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Ludwick

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(54) **SYSTEMS AND METHODS FOR BULK INCREMENTING A BONUS PRIZE AND REPEATEDLY PROVIDING THE BONUS PRIZE IN ASSOCIATION WITH A PLURALITY OF FREE SPINS**

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G07F 17/32 (2006.01)

(52) **U.S. Cl.**
CPC ***G07F 17/3267*** (2013.01); ***G07F 17/3213*** (2013.01); ***G07F 17/3244*** (2013.01)

(58) **Field of Classification Search**
CPC G07F 17/3267; G07F 17/3213; G07F 17/3244
See application file for complete search history.

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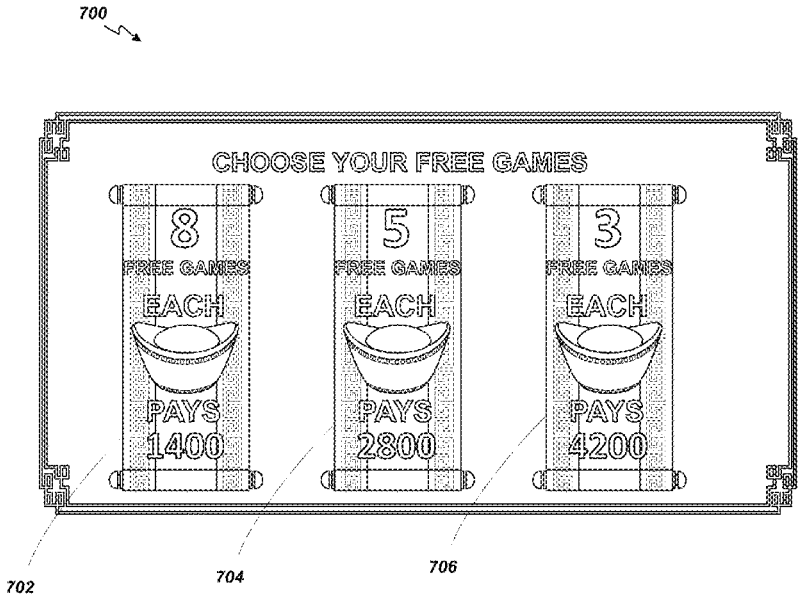
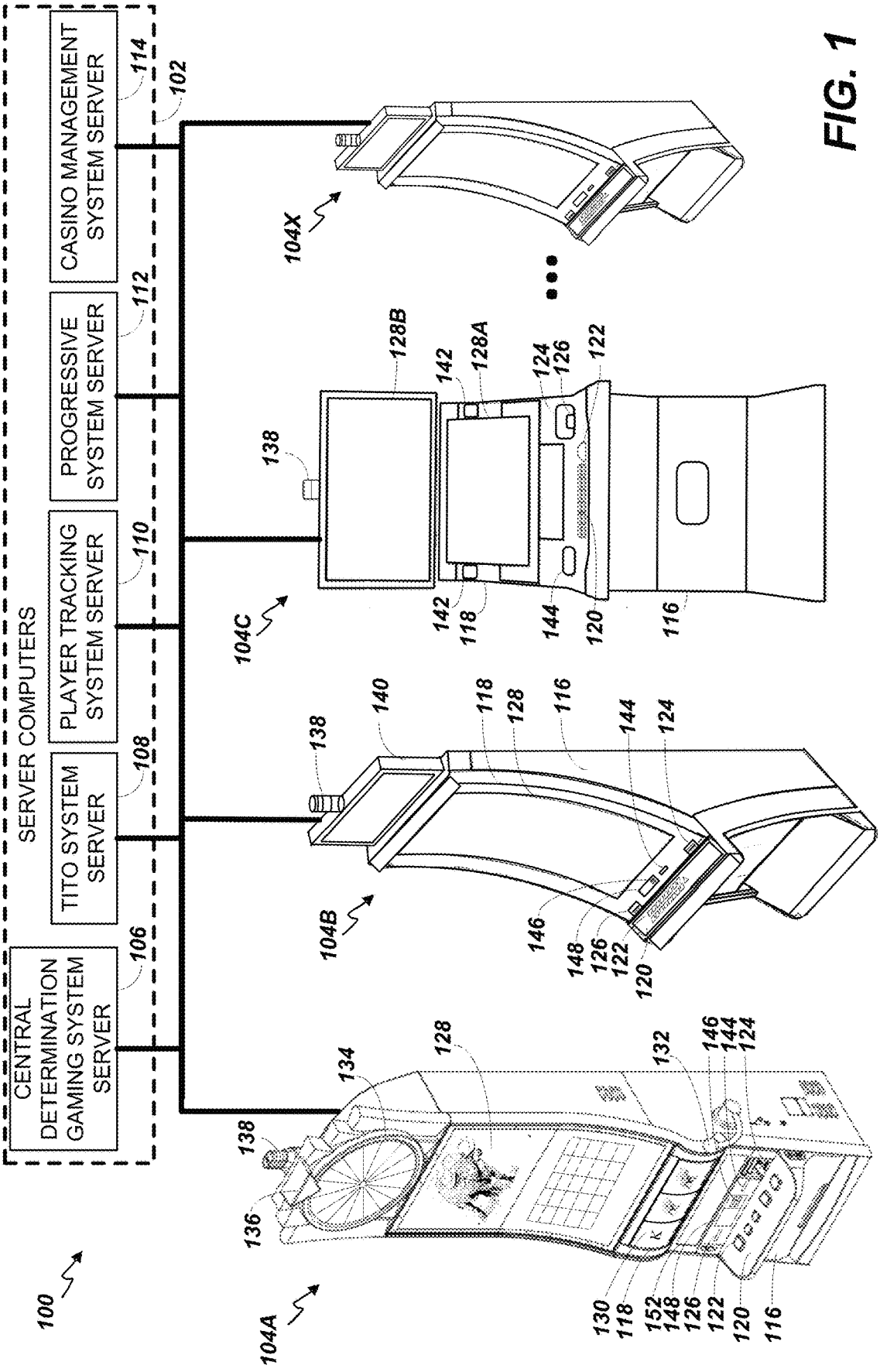
(57) **ABSTRACT**

An electronic gaming machine includes a processor configured to control a display device to display a matrix of symbol positions and a bonus meter, where the bonus meter displays a bonus prize. In response to a bonus game trigger condition being satisfied, the processor is configured to control the display device to display a plurality of volatility options, each being player selectable and associated with a number of free spins and a multiple or another percentage of the bonus prize. A player selection of one volatility option is received, and a plurality of free spins are initiated. During each free spin, the processor is configured to control the display device to display a symbol in each symbol position of the matrix, evaluate the matrix to determine whether the matrix includes at least one free game scatter symbol, and if at least one free game scatter symbol is included, to add the multiple or percentage of the bonus prize to a credit balance of the player, whereby the multiple or percentage of the bonus prize is capable of being repeatedly added to the credit balance of the player during the first plurality of free spins.

17 Claims, 12 Drawing Sheets

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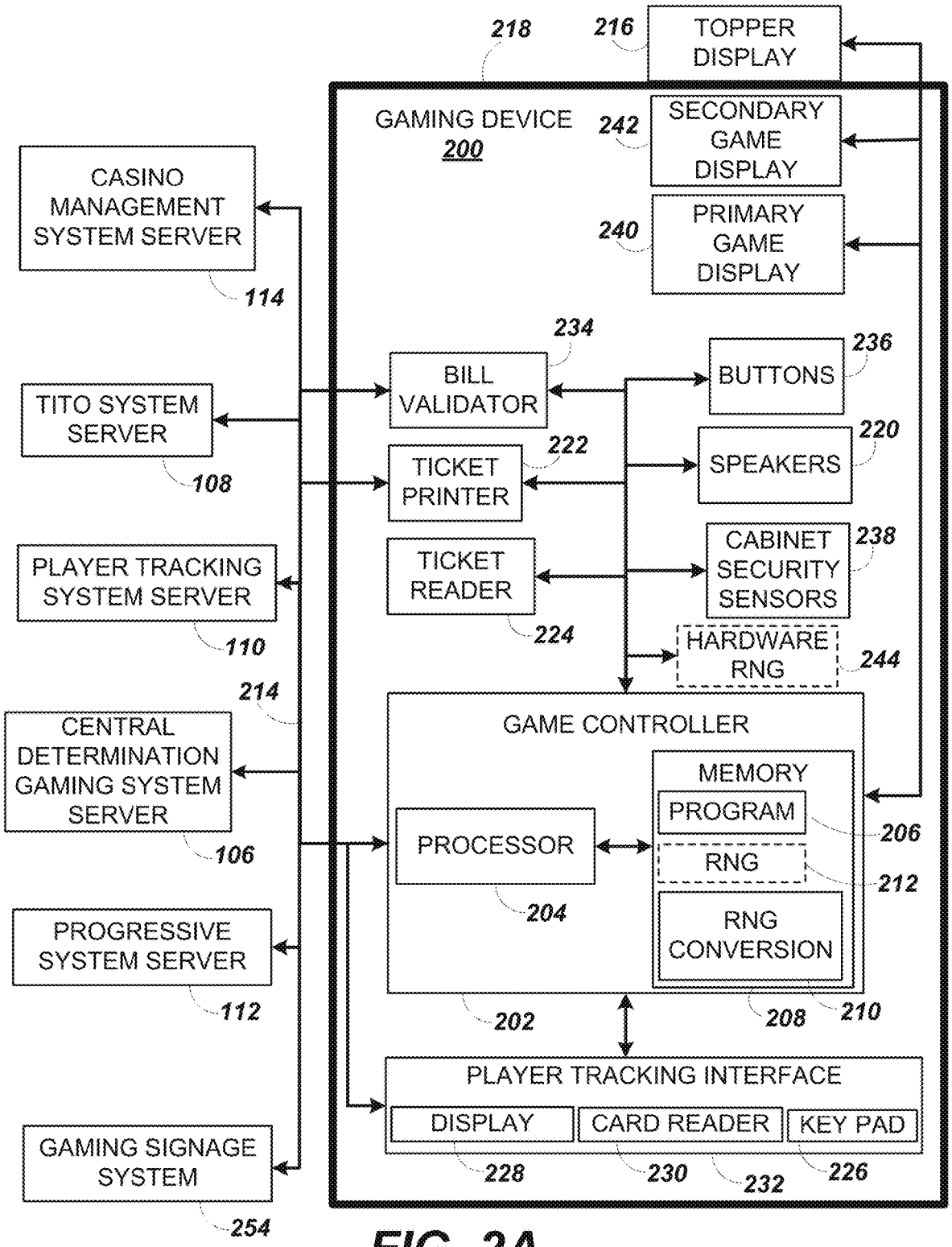
TITO SYSTEM SERVER
108
PLAYER TRACKING SYSTEM SERVER
110
PROGRESSIVE SYSTEM SERVER
112
CASINO MANAGEMENT SYSTEM SERVER
114
102
100
104A
104B
104C
104X

