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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/520,836	03/08/2000	Takahiro Nakano	500.38315X00	1579
20457	7590	11/26/2003	EXAMINER	
ANTONELLI, TERRY, STOUT & KRAUS, LLP 1300 NORTH SEVENTEENTH STREET SUITE 1800 ARLINGTON, VA 22209-9889			MOE, AUNG SOE	
			ART UNIT	PAPER NUMBER
			2612	
DATE MAILED: 11/26/2003				

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

Office Action Summary	Application No.	Applicant(s)	
	09/520,836	NAKANO ET AL.	
	Examiner	Art Unit	
	Aung S. Moe	2612	

-- 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) 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 the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- 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 12 September 2003.

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) 1-6,8,9 and 12-16 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4a) Of the above claim(s) _____ is/are withdrawn from consideration.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) 1-6,8,9 and 12-16 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 and 120

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.

13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.

14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>5</u> .	6) <input type="checkbox"/> Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Species I of Figs. 1-6 and claims 1-6, 8-9, and 12-16 as set forth in Paper No. 4 (received on 9/12/2003) is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 103

3. 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.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-6, 8-9 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Noboru (Translation of JP 11-187306) in view of Kijima et al. (EP 0,840,503).

Regarding claim 1, Noboru '306 discloses 1, an electric camera (Fig. 1) comprising: an image sensing device (2) with a light receiving surface having N vertically arranged pixels and an arbitrary number of pixels arranged horizontally (i.e., see paragraph 0004 and 0005), N being equal to or more than three times the number of effective scanning lines M of a display screen of a television system (i.e., noted that the CCD sensor of Noboru '306 is used in the standard television system which contains the "N" number of pixels more than or equal to the standard television system such as NTSC; Moreover, it is conventionally well-known that the number of effective scanning lines in the field of the standard television system, e.g., NTSC, is about 240 lines; see paragraph 0005);

a driver (Fig. 1, the elements 4 and 6) to drive the image sensing device (2) to vertically read-out the signal charges accumulated in individual pixels of every pixels to produce a number of lines of output signals which corresponds to the number of effective scanning lines M (i.e., as discussed in paragraph 0019 that the effective pixels read out from the solid state image pickup device 2 is display on the view finder or monitor corresponding to the standard television signal, this implied that the number of lines read out from the sensor 2 must be corresponded to the number of effective scanning lines M of the standard television system; see Figs. 4 and 5); and a

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signal processing unit (Fig. 1, the element 7) to generate image signals by using the output signals of the image sensing device (2).

Furthermore, it is noted that although Noboru '306 shows the use of a image sensor (2) and a driver (4 & 6) for vertically reading out the signals charges accumulated in individual pixel of ever K pixels to produce a number of lines of output signals to display the image on the standard television system (i.e., noted that since the image read out from the sensor 2 is display on the standard television system, the number of lines having K pixels must be corresponded to the number of effective scanning lines M of the standard television; see Fig. 5 and the Abstract) as discussed above, Noboru '306 does not explicitly state that the signal charges accumulated in individual pixels of every K pixels are vertically mixed or culled to produce a number of lines of output signals wherein K being at lest one of integers equal to or less than an integral part of a quotient of N divided by M as recited in present claimed invention.

However, the above-mentioned claimed limitations are well known in the art as evidenced by Kijima '503. In particular, Kijima '503 teaches the use of a solid-state image pickup element such as CCD (Fig. 1, the element 12) with the effective pixel more than the number of pixels corresponding to a standard TV signal (i.e., as discussed in col. 3 lines 35+ that the CCD 12 of Kijima '503 having 1, 000,000 or more pixels which is clearly more than the number of pixels corresponding to a standard TV system) and the respective pixels from a number of lines are read out in conventional interlaced scanning method to provide the motion/dynamic picture image data (see col. 1, lines 20+).

