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CHERNOFF VILHAUER MCCLUNG & STENZEL, LLP
601 SW Second Ave., Suite 1600
PORTLAND, OR 97204

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SNYDER, ADAM J

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte XIAO-FAN FENHG and SCOTT J. DALY

Appeal 2010-005250
Application 10/966,258
Technology Center 2600

Before ROBERT E. NAPPI, JOHNNY A. KUMAR, and
BRYAN F. MOORE, *Administrative Patent Judges*.

MOORE, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134(a) of the Final Rejection of claims 1 and 3-17. App. Br. 3. Claims 2 and 18-25 are canceled. *Id*. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

INVENTION

The invention is directed to a backlit display with improved dynamic range. *See* Spec. 1:11-12.

Claim 1 is exemplary of the invention and is reproduced below:

> 1. A method for displaying an input image on a liquid crystal display comprising, said input image comprising a plurality of sequential frames:
>
> (a) illuminating a plurality of pixels at a first non-zero illumination level over a first time period within an interval of a length associated with respective individual ones of said plurality of sequential frames;
>
> (b) illuminating said plurality of pixels at a second illumination level over a second time period within said interval, said second illumination level less than said first illumination level;
>
> (c) wherein said second illumination level is automatically selected based upon a statistical measure of a plurality of pixels of said input image, where said statistical measure is indicative of a property of only a portion of said input image and is not indicative of said property with respect to any other portion of said input image.

REFERENCES

Luther Weindorf	US 2002/0118182 A1	Aug. 29, 2002
Asao	US 6,809,717 B2	Oct. 26, 2004
Sugino	US 2005/0259064 A1	Nov. 24, 2005
Leyvi	US 2006/0071936 A1	Apr. 6, 2006
Hirakata	US 7,161,577 B2	Jan. 9, 2007
Hsu	US 7,268,759 B2	Sep. 11, 2007

REJECTIONS AT ISSUE

Claims 1, 3, 4, and 7-11 are rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Asao and Hsu. Ans. 4-8.

Claim 5 is rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Asao, Hsu, and Hirakata. Ans. 8.

Claim 6 is rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Asao, Hsu, and Leyvi. Ans. 8-9.

Claims 12 and 15 are rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Asao and Luther Weindorf. Ans. 9-10.

Claims 13, 14, and 17 are rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Asao, Luther Weindorf, and Sugino. Ans. 10-12.

Claim 16 is rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Asao, Luther Weindorf, and Hirakata. Ans. 13.

ISSUES

1. Did the Examiner err in finding that the combination of Asao and Hsu teach "wherein said second illumination level is automatically selected based upon a statistical measure of a plurality of pixels of said input image, where said statistical measure" as recited in claim 1;

2. Did the Examiner err in finding that the combination of Asao, Hsu, and Hirakata teach "statistical measure is an average" as recited in claim 5;

3. Did the Examiner err in finding that the combination of Asao, Hsu, and Leyvi teach "statistical measure is an median" as recited in claim 6; and

4. Did the Examiner err in finding that the combination of Asao, Hsu, and Luther Weindorf teach "wherein the magnitude of said another value is user-adjustable, independently of the duration of said another value" as recited in claim 12?

ANALYSIS

35 U.S.C. § 103(a) - Asao and Hsu

Claims 1, 3, 4, and 7-11

Appellants argue that combination of Asao and Hsu does not teach "wherein said second illumination level is automatically selected based upon a statistical measure of a plurality of pixels of said input image, where said statistical measure," as recited in claim 1. App. Br. 7. Specifically, Appellants argue that the "Hsu merely diminishes the white level luminance

[i.e., first illumination level] of the backlight to the highest grayscale value in the frame . . . [but] Hsu has nothing to do with the level of black point insertion [i.e., second illumination level] within a frame, as is claimed." *Id.* This argument is not persuasive.

