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Luo et al.

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(54) **METHOD FOR AUTOMATIC DETERMINATION OF MAIN SUBJECTS IN PHOTOGRAPHIC IMAGES**

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(51) **Int. Cl.**[7] **G06K 9/46**
(52) **U.S. Cl.** **382/203**
(58) **Field of Search** 382/203, 204, 382/205, 206, 207, 168, 169, 173, 218, 195, 155, 156, 159, 160, 190, 202, 227

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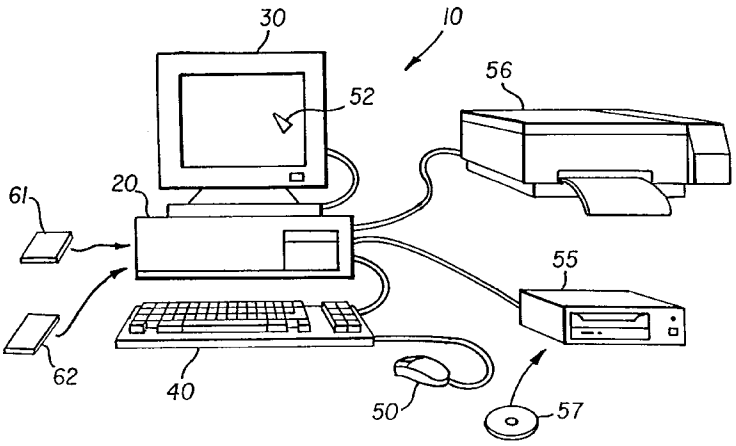
(57) **ABSTRACT**

A method for detecting a main subject in an image, the method comprises: receiving a digital image; extracting regions of arbitrary shape and size defined by actual objects from the digital image; grouping the regions into larger segments corresponding to physically coherent objects; extracting for each of the regions at least one structural saliency feature and at least one semantic saliency feature; and integrating saliency features using a probabilistic reasoning engine into an estimate of a belief that each region is the main subject.