Furthermore, Kijima '503 teaches that in order to realized the high speed image reading mode, it is desirable to drive the image sensing device (12) to vertically mix or cull signal

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charges accumulated in individual pixels of every K pixels to produce a number of lines of output signals (i.e., noted from Figs. 6-7 and 9-10 and col. 11, lines 30+, col. 12, lines 30+ and col. 15, lines 20+) which corresponds to the number of effective scanning lines M (i.e., noted that the number of "n" lines are reading out at 20 MHz rate, frames containing two interleaved fields can be produced at the NTSC standard rate of 30 per second, thus, the number of "n" lines read out from the sensor 12 must correspond to the effective scanning lines of the NTSC standard; see col. 1, lines 30-35, col. 4, lines 15-25, and col. 18, lines 45-50), K being at least one of integers equal to or less than an integral part of a quotient of N divided by M (i.e., this case noted that the sensor 12 contains about 1000 pixel in the vertical direction and the effective scanning lines for the conventional TV system, e.g., NTSC, is about 240, thus, a quotient of 1000 divided by 240 is about 4.2. As shown in Figs. 6 and 9 of Kijima '503, that the pixel signals for two or three lines continued in the vertical direction may be added and read, in view of this, it is cleared that the value for "K" is *equal to or less than* a quotient of 1000 divided by 240; see col. 8, lines 20+ and col. 12, lines 24+).

In view of the above, having the system of Noboru '306 and then given the well-established teaching of Kijima '503, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Noboru '306 as taught by Kijima '503 in order to realized a high speed dynamic imaging mode as suggested by Kijima '503 (i.e., see col. 1, lines 55+). Moreover, Kijima '503 states at col. 18, lines 35+ that such a modification would increase the data reading rate to efficiently and quickly obtain a fine focused image at an optimal shutter release opportunity.

Regarding claim 2, the combination of Noboru '306 and Kijima '503 discloses an electric camera according to claim 1, wherein the driver drives the image sensing device to read out or discard the signal charges of a pixel area corresponding to $N-K \cdot M$ pixels during a vertical blanking period of the television system (i.e., noted from the paragraph 0006 of Noboru '306 that only the number of pixels corresponding to the standard television signal is read out from the CCD sensor having an effective pixel more than the number of pixels corresponding to the standard television. In view of this, it is obvious that only the effective scanning lines corresponding to the standard TV are read out from the CCD sensor during the vertical blanking period as shown in Fig. 4 of Noboru '306) to extract the signal charges of a pixel area corresponding to $(K \times M)$ pixels from the N vertically arranged pixels of the image sensing device during a vertical effective scanning period of the television system and thereby obtain a number of lines of output signals which corresponds to the number of effective scanning lines M , $N-K \cdot M$ being the N vertically arranged pixels of the image-sensing device minus a product $(K \times M)$ of the number of pixels to be cyclically mixed or culled K and the number of effective scanning lines M (i.e., noted from the teaching of Kijima '503 that the number of "q" pixels read out by adding the "q" pixels from "n" lines are less than the total pixel sensor form "m" lines, and they are obviously corresponding to the conventional standard TV system for displaying the motion images by interleaving the odd and even files of image signals; see col. 1, lines 25+ and col. 15, lines 25+).

Regarding claim 3, the combination of Noboru '306 and Kijima '503 discloses an electric camera according to claim 1, wherein the signal-processing unit has a function of:

extracting an output signal period corresponding to that horizontal segment which virtually matches an aspect ratio of the television system with respect to a vertical height of the extracted pixels in the light receiving surface of the image-sensing device, and outputting the signals of the extracted horizontal segment over the entire horizontal effective scanning period of the television system (i.e., see Figs. 5; paragraph 0012, 0016, 0017-0018 and Figs. 4-5 of Noboru '306).

Regarding claim 4, the combination of Noboru '306 and Kijima '503 discloses an electric camera according to claim 1, wherein the driver drives the image sensing device to shift, in each display cycle of the television system (Fig. 4-5; paragraph 0012, 0016, 0017-0018 and Figs. 4-5 of Noboru '306), positions of the pixels to be cyclically mixed or culled and thereby output interlaced signals (noted the teaching of Kijima '503 as shown in Figs. 6 and 9; col. 1, lines 25+ and col. 11, lines 30+ and col. 12, lines 25+ of Kijima '503).

