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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/023,295	12/27/2004	Bruce R. Ferguson	MSEMI.115A	3364
20995 7590 09/06/2007 KNOBBE MARTENS OLSON & BEAR LLP 2040 MAIN STREET FOURTEENTH FLOOR IRVINE, CA 92614			EXAMINER NGUYEN, KEVIN M	
			ART UNIT 2629	PAPER NUMBER
			NOTIFICATION DATE 09/06/2007	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 11/023,295	Applicant(s) FERGUSON, BRUCE R.	
	Examiner Kevin M. Nguyen	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) ☒ Notice of References Cited (PTO-892) | 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) ☐ Notice of Informal Patent Application |
| 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>10/11/2006, 3/24/2005</u> . | 6) ☐ Other: _____ |

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 20 and 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. Regarding claim 20, the word "means" is preceded by the word(s) "monitoring" "multiplying" and "adjusting" in an attempt to use a "means" clause to recite a claim element as a means for performing a specified function. However, since no function is specified by the word(s) preceding "means," it is impossible to determine the equivalents of the element, as required by 35 U.S.C. 112, sixth paragraph. See *Ex parte Klumb*, 159 USPQ 694 (Bd. App. 1967).

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1, 2, 11, 13, 14, 15, 20 and 21 are rejected under 35 U.S.C. 102(e) as being anticipated by Park (Korean, KR 10-2003-0075461 is equivalent to Park, US 7,202,458, hereafter Park).

As to claim 1, a visual information display system with ambient light correction comprising: a visible light sensor configured to output a sensor current signal in proportion to the level of ambient light; a dimming control input determined by a user; a multiplier circuit configured to generate a brightness control signal based on a product of the sensor current signal and the dimming control input; and a display driver configured to adjust brightness levels of one or more light sources in response to the brightness control signal (Park teaches elements 22, 14, 42, and 38 in fig. 1, pages 2 and 3).

As to claim 2, the visual information display system of claim 1, further comprising a dark level bias circuit configured to maintain the brightness control signal above a predetermined level when the ambient light level decreases to approximately zero (Park teaches in figure 5, page 3).

As to claim 11, the visual information display system of claim 1, wherein the display driver is an inverter and the light sources are fluorescent lamps for backlighting a liquid crystal display (Park teaches element 14, fig. 1).

As to claim 13, a method to adjust display brightness over ambient light variations, the method comprising the steps of: sensing ambient light with a visible light detector, wherein the visible light detector outputs a current signal that varies linearly with the ambient light level; multiplying the current signal with a user-adjustable dimming control input to generate a brightness control signal; and providing the brightness control signal to a display driver (Park teaches providing elements 22, 14, 42, and 38, fig. 1, pages 2 and 3).

As to claim 14, the method of claim 13, wherein the visible light detector has an adjustable response time to allow the current signal to remain substantially unchanged during transient variations of less than a predefined duration in the ambient light (Park teaches steps 100, 102 and 104, fig. 4, page 3 or col. 6, lines 1-10).

As to claim 15, the method of claim 13, wherein software algorithm is used to multiply the current signal with the user-adjustable dimming control input (Park teaches in page 3 or col. 5, lines 45-60).

As to claim 20, a visual information display system with ambient light correction comprising: means for monitoring ambient light and generating a current signal with an amplitude proportional to the ambient light level; means for multiplying the current signal by a dimming control input to generate a brightness control signal; and means for adjusting display brightness with the brightness control signal (the limitation of claim 20 is the same as those of claim 1 and therefore the claim will be rejected using the same rationale).

As to claim 21, the visual information display system of claim 19, wherein a user sets the dimming control input based on a perceived brightness level and the brightness control signal varies with the ambient light to maintain the perceived brightness level (Park teaches element 42, page 3 or col. 5, line 61 to col. 6, line 15).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Park in view of Lin (US 2004/0155853).

