

664. FIG. 19B illustrates object **660** and payline **664** as viewed from the side of object **660**. From viewpoint **668**, payline **664** appears to be in front of object **660**.

[0121] The image or images of slot reels need not be mapped onto the face **662** of an object **660**. For example, the images of slot reels could be mapped onto a plane. Additionally, although the example of **FIGS. 19A and 19B** illustrate the virtual slot machine modeled as an image or images mapped onto a flat face, the virtual slot machine can be modeled in other ways as well. **FIG. 20** illustrates another example of a virtual slot machine and a payline in 3D model space. The model **670** of virtual slot machine includes three reels modeled as three cylinders **672, 674, and 676**. Each reel has mapped on it an image or images of symbols. The model **670** also includes a payline **678** that passes through reference points **680, 682, and 684**.

[0122] Turning now to **FIGS. 3, 6A, 6B, 19A, 19B, and 20**, microprocessor **104** may generate a 3D model of a slot machine game. The 3D model may include virtual slot reels and one or more paylines. **FIGS. 19A, 19B, and 20** illustrate examples of 3D models of slot machine including virtual slot reels and paylines.

[0123] Microprocessor **104** may generate 3D primitives corresponding to the virtual slot reels and the payline. In some embodiments, these 3D primitives are provided to a graphics processor **107**, along with other information such as lighting information. In these embodiments, the graphics processor **107** may perform "Transform and Lighting" processing on the 3D primitives, and may generate a signal for causing display unit **70** to display an image of the virtual slot reels and the payline. In other embodiments, microprocessor **104** may perform "Transform and Lighting" processing on the 3D primitives to generate 2D primitives. In these embodiments, these 2D primitives may be provided to graphics processor **107**, which may generate a signal for causing display unit **70** to display an image of the virtual slot reels and the payline.

[0124] As described above with reference to **FIG. 15**, a payline or paylines may be generated after the reels of the virtual slot machine stop spinning, and if the player has won. **FIG. 21** is one embodiment of a method **493** for generating a payline. Method **493** will be described with reference to **FIG. 24**. In some embodiments, method **493** may be implemented by microprocessor **104** in conjunction with graphics processor **107**.

[0125] At block **700**, locations of reference points in 3D model space of the payline may be determined. For example, in **FIG. 24**, the locations of reference points **680, 682 and 684** may be generated, retrieved from a look-up table, etc. In some embodiments, the reference points generated at block **700** may be between the virtual reels of the slot machine and the viewpoint.

[0126] At block **702**, payline properties may be defined. The payline properties may include one or more (or none) of, but are not limited to, payline width, payline curve radius, the number of polygons to be used to define curves, etc. Alternatively, or additionally, other payline properties may include payline thickness, distance from the reel face, etc. The payline properties may be defined ahead of time and stored in, for example, memory **102** or memory **106 (FIG. 3)**. Then, during operation, the payline properties can be retrieved from memory.

[0127] At block **704**, a payline may be generated in 3D model space. One embodiment of a method for generating the payline in 3D model space will be described subsequently with reference to **FIG. 22**. At block **706**, graphics attributes may be associated with the payline. Such attributes may include, for example, color, texture, texture mapping, transparency, translucency, etc. One or more, or none, of these attributes (or other attributes) can be associated with the payline. Using various graphics attributes, the payline can be made to appear to oscillate, move, rotate, pivot, slide on the screen, flash, fade in, fade out, shrink, grow, etc. Similarly, the scale of the payline in various dimensions may be changed. Additionally, the payline may appear to be on fire, be drawn by a laser, or the payline's colors may appear to change. Also, a varying transparency effect can be employed to help make the payline edges appear smooth. Further, the payline may appear to morph into different shapes. For example, the payline may appear to morph to include boxes around winning symbols in a reel-type slot machine game.

[0128] At block **708**, the payline may be displayed. If a graphics processor such as the graphics processor **107B** of **FIG. 6B** is used, displaying the payline may include providing the 3D primitive information generated at block **704** to the graphics processor **107**. This may also include providing the effects information associated with the payline (block **706**) to the graphics processor **107**. If a graphics processor such as the graphics processor **107A** is used, displaying the payline may include the microprocessor performing "Transform and Lighting" processing on the 3D primitive information generated at block **704** to generate 2D primitive information. Then, the 2D primitive information may be provided to graphics processor **107**. Next, graphics processor **107** generates one or more control signals that control display unit **70** to display an image of the slot reels and the payline.

[0129] **FIG. 22** is a flow diagram illustrating one embodiment of a method **704** for generating a payline in 3D model space. Method **704** will be described with reference to **FIG. 24**. At block **720**, one of the reference points generated at block **700 (FIG. 21)** may be selected as a current reference point. For example, in **FIG. 24**, reference point **752** may be selected as the current reference point.

[0130] At block **724**, a current slope may be generated. In **FIG. 24**, for example, the current slope may be the slope between reference points **752** and **754**. At block **726**, a prior slope may be set to the current slope.

[0131] At block **728**, it may be determined whether there is a next reference point. For example, in **FIG. 24**, if reference point **752** is the current reference point, reference point **754** may be considered a next reference point. If there is no next reference point, the routine may end. If there is a next reference point, control may pass to block **730**.

[0132] At block **730**, a next slope may be calculated. In **FIG. 24**, for example, the next slope may be the slope between reference points **754** and **756**.

[0133] At block **732**, it may be determined whether the current slope is the same as the prior slope. If yes, control may pass to block **736**. If no, control may pass to block **734**. If the current slope is different than the prior slope, this may indicate that a curve was previously generated. In **FIG. 24**,