FIG. 1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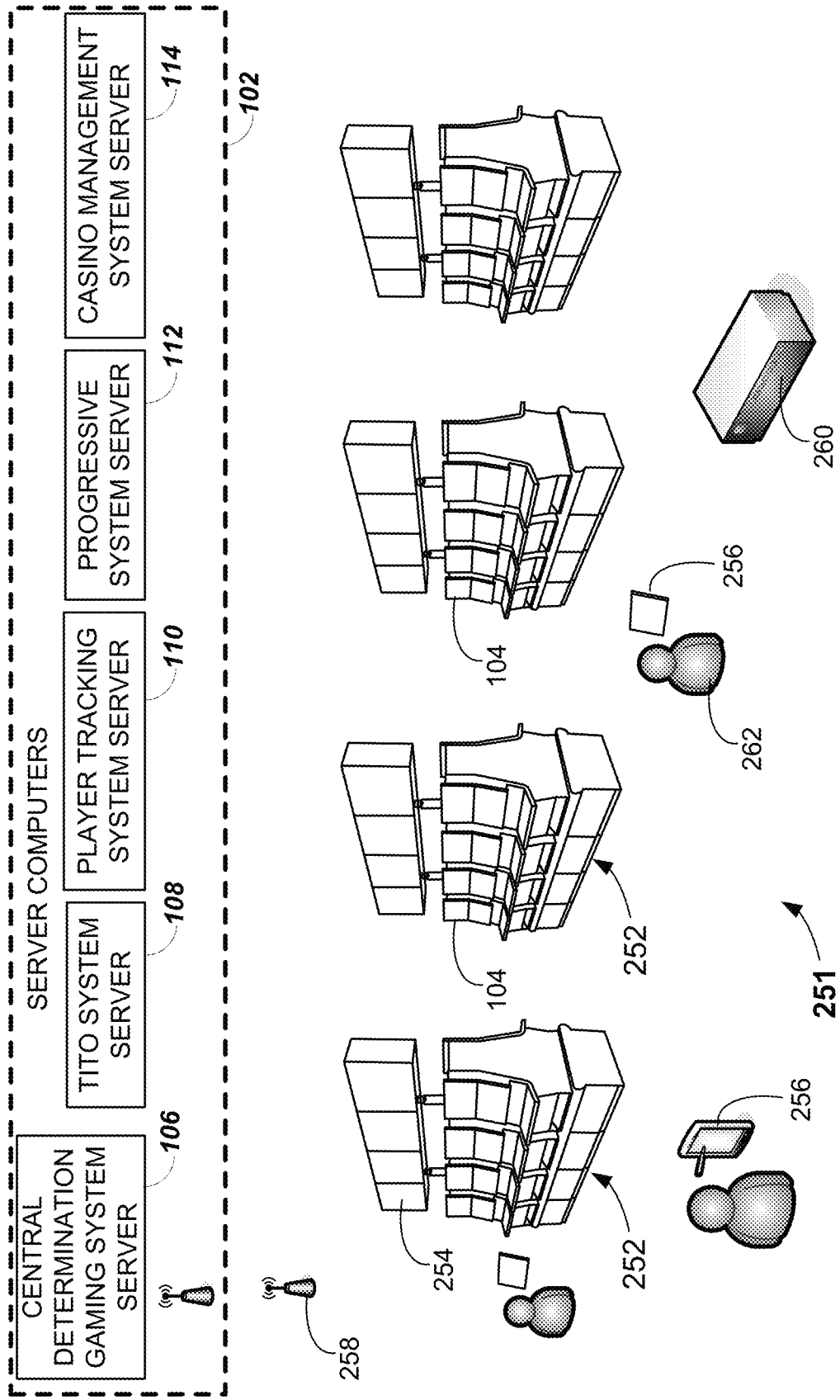
216
TOPPER DISPLAY
GAMING DEVICE
200
242
SECONDARY GAME DISPLAY
240
PRIMARY GAME DISPLAY
CASINO MANAGEMENT SYSTEM SERVER
114
234
BILL VALIDATOR
236
BUTTONS
TITO SYSTEM SERVER
108
222
TICKET PRINTER
220
SPEAKERS
PLAYER TRACKING SYSTEM SERVER
110
TICKET READER
224
238
CABINET SECURITY SENSORS
HARDWARE RNG
244
214
CENTRAL DETERMINATION GAMING SYSTEM SERVER
106
GAME CONTROLLER
MEMORY
PROGRAM
206
PROCESSOR
RNG
212
204
RNG CONVERSION
PROGRESSIVE SYSTEM SERVER
112
202
208
210
PLAYER TRACKING INTERFACE
DISPLAY
CARD READER
KEY PAD
GAMING SIGNAGE SYSTEM
254
228
230
232
226

FIG. 2A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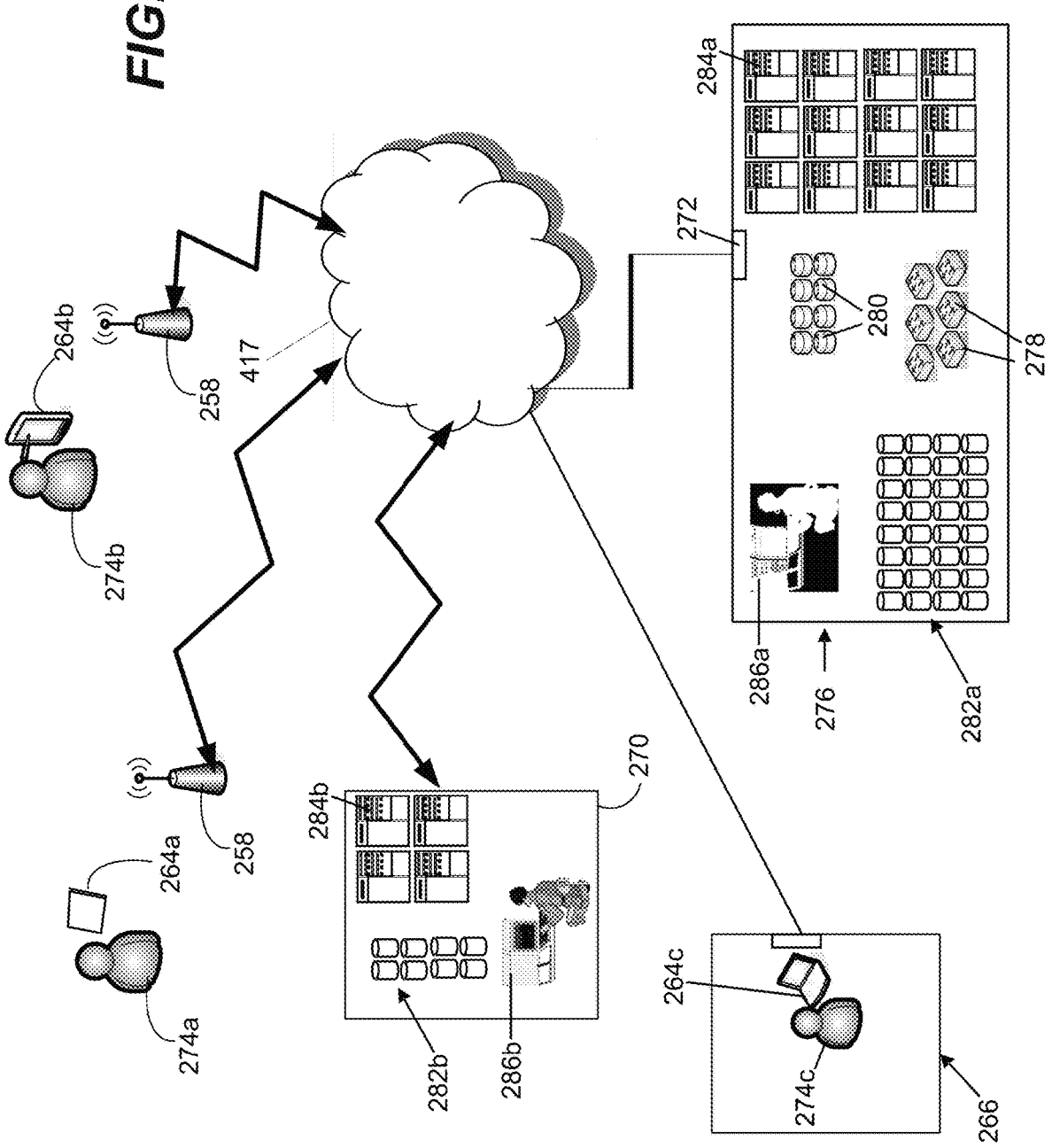
106
TITO SYSTEM SERVER
108
PLAYER TRACKING SYSTEM SERVER
110
PROGRESSIVE SYSTEM SERVER
112
CASINO MANAGEMENT SYSTEM SERVER
114
102
258
254
252
104
256
262
260
251

FIG. 2B

FIG. 2C


264b
258
417
284a
272
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278
274b
286a
276
282a
264a
258
270
284b
264c
274a
282b
286b
274c
266

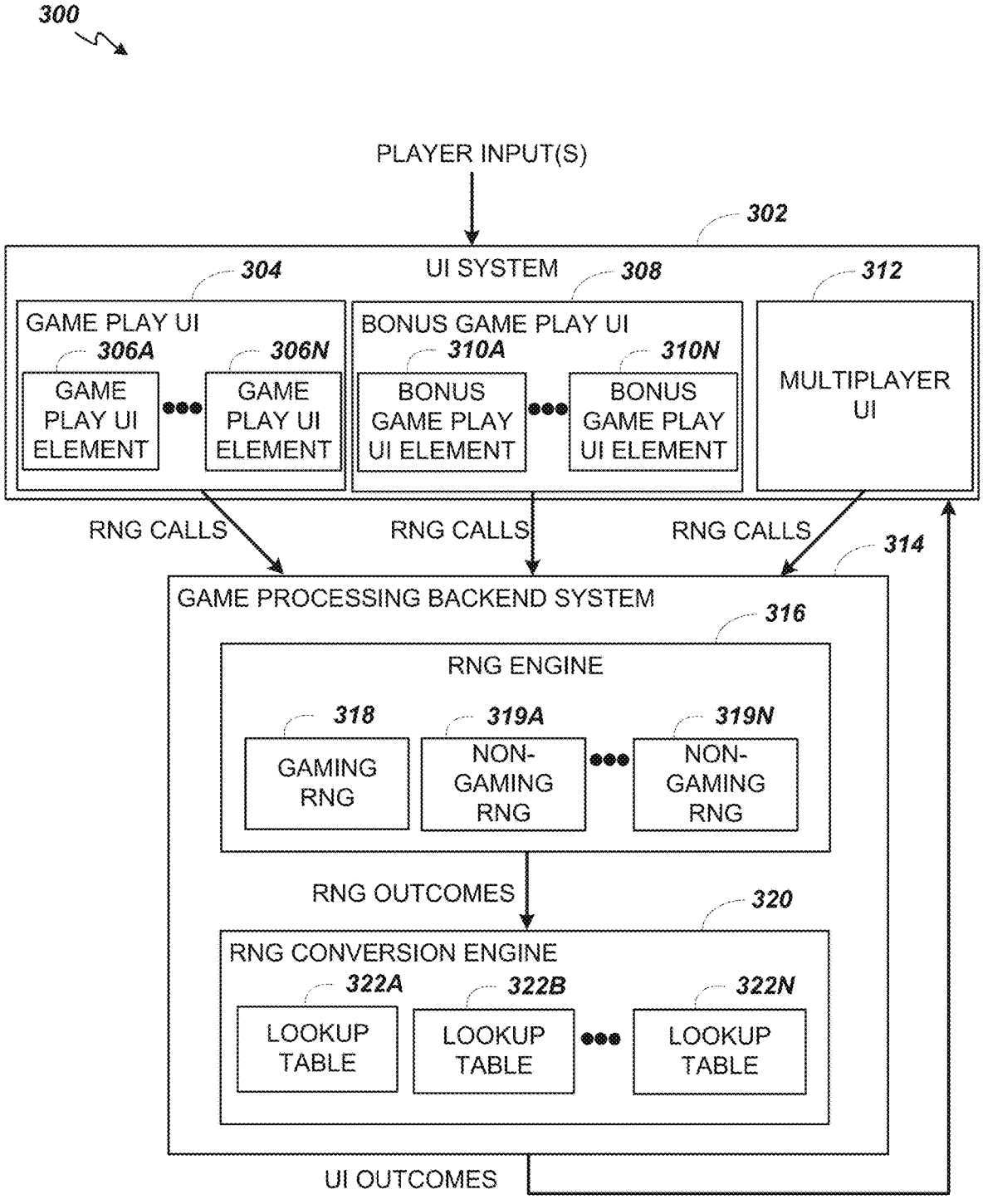

300
PLAYER INPUT(S)
302
UI SYSTEM
304
GAME PLAY UI
306A
GAME PLAY UI ELEMENT
306N
GAME PLAY UI ELEMENT
308
BONUS GAME PLAY UI
310A
BONUS GAME PLAY UI ELEMENT
310N
BONUS GAME PLAY UI ELEMENT
312
MULTIPLAYER UI
RNG CALLS
RNG CALLS
RNG CALLS
314
GAME PROCESSING BACKEND SYSTEM
316
RNG ENGINE
318
GAMING RNG
319A
NON-GAMING RNG
319N
NON-GAMING RNG
RNG OUTCOMES
320
RNG CONVERSION ENGINE
322A
LOOKUP TABLE
322B
LOOKUP TABLE
322N
LOOKUP TABLE
UI OUTCOMES