Regarding claim 5, the combination of Noboru '306 and Kijima '503 discloses an electric camera according to claim 4, wherein the signal processing unit has a function of interpolating vertical positions of gravity centers of the interlaced output signals obtained by the mixing or culling so that a phase difference between the gravity centers on two interlaced fields is 180 degrees (i.e., noted that Noboru '306 discloses the use of angular-velocity sensor 5a and 5b for interpolating vertical position of gravity center of the interlaced output signals from the sensor 2 so that a phase difference between the gravity center on two interlaced fields is 180 degrees as discussed in the paragraph 0013+; and Kijima '503 teaches the mixing or culling of the output signals to obtain the interlace signals for generating the high speed motion images thereof; see Figs. 6 and 9, col. 11, lines 30+ and col. 12, lines 25+).

Regarding claim 6, the combination of Noboru '306 and Kijima '503 discloses an electric camera according to claim 1, wherein the image sensing device can vertically mix or cull those numbers of pixels which are at least two of integers equal to or less than an integral part of a quotient of the number of vertically arranged pixel rows N divided by the number of effective scanning lines M (i.e., see Figs. 6 and 9; col. 11, lines 30+ and col. 12, lines 25+ of Kijima '503), and the driver drives the image sensing device in at least two modes corresponding to the at least two integers (i.e., noted the use of multiple modes in the camera system of Kijima '503 by selectively mixing or culling those number of pixels from the CCD sensor 12 as shown in Figs. 6 and 9; see col. 7, lines 25+, col. 8, lines 26+ and col. 12, lines 29+ of Kijima '503).

Regarding claim 8, the combination of Noboru '306 and Kijima '503 discloses an electric camera according to claim 6, further including a gain adjust unit for adjusting a gain of the output signals of the image sensing device (i.e., noted the Gain adjusting circuits 3, 4 and 6 as shown in Fig. 1 of Noboru '306; and noted the elements 14, 16, 20, 22 and 24 of Kijima '503), wherein, when the number of pixels to be cyclically mixed changes, a gain of the gain adjust unit is changed according to the number of pixels to be cyclically mixed on the image sensing device (i.e., noted the teaching of Kijima '503 for mixing the pixel signals as shown in Fig. 6 and 9) so that an output signal level of the gain adjust unit remains constant (i.e., noted from Figs. 1 of Noboru '306 and Kijima '503 that the signals output from the CCD sensor are respectively adjusted by using the gain adjusting circuit so that the output signals would remain constant).

Regarding claim 9, the combination of Noboru '306 and Kijima '503 discloses an electric camera according to claim 1, further including an image un-stability detector (Fig. 1, the elements 5a and 5b) for detecting an image un-stability of the electric camera, wherein a vertical

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height and horizontal width size and a position of an area to be extracted from the light receiving surface is changed according to an amount of image un-stability detected by the un-stability detector to correct the image un-stability (i.e., Paragraph 0013+ of Noboru '306).

Regarding claim 12, the combination of Noboru '306 and Kijima '503 discloses an electric camera according to claim 1, further including a trigger device (Fig. 1, the element 6 of Noboru '306) such as a shutter button (Fig. 1, the elements 46 of Kijima '503), wherein, when a trigger is produced by the trigger device, the signal charges accumulated in individual pixels of the image sensing device are not cyclically mixed but are read out independently for all pixels (i.e., see Figs. 6 and 9 of Kijima '503).

6. Claims 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Noboru '306 in view of Kijima '503 as applied to claims discussed above, and further in view of Fujimoto (U.S. 4,434,435).

Regarding claim 13, the combination of Noboru '306 and Kijima '503 discloses an electric camera according to claim 1 as discussed above, wherein color filters that pass first, second and third colors respectively are arranged to cyclically appear horizontally at three-pixel intervals (i.e., noted the use of color signals processing as discussed in paragraph 0011 of Noboru '306; and see Figs. 2, 10 and 11 of Kijima '503).

Furthermore, it is noted that the combination of Noboru '306 and Kijima '503 does not explicitly show wherein the color filters that pass the same colors are arranged vertically as recited in the present claimed invention.

However, the above-mentioned claimed limitations are well known in the art as evidenced by Fujimoto '435. In particular, Fujimoto '435 teaches the use of color filters that pass the same colors, which are arranged vertically as recited in the present claimed invention (Figs. 1, 4 and 13 of Fujimoto '435).

