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(54) **GAMING MACHINE WITH PROXIMITY-SENSITIVE INPUT DEVICE**

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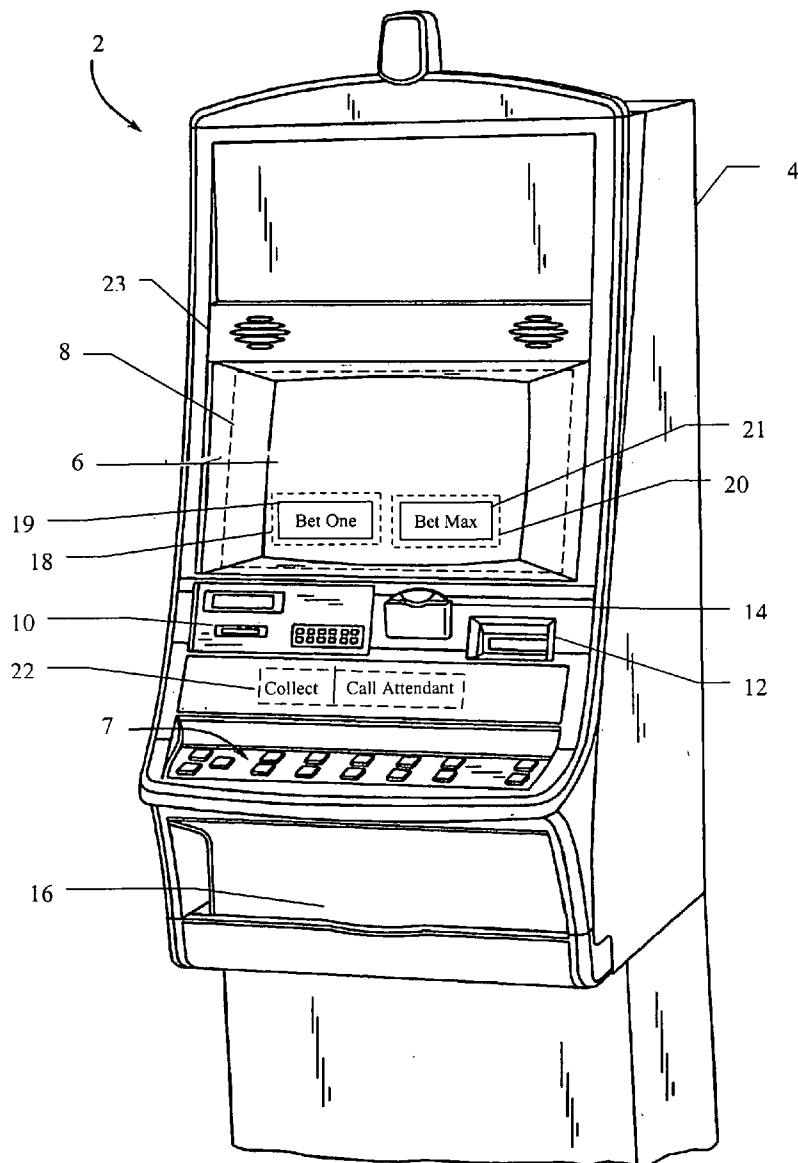
(57) **ABSTRACT**

A gaming device includes a proximity-sensitive input device that receives input from a gaming patron based upon placement of an object near the input device but without necessarily touching the input device. In an embodiment, the input device is behind a plate of glass. In another embodiment, the proximity-sensitive input device includes a projected-capacitance sensor grid.

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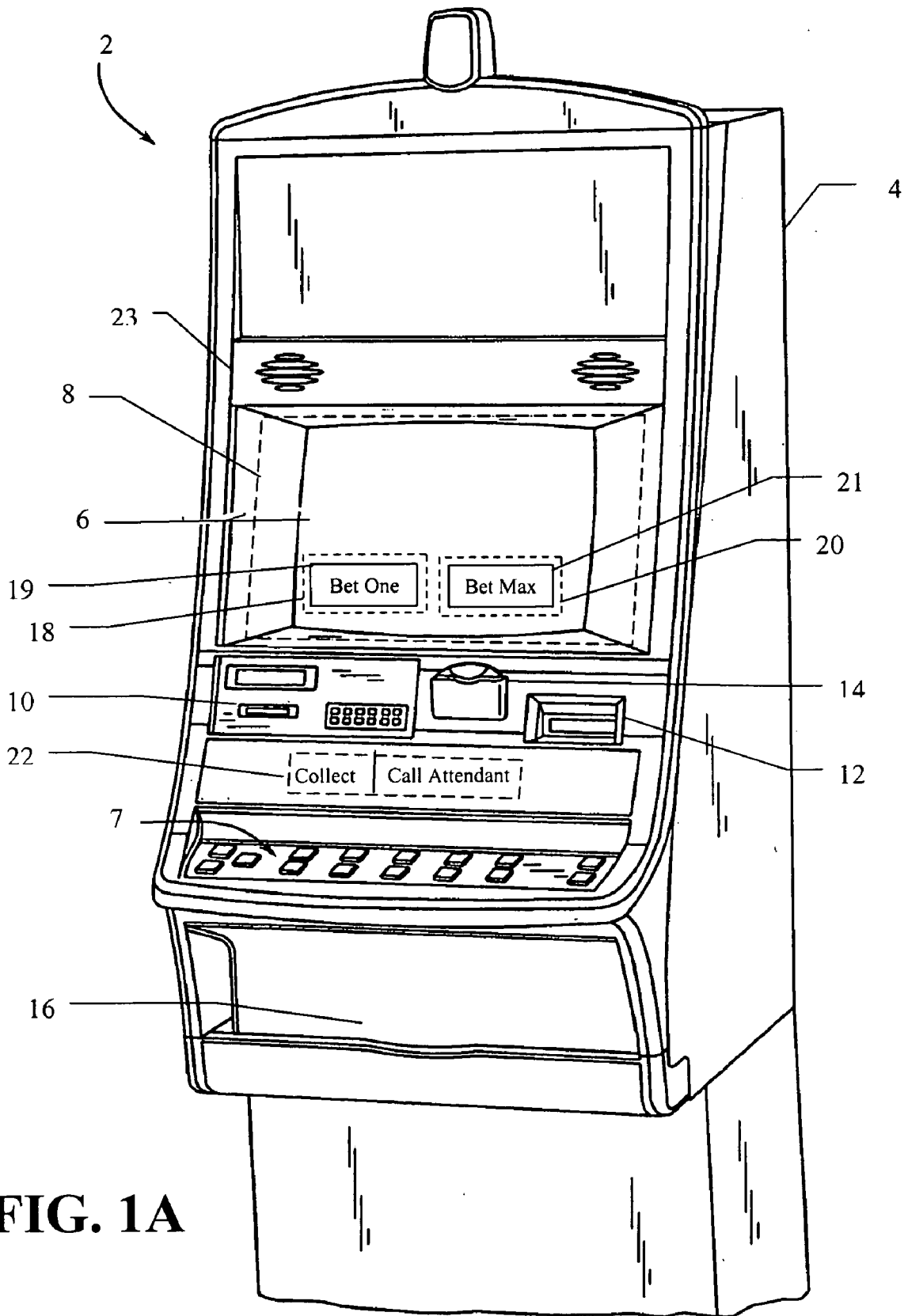
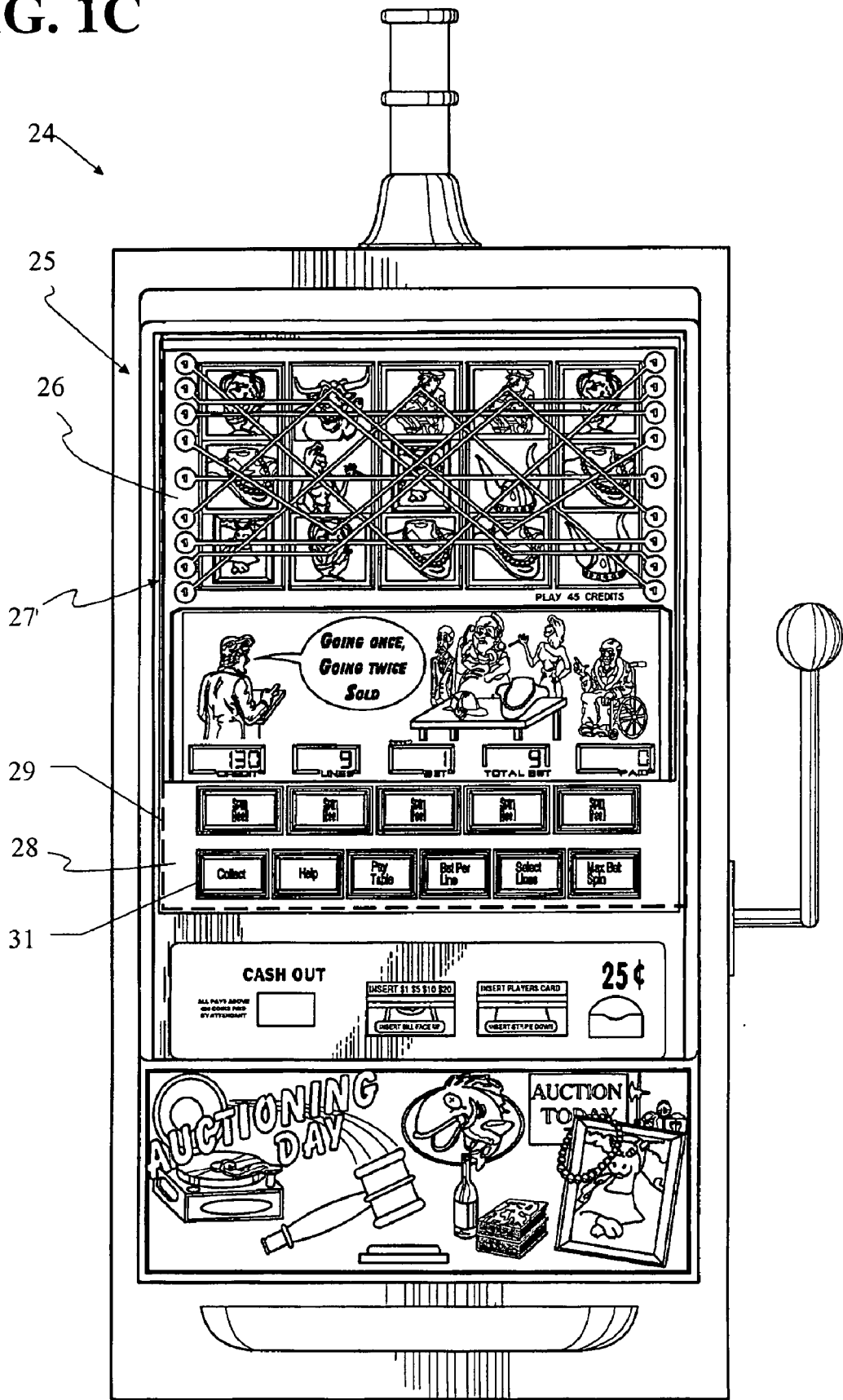


