

(54) **INCREASING IMAGE FIELD OF VIEW AND FRAME RATE IN AN IMAGING APPARATUS**

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(*) Notice: This patent issued on a continued prosecution application filed under 37 CFR 1.53(d), and is subject to the twenty year patent term provisions of 35 U.S.C. 154(a)(2).

Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **08/986,754**

(22) Filed: **Dec. 8, 1997**

(65) **Prior Publication Data**

US 2001/0050712 A1 Dec. 13, 2001

(51) **Int. Cl.⁷** **H04N 5/235**

(52) **U.S. Cl.** **348/230; 348/240; 348/239**

(58) **Field of Search** 348/222, 224, 348/229, 230, 240, 239, 14, 15, 18, 19, 340, 135, 169, 172; 250/203.1, 203.6

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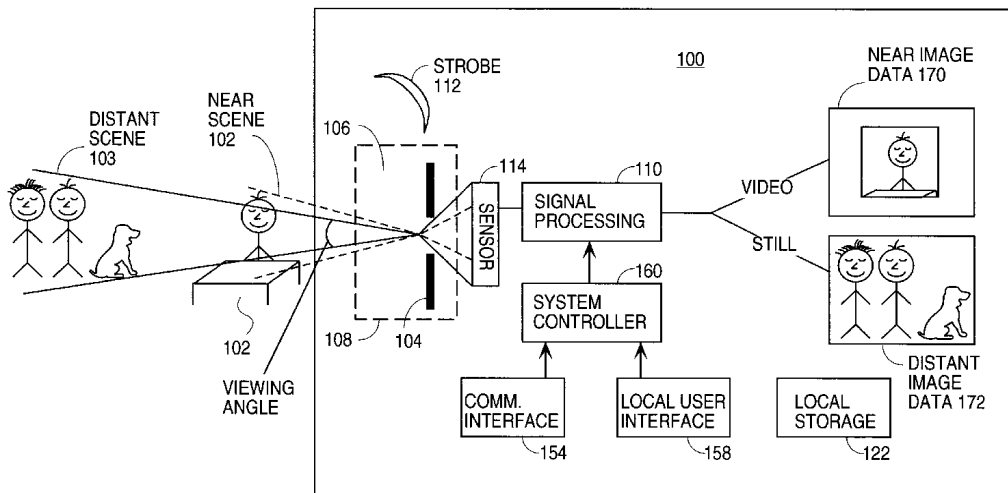
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(57) **ABSTRACT**

An imaging apparatus that is configurable to operate in at least two modes. One mode is particularly suitable for still image capture, whereas the second mode is suitable for video image capture and other rapid frame rate applications. The image data in the second mode is smaller (lower resolution) than the image data obtained in the first mode. The reduction is accomplished by either digital scaling, cropping, or by a combination of optical scaling and selective readout of sensor signals. The simple digital scaling provides a fixed angular field of view for both modes of operation, while cropping alone gives a smaller field of view. Using the combination of optical scaling and selective sensor signal readout, however, provides a wider field of view for the second mode of operation while at the same time providing lower resolution images, thus improving frame rate in the second mode of operation. The embodiments can be used in a wide range of imaging applications, including digital cameras used for both still image capture and video.

