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United States Patent [19]

Moed et al.

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[54] **SYSTEM AND METHOD FOR SEGMENTING IMAGE REGIONS FROM A SCENE LIKELY TO REPRESENT PARTICULAR OBJECTS IN THE SCENE**

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[21] Appl. No.: **08/998,211**

[22] Filed: **Dec. 24, 1997**

Related U.S. Application Data

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[51] **Int. Cl.**[7] **G06K 9/00**; G06K 9/46; H04N 9/47

[52] **U.S. Cl.** **382/103**; 382/164; 382/236; 348/143

[58] **Field of Search** 382/103, 164, 382/165, 236, 257; 348/143, 152, 155, 169, 700, 701, 590, 591, 592

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[57] **ABSTRACT**

A system and method for extracting image information from a video frame for regions of a the video frame that likely are objects of interest in a scene. An initial region set is generated by comparing luminance image information and color image information of a video frame with luminance image information and color image information of a background image for the scene. A high confidence region set is generated comprising regions from the initial based upon edge information of the regions and edge information in the background image. A final region set is generated by combining one or more regions in the high confidence region set if such combinations satisfy predetermined criteria, including size, region proximity and morphological region dilation.

38 Claims, 9 Drawing Sheets

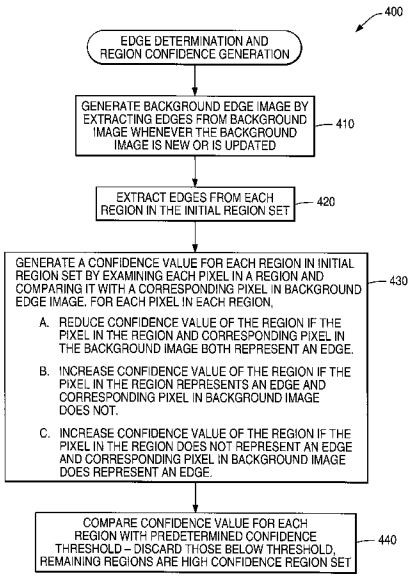