FIG. 1A



FIG. 1C



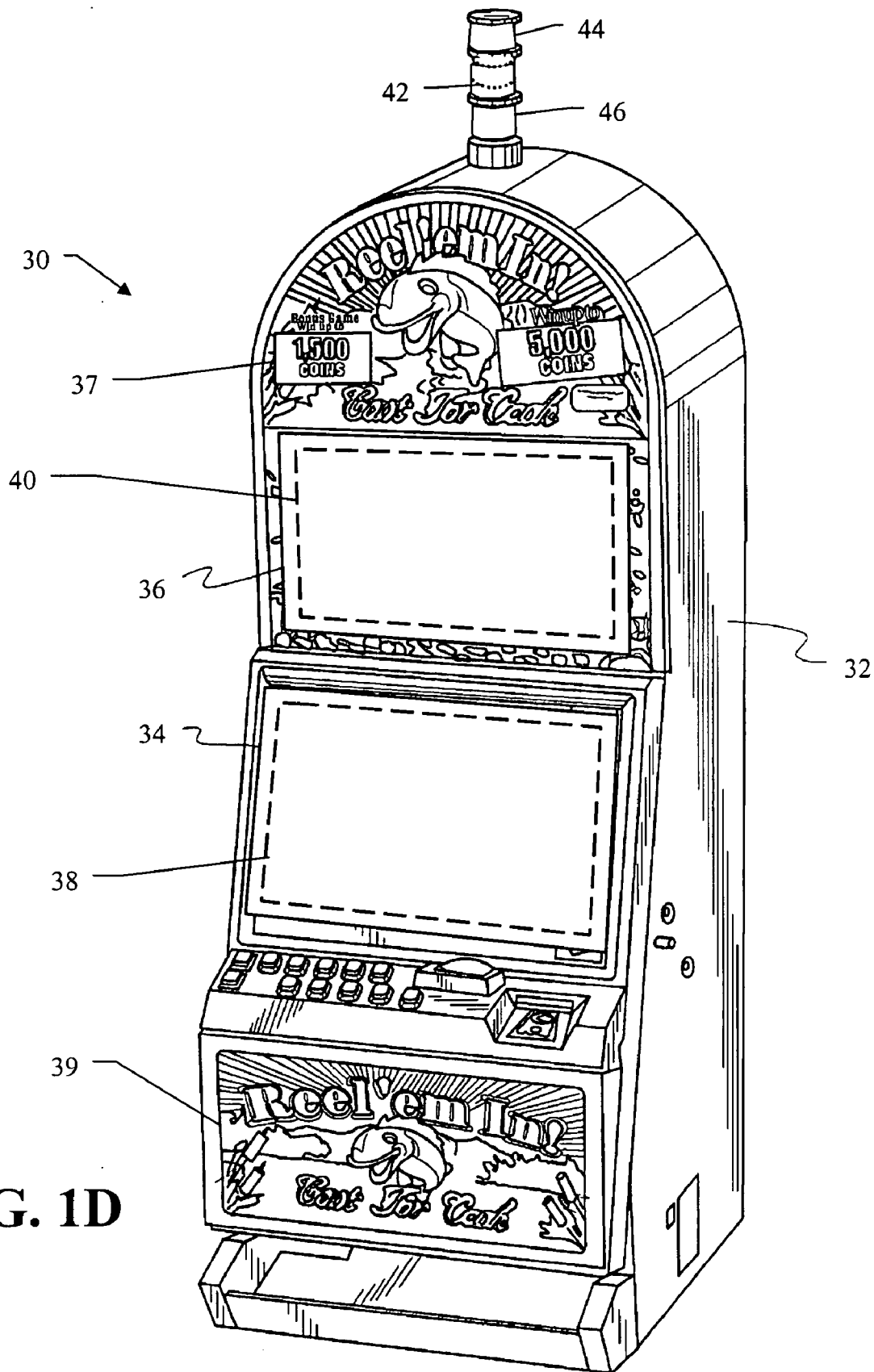


FIG. 1D

FIG. 1E

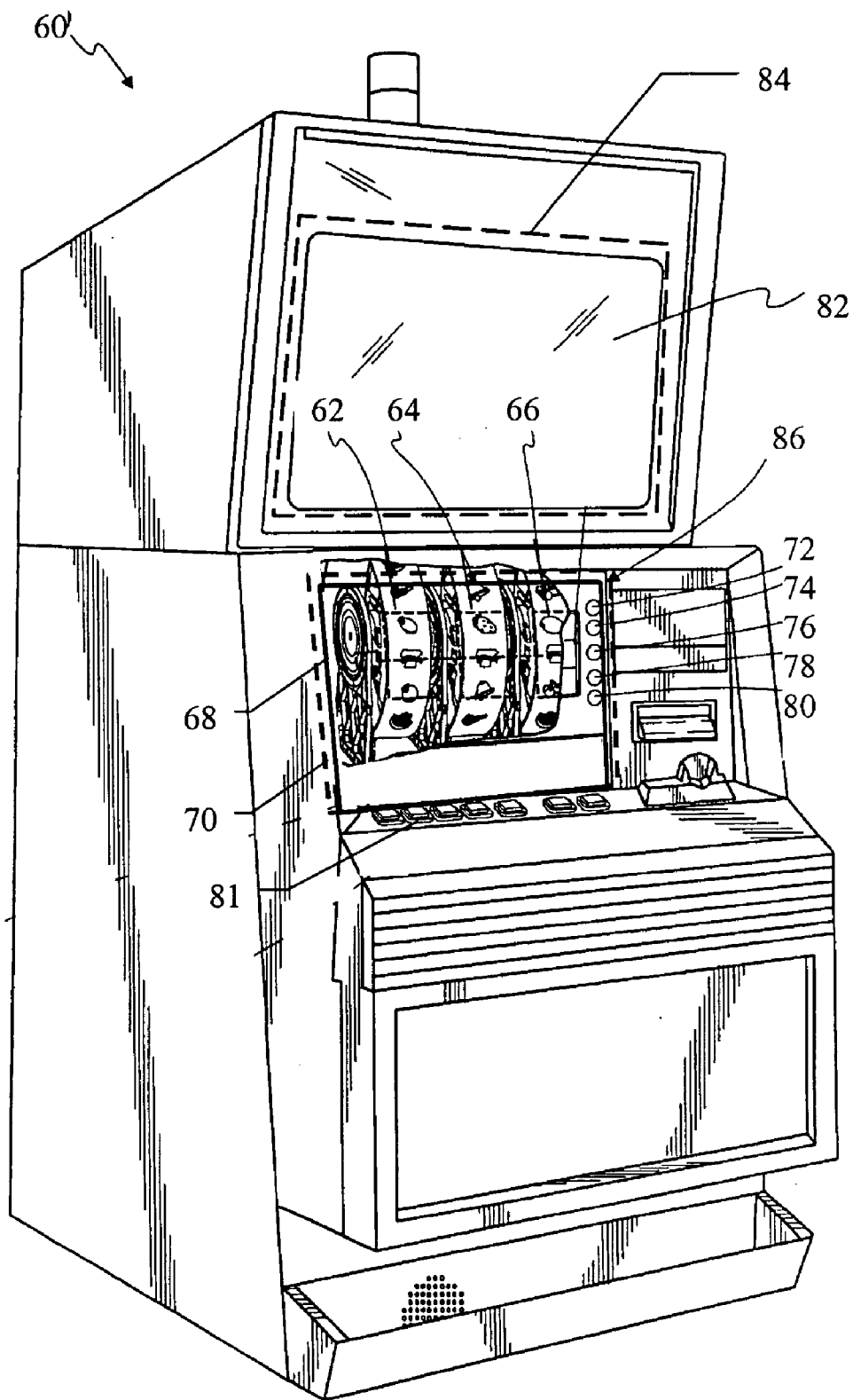


FIG. 2A

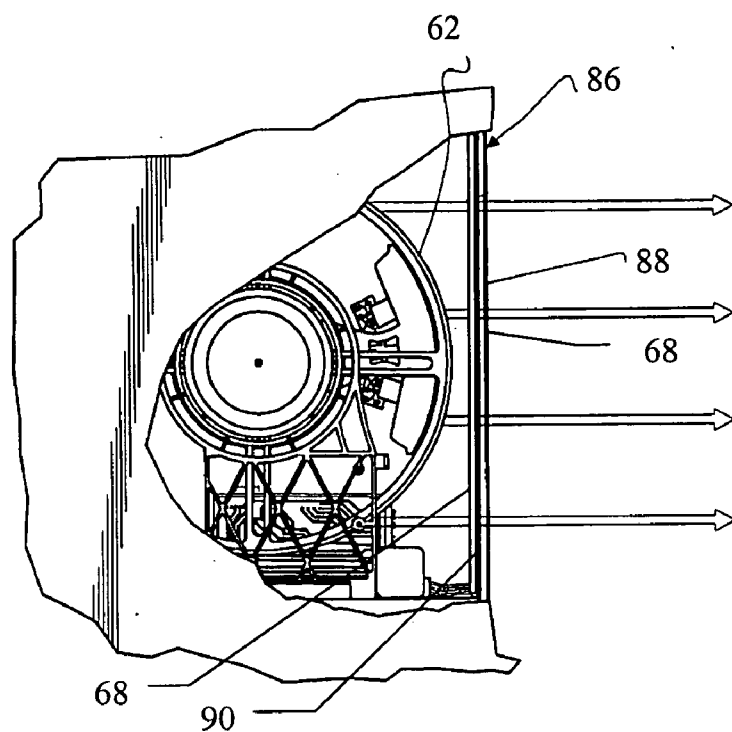