17 Claims, 6 Drawing Sheets



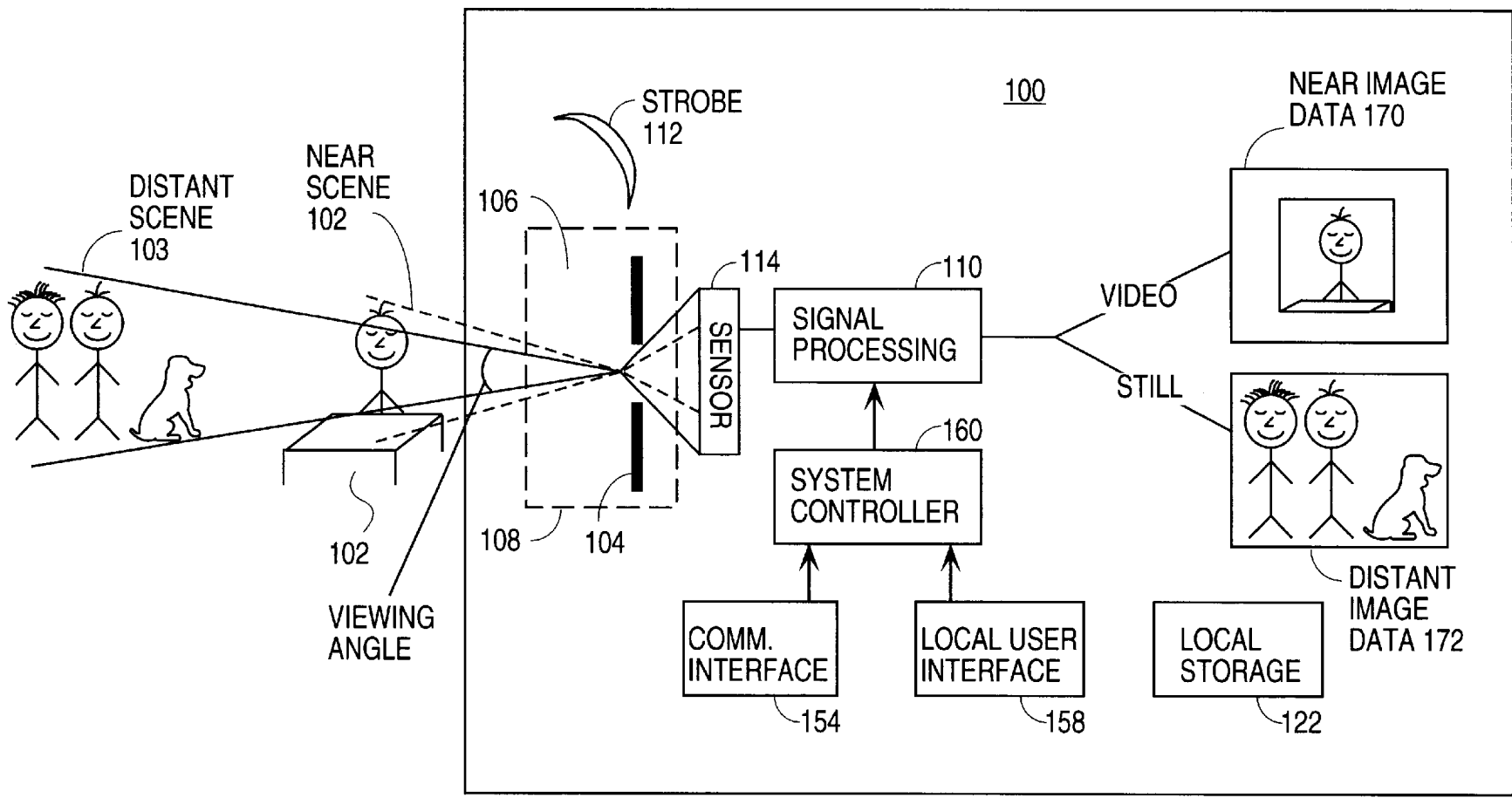


FIG. 1

