separate from the display **110** and the CPU **104**. The display **110** may be any of the POV or 3D displays discussed herein.

[**0055**] A system memory **106** stores control software, operational instructions, and data associated with the gaming machine. In one embodiment, the system memory **106** comprises a separate read-only memory (ROM) and battery-backed random-access memory (RAM). However, it will be appreciated that the system memory **106** may be implemented on any of several alternative types of memory structures or may be implemented on a single memory structure. A payoff mechanism **116** is operable in response to instructions from the CPU **104** to award a payoff to the player in response to certain winning outcomes that might occur in the wagering game, which may include a basic game and one or more bonus games. The payoff may be provided via coins, bills, tickets, coupons, cards, etc. The payoff amounts are determined by one or more pay tables stored in the system memory **106**. The gaming machine may be linked to other gaming machines or to an accounting system via a network **114**.

[**0056**] The method of conducting a wagering game such as slots is described below. In general, game play is initiated by inserting money or playing a number of credits, causing the CPU **104** to activate a number of pay lines corresponding to the amount of money or number of credits played. In an embodiment, the player selects the number of pay lines by pressing a "Select Lines" key on a secondary display (not shown). The player then chooses the number of coins or credits to bet on the selected pay lines by pressing a "Bet Per Line" key on the secondary display.

[**0057**] After activation of the pay lines, the reels may be set in motion by touching a "Spin Reels" key or, if the player wishes to bet the maximum amount per line, by using the "Max Bet Spin" key on the secondary display. Alternately, other mechanisms such as, for example, a lever or pushbutton may be used to set the reels in motion. The reels may be shown on the secondary display or on the display **110**. The CPU **104** uses a random number generator to select a game outcome (e.g., "basic" game outcomes) corresponding to a particular set of reel "stop positions." The CPU **104** then causes each of the video reels to stop at the appropriate stop position. Video symbols are displayed on the reels to graphically illustrate the reel stop positions and indicate whether the stop positions of the reels represent a winning game outcome.

[**0058**] Winning basic game outcomes (e.g., symbol combinations resulting in payment of coins or credits) are identifiable to the player by a pay table. In an embodiment, the pay table is affixed to the gaming machine **100** and/or displayed by the secondary video display or the display **110** in response to a command by the player (e.g., by pressing a "Pay Table" button). A winning basic game outcome occurs when the symbols appearing on the reels along an active pay line correspond to one of the winning combinations on the pay table. A winning combination, for example, could be three or more matching symbols along an active pay line, where the award is greater as the number of matching symbols along the active pay line increases. If the displayed symbols stop in a winning combination, the game credits the player an amount corresponding to the award in the pay table for that combination multiplied by the amount of credits bet on the winning pay line. The player may collect the amount of accumulated credits by pressing a "Collect" button. In one implementation, the winning combinations start from the first reel (left to right) and span adjacent reels. In an alternative implementation, the winning combinations start from either the first reel (left to right) or the last reel (right to left) and span adjacent reels.

[**0059**] Included among the plurality of basic game outcomes are one or more start-bonus outcomes for starting play of a bonus game. The payoff amounts corresponding to certain outcomes of the bonus game are stored in system memory **106**. A start-bonus outcome may be defined in any number of ways. For example, a start-bonus outcome occurs when a special start-bonus symbol or a special combination of symbols appears on one or more of the reels in any predetermined display position. The start-bonus outcome may require the combination of symbols to appear along a pay line, or may alternatively require that the combination of symbols appear anywhere on the display regardless of whether the symbols are along the pay line. The appearance of a start-bonus outcome causes the processor to shift operation from the basic game to a bonus game, which may, for example, be a scrolling indicia feature described in connection with **FIG. 10** below.

[**0060**] The gaming machine **100** may be "upright" such as shown in **FIG. 10** in which a display is oriented vertically relative to the player. Alternatively, the gaming machine **100** may be a "slant-top" version in which a display is slanted at about a thirty-degree angle toward the player, such as shown in **FIG. 2***a*.

II. Gaming Machine Including a POV Display

[**0061**] A. Volumetric 3D display

[**0062**] **FIG. 2***a* is a diagrammatic illustration of a perspective view of a gaming machine **200** including a volumetric 3D display **202** and a secondary display **204**. Volumetric 3D displays are displays that produce volume-filling imagery. Such displays permit the generation, absorption, or scattering of visible radiation from a set of localized and specified regions within a physical volume.

[**0063**] The volumetric 3D display **202** displays autostereoscopic imagery in a spherical volume by projecting a number of 2D images per second onto a rotating screen **254** shown in **FIG. 2***b*. In an embodiment, the volumetric 3D display **202** projects thousands of 2D images per second onto the rotating screen, and the screen rotates at a rotational speed of at least 500 revolutions per minute. The volumetric 3D display **202** provides at least one slice per degree and a slice resolution of at least 500 pixels by 500 pixels. The volumetric resolution of the volumetric 3D display **202** to is at least about 100 million voxels. Because of its spherical shape, the volumetric 3D display **202** provides a viewing angle of approximately 360 degrees horizontal and approximately 270 degrees vertical. The 360-degree horizontal viewing angle permits the 3D imagery to be viewed from any point around the gaming machine **200**, which will attract curiosity and will allow more would-be players to watch the game play without having to stand behind the player.

[**0064**] The imagery displayed by the volumetric 3D display **202** represent software-generated color 3D symbols **206** which are traditionally displayed as 2D symbols on a mechanical or simulated reel, such as fruit symbols and bar,