[0155] FIG. **27** illustrates a video display device **2750**, such as a mini-laser projector as manufactured, for example, by Microvision, Inc. or Explay Ltd or similar devices. In addition to a mini-laser projector, other methods and types of video displays have been described herein for presenting images. Furthermore, other configurations of video display device(s) and screen(s) (e.g., projection layer(s)) have been described, as well, for simulating mechanical reels. FIG. **27** illustrates one exemplary embodiment of one video display device for presenting images onto a curved surface (for example, a screen), for the simulation of a single mechanical reel. Other configurations presented herein are applicable, as well.

[0156] The video display device **2750** in FIG. **27** can be mounted (not shown) with the projector having a generally rigid connection to the screen **2710**. The generally rigid connection allows the projector to maintain video output to the screen assembly **2705** and also allows vibrations or other movements to be transmitted to both the screen assembly **2705** and the video display device **2750**. The connection between the video display device **2750** and the screen assembly **2705** allows the two elements to generally move together so that the presented images move together with physical movements of the screen assembly **2705**.

[0157] In certain embodiments, the subframe **2720** is semi-rigidly connected to the display area **2730** or the housing **2740**. For example, coil springs **2760** can be attached to spring mounts **2730** on subframe **2720** and spring mounts **2764** on the housing **2740** to semi-rigidly mount subframe **2720** to housing **2740**. Other devices capable of securing the subframe **2720** to the housing **2740** or to display area **2730**, and further capable of allowing outside influences such as vibration to be transmitted to the screen assembly **2705**, are also contemplated, such as semi-rigid plastic materials. Semi-rigid mounting for subframe **2720** allows the screen assembly **2705** to attain a neutral position centered within the shroud **2732** of the display area **2730**.

[0158] In certain embodiments, an actuation device mechanically connected to the subframe **2720** can be used to develop slight harmonic or cyclic motions in the screen assembly **2705**. For example, a motor with an eccentric shaft can be used to apply slight harmonic motion to the subframe **2720** during the presentation of images simulating the rotation of a mechanical reel. The actuation device can further be controlled to simulate a hard stop and shimmy, similar to what can occur for an actual mechanical reel device.

[0159] In certain embodiments, the subframe **2720** has an upper flange **2770** and a lower flange **2775** extending, respectively, from upper and lower ends of the subframe **2720**. The flanges **2770**, **2775** can include slots **2772**, **2777**, which allow the subframe **2720** to be in mechanical communication with or coupled to an upper drive motor **2780** and to a lower drive motor **2785**. The drive motors **2780**, **2785** are mounted to either the housing **2740** (shown) or to the display area **2730** (not shown) of the gaming machine. The drive motors **2780**, **2785** can be fitted with eccentric lobes **2788** on the motor shaft, or similar fittings that allow an eccentric load to be imparted to the subframe **2720**. In the embodiment illustrated in FIG. **27**, the eccentric lobes **2788** float within the slots **2772**, **2777** and impart an eccentric load to the subframe **2720** while rotating. The rotation of the eccentric lobes **2788** places them in contact with the slots **2772**, **2777** of subframe **2720**.

[0160] In certain embodiments, the eccentric lobes **2788** have approximately 0.5 to 1 millimeter of eccentricity. For a system, similar to the one illustrated in FIG. **27**, in which two drive motor are connected to the upper and lower flanges **2770**, **2775** of the subframe **2720**, the 0.5 to 1 millimeter of eccentricity translates into approximately 1 to 2 millimeters of movement for the screen assembly **2705**. In certain embodiments, the drive motors **2780**, **2785** are arranged to be slightly out of phase with each another to allow the movement of the screen assembly **2705** to have the appearance of a spinning plastic reel drum, similar to what may be found in a mechanical slot reel device. The out of phase movement of the screen assembly **2705** provides the appearance of an out-of-round (e.g., slight undulation in-and-out of the display area **2730**) and/or an out-of-square (e.g., cyclic side-to-side movement) condition typically found in mechanical reel devices. The out of phase movement can also provide an appearance of a warped movement (e.g., irregular side-to-side movement).

[0161] In certain embodiments, movements applied to the subframe **2720** using drive motors **2780**, **2785** are based on the dynamic events for a spinning reel cage, including starting, spinning and stopping. Each dynamic event has unique characteristics and resonance patterns. For example, while presenting images, an out of phase movement can be imparted to give the appearance that the screen assembly **2705** resonates along the simulated axis of rotation, similar to what occurs when a mechanical reel device is braking or coming to a stop.

[0162] FIG. **28**A illustrates an exemplary embodiment of a floating projection screen assembly **2805**. The screen assembly **2805** includes a subframe **2820** that further has an upper flange **2870** and a lower flange **2875**. Each flange has a spring mount **2862**. A coil spring **2860** is attached to each of spring mounts **2862**, and the springs **2860** are further attached to corresponding spring mounts **2864**. Spring mounts **2864** are attached to an upper assembly mounting frame **2890** and a lower assembly mounting frame **2895**. An upper drive motor **2880** and lower drive motor **2885** are connected or coupled to slots **2872**, **2877** in the subframe **2820**. The drive motors **2880**, **2885** are fitted with eccentric lobes **2884** on the motor shaft **2886**, or similar fittings that allow an eccentric load to be imparted to the subframe **2820**.

[0163] FIG. **28**B illustrates a top cross-sectional view of one alternative embodiment in which the right and left sides **2806**, **2807** of screen assembly **2805** are semi-rigidly secured using coil spring(s) **2861**. A left drive motor **2881** and a right drive motor **2882** can be used to impart eccentric loads to the screen assembly **2805**.

[0164] FIG. **29** illustrates an exemplary embodiment of an articulated rear-projection floating screen assembly system within a display region **2900** of a gaming machine. The system can include multiple adjacent floating screen assemblies **2910***a-c* in which each individual assembly is similar to the exemplary embodiments illustrated in FIGS. **27** and **28**. Each floating screen assembly **2910***a-c* has a projection surface **2913***a-c* that is secured to a frame **2916***a-c*. The floating screen assemblies **2910***a-c* can be mounted to a display window **2920**, which in turn, can be mounted to a