37 Claims, 9 Drawing Sheets



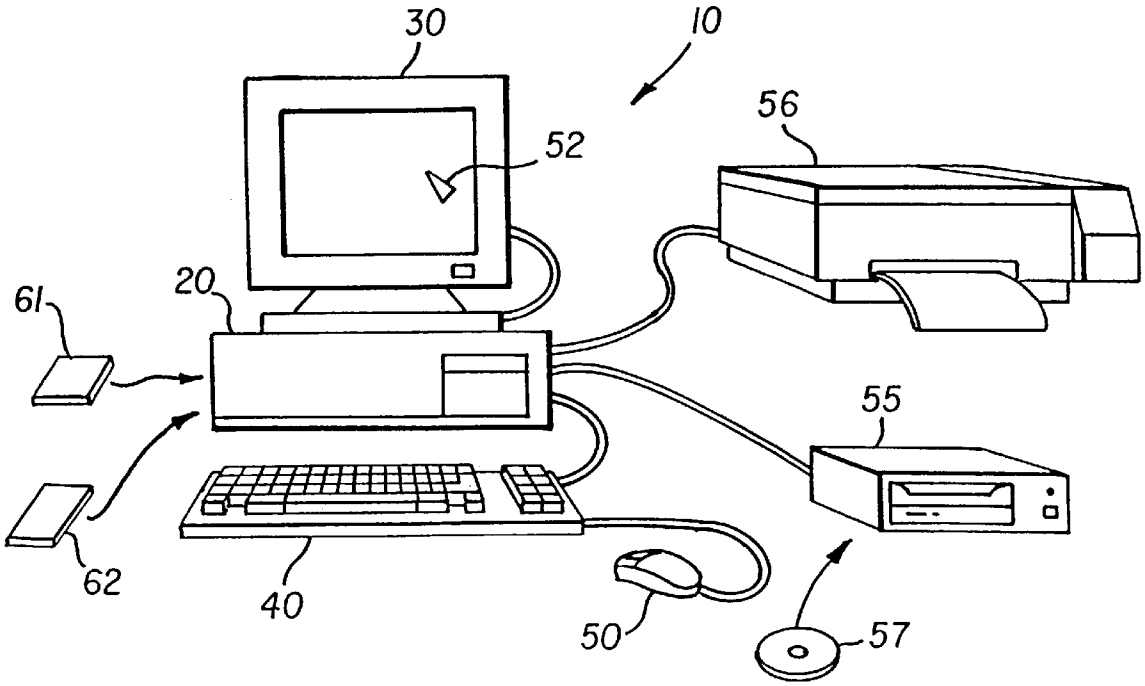


FIG. 1

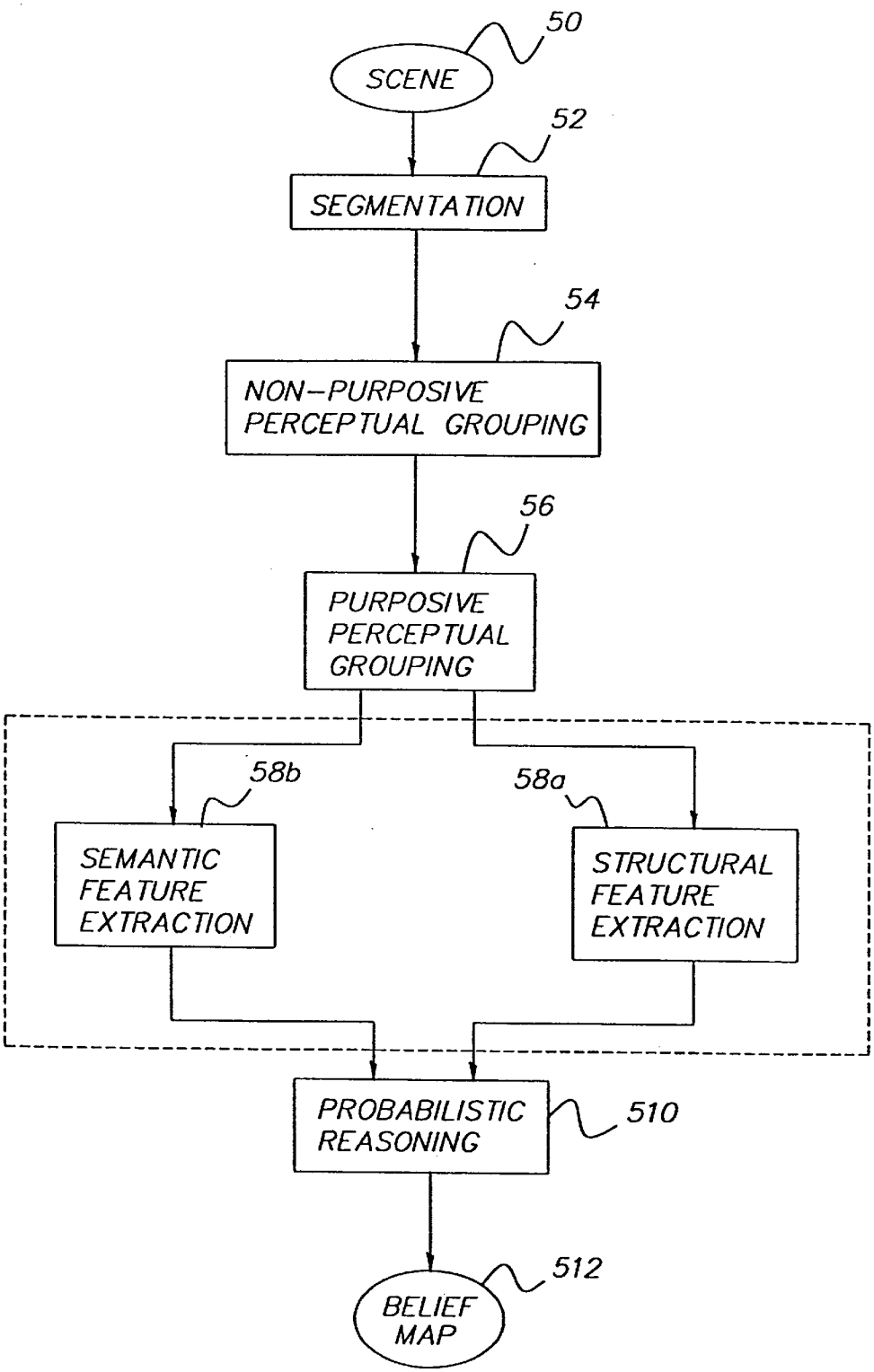


FIG. 2

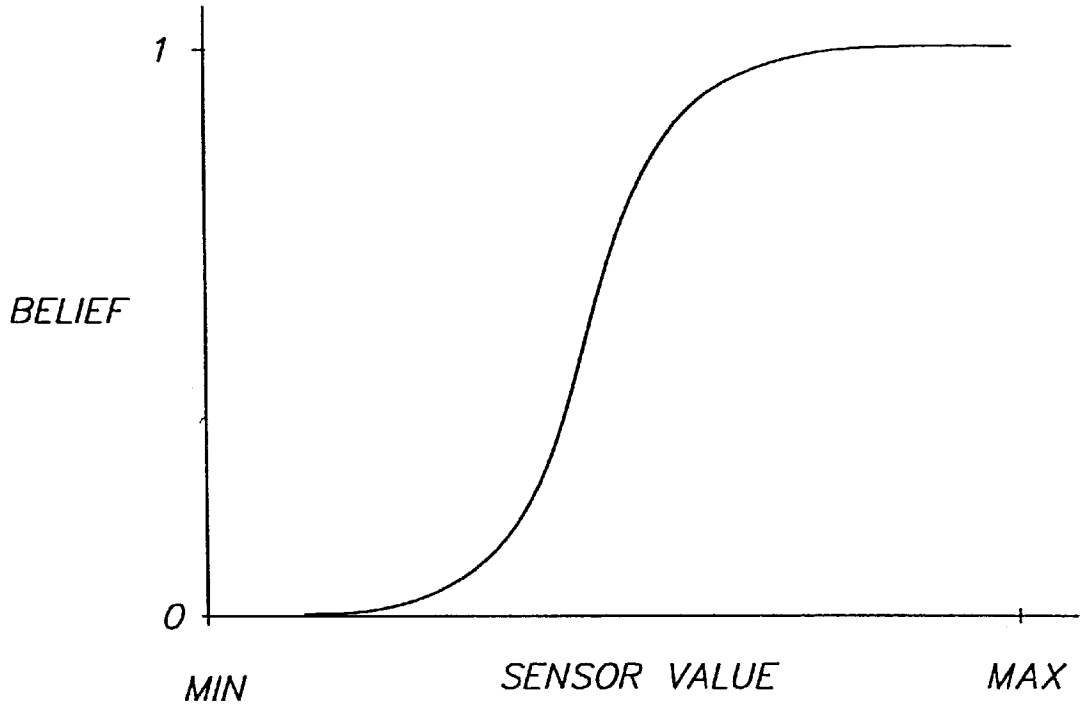


