Paragraph 78 of Funamoto, upon which the Examiner relies, states as follows:

The CPU **112** compares the position and size of the face region detected in the last round of detection by the face detection unit **20** with the position and size of the face region detected in the current round of detection, and judges whether any amount of change in the positions and sizes of the face regions is less than a predetermined threshold (whether, for instance, the distance between the central coordinates of the face regions is less than half the length of the diagonal of preceding face region and whether the size ratio is less than 10%).

Funamoto ¶ 78.

As Appellant asserts, paragraph 78 of Funamoto describes comparing the position and size of a face region detected in a last round of detection with the position and size of a face region in a current round, and determines whether any change in the positions or sizes of the face region is less than a predetermine threshold. Nothing in paragraph 78 discloses selecting and outputting anything “in response to the determination unit determining that the face area detected by the first detection unit and the estimated area

estimated by the area estimation unit are not related to the same subject,” as recited in claim 20.

Consequently we reverse the Examiner’s rejection of claim 20 as obvious under 35 U.S.C. § 103.

CONCLUSION

We affirm the Examiner’s rejection of claims 1, 5–7, 9, 12, 14, and 20 under 35 U.S.C. § 112 and of claims 1, 5–7, 9, 12, and 14 under 35 U.S.C. § 103. We reverse the Examiner’s rejection of claim 20 under 35 U.S.C. § 103.

In summary:

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
1, 5–7, 9, 12, 14, 20	112	Written Description	1, 5–7, 9, 12, 14, 20	
1, 12, 14	103	Luo, Kinjo, Terashima	1, 12, 14	
5–7, 20	103	Luo, Kinjo, Terashima, Funamoto	5–7	20
9	103	Luo, Kinjo, Terashima, Moon	9	
Overall Outcome			1, 5–7, 9, 12, 14, 20	

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv). *See* 37 C.F.R. § 41.50(f).

AFFIRMED