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(12) **United States Patent**
Guidash

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(45) **Date of Patent: Nov. 9, 2010**

(54) **IMAGE SENSOR AND IMAGE CAPTURE SYSTEM WITH EXTENDED DYNAMIC RANGE**

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(73) Assignee: **Eastman Kodak Company**, Rochester, NY (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 1430 days.

(21) Appl. No.: **10/654,313**

(22) Filed: **Sep. 3, 2003**

(65) **Prior Publication Data**

US 2005/0045980 A1 Mar. 3, 2005

(51) **Int. Cl.**
H04N 3/14 (2006.01)

(52) **U.S. Cl.** **348/297**; 348/273

(58) **Field of Classification Search** 348/297
See application file for complete search history.

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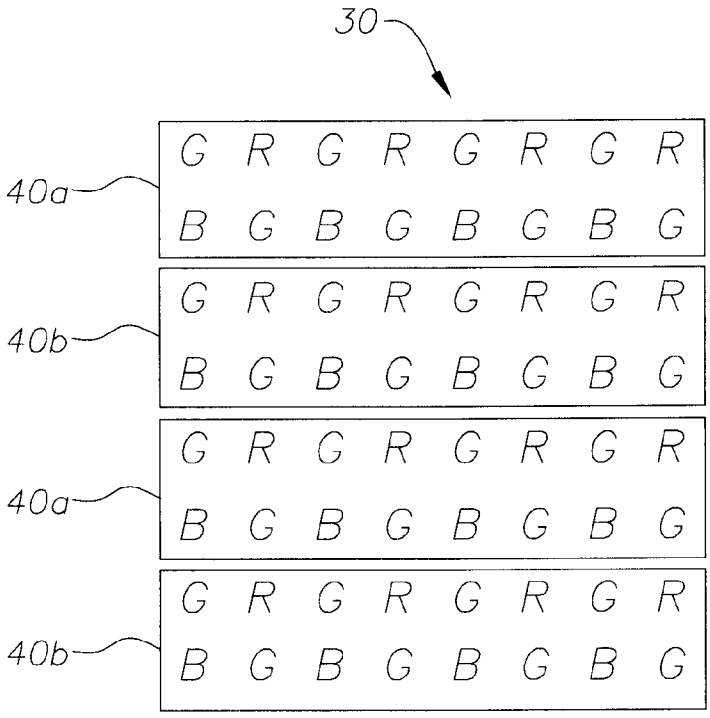
(57) **ABSTRACT**

An image sensor includes a plurality of pixels; a color filter pattern spanning at least a portion of the pixels, wherein the color filter pattern forms a color filter kernel having colors in a predetermined arrangement; and a mechanism for controlling integration time of the pixels, wherein the integration time of the plurality of pixels is spatially variant in a pattern that is correlated with the color filter array kernel.

10 Claims, 4 Drawing Sheets



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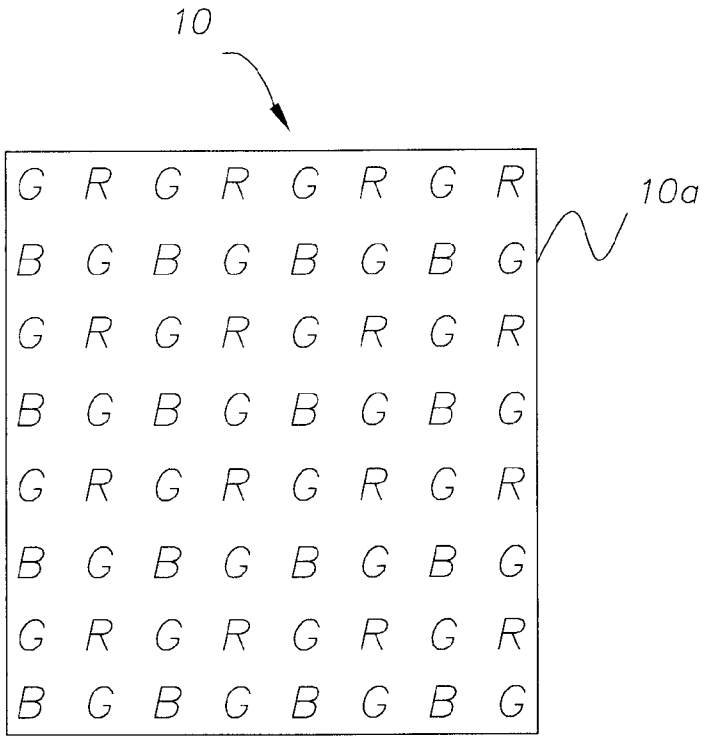