FIG. 3

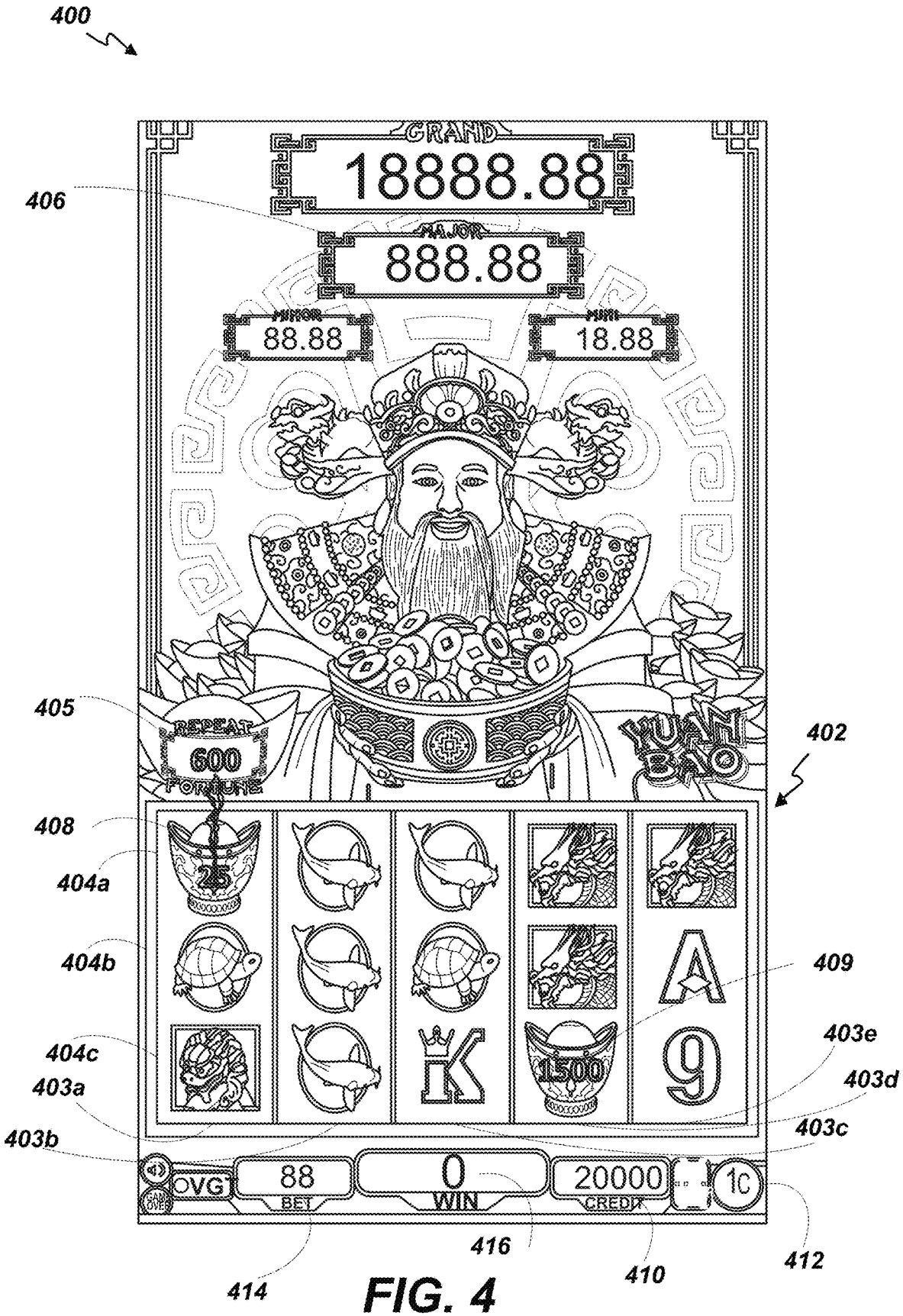

400
406
405
402
408
404a
404b
409
404c
403e
403a
403d
403b
403c
414
416
410
412
GRAND
18888.88
MAJOR
888.88
MINOR
88.88
MINI
18.88
REPEAT
600
FORTUNE
YUAN BAO
25
A
1500
K
9
88
BET
0
WIN
20000
CREDIT
1C

FIG. 4

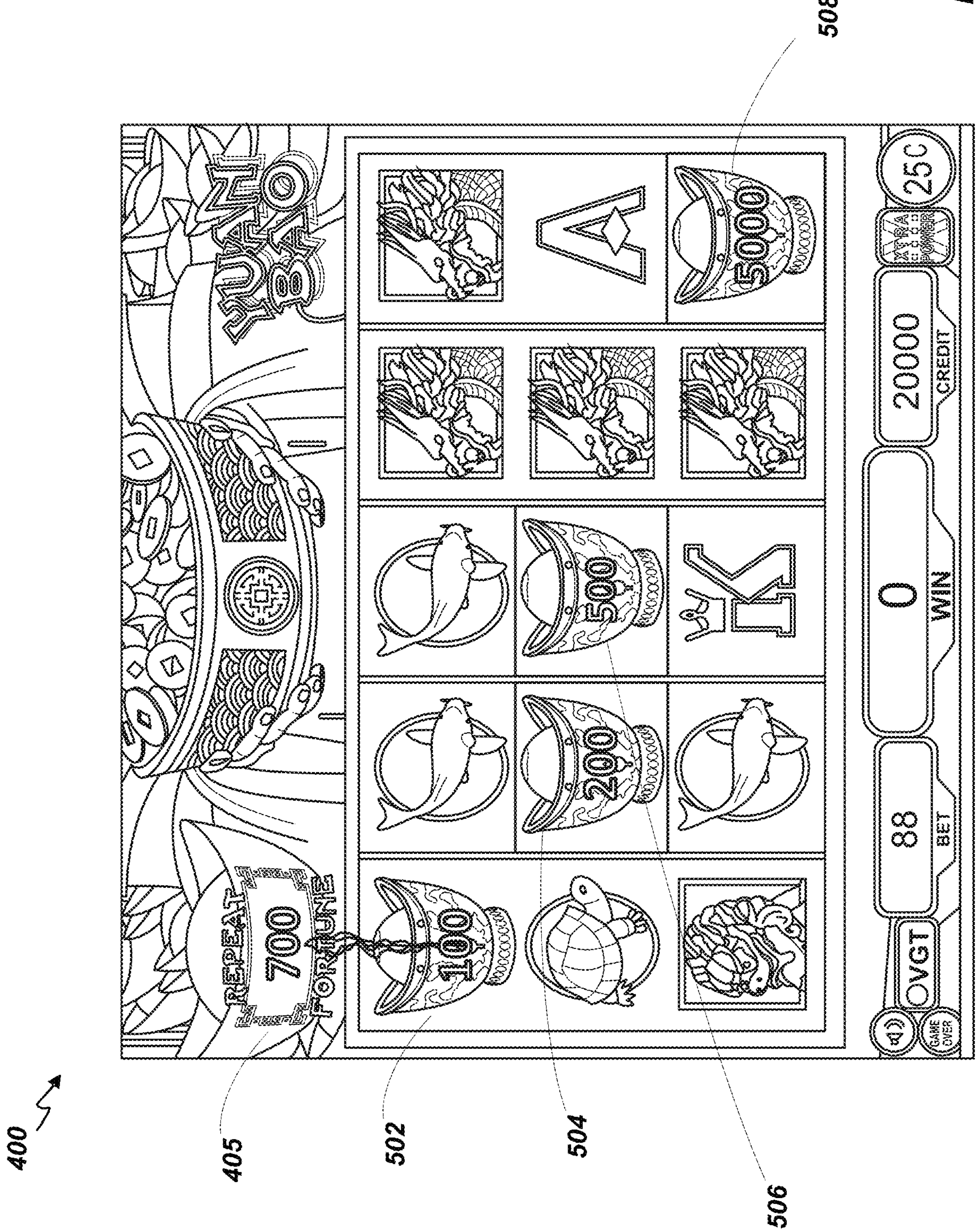
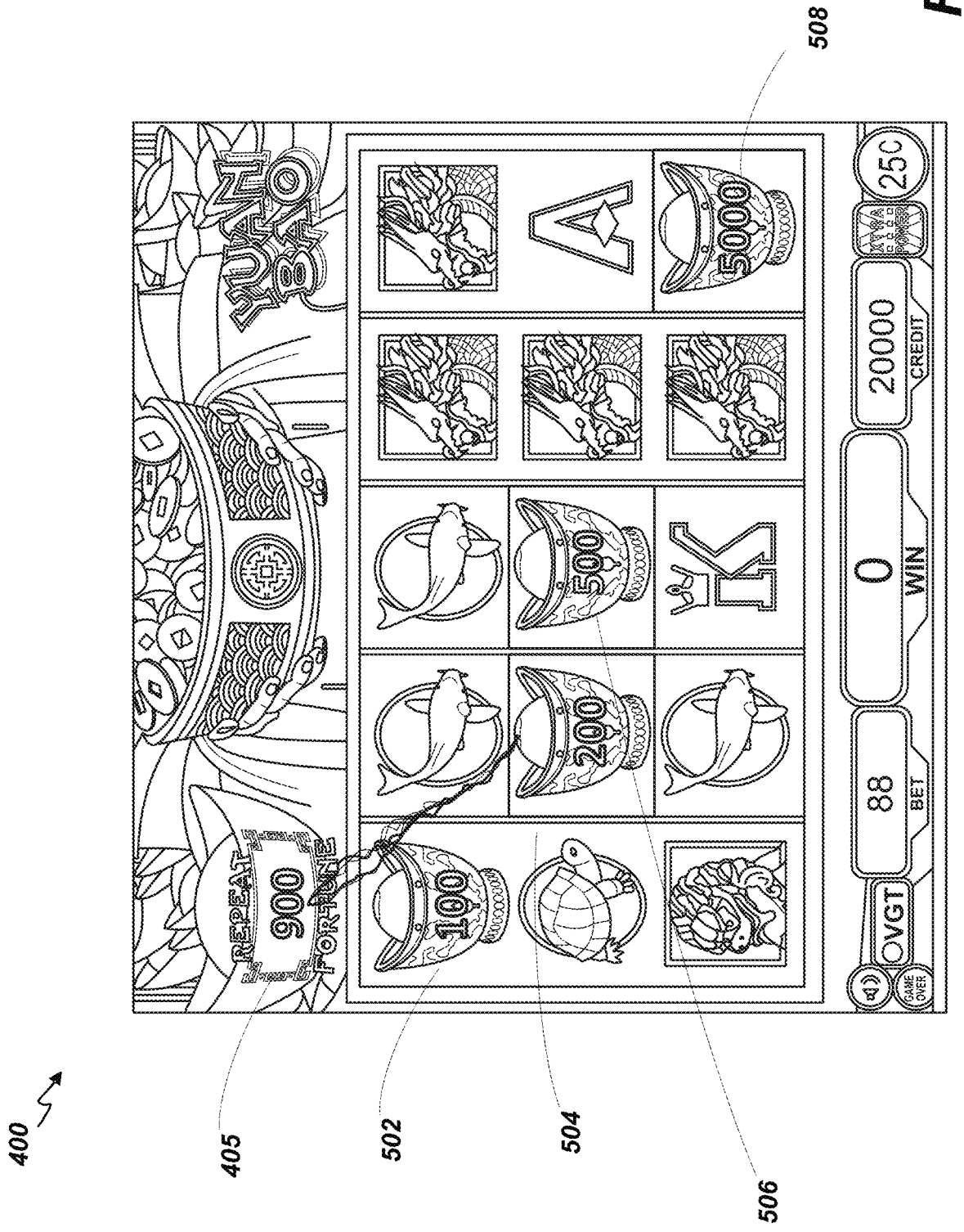