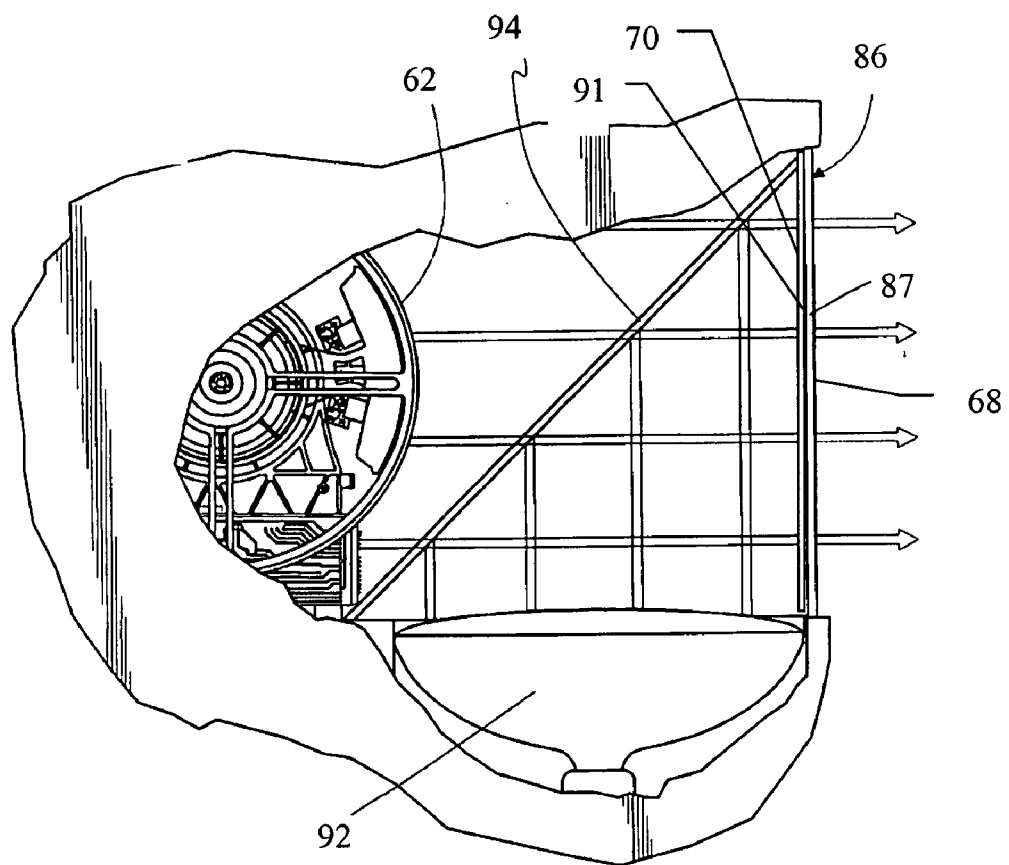


FIG. 2B



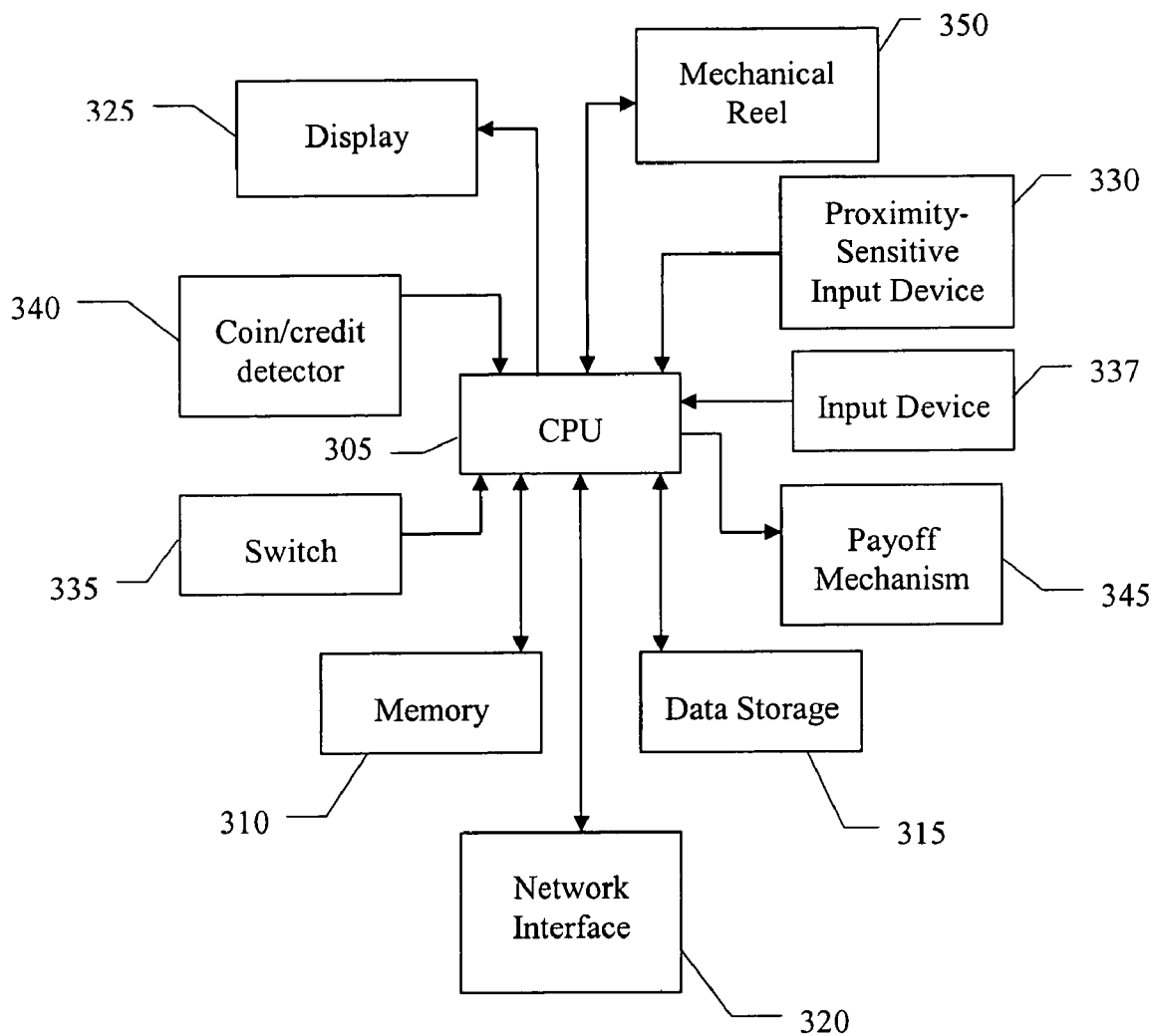


FIG. 3

FIG. 4A

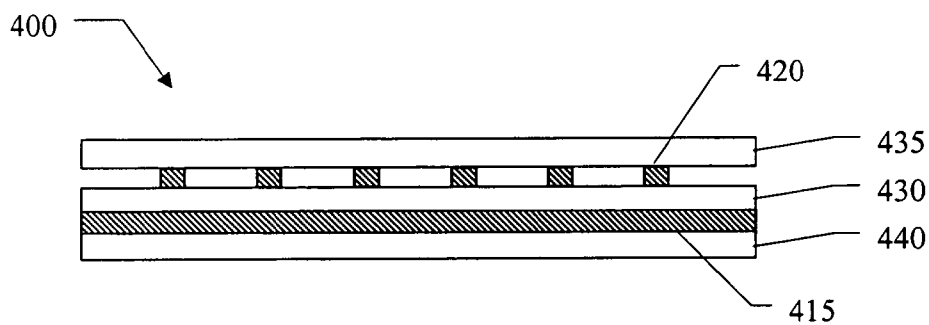
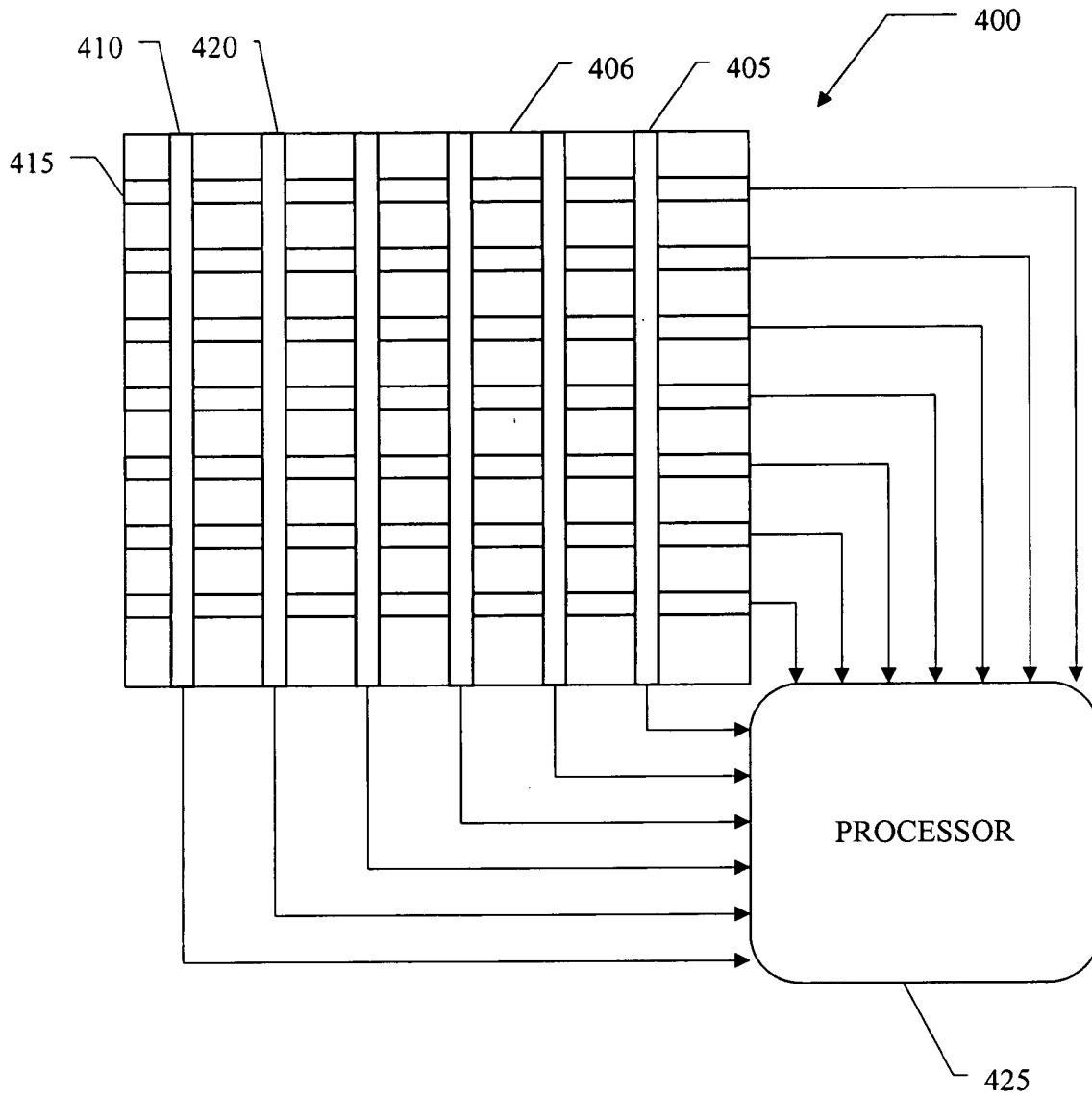


