

(e.g., slow or fast) with which a player pushes or pulls a gaming device lever (e.g., a player input device such as a joystick or pull lever) can be monitored and applied to the cocking and unloading simulation to provide a similar appearance as a slow or fast lever movement in a mechanical gaming device. In another example, the amount of effort or force (e.g., soft or hard) a player exerts in pushing or pulling a gaming device lever can be monitored to provide a similar appearance as a soft or hard lever movement in a mechanical gaming device. In certain embodiments, a gaming device lever can have a finger-type control similar to a joy-stick device. Based on the input of the player, the type of cocking motion and unloading that is simulated for the reels is determined using, for example, a physics engine or a database with a predetermined cocking motions and unloadings based on ranges of player speed and force or effort. The database can be stored in the memory 36 for the gaming machine 10.

[0147] In certain embodiments, as illustrated in FIG. 26, a 3-D effect can be obtained by projecting an image from a video display device 1260 onto a transparent surface 1200 and also onto the front glass or display window 1254 of the gaming machine. The transparent surface 1200 and the display window 1254 are contemplated to be along offset planes that may or may not be parallel to each other. The display window 1254 is further contemplated to be along the same projection path that the video display device 1260 is projecting images to the transparent surface 1200. In another embodiment, the front glass or display window can further display various meters associated with a gaming machine, such as credit meters, coin-in, bet, etc.

[0148] In other aspects, a transmissive display technology can be used in which a rear projection video display device provides a 3-D effect through the illusion of depth by providing two layers of video. The use of transmissive display technology in a gaming machine is described further in U.S. Pat. No. 7,160,187, filed Dec. 17, 2002, entitled "Gaming Machine With Superimposed Display Image", and U.S. Pat. No. 6,517,433, filed May 22, 2001, entitled "Reel Spinning Slot Machine With Superimposed Video Image". The '187 and '433 patents are each incorporated herein by reference in their entireties.

[0149] In certain embodiments, a gaming machine transitions between different games that have different reel symbols. During the transition, new images may be downloaded to the gaming device. The transition can include darkening the projected images or fading the projected images out before introducing the new reel images. The transition can occur in a number of ways including while the reels are spinning or are simulated to be spinning. In other aspects, the symbols from the old game can fade out and the new symbols can then be faded in to minimize any undesirable observations by the player of an harsh transition.

[0150] Further, the gaming machine 10' may include sound effects that replicate typical sounds in a mechanical reel system such as the hum or vibration, especially when starting or stopping. The sounds effects can also include the background hum of a machine when it is stopped and the reels are no longer spinning. The sound effects can be projected to a player using an audio system. The sound effects can change as each of the video reels slows and, eventually, stops. Thus, the gaming machine 10' may broad-

cast a high pitch, high-volume sound effect that is typical of mechanical reels when all of the video reels are initially spinning at a high-speed condition. But, the pitch and the volume may decrease as each video reel comes to a stop. The gaming machine 10' may also have player-input device where the player has some control over the movement of one or more simulated reels (e.g., a "braking" motion). The player's input then has an effect on the sound effects as well. Further, the sound effects may be varied depending on the position of the player's head 558 as sensed by the e-field sensors in the sensors 550. For example, the sound effects may change in volume or direction depending on the position of the player's head relative to the screen. The sound effects may be optimized depending on the player's position in relation to the screen. Further, the presence of a player near the gaming machine 10' may be detected via the e-field sensors and an audio message enticing the player to play the gaming machine 10' may be broadcast in the direction of the player. For example, a message may be broadcast to prompt a player to swipe a player tracking card in the gaming machine 10'. Other reminders may be broadcast to a detected player such as not to leave the tracking device inserted in the gaming machine 10' while they are playing or to thank the player once the player leaves the area of the gaming machine 10'.

[0151] The environmental mapping of the video reel 560 as described with reference to FIGS. 19-20 and the alteration of the video reel 560 to achieve some typical imperfections as described with reference to FIG. 21 can be applied to the various video-reel embodiments disclosed in FIGS. 3-15.

[0152] On some of the embodiments (e.g., rotating electronic paper), power may be needed on the rotating reel drum or cage. In that situation, an ultra-thin, rechargeable battery that rotates with the reel drum or cage can be used. When the gaming machine 10 is idle, the rotation of the reel drum or cage could be such that it stops at a known angular position (or positions) at which a docking station permits the recharging of the ultra-thin batteries.

[0153] Another feature may be the automatic adjustment of features of the gaming machine 10' based on player location detected by the e-field sensors in the sensors 550. For example, a display may be automatically adjusted to a position relate to a player's head based on the location of the player's head.

[0154] In certain embodiments, a gaming machine can include dynamic control of the physical movements in the x, y and z directions (that is, up and down, left and right, and forwards and backwards or any combinations thereof) of a screen to simulate a mechanical reel device. Dynamic control can be implemented using an electromechanical control apparatus. FIG. 27 illustrates a multi-perspective view of an articulated screen for rear projected reels. A floating screen assembly 2705 can include a screen 2710 that is mounted to a subframe 2720 which in turn can be mounted to a display area 2730 or to a housing 2740, using resilient members. The screen 2710 and subframe 2720, when viewed by a player through the display area 2730, is designed to have the appearance of a mechanical reel cage typically found on a mechanical reel device. For example, the screen 2710 and subframe 2720, when operating with a video display device 2750, has the appearance of an actual spinning reel from a mechanical slot machine reel including the sidewalls and the reel strip.