# FLEXIBLE ELECTRONIC VIEWING DEVICE

## TECHNICAL FIELD OF THE INVENTION

[0001] The present invention relates to viewing devices and, more particularly, to a viewing device having a substrate connected to a flexible display device.

## BACKGROUND OF THE INVENTION

[0002] Digital imaging devices, such as digital cameras and optical scanning devices (scanners), convert an image to machine-readable image data (image data). The image data may be processed so as to replicate the image on an electronic display or viewing device. Processing the image data enables a user to instantaneously generate a replicated image that has many characteristics that are not achievable with conventional film photography. For example, the processing can automatically optimize the color tone and grey scale of an image to a user's preference at any time after the image data has been generated. Optimizing these characteristics using conventional film photography typically must be done at the time the image is photographed or at the time the film is developed.

[0003] As briefly described above, one advantage of digital imaging is that the image can be instantaneously replicated by an electronic viewing or display device. In addition, the replicated image can be instantaneously sized and processed for optimal viewing. For example, the image data may be transmitted to a video display for instantaneous viewing. A computer connected to the video display can enlarge or decrease the size of the replicated image displayed on the video display for optimal viewing. Likewise, a replicated image can be processed to enhance color and other characteristics in the image. The same processing abilities apply to image data transmitted to a printer via a computer or directly from a digital imaging device. The size and other characteristics of the replicated image can be modified by the digital imaging device to optimize the printed image.

[0004] Many digital cameras enable users to process the image data internally prior to transmitting the image data to a peripheral device to replicate the image. These digital cameras typically have a viewing device, such as a liquid crystal display (LCD), that displays the replicated images. A user may use the digital camera to process the image data and see revisions made to the replicated image prior to downloading the image data to a peripheral device for replication.

[0005] Viewing devices that replicate images, however, are not as readily transportable between people as conventional film-type photographs. For example, replicated images that are printed are required to be printed on a high quality paper by a high quality printer in order to have the quality of conventional film-type photographs. The high quality paper and high quality printer, however, are relatively expensive. Furthermore, the time required to print the images can be relatively long.

[0006] Conventional video displays, including LCDs, are able to replicate high quality images. Conventional video displays, however, are generally not as readily transportable among people as conventional film-type photographs. The video displays tend to be heavy, bulky, and fragile. Accordingly, a video display, even an LCD associated with a laptop computer, cannot be as readily passed among people as conventional film-type photographs.

[0007] Other smaller viewing devices are available. These smaller viewing devices, however, are not as readily transferable among people as conventional film-type photographs. These smaller viewing devices typically use a fragile display device, such as a rigid LCD display having a plurality of rigid substrates. Should one of the substrates become cracked or otherwise damaged, the viewing device will be rendered inoperable. Likewise, should the display device bend or otherwise experience excessive force, it will likely become damaged and the viewing device will be rendered inoperable. For example, if a viewing device is dropped to the floor by a user, the weight of the device will cause a substantial force to be acted on the viewing device upon impact with the floor. The force may damage the display device which will render the viewing device inoperable.

## SUMMARY OF THE INVENTION

[0008] The present invention is directed toward a viewing device. The viewing device may comprise a flexible display device operatively connected to a handle. The flexible display device may comprise a first surface, a second surface oppositely disposed relative to the first surface, and a display edge located between the first surface and the second surface. An image is displayable on the first surface. The handle may comprise a handle first surface, wherein the display edge is operatively connected to the handle first surface.

## BRIEF DESCRIPTION OF THE DRAWINGS

[0009] **FIG. 1** is an exemplary top perspective view of a viewing device of the present invention.

[0010] **FIG. 2** is a side view of the viewing device of FIG. **1** undergoing deflection or bending.

[0011] **FIG. 3** is a side perspective cut away view of an embodiment of a display device in the viewing device of **FIG. 1**.

[0012] **FIG. 4** is a side perspective cut away view of an embodiment of a display device having a touch screen associated therewith.

## DETAILED DESCRIPTION OF THE INVENTION

[0013] A non-limiting embodiment of a viewing device **100** is shown in **FIG. 1**. The viewing device **100** may have a flexible display device **110** operatively or otherwise mechanically and electrically connected to a handle **112**. As described below, the handle **112** may contain electronics and a power supply that serve to operate the display device **110**.

[0014] The display device **110** may have an upper surface **118** and a lower surface **120** oppositely disposed with respect to the upper surface **118**. As described in greater detail below, images, such as text, graphics, pictures, or other information, may be displayable on the upper surface **118**. The display device **110** may also have a first side **122**, a second side **124**, a third side **126**, and a fourth side **128**. The first side **122** may be operatively connected to the