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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte KIM MATTHEWS¹

Appeal 2015-007416
Application 13/252,251
Technology Center 2600

Before LARRY J. HUME, JENNIFER L. McKEOWN, and
JAMES W. DEJMEK, *Administrative Patent Judges*.

DEJMEK, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellant appeals under 35 U.S.C. § 134(a) from a Final Rejection of claims 1–9, 11, and 13–21. Claim 12 has been canceled. App. Br. A-3. Claim 10 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Final Act. 25. We have jurisdiction over the remaining pending claims under 35 U.S.C. § 6(b).

We reverse.

¹ Appellant identifies Alcatel-Lucent USA, Inc. as the real party in interest. App. Br. 3.

STATEMENT OF THE CASE

Introduction

Appellant's claimed invention is directed to "the use of temporally structured light during scene production such that foreground/background separation/differentiation is enabled." Spec. ¶ 3. According to the Specification, by distinguishing certain portions of a captured image (e.g., foreground from background) based on the characteristics of the light illuminating those portions, the transmission parameters of the different portions could be altered (e.g., higher quality transmission for the foreground image or electing not to transmit the background in an effort to minimize transmission bandwidth requirements). Spec. ¶ 14.

Claim 1 is illustrative of the subject matter on appeal and is reproduced below with the disputed limitations emphasized in *italics*:

1. A temporal method of differentiating elements in a scene comprising:

illuminating a first element of the scene with light having a particular temporal characteristic;

illuminating a second element of the scene with light having a different temporal characteristic;

collecting images of the scene wherein the collected images include a first image portion produced by the first element and a second image portion produced by the second element;

differentiating the first image portion from the second image portion based on the different temporal characteristics used to illuminate the first element and the second element; and

transmitting only the first image portion to a remote location.

The Examiner's Rejections

1. Claims 1–5, 8, 11, and 13–21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kakii et al. (US 2010/0118935 A1; May 13, 2010) (“Kakii”) and Warszauer et al. (US 2008/0203277 A1; Aug. 28, 2008) (“Warszauer”). Final Act. 6–22.

2. Claim 9 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Kakii and Warszauer. Final Act. 22–23.

3. Claims 6 and 7 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kakii, Warszauer, and Goodman (US 2010/0321467 A1; Dec. 23, 2010). Final Act. 23–25.

Issues on Appeal

1. Did the Examiner err in finding the combination of Kakii and Warszauer teaches or suggests “differentiating the first image portion from the second image portion based on the different temporal characteristics used to illuminate the first element and the second element,” as recited in claim 1?

2. Did the Examiner err in finding the combination of Kakii and Warszauer teaches or suggests “selectively transmitting a first portion of an image . . . and bypassing transmission of a second portion of the image . . .,” wherein the first portion is formed by illuminating a first element with light having a first temporal characteristic and the second portion is formed by illuminating a second element with light having a second temporal characteristic, as recited in claim 13?

ANALYSIS²

Warszauer is generally directed to “photographing objects as they appear when illuminated by a controlled light source, while minimizing [the] influence of ambient light on the resultant images.” Warszauer ¶ 40. In a disclosed embodiment, Warszauer teaches using a time-modulated light source and a camera comprising at least one light-sensor. Warszauer ¶ 9. The disclosed light sensor further comprises a capacitor that is charged during a first period and discharged during a second period. Warszauer ¶ 9. During the first periods (i.e., when the capacitor of the light source is charging), the light source is providing light, whereas during the second periods (i.e., when the capacitor is discharging), the light source is not providing light. Warszauer ¶ 9. Warszauer further describes the exposure time for capturing an image is divided into two phases—during the first phase, exposure occurs when the light source is providing light, whereas during the second phase the light source is off and only ambient light is present. Warszauer ¶¶ 52, 57. According to Warszauer:

[C]ell capacitor charging due to ambient light during first phases is largely canceled out during second phases, yet cell capacitor charging during first phases due to own light is not canceled out during second phases. Light detection circuitry thus detects an image of a photographed scene as seen illuminated by own light, and largely ignores light information derived from ambient light.

Warszauer ¶ 58.

² Throughout this Decision, we have considered the Appeal Brief, filed February 11, 2015 (“App. Br.”); the Reply Brief, filed August 4, 2015 (“Reply Br.”); the Examiner’s Answer, mailed on June 4, 2015 (“Ans.”); and the Final Office Action (“Final Act.”), mailed on November 18, 2014, from which this Appeal is taken.