FIG. 1a
(Prior Art)

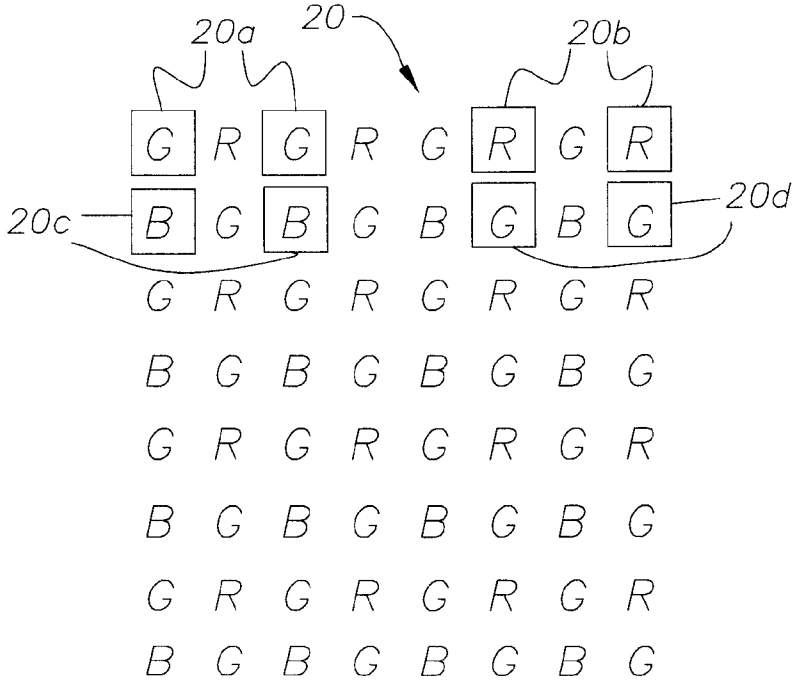

FIG. 1b
(Prior Art)

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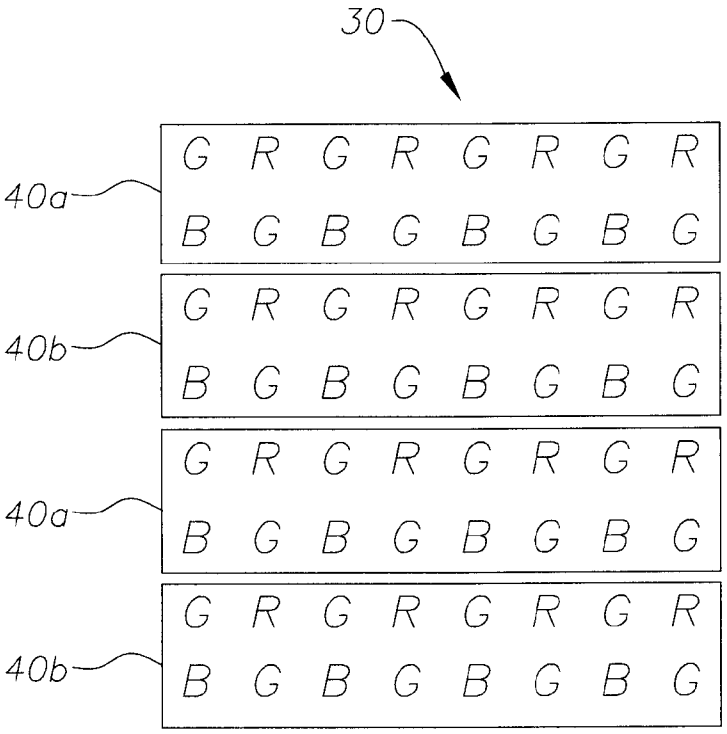