The Examiner relies on the combination of Asao and Hsu to teach this limitation. Asao teaches that there is a second illumination level within a frame. Asao, 8:15-32; *see also* Ans. 14. Hsu teaches changing the backlight level based upon a statistical measurement (i.e. Maximum grayscale value) of a portion (i.e. segments) of the image to provide a sharp image quality and consuming less power. Hsu, 3:65- 4:26, *see also* Ans. 14. Since claim 1 only requires a "second illumination level less than said first illumination level," and Asao provides this teaching, all that is required of Hsu is to choose an illumination level based on a statistical measurement. Appellants suggests that the teachings of Hsu apply only to the white (higher) illumination level not the black (lower) illumination level, however, the Examiner does not rely on Hsu to teach the existence of a "black illumination level," rather Hsu only provides the means to determine an illumination level based on a statistical measurement. Thus, we agree with the Examiner that the combination of Asao and Hsu teaches "wherein said second illumination level is automatically selected based upon a statistical measure of a plurality of pixels of said input image, where said statistical measure," as recited in claim 1. *See* Ans. 15.

Appellants do not make substantive arguments regarding claims 3, 4 and thus these claims fall with claim 1. Claim 7 contains essentially the same limitations as claim 1, and claims 8-11 depend from claim 7, thus claims 7-11 fall with claim 1.

35 U.S.C. § 103(a) - Asao, Hsu, and Hirakata

Claim 5

Claim 5 requires that the "statistical measure is an average." Appellants argue that "Hsu requires that the statistical measure be a maximum gray level of the frame, and cannot be an average [as taught by Hirakata] for the technique of Hsu to work" because Hsu teaches away from using an average. App. Br. 8. "A reference may be said to teach away when a person of ordinary skill, upon reading the reference, . . . would be led in a direction divergent from the path that was taken by the applicant." *In re Haruna*, 249 F.3d 1327, 1335 (Fed. Cir. 2001) quoting *Tec Air, Inc. v. Denso Mfg. Mich. Inc.*, 192 F.3d 1353, 1360 (Fed. Cir. 1999). A reference does not teach away, however, if it merely expresses a general preference for an alternative invention but does not "criticize, discredit, or otherwise discourage" investigation into the invention claimed. *In re Fulton*, 391 F.3d 1195, 1201 (Fed. Cir. 2004). Appellants do not argue, nor do we find, that Hsu criticizes, discredits, or discourages using an average. Thus we are not persuaded by this argument.

35 U.S.C. § 103(a) - Asao, Hsu, and Leyvi

Claim 6

Claim 6 requires that the "statistical measure is a median." Appellants argue that "Hsu requires that the statistical measure be a maximum gray level of the frame, and cannot be an average [as taught by Leyvi] for the technique of Hsu to work" because Hsu teaches away from using an average. App. Br. 9. Appellants do not argue, nor do we find, that Hsu criticizes,

discredits, or discourages using a median. Thus we are not persuaded by this argument.

35 U.S.C. § 103(a) - Asao and Luther Weindorf

Claims 12 and 15

Claim 12 recites "wherein the magnitude of said another value [black level] is user-adjustable, independently of the duration of said another value." Appellants argue that Luther Weindorf "merely discloses that a user may adjust the overall brightness provided by a backlight to an LCD display [, however,] brightness of an LCD display is adjusted by varying the white point, or 'on level' of a backlight, and does not affect the black level, within a frame, to which a backlight is decreased so as to reduce image blur." App. Br. 9. As noted above, Asao is relied on by the Examiner to show the black illumination level. Therefore, Luther Weindorf is only required to show that an illumination level is user adjustable. Luther Weindorf teaches changing the magnitude of backlight level based upon a user-adjustable factor (¶ [0039]) to provide a brightness control system to improve one or more viewing preferences (¶ [0012]). Therefore, we agree with the Examiner that the combination of Asao and Luther Weindorf teach "wherein the magnitude of said another value [black level] is user-adjustable, independently of the duration of said another value." *See* Ans. 16-17.

Appellants do not make substantive arguments regarding the rejections of claims 13-17, which depend from claim 12, thus we sustain the rejections of claims 13-17 for the same reasons as discussed with respect to claim 12.

DECISION

The Examiner's decision to reject claims 1 and 3-17 is affirmed.

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

ELD