

the manually set direction in quite the same manner as that described previously.

While a camera is used as the means for generating an image in the above-described embodiments, the present invention may be employed in an arrangement where a computer is used for generating an image. In such an arrangement, the HMD 202 or the manually held display apparatus 300 may be connected to an image generating computer to generate an image in accordance with the direction of viewing or the manually inputted direction. Alternatively, an image of a wide area is previously stored so that a partial area is taken out of the image to display in accordance with the direction of viewing or the manually inputted direction.

While the HMD 202 and the manually held display apparatus 300 are structured so that virtual images are viewed through the eyepieces, they may be structured so that the images on the display devices are directly viewed.

Obviously, many modifications and variations of the present invention are possible in light of the above teachings. It is therefore to be understood that within the scope of the appended claims, the invention may be practiced other than as specifically described.

What is claimed is:

1. An image display apparatus worn by a user on the head, comprising:

- an angle sensor for detecting an angle of rotation of the head;
- an angular velocity sensor operable independently of said angle sensor for detecting a velocity of rotation of the head;
- a calculator for calculating an angle of rotation of the head, based on an output from the angle sensor or the angular velocity sensor; and
- a display controller for displaying an image of a direction in accordance with the angle calculated by the calculator.

2. An image display apparatus as claimed in claim 1, further comprising a comparator for comparing a value of the velocity detected by the angular velocity sensor with a predetermined value, wherein the calculator calculates the angle based on a result of the comparison by the comparator.

3. An image display apparatus as claimed in claim 2, wherein the calculator calculates the angle based on the output from the angle sensor when the value detected by the angular velocity sensor is smaller than the predetermined value.

4. An image display apparatus as claimed in claim 2, wherein the calculator calculates the angle based on the output from the angular velocity sensor when the value detected by the angular velocity sensor is greater than the predetermined value.

5. An image display apparatus as claimed in claim 2, wherein the calculator corrects an angle obtained from the output from the angular velocity sensor based on an angle detected by the angle sensor when the value detected by the angular velocity sensor is smaller than the predetermined value.

6. An image display apparatus as claimed in claim 1, further comprising an integrator for integrating the velocity detected by the angular velocity sensor to calculate an angle of rotation.

7. An image display apparatus as claimed in claim 1, further comprising means for judging whether the head of the user is stationary or not, wherein the calculator is provided with a plurality of methods to calculate the angle, said calculator switching the methods based on the result of the judgment.

8. An image display apparatus as claimed in claim 1, further comprising an input device for inputting an image.

9. An image display apparatus as claimed in claim 8, wherein the display controller displays an area, in a direction in accordance with the calculated angle, of the inputted image.

10. An image display apparatus as claimed in claim 8, wherein the input device is a camera.

11. An image display apparatus as claimed in claim 10, wherein the display controller controls the direction of the displayed image by varying a direction of shooting of the camera.

12. An image display apparatus for displaying an image varying in accordance with the direction of the head of a user, comprising:

- a direction detector for detecting a direction of viewing by detecting an angle of rotation of the head;
- an image display controller for displaying an image in accordance with the direction detected by the direction detector;
- an information display controller for displaying information on the direction of viewing;
- a camera for inputting an image, the image display controller controlling a direction of shooting of the camera so that an image in accordance with the detected direction is displayed; and
- a direction setting device operable independently of said direction detector for manually setting the direction of viewing, the information display controller for displaying the information on the detected direction of viewing by representing the information as a direction relative to a direction set by the direction setting device.

13. An image display apparatus as claimed in claim 12, wherein the information display controller displays information on a horizontal direction of viewing.

14. An image display apparatus as claimed in claim 12, wherein the information display controller displays information on a vertical direction of viewing.

15. An image display apparatus comprising:

- an angle sensor for detecting an angle of rotation of a head of a user;
- an angular velocity sensor operable independently of said angle sensor and for detecting a velocity of rotation of the head;
- a calculator for calculating an angle of rotation of the head based on an output from the angular velocity sensor; means for comparing the angle of rotation detected by the angle sensor to the calculated angle of rotation so as to determine a correct angle of rotation; and
- a display controller for displaying an image of a direction in accordance with the correct angle of rotation.

16. An image display apparatus for displaying an image varying in accordance with the direction of the head of a user, comprising:

- a display device for displaying an image;
- a direction detector for detecting a direction of viewing by detecting an angle of rotation of the head;
- a direction input device operable independently of said direction detector and for inputting a direction of viewing manually therefrom;
- a selector for selecting one direction out of the directions of viewing detected by the direction detector and inputted from the direction input device;
- an image display controller for displaying on the display device an image in accordance with the direction selected by the selector; and