

HEAD-MOUNTED DISPLAY APPARATUS
WITH A SINGLE IMAGE DISPLAY DEVICE

ABSTRACT

A head-mounted display apparatus comprises an image display device, a beam splitter for partially transmitting and partially reflecting light from the image display device, a reflection mirror, and a first and a second magnifying lenses. The image display device is disposed in front of a right eye of an observer and displays images on the basis of video signals from a video signal source. The beam splitter, disposed between the image display device and the right eye, splits the light from the image display device into two light beams. The reflection mirror, disposed in front of a left eye, reflects the light from the beam splitter to the left eye. The first and the second magnifying lenses are respectively disposed between the beam splitter and the right eye and between the reflection mirror and the left eye, thereby enabling the observer to see enlarged virtual image formed at a certain distance from the eyes. The head-mounted display apparatus of the present invention can also provide a stereoscopic vision by displaying images on the image display device on the basis of the principle of binocular parallax.

Fig. 3