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Pirim

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(54) **IMAGE PROCESSING APPARATUS AND METHOD**

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(51) **Int. Cl.⁷** **G06K 9/00**
(52) **U.S. Cl.** **348/143; 382/262**
(58) **Field of Search** **348/143; 382/262, 382/107, 236**

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(57) **ABSTRACT**

The purpose of this invention is a process and a device operating in real time for identifying and localizing an area in relative movement in a scene and determining the speed and oriented direction of this relative movement in real time.

The process carries out temporal processing of the digital video input signal S(PI) that consists in deducing, from the variations between the value of each pixel in a frame and in the immediately preceding frame, a binary signal DP identifying whether or not there was a significant variation and a digital signal CO representing the magnitude of this variation, and a spatial processing consisting in distributing in a matrix these two signals successively for a single frame that is scanned through the matrix, and deducing the required relative movement and its parameters from this matrix distribution. The device achieves this by including a temporal processing unit 15 associated with a memory 16 and a spatial processing unit 17 associated with a delay unit 18; the clock unit 20 and the control unit 19 control the rate of operation of units 15 and 17.

36 Claims, 10 Drawing Sheets

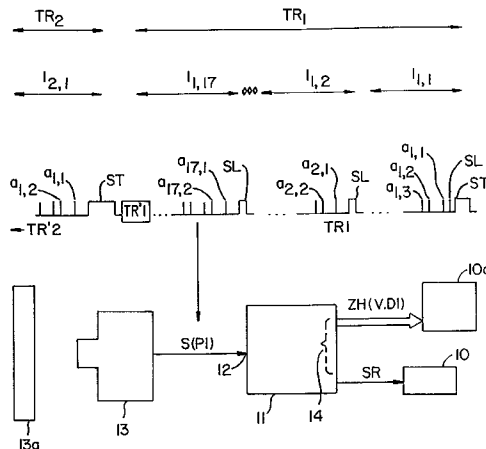


Exhibit 2001

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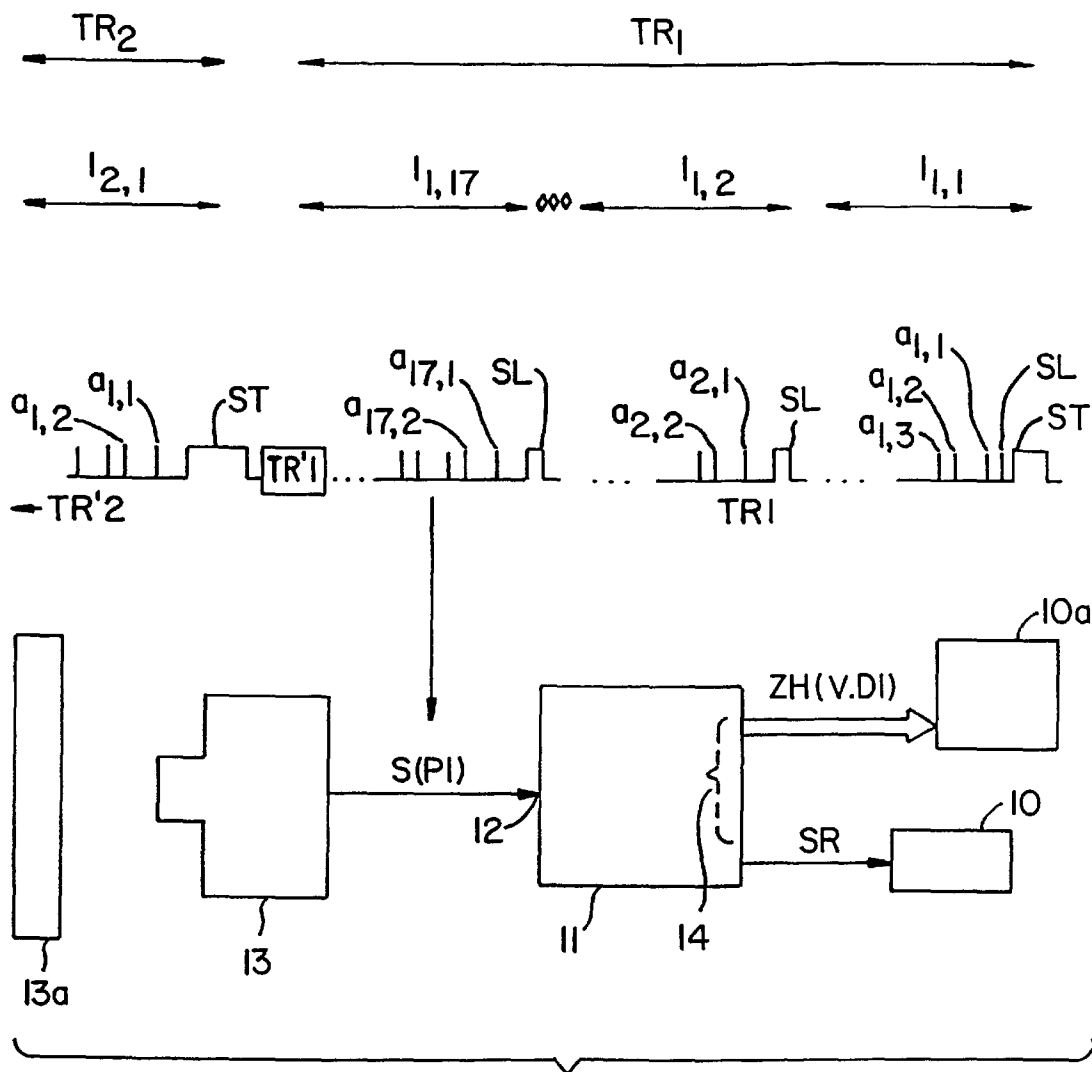


