

manner. For instance, the input button may be shown sinking into a surface from which it protrudes as if it were physically depressed. In FIG. 12D, the input button 159 is shown in a depressed position in the 3-D gaming environment. In FIG. 12E, the depressed button is rendered in a photograph 162 shown in the game window 161.

[0158] FIG. 13 is a flow chart depicting a method of detecting input button collisions for input buttons modeled in a 3-D gaming environment on a gaming machine. In 1300, one or more 3-D models of input buttons are generated in a 3-D gaming environment. In 1302, a 3-D surface in the 3-D gaming environment is selected that includes at least portion of one or more input buttons modeled in the 3-D gaming environment. In 1304, a two-dimensional projection surface is rendered from the selected 3-D surface in the gaming environment. As noted above, the 3-D surface may be considered a 3-D object and a 2-D projection surface may be considered a 2-D image. In 1306, the rendered two-dimensional projection surface is displayed to at least one display surface on a gaming machine.

[0159] In 1308, at least one or the one or more input buttons modeled in the 3-D gaming environment are activated. In 1310, an input location corresponding to a 2-D coordinate on a display screen is received. In 1311, an input line is generated in the 3-D gaming environment based on the coordinate transformation used to render the two-dimensional projection surface in 1304. In 1312, the input line is compared to 3-D surface locations in the 3-D gaming environment.

[0160] In 1314, when a collision between the input line and an input buttons in the 3-D gaming environment are not detected, the screen input is ignored by the gaming machine. In 1315, when a collision between the input line and an input button has been detected, the gaming machine determines whether the input button is active. When the input button is not active, the screen input is ignored by the gaming machine. In 1316, when the input button is active, the gaming machine may execute the action specified by the input button. For instance, a game of chance may initiated on the gaming machine.

[0161] Although the foregoing invention has been described in some detail for purposes of clarity of understanding, it will be apparent that certain changes and modifications may be practiced within the scope of the appended claims. For instance, while the gaming machines of this invention have been depicted as having top box mounted on top of the main gaming machine cabinet, the use of gaming devices in accordance with this invention is not so limited. For example, gaming machine may be provided without a top box or a secondary display. Both of these types of gaming machines may be modeled in a virtual gaming environment stored on a gaming machine.

What is claimed is:

1. A gaming machine comprising:

a master gaming controller designed or configured to control one or more games of chance played on the gaming machine;

one or more virtual three-dimensional 3-D gaming environments available for rendering a game outcome presentation for the one or more games of chance;

game logic for rendering one or more two-dimensional images derived from a 3-D object in at least one of the 3-D gaming environments;

one or more display devices for displaying said game outcome presentations with said rendered one or more two-dimensional images.

2. The gaming machine of game 1, further comprising:

game logic designed or configured to draw a plurality of the game outcome presentations in the one or more 3-D gaming environments and to capture two or more of the game outcome presentations on at least one of the two-dimensional images.

3. The gaming machine of game 1, further comprising:

game logic designed or configured to draw a gaming machine maintenance operation in the one or more 3-D gaming environments and to capture the gaming machine maintenance operation on the one or more two-dimensional images.

4. The gaming machine of claim 1, further comprising:

game logic designed or configured to draw a gaming machine operational feature in the one or more 3-D gaming environments and to capture the gaming machine operation feature on the one or more two-dimensional images.

5. The gaming machine of claim 4, wherein the gaming machine operational feature is selected from the group consisting of inserting a player tracking card in a card reader on the gaming machine, entering an identification code on the gaming machine, pressing an input button on the gaming machine, inserting a printed ticket in a bill validator on the gaming machine, displaying an electronic fund transfer transaction, displaying an alternate video presentation, using an electronic key with a gaming device connected to the gaming machine.

6. The gaming machine of claim 1, further comprising:

game logic designed of configured to draw attract mode features in the one or more 3-D gaming environment and to capture the attract mode features on the one or more two-dimensional images.

7. The gaming machine of claim 1, further comprising:

game logic designed or configured to draw a promotional feature in the one or more 3-D gaming environments and to capture the promotional feature on the one or more two-dimensional images.

8. The gaming machine of claim 1, further comprising:

game logic designed or configured to draw casino information in the one or more 3-D gaming environments and to capture the casino information on the one or more two-dimensional images.

9. The gaming machine of claim 1, further comprising:

game logic designed or configured to draw a bonus game presentation in the one or more 3-D gaming environments and to capture the bonus game presentation on the one or more two-dimensional images.

10. The gaming machine of claim 1, wherein a three-dimensional position of the 3-D object is time varying.

11. The gaming machine of claim 10, wherein a rate of movement of the three-dimensional position of the 3-D object is time varying.