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[54] **3D HUMAN INTERFACE APPARATUS USING MOTION RECOGNITION BASED ON DYNAMIC IMAGE PROCESSING**

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[52] **U.S. Cl.** **345/156**; 395/135

[58] **Field of Search** 382/190, 199, 382/201, 203; 348/13, 20; 395/135; 345/156

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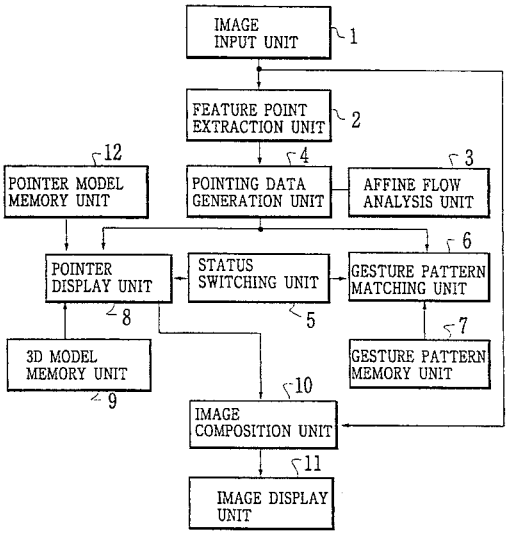
[57] **ABSTRACT**

A 3D human interface apparatus using a motion recognition based on a dynamic image processing in which the motion of an operator operated object as an imaging target can be recognized accurately and stably. The apparatus includes: an image input unit for entering a plurality of time series images of an object operated by the operator into a motion representing a command; a feature point extraction unit for extracting at least four feature points including at least three reference feature points and one fiducial feature point on the object, from each of the images; a motion recognition unit for recognizing the motion of the object by calculating motion parameters, according to an affine transformation determined from changes of positions of the reference feature points on the images, and a virtual parallax for the fiducial feature point expressing a difference between an actual position change on the images and a virtual position change according to the affine transformation; and a command input unit for inputting the command indicated by the motion of the object recognized by the motion recognition unit.

15 Claims, 10 Drawing Sheets