WAGERING GAME WITH 3D RENDERING OF A MECHANICAL DEVICE

RELATED APPLICATIONS

[0001] This application is related to (1) U.S. patent application Ser. No. 10/657,650, filed Sep. 8, 2003, titled Gaming Machine Performing Real-Time 3d Rendering Of Gaming Events, which is a conventional of U.S. Application No. 60/410,039, filed Sep. 12, 2002 (Attorney Docket No. 47079-00134USPT), (2) U.S. patent application Ser. No. 10/400,239, filed Mar. 27, 2003, titled "Gaming Machine Having A 3D Display" (Attorney Docket No. 47079-00151USPT), and (3) U.S. patent application Ser. No. 10/401,246, filed Sep. 27, 2003, titled "Gaming Machine Having A Persistence-Of-Vision Display" (Attorney Docket No. 47079-00184USPT), each of which is incorporated herein and made a part hereof by reference in its entirety.

FIELD OF THE INVENTION

[0002] The present invention relates generally to wagering games and, more particularly, to a wagering game having a secondary display that displays a 3D-rendered mechanical device.

BACKGROUND OF THE INVENTION

[0003] Gaming machines, such as slot machines, video poker machines, and the like, have been a cornerstone of the gaming industry for several years. Generally, the popularity of such machines with players is dependent on the likelihood (or perceived likelihood) of winning money at the machine and the intrinsic entertainment value of the machine relative to other available gaming options. Where the available gaming options include a number of competing machines and the expectation of winning each machine is roughly the same (or believed to be the same), players are most likely to be attracted to the most entertaining and exciting of the machines.

[0004] Consequently, shrewd operators strive to employ the most entertaining and exciting machines available because such machines attract frequent play and, hence, increase profitability to the operator. In the competitive gaming machine industry, there is a continuing need for gaming machine manufacturers to produce new types of games, or enhancements to existing games, which will attract frequent play by enhancing the entertainment value and excitement associated with the game.

[0005] One approach to enhance the entertainment value and excitement of a game is to portray part or all of the game outcome or a bonus game in the top box area of a gaming machine. The top box area may include a mechanical device such as a mechanical reel that is constructed from physical mechanical structures. Players are often drawn to a particular gaming machine because of its top-box features, which provides a context or a theme for the game. A drawback of incorporating a mechanical device in the top box area is that the device cannot be easily changed or replaced if it becomes obsolete or damaged. To do so, an operator would have to take the gaming machine offline and possibly remove it from the casino floor to avoid disruption to the players on the floor. In addition, mechanical devices wear out and eventually break or require labor-intensive servicing or replacement. However, they are desirable because mechanical devices obey mechanical rules and laws of physics, which creates the illusion of uninfluenced randomness (even though the actual game outcome is calculated in advance by a random number generator).

[0006] It is also desirable to provide various different games with different top-box features to the players to reduce player boredom and encourage extended game play. However, each gaming machine occupies floor space in the casino, and accordingly, if a player desires to play a game having a different top-box feature, the player must seek out and walk to a different gaming machine. Or, a casino may perceive by monitoring player activity that a certain top-box feature appears to be more popular with the players. With traditional gaming machines, the casino would have to remove existing gaming machines and replace them with new ones having the popular top-box feature or free up floor space to install new machines.

[0007] What is needed, therefore, is a system and method that presents a realistic-looking top-box presentation on a gaming machine and allows the top-box presentation to be changed on-the-fly with minimal operator intervention. The embodiments described below satisfies these and other needs.

SUMMARY OF THE INVENTION

[0008] According to an embodiment of the present invention, a gaming apparatus adapted to display at least one randomly selected outcome from a plurality of outcomes in response to receiving wager inputs from a player, includes a display in a top box area of the gaming apparatus. The top-box display is adapted to display at least one 3D-rendered image of a mechanical device that can be pre-rendered or rendered in real time. The 3D-rendered image can be downloaded to the gaming apparatus or stored on a storage device in the gaming apparatus. In a specific embodiment, the gaming apparatus includes a digital video recorder that stores the 3D-rendered image(s) and converts them into analog video signals for display on the top-box display. New 3D-rendered images of mechanical devices may be downloaded onto the digital video recorder in analog video format for display on the top-box display.

[0009] According to a method of displaying a 3D-rendered image of a mechanical device on a gaming apparatus, at least one randomly selected outcome is selected from a multiple outcomes in response to receiving wager inputs from a player. A 3D-representation of a mechanical device is rendered to form at least one 3D-rendered image of the mechanical device. The 3D-rendered image is displayed on a display located in the top box area of the gaming apparatus. The following additional acts or steps may be performed in any order and in any combination with other acts or steps. The 3D-rendered image may be stored on a device such as a digital video recorder, and may be pre-rendered or rendered in real time in the gaming apparatus or remote from the gaming apparatus on a server or host computer, for example. The player may be presented with multiple bonus game selections, and depending on the bonus game selected by the player, the 3D-rendered image or image sequences (animation) associated with the player's selection are displayed with the outcome. In the case of an animation, one or more special effects may be employed.

[0010] The above summary of the present invention is not intended to represent each embodiment or every aspect of