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FIG. 1

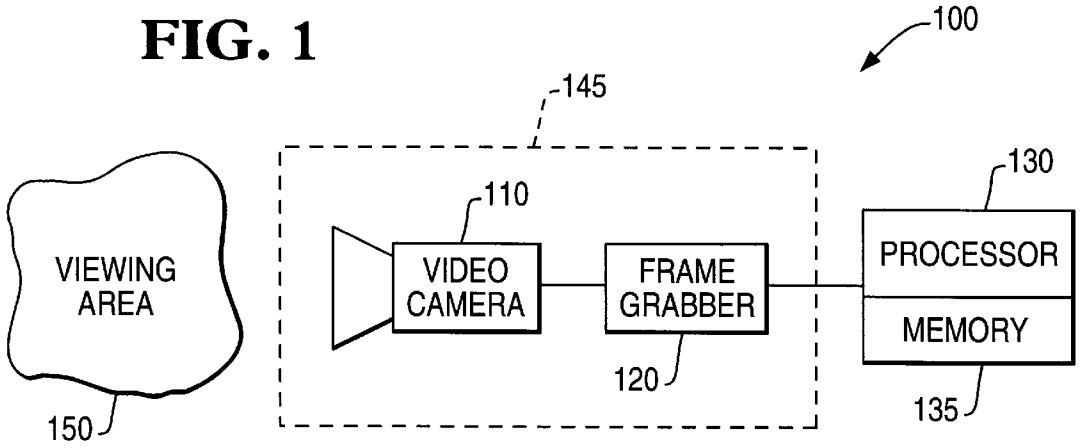

FIG. 2

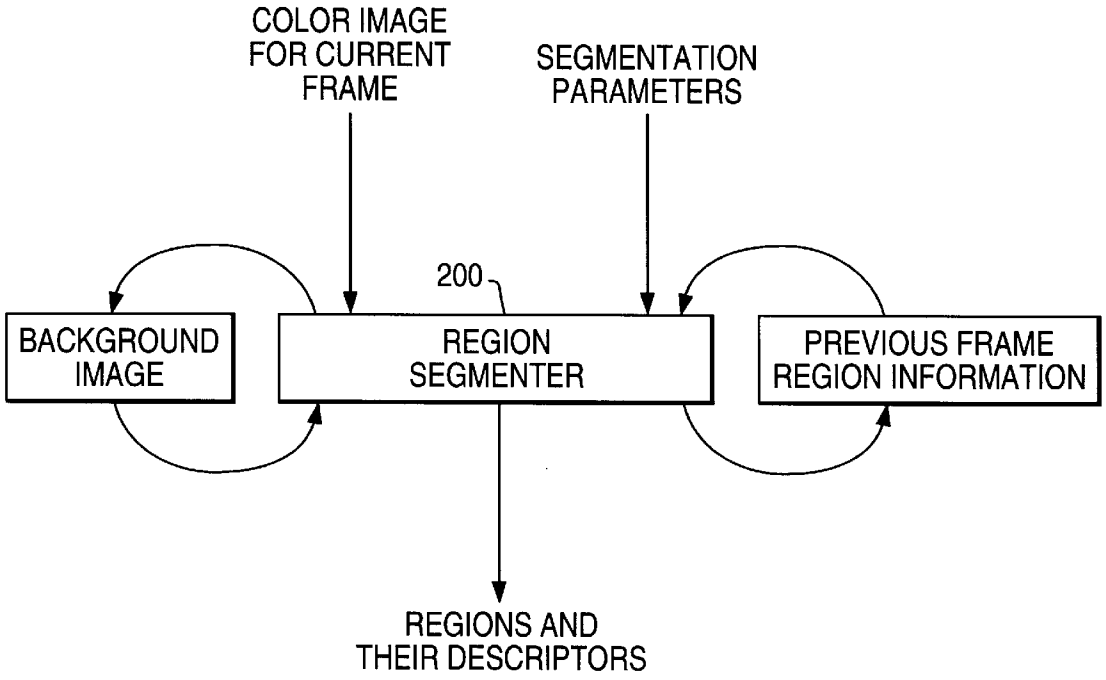

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FIG. 3

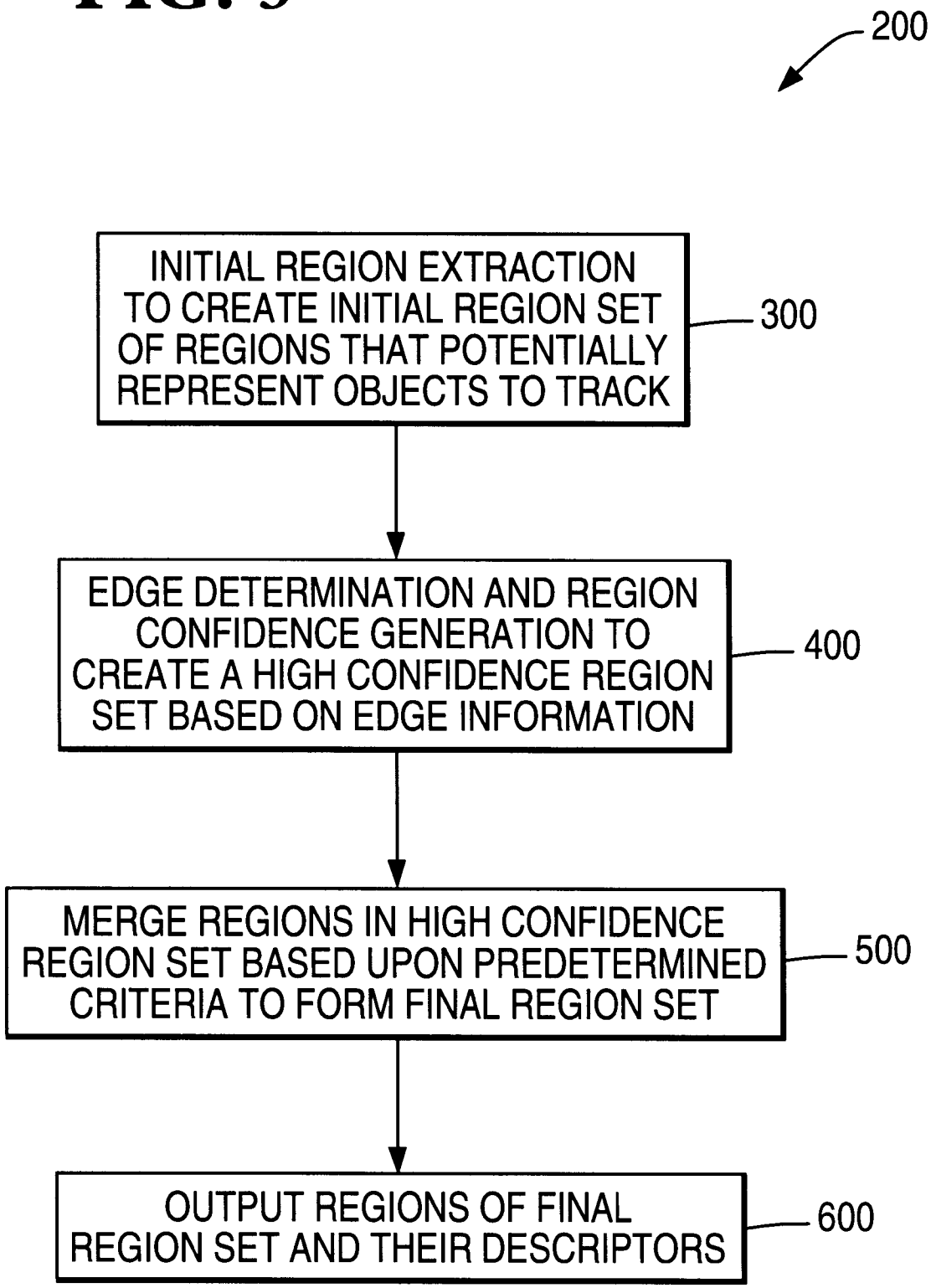

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FIG. 4

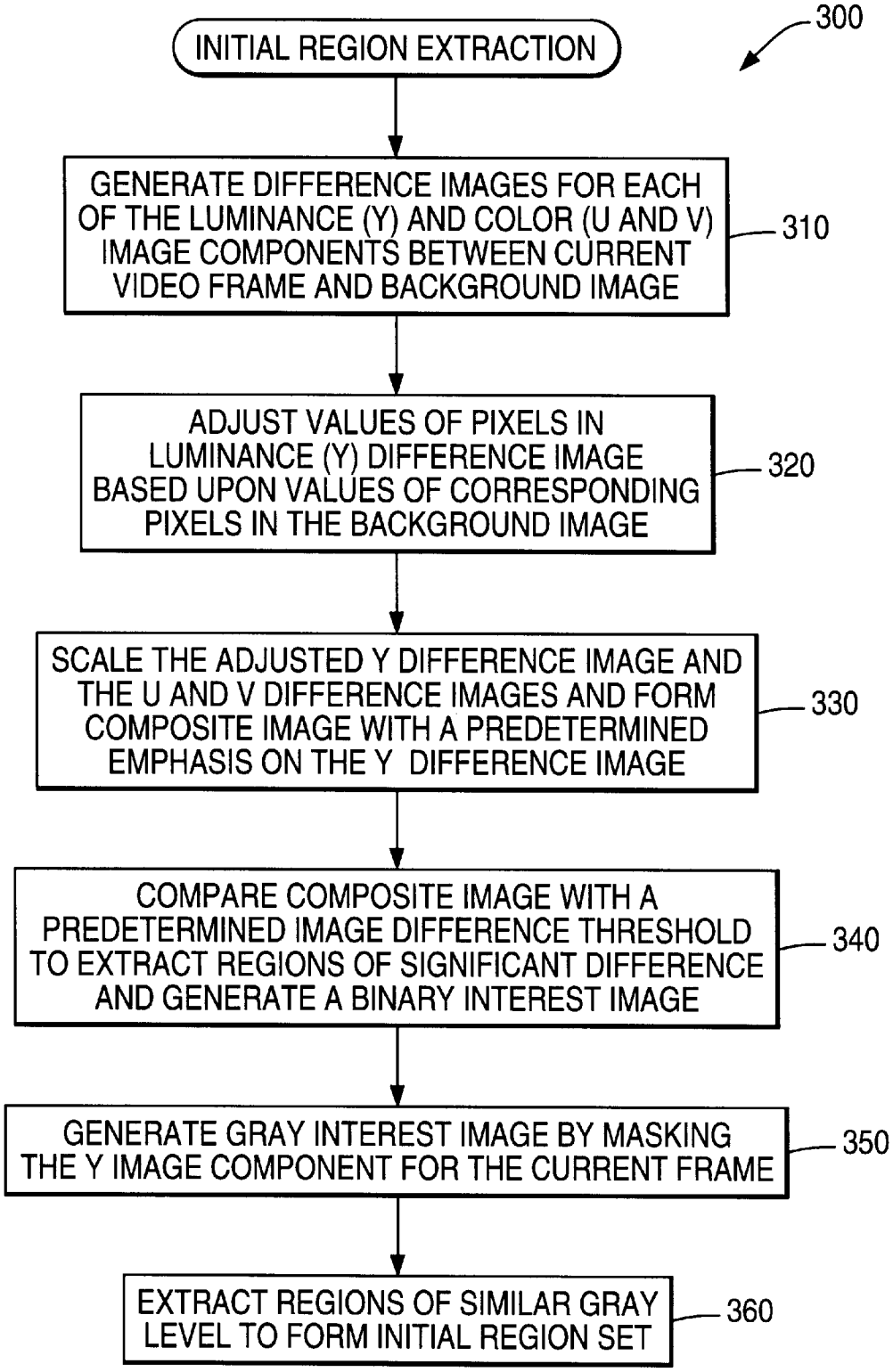

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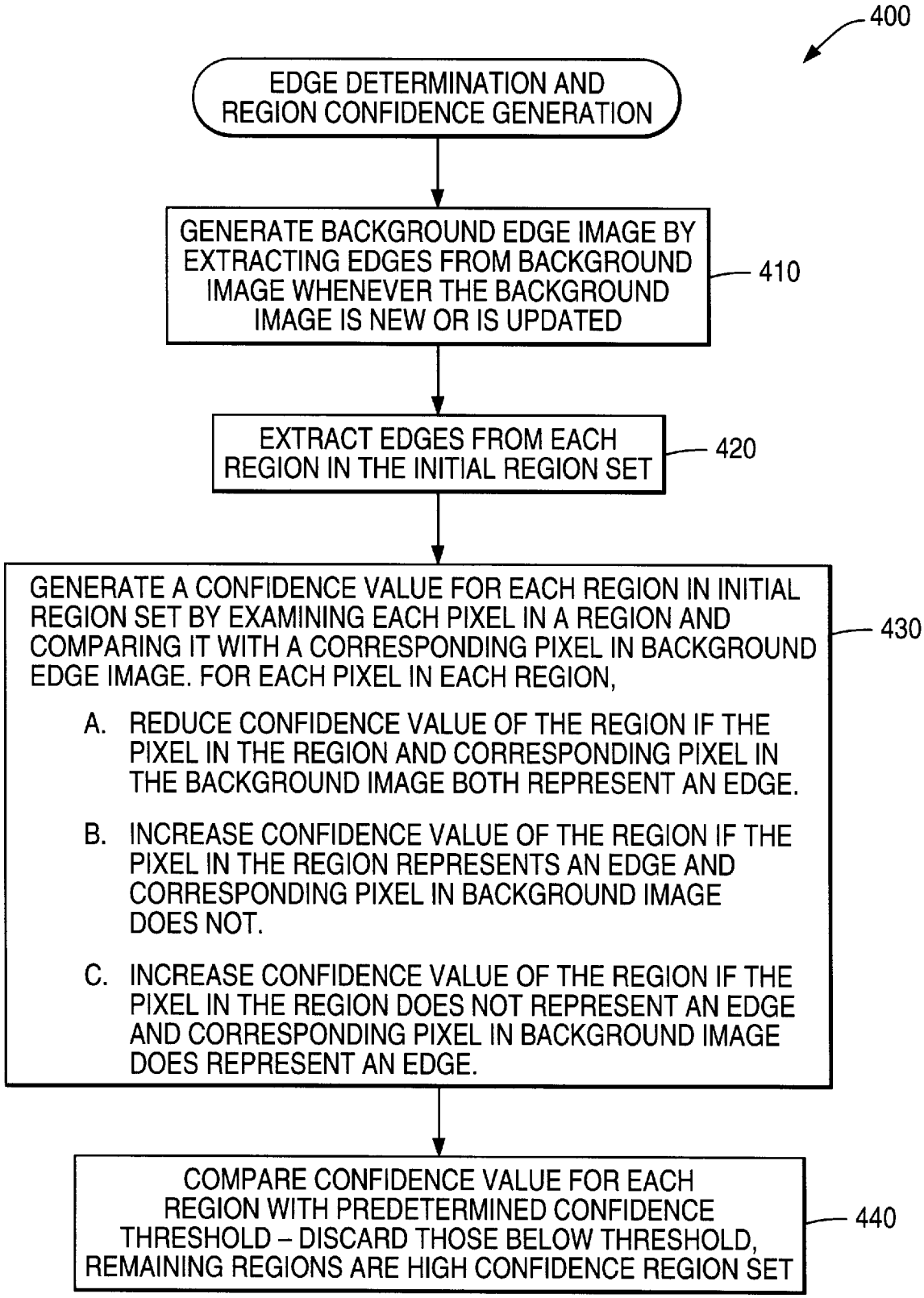
FIG. 5



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