FIG. 1.

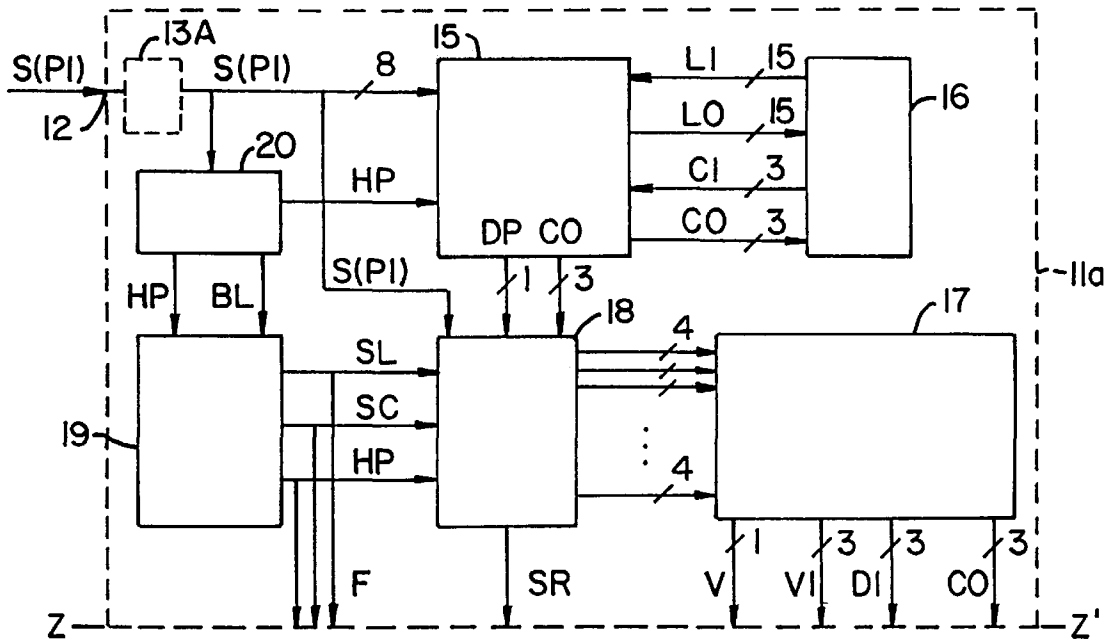


FIG. 2.