400
405
502
504
506
508
REPEAT
700
FORTUNE
100
200
500
50000
A
K
88
BET
0
WIN
20000
CREDIT
VGT
GAME OVER
25C

FIG. 5

FIG. 6


400
405
502
504
506
508
REPEAT
FORTUNE
900
100
200
500
5000
A
K
0
WIN
20000
CREDIT
88
BET
25C
VGT
GAME OVER

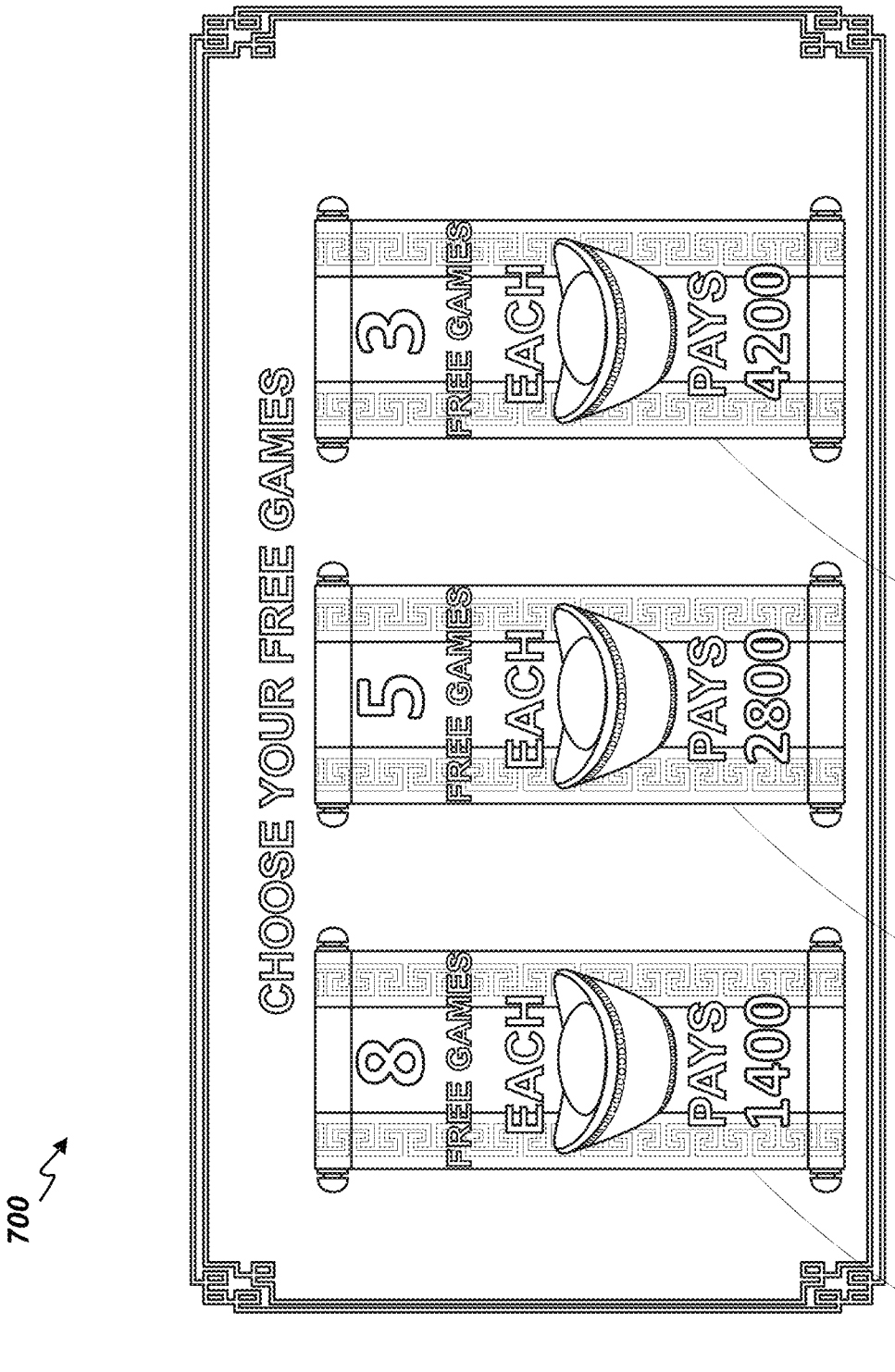
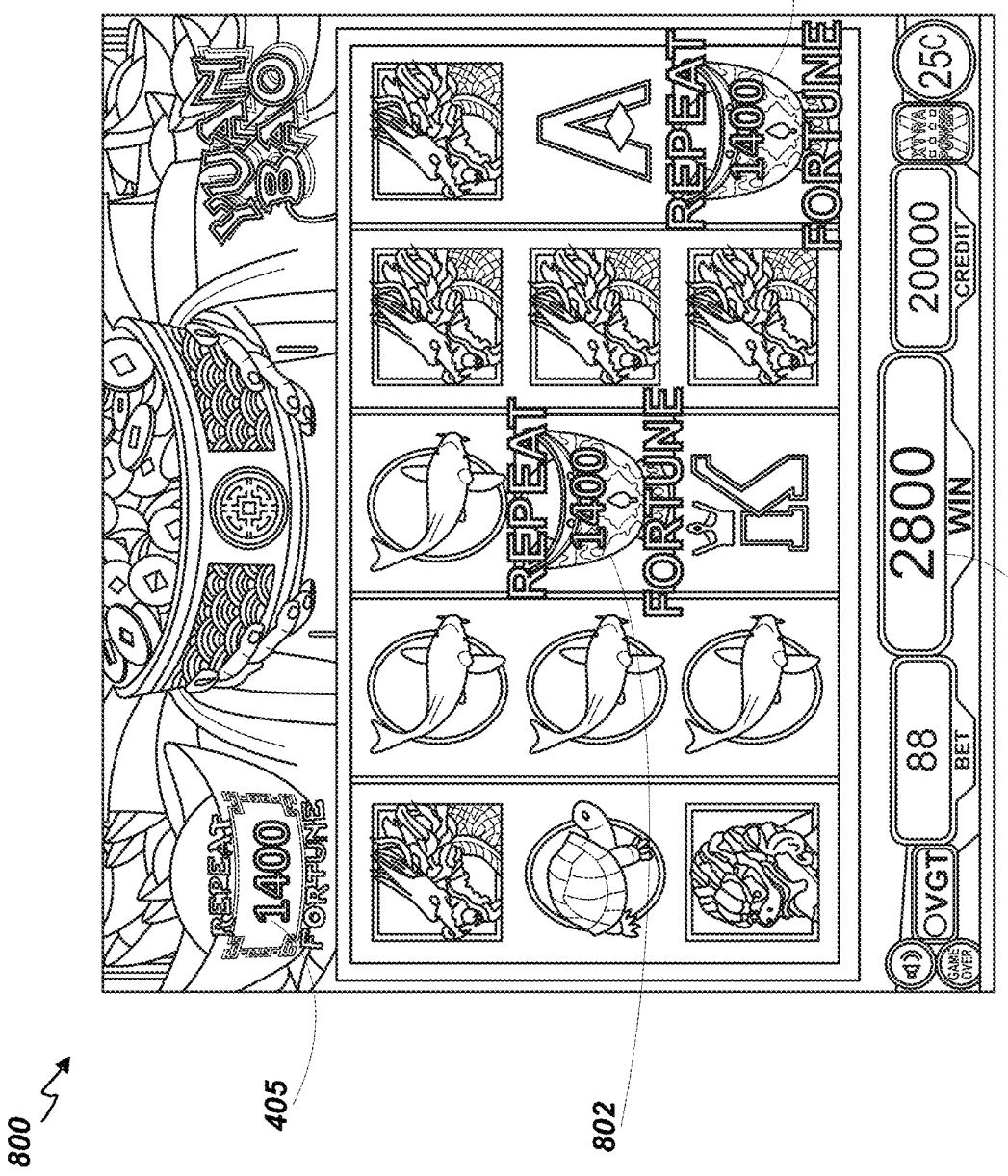

700
CHOOSE YOUR FREE GAMES
8
FREE GAMES
EACH
PAYS
1400
5
FREE GAMES
EACH
PAYS
2800
3
FREE GAMES
EACH
PAYS
4200
702
704
706

