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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte WEIJIE ZHANG and JOSEPH McGEE

Appeal 2018-004027
Application 14/290,972
Technology Center 2600

Before CAROLYN D. THOMAS, JESSICA C. KAISER, and
KARA L. SZPONDOWSKI, *Administrative Patent Judges*.

THOMAS, *Administrative Patent Judge*.

DECISION ON APPEAL

Pursuant to 35 U.S.C. § 134(a), Appellant¹ appeals from the Examiner's decision to reject claims 1–20. We have jurisdiction over the appeal under 35 U.S.C. § 6(b).

We AFFIRM-IN-PART.

¹ We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42. Appellant identifies the real party in interest as Archer Software Corporation. Appeal Br. 3.

The present invention relates generally to analyzing and interpreting user gestures. *See* Abstr.

Independent claim 1, reproduced below, is representative of the appealed claims:

1. A method of gesture processing, the method comprising:
capturing ambient-lit image data from at least one two-dimensional imaging camera;
analyzing the ambient-lit image data to identify an image of at least one user within the ambient-lit image data; and
determining a command for a device and/or an input position based on the analyzed ambient-lit image data.

Appellant appeals the following rejections:

R1. Claims 1–20 are rejected under 35 U.S.C. § 112 (a) or 35 U.S.C. § 112 (pre-AIA), first paragraph, as failing to comply with the written description requirement (Final Act. 5–6);

R2. Claims 1–5, 8–10, and 12–20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Clarkson (US 2011/0080490 A1, Apr. 7, 2011) and Huebner (US 2014/0267031 A1, Sept. 18, 2014) (Final Act. 6–16); and

R3. Claims 6, 7, and 11 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Clarkson, Huebner, and Ptucha (US 2013/0201104 A1, Aug. 8, 2013).

We review the appealed rejections for error based upon the issues identified by Appellant, and in light of the arguments and evidence produced thereon. *Ex parte Frye*, 94 USPQ2d 1072, 1075 (BPAI 2010) (precedential).

ANALYSIS

Rejection under § 112

The Examiner finds that “[t]he subject matter ‘ambient-lit image data’ . . . was not described in the specification.” Final Act. 6. The Examiner adds that “the captured image may be lit by any manner of sources, ambient, dedicated, visible, or invisible (i.e. IR light) [and] [t]he simplistic drawings presented in this application do not offer any evidence to what manner the images are lit, and as such the limitation is still seen as undisclosed.” Ans. 3. We disagree with the Examiner.

Appellant contends that “it is well-known in the art that cameras capture ambient-lit image data when they are not used with illumination devices such as flashes[] [and] [t]he figures as filed clearly illustrate cameras used without illumination devices.” Appeal Br. 10 (citing Spec. Figs. 1–3, 13B, and 15). Although we agree with Appellant that cameras without flashes can be interpreted as capturing ambient-lit image data, after carefully examining Appellant’s figures, we find it is unclear how the cameras are actually capturing such images, i.e., with or without flashes.

In any case, we find that one of ordinary skill in the art would recognize that cameras in the default mode capture images by merely using ambient light, e.g., natural and/or normal room light. As such, the question becomes: Does merely disclosing a camera show that Appellant had possession of capturing “ambient-lit image data” in their Specification as filed? We answer such a question in the affirmative and find that Appellant’s disclosed use of a “camera” at a minimum discloses capturing ambient-lit image data.

Accordingly, for at least the reasons noted *supra*, we disagree with the Examiner that the claimed “ambient-lit image data” is not sufficiently described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor had possession of the claimed invention.

Therefore, we reverse the Examiner’s rejection of claim 1–20 under 35 U.S.C. § 112.

Rejections under § 103(a)

Appellant contends “Clarkson teaches a method of gesture processing under active illumination . . . where gestures cannot be recognized in ambient-lit images.” Appeal Br. 12–13. Similarly, Appellant also contends that “active illumination is also necessary to Huebner’s system, wherein ambient-lit image data is captured, active-lit image data is captured, and data for analysis is generated from a difference between the two images.” *Id.* at 14 (emphasis omitted). In summary, Appellant contends that “no combination of Clarkson and/or Huebner discloses, teaches, or suggest analyzing the ambient-lit image data to identify an image of at least one user within the ambient-lit image data [because] Clarkson teaches identifying an image within illuminated image data . . . [and] Huebner [] analyzes the difference data to detect the user image within.” *Id.* at 15 (emphasis omitted).

In other words, Appellant contends that neither Clarkson nor Huebner teaches or suggests the claimed “analyzing the ambient-lit image data to identify an image of at least one user *within the ambient-lit data*,” (see claim 1) (emphasis added) because Clarkson only analyzes user *within active*

illuminated data and Huebner analyzes user *within gesture light view data*.

We agree with Appellant.