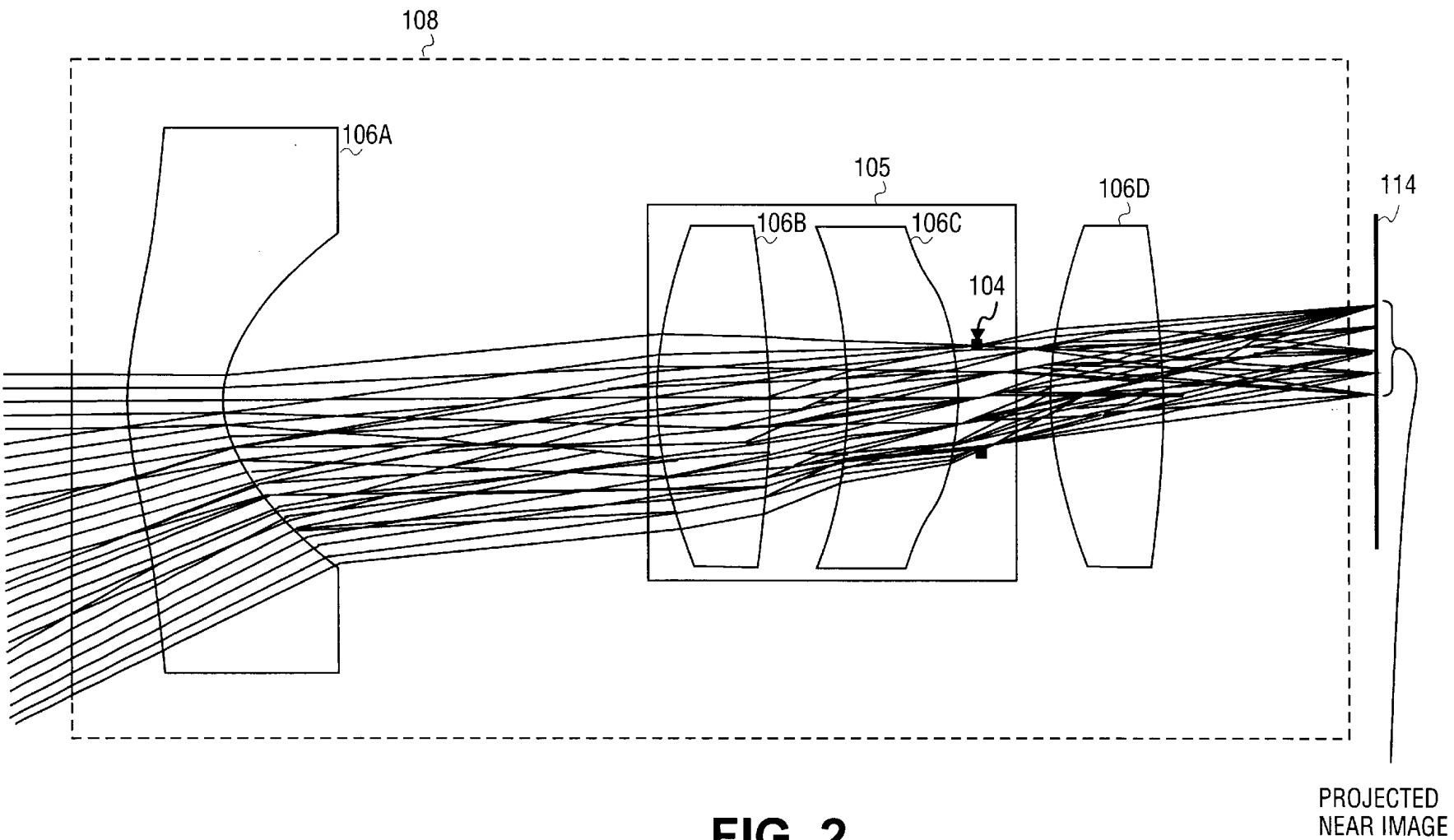


FIG. 2

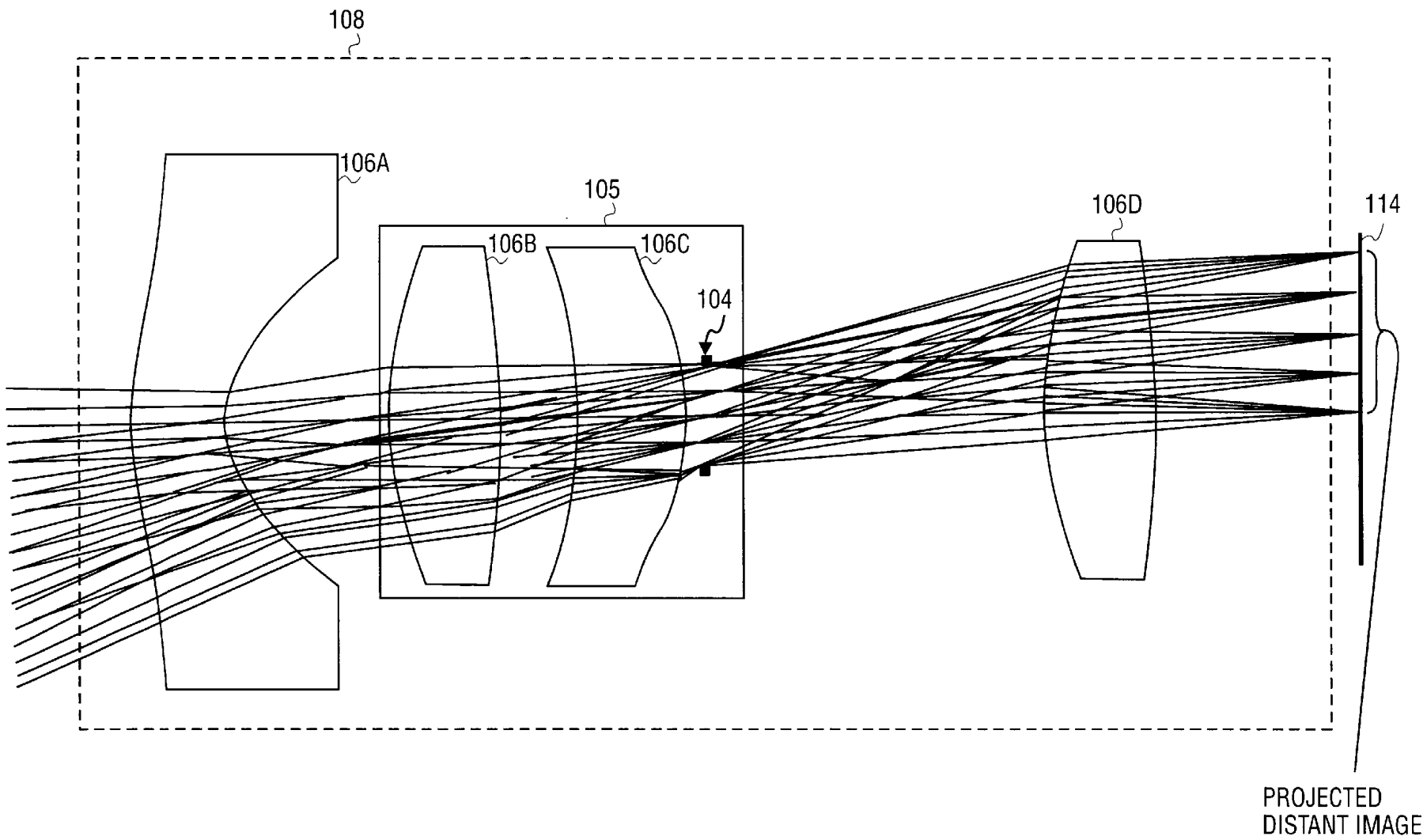


FIG. 3

