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EXAMINER
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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte KLAUS M. IRION, ANDRE EHRHARDT,
REINHOLD BAUMGARTNER, HERBERT STEPP, and
THOMAS PONGRATZ

Appeal 2010-010921
Application 11/361,484
Technology Center 3700

Before LINDA E. HORNER, PHILLIP J. KAUFFMAN, and
MICHAEL C. ASTORINO, *Administrative Patent Judges*.

ASTORINO, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

The Appellants appeal under 35 U.S.C. § 134 from the Examiner's decision finally rejecting claims 1-18. We have jurisdiction over the appeal under 35 U.S.C. § 6(b).

We AFFIRM.

CLAIMED SUBJECT MATTER

Claim 1 is the only independent claim on appeal. Claim 1, reformatted and reproduced below, is representative of the subject matter on appeal.

> 1. A fluorescence diagnosis system, comprising
>
> a viewing system,
>
> at least one light source, and
>
> a camera system for recording an image taken by said viewing system, said at least one light source being able to be operated
>
> in a first operating mode in which white light is generated, leading to a white light image,
>
> in a second operating mode in which a first fluorescence excitation light of a first excitation wavelength range is generated, producing a fluorescence image in a visible range, and
>
> in a third operating mode in which a second fluorescence excitation light of a second excitation wavelength range is generated, producing a fluorescence image in a NIR range,
>
> said camera system is sensitive at least in said visible range and said NIR range,
>
> said fluorescence diagnosis system further comprising an image processing system via which said fluorescence image in said NIR range can be converted into a visible image,
>
> wherein said fluorescence diagnosis system is adapted to simultaneously display the white light image, the fluorescence image in a visible range, and the fluorescence image in a NIR range as separate images on the viewing system.

REJECTIONS

The following Examiner's rejections are before us for review.

Claims 1-11, 13, 14, 17, and 18 are rejected under 35 U.S.C. § 103(a) as unpatentable over Cline (US 6,821,245 B2, iss. Nov. 23, 2004) and Zeng (US 2004/0225222 A1, pub. Nov. 11, 2004).[1,2,3]

Claim 12 is rejected under 35 U.S.C. § 103(a) as unpatentable over Cline, Zeng, and Weinberger (Andreas W.A. Wineberger, et al., *Persistent indocyanine green (ICG) fluorescence 6 weeks after intraocular ICG administration for macular hole surgery*, Graefe's Arch. Clin. Exp. Ophthalmol., pp. 388-390, Springer-Verlag (2001)).

Claims 15 and 16 are rejected under 35 U.S.C. § 103(a) as unpatentable over Cline, Zeng, and Ben-Haim (US 6,200,310 B1, iss. Mar. 13, 2001).

OPINION

The Examiner finds Cline discloses everything recited in claim 1 including a fluorescence diagnosis system having a viewing system, and first, second, and third operating modes, except Cline does not disclose that its fluorescence diagnosis system is adapted to simultaneously display the

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[1] The Answer at page 4 states that the claims are rejected "as being anticipated by Cline." Since the claims are rejected under section 103 and not section 102 it is understood that the rejection is based on obviousness and not anticipation. Accordingly, the proper phrase is "unpatentable over Cline" and not "anticipated by Cline."

[2] We have consolidated the Examiner's rejection of claims 1-4, 7-11, 13, 14, 17 and 18 set forth on page 4 of the Answer and the Examiner's rejection of claims 5 and 6 set forth on page 7 of the Answer since both rejections are based on the combination of Cline and Zeng.

[3] The Examiner includes Sage (US 4,600,302, iss. Jul. 15, 1986) as extrinsic evidence for the rejection of claim 11. Ans. 4, 6.

white light image from the first operating mode, the fluorescence image in a visible range from the second operating mode, and the fluorescence image in a NIR range from the third operating mode as *separate* images on the viewing system. Ans. 4-5. To remedy this deficiency with regard to the rejection of claim 1, the Examiner turns to Zeng's disclosure and finds that it teaches "displaying images overlaid or as separate images as an alternative expedient in the art." Ans. 5 (citing Zeng, para. [0054]). The Examiner concludes that "[i]t would have been obvious to one of ordinary skill in the art to modify the display of Cline[] to present the images as overlaid or as separate images since this is taught by Zeng[] to be an alternative expedient in the art of displaying." *Id*.