Here, the Examiner finds that Clarkson teaches capturing an image “while an illumination source is turned on . . . [and] while the illumination source is turned off . . . to produce a resulting image . . . [that] may be analyzed.” Ans. 4. Specifically, Clarkson discloses:

In implementations where alternating camera images are captured while an illumination source is turned on, a camera image captured while the illumination source is turned off may be subtracted from a camera image captured while the illumination source was turned on to produce a resulting image. The resulting image may be analyzed to determine whether one or more objects are illuminated in the camera image captured when the illumination source was turned on. Subtracting the camera image captured when the illumination source was turned off may remove ambient light which was present in both camera images.

Spec. ¶ 60. In other words, Clarkson’s system captures ambient-lit data, but analyzes the resulting image which has removed the ambient light, as opposed to analyzing ambient-lit image data to identify an image of at least one user *within the ambient-lit image data*, as required by claim 1.

Further, the Examiner finds that “[t]he Huebner reference was added for more clarification to capture an ambient light view without illumination source.” Ans. 4 (citing Huebner ¶¶ 173–174). Specifically, Huebner discloses “the viewing sensor **148** may capture an ambient light view (or ‘photo’ image frame) of its field of view forward of the pointer **100**.”

Huebner ¶ 173. Huebner further discloses that “[t]hen in step **S121**, control unit **108** and view grabber **118** may take receipt of and store the ambient light view in captured view data **104** for future analysis.” *Id.* ¶ 174.

Additionally, Huebner discloses “control unit **108** and view grabber **118** may

retrieve the previously stored ambient and lit light views and compute image subtraction of the ambient and lit light views, resulting in a gesture light view.” *Id.* ¶ 180. In other words, like Clarkson, Huebner teaches performing a subtraction function to arrive at the resultant gesture light view, and it is this resultant image (i.e., the gesture light views) that is analyzed to identify a user within the gesture light views, not a user within the ambient-lit image data. *See id.* ¶ 183.

As such, we agree with Appellant that the combined teachings of Clarkson and Huebner, as identified by the Examiner, fail to teach or suggest the claimed “analyzing the ambient-lit image data to identify an image of at least one user within the ambient-lit image data,” but rather teaches identifying the user within illuminated views of image data.

Accordingly, we reverse the Examiner’s rejection of independent claim 1, and dependent claims 2–17 and 20 for similar reasons.

Claim 18

Claim 18 is independent. The Examiner finds that Clarkson teaches “generating a sensing region based on the captured image data,” as recited in claim 18. Final Act. 12. The Examiner further finds that Huebner teaches “the viewing sensor 148 may capture an ambient light view (or ‘photo’ image frame) of its field of view forward of the pointer 100. . . . wherein the Pointer 100 may calibrate the workspace by creating a geometric mapping between the coordinate systems of the view region 420 and projection region 222.” *Id.* at 13–14. In other words, it is the combined teachings of Clarkson and Huebner that the Examiner is relying on to teach and/or suggest this limitation of claim 18.

Appellant contends that “Clarkson in view of Huebner does not teach or suggest ‘capturing ambient-lit image data . . . [and] generating a sensing region based on the captured ambient-lit image data’ (claim 18), because the sensing region of Clarkson is an illuminated region.” Appeal Br. 15.

Assuming *arguendo* that Clarkson’s sensing region is an illuminated region, as proffered by Appellant, we observe that Appellant has not further contested the Examiner’s findings regarding Huebner’s ambient light views and geometric mapping.

Specifically, Appellant’s argument against Clarkson separately from Huebner does not persuasively rebut the combination made by the Examiner. One cannot show non-obviousness by attacking references individually, where the rejections are based on combinations of references. *In re Merck & Co., Inc.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986); *In re Keller*, 642 F.2d 413, 425–26 (CCPA 1981).

Accordingly, we sustain the Examiner’s rejection of claim 18.

Claim 19

Claim 19 is independent. Appellant contends that “Clarkson in view of Huebner does not teach or suggest ‘capturing ambient-lit image data . . . [and] performing . . . on the ambient-lit image data’ (claim 19), because Huebner processes difference data resulting from a combination of active and ambient lit data sets.” Appeal Br. 15. In other words, Appellant contends that the Examiner’s reliance on Huebner for teaching the “performing” step is deficient because the processing in Huebner is performed on “difference data” not “ambient-lit image data,” as required by claim 19. We agree with Appellant.

As noted *supra* regarding claim 1, while the Examiner has shown capturing of ambient-lit image data in both Clarkson and Huebner, the Examiner fails to persuasively show any analyzing specifically on the ambient-lit image data as set forth in the claims in neither Clarkson nor Huebner, but instead analyzing illuminated views.

Accordingly, we reverse that rejection of claim 19.

CONCLUSION

In summary:

Claims Rejected	Basis	Affirmed	Reversed
1-20	§ 112		1-20
1-5, 8-10, and 12-20	§ 103 Clarkson and Huebner	18	1-5, 8-10, 12-17, 19, and 20
6, 7, 11	§ 103 Clarkson, Huebner, and Ptucha		6, 7, 11
Overall Outcome		18	1-17, 19, and 20

No period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED-IN-PART