FIG. 4B

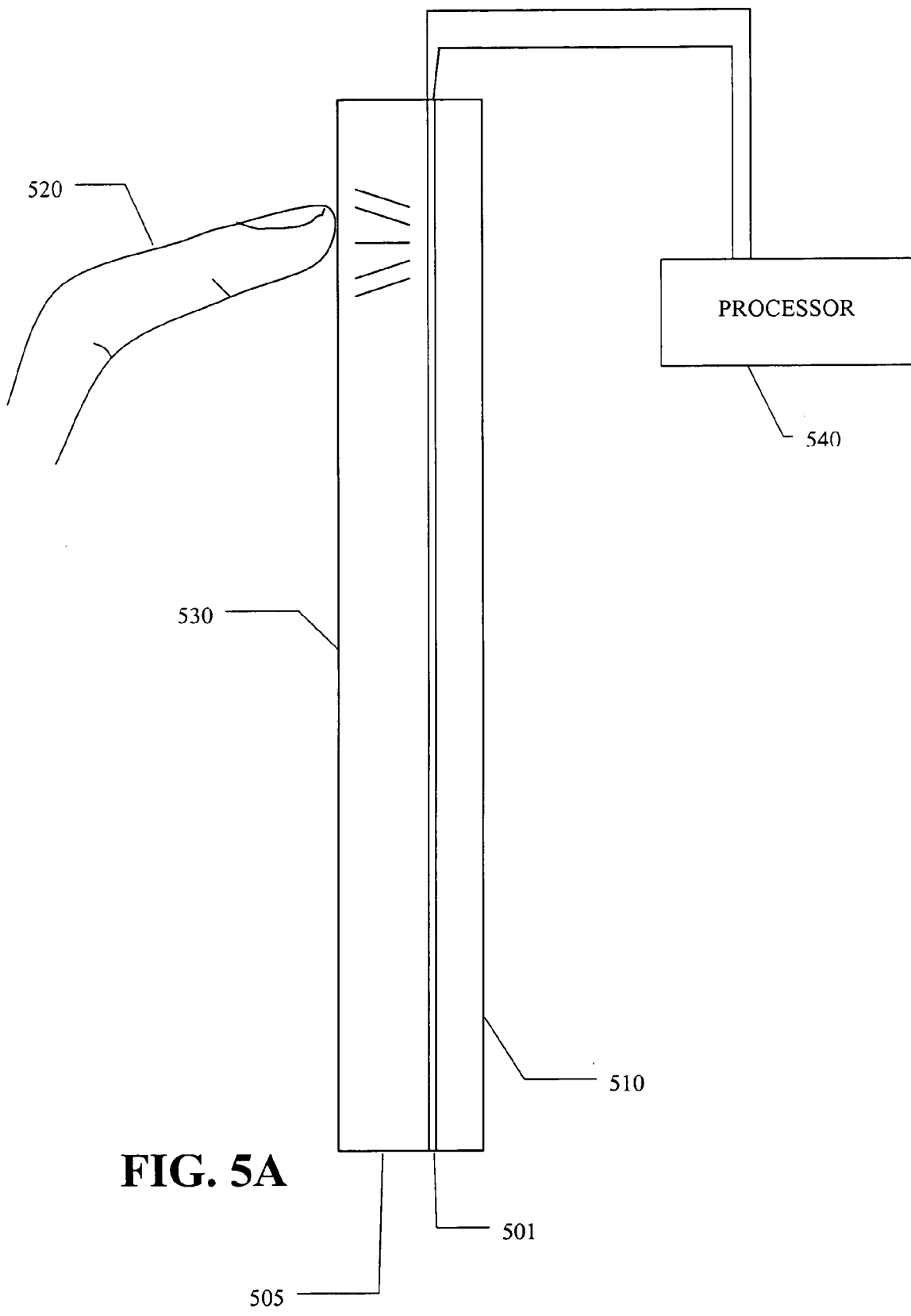


FIG. 5A

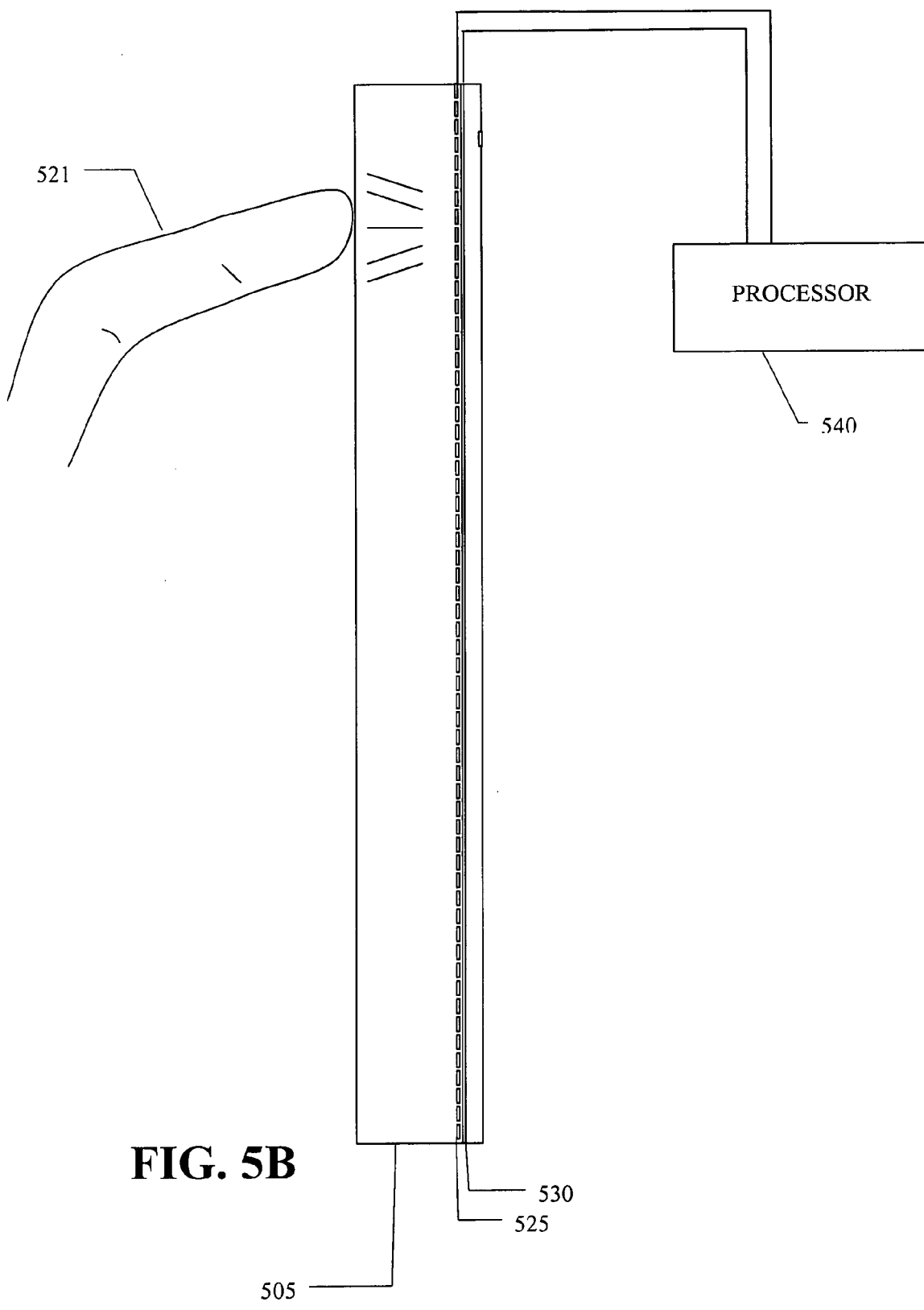


FIG. 5B

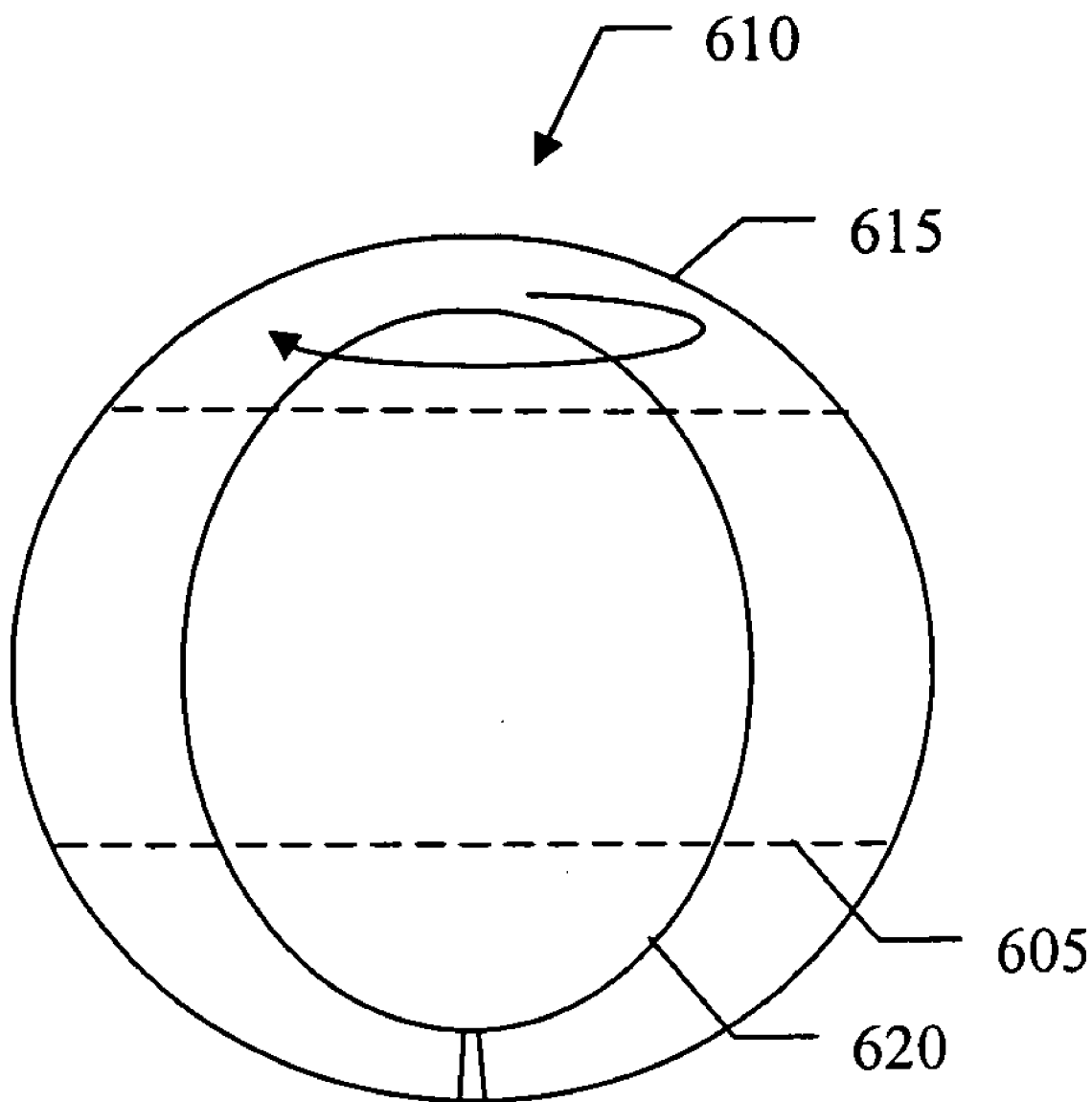


FIG. 6

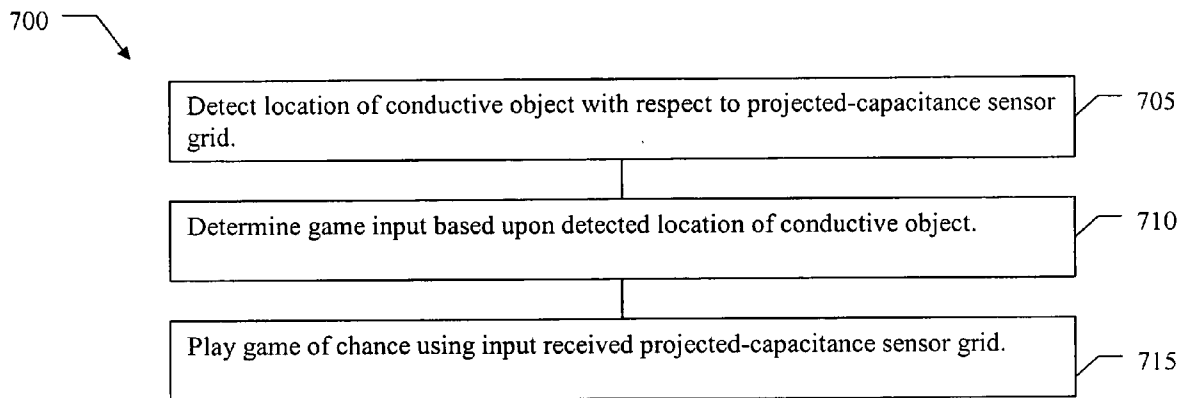


FIG. 7

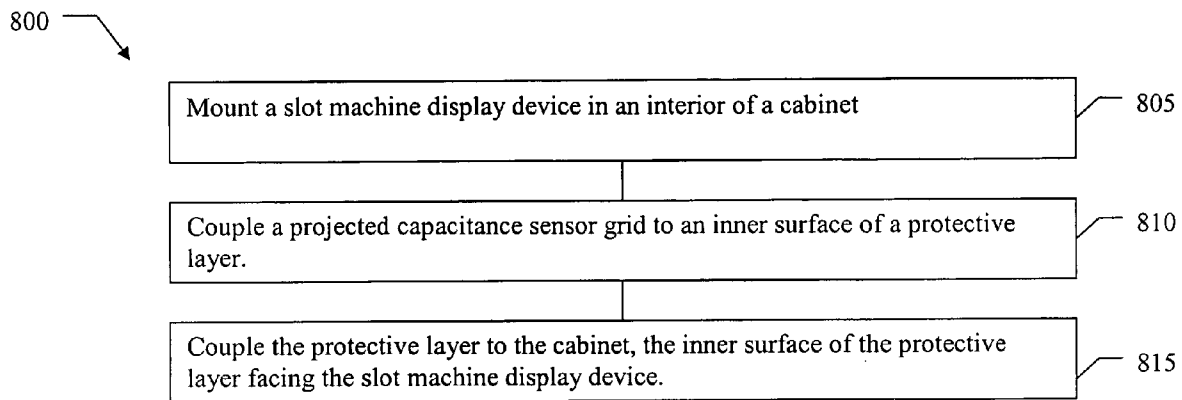


FIG. 8

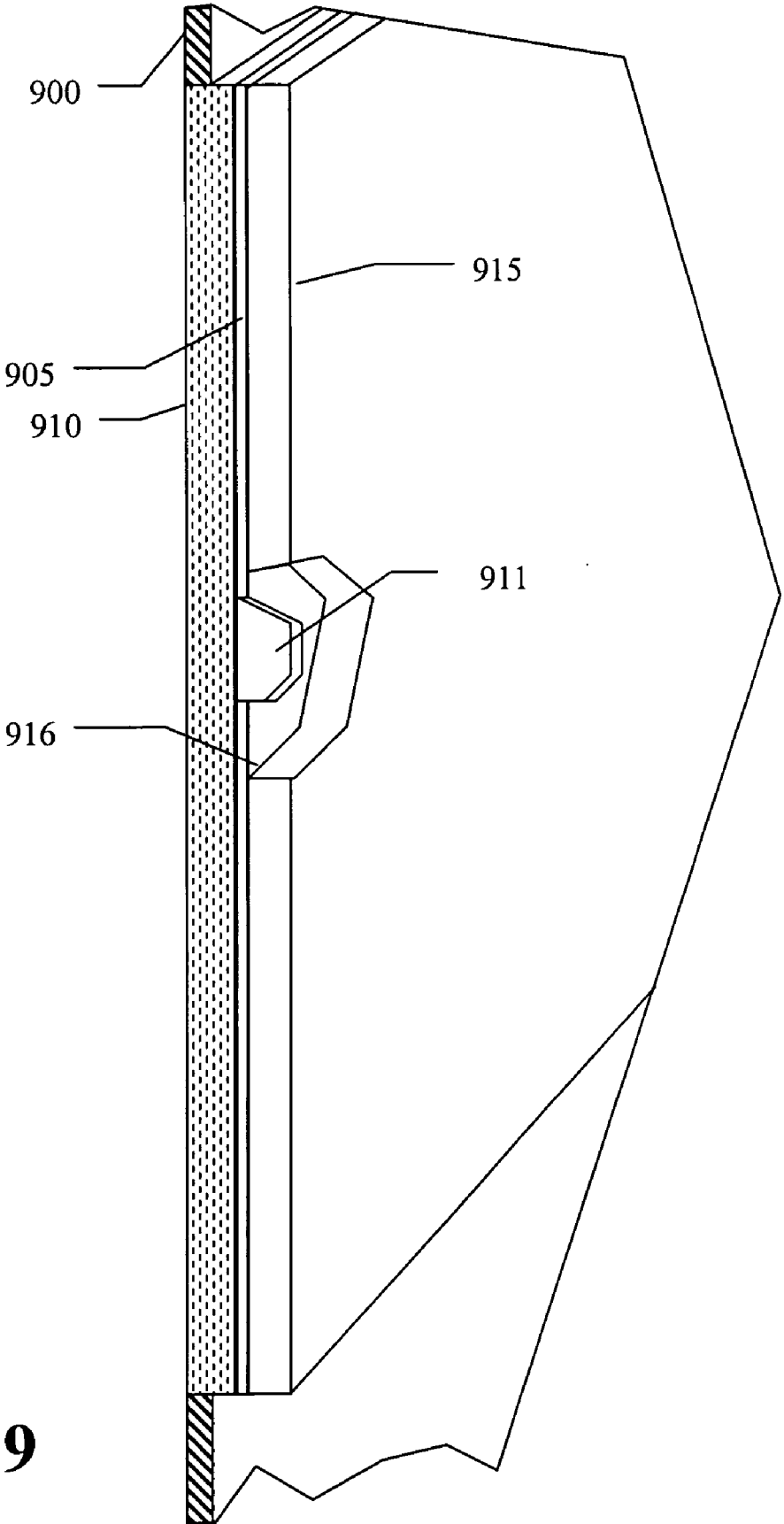


FIG. 9

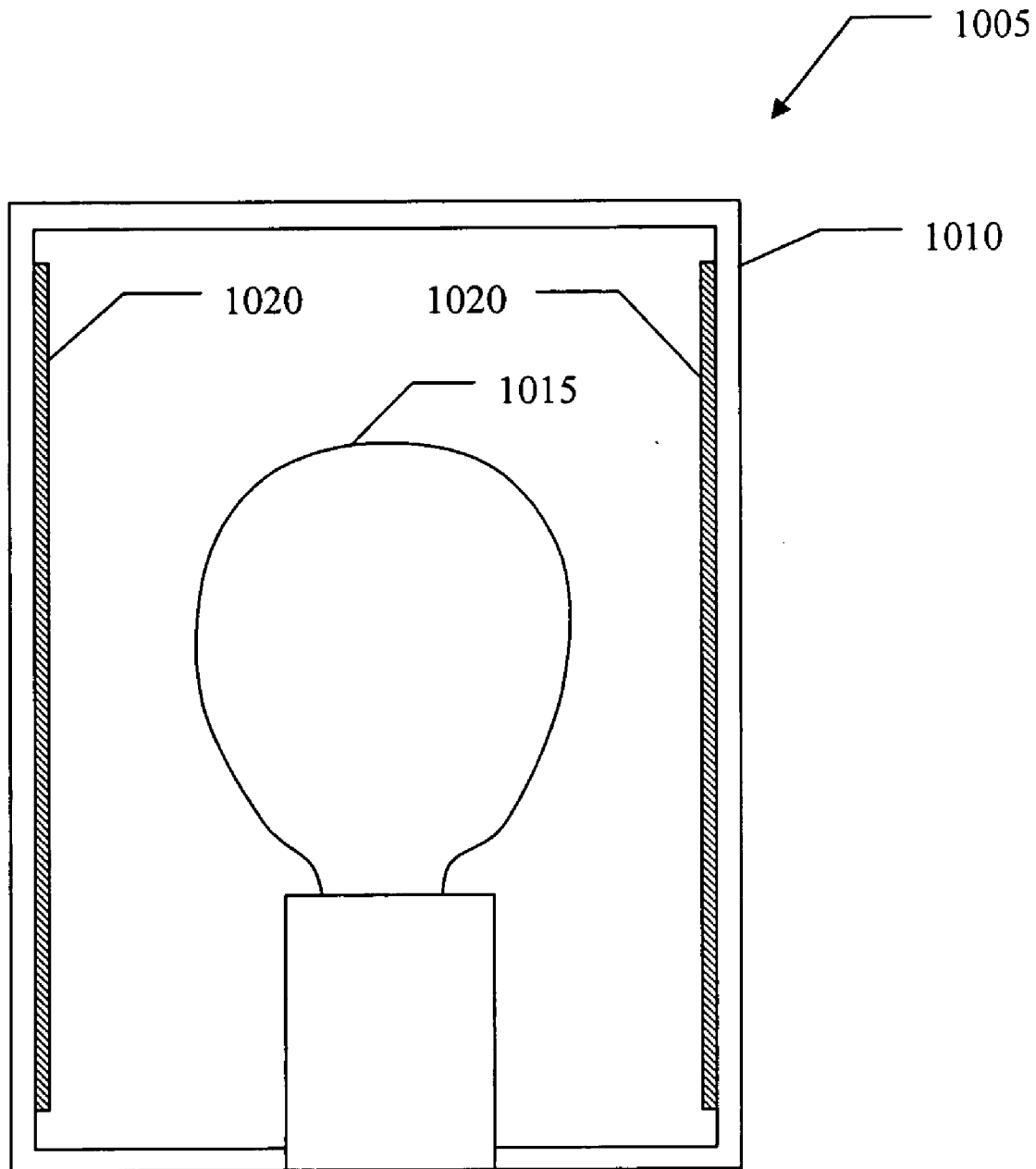


FIG. 10

GAMING MACHINE WITH PROXIMITY-SENSITIVE INPUT DEVICE

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FIELD

[0002] This patent application pertains generally to gaming devices, and more particularly to a gaming device including a proximity sensitive screen.

BACKGROUND

[0003] Modern gaming devices such as slot machines typically include a user interface that allows a game patron to interact with a computer. Some gaming machines include a touch screen interface. Typically, a touch screen interface is placed in front of a display device. The touch screen is generally transparent, so that a gaming patron can see through the touch screen to an image presented on the display device. The touch screen is typically coupled to a computer system that controls the display device, so that user input through the touch screen can be coordinated with information presented on the display device.

SUMMARY

[0004] One embodiment of a gaming machine includes a processor circuit to administer a wagering game, a layer of dielectric material having an outer surface, and a proximity-sensitive input device including a proximity sensor to detect through the layer of dielectric material an object proximate the outer surface of the layer, the proximity-sensitive input device communicatively coupled to the processor circuit, wherein the proximity-sensitive input device is configured to receive an input relating to the wagering game.

[0005] Another example of a gaming machine includes a means for displaying information relating to a wagering game, a layer of dielectric material having an inner surface and an outer surface, the inner surface facing the means for displaying information, means for sensing an object proximate the outer surface of the layer of dielectric material to receive an input relating to the wagering game, and means for administering a wagering game in response to the input relating to the wagering game, the means for administering the wagering game communicatively coupled to the means for displaying information relating to the wagering game.

[0006] An example of a method of making a gaming device includes mounting a slot machine display device in an interior of a cabinet, coupling a projected capacitance sensor system to an inner surface of a layer of dielectric material, and coupling the layer of dielectric material to the cabinet, the inner surface of the layer of dielectric material facing the slot machine display device, wherein the pro-