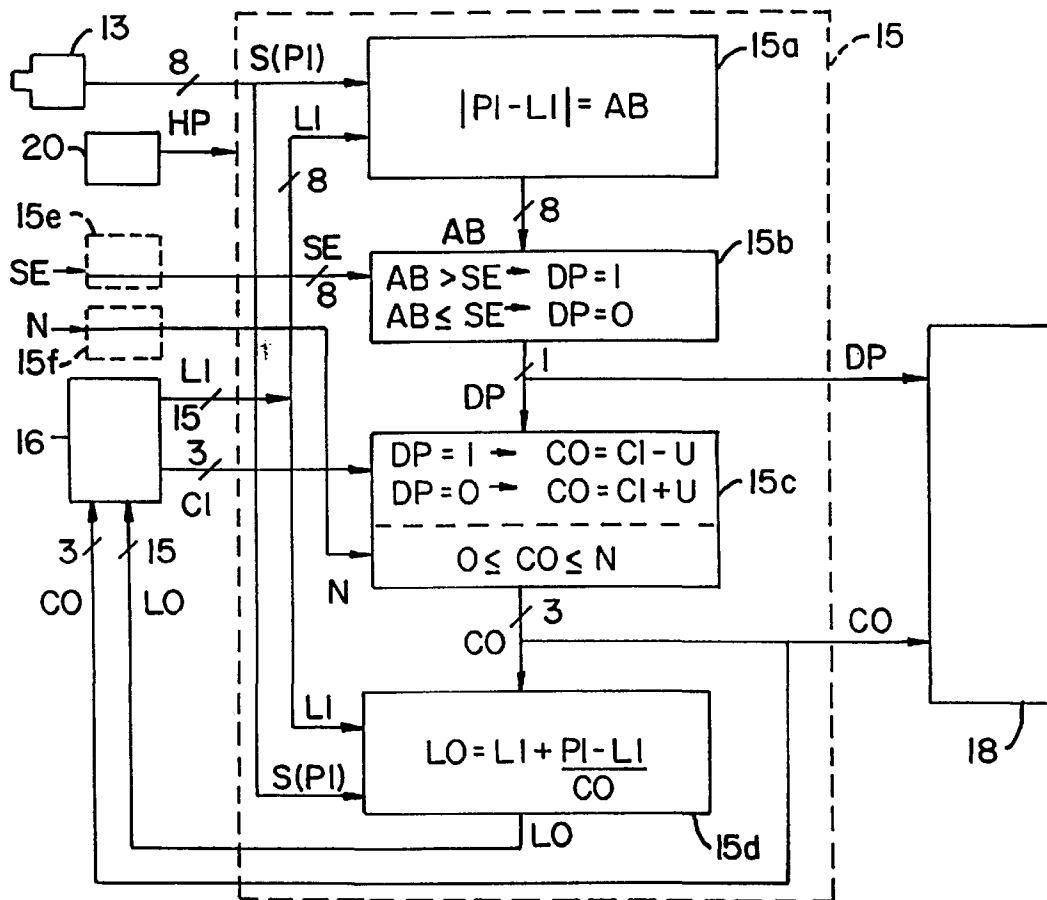


FIG. 3.

