in the card reader **24**, the virtual 3-D model of the gaming machine may be used to display a visual sequence of the card being removed from the card reader **24**, flipped over and correctly inserted into the card reader **24**. In another example, a visual sequence showing a player inputting an input code on the key pad **22** may be used to prompt and show the player how to enter the information. In another example, when the gaming machine **2** is expecting an input from the player using one of the player input switches **32**, the virtual 3-D model of the gaming machine may be used to display a visual sequence of the correct button on the gaming machine being depressed. In yet another example, the manner in which a bill or ticket is inserted into the bill validator may be shown to the player using a sequence of photographs generated from the 3-D model.

[**0126**] During certain game events, the gaming machine **2** may display visual and auditory effects that can be perceived by the player. These effects add to the excitement of a game, which makes a player more likely to continue playing. Auditory effects include various sounds that are projected by the speakers **10**, **12**, **14**. Visual effects include flashing lights, strobing lights or other patterns displayed from lights on the gaming machine **2** or from lights behind the belly glass **40**. The ability of a player to control a virtual camera in a virtual gaming environment to change the game outcome presentation may also add to the excitement of the game. After the player has completed a game, the player may receive game tokens from the coin tray **38** or the ticket **20** from the printer **18**, which may be used for further games or to redeem a prize.

[**0127**] **FIG. 6** is a flow chart depicting a method for generating a game outcome presentation from a virtual gaming environment. In **600**, after receiving a wager for one or more games played on a gaming machine, an input signal is received on the gaming machine to initiate a game of chance. The input signal may be input by a player using a various input devices available on the gaming machine, such as input buttons and a touch screen. In **602**, one or more game outcomes are determined for the one or more games initiated by the game player. Typically, a game outcome is determined by generating one or more random numbers and comparing the numbers with a paytable stored on the gaming machine.

[**0128**] In **603**, based upon the one or more game outcomes determined in **602**, one or more game displays is rendered in a 3-D virtual game environment in the gaming machine. In **604**, at least one virtual camera in the 3-D gaming environment is used to render a sequence of 2-D projection surfaces (e.g. images) derived from three-dimensional coordinates of surfaces in the 3-D gaming environment. As described with reference to **FIG. 2**, the position of the virtual camera may vary with time. In **606**, the sequence of rendered 2-D projection surfaces is displayed to one or more game display screens on the gaming machine as part of a game outcome presentation or a bonus game presentation. In **608**, the game outcome (e.g. an amount awarded for one or more games) is displayed to the display screen. The method described above is not limited to game outcome presentations. Other types of gaming information such as attract mode presentations, maintenance operation information, game operation information and casino information may be generated in a 3-D virtual gaming environment and displayed to a display screen on the gaming machine. Further, transition screens that allow a smooth transition between different gaming presentations may also be generated and displayed on the display screen. For instance, a transition screen may be generated to for a display a smooth transition between a game outcome presentation and a bonus game.

[**0129**] **FIG. 7** is a flow chart depicting a method for generating a game using a 3-D virtual gaming environment. In **700**, game events that comprise a game of chance played on the gaming machine and are represented visually are selected. In **705**, a 3-D visual storyboard describing a scene in one or more virtual gaming environments is generated for each game event. The scene information may include virtual camera positions as a function of time in one or more gaming environments. For instance, a story board for cards being dealt in a card game may describe a pair of 3-D hands dealing the card over a gaming table with a virtual camera positioned directly above the gaming table looking down at the hands. In **710**, a scene corresponding to the 3-D visual storyboard for each game event is generated in one or more 3-D virtual gaming environments. In **715**, a scene corresponding to the visual storyboard for each game event is "filmed" in the one or more 3-D gaming environment. Filming each game event in the 3-D gaming environment comprises selecting a sequence of virtual camera positions and angles in the one or more 3-D gaming environments. In some embodiments, a player may control the position of the virtual camera in some manner. In **720**, a sequence of 2-D projection surfaces (e.g. virtual camera images) derived from three-dimensional coordinates of surfaces in the 3-D gaming environment are rendered to a display screen on the gaming machine.

[**0130**] In the present invention, multiple "photographs" may be simultaneously generated from multiple virtual cameras located in one or more 3-D gaming environments on a gaming machine. The photographs may be displayed on one or more display screens available on the gaming machine. In addition, virtual cameras may be located in virtual 3-D gaming environments located on remote gaming devices, such as remote servers or other gaming machines, in communication with the local gaming machine. For instance, a plurality of linked gaming machines may "share" a 3-D gaming environment and players on each of the plurality of gaming machines may be able to see activities of other players in the "shared" 3-D gaming environment and possible interact with other players in the shared 3-D gaming environment. For instance game players may be able to play games against other game players or play games with other game players. The gaming machines may be linked via a local area network, a wide area network, the Internet, private intranets and virtual private intranets.

[**0131**] A plurality of photographs from virtual cameras in one or more 3-D gaming environments may be arranged as a number of smaller game windows on a display screen on the gaming machine. For example, the display screen may be divided into four equally sized game windows. As another example, a smaller game window may be generated within a larger game window on the display screen like picture-in-picture on a Television. The multiple game windows may contain photographs generated from 3-D virtual gaming environments both local and remote to the gaming machine. In addition, the multiple game windows may contain information from other sources. For instance, the game windows may each contain entertainment content such