FIG. 3

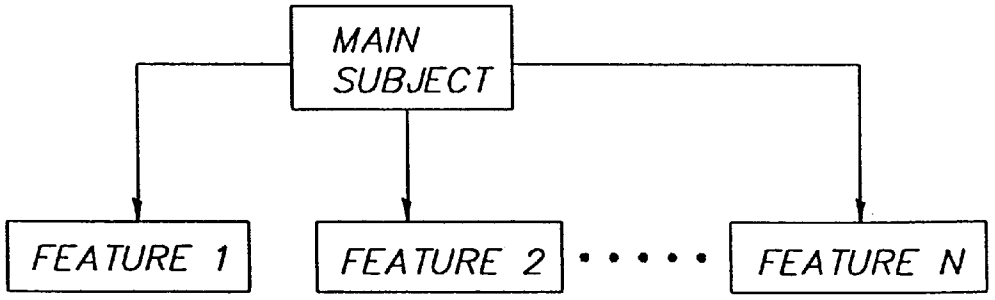


FIG. 7

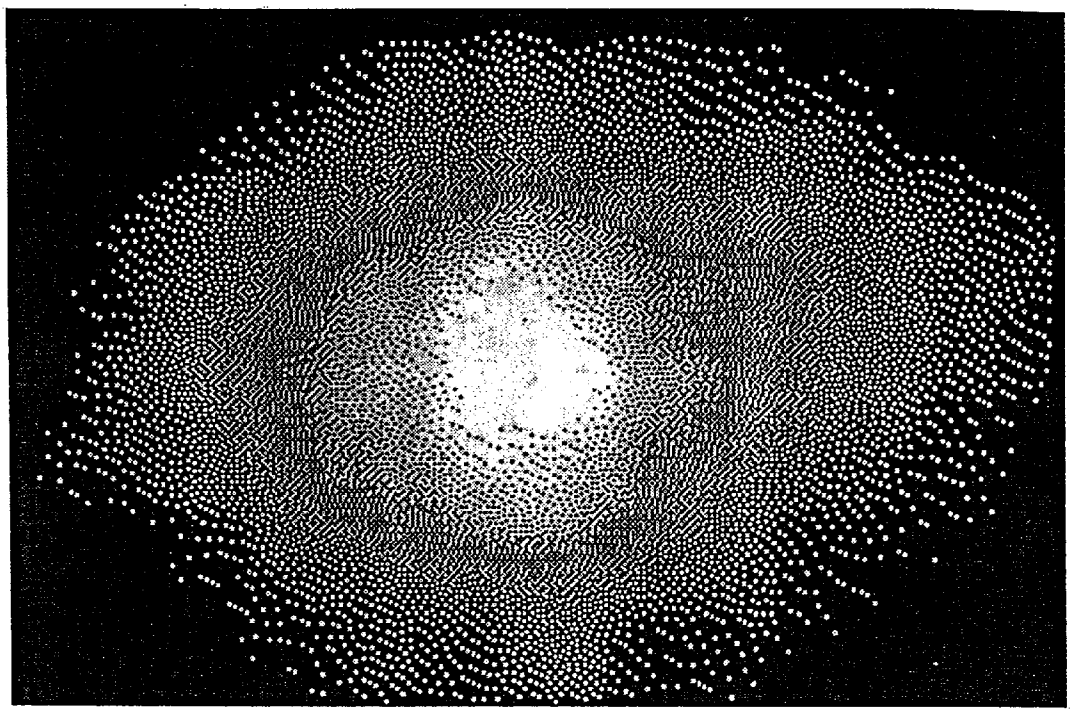


Fig . 4a

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