The Appellants concede that Cline's light source 40 has three operating modes. App. Br. 6. The first operating mode uses white light. The second operating mode, the "fluorescence/fluorescence" mode, and the third operating mode, the "fluorescence/reflectance" mode, are similar in that a fluorescence image is normalized. App. Br. 6-7. The Appellants point out that normalization helps distinguish "changes in the signal strength that are due to pathology and those that are due to imaging geometry and shadows." App. Br. 6 (quoting Cline, col. 7, ll. 31-35), *see* Reply Br. 3. The Appellants also point out that: in the second operating mode, normalizing a first fluorescence image occurs by acquiring a second fluorescence image that is not significantly affected by tissue pathology as a reference signal and then superimposing the first and second fluorescence images; and, in the third operating mode, normalizing a fluorescence image occurs by acquiring a reflected light image that does not detect tissue pathology and then superimposing the first fluorescence image and the reflected light image.

App. Br. 6-7 (citing Cline, col. 7, ll. 35-47). The Appellants contend that in each of the second and third operating modes the images acquired to normalize the first fluorescence image "would provide no additional useful information to the surgeon when displayed by themselves," and as such, one of ordinary skill in the art would not have reason to modify Cline to display the normalizing images separately. *See* App. Br. 7-9. Moreover, the Appellants contend that displaying both images separately "would be a waste of display space or, worse, confusing to the operator." Reply Br. 2-3.

In response, the Examiner reasons that viewing Cline's images separately "could assist with images calibration as Cline teaches the importance of constant gain ratio for the video system calibration (Col. 14, Line 33-47)." Ans. 11. We agree with the Examiner's reasoning. Cline describes the function of the gain ratio "is to provide the operator with the best combination of sensitivity (ability to detect suspect tissue) and specificity (ability to discriminate correctly)" and that "[t]here is an optimal gain ratio for which tissue suspicious for early cancer in a fluorescence image will appear as a distinctly different color than normal tissue." Cline, col. 7, ll. 59-65. The Appellants do not cogently explain why the Examiner's reasoning is in error.

The Appellants also contend that Cline teaches away from simultaneously viewing separate images, since the heart of Cline's invention is to "display only the overlaid primary and normalizing images." *See* Reply Br. 3-4, App. Br. 9. One of ordinary skill in the art would understand that a purpose of Cline is to display a superimposed image, not that it would be undesirable to simultaneously display separate images along with the superimposed image. *See* Ans. 10. Zeng teaches that it is desirable to

simultaneously display separate images along with the superimposed image. Ans. 10-11 (citing Zeng, paras. [0055], [0065]); *see* App. Br. 7 (the Appellants concede that "Zeng discloses a multi-modal imaging system, and discloses that white light images and fluorescence images may be displayed on different partitions on the same viewing monitor." (citing Zeng, para. [0054])); *see also In re Gurley*, 27 F.3d 551, 553 (Fed. Cir. 1994). As such, the Appellants' contention is not persuasive.

For the above reasons, we agree with the Examiner's conclusion of obviousness. Thus, the rejection of claim 1, and its dependent claims 2-11, 13, 14, 17, and 18, as unpatentable over Cline and Zeng is sustained.

The Appellants have not provided further arguments for the rejection of claim 12 as unpatentable over Cline, Zeng, and Weinberger and the rejection of claims 15 and 16 as unpatentable over Cline, Zeng, and Ben-Haim. Accordingly, the Appellants rely on the arguments presented for the Examiner's rejection of claim 1 for these grounds of rejection.

For the same reasons we have sustained the rejection of claim 1, we likewise sustain the rejection of claim 12 as unpatentable over Cline, Zeng, and Weinberger and the rejection of claims 15 and 16 as unpatentable over Cline, Zeng, and Ben-Haim.

DECISION

We AFFIRM the rejections of claims 1-18.

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

AFFIRMED

Klh