jected capacitance sensor system is configured to receive an input through the layer of dielectric material.

BRIEF DESCRIPTION OF THE DRAWINGS

[0007] FIG. 1A is a perspective view of an embodiment of a video gaming machine including a proximity-sensitive input device.

[0008] FIG. 1B is a front view of a video display and a proximity sensitive input device.

[0009] FIG. 1C is a front view of an embodiment of another video gaming machine including a proximity-sensitive input device.

[0010] FIG. 1D is a perspective view of an embodiment of a video gaming machine that has two electronic displays and at least one proximity-sensitive input device.

[0011] FIG. 1E is a perspective view of an embodiment of a gaming machine that includes mechanical reels and a proximity-sensitive input device.

[0012] FIGS. 2A and 2B are side views of an embodiment of a gaming machine that includes mechanical reels and a video display.

[0013] FIG. 3 is a schematic representation of an exemplary gaming device.

[0014] FIG. 4A is a schematic illustration of one embodiment of a projected-capacitance sensor system.

[0015] FIG. 4B is a schematic illustration of a bottom view of the illustration of 4A.

[0016] FIG. 5A is a side-view of a proximity-sensitive film and a layer of dielectric material.

[0017] FIG. 5B is a side-view of a projected-capacitance sensor grid and a layer of dielectric material.

[0018] FIG. 6 is a schematic illustration of proximity-sensitive input device and an exemplary volumetric display.

[0019] FIG. 7 is a schematic illustration of a method of making a gaming device.

[0020] FIG. 8 is a schematic illustration of a method of receiving input from a projected-capacitance sensor grid.

[0021] FIG. 9 is a cut-away partial perspective view of a proximity-sensitive input device between a glass plate and a flat-screen display.

[0022] FIG. 10 is a cross-sectional view of a light tower and a proximity-sensitive device.

DETAILED DESCRIPTION

[0023] Methods and apparatus for providing gaming machines incorporating a proximity-sensitive input device are described in this application. In the following description, numerous specific details are set forth. However, it is understood that embodiments of the invention may be practiced without these specific details. In other instances, well-known circuits, structures, and techniques have not been shown in detail in order to avoid obscuring the understanding of this description. Note that in the description, references to "one embodiment" or "an embodiment" mean that the feature being referred to is included in at least one embodiment of the invention. Further, separate references to

