

surface of the interior cylindrical surface **310** defines a second cavity through which is fitted a shaft **315**. One or more spokes **320** connect the cylindrical surface **305** to the interior cylindrical surface **310**. Thus, when the interior cylindrical surface **310** rotates about the shaft **315** (e.g., via a bearing assembly), the cylindrical surface **305** is caused to be rotated about the shaft **315** as well.

[0066] Referring now to **FIG. 3B**, an embodiment of a reel assembly in accordance with one or more embodiments of the present invention is illustrated. A reel comprising a cylindrical surface **305** is illustrated. As illustrated, the outer first surface of the cylindrical surface **305** may include one or more display devices **335** (e.g., attached to or embedded in the cylindrical surface **305**). The display devices may be, for example: (i) electroluminescent screens; (ii) gas discharge displays; (iii) liquid crystal displays, including liquid crystal displays that are painted directly on the outer surface; (iv) cathode ray tube displays; (v) plasma screens; (vi) light emitting diode (LED) displays; and/or (vii) flexible displays such as light emitting polymer displays (e.g., organic light emitting diode (OLED) displays). Note that OLED displays are one example of flexible displays. One advantage of using flexible displays to implement embodiments of the present invention is that they may be conformed to the curvature of the reel. However, displays need not necessarily conform to the curvature of the reel. For example, a flat and rigid or semi-rigid display may simply be affixed to the outer surface of the reel. For example, the reel may comprise multiple surface locations, each surface location being defined by a display.

[0067] In one or more embodiments, each display device **335** may be operable to display a single indicium at a time. However, in other embodiments, a single display device **335** may display multiple indicia. For example, a single display device **335** may span one-hundred-and-eighty degrees of arc of the reel, and may display six different indicia, spaced at intervals of thirty degrees along the circumference of the cylindrical surface **305**. A single display device **335** (e.g., a flexible and long display device) may even span the entire circumference of the cylindrical surface **305**.

[0068] The substantially concave inner second surface of the cylindrical surface **305** may contain one or more display memories **340**. In one embodiment, a single display memory **340** is associated with each display device **335**. The display memory **340** associated with a display device **335** may be located at the same angular surface location as the display device **335**, the display memory **340** being located on the inner second surface of the cylindrical surface **305** while the associated display device **335** is located on the outer first surface. Alternatively, a display memory **340** may be a component of a display device **335**, or may be located between the outer first surface and a display device **335** (e.g., may be embedded in an inner layer of the cylindrical surface **305**). Note that a surface location of the cylindrical surface **305** is a particular portion, defined by one or more predetermined boundaries, of the outer periphery of the cylindrical surface **305**.

[0069] A display memory **340** may be electrically coupled to, or otherwise in communication with, its corresponding display device **335**. As described in detail below, a display memory **340** may store information about indicia that can be displayed on a display device **335**. In some embodiments, a

single display memory **340** is in communication with (e.g., electrically coupled to) multiple display devices **335**, and may store information about indicia to be displayed on the multiple display devices **335**. In one embodiment, a display memory **340** may comprise a central memory of a slot machine (e.g., the data storage device **215** of **FIG. 2**) and may not be a component of the reel assembly **300**. Such a centralized display memory may store, for example, information about all indicia available for display on any of the display devices of the slot machine. In yet another embodiment, a display memory **340** storing information about indicia to be displayed on a display device **335** of a slot machine may be at a location remote from the slot machine (e.g., a display memory **340** may be stored in a computing device such as a slot server of a casino or a computer controlling a plurality of slot machines).

[0070] A display memory **340** may comprise magnetic memory, optical memory, semiconductor memory or any combination thereof. For example, a display memory **340** may include RAM, SRAM (static RAM), DRAM (dynamic RAM), SDRAM (synchronous DRAM), ROM, PROM (programmable ROM), EPROM (erasable PROM), and/or EEPROM (electrically erasable PROM).

[0071] A display memory **340** may store data about one or more indicia. For example, a display memory **340** may store a first bit map for a cherry symbol, and a second bit map for an orange symbol. In one embodiment, a respective display memory **340** is associated with one or more predefined angular surface locations of a display device **335** or a predefined display device **335**. In such an embodiment, the respective display memory **340** may store a plurality of indicia available for display at the one or more predefined angular surface locations or on the predefined display device. Accordingly, a processor (e.g., processor **205** or reel processor **355**) may direct the display device **335** as to which of the available indicia stored in the display memory **340** to display. Note that the processor may select which of the available indicia are to be displayed based on one or more rules, which will be described in detail below. Accordingly, a means for selecting which at least one indicium to display at a predefined angular surface location of a display device or on a display device may comprise a processor programmed to execute a program for making the selection. For example, the processor may be programmed to access a database of rules for making such a selection or to recognize a signal from another processor (e.g., a processor of a casino server or of a handheld device of a casino employee) as to which at least one indicium is to be displayed.

[0072] In one embodiment, the at least one indicium displayed at a predefined angular surface location of a display device **335** or on a predefined display device **335** may be changed frequently (e.g., during a play of a game by a player, after every rotation of a reel, every few plays of a game). In other embodiments, the at least one indicium displayed at a predefined angular surface location of a display device **335** or on a predefined display device **335** may be changed relatively less frequently (e.g., when the casino desires to change or update the indicia for a game or use the reels of the slot machine to display indicia for another game, thus changing the game playable on the slot machine).

[0073] In one or more embodiments, a slot machine may be programmed with more than one game. For example, a