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METHOD AND SYSTEM FOR A GAMING SYSTEM USER INTERFACE

Abstract

A gaming machine includes a base, a columnar pedestal extending vertically from the base, and a button deck adjustably coupled to the pedestal. The button deck includes an upper surface including a transparent touchscreen element, a lower surface opposite the upper surface, and a button deck body extending therebetween. At least one of the lower surface and the body include one or more transparent display elements, the one or more transparent display elements are configured to generate images of gaming machine control actuators viewable on the upper surface. The transparent touchscreen element is configured to receive touches and gestures indicating control inputs. The gaming machine also includes a player tracking card reader positioned within the button deck and accessible through a slot in a front edge of the button deck, the player tracking card reader communicatively coupled to a player tracking display area of the gaming machine.

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Background/Summary

CROSS REFERENCE TO RELATED APPLICATIONS [0001] This application is a continuation of U.S. application Ser. No. 18/626,238, filed Apr. 3, 2024, which is a continuation of U.S. application Ser. No. 18/155,619, filed Jan. 17, 2023, and issued as U.S. Pat. No. 11,983,986, which is a continuation of U.S. application Ser. No. 17/107,526, filed Nov. 30, 2020, and issued as U.S. Pat. No. 11,568,705, which is a divisional of, and claims priority to, U.S. application Ser. No. 14/498,638, filed Sep. 26, 2014, and issued as U.S. Pat. No. 10,854,039, the contents of which are hereby incorporated in their entirety.

BACKGROUND
[0002] This description relates to gaming machines, and, more particularly, to a method and system for enhancing player comfort and ergonomics in gaming machines.
[0003] Gaming machines have evolved to a substantially consistent form due to interchangeability and standardization considerations. For example, button layouts follow a standard linear arrangement in which players' must adjust their reach to accomplish different actions. Rather than assuming a more ergonomic configuration that is less fatiguing to players, buttons of gaming machines are arranged at consistent intervals in a straight line pattern. Additionally, gaming cabinets have a footprint at floor level that is either similar to and that exceeds the dimensions of the game itself. Often, gaming machines are placed on box stands to elevate them to a consistent height. However, the box stands also extend to a footprint that meets or exceeds the dimensions of the game. Players at such gaming machines are constantly at odds of being near enough to the machine to comfortably reach the game buttons, but far enough away from the gaming machine to have room to place their feet in front of them. Placement of the button panel or button deck is generally fixed on the front of the cabinet and is not adjustable to facilitate game play or player comfort.
[0004] Such discomforts and poor ergonomics affect player satisfaction with the gaming machine and the gaming experience and may affect revenues of the affected machines.
BRIEF DESCRIPTION
[0005] In an aspect, a gaming machine includes a base, a columnar pedestal extending vertically from the base, the pedestal having a cross-sectional area, a width, and a depth that are less than each of a corresponding cross-sectional area, width, and depth of the base, and a button deck adjustably coupled to the pedestal. The button deck includes an upper surface including a transparent touchscreen element, a lower surface opposite the upper surface, and a button deck

body extending therebetween. At least one of the lower surface and the body including one or more transparent display elements, the one or more transparent display elements configured to generate one or more images of gaming machine control actuators viewable on the upper surface, the transparent touchscreen element configured to receive from a user at least one of touches and gestures indicating control inputs to the gaming machine, the at least one of touches and gestures corresponding to the generated images. The gaming machine also includes a player tracking card reader positioned within the button deck and accessible through a slot in a front edge of the button deck, the player tracking card reader communicatively coupled to a player tracking display area of the gaming machine.

[0006] In another aspect, a gaming machine includes a pedestal configured to support one of a plurality of interchangeable game cabinets through a pedestal mating flange configured to engage a complementary game cabinet flange, one or more mating plugs configured to engage a complementary one or more mating plugs positioned proximate the mating flanges, the mating plugs configured to join respective signal and power conduits between the pedestal and the game cabinet. The gaming machine also includes a button deck adjustably coupled to the pedestal. The button deck includes an upper surface including a transparent touchscreen element, a lower surface opposite the upper surface, and a button deck body extending therebetween. At least one of the lower surface and the body including one or more transparent display elements, the one or more transparent display elements configured to generate one or more images of gaming machine control actuators viewable on the upper surface, the transparent touchscreen element configured to receive from a user at least one of touches and gestures indicating control inputs to the gaming machine, the at least one of touches and gestures corresponding to the generated images.

