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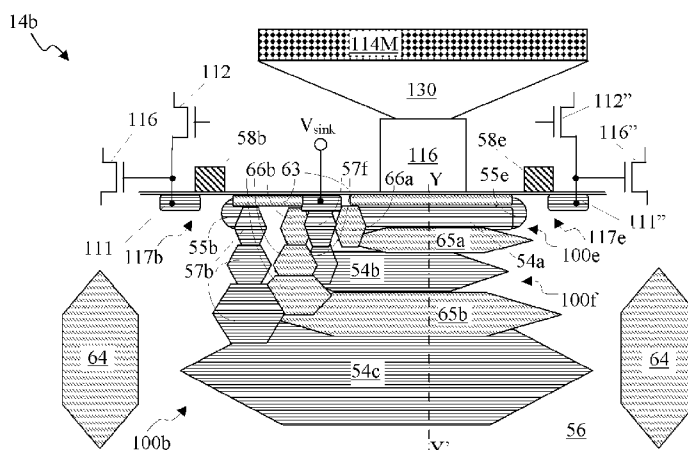
(54) Title: COLOR IMAGE SAMPLING AND RECONSTRUCTION

FIG. 8

(57) **Abstract:** An image capture apparatus that includes an array of color filters for green, red, and magenta colors arranged over a semiconductor substrate in the manner of a primary color Bayer pattern except a magenta color replaces the blue color. Light passing through the magenta color filter is integrated separately in a magenta pixel for a shallow photodiode signal and a deep photodiode signal in a first photodiode and a deeper second photodiode in the substrate, respectively. A mezzanine photodiode may be disposed between the first and second photodiodes and held at a fixed voltage level or reset multiple times during charge integration. A red pixel value for the magenta pixel is a function of the deep photodiode signal and an adjacent red pixel's red pixel signal. A minimum exists in its derivative with respect to the former at a value of the former that varies with the latter.

