

## GAMING MACHINE HAVING A 3D DISPLAY

### REFERENCE TO RELATED APPLICATIONS

[0001] This application is related to U.S. patent application Ser. No. 10/077,443 (Attorney Docket No. 47079-00115USPT) filed Feb. 15, 2002 and entitled "Simulation of Mechanical Reels On a Gaming Machine," and U.S. patent application No. \_\_\_\_\_ (Attorney Docket No. 47079-00184USPT) filed concurrently herewith and entitled "Gaming Machine Having a Persistence-of-Vision Display."

### FIELD OF THE INVENTION

[0002] The present invention relates generally to gaming machines, and, more particularly, to a gaming machine having a 3D display.

### 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. Shrewd operators consequently strive to employ the most entertaining and exciting machines available because such machines attract frequent play and hence increase profitability to the operator. Accordingly, 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.

[0004] A typical gaming machine includes a display area controlled by a processor. In response to a wager, the processor randomly selects a game outcome from a plurality of possible game outcomes and then causes the reels to be stopped to display the selected game outcome. In a slot machine, for example, the selected game outcome is represented by certain symbols on the reels being in visual association with a display area. If the selected outcome corresponds to a winning outcome identified on a pay table, the processor instructs a payoff mechanism to award a payoff for that winning outcome to the player in the form of cash or credits.

[0005] A gaming machine must be exciting to play, but must also attract would-be players to place a wager with the gaming machine in the first instance. To this end, gaming machines typically include lamps or other visually decorative elements and produce sounds to lure players to place a wager and to enhance the overall playing experience so that players continue placing wagers. One type of prior-art slot machine includes mechanical symbol-bearing reels driven by stepper motors. The display area on this type of slot machine is fairly mundane. Several proposals to modify the appearance of the display area have been set forth. For example, the reels may contain electroluminescent elements that define one or more reel symbols, such as diamonds,

cherries, or bars, where the characteristics of the reel symbols change based on inputs to the electroluminescent elements. In another proposal, the reel symbols are colored by backlighting the symbols with colored light bulbs or similar means.

[0006] Another type of prior-art gaming machine is a video-based slot machine that depicts the symbol-bearing reels on a video display. Traditional video-based slot machines allow for more flexibility in game design and multi-denominational play than mechanical reel-based slot machines offer and can depict complex and entertaining graphical images, animations, and play sequences that cannot be employed in mechanical slot machines. Some video-based slot machines incorporate two displays, one to display the basic game and the other to display a bonus game. Despite these flexibilities over mechanical reel-based slot machines, there are limitations. For example, traditional video-based slot machines can only display 2-dimensional images. Images that appear to be 3-dimensional may be rendered on a traditional LCD or CRT display, but these images are merely simulated and do not present a true stereoscopic effect to the viewer. Display technologies beyond the traditional LCD or CRT display exist today to create exciting visual effects in gaming environments. The present invention is directed to exploiting these technologies.

### SUMMARY OF THE INVENTION

[0007] According to an embodiment of the present invention, a gaming machine for conducting a wagering game includes a controller for selecting a game outcome from a plurality of game outcomes and a 3D display for displaying the game outcome in a true 3D or virtual 3D. In alternate embodiments, the 3D display for displaying the game outcome in true 3D is a volumetric 3D display, a multi-layer display with or without tracking of a viewer's position or angle, or a holographic display. In still further embodiments, the 3D display for displaying the game outcome in virtual 3D is an autostereoscopic display or a non-autostereoscopic display. Autostereoscopic displays include lenticular displays which include generally cylindrical lenslets or generally spherical lenslets disposed over a substantially transparent liquid crystal layer and parallax illumination displays which include a substantially transparent LCD layer and an illumination plate generating a plurality of light lines, the illumination plate being separated by a distance from the LCD layer and projecting the light lines through the LCD layer. In the embodiment where the 3D display is a non-autostereoscopic display, a viewing aid must be worn by the viewer to complete the 3D effect.

[0008] A method of conducting a wagering game on a gaming machine includes selecting a game outcome from a plurality of possible outcomes and displaying the game outcome on a 3D display, which may be any one of the foregoing displays.

[0009] The above summary of the present invention is not intended to represent each embodiment, or every aspect, of the present invention. This is the purpose of the figures and the detailed description which follow.

### BRIEF DESCRIPTION OF THE DRAWINGS

[0010] The foregoing and other advantages of the invention will become apparent upon reading the following detailed description and upon reference to the drawings.