[0007] In a further aspect, a gaming machine pedestal includes a button deck adjustably coupled to the pedestal, the button deck including one or more extendable arms, each arm coupled at one end to the pedestal and at a second end to the button deck, the button deck extendable away from and towards the pedestal, and a player tracking card reader positioned within the button deck and accessible through a slot in a front edge of the button deck.

Description

BRIEF DESCRIPTION OF THE DRAWINGS

[0008] FIGS. **1**-**4** show example embodiments of the method and apparatus described herein.

[0009] FIG. **1** is a perspective view of a gaming machine in accordance with an example embodiment of the present disclosure.

[0010] FIG. **2** is a perspective view of a lower portion of the game cabinet in accordance with an example embodiment of the present disclosure.

[0011] FIG. **3** is an enlarged perspective view of the button deck shown in FIG. **1**.

[0012] FIG. **4** is an illustration of embodiments of connections of the button deck to the column.

[0013] Although specific features of various embodiments may be shown in some drawings and not in others, this is for convenience only. Any feature of any drawing may be referenced and/or claimed in combination with any feature of any other drawing.

[0014] Unless otherwise indicated, the drawings provided herein are meant to illustrate features of embodiments of the disclosure. These features are believed to be applicable in a wide variety of systems comprising one or more embodiments of the disclosure. As such, the drawings are not meant to include all conventional features known by those of ordinary skill in the art to be required for the practice of the embodiments disclosed herein.

DETAILED DESCRIPTION

[0015] The following detailed description illustrates embodiments of the disclosure by way of example and not by way of limitation. It is contemplated that the disclosure has general application

to gaming machine embodiments providing player comfort and ergonomic considerations in industrial, commercial, and residential applications.

[0016] The following description refers to the accompanying drawings, in which, in the absence of a contrary representation, the same numbers in different drawings represent similar elements.

[0017] FIG. **1** is a perspective view of a gaming machine **100** in accordance with an example embodiment of the present disclosure. In the example embodiment, gaming machine **100** includes a base **102** and a column **104** supported by base **102**. A game cabinet **106** is coupled to an upper portion **108** of column **104**. Game cabinet **106** includes one or more video display panels **109**, a plurality of auxiliary devices, such as, but, not limited to a first user interface **110**, a first side panel **112**, and a second side panel **114**. Gaming machine **100** also includes a button deck **122** adjustably coupled to column **104**, game cabinet **106**, and/or first user interface **110**.

[0018] In the example embodiment, base **102** is configured to rest on or be coupled to a lower horizontal surface such as, but, not limited to, a floor **124**. Base **102** includes one or more vertically upwardly extending sidewalls **126**, which may include straight panels, and/or curved and contoured panels, such as, but, not limited to a circular, oval, oblong, and/or irregularly curved cross-section. Base **102** includes an upper surface **128** configured to fair base **102** by producing a closed smooth outline, support column **104**, and/or provide a resting place for a user's feet.

[0019] Column **104** is a rigid, relatively slender, upright support, composed of relatively few components that extends vertically between base **102** and game cabinet **106**. In various embodiments, column **104** includes a cylindrical or polygonal shaft **132**. Column **104** houses various components and conduits that are configured to support the operation of gaming machine **100** and its integration into a larger operation and control network (not shown), in which gaming machine **100** is in communication.

[0020] In various embodiments, button deck **122** is mounted to column **104** and is controlled through a gaming machine **100** controller (not shown in FIGS. **1** and **2**). In one embodiment, button deck **122** is configured to translate with respect to column **104** in a single direction, for example, towards and away from column **104**. In some embodiments, the translation is controlled manually by the user, automatically by a motor, or combinations thereof. For example, when gaming machine **100** detects a user entering a proximity of gaming machine **100**, button deck **122** may be commanded to translate in either direction to indicate to the user that button deck **122** is movable. The user may then adjust button deck **122** manually by hand, manually through operation of a switch controlling the button deck motor, or allow button deck **122** to be controlled automatically by gaming machine **100**. The user may also turn off the automatic translation feature using an override switch (not shown). Button deck **122** may be configured to translate in a plurality of directions and/or rotate around a plurality of axes to suit the user's comfort and ergonomic control.