“one embodiment” in this description do not necessarily refer to the same embodiment. However, neither are such embodiments mutually exclusive, unless so stated and except as will be readily apparent to those of ordinary skill in the art. Thus, embodiments of the invention include any variety of combinations and/or integrations of the embodiments described herein. Moreover, in this description, the phrase “exemplary embodiment” means that the embodiment being referred to serves as an example or illustration. Embodiments are also referred to herein as “an example” or “examples.”

[0024] Referring now to **FIG. 1A**, an exemplary gaming machine **2** administers a wagering game. The gaming machine **2** includes a cabinet **4** and a display device **6** that is typically mounted to the cabinet **3**. In an example, the display device **6** includes a liquid crystal display (LCD), plasma screen, a cathode ray tube (CRT), volumetric display, or other type of display. One or more central processing units (CPU's) interact with a memory circuit and data storage to present a wagering game on the display **6**. The gaming device **2** receives input from a player through at least one proximity-sensitive input device **8**, which is typically transparent but is shown with a dotted line for purposes of illustration. An example of a proximity-sensitive input device is available from Binstead Designs Ltd. of Nottingham, England.

[0025] Some gaming device embodiments also include buttons **7**. The gaming device receives payment for game play through one or more payment mechanisms, such as a card slot **10**, a cash slot **12**, or a coin slot **14**. The device provides a payoff in a coin tray **16** or on a card through card slot **10**.

[0026] In an example, a proximity-sensitive input device **8** is mounted in front of the display device **6**. In one example, a portion of the display **6** that corresponds with a gaming-related option is selectable by placing a conductive object such as a finger proximate a region of the proximity sensitive input device that is associated with the option. For example, in **FIG. 1A**, a virtual button **19** on the display device **6** is labeled “Bet One” and is associated with a betting option where a patron makes a one-credit bet. The virtual button **19** is selectable by placing a finger proximate a region **18** of the proximity-sensitive input device. Another virtual button on the display device **6** is labeled “Bet Max”**21** and is associated with a second betting option where a patron makes a maximum bet. The “Bet Max” button is selectable by placing a finger proximate region **20** of the proximity-sensitive input device. In another example, the proximity-sensitive input device **8** is used to position a pointer on the display **6**.