FIG. 7



800
405
802
804
810

FIG. 8

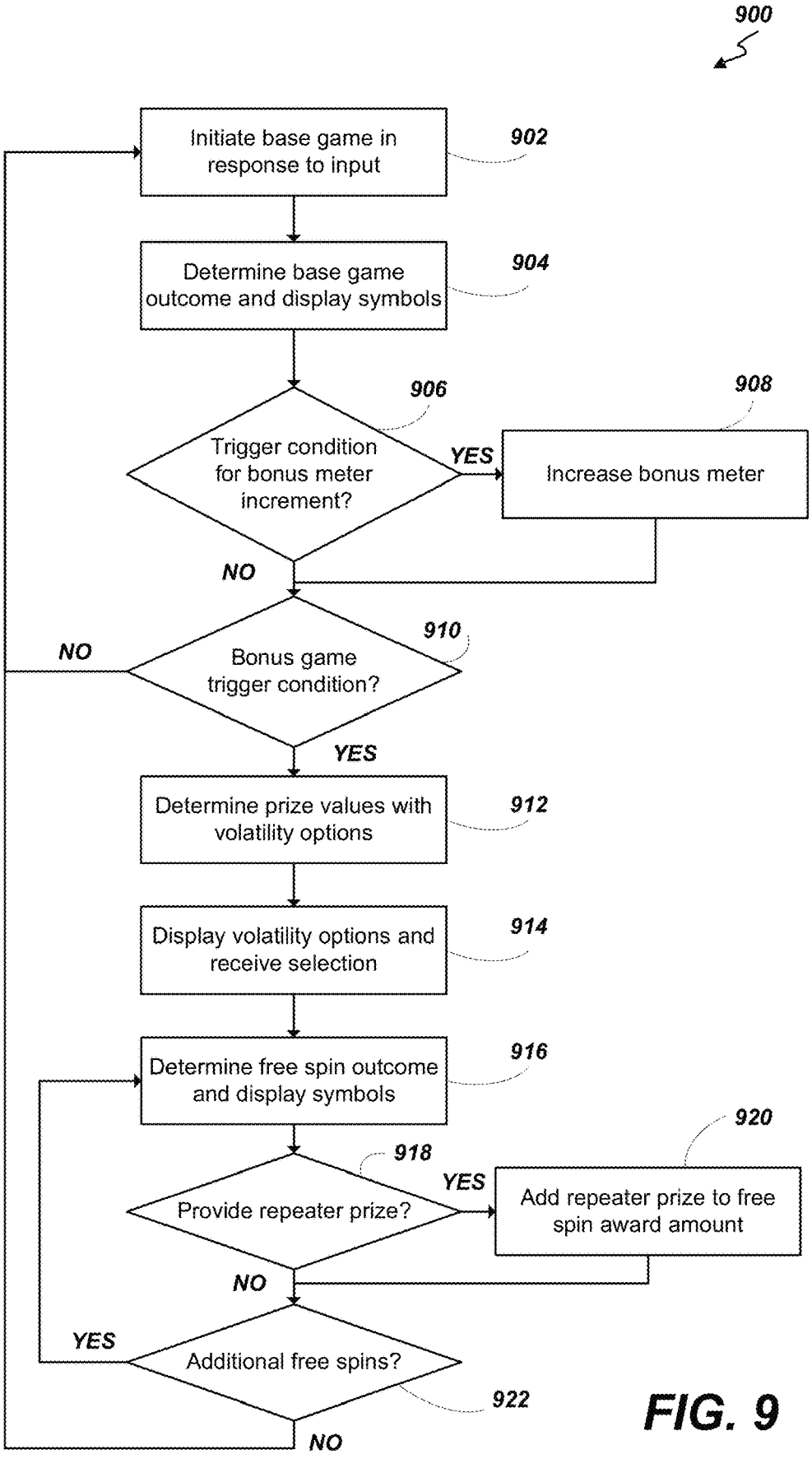

900
Initiate base game in response to input
902
Determine base game outcome and display symbols
904
906
Trigger condition for bonus meter increment?
YES
908
Increase bonus meter
NO
910
Bonus game trigger condition?
NO
YES
Determine prize values with volatility options
912
Display volatility options and receive selection
914
Determine free spin outcome and display symbols
916
920
918
Provide repeater prize?
YES
Add repeater prize to free spin award amount
NO
YES
Additional free spins?
922
NO

FIG. 9

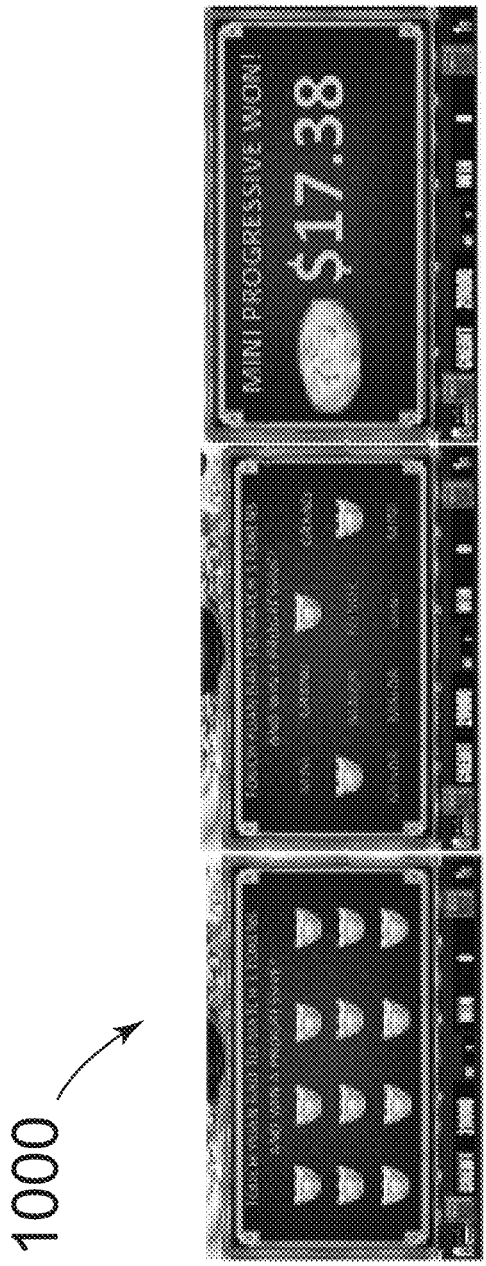


FIG. 10

SYSTEMS AND METHODS FOR BULK INCREMENTING A BONUS PRIZE AND REPEATEDLY PROVIDING THE BONUS PRIZE IN ASSOCIATION WITH A PLURALITY OF FREE SPINS

RELATED APPLICATIONS

This application claims priority to U.S. Provisional Patent Application 62/895,119, filed Sep. 3, 2019 and U.S. Provisional Patent Application 62/894,227, filed Aug. 30, 2019, both of which are incorporated herein by reference in their entirety.

BACKGROUND

Electronic gaming machines ("EGMs") or gaming devices provide a variety of wagering games such as slot games, video poker games, video blackjack games, roulette games, video bingo games, keno games and other types of games that are frequently offered at casinos and other locations. Play on EGMs typically involves a player establishing a credit balance by inputting money, or another form of monetary credit, and placing a monetary wager (from the credit balance) on one or more outcomes of an instance (or single play) of a primary or base game. In many games, a player may qualify for secondary games or bonus rounds by attaining a certain winning combination or triggering event in the base game. Secondary games provide an opportunity to win additional game instances, credits, awards, jackpots, progressives, etc. Awards from any winning outcomes are typically added back to the credit balance and can be provided to the player upon completion of a gaming session or when the player wants to "cash out."

"Slot" type games are often displayed to the player in the form of various symbols arrayed in a row-by-column grid or matrix. Specific matching combinations of symbols along predetermined paths (or paylines) through the matrix indicate the outcome of the game. The display typically highlights winning combinations/outcomes for ready identification by the player. Matching combinations and their corresponding awards are usually shown in a "paytable" which is available to the player for reference. Often, the player may vary his/her wager to include differing numbers of paylines and/or the amount bet on each line. By varying the wager, the player may sometimes alter the frequency or number of winning combinations, frequency or number of secondary games, and/or the amount awarded.

Typical games use a random number generator (RNG) to randomly determine the outcome of each game. The game is designed to return a certain percentage of the amount wagered back to the player over the course of many plays or instances of the game, which is generally referred to as return to player (RTP). The RTP and randomness of the RNG ensure the fairness of the games and are highly regulated. Upon initiation of play, the RNG randomly determines a game outcome and symbols are then selected which correspond to that outcome. Notably, some games may include an element of skill on the part of the player and are therefore not entirely random.

Many conventional wagering games may also include a bonus award, such as a progressive or jackpot award, which may be displayed in a location that is visible to a player and that may be awarded to a player under a variety of conditions. Traditionally, however, these awards are static or simply incremented as a function of wager amount (e.g., typically, 2-3% of a player's wager). Conventional bonus awards are not, however, increased in bulk based upon credit or cash values landing on the reels. Conventional wagering games also only provide a given bonus or jackpot award to a player once. For example, although a player may win a bonus award as a result of a combination of symbols appearing on the reels, bonus awards are not typically provided to a player over and over again. Moreover, although some known wagering games include volatility selection options, these games do not traditionally include any mechanism for increasing a bonus award to an even higher value when a player selects a volatility option.

SUMMARY

In one aspect, an electronic gaming machine is provided. The electronic gaming machine includes a display device, a processor, and a memory storing instructions, which when executed by the processor, cause the processor to at least: control the display device to display a plurality of symbol positions and a bonus meter, the bonus meter displaying an award amount, determine a base game outcome, the base game outcome comprising a plurality of symbols displayed at the plurality of symbol positions, in response to a bonus game trigger condition being satisfied in the base game outcome, control the display device to display a plurality of volatility options, each volatility option associated with a number of free spins and a multiple of the award amount, receive a selection of a first volatility option of the plurality of volatility options, the first volatility option associated with a first plurality of free spins and a first multiple of the award amount, and initiate the first plurality of free spins, and for each spin of the first plurality of free spins, at least: determine an outcome for the spin, the outcome of the spin comprising a plurality of symbols, control the display device to display the plurality of symbols in a plurality of bonus symbol positions, evaluate the plurality of bonus symbol positions to determine whether the plurality of bonus symbol positions include a first quantity of bonus award trigger symbols, and in response to determining that the plurality of bonus symbol positions include the first quantity of bonus award trigger symbols, add the first multiple of the award amount to a free spin award amount.

In another aspect, a computer implemented method is provided. The method includes controlling, by a processor, a display device to display a plurality of symbol positions and a bonus meter, the bonus meter displaying an award amount, determining, by the processor, a base game outcome, the base game outcome comprising a plurality of symbols displayed at the plurality of symbol positions, in response to a bonus game trigger condition being satisfied in the base game outcome, controlling, by the processor, the display device to display a plurality of volatility options, each volatility option associated with a number of free spins and a multiple of the award amount, receiving a selection of a first volatility option of the plurality of volatility options, the first volatility option associated with a first plurality of free spins and a first multiple of the award amount, and initiating the display of the first plurality of free spins, and for each spin of the first plurality of free spins, at least: determining an outcome for the spin, the outcome of the spin comprising a plurality of symbols, controlling the display device to display the plurality of symbols in a plurality of bonus symbol positions, evaluating the plurality of bonus symbol positions to determine whether the plurality of bonus symbol positions include a first quantity of bonus award trigger symbols, and in response to determining that the plurality of bonus symbol positions include the first quantity

of bonus award trigger symbols, adding the first multiple of the award amount to a free spin award amount.

In another aspect, a method of operating a gaming device is provided. The method includes controlling, by a processor, a display device to display a matrix of symbol positions and a bonus meter, the matrix including a plurality of columns and a plurality of rows, the bonus meter including a bonus prize, in response to a bonus game trigger condition being satisfied, controlling, by the processor, the display device to display a plurality of volatility options, each volatility option selectable by a player of the electronic gaming machine and associated with a number of free spins and a multiple or percentage of the bonus prize, receiving, by the processor, a player selection of a first volatility option of the plurality of volatility options, the first volatility option associated with a first plurality of free spins and a first multiple or percentage of the bonus prize, and initiating, by the processor, the first plurality of free spins, and during each free spin of the first plurality of free spins, at least: controlling, by the processor, the display device to display a symbol in each symbol position of the matrix of symbol positions, evaluating, by the processor, the matrix of symbol positions to determine whether the matrix includes at least one free game scatter symbol, and in response to determining that the matrix includes the at least one free game scatter symbol, adding, by the processor, the first multiple or percentage of the bonus prize to a credit balance of the player, whereby the first multiple or percentage of the bonus prize is capable of being repeatedly added to the credit balance of the player during the first plurality of free spins.

In one more aspect, a non-transitory, computer-readable storage medium having instructions stored thereon is provided. The instructions when executed by a processor, cause the processor to control a display device to display a plurality of symbol positions and a bonus meter, the bonus meter displaying an award amount, determine a base game outcome, the base game outcome comprising a plurality of symbols displayed at the plurality of symbol positions, in response to a bonus game trigger condition being satisfied in the base game outcome, control the display device to display a plurality of volatility options, each volatility option associated with a number of free spins and a multiple of the award amount, receive a selection of a first volatility option of the plurality of volatility options, the first volatility option associated with a first plurality of free spins and a first multiple of the award amount, and control the display device to initiate the first plurality of free spins, and for each spin of the first plurality of free spins, at least: determine an outcome for the spin, the outcome of the spin comprising a plurality of symbols, control the display device to display the plurality of symbols in a plurality of bonus symbol positions, evaluate the plurality of bonus symbol positions to determine whether the plurality of bonus symbol positions include a first quantity of bonus award trigger symbols, and in response to determining that the plurality of bonus symbol positions include the first quantity of bonus award trigger symbols, add the first multiple of the award amount to a free spin award amount.