[0021] FIG. **2** is a perspective view of a lower portion of game cabinet **106** in accordance with an example embodiment of the present disclosure. FIG. **3** is an enlarged perspective view of button deck **122**. In the example embodiment, button deck **122** includes an upper input surface **602** that may be embodied in a touchscreen surface or may be embodied in a combination of touchscreen elements **604** and mechanical input devices **606**. For example, upper input surface **602** may include touchscreen elements for inputting various wager amounts, a “service” call button, a “cash-out” button, and other input requirements and also include a mechanical “spin” button **606**. Touchscreen elements **604** may be isolated to certain areas of surface **602** and may be fixed in their function. However, in some embodiments, touchscreen elements **604** may be relocatable on surface **602** and may be reconfigurable to perform different functions during different portions of a game or for different games, such as when game cabinet **106** is interchanged. In one embodiment, button deck **122** is at least partially transparent or translucent, which permits a user to see through button deck **122**, permits light from sources below button deck **122** to be seen by the user, and gives an appearance of mechanical “spin” button **606** and touchscreen elements **604** floating in front of the user.

[0022] Upper input surface **602** also may include an element **608** configured to control an opacity of button deck **122**. Element **608** may comprise a liquid crystal display (LCD) element or other element configured to be electrically controlled to alter its transmissive properties. Element **608** may be configured to control opacity of button deck **122** as a whole or may be configured to control smaller regions of button deck **122** to present graphical objects to the user.
[0023] Button deck **122** also includes a card reader **610** for player tracking and communication. Card reader **610** is a part of a player tracking system that receives a player tracking card inserted and removed by the user. Card reader **610** transfers information stored on a player card to gaming machine **100**. Gaming machine **100** is configured to provide player information on a player information portion (not shown in FIG. **6**) of video display panel **109**. In one embodiment, the player information portion is a reserved area that can be observed during game play. In other embodiments, the player information portion is overlaid onto a game screen during play or between games. When the player information portion is reserved, player information may only be displayed during predetermined times or when activated by the user. In other embodiments, the player information is dimmed or grayed out so as not to detract from the appearance of the game during game play.
[0024] FIG. **4** is an illustration of embodiments of connections of button deck **122** to column **104**. In a first alternative embodiment, button deck **122** is pivotally coupled to column **104** through a pivot point **802** located along a rear edge **804** of button deck **122**. In the example embodiment, pivot point **802** is positioned in a corner of button deck **122**, however pivot point **802** can be located at any position along rear edge **804**. A second alternative embodiment includes a first support arm **806** and a second support arm **808**. In the example embodiment, support arms **806** and **808** are telescoping in that one of first support arm **806** and second support arm **808** may be extended at different rates and/or distances to permit button deck **122** to be angled with respect to column **104**. Such an orientation may be beneficial to, for example, a user that is not positioned directly in front of gaming machine **100**. To support such movement, a connection point **810** between first support arm **806** and second support arm **808** and button deck **122** is pivotable about connection point **810**. A third alternative embodiment is illustrated where a track **812** along an underside **814** of button deck **122** is configured to receive a pivotable knob **816** coupled to an arm **818** extending from column **104**. During operation, button deck **122** can be translated laterally along track **812** in a first direction **820** or a second direction **824** and/or rotated about knob **816** at any point along track **812**.
[0025] This written description uses examples to describe the disclosure, including the best mode, and also to enable any person skilled in the art to practice the disclosure, including making and using any devices or systems and performing any incorporated methods. The patentable scope of the disclosure is defined by the claims, and may include other examples that occur to those skilled in the art. Such other examples are intended to be within the scope of the claims if they have structural elements that do not differ from the literal language of the claims, or if they include equivalent structural elements with insubstantial differences from the literal languages of the claims.

Claims

1. A gaming device comprising: a cabinet; a transparent button deck adjustably coupled to the cabinet, the transparent button deck permits a user to see through the transparent button deck, the transparent button deck comprising: an upper surface comprising a transparent touchscreen element; a transparent lower surface opposite the upper surface; and a transparent button deck body extending therebetween; and an extendable arm pivotably coupled to the transparent button deck and coupled to the cabinet, the extendable arm being telescopingly extendable away from and towards the cabinet for translating and pivoting the button deck relative to the cabinet.