[0027] In another example, a proximity-sensitive input device **22** is located outside the visible playing field defined by the electronic display **6**. In **FIG. 1A**, for example, a proximity-sensitive input device **22** extends over a portion of the front of the cabinet that is marked with the options “Collect” and “Call Attendant.” In an example, the proximity-sensitive input device is behind a sheet of glass **23**. In an example, artwork on the glass includes the “collect” and “call attendant” markings. In an example, the glass **23** is backlit. Portions of the proximity-sensitive input device **22** around the “collect and “call attendant” markings are selectable to collect winnings or call an attendant. The location

and arrangement of these selectable options on the cabinet **4** is merely exemplary, and other locations and arrangements are possible.

[0028] **FIG. 1B** illustrates a proximity-sensitive device **100** and a video display **105** showing an exemplary image **106** from a wagering game. In the example shown in **FIG. 1B**, fifteen items are shown arranged in three rows and five columns. In an example, the display includes virtual buttons including a collect button **110**, a help button **115**, a pay table button **120**, a spin reels button **125**, a max bet button **130**, a change denomination button **135**, a select lines button **140**, and a bet per line button **145**. The proximity-sensitive device receives input based upon placement of an object such as a finger proximate one of the buttons. For example, the proximity-sensitive device can receive an input from a patron to change denomination when the patron places a finger proximate the “change demon” button **135**. In an example, the collect button **110** allows a patron to cash out credits remaining on a credit meter, the help button **115** allows a patron to access a help screen, the pay table button **120** shows the pay table for various bets, the spin reels button **125** spins the reels to play a game, the max bet button **130** inputs a wager for a maximum bet (e.g. bet all lines), the select lines button **140** allows a patron to select the number of lines to play, and the bet per line button **145** allows a patron to enter a bet for lines individually.

[0029] In an example, or more buttons are located outside the field of view of the electronic display. For example, the “Call Attendant” button **150** is located outside the field of view of the display. In an example, the call attendant button **150** includes artwork on a glass. In an example, the artwork is backlit.

[0030] **FIG. 1C** shows a gaming machine **24**. A video display device **26** displays a video image **25** and that includes virtual buttons **27** that are selectable through a proximity-sensitive input device **29**. In an example, the proximity-sensitive input device **29** extends beyond the field of view of the video display, so that a portion **28** of the gaming machine below the video display is selectable through the proximity-sensitive input device **29**. In an example, gaming inputs are selectable through buttons **31** on the lower portion **28**. In an example, the buttons **31** include artwork on a backlit glass.

[0031] Referring now to **FIG. 1D**, another example of a video gaming machine **30** includes a cabinet **32** containing two video displays **34** and **36**. In an example, a first proximity-sensitive input device **38** is mounted in front of video display **34** and a second proximity-sensitive input device **40** is mounted in front of video display **36**. In an example, a proximity-sensitive input device **42** is also mounted over or within a light tower **44**. In an example, the light tower **44** includes a light source and a layer of dielectric material **46** extending around the light source, and the proximity-sensitive input device **42** is positioned between the light source and the layer of dielectric material. A cross-section of an exemplary light tower is shown in **FIG. 10**. In an example, the proximity-sensitive input device **42** on the light tower is coupled to a controller that switches the color of the light in the light tower to communicate a parameter of the game, such as the minimum bet. In an example, the color of the light tower can be changed by an attendant by touching the light tower proximate the input

device. In another example, light tower 44 is positioned so that it is reachable by a patron to select an input. In another example, the artwork in the top glass 37 or belly glass 39 is selectable or changeable by an attendant through a proximity-sensitive input device. In an example, the art work in the top glass is selectable or changeable by touching a proximity-sensitive input device proximate the top glass. In an example, a contiguous sheet of glass covers the artwork in the top glass 37 and the video display 36. In an example, a proximity-sensitive input device is configured under the top glass. In an example, the “5000 coins” jackpot or the “1500 coins” bonus game payoff is changeable through a proximity sensitive input device.

[0032] While the video displays 34 and 36 are shown stacked vertically in FIG. 1D, it will be appreciated that the displays are stackable side by side. In another example, more than two video displays are used.

[0033] Referring now to FIG. 1E, another example of a gaming machine 60 has three mechanical spinning reels 62, 64, 66. In response to a wager, the reels 62, 64, 66 are rotated and stopped to randomly place symbols on the reels in visual association with a display area 68. Payouts are awarded based on combinations and arrangements of the symbols appearing in the display area 68. The gaming device may, for example, include five paylines in the form of three horizontal lines and two diagonal lines.

[0034] Referring again to FIG. 1E, the gaming machine 60 includes a proximity-sensitive input device 70 that is mounted in front of the reels 62, 64, 66. In an example, five buttons 72, 74, 76, 78, 80 corresponding to five pay lines appear on the display area proximate the three mechanical reels. In an example, the buttons 72, 74, 76, 78, 80 correspond to selectable regions of the proximity-sensitive input device 70. In an example, buttons 110, 115, 120, 125, 130, 135, 140 which appear in FIG. 1B also appear on the display area proximate the three mechanical reels. In an example, the location of the buttons is indicated by a marking on a layer of dielectric material that extends over the proximity-sensitive input device. In an example, the buttons are printed or etched on the layer of dielectric material. In another example, a marked film is overlaid on the layer of dielectric material. In an example, the gaming device 10 also includes optional electro-mechanical buttons 81.

[0035] In an example, the gaming device 10 also includes an electronic display 82. In an example, a bonus game is triggered by a start-bonus outcome in the wagering game and administered through the electronic display 82. In an example, a second proximity-sensitive input device 84 extends over the electronic display.

[0036] In an example, the gaming device 60 also includes a video display (see FIGS. 2A and 2B) that provides a video image 86 in the display area 68. In an example, the video image 86 appears to the patron to blend or interact with the reels 62, 64, 66. In an example, the buttons 72, 74, 76, 78, 80 are part of the video image 86. In an example, the video image 86 is interactive with the reels 62, 64, 66. In an example, the video image also includes other buttons, such as the “collect,” “help,” and other buttons shown in FIG. 1B. In an example, options associated with the buttons are selectable through the proximity-sensitive input device.

[0037] FIG. 2A shows a partially cut-away side view of a portion of game machine 60 shown in FIG. 1E. The video

image 86 is generated by a flat panel transmissive video display 88 positioned in front of reels 62, 64, 66, which are visible through the display. In FIG. 2A, reels 64, 66 are aligned behind reel 62 and thus are not visible in FIG. 2A. In an example, the transmissive display 88 is a transmissive liquid crystal display (LCD). In an example, the proximity-sensitive input device 70 is mounted between the display 88 and the reels 62, 64, 66. In an example, the proximity-sensitive screen is mounted to a back surface 90 of the display 88. In an example, the proximity-sensitive input device contains regions that correspond to buttons 72, 74, 76, 78, 80 denoted by the image on the display 88. In an alternative example, the proximity-sensitive input device 70 is mounted to a front surface of the display 88, and the display is positioned behind a plate of glass, as illustrated in FIG. 9.

[0038] FIG. 2B shows a partially cut-away side view of a portion of an alternate configuration of the game machine 60 shown in FIG. 1E, where the video image 86 is a virtual image. The virtual image is preferably generated by a projection arrangement including a video display 92 and a partially reflective mirror 94. The video display 92 and the partially reflective mirror 94 are positioned to project the virtual image through a proximity-sensitive input device 70 and a transparent plate 87. The video display 92 is preferably mounted below the reels 62, 64, 66. Reels 64 and 66 are aligned behind reel 62 and are not visible in FIG. 2B. The mirror 94 is preferably mounted in front of the reels 62, 64, 66 and is oriented at approximately a forty-five degree angle relative to the video display 92 and the display area 68. In an example, the display area 16 includes a layer of dielectric material, such as a glass cover or window. In an example, the proximity-sensitive input device 70 is coupled to an inside surface 91 of the transparent plate 87. Alternatively, the proximity-sensitive input device 70 is integrated into the transparent plate 91.

[0039] In the examples illustrated in FIGS. 1A-1E and 2A-2B, the gaming machines are shown as “upright” versions in which a display is oriented generally vertical relative to the player. In an alternative configuration, the gaming machine is a “slant-top” version in which a display is slanted at about a thirty-degree angle toward the player.

[0040] FIG. 3 shows a schematic representation of an exemplary gaming device. A game can be played through a CPU 305 that is coupled to a memory circuit 310 and data storage 315 such as a hard drive. A network interface 320 allows the gaming device to interact with a server (not shown in FIG. 3) to coordinate multiple devices, for example, in a progressive jackpot environment. An optional mechanical reel 350 presents game results to a patron. A display device 325 presents game choices or results to a patron. In an example, advertisements, entertainment, or videos are also presented on the display device. A proximity-sensitive input device 330 allows input from a game patron. In an example, the proximity-sensitive input device 330 includes a projected-capacitance sensor system. In an example, one or more additional other input device 337, such as buttons, are also provided and coupled to the CPU 305. A payment mechanism 340 receives payment for game play through one or more of coins, bills, cash-value cards, or credit cards, network-based password systems. A payoff mechanism 345 pays a gaming patron in coins, bills, and/or a cash-value card. In one example, a balance is maintained on

an account associated with a tracking card. A switch 335 allows the gaming device to be shut off. A variety of gaming device systems are possible, and it is understood that the devices illustrated in FIGS. 1A-1E, FIGS. 2A-2B, and FIG. 3 are merely examples.

[0041] FIG. 4A is a schematic illustration of an example of a projected-capacitance sensor system 400 coupled to a processor 425. The sensor system 400 includes a sensor grid 405 and one or more layers of dielectric material 406. The sensor grid 405 includes a plurality of conductors 410. In an example, the sensor grid 405 includes a first group of conductors 415 and a second group of conductors 420 that is separated from the first group of conductors by a layer of dielectric material 430, shown in FIG. 4B. The conductors 410 shown in FIGS. 4A and 4B are schematic illustrations and are not drawn to scale. In an example, the first group of conductors 415 is orthogonal to the second group of conductors 420. In an example, the conductors 410 are assembled in a laminated structure between three layers of dielectric material 430, 435, 440, as shown in FIG. 4B. In an example, the layers 430, 435, 440 are flexible dielectric film, and the layers and conductors together form a flexible sensor film. In another example, one or more of the layers 430, 435, 440 is glass. In an example, the conductors are deposited, embedded, or assembled into a glass structure. In an example, the conductors 410 are made from silver or a metal oxide such as indium oxide.

