

might be in direct communication with various input devices or other peripherals, a video card or controller **144** can be interspersed between the master gaming controller and display **126**, such that communication to the display is indirect. Various memory or storage components, designated as RAM **141** and ROM **142** might be accessible to master gaming controller **140**, and such storage components may be dedicated to the master gaming controller, or could be shared by other gaming machine components.

**[0059]** In addition, a specialized simulated reel configurator **145** can be located within processor-based gaming machine **100**. Preferably, simulated reel configurator **145** is adapted to configure one or more simulated rotating reels for presentation on a display **126** of gaming machine **100**. This reel configurator **145** can be a dedicated processor located separately from master gaming controller **140**, as shown in FIG. **4**, so as to alleviate some of the burdens that are typically placed on the master gaming controller. Alternatively, this reel configurator can be contained within or even be a part of the master gaming controller itself (not shown). Such a processor could be, for example, the Pentium III chip made by Intel Corporation of Santa Clara, Calif., although other suitable processors can also be used. Reel configurator **145** may be in communication with (or within) master gaming controller **140**, and also in communication with video controller **144** and/or display(s) **126**.

**[0060]** On or more configurator storage units or memory devices **146** can be associated with reel configurator **145**, and such configurator memory devices can be dedicated to the configurator or shared with other machine components. Such configurator memory devices **146** could be specific memory chips and/or also an internal hard disk drive, such as, for example, a 40 gigabyte model 6K040L0 hard drive made by Maxtor Corporation of Milpitas, Calif., although other suitable memory components can also be used. Such configurator memory devices **146** can be used to store files containing, for example, original and modified versions of visible reel symbols, original and modified versions of entire virtual reel strips, preferred parameter for ghost regions, and data with respect to regulatory requirements regarding blank reel stops, among other items.

**[0061]** In various embodiments, reel configurator **145** facilitates the display of simulated rotating reels upon display device **126**, such as by configuring at least one simulated rotating reel such that one or more of the visible reel symbols thereupon are expanded into one or more ghosts or blank regions on that reel. The overall amount of blank area on the gaming reel or reels is reduced via this reel symbol sizing, such that the resulting reel presentation is more appealing to many players. In some embodiments, this can involve the original creation of visible reel symbols that are oversized and ghosts or blanks that are undersized with respect to the size of the reel stops for a new reel. In other embodiments, this can involve the resizing of visible reel symbols that are already present on an existing reel. For example, reel configurator **145** can be adapted to take existing reel symbols from an existing virtual reel strip, and stretch or otherwise expand those reel symbols so that they extend beyond the bounds of their respective reel stops.

**[0062]** As noted above, many reels from all types of reel-based gaming machines are made up of numerous equally sized and spaced reel stops. Use of this specialized reel configurator allows reel from such gaming machines to have visible reel symbols that are larger than the segment bounds

for their respective reel stops. Where such reels have blanks or ghosts at some reel stops, this means that the visible reel symbols can intrude into the ghost reel stops and make the respective games more visually appealing. In cases where sizing or resizing is desired regardless of the existence of any blanks, various reel symbols can be oversized (i.e., stretched beyond their respective reel stop boundaries) simply as a way to emphasize specific reel symbols or reel symbol types. Such sizing or resizing of visible reel symbols allows the reel stop sizes to stay uniform, since only the graphical presentation of the visible reel symbols are stretched or otherwise sized. Accordingly, with respect to processor-based gaming machines and simulated reels, model and evaluation components of the code for reel stops need not be affected in many cases. However, changes to code with respect to existing visible reel symbols would likely be needed in most cases.

**[0063]** For example, where it is desired to stretch an existing visible reel symbol so that its vertical length doubles, the symbol script for that reel symbol can be altered on whatever scale or scales might be needed. Such a change might involve adding a particular line or lines of code to existing code for a reel symbol. For example, and depending on specific code elsewhere in the script, the following extra line could be added to the end of the script file for an existing virtual reel symbol:

**[0064]** “setRelativeScale (1.0f, 1.8f, 1.0f)”

Depending upon the particular code conventions and parameters used, such an added line may result in reel symbols that are stretched to about double in size in a vertical direction, but that are not stretched in any other direction. Of course, other specific lines of code may also be used, and such code changes may involve added lines and/or changes to existing lines of code. Different scales might be also used, and stretching in a horizontal or other direction might also be implemented, as desired.

**[0065]** As will be readily appreciated, such stretching or resizing of visible reel symbols can be made for many or all of the reel symbols on a given set of gaming reels. In many embodiments, it will be desirable to stretch or resize only those visible reel symbols that are adjacent to a ghost or blank reel stop, such that the stretched reel symbol is expanded into the ghost. Such an implementation can be aided in situations where particular code has designated ghosts or blank reel stops as “pure alpha,” such that the resizing of adjacent visible reel symbols into the blank regions of the ghost does not involve any “tearing.” Additional code can be included so that the reel configurator is adapted to identify only those visible reel symbols that are adjacent to blank reel stops, such that only those visible reel symbols are resized into the blank reel stops accordingly.

**[0066]** Examples of rotating reels having reel symbols that are resized according to various embodiments of the present invention are provided in perspective view in FIGS. **5A** through **5C**. In each figure, existing mechanical reel or virtual reel **91** is illustrated with a particular existing visible reel symbol **94** and an existing ghost or blank reel stop **95**. As a result of a resizing process, the resultant reel **191** contains a resized visible reel symbol **194** that corresponds to old reel symbol **94**, as well as a resulting blank reel stop **195** that is noticeably smaller than old blank reel stop **95**. In each illustration, the resized visible reel symbol **194** has expanded beyond the bounds of its own particular reel stop and into the adjacent blank **195**. In FIGS. **5A** and **5C**, the barrel and cherry reel symbols have been resized or stretched in both vertical