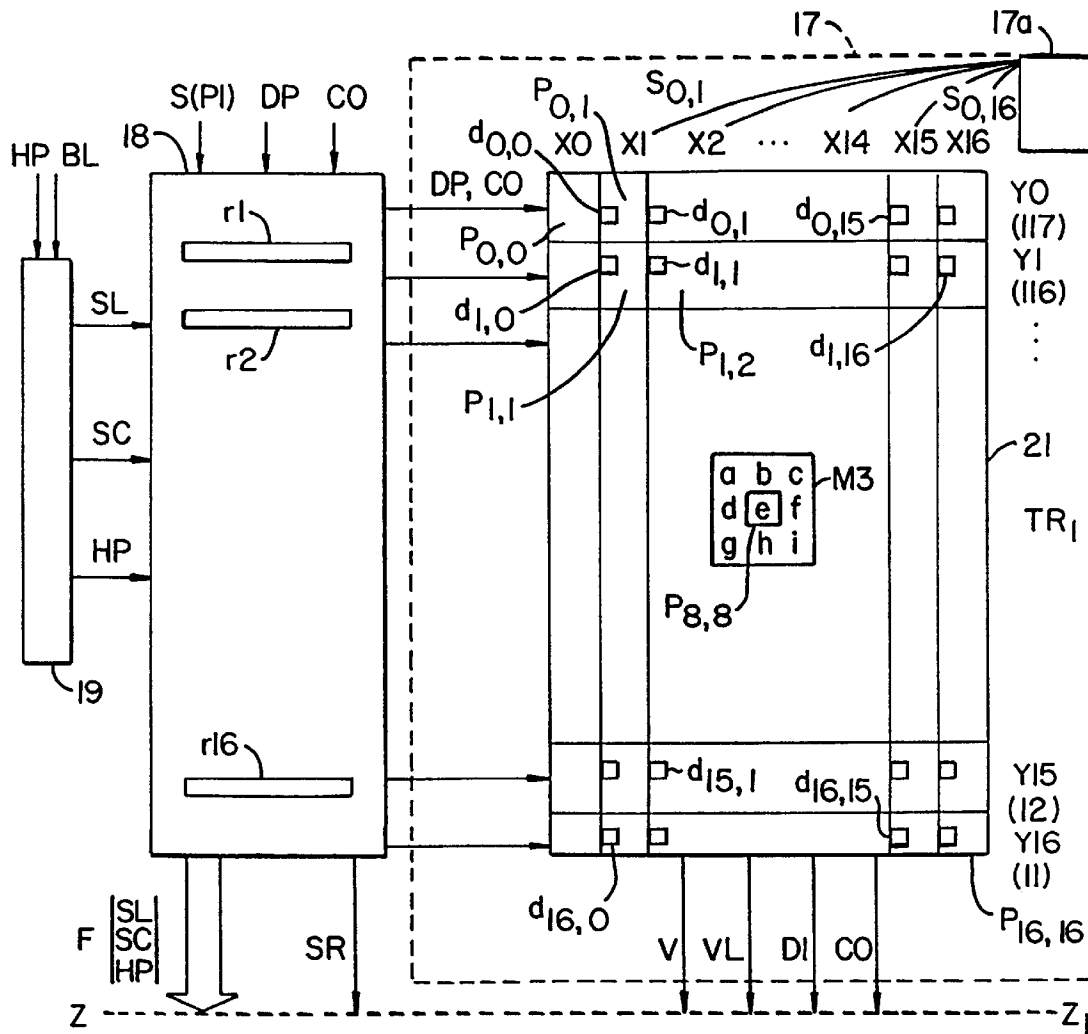


FIG. 4.

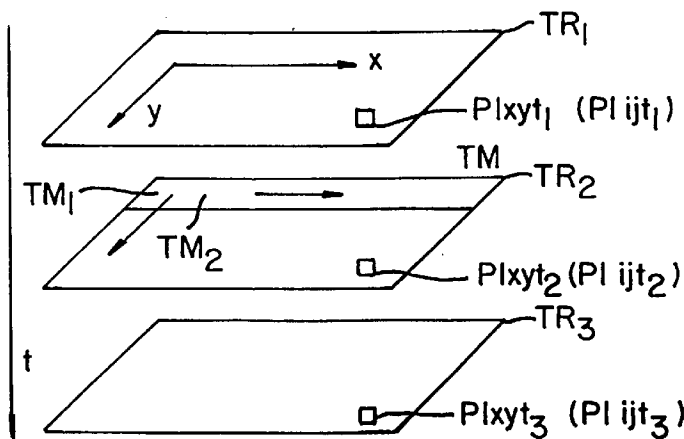


FIG. 5.

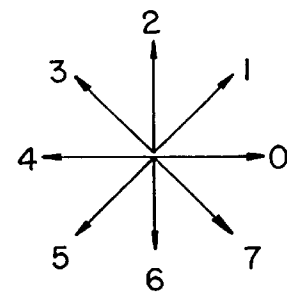


FIG. 6.

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