[0042] A low-voltage AC signal is applied to the conductors 410. The low-voltage AC signal creates an electrostatic field. When a conductive object is placed proximate the sensor grid 405, a capacitance forms between the object and one or more conductors 410 in the sensor grid 405, which disturbs the electric field. The disturbance of the electric field by the conductive object is detectable through two or more of the conductors. A processor circuit 425 that is electrically coupled to the conductors determines the location of the object relative to the conductors 410. In an example, the processor circuit 425 also administers the wagering game.

[0043] FIG. 5A shows a side-view of a proximity-sensitive film 501 that includes a projected capacitance sensor system, such as the system 400 shown in FIGS. 4A-4B. The proximity-sensitive film is coupled to a layer of dielectric material 505. A conductive object 520 is detectable through the layer of dielectric material 505 by the proximity-sensitive film 501. In an example, the conductive object is a finger 520. The proximity-sensitive film 501 is electrically coupled to a processor 540. In an example, the sensor film 501 and one or more layers of dielectric material 530 are mounted in a gaming machine. In an example, the layer of dielectric material protects the proximity-sensitive film by providing a barrier between the sensor film and the outside environment proximate the outer surface 530 of the layer of dielectric material. In an example, the layer of dielectric material is a glass plate. In an example, an optional second layer of dielectric material 510, such as a second glass plate or a front surface of a display, is provided behind the sensor film 501, so that the sensor film is sandwiched between the two layers of dielectric materials. In another example, shown in FIG. 5B, conductors 525, 530 are integrated into the layer of dielectric material 505. The structures shown in FIGS. 4A, 4B, 5A, and 5B are schematic representations and are not necessarily shown to scale.

[0044] FIG. 6 shows a schematic illustration of proximity-sensitive input device 605 assembled with an exemplary volumetric display 610. In an example, the volumetric display 610 includes a hollow transparent sphere 615 and a rotating projection screen 620 inside the sphere. One or more high-speed projectors displays an image on the rotating screen 620 to create the illusion of a three-dimensional object in the sphere 615. In an example, the sphere 615 is made of glass. In an example, the proximity-sensitive device 605 includes a proximity-sensitive film that includes a projected-capacitance sensor grid. In an example, the proximity-sensitive film is attached to the inner surface of the glass, as shown on flat glass in FIG. 5A. In another example, a proximity-sensitive sensor grid is integrated into the glass, as shown in FIG. 5B. A conductive object such as a finger is detectable by the proximity-sensitive device through the glass sphere. The proximity-sensitive input device is coupled to a processor that receives input based upon detection of a conductive object such as a finger at a location proximate the outer surface of the sphere.

[0045] FIG. 7 illustrates a method 700 of receiving input from a projected-capacitance sensor grid. At 705, a projected-capacitance sensor grid detects the location of a conductive object such as a finger. For example, X and Y coordinates of the object are determined based upon disruption of an electric field by the presence of a conductive object proximate conductors at known X and Y coordinates. At 710, a game input is determined based upon the detected location of the conductive object. At 715, a wagering game is played using the input received from the projected-capacitance sensor grid.

[0046] FIG. 8 illustrates a method 800 of making a gaming device. At 805, a slot machine display device is mounted in an interior of a cabinet. In an example, the slot machine display device includes a mechanical stepper reel. In another example, the slot machine display device includes an electronic display device, such as a LCD display, CRT display, or volumetric display. At 810, a projected capacitance sensor grid is coupled to an inner surface of a layer of dielectric material. At 820, the layer of dielectric material is coupled to the cabinet with the inner surface of the layer of dielectric material facing the slot machine display device. The projected capacitance sensor grid is protected by the layer of dielectric material and receives an input through the layer of dielectric material. In an example, the projected capacitance sensor grid is coupled to the layer of dielectric material before the layer of dielectric material is coupled to the cabinet. In another example, the projected capacitance sensor grid is coupled to the layer of dielectric material after the layer of dielectric material is coupled to the cabinet. In an example, at least a portion of the projected capacitance sensor grid is deposited directly on the layer of dielectric material. In another example, the projected capacitance sensor grid includes layers of conductors laminated in layers of dielectric film. In an example, the laminated dielectric film is coupled to the layer of dielectric material.

[0047] Referring now to FIG. 9, in an example, a proximity-sensitive input film 905 is mounted in a cabinet 900 between a protective glass plate 910 and a flat-screen display 915, such as an LCD display. In an example, the proximity-sensitive film 905 is applied to the back side 911 of the glass plate 910. In another example, the proximity-sensitive film 905 is attached to a front surface 916 of the display 915. In

an example, a gaming machine is retrofitted with a proximity-sensitive input film by attaching the proximity-sensitive film **905** to the glass **910** or display **915**.

[0048] **FIG. 10** shows a cross-sectional view of a light tower **1005** that includes a proximity-sensitive input device **1020**. In an example, the light tower includes a transparent or translucent dielectric shell **1010** and a light source **1015** inside the shell. In an example, the proximity-sensitive input device is a projected-capacitance sensor film **1020** that is situated on an inner surface of the shell **1010**. A conductive object such as a finger or hand is detectable by the film through the dielectric shell.

[0049] It is to be understood that the above description is intended to be illustrative, and not restrictive. For example, the above-described embodiments (and/or aspects thereof) may be used in combination with each other. Many other embodiments will be apparent to those of skill in the art upon reviewing the above description. The scope of the invention should, therefore, be determined with reference to the appended claims, along with the full scope of equivalents to which such claims are entitled. In the appended claims, the terms “including” and “in which” are used as the plain-English equivalents of the respective terms “comprising” and “wherein.” Also, in the following claims, the terms “including” and “comprising” are open-ended, that is, a system, device, article, or process that includes elements in addition to those listed after such a term in a claim are still deemed to fall within the scope of that claim.

I claim:

1. A gaming machine comprising:
 - a processor circuit to administer a wagering game;
 - a layer of dielectric material having an outer surface; and
 - a proximity-sensitive input device including a proximity sensor to detect through the layer of dielectric material an object proximate the outer surface of the layer, the proximity-sensitive input device communicatively coupled to the processor circuit, wherein the proximity-sensitive input device is configured to receive an input relating to the wagering game.
2. The gaming machine of claim 1, wherein the gaming machine includes a mechanical stepper reel that is visible through the layer of dielectric material and the proximity-sensitive input device.
3. The gaming machine of claim 1, wherein the proximity-sensitive input device includes a projected-capacitance sensor system.
4. The gaming machine of claim 3, wherein the projected-capacitance sensor system includes a multiplicity of conductors laminated between layers of flexible dielectric material to form a proximity-sensitive film, the proximity-sensitive film proximate an inner surface of the layer of dielectric material.
5. The gaming machine of claim 1, wherein the proximity-sensitive input device includes conductors integrated into the layer of dielectric material.
6. The gaming machine of claim 1, wherein the gaming device further includes an electronic display communicatively coupled to the processing unit to display a result of the wagering game that is visible through the layer of dielectric material.

7. The gaming machine of claim 6, wherein a portion of the display device presents an option relating to the wagering game visible through the layer of dielectric material, the processor configured to receive an input from the proximity-sensitive input device based upon detection of an object proximate a region of the proximity-sensitive input device that extends over the portion of the display device that presents the option relating to the wagering game.

8. The gaming machine of claim 6, further comprising at least one marking on the layer of dielectric material identifying a region of the projected capacitance sensor grid and an option associated with the region, the option selectable by placing an object proximate the region identified by the marking.

9. The gaming machine of claim 8, wherein the display device has an outer perimeter, the region of the proximity-sensitive input device associated with the option located outside the outer perimeter of the display device.

10. The gaming machine of claim 1, further comprising a light tower including a light source and a layer of dielectric material extending around the light source, the proximity-sensitive input device positioned between the light source and the layer of dielectric material, and the input relating to the wagering game includes an input that changes the color of the light tower to indicate a parameter of the game.

11. The gaming machine of claim 1, wherein the display device includes a volumetric three-dimensional display and the proximity-sensitive input device is configured to sense an object proximate the volumetric three-dimensional display.

12. The gaming machine of claim 11, wherein the volumetric three-dimensional display includes a rotating projection surface and a transparent layer extending around the rotating projection surface, the proximity-sensitive input device proximate an inner surface of the transparent layer.

13. A gaming machine comprising:

- means for displaying information relating to a wagering game;

- a layer of dielectric material having an inner surface and an outer surface, the inner surface facing the means for displaying information;

- means for sensing an object proximate the outer surface of the layer of dielectric material to receive an input relating to the wagering game;

- means for administering a wagering game in response to the input relating to the wagering game, the means for administering the wagering game communicatively coupled to the means for displaying information relating to the wagering game.

14. The gaming machine of claim 13, wherein the means for displaying information relating to a wagering game includes a mechanical stepper reel, the layer of dielectric material includes a layer of glass, and the means for sensing an object proximate the outer surface of the layer of dielectric material includes a projected capacitance sensor system.

15. The gaming machine of claim 13, wherein the means for displaying a result of the wagering game includes an electronic display device and the means for administering the wagering game includes a processing circuit configured to present information relating to the wagering game on the display device.

16. The gaming machine of claim 13, wherein the means for administering the wagering game includes a mechanical slot machine including mechanical reels, the means for displaying information relating to the wagering game including external surfaces of the mechanical reels.

17. A method comprising:

mounting a slot machine display device in an interior of a cabinet;

coupling a projected capacitance sensor system to an inner surface of a layer of dielectric material; and

coupling the layer of dielectric material to the cabinet, the inner surface of the layer of dielectric material facing

the slot machine display device, wherein the projected capacitance sensor system is configured to receive an input through the layer of dielectric material.

18. The method of claim 17, wherein the slot machine display device includes a mechanical stepper reel.

19. The method of claim 17, wherein the slot machine display device includes an electronic display device.

20. The method of claim 17, wherein the projected capacitance sensor system is coupled to the layer of dielectric material before the layer of dielectric material is coupled to the cabinet.

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