In yet another aspect, a non-transitory, computer-readable storage medium having instructions stored thereon is provided. The instructions when executed by a processor, cause the processor to at least control a display device to display a matrix of symbol positions and a bonus meter, the matrix including a plurality of columns and a plurality of rows, the bonus meter including a bonus prize, in response to a bonus game trigger condition being satisfied, control the display device to display a plurality of volatility options, each volatility option selectable by a player of the electronic gaming machine and associated with a number of free spins and a multiple or percentage of the bonus prize, receive a player selection of a first volatility option of the plurality of volatility options, the first volatility option associated with a first plurality of free spins and a first multiple or percentage of the bonus prize, and initiate the first plurality of free spins, and during each free spin of the first plurality of free spins, at least: control the display device to display a symbol in each symbol position of the matrix of symbol positions; evaluate the matrix of symbol positions to determine whether the matrix includes at least one free game scatter symbol; and in response to determining that the matrix includes the at least one free game scatter symbol, add the first multiple or percentage of the bonus prize to a credit balance of the player, whereby the first multiple or percentage of the bonus prize is capable of being repeatedly added to the credit balance of the player during the first plurality of free spins.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is an exemplary diagram showing several EGMs networked with various gaming related servers;

FIG. **2**A is a block diagram showing various functional elements of an exemplary EGM;

FIG. **2**B depicts a casino gaming environment according to one example;

FIG. **2**C is a diagram that shows examples of components of a system for providing online gaming according to some aspects of the present disclosure;

FIG. **3** illustrates, in block diagram form, an embodiment of a game processing architecture that implements a game processing pipeline for the play of a game in accordance with various embodiments described herein;

FIG. **4** is a screenshot of a wagering game played on an EGM, as shown in FIG. **1** and FIG. **2**A, in which a first designated symbol is displayed in a matrix of symbol positions, and in which a prize associated with the first designated symbol is added to a bonus meter;

FIG. **5** is a screenshot of the wagering game shown in FIG. **4**, in which a second designated symbol is displayed in the matrix of symbol positions, and in which a prize associated with the second designated symbol is added to the bonus meter;

FIG. **6** is a screenshot of the wagering game shown in FIG. **4**, in which a third and a fourth designated symbol are displayed in the matrix of symbol positions, and in which prizes associated with the third and fourth designated symbols are added to the bonus meter;

FIG. **7** is a screenshot of a volatility selection interface of the wagering game shown in FIG. **4**, in which a player is enabled to select a volatility option from a plurality of volatility options, where each volatility option is associated with a plurality of free spins and a multiple of the bonus meter;

FIG. **8** is a screenshot of a bonus game of the wagering game shown in FIG. **4**, in which several designated symbols are displayed in the matrix of symbol positions, and in which each designated symbol causes the selected multiple of the bonus meter to be added to a credit balance of the player; and

FIG. **9** is a screenshot of a jackpot game of the wagering game shown in FIG. **4**;

FIG. **10** is a screenshot of a jackpot game according to an embodiment of the present disclosure.

DETAILED DESCRIPTION

Embodiments of the present disclosure provide systems and methods for incrementing a bonus prize based upon

credit values displayed on designated symbols appearing in a matrix of symbol positions of a base game. In addition to incrementing the bonus prize during the base game, a bonus game may be triggered based upon the occurrence of one or more designated symbols in the matrix. During the bonus game, a player may select a volatility option, which may be used to determine to adjust (e.g., increase) the prize value accumulated in the base game. The selected volatility option may also specify a number of free spins. Once a volatility selection is made by the player, the player is awarded the number of free spins associated with the option, and during each free spin, if any designated symbols land in the matrix, the player is provided the adjusted prize value for each occurrence of a designated symbol. Thus, the adjusted prize value may be repeatedly provided to a player over the course of a plurality of free spins.

FIG. **1** illustrates several different models of EGMs which may be networked to various gaming related servers. Shown is a system **100** in a gaming environment including one or more server computers **102** (e.g., slot servers of a casino) that are in communication, via a communications network, with one or more gaming devices **104**A-**104**X (EGMs, slots, video poker, bingo machines, etc.) that can implement one or more aspects of the present disclosure. The gaming devices **104**A-**104**X may alternatively be portable and/or remote gaming devices such as, but not limited to, a smart phone, a tablet, a laptop, or a game console. Gaming devices **104**A-**104**X utilize specialized software and/or hardware to form non-generic, particular machines or apparatuses that comply with regulatory requirements regarding devices used for wagering or games of chance that provide monetary awards.

Communication between the gaming devices **104**A-**104**X and the server computers **102**, and among the gaming devices **104**A-**104**X, may be direct or indirect using one or more communication protocols. As an example, gaming devices **104**A-**104**X and the server computers **102** can communicate over one or more communication networks, such as over the Internet through a website maintained by a computer on a remote server or over an online data network including commercial online service providers, Internet service providers, private networks (e.g., local area networks and enterprise networks), and the like (e.g., wide area networks). The communication networks could allow gaming devices **104**A-**104**X to communicate with one another and/or the server computers **102** using a variety of communication-based technologies, such as radio frequency (RF) (e.g., wireless fidelity (WiFi®) and Bluetooth®), cable TV, satellite links and the like.

In some embodiments, server computers **102** may not be necessary and/or preferred. For example, in one or more embodiments, a stand-alone gaming device such as gaming device **104**A, gaming device **104**B or any of the other gaming devices **104**C-**104**X can implement one or more aspects of the present disclosure. However, it is typical to find multiple EGMs connected to networks implemented with one or more of the different server computers **102** described herein.

The server computers **102** may include a central determination gaming system server **106**, a ticket-in-ticket-out (TITO) system server **108**, a player tracking system server **110**, a progressive system server **112**, and/or a casino management system server **114**. Gaming devices **104**A-**104**X may include features to enable operation of any or all servers for use by the player and/or operator (e.g., the casino, resort, gaming establishment, tavern, pub, etc.). For example, game outcomes may be generated on a central determination gaming system server **106** and then transmitted over the network to any of a group of remote terminals or remote gaming devices **104**A-**104**X that utilize the game outcomes and display the results to the players.

Gaming device **104**A is often of a cabinet construction which may be aligned in rows or banks of similar devices for placement and operation on a casino floor. The gaming device **104**A often includes a main door **154** which provides access to the interior of the cabinet. Gaming device **104**A typically includes a button area or button deck **120** accessible by a player that is configured with input switches or buttons **122**, an access channel for a bill validator **124**, and/or an access channel for a ticket-out printer **126**.

In FIG. **1**, gaming device **104**A is shown as a Relm XL™ model gaming device manufactured by Aristocrat® Technologies, Inc. As shown, gaming device **104**A is a reel machine having a gaming display area **118** comprising a number (typically 3 or 5) of mechanical reels **130** with various symbols displayed on them. The reels **130** are independently spun and stopped to show a set of symbols within the gaming display area **118** which may be used to determine an outcome to the game.

In many configurations, the gaming machine **104**A may have a main display **128** (e.g., video display monitor) mounted to, or above, the gaming display area **118**. The main display **128** can be a high-resolution LCD, plasma, LED, or OLED panel which may be flat or curved as shown, a cathode ray tube, or other conventional electronically controlled video monitor.

In some embodiments, the bill validator **124** may also function as a "ticket-in" reader that allows the player to use a casino issued credit ticket to load credits onto the gaming device **104**A (e.g., in a cashless ticket ("TITO") system). In such cashless embodiments, the gaming device **104**A may also include a "ticket-out" printer **126** for outputting a credit ticket when a "cash out" button is pressed. Cashless TITO systems are used to generate and track unique bar-codes or other indicators printed on tickets to allow players to avoid the use of bills and coins by loading credits using a ticket reader and cashing out credits using a ticket-out printer **126** on the gaming device **104**A. The gaming machine **104**A can have hardware meters for purposes including ensuring regulatory compliance and monitoring the player credit balance. In addition, there can be additional meters that record the total amount of money wagered on the gaming machine, total amount of money deposited, total amount of money withdrawn, total amount of winnings on gaming device **104**A.

In some embodiments, a player tracking card reader **144**, a transceiver for wireless communication with a mobile device (e.g., a player's smartphone), a keypad **146**, and/or an illuminated display **148** for reading, receiving, entering, and/or displaying player tracking information is provided in EGM **104**A. In such embodiments, a game controller within the gaming device **104**A can communicate with the player tracking system server **110** to send and receive player tracking information.

Gaming device **104**A may also include a bonus topper wheel **134**. When bonus play is triggered (e.g., by a player achieving a particular outcome or set of outcomes in the primary game), bonus topper wheel **134** is operative to spin and stop with indicator arrow **136** indicating the outcome of the bonus game. Bonus topper wheel **134** is typically used to play a bonus game, but it could also be incorporated into play of the base or primary game.

A candle **138** may be mounted on the top of gaming device **104**A and may be activated by a player (e.g., using a

switch or one of buttons **122**) to indicate to operations staff that gaming device **104**A has experienced a malfunction or the player requires service. The candle **138** is also often used to indicate a jackpot has been won and to alert staff that a hand payout of an award may be needed.

There may also be one or more information panels **152** which may be a back-lit, silkscreened glass panel with lettering to indicate general game information including, for example, a game denomination (e.g., $0.25 or $1), pay lines, pay tables, and/or various game related graphics. In some embodiments, the information panel(s) **152** may be implemented as an additional video display.

Gaming devices **104**A have traditionally also included a handle **132** typically mounted to the side of main cabinet **116** which may be used to initiate game play.

Many or all the above described components can be controlled by circuitry (e.g., a gaming controller) housed inside the main cabinet **116** of the gaming device **104**A, the details of which are shown in FIG. **2**A.

An alternative example gaming device **104**B illustrated in FIG. **1** is the Arc™ model gaming device manufactured by Aristocrat® Technologies, Inc. Note that where possible, reference numerals identifying similar features of the gaming device **104**A embodiment are also identified in the gaming device **104**B embodiment using the same reference numbers. Gaming device **104**B does not include physical reels and instead shows game play functions on main display **128**. An optional topper screen **140** may be used as a secondary game display for bonus play, to show game features or attraction activities while a game is not in play, or any other information or media desired by the game designer or operator. In some embodiments, topper screen **140** may also or alternatively be used to display progressive jackpot prizes available to a player during play of gaming device **104**B.

Example gaming device **104**B includes a main cabinet **116** including a main door **154** which opens to provide access to the interior of the gaming device **104**B. The main or service door **154** is typically used by service personnel to refill the ticket-out printer **126** and collect bills and tickets inserted into the bill validator **124**. The main or service door **154** may also be accessed to reset the machine, verify and/or upgrade the software, and for general maintenance operations.

Another example gaming device **104**C shown is the Helix™ model gaming device manufactured by Aristocrat® Technologies, Inc. Gaming device **104**C includes a main display **128**A that is in a landscape orientation. Although not illustrated by the front view provided, the landscape display **128**A may have a curvature radius from top to bottom, or alternatively from side to side. In some embodiments, display **128**A is a flat panel display. Main display **128**A is typically used for primary game play while secondary display **128**B is typically used for bonus game play, to show game features or attraction activities while the game is not in play or any other information or media desired by the game designer or operator. In some embodiments, example gaming device **104**C may also include speakers **142** to output various audio such as game sound, background music, etc.