FIG. 2a

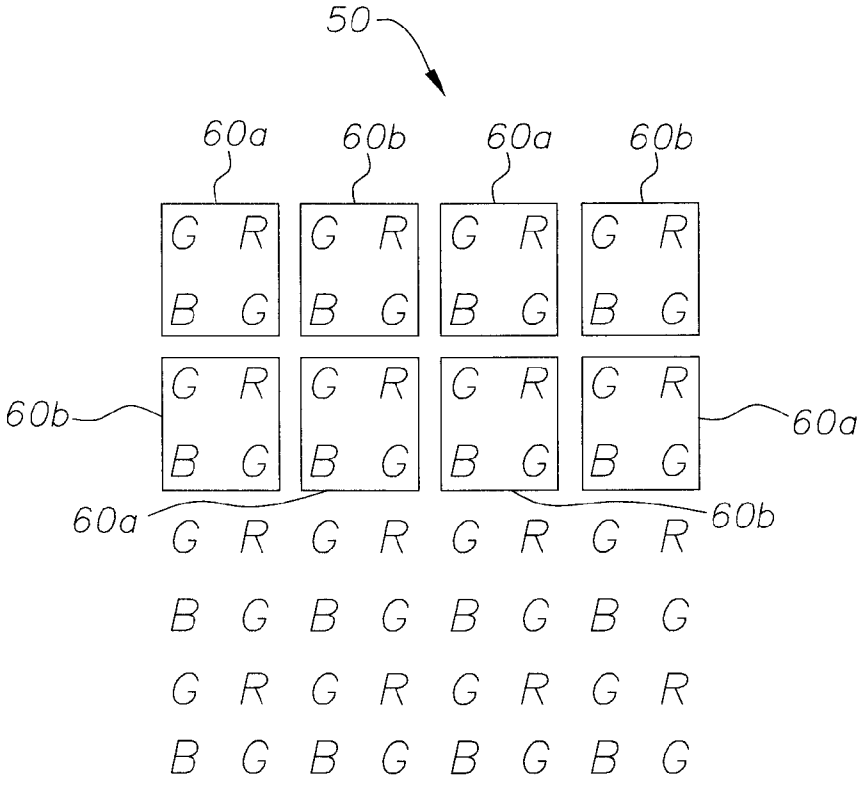

FIG. 2b

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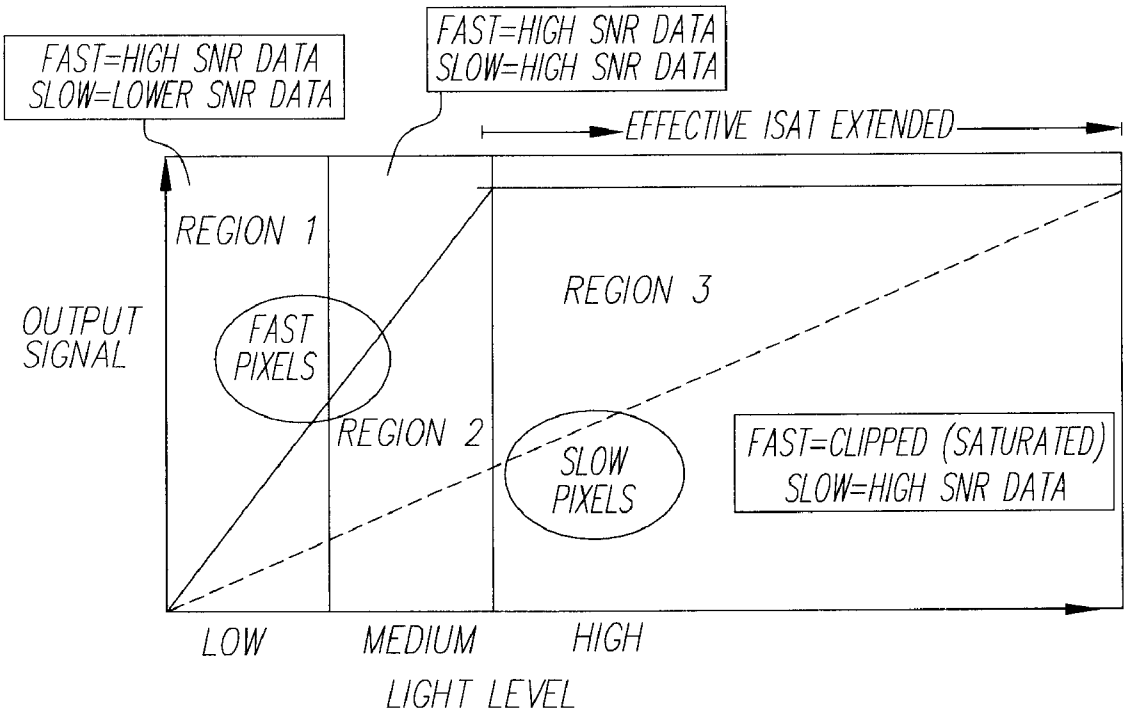