Park teaches all of the limitation, except for the visual information display system of claim 1, further comprising an overdrive clamp circuit configured to limit the brightness control signal to be less than a predetermined level. As modified by Lin reference, Lin teaches the deficiencies of Park in which the display device comprises a used override switch 32 that sets the brightness to a user defined level regardless of the value of the target brightness signal, see section 16. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Park to have the used override switch as taught by Lin, because this would eliminate both system CPU requirements and additional wiring traces while still maintaining panel brightness control (see 3 last lines of section 2 of Lin).

8. Claims 4 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park in view of Lowles et al (US 6,967,657, hereinafter Lowles).

As to claim 4, Park teaches all of the limitation, except for the visual information display system of claim 1, further comprising an automatic shutdown circuit configured to turn off auxiliary light sources in a transfective display system when the ambient light is greater than a predefined level. As modified by Lowles reference, Lowles teaches the deficiencies of Park in which a LCD device "further increase the font size of the FPD to a third font size larger than the second and first font sizes with a successive occurrence of the pre-selected input. With each successive occurrence of the pre-selected input the

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font size may further increase. The device then remains in this low-light mode, where the light source 14 is activated, (step 36) until a pre-determined period has passed without the detection of any user input (either the pre-selected input or some arbitrary input). After the pre-determined period of inactivity, the device automatically shuts off the light source, adjusts the display from monochrome to full color and decreases the font size to the first font size in step 40. In addition, the light source may also be shut off by some specific input by the user indicating that the user desires to return the FPD to its normal reflective mode of operation" (col. 3, lines 20-34).

As to claim 19, the method of claim 13, further comprising the step of shutting off the display driver when the ambient light level is above a predetermined threshold (the limitation of claim 19 is similar to those of claim 4, though in method form, therefore the rejection of claim 19 will be treated using the same rationale as claim 4).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Park to have the device automatically shuts off the light source as taught by Lowles, because this would "provides a transreflective FPD with an improved viewing performance under low-lighting conditions while approaching the advantages of a reflective FPD" (col. 2, lines 5-8 of Lowles).

9. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park in view of Wei et al (US 6,809,718, hereinafter Wei).

As to claim 5, Park teaches all of the limitation except for the visual information display system of claim 1, wherein the visible light sensor comprises an array of PIN diodes on a single substrate that produces a current which is amplified to be the sensor

current signal (Park teaches element 22, fig. 1). Claim 6, the visual information display system of claim 1, wherein the visible light sensor has an adjustable response time using a capacitor. As modified by Wei reference, Wei teaches the deficiencies of Park in which a LCD device comprises a photo sensor 34 is a thin film transistor TFT for producing a photo current 52, the decisive circuit 46 calculates the ambient light 56, PWM controller 58 generates PWM signal 58 corresponding to a pulse width to modulate a voltage pulse value which is transferred to a base of a transistor Q_4 , and a voltage source V_M . There is a RC circuit having a capacitor coupling between V_M and transistor Q_4 (fig. 3, col. 3, lines 43-66).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Park to have RC circuit as taught by Wei, because this would adjust the light source that depends on an ambient illumination spontaneously without consuming power and causing eyestrain (col. 2, lines 30-34 of Wei).

10. Claims 7, 9, 10 and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park in view of Sanchez (US 2006/0049959).

As to claim 7, Park teaches all of the limitation, except for the visual information display system of claim 1, wherein the multiplier circuit further comprises: a pair of current steering diodes configured to multiple the sensor current signal by a pulse-width-modulation signal representative of the dimming control input; a network of resistors configured to scale the brightness control signal; and at least one capacitor coupled to the network of resistors and configured as a low pass filter for the brightness control signal. As modified by Sanchez reference, Sanchez teaches the deficiencies of

Park in which a LCD device comprises a multiplexer 305, a photosensor and diode between capacitor and resistor 322, resistors 322, 323, a capacitor is between ground the diode, fig. 3, sections 19 to 21.

