

the outcome of the game. The system **200** has three mechanical reels **212**, **214**, **216**. Additionally, the system **200** has a video display device **218** that includes a screen **220** for displaying video symbols that form part of the display region **202** for determining the outcome of the game. Thus, the system **200** is provided with additional versatility by having one simulated reel that can be used to alter the payout table without altering the mechanical reels. Further, the screen **220** could be used for various diagnostic features for the game.

[0054] FIGS. **12a** and **12b** illustrate a reel **250** that can be used by itself or in conjunction with the embodiments of FIGS. **4-8**. The reel **250** has a symbol location **252** which provides a compound symbol, which is a symbol that is capable of being visualized as more than one symbol. For the purposes of describing this feature of the present invention, the compound symbol is of the "bar symbol" genre. As an example, when the wavelength of light is 700 nanometers from a light source **254** (FIG. **12a**), the bottom two bars **252a**, **252b** in the bar symbol are visible to the player, making the compound symbol appear like a double bar symbol. In this instance, the top bar **252a** is not responsive to the light at 700 nanometers, such that it is not visible. Alternatively, when the wavelength is 400 nanometers (FIG. **12b**), the top bar **252a** appears visible to the player, while the bottom two bars **252b**, **252c** are not responsive. Thus, the overall appearance is a single bar symbol when 400 nanometer light is used.

[0055] The source **254** can be any kind of display device capable of providing various output wavelengths. In one preferred embodiment, the source **254** is an array of multi-colored LEDs. While colored bulbs may work, the LEDs are preferred since the bulbs get hot and burn out due to cycling, and white bulbs become yellow over time. In these situations, the LED is used for backlighting when non-compound symbols require such backlighting and for selective wavelength lighting when one or more features of a compound symbol require visualization. The source **254** can also be an electroluminescent element.

[0056] Further, the reel can include compound symbols at some locations and transparent windows in other locations to provide varying degrees of versatility. For such a system, the source **254** must also be able to provide video symbols for display through the transparent window.

[0057] The invention described in FIG. **12** contemplates using various wavelengths of energy to achieve the display of more than one symbol in one symbol location on the reel **250**. For example, ultra-violet energy may be projected to cause the fluorescing of certain colored reel symbols so as to make them more visible, or a black light can be used to highlight certain symbol features in a compound symbol.

[0058] FIGS. **13a-13d** illustrate another reel system **270** for developing a compound symbol, similar to that which is shown in FIG. **12**. The system **270** includes a reel **272** with a polarizing filter **274** that controls the polarization state of the light emanating from a source **276**. The polarized light is the backlighting for the reel **272** and causes a symbol **280** to be visible to a player of the game.

[0059] The exemplary symbol **280** shown in FIG. **13b** is again a bar-type symbol. The top and bottom bars have an optical characteristic of permitting the passage of light when

polarized in the vertical direction. The middle bar has an optical characteristic for permitting the passage of light when polarized in the horizontal direction. Such a symbol **280** can be made by having a polarized film for each bar.

[0060] The filter **274**, shown in FIG. **13c**, is rotatable between 0 and 90 degrees. When oriented at 0 degrees, the light emanates with a vertical polarization. When oriented at 90 degrees, the light emanates with a horizontal polarization. By controlling the angular orientation of the filter **274**, the polarization state of the light from the source **276** is controlled.

[0061] FIG. **13d** illustrates the resultant visible symbol **280** that is displayed to the player as a function of the orientation angle of the filter **274**. When at 0 degrees, the vertically polarized light causes the top and bottom bars to be visible while the middle bar is not visible, thereby creating a two bar symbol **280a**. If the light is polarized horizontally by the filter **274** (i.e., at 90 degrees), then the middle bar is visible and the top and bottom bars are not visible, thereby creating a one bar symbol **280c**. Finally, if the light is polarized by the filter **274** at 45 degrees, then all three bars transmit the same amount of light and all three are visible, thereby creating a three bar symbol **280b**. It should be noted that the intensity of the three bars when the filter **274** is at 45 degrees is less than the intensity of the visible bars (one bar or two bars) when the filter **274** is at 0 or 90 degrees.

[0062] Accordingly, the system **270** provides for the creation of multiple symbols at one symbol location by adjusting the polarization state with the filter **274**. While this system **270** has been described with a basic bar symbol that can be made to be three different symbols (one bar **280b**, two bars **280a**, or three bars **280c**), the symbol location could contain features from other types of symbols, such as the number "7" symbol and a "cherry" symbol, wherein the first symbol is displayed with vertically polarized light and the second symbol is displayed with horizontally polarized light.

[0063] While the present invention has been described with reference to one or more particular embodiments, those skilled in the art will recognize that many changes may be made thereto without departing from the spirit and scope of the present invention. Each of these embodiments and obvious variations thereof is contemplated as falling within the spirit and scope of the claimed invention, which is set forth in the following claims.

What is claimed is:

1. A spinning reel slot machine, comprising:

an image display device having a surface for producing images of simulated mechanical reels; and

a plurality of optical fibers have first ends optically coupled to said surface of said image display device and second ends for displaying said simulated mechanical reels to a player of said slot machine, at least some of said second ends defining a curved display surface having a radius of curvature that approximates the radius of curvature of a mechanical reel.

2. The slot machine of claim 1, further including a flat transmissive window in front of said curved display surface.