FIG. 3

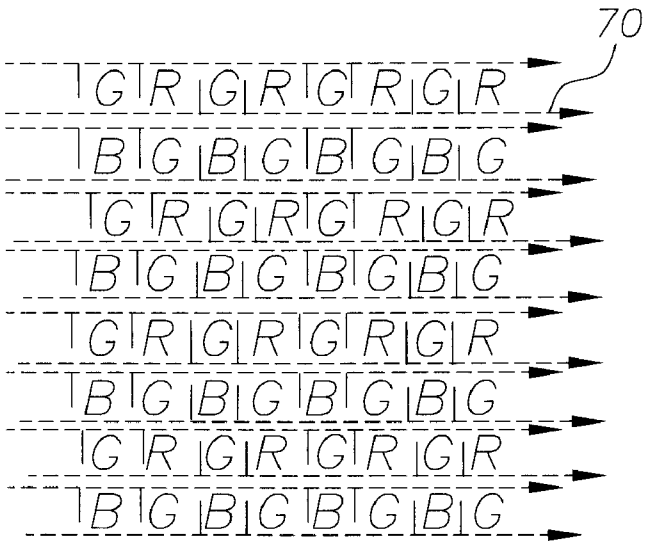

FIG. 4a

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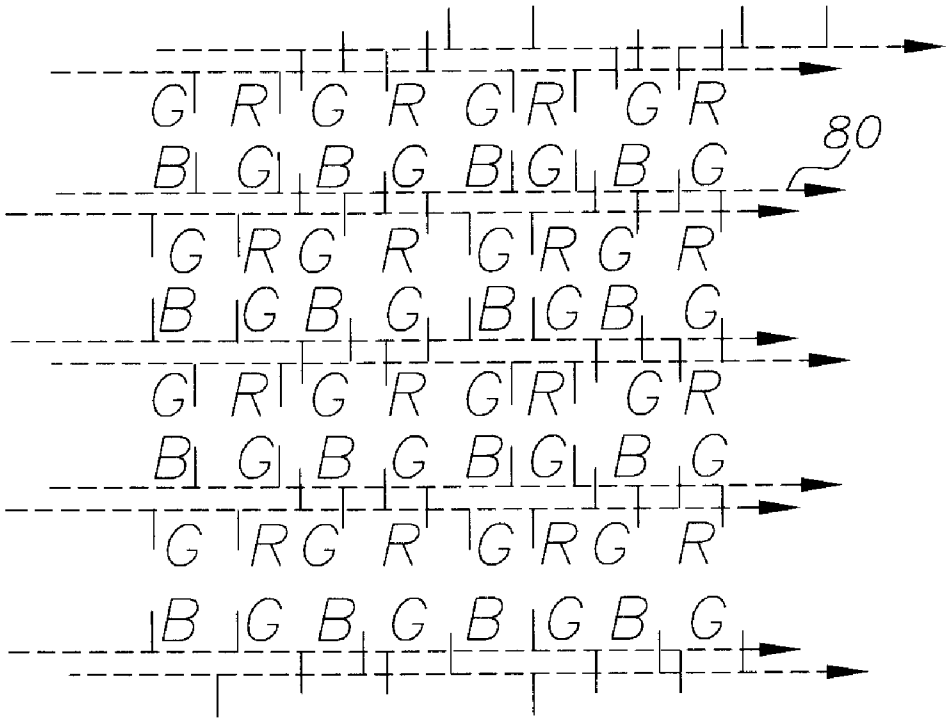

FIG. 4b

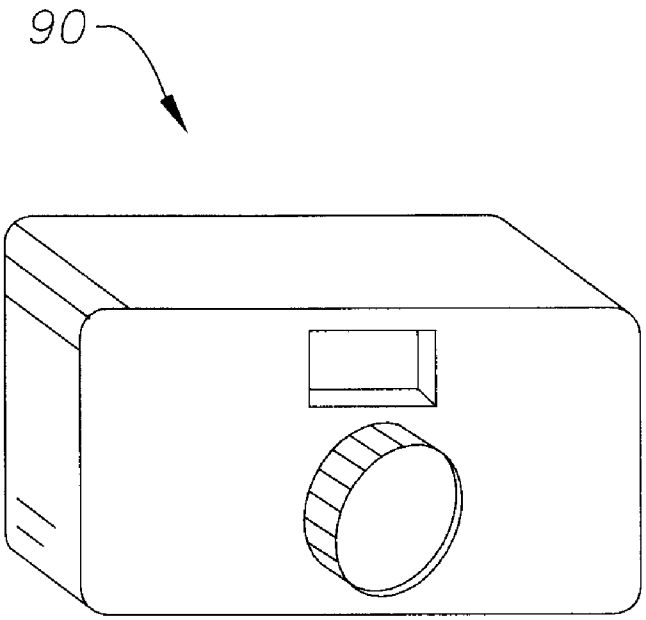

FIG. 5

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