GAMING MACHINE WITH LAYERED DISPLAYS

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] This application is a continuation of U.S. patent application Ser. No. 11/514,808, filed Sep. 1, 2006 and entitled "GAMING MACHINE WITH LAYERED DISPLAYS", which is a) a continuation-in-part of U.S. patent application Ser. No. 10/213,626 filed Aug. 6, 2002, and b) a continuation-in-part of U.S. patent application Ser. No. 10/755,598 filed Jan. 12, 2004; all of these patent applications are incorporated herein by reference in their entirety for all purposes.

FIELD OF THE INVENTION

[0002] This invention relates to gaming machines. In particular, the invention relates to gaming machines with layered displays disposed along a common line of sight and gaming machines that include a digital display device with a curved surface.

BACKGROUND OF THE INVENTION

[0003] Conventional gaming machines use one or more display devices to output video data. While many gaming machines include multiple displays, the displays are arranged separately from each other so as to offer multiple screens that provide more information to a person. For example, some conventional gaming machines include an LCD panel disposed in a central part of the gaming machine for presenting a game, while a secondary and smaller LCD panel in a top box of the gaming machine provides bonus game or other information.

[0004] Upper and lower, side-by-side, or other separate display screen arrangements require a player to change his or her line of sight one from one screen to another. This may lead to less game play. Players often get distracted when they look away from a gaming machine, which repositioning between separate display devices often leads to. A gaming machine that permits a person to view multiple display screens simultaneously while looking in a single direction would improve player interaction with a gaming machine.

SUMMARY OF THE INVENTION

[0005] The present invention provides a gaming machine that includes multiple display devices arranged in a common line of sight. The common line of sight passes through a portion of an exterior display device and to a portion of an interior display device. In some cases, an intermediate display device or light filter is also included between the exterior display device and the interior display device and the common line of sight passes through a portion of the intermediate display device as well. A touchscreen may also be added outside the exterior display device to facilitate player input and gaming machine interaction. The common line of sight arrangement permits a person to view video output on all the display devices simultaneously or without substantially changing their position or line of sight.

[0006] In one embodiment, the interior display device includes a digital display device that includes a curved surface. The curved surface may be used to show virtual video reels that resemble mechanical reels used on older gaming machines. The digital display device, however, permits the number of reels and the symbols on each reel to be changed, as desired.

[0007] The multiple display devices find many uses. In one embodiment, a single game is output using all the display devices, which cooperate to form a single coordinated visual presentation. Different depths provided by the multiple display devices improve presentation of three-dimensional graphics.

[0008] In another embodiment, the multiple display devices output video for different games or purposes. For example, the interior display device may output a game, while the intermediate display device outputs a bonus game or pay table associated with the interior display, while the exterior and foremost display device provides a progressive game or is reserved for player interaction and video output with the touchscreen. Other combinations may be used and are described below.

[0009] In one embodiment, the exterior display device has a screen that has the capacity to be completely or partially translucent or transparent at controlled times and/or at controlled portions and locations on the screen. An intermediate display device can have the same see-through capacity. When one of the proximate display screens is transparent or translucent, a person can see images displayed on one of the distal display devices.

[0010] In one aspect, the present invention relates to a gaming machine. The gaming machine includes an external cabinet defining an interior region of the gaming machine. The external cabinet is adapted to house a plurality of gaming machine components within or about the interior region. The gaming machine includes a processor configured to execute instructions from memory that permit game play on the gaming machine. The gaming machine further includes a first display device disposed within or about the interior region and a digital display device that includes a curved surface for presenting an image on the curved surface to a person near the gaming machine. The first display device and the curved surface of the digital display device are disposed such that a common line of sight passes through a portion of the first display device and to a portion of the curved surface of the digital display device. The curved surface of the digital display device is distally located along the common line of sight relative to the first display device for a person looking along the common line of sight.

[0011] In another aspect, the present invention relates to a gaming machine that includes a light valve disposed along the common line of sight between the first display device and the digital display device including the curved surface. The light valve is configured to block at least a portion of the curved surface in response to a control signal.

[0012] In yet another aspect, the present invention relates to a gaming machine that includes a touchscreen proximately located along the common line of sight relative to the first display device for a person looking along the common line of sight.

[0013] In still another aspect, the present invention relates to a gaming machine that includes a digital display device that includes a curved surface for presenting an image on the curved surface to a person near the gaming machine. The digital display device is configured to permit display of a