As to claim 9, Sanchez conventionally discloses a dimming voltage 113, a potentiometer 113, a diode 112, the resistors 110, 111, and capacitor 106 (see fig. 1, section 4).

As to claim 10, Sanchez conventionally discloses an analog circuit 101, a dimming voltage 113, a potentiometer 113, a diode 112, the resistors 110, 111, and capacitor 106 (see fig. 1, and section 4).

As to claim 16, Sanchez teaches the method of claim 13, wherein the user-adjustable dimming control input is a pulse-width-modulation logic signal and the multiplying step further comprises the steps of: steering the current signal to a network of resistors to generate the brightness control signal when the pulse-width-modulation logic signal is a first logic level; steering the current signal away from the network of resistors when the pulse-width-modulation logic signal is a second logic level; and using at least one capacitor as a smoothing filter for the brightness control signal (Sanchez teaches providing a multiplexer 305, a photosensor and diode between capacitor and resistor 322, resistors 322, 323, a capacitor is between ground the diode, fig. 3, sections 19 to 21).

As to claim 17, the method of claim 13, wherein the user-adjustable dimming control input adjusts a potentiometer and the multiplying step is accomplished by driving the potentiometer and a resistor network with the output of the visible light detector

(Sanchez conventionally discloses dimming voltage 113, adjusting by a potentiometer 110, and driving by a resistor 110, and multiplying by inverter 107, fig. 1, section 4).

As to claim 18, the method of claim 13, wherein the user-adjustable dimming control input is a digital word and the multiplying step further comprises the steps of: providing the digital word to a digital-to-analog converter for conversion to an analog voltage; and generating a reference voltage for the digital-to-analog converter by driving a resistor network with the output of the visible light detector (Sanchez conventionally discloses providing an analog circuit 101, a dimming voltage 113, a potentiometer 113, a diode 112, the resistors 110, 111, and capacitor 106, see fig. 1, and section 4).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Park to have a multiplexer 305, a photosensor and diode between capacitor and resistor 322, resistors 322, 323, a capacitor is between ground the diode as taught by Sanchez, because this would compensate for lamp aging, while fabricating the backlight for LCD device at low cost and light weight (see section 9 and 10 of Sanchez).

11. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Park in view of Sanchez as applied to claim 1 above, and further in view of Dupont et al (US 5,317,401, hereinafter Dupont).

Both Park and Sanchez teach all of the limitation, except for the visual information display system of claim 7, wherein the dimming control input is a DC voltage and the pulse-width-modulation signal is generated using a comparator circuit and a saw-tooth ramp signal. As modified by Dupont reference, Dupont teaches the

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deficiencies of Park and Sanchez in which a LCD device comprises providing selectively adjust brightness of the image 20 having voltage signal 11, a PWM, and a ramp signal 14, fig. 1, col. 2, line 28 to col. 3, line 15. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Park and Sanchez to have selectively adjust brightness of the image 20 having voltage signal 11, a PWM, and a ramp signal 14 as taught by Dupont, because this would adjust independently the contrast and brightness without one effecting the other (col. 4, lines 42-43 of Dupont).

12. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Park in view of Sakamoto (US 6,429,839).

Park teaches all of the limitation, except for the visual information display system of claim 1, wherein the light sources are light emitting diodes for backlighting a liquid crystal display. As modified by Sakamoto reference, Sakamoto teaches the deficiencies of Park in which the backlight of the LCD device is light emitting diode (col. 10, lines 47-52). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Park to have the backlight of the LCD device is light emitting diode as taught by Sukamoto, because this would provide the LCD panel thin and light weight (col. 1, lines 17-22 of Sukamoto).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M. Nguyen whose telephone number is 571-272-7697. The examiner can normally be reached on MON-THU from 9:00-6:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard A. Hjerpe can be reached on 571-272-7691. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kevin M. Nguyen/
KEVIN M. NGUYEN
Examiner
Art Unit 2629

KMN
August 30, 2007