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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte TERRENCE EDWARD McARDLE and
BENJAMIN ZEIS NEWHOUSE¹

Appeal 2018-003647
Application 14/211,786
Technology Center 2600

Before MARC S. HOFF, JAMES R. HUGHES, and ERIC S. FRAHM,
Administrative Patent Judges.

FRAHM, *Administrative Patent Judge.*

DECISION ON APPEAL

STATEMENT OF THE CASE

Introduction

Appellants appeal under 35 U.S.C. § 134(a) from a Final Rejection of claims 1–20. We have jurisdiction under 35 U.S.C. § 6(b). We affirm.

¹ According to Appellants, the real party in interest is Dropbox, Inc. who owns Aria Glassworks, Inc., which in turn is the assignee of the instant application (Appeal Br. 1).

Appellant's Disclosed Invention

Appellants' disclosed and claimed invention concerns a method for dynamically displaying virtual and augmented reality (VAR) scenes on a mobile phone/tablet that simulates natural perception (Title; Abs.; Spec. ¶¶ 2, 3; claim 1).

Exemplary Claim

An understanding of the invention can be derived from a reading of sole independent claim 1, which is reproduced below with bracketed lettering and *emphases* added:

1. A method for dynamically displaying virtual and augmented reality (VAR) scenes comprising:

capturing a plurality of real images comprising a plurality of real photometric parameters with a camera of a device;

determining visual input parameters for the device based on the plurality of real images by calculating a graphical projection of a three-dimensional VAR scene of the plurality of real images [A1] *without synthetic components to be shown on a digital display of the device*, calculating a visual locus of the three-dimensional VAR scene for the digital display of the device, and computing a ray direction of the three-dimensional VAR scene for each image of the plurality of real images through the visual locus;

storing the plurality of real images, the plurality of real photometric parameters of the plurality of real images, and locations of the plurality of real images within the three-dimensional VAR scene on the device;

determining a plurality of virtual photometric parameters based on the plurality of real photometric parameters of the plurality of real images;

generating a map of the three-dimensional VAR scene by determining a pair of image values for each of the plurality of real images, identifying the virtual photometric parameters that intersect at each ray direction for the plurality of real images, and, for each ray direction, computing a plurality of intrinsic

photographic inputs to define a parameterized photometric simulation function; and

[B] *rendering the three-dimensional VAR scene of the plurality of real images* with a plurality of simulated virtual photometric parameters by determining a value of each pixel for the three-dimensional VAR scene using the parameterized photometric simulation function and rendering a plurality of pixels into an output image that comprises some of the plurality of real images [A2] *without synthetic components depicted within the VAR scene.*

The Examiner's Rejections

(1) The Examiner rejected claim 1 under 35 U.S.C. § 112(a) as failing to provide adequate written description of the claimed invention so as to reasonably convey to one skilled in the relevant art that the inventors had possession of the claimed invention at the time the application was effectively filed (Ans. 2–3). Specifically, the Examiner determined that the Specification lacks support for the recitation of “without synthetic components,” as recited in claim 1 (Ans. 2).

(2) The Examiner rejected claims 1–5 and 15–20 under 35 U.S.C. § 103(a) as being unpatentable over the combination of Weising (US 2011/0216060 A1; published Sept. 8, 2011), Kawamoto (US 8,698,902 B2; issued Apr. 15, 2014 and filed Mar. 22, 2011), and Newhouse (US 2012/0214590 A1; published Aug. 23, 2012).² Final Act. 8–24; Ans. 3–18.

² Although dependent claim 15 is left out of the heading of the statement of the rejection (*see* Final Act. 8; Ans. 3), we consider this harmless error because (i) the Examiner addresses claim 15 on the merits in the body of the rejection (*see* Final Act. 20; Ans. 14); and (ii) Appellants do not separately argue claim 15, and argue claim 15 on the same basis as sole independent claim 1 from which claim 15 directly depends.

(3) The Examiner rejected claims 7 and 8 under 35 U.S.C. § 103(a) as being unpatentable over the combination of Weising, Kawamoto, Newhouse, and Osterhout (US 2012/0194553 A1; published Aug. 2, 2012). Final Act. 24–26; Ans. 18–20.

(4) The Examiner rejected claim 9 under 35 U.S.C. § 103(a) as being unpatentable over the combination of Weising, Kawamoto, Newhouse, and Kim (US 2011/0234631 A1; published Sept. 29, 2011). Final Act. 26–27; Ans. 21–22.