In view of the above, having the system of Noboru '306 and then given the well-established teaching of Fujimoto '435, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Noboru '306 as taught by Fujimoto '435 in order to provide a novel improved apparatus wherein rather simple stripe filter is used in combination with a mosaic pattern solid state image sensor, thereby an improved manufacturing productivity and yield are attainable as suggested by Fujimoto '435 (i.e., see col. 4, lines 50+).

Regarding claims 14 and 15, the combination of Noboru '306, Kijima '503 and Fujimoto '435 show the use of the first, second and third color stripe filters on the mosaic-disposed picture elements on a solid state image sensor (i.e., see Figs. 1, 4 and 13 of Fujimoto '435) of an electric camera according to claim 13. Furthermore, it is noted that although the proposed combination of Noboru '306, Kijima '503 and Fujimoto '435 show the use of well known color filter combination of different color stripe filters having the combination of yellow, green, white and cyan on a solid state image sensor as discussed above, the combination of Noboru '306, Kijima '503 and Kijima '503 does not explicitly show the use of well-known combination of color filters such that the combination of either yellow, green and cyan or the combination of yellow, white and cyan respectively.

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However, since Fujimoto '435 teaches the use of combination of well known color stripe filters having specific color filters such that yellow, green, white and cyan on a solid state image sensor as shown in Figs. 4 and 13 (i.e., see col. 6, lines 40+ and col. 19, lines 4+), thus, having the system of Noboru '306 and then given the well-established teaching of Fujimoto '435, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use any combination of strip filters (i.e., combination of Ye, G & Cy or Ye, W & Cy) for the purpose of achieving the different desired resolution thereof.

Regarding claim 16, the combination of Noboru '306, Kijima '503 and Fujimoto '435 teaches an electric camera according to claim 13, wherein the first, second and third colors are red, green and blue, respectively (i.e., noted the color filters as shown in Fig. 1 of Fujimoto '435).

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. Harada '082, Watanabe '236, Mitsui '375, Armstrong '457, Ueno '276, Ishigami '291, Nobuoka '698, Ishibashi '007, Matoba '129, Hashimoto '599, Parulski '597 and Chang '939 shows an imaging apparatus having CCD image sensor and selectively reading out the specific amount of pixel from the plurality of pixels from the CCD sensor.

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8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aung S. Moe whose telephone number is 703-306-3021. The examiner can normally be reached on Mon-Fri (9-5).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber can be reached on 703-305-4929. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-9700.



Aung S. Moe
Primary Examiner
Art Unit 2612

Notice of References Cited

Application/Control No.
09/520,836

Examiner
Aung S. Moe

Applicant(s)/Patent Under
Reexamination
NAKANO ET AL.

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U.S. PATENT DOCUMENTS					
*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
	A	US-5,668,597	09-1997	Parulski et al.	348/350
	B	US-4,434,435	02-1984	Fujimoto, Makoto	348/277
	C	US-5,657,082	08-1997	Harada et al.	348/262
	D	US-6,529,236 B1	03-2003	Watanabe, Mikio	348/230.1
	E	US-6,181,375 B1	01-2001	Mitsui et al.	348/240.99
	F	US-6,580,457 B1	06-2003	Armstrong et al.	348/317
	G	US-2001/0043276	11-2001	UENO, HIROYUKI	348/322
	H	US-2002/0118291 A1	08-2002	Ishigami et al.	348/311
	I	US-5,986,698 A	11-1999	Nobuoka, Kousuke	348/208.3
	J	US-6,122,007 A	09-2000	Ishibashi, Norio	348/231.6
	K	US-5,450,129 A	09-1995	Matoba et al.	348/294
	L	US-5,264,939 A	11-1993	Chang, Win-Chyi	348/322
	M	US-4,910,599	03-1990	Hashimoto, Seiji	348/240.2

FOREIGN PATENT DOCUMENTS						
*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N	EP000840503A2	06-1998	Europe	Kijima et al.	
	O	11-187306	07-1999	Japan	Noboru	
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS					
*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)			
	U				
	V				
	W				
	X				

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.