each reel at a random position. The gaming machine senses an outcome, along a central payline, by sensing the position of each reel.

[0032] 2-D video reels refer to the use of cartoonish animations that caricature reels on a single 2-D video device. The cartoonish animations do not intend to realistically portray actual mechanical reels, nor do they.

[0033] Realistic simulation of mechanical reels, using embodiments described herein, refers to 2-D and/or 3-D hardware and/or software attempts to emulate actual mechanical reels. Their goal is to have a player perceive a real mechanical reel, at least partially. In particular, embodiments described herein contribute to the perception of a mechanically driven reel slot machine by emulating perceivable hardware features in a gaming machine. Briefly, one such hardware feature is the space between a silkscreen glass and the mechanical reels disposed behind the glass. Another optional hardware emulation includes actual lighting found in a mechanically driven reel slot machine. These and other embodiments will be described in further detail below.

[0034] The embodiments described herein use hardware and/or software to increase the perception that a processor-based gaming machine includes real mechanical reels. Old mechanical reel-based gaming machines have numerous mechanical attributes—such as mechanical parts and components, 3-D features, and imperfections—that are visibly perceivable and convey their identity. The inventor discovered that emulating many of these mechanical attributes can lead to the perception of real mechanical machine by a person who is near a processor-based machine.

[0035] In one embodiment, physical adaptation embodiments described herein add parallax and perspective to the visual display of video reels. This is described with respect to FIGS. **1**A, **1**B, and **2**A-**2**C.

[0036] In addition to physical adaptations, a gaming machine as described herein attempting to emulate a mechanically driven reel slot machine may also include contributions from other sources, such as audio and/or video adaptations, where each adaptation adds to the perception of a mechanically driven reel slot machine.

[0037] Audio adaptations may include: stereo audio that varies output audio based on video reel position in the gaming machine (e.g., audio for a left video reel is output and increasingly heard on a left side of a digital machine, while audio for a right video reel is increasingly heard on the right side of the machine), stereo recording and playback of actual mechanical sounds in a real mechanical reel machine, randomization of the actual mechanical sounds to avoid repetition of the same sounds, etc. Other audio adaptations are also suitable for use.

[0038] Video data may also be used to add to the perception of real reels. The video data embodiments simulate one or more perceived realistic visual attributes of a real mechanical reel in a gaming machine. Briefly, these perceived realistic visual attributes may include one or more of: outward bowing of video reel edges to simulate perceived curvature of an actual circular mechanical reel, variable lighting of video reel displays to simulate perceived reel curvature and out of plane dimensions of an actual curved reel, the inclusion of video simulations of mechanical components between the reel strips (e.g., latches and other mechanisms that a person can see in a mechanical reel gaming machine), backlight blinking of video reel symbols to simulate lighting used in old-fashioned mechanical systems, etc.

[0039] In another specific embodiment, video data provided to the distal video display device simulates a visible mechanical imperfection of a mechanical reel in a gaming machine. The visible mechanical imperfection refers to visible actions, attributes or behavior of a mechanical reel or one or more parts in a mechanical reel or gaming machine. The visible mechanical imperfection may be dynamic, meaning that the mechanical reel is moving when it displays the visible imperfection. Genesis of the visible imperfections often stem from peculiarities, realities, or imperfections in the mechanical device or system, such as loose machining tolerances, random variations which are characteristic of real systems, etc. For example, a simulated video reel may wobble or show lateral jitter in a direction orthogonal to the direction of spin to emulate this common occurrence in a real mechanical reel system. In another specific embodiment, the visible mechanical imperfection includes video reel kick-back, which emulates the dynamic bounce that a real mechanical reel commonly produces when stopped. Video reels may also spin at slightly different speeds to emulate their imperfect mechanical counterparts. Other video adaptations are also suitable for use.

[0040] Individually, each of these physical, audio and video adaptations may not create a full illusion of a mechanical reel machine. Cumulatively, however, when multiple of these adaptations are provided in a processor-based gaming machine, senses for a person near the gaming machine process numerous indications of a real mechanical reel machine, and the person may be at least partially or temporarily fooled into perceiving a real mechanical reel machine.

[0041] While embodiments described herein are not an exact replacement for a truly mechanical machine, they are believed to be a reasonable match that preserves some or most of the "look and feel" of mechanical reel-based machines. These digital machines may satisfy many players looking for a mechanical reel-based machine, while avoiding the associated costs and complexities of old mechanical machines, and permitting the benefits of digital machines. For example, processor-based video display devices permit easy reconfiguration of video output, including remote reconfiguration. The digital nature of the video display devices permits the reel game on a gaming machine to be changed using digital techniques. This allows symbols on the video reels to be changed to present a different reel game, if desired, or enables the number of reels depicted on the video display devices to be changed. Wireless or wired connection to the gaming machine also permits remote changes to games by downloading instructions for the changes.

[0042] Parallax refers to the effect whereby the positions of objects relative to each other appear to shift due to changes in the relative angular position of the observer attributable to motion of the observer. In other words, it is a perceived shift of an object relative to another object caused by a change in observer position. If there is no parallax between the two objects, then a person typically perceives them as side by side at the same depth. This addition of parallax helps the processor-based gaming machine better emulate the three dimensional nature of mechanical counterparts.

[0043] FIG. **1**A illustrates parallax for a gaming machine with actual mechanical reels. A change in position from **21***a* to **21***b* changes the view of mechanical reels **74** due to parallax. Glass plate **72** includes screen printing or printed decals **75** attached to glass **72**. Transparent windows in the screen printing were bordered by opaque sections **75** that partially