(5) The Examiner rejected claim 10 under 35 U.S.C. § 103(a) as being unpatentable over the combination of Weising, Kawamoto, Newhouse, and Lord (US 2011/0069229 A1; published Mar. 24, 2011). Final Act. 27–28; Ans. 22–23.

(6) The Examiner rejected claim 11 under 35 U.S.C. § 103(a) as being unpatentable over the combination of Weising, Kawamoto, Newhouse, Lord, and Osterhout. Final Act. 28–30; Ans. 23–24.

(7) The Examiner rejected claims 12 and 13 under 35 U.S.C. § 103(a) as being unpatentable over the combination of Weising, Kawamoto, Newhouse, and Zimmer (US 2005/0232507 A1; published Oct. 20, 2005). Final Act. 30–31; Ans. 24–26.

(8) The Examiner rejected claim 14 under 35 U.S.C. § 103(a) as being unpatentable over the combination of Weising, Kawamoto, Newhouse, and Swanson (US 2014/0019166 A1; published Jan. 16, 2014 and filed July 13, 2012). Final Act. 31–32; Ans. 26–27.

ISSUES

Written Description Rejection Under § 112(a)

Based on Appellant's arguments (Reply Br. 2–4), the following written description issue is presented:

(1) Did the Examiner err in rejecting claim 1 as lacking written description support for the recitations of “without synthetic components” on the basis that the Specification as originally filed did not reasonably convey to one skilled in the relevant art that the inventor had possession of the claimed invention at the time the application was effectively filed?

Obviousness Rejections Under § 103(a)

Based on Appellants' arguments (Appeal Br. 7–13; Reply Br. 4–9), the following obviousness issue is presented:³

(2) Did the Examiner err in rejecting claims 1–20 under 35 U.S.C. § 103(a) because the base combination of Weising, Kawamoto, and Newhouse because (a) the Examiner properly modified Weising and Kawamoto with Newhouse; and/or (b) the combination of Weising and Kawamoto teaches or suggests “rendering the three-dimensional VAR scene

³ Based on Appellant's arguments (Appeal Br. 7–13; Reply Br. 4–9) with regard to the obviousness rejection of claims 1–5 and 15–20, we select claim 1 as representative of the group of claims rejected over the base combination of Weising, Kawamoto, and Newhouse. Notably, Appellant only presents arguments as to claim 1, and relies on the arguments for claim 1 with regard to the patentability of claims 2–5 and 15–20. Because Appellants similarly do not provide separate arguments as to remaining dependent claims 7–14, we decide the outcome of the appeal of the obviousness rejections of claims 7–14 on the same basis as claim 1, from which these claims depend.

of the plurality of real images,” as recited in representative claim 1?

ANALYSIS

We have reviewed the Examiner’s rejections (Final Act. 8–32; Ans. 2–28) in light of Appellants’ contentions in the Appeal Brief (Appeal Br. 7–13) and the Reply Brief (Reply Br. 2–9) that the Examiner has erred, as well as the Examiner’s response to Appellants’ arguments in the Appeal Brief (*see* Ans. 28–31).

First Issue: Written Description Rejection of Claim 1

We agree with Appellants’ conclusions that the Examiner erred in rejecting claim 1 under 35 U.S.C. §112(a) as failing to provide an adequate written description of the invention recited in claim 1.

Because Figure 1 (steps 710 and 720) and paragraph 26 of the Specification show and describe using real components, and not synthetic components, the originally filed Specification reasonably conveys to one of ordinary skill in the art that Appellants had possession of the disputed limitation recited in claim 1. In this light, we agree with Appellants’ arguments (Reply Br. 3–4) that Figure 1 and paragraph 26 of the Specification fully support the negative limitations recited in claim 1 of “without synthetic components.”⁴

Accordingly, we do not sustain the Examiner’s written description rejection of claim 1.

⁴ Notably, at the time of withdrawing the written description rejection of claim 1 in the Advisory Action mailed July 13, 2017 (*see* Adv. Act., p. 2), the Examiner was also persuaded by Appellant’s arguments in this regard.

Second Issue: Obviousness Rejection of Representative Claim 1

However, we disagree with Appellants' arguments with regard to the obviousness rejections of claims 1–20 over the base combination of Weising, Kawamoto, and Newhouse. As to the obviousness rejection of representative claim 1, we adopt as our own: (1) the findings and reasons set forth by the Examiner in the action from which this appeal is taken (Final Act. 8–15; Ans. 3–9), and (2) the reasons set forth by the Examiner in the Examiner's Answer in response to Appellants' Appeal Brief (Ans. 28–31), except for the Examiner's finding (Ans. 30) that Weising discloses disputed limitation [B] (“rendering the three-dimensional VAR scene of the plurality of real images”) recited in claim 1. We provide the following for emphasis only, and highlight and amplify certain teachings and suggestions of Weising, Kawamoto, and Newhouse as follows.