2. The gaming device of claim 1, wherein at least one of the transparent lower surface and the transparent button deck body comprises one or more transparent display elements, the one or more transparent display elements configured to generate one or more images of gaming device control actuators viewable on the upper surface, the transparent touchscreen element configured to receive from a user at least one of touches and gestures indicating control inputs to the gaming device, the at least one of touches and gestures corresponding to the generated images.
3. The gaming device of claim 1 further comprising a player tracking card reader positioned within the transparent button deck and accessible through a slot in a front edge of the button deck, the player tracking card reader communicatively coupled to a player tracking display area of the gaming device.
4. The gaming device of claim 1 further comprising an additional extendable arm pivotably coupled to the transparent button deck and coupled to the cabinet, the additional extendable arm being telescopingly extendable away from and towards the cabinet independent of the extendable arm.
5. The gaming device of claim 1, wherein the extendable arm is coupled to the transparent lower surface of the transparent button deck.
6. The gaming device of claim 1, wherein the extendable arm includes a first extendable arm, the gaming device further comprising a second extendable arm pivotably coupled to the transparent button deck and coupled to the cabinet, and wherein the transparent button deck is adjustable relative to the cabinet to position the button deck in a first orientation, in which a length of the first extendable arm is greater than a length of the second extendable arm, and a second orientation relative to the cabinet, in which the length of the second extendable arm is greater than the length of the first extendable arm.
7. The gaming device of claim 6, wherein the transparent button deck is oriented at a first angle relative to the cabinet when in the first orientation, the transparent button deck being oriented at a second, different angle relative to the cabinet when in the second orientation.
8. The gaming device of claim 1, wherein the extendable arm includes a first extendable arm, the gaming device further comprising a second extendable arm pivotably coupled to the transparent button deck and coupled to the cabinet, the gaming device further comprising a first pivotable connector coupling the first extendable arm to the transparent button deck, wherein the first pivotable connector facilitates pivoting the button deck about a first rotational axes extending through the first pivotable connector.
9. The gaming device of claim 8, further comprising a second pivotable connector coupling the second extendable arm to the transparent button deck, wherein the second pivotable connector facilitates pivoting the transparent button deck about a second rotational axis extending through the second pivotable connector, wherein the second rotational axis is offset from the first rotational axis.
10. The gaming device of claim 9, wherein the first and second rotational axes are each perpendicular to the first direction.
11. The gaming device of claim 9, wherein the first pivotable connector is positioned at a first corner of the button deck and the second pivotable connector is positioned at a second corner of the button deck, wherein the first corner is defined at an opposite side of the button deck from the second corner.
12. The gaming device of claim 9, wherein the button deck extends between a front edge of the button deck and an opposed rear edge, wherein the first and second pivotable connectors are each positioned at the rear edge.
13. The gaming device of claim 12, wherein the button deck further comprises a first side and a second side each extending from the rear edge to the front edge, the button deck extending laterally between the first side and the second side, and wherein the first pivotable connector is positioned adjacent the first side and the second pivotable connector is positioned adjacent the second side.

14. The gaming device of claim 1, wherein the transparent button deck further comprises a transparency element configured to control an opacity level of at least one region of the transparent button deck.

15. The gaming device of claim 1, further comprising opaque components positioned within said transparent button deck body, said one or more transparent display elements configured to disguise an appearance of said opaque components.

16. A button deck assembly for use with a gaming device having a cabinet, the button deck assembly comprising: a transparent button deck permitting a user to see through the transparent button deck, the transparent button deck comprising: an upper surface comprising a transparent touchscreen element; a transparent lower surface opposite the upper surface; and a transparent button deck body extending therebetween; and an extendable arm pivotably coupled to the transparent button deck and coupled to the cabinet, the extendable arm being telescopingly extendable away from and towards the cabinet for translating and pivoting the button deck relative to the cabinet.

17. The button deck assembly of claim 16, wherein at least one of the transparent lower surface and the transparent button deck body comprises one or more transparent display elements, the one or more transparent display elements configured to generate one or more images of gaming device control actuators viewable on the upper surface, the transparent touchscreen element configured to receive from a user at least one of touches and gestures indicating control inputs to the gaming device, the at least one of touches and gestures corresponding to the generated images.

18. The button deck assembly of claim 16 further comprising an additional extendable arm pivotably coupled to the transparent button deck and coupled to the cabinet, the additional extendable arm being telescopingly extendable away from and towards the cabinet independent of the extendable arm.

19. The button deck assembly of claim 16, wherein the extendable arm is coupled to the transparent lower surface of the transparent button deck.

20. A gaming machine comprising: a pedestal; a transparent button deck adjustably coupled to the pedestal, the transparent button deck permits a user to see through the transparent button deck, the transparent button deck comprising: an upper surface comprising a transparent touchscreen element; a transparent lower surface opposite the upper surface; and a transparent button deck body extending therebetween, at least one of said transparent lower surface and said transparent button deck body comprising one or more transparent display elements, said one or more transparent display elements configured to generate one or more images of gaming machine control actuators viewable on said upper surface, said transparent touchscreen element configured to receive from a user at least one of touches and gestures indicating control inputs to said gaming machine, the at least one of touches and gestures corresponding to the generated images; and an extendable arm pivotably coupled to the transparent button deck and coupled to the pedestal, the extendable arm being telescopingly extendable away from and towards the pedestal for translating and pivoting the button deck relative to the pedestal.