Appellant argues Warszauer, as relied upon by the Examiner, fails to teach illuminating a first element of a scene with light having a particular temporal characteristic and illuminating a second element of the scene with light having a different temporal characteristic. App. Br. 5–9. Rather than illuminating different portions of a scene with different light sources, Appellant contends “Warszauer describes a technique for photographing a scene or object that is illuminated by both a controlled own-light source and ambient light.” App. Br. 6 (emphases omitted). Appellant asserts Warszauer teaches the light captured by the camera is produced by both the light source (i.e., own-light) and ambient light. App. Br. 7 (citing Warszauer ¶ 7). Further, Appellant argues Warszauer does not teach or suggest that any portion of the captured image is produced solely by ambient light when the object or scene is illuminated by the light source. App. Br. 7. Because Warszauer teaches a system in which the entire captured scene or object is illuminated by the combination of two different light sources—own-light and ambient light—Appellant additionally asserts Warszauer differentiates between different portions of the captured image illuminated by different light sources (i.e., light having different temporal characteristics). App. Br. 8; Reply Br. 3.

The Examiner explains Warszauer describes a technique for photographing a scene illuminated by both a controlled own-light source and ambient light. Ans. 24. The Examiner finds the mixture of the controlled light source and ambient light “is implicitly varied from an area in the scene to another area in the scene.” Ans. 24 (emphasis omitted). The Examiner further finds “Warszauer’s camera captures an image of [a] scene having areas illuminated by the combination of a controlled own-light source and

ambient light and other areas illuminated with the ambient light only.”

Ans. 25. Further, the Examiner finds:

When the areas illuminated by ambient light only are entirely eliminated from the resultant photographic image, only the areas illuminated by the combination of the own-light and the ambient light remain in the resultant photographic image. Without specifying the differentiating process in more details, this is meets the requirement of the differentiating process.

Ans. 29.

We find Appellant’s arguments persuasive of Examiner error. In particular, we agree with Appellant that the Examiner has not identified sufficient evidence, or provided persuasive technical reasoning, that Warszauer teaches differentiating a first image portion from a second image portion based on the different temporal characteristics of the light used to illuminate the different portions of the collected images of a scene, as recited in independent claim 1. Rather, Warszauer teaches an exposure time having two phases, but each phase illuminating the *entire* scene. Warszauer ¶¶ 52, 57. Based on the capture of the *entire* scene under two different lighting conditions (controlled light and ambient light during the first phase and ambient light only during the second phase), Warszauer is directed to minimizing the effects of ambient light on the *entire* captured scene. Warszauer ¶ 58. We agree with Appellant that such a teaching does not suggest differentiating portions of the collected images of a scene based on how the temporal characteristics of the light used to illuminate those portions.

Accordingly, based on the record before us, we do not sustain the Examiner’s rejection of independent claim 1. Additionally, we do not

sustain the Examiner's rejections of claims 2–9, 11, and 21, which depend therefrom.

Similarly, we agree with Appellant that the Examiner has not identified sufficient evidence, or provided persuasive technical reasoning, that Warszauer teaches forming a first portion of an image by illuminating a first element of the scene (i.e., at a first location) with light having a first temporal characteristic and illuminating a second portion of an image by illuminating a second element of the scene with light having a second temporal characteristic to allow the selective transmission of the first portion but not the second portion, as recited in independent claim 13, and as commensurately recited in independent claim 17. As discussed *supra*, Warszauer does not teach forming a first and second portion of an image by illuminating different portions of the scene to be captured using a light having a first temporal characteristic to form the claimed first portion (which is selectively transmitted) and light having a second temporal characteristic to form the claimed second portion (for which transmission is bypassed). Rather, Warszauer teaches an exposure of capturing an entire image with illumination from a controlled own-light source as well as ambient light during a first phase of exposure, and capturing an entire image with illumination only from ambient light during a second phase of exposure. *See* Warszauer ¶ 58.

Therefore, on the record before us, we do not sustain the Examiner's rejection of independent claims 13 and 17. Additionally, we do not sustain the Examiner's rejection of claims 14–16 and 18–20, which depend therefrom.

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DECISION

We reverse the Examiner's decision to reject claims 1–9, 11,
and 13–21.

REVERSED