Appellants' arguments (Appeal Br. 8–10; Reply Br. 4–7) that there is no motivation to combine Newhouse with Weising and/or Kawamoto due to inoperability are not persuasive in light of the Examiner's cogent and well-articulated reasoning found at pages 8–9 and 28–29 of the Answer and pages 14–15 of the Final Rejection. Furthermore, Appellants' contention that the Examiner errs by “stripping the virtual elements and virtual object respectively out of *Weising* and *Kawamoto* would render each reference inoperable for its intended purpose” (Appeal Br. 10) is unpersuasive, because the Examiner does not do so. Instead, the Examiner provides a well-articulated rationale for why one of ordinary skill in the art would indeed eliminate synthetic components using Newhouse (*see* Final 14–15; Ans. 8–9 and 28–29).

Appellants' contentions (Appeal Br. 10–13; Reply Br. 7–9) that

Weising, Kawamoto, and Newhouse, either alone or in combination, fail to disclose limitation [B] recited in claim 1 (“rendering the three-dimensional VAR scene of the plurality of real images”) are unpersuasive. Appellant’s contentions in this regard are premised on the assertion that both (i) Weising (*see* Appeal Br. 11–12); and (ii) Kawamoto (*see* Appeal Br. 12), fail to disclose rendering a three-dimensional VAR scene of plural real images, and instead rendering/displaying of a single image. Notably, Appellants neither address nor dispute the Examiner’s finding that Newhouse teaches an output image that “is a collection of a series of discrete real images/frames 100, 100A, 100B” (*see* Final Act. 14; Ans. 9). Although we agree with Appellants that Weising fails to disclose rendering using plural real images, both Kawamoto (*see* col. 23, ll. 34–55 (describing left eye and right eye images); *see also* Ans. 31) and Newhouse (*see* ¶ 28 describing discrete images 100, 100A, and 100B) disclose plural, and not single images. We agree with the Examiner (Ans. 31) that Kawamoto, and thus the combination of applied references, teaches or suggests the disputed limitation of rendering a three-dimensional VAR scene of a plurality of real images. In this light, we agree with the Examiner’s conclusion that one of ordinary skill in the art, in view of the combined teachings and suggestions of Weising, Kawamoto, and Newhouse, would have found it obvious to render a three-dimensional VAR scene of a plurality of real images as set forth in claim 1.

In view of all of the foregoing, we sustain the obviousness rejection of representative claim 1, as well as claims 2–5 and 15–20 grouped therewith, over the combination of Weising, Kawamoto, and Newhouse.

Appellants have failed to show that the Examiner erred in determining that the remaining six combinations applying the base combination further in

view of Osterhout, Kim, Lord, Zimmer, and/or Swanson teach or suggest the method recited in claims 7–14. For similar reasons as already discussed as to sole independent claim 1, and based on Appellants’ failure to address the Examiner’s prima facie case of obviousness with regard to claims 7–14, we sustain the Examiner’s obviousness rejections of these claims *pro forma*. See 37 C.F.R. § 41.37(c)(1)(iv) (requiring a statement in the briefs as to each ground of rejection presented by Appellant for review, and stating that arguments not presented in the briefs by Appellant will be refused consideration).

CONCLUSIONS

(1) The Examiner erred in rejecting claim 1 as being unpatentable under 35 U.S.C. § 112(a) for lack of written description support in the Specification.

(2) The Examiner did not err in rejecting claims 1–20 under 35 U.S.C. § 103(a) as being unpatentable over the base combination of Weising, Kawamoto, and Newhouse because (a) the Examiner properly modified Weising and Kawamoto with Newhouse; and (b) the combination of Weising and Kawamoto teaches or suggests “rendering the three-dimensional VAR scene of the plurality of real images,” as recited in representative claim 1.

DECISION

(1) The Examiner’s rejection of claim 1 under 35 U.S.C. § 112(a) as failing to provide adequate written description of the claimed invention is reversed.

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(2) The Examiner's obviousness rejections of claims 1–20 under 35 U.S.C. § 103(a) are affirmed.

Because we sustain at least one rejection as to every claim, we affirm.

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).

AFFIRMED