Many different types of games, including mechanical slot games, video slot games, video poker, video black jack, video pachinko, keno, bingo, and lottery, may be provided with or implemented within the depicted gaming devices **104**A-**104**C and other similar gaming devices. Each gaming device may also be operable to provide many different games. Games may be differentiated according to themes, sounds, graphics, type of game (e.g., slot game vs. card game vs. game with aspects of skill), denomination, number of paylines, maximum jackpot, progressive or non-progressive, bonus games, and may be deployed for operation in Class 2 or Class 3, etc.

FIG. **2**A is a block diagram depicting exemplary internal electronic components of a gaming device **200** connected to various external systems. All or parts of the example gaming device **200** shown could be used to implement any one of the example gaming devices **104**A-X depicted in FIG. **1**. As shown in FIG. **2**A, gaming device **200** includes a topper display **216** or another form of a top box (e.g., a topper wheel, a topper screen, etc.) that sits above cabinet **218**. Cabinet **218** or topper display **216** may also house a number of other components which may be used to add features to a game being played on gaming device **200**, including speakers **220**, a ticket printer **222** which prints bar-coded tickets or other media or mechanisms for storing or indicating a player's credit value, a ticket reader **224** which reads bar-coded tickets or other media or mechanisms for storing or indicating a player's credit value, and a player tracking interface **232**. Player tracking interface **232** may include a keypad **226** for entering information, a player tracking display **228** for displaying information (e.g., an illuminated or video display), a card reader **230** for receiving data and/or communicating information to and from media or a device such as a smart phone enabling player tracking. FIG. **2**A also depicts utilizing a ticket printer **222** to print tickets for a TITO system server **108**. Gaming device **200** may further include a bill validator **234**, player-input buttons **236** for player input, cabinet security sensors **238** to detect unauthorized opening of the cabinet **218**, a primary game display **240**, and a secondary game display **242**, each coupled to and operable under the control of game controller **202**.

The games available for play on the gaming device **200** are controlled by a game controller **202** that includes one or more processors **204**. Processor **204** represents a general-purpose processor, a specialized processor intended to perform certain functional tasks, or a combination thereof. As an example, processor **204** can be a central processing unit (CPU) that has one or more multi-core processing units and memory mediums (e.g., cache memory) that function as buffers and/or temporary storage for data. Alternatively, processor **204** can be a specialized processor, such as an application specific integrated circuit (ASIC), graphics processing unit (GPU), field-programmable gate array (FPGA), digital signal processor (DSP), or another type of hardware accelerator. In another example, processor **204** is a system on chip (SoC) that combines and integrates one or more general-purpose processors and/or one or more specialized processors. Although FIG. **2**A illustrates that game controller **202** includes a single processor **204**, game controller **202** is not limited to this representation and instead can include multiple processors **204** (e.g., two or more processors).

FIG. **2**A illustrates that processor **204** is operatively coupled to memory **208**. Memory **208** is defined herein as including volatile and nonvolatile memory and other types of non-transitory data storage components. Volatile memory is memory that do not retain data values upon loss of power. Nonvolatile memory is memory that do retain data upon a loss of power. Examples of memory **208** include random access memory (RAM), read-only memory (ROM), hard disk drives, solid-state drives, USB flash drives, memory cards accessed via a memory card reader, floppy disks accessed via an associated floppy disk drive, optical discs accessed via an optical disc drive, magnetic tapes accessed via an appropriate tape drive, and/or other memory compo-

nents, or a combination of any two or more of these memory components. In addition, examples of RAM include static random access memory (SRAM), dynamic random access memory (DRAM), magnetic random access memory (MRAM), and other such devices. Examples of ROM include a programmable read-only memory (PROM), an erasable programmable read-only memory (EPROM), an electrically erasable programmable read-only memory (EEPROM), or other like memory device. Even though FIG. **2**A illustrates that game controller **202** includes a single memory **208**, game controller **202** could include multiple memories **208** for storing program instructions and/or data.

Memory **208** can store one or more game programs **206** that provide program instructions and/or data for carrying out various embodiments (e.g., game mechanics) described herein. Stated another way, game program **206** represents an executable program stored in any portion or component of memory **208**. In one or more embodiments, game program **206** is embodied in the form of source code that includes human-readable statements written in a programming language or machine code that contains numerical instructions recognizable by a suitable execution system, such as a processor **204** in a game controller or other system. Examples of executable programs include: (1) a compiled program that can be translated into machine code in a format that can be loaded into a random access portion of memory **208** and run by processor **204**; (2) source code that may be expressed in proper format such as object code that is capable of being loaded into a random access portion of memory **208** and executed by processor **204**; and (3) source code that may be interpreted by another executable program to generate instructions in a random access portion of memory **208** to be executed by processor **204**.

Alternatively, game programs **206** can be setup to generate one or more game instances based on instructions and/or data that gaming device **200** exchange with one or more remote gaming devices, such as a central determination gaming system server **106** (not shown in FIG. **2**A but shown in FIG. **1**). For purpose of this disclosure, the term "game instance" refers to a play or a round of a game that gaming device **200** presents (e.g., via a user interface (UI)) to a player. The game instance is communicated to gaming device **200** via the network **214** and then displayed on gaming device **200**. For example, gaming device **200** may execute game program **206** as video streaming software that allows the game to be displayed on gaming device **200**. When a game is stored on gaming device **200**, it may be loaded from memory **208** (e.g., from a read only memory (ROM)) or from the central determination gaming system server **106** to memory **208**.

Gaming devices, such as gaming device **200**, are highly regulated to ensure fairness and, in many cases, gaming device **200** is operable to award monetary awards (e.g., typically dispensed in the form of a redeemable voucher). Therefore, to satisfy security and regulatory requirements in a gaming environment, hardware and software architectures are implemented in gaming devices **200** that differ significantly from those of general-purpose computers. Adapting general purpose computers to function as gaming devices **200** is not simple or straightforward because of: (1) the regulatory requirements for gaming devices **200**, (2) the harsh environment in which gaming devices **200** operate, (3) security requirements, (4) fault tolerance requirements, and (5) the requirement for additional special purpose componentry enabling functionality of an EGM. These differences require substantial engineering effort with respect to game design implementation, game mechanics, hardware components, and software.

One regulatory requirement for games running on gaming device **200** generally involves complying with a certain level of randomness. Typically, gaming jurisdictions mandate that gaming devices **200** satisfy a minimum level of randomness without specifying how a gaming device **200** should achieve this level of randomness. To comply, FIG. **2**A illustrates that gaming device **200** includes an RNG **212** and/or hardware RNG **244** that utilizes hardware and/or software to generate RNG outcomes that lack any pattern. The RNG operations are often specialized and non-generic in order to comply with regulatory and gaming requirements. For example, in a reel game, game program **206** can initiate multiple RNG calls to RNG **212** to generate RNG outcomes, where each RNG call and RNG outcome corresponds to an outcome for a reel. In another example, gaming device **200** can be a Class II gaming device where RNG **212** generates RNG outcomes for creating Bingo cards. In one or more embodiments, RNG **212** could be one of a set of RNGs operating on gaming device **200**. Game developers could vary the degree of true randomness for each RNG (e.g., pseudorandom) and utilize specific RNGs depending on game requirements.

Another regulatory requirement for running games on gaming device **200** includes ensuring a certain level of RTP. Similar to the randomness requirement discussed above, numerous gaming jurisdictions also mandate that gaming device **200** provides a minimum level of RTP (e.g., RTP of at least 75%). FIG. **2**A illustrates that gaming device **200** includes an RNG conversion engine **210** that translates the RNG outcome from RNG **212** to a game outcome presented to a player. To meet a designated RTP, a game developer can setup the RNG conversion engine **210** to utilize one or more lookup tables to translate the RNG outcome to a symbol element, stop position on a reel strip layout, and/or randomly chosen aspect of a game feature. As an example, the lookup tables can regulate a prize payout amount for each RNG outcome and how often the gaming device **200** pays out the prize payout amounts. The RNG conversion engine **210** could utilize one lookup table to map the RNG outcome to a game outcome displayed to a player and a second lookup table as a pay table for determining the prize payout amount for each game outcome. The mapping between the RNG outcome to the game outcome controls the frequency in hitting certain prize payout amounts.

FIG. **2**A also depicts that gaming device **200** is connected over network **214** to player tracking system server **110**. Player tracking system server **110** may be, for example, an OASIS® system manufactured by Aristocrat® Technologies, Inc. Player tracking system server **110** is used to track play (e.g. amount wagered, games played, time of play and/or other quantitative or qualitative measures) for individual players so that an operator may reward players in a loyalty program. The player may use the player tracking interface **232** to access his/her account information, activate free play, and/or request various information. Player tracking or loyalty programs seek to reward players for their play and help build brand loyalty to the gaming establishment. The rewards typically correspond to the player's level of patronage (e.g., to the player's playing frequency and/or total amount of game plays at a given casino). Player tracking rewards may be complimentary and/or discounted meals, lodging, entertainment and/or additional play. Player tracking information may be combined with other information that is now readily obtainable by a casino management system.

When a player wishes to play the gaming device **200**, he/she can insert cash or a ticket voucher through a coin acceptor (not shown) or bill validator **234** to establish a credit balance on the gamine machine. The credit balance is used by the player to place wagers on instances of the game and to receive credit awards based on the outcome of winning instances. The credit balance is decreased by the amount of each wager and increased upon a win. The player can add additional credits to the balance at any time. The player may also optionally insert a loyalty club card into the card reader **230**. During the game, the player views with one or more UIs, the game outcome on one or more of the primary game display **240** and secondary game display **242**. Other game and prize information may also be displayed.

For each game instance, a player may make selections, which may affect play of the game. For example, the player may vary the total amount wagered by selecting the amount bet per line and the number of lines played. In many games, the player is asked to initiate or select options during course of game play (such as spinning a wheel to begin a bonus round or select various items during a feature game). The player may make these selections using the player-input buttons **236**, the primary game display **240** which may be a touch screen, or using some other device which enables a player to input information into the gaming device **200**.

During certain game events, the gaming device **200** may display visual and auditory effects that can be perceived by the player. These effects add to the excitement of a game, which makes a player more likely to enjoy the playing experience. Auditory effects include various sounds that are projected by the speakers **220**. Visual effects include flashing lights, strobing lights or other patterns displayed from lights on the gaming device **200** or from lights behind the information panel **152** (FIG. **1**).

When the player is done, he/she cashes out the credit balance (typically by pressing a cash out button to receive a ticket from the ticket printer **222**). The ticket may be "cashed-in" for money or inserted into another machine to establish a credit balance for play.

Although FIGS. **1** and **2**A illustrates specific embodiments of a gaming device (e.g., gaming devices **104**A-**104**X and **200**), the disclosure is not limited to those embodiments shown in FIGS. **1** and **2**A. For example, not all gaming devices suitable for implementing embodiments of the present disclosure necessarily include top wheels, top boxes, information panels, cashless ticket systems, and/or player tracking systems. Further, some suitable gaming devices have only a single game display that includes only a mechanical set of reels and/or a video display, while others are designed for bar counters or table tops and have displays that face upwards. Additionally, or alternatively, gaming devices **104**A-**104**X and **200** can include credit transceivers that wirelessly communicate (e.g., Bluetooth or other near-field communication technology) with one or more mobile devices to perform credit transactions. As an example, bill validator **234** could contain or be coupled to the credit transceiver that output credits from and/or load credits onto the gaming device **104**A by communicating with a player's smartphone (e.g., a digital wallet interface). Gaming devices **104**A-**104**X and **200** may also include other processors that are not separately shown. Using FIG. **2**A as an example, gaming device **200** could include display controllers (not shown in FIG. **2**A) configured to receive video input signals or instructions to display images on game displays **240** and **242**. Alternatively, such display controllers may be integrated into the game controller **202**. The use and discussion of FIGS. **1** and **2**A are examples to facilitate ease of description and explanation.

