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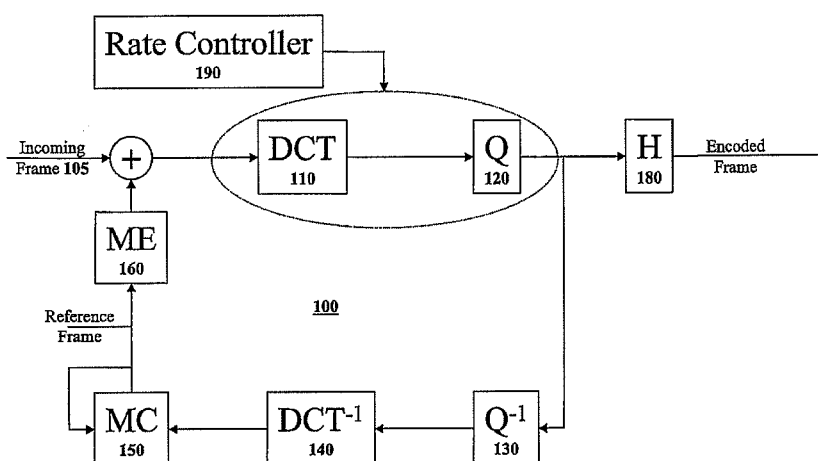
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(54) Title: METHOD AND APPARATUS FOR VARIABLE ACCURACY INTER-PICTURE TIMING SPECIFICATION FOR DIGITAL VIDEO ENCODING WITH REDUCED REQUIREMENTS FOR DIVISION OPERATIONS



(57) Abstract: A method and apparatus for performing motion estimation in a digital video system is disclosed (Fig. 1). Specifically, the present invention discloses a system that quickly calculates estimated motion vectors in a very efficient manner (Fig. 1, item 160). In one embodiment, a first multiplicand is determined by multiplying a first display time difference between a first video picture and a second video picture by a power of two scale value (Fig. 1, items 150, 160). This step scales up a numerator for a ratio (Fig. 1, item 120). Next, the system determines a scaled ratio by dividing that scaled numerator by a second first display time difference between the second video picture and a third video picture. The scaled ratio is then stored calculating motion vector estimations. By storing the scaled ratio, all the estimated motion vectors can be calculated quickly with good precision since the scaled ratio saves significant bits and reducing the scale is performed by simple shifts (Fig. 1, item 180).