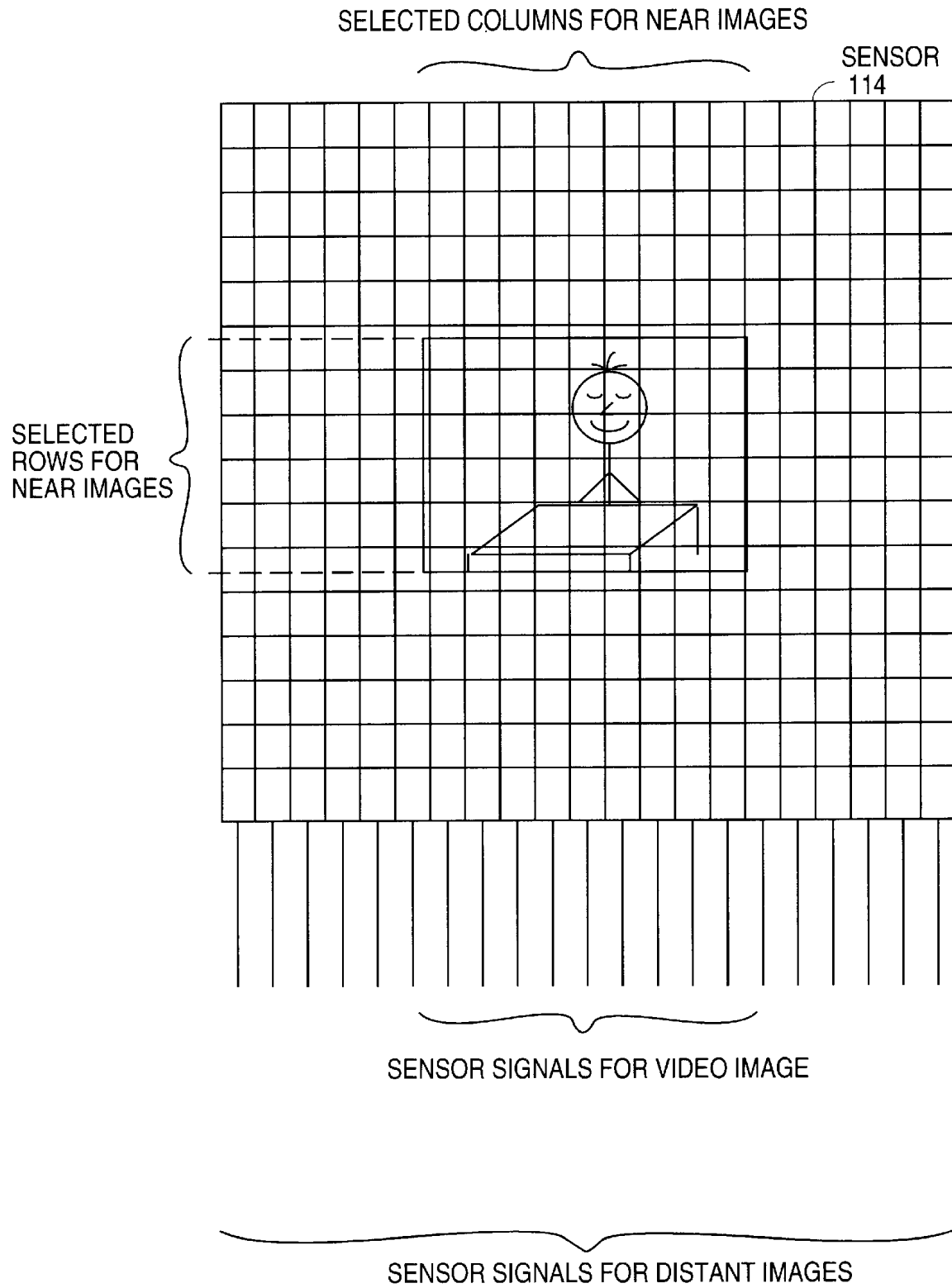


FIG. 4

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