FIG. **2**B depicts a casino gaming environment **251** according to one example. In this example, each bank **252** of EGMs **104** (shown in FIG. **1**) includes a corresponding gaming signage system **254** (also shown in FIG. **2**A). Environment **251** includes mobile devices **256**. In this example, the mobile devices **256** may be communication with one or more other devices in the casino **251**, including one or more of the server computers **102**, via wireless access points **258**. In some implementations, the casino **251** may include one or more kiosks **260** for use by one or more patrons **262**.

FIG. **2**C is a diagram that shows examples of components of a system for providing online gaming according to some aspects of the present disclosure. In this example, mobile devices **264***a*, **264***b*, and **264***c* are operated by users **274***a*-**274***c* and are capable of communication via one or more networks **417**. A mobile device **264***c* may be within a residence **266**. A data center **276** is capable of communication with the networks **417** via a gateway **272**. In this example, switches **278** and routers **280** are configured to provide network connectivity for devices of the data center **276**, including storage devices **282***a*, servers **284***a*, and one or more workstations **286***a*. In this example, a data center **270** is also configured for communication via the networks **417**. Here, the data center **270** includes storage devices **282***b*, servers **284***b*, and one or more workstations **286***b*.

FIG. **3** illustrates, in block diagram form, an embodiment of a game processing architecture **300** that implements a game processing pipeline for the play of a game in accordance with various embodiments described herein. As shown in FIG. **3**, the gaming processing pipeline starts with having a UI system **302** receive one or more player inputs for the game instance. Based on the player input(s), the UI system **302** generates and sends one or more RNG calls to a game processing backend system **314**. Game processing backend system **314** then processes the RNG calls with RNG engine **316** to generate one or more RNG outcomes. The RNG outcomes are then sent to the RNG conversion engine **320** to generate one or more game outcomes for the UI system **302** to display to a player. The game processing architecture **300** can implement the game processing pipeline using a gaming device, such as gaming devices **104**A-**104**X and **200** shown in FIGS. **1** and **2**A, respectively. Alternatively, portions of the gaming processing architecture **300** can implement the game processing pipeline using a gaming device and one or more remote gaming devices, such as central determination gaming system server **106** shown in FIG. **1**.

The UI system **302** includes one or more UIs that a player can interact with. The UI system **302** could include one or more game play UIs **304**, one or more bonus game play UIs **304**, and one or more multiplayer UIs **306**, where each UI type includes one or more mechanical UIs and/or graphical UIs (GUIs). In other words, game play UI **304**, bonus game play UI **304**, and the multiplayer UI **304** may utilize a variety of UI elements, such as mechanical UI elements (e.g., physical "spin" button or mechanical reels) and/or GUI elements (e.g., virtual reels shown on a video display or a virtual button deck) to receive player inputs and/or present game play to a player. Using FIG. **3** as an example, the different UI elements are shown as game play UI elements **306**A-**306**N and bonus game play UI elements **310**A-**310**N.

The game play UI **304** represents a UI that a player typically interfaces with for a base game. During a game

instance of a base game, the game play UI elements **306**A-**306**N (e.g., GUI elements depicting one or more virtual reels) are shown and/or made available to a user. In a subsequent game instance, the UI system **302** could transition out of the base game to one or more bonus games. The bonus game play UI **308** represents a UI that utilizes bonus game play UI elements **310**A-**310**N for a player to interact with and/or view during a bonus game. In one or more embodiments, at least some of the game play UI element **306**A-**306**N are similar to the bonus game play UI elements **310**A-**310**N. In other embodiments, the game play UI element **306**A-**306**N can differ from to the bonus game play UI elements **310**A-**310**N.

FIG. **3** also illustrates that UI system **302** could include a multiplayer UI **312** purposed for game play that differ or is separate from the typical base game. For example, multiplayer UI **302** could be set up to receive player inputs and/or presents game play information relating to a tournament mode. When a gaming device transitions from a primary game mode that presents the base game to a tournament mode, a single gaming device is linked and synchronized to other gaming devices to generate a tournament outcome. For example, multiple RNG engines **316** corresponding to each gaming device could be collectively linked to determine a tournament outcome. To enhance a player's gaming experience, tournament mode can modify and synchronize sound, music, reel spin speed, and/or other operations of the gaming devices according to the tournament game play. After tournament game play ends, operators can switch back the gaming device from tournament mode to a primary game mode to present the base game. Although FIG. **3** does not explicitly depict that multiplayer UI **312** includes UI elements, multiplayer UI **312** could also include one or more multiplayer UI elements.

Based on the player inputs, the UI system **302** could generate RNG calls to a game processing backend system **314**. As an example, the UI system **302** could use one or more application programming interfaces (APIs) to generate the RNG calls. To process the RNG calls, the RNG engine **316** could utilize gaming RNG **318** and/or non-gaming RNGs **319**A-**319**N. Gaming RNG **318** corresponds to RNG **212** shown in FIG. **2**A. As previously discussed with reference to FIG. **2**A, gaming RNG **318** often performs specialized and non-generic operations that comply with regulatory and/or game requirements. For example, because of regulation requirements, gaming RNG **318** could be a cryptographic random or pseudorandom number generator (PRNG) (e.g., Fortuna PRNG) that securely produces random numbers for one or more game features. To generate random numbers, gaming RNG **318** could collect random data from various sources of entropy, such as from an operating system (OS). Alternatively, non-gaming RNGs **319**A-**319**N may not be cryptographically secure and/or be computational less expensive. Non-gaming RNGS **319**A-**319**N can, thus, be used to generate outcomes for non-gaming purposes. As an example, non-gaming RNGs **319**A-**319**N can generate random numbers for such as generating random messages that appear on the gaming device. The RNG conversion engine **320** processes each RNG outcome from RNG engine **316** and converts the RNG outcome to a UI outcome that is feedback to the UI system **302**. With reference to FIG. **2**A, RNG conversion engine **320** corresponds to RNG conversion engine **210** used for game play. As previously described, RNG conversion engine **320** translates the RNG outcome from the RNG **212** to a game outcome presented to a player. RNG conversion engine **320** utilizes one or more lookup tables **322**A-**322**N to regulate a prize payout amount for each RNG outcome and how often the gaming device pays out the derived prize payout amounts. In one example, the RNG conversion engine **320** could utilize one lookup table to map the RNG outcome to a game outcome displayed to a player and a second lookup table as a pay table for determining the prize payout amount for each game outcome. In this example, the mapping between the RNG outcome to the game outcome controls the frequency in hitting certain prize payout amounts. Different lookup tables could be utilized depending on the different game modes, for example, a base game versus a bonus game.

After generating the UI outcome, the game processing backend system **314** sends the UI outcome to the UI system **302**. Examples of UI outcomes are symbols to display on a video reel or reel stops for a mechanical reel. In one example, if the UI outcome is for a base game, the UI system **302** updates one or more game play UI elements **306**A-**306**N, such as symbols, for the game play UI **304**. In another example, if the UI outcome is for a bonus game, the UI system could update one or more bonus game play UI elements **310**A-**310**N (e.g., symbols) for the bonus game play UI **308**. In response to the updating the appropriate UI, the player may subsequently provide additional player inputs to initiate a subsequent game instance that progresses through the game processing pipeline.

FIG. **4** is an example screen of a user interface **400** in accordance with various aspects of the present disclosure. In the example screen of FIG. **4**, user interface **400** shows a game that includes a matrix of symbol positions **402** (or simply "matrix" **402**). The symbol positions of matrix **402** are arranged in a plurality of rows and a plurality of columns. More particularly, in the example embodiment, matrix **402** is a 3×5 matrix having three rows and five columns. However, in other embodiments, matrix **402** may be any size (e.g., 2×2, 3×3, 4×4, 10×10, etc.). In other embodiments, matrix **402** may be non-rectangular, such as a 3×4×5×4×3 configuration, or any other configuration.

Each row of matrix **402** is designated as **404***a*, **404***b*, and **404***c*. Each column of matrix **402** is designated as **403***a*, **403***b*, **403***c*, **403***d*, and **403***e*. As a result, and in the example embodiment, matrix **402** includes fifteen symbol positions. However, a number of symbol positions in matrix **402** may vary depending upon a number of rows and columns displayed in matrix **402**. In some embodiments, matrix **402** may be replaced by one or more mechanical reels, and the embodiments described herein work equally well with mechanical reels as with matrix **402**. Further, each column **403***a-e* of matrix **402** may be represented as a virtual reel that can be displayed as spinning. After each reel stops, symbols displayed on the reel match up with display positions on matrix **402**.

As described herein, during play of user interface **400**, symbols may be selected (e.g., such as from a plurality of reel strips) and displayed in the symbol positions of each column of symbols within matrix **402**. A "reel strip" may include a plurality of symbols arranged in a vertical column. To display symbols from a reel strip in a column of symbol positions within matrix **402**, processor **204** may simulate spinning and stopping of a reel containing that reel strip within one or more columns of matrix **402**. Here again, however, mechanical reels having physical reel strips may be used as well.

When a respective reel is simulated to stop within an associated column, one or more symbols may be displayed from the reel strip in the symbol positions of the column. Processor **204** may use a random number generator to

generate a random number to determine the reel stop position of each of the reels. The symbols displayed after spinning and stopping each reel in a respective column of matrix **402** may be referred to herein as a "reel outcome" or a "reel game outcome." Thus, a rotation and stopping of a plurality of reels may be simulated by processor **204** within the columns of matrix **402** to cause a reel outcome, including a plurality of symbols, to be displayed from the plurality of reel strips within the columns of matrix **402**.

It will also be appreciated that symbols may be displayed in matrix **402** in response to one or more player wagers and/or, in some cases, when one or more free spins are awarded. Symbols may, in addition, be selected randomly, such as based upon a random number provided by RNG **212** and/or, in at least some embodiments, based upon one or more bingo game outcomes. Similarly, in at least some embodiments, one or more random numbers may be provided by RNG engine **316**.

In the example embodiment, user interface **400** also includes a bonus meter **405**, which may be displayed, in at least some embodiments, in a position adjacent to and/or above matrix **402**. In some embodiments, bonus meter **405** may also be referred to as a "repeat" meter, as described herein, because a prize value displayed by bonus meter **405** may be repeatedly provided to a player.

Similarly, user interface **400** may also include one or more jackpot meters **406**, which may be configured to increase in value.

A player may place a wager to initiate play of the game represented in user interface **400**, which may cause a base game to be initiated. An input may be received via buttons **236** or another input device, such as a touch sensitive display device to initiate the base game and place a wager. In the base game, processor **204** may control a display device, such as primary or secondary display **240** and/or **242**, to simulate spinning and stopping of a plurality of reels (as described above), and symbols to be displayed in each symbol position of matrix **402**, forming the game outcome, or the base game outcome. User interface **400** also displays credit meter **410**, denomination **412**, bet amount **414**, and win amount **416**.

The symbols displayed in matrix **402** may be evaluated, such as by processor **204**, to determine whether there are any winning combinations of symbols. Specifically, the symbols displayed in matrix **402** may be compared to one or more winning symbol combinations in a paytable of winning symbol combinations, and if there any winning symbol combinations are displayed, an award associated with each combination may be added to a player's credit balance.

In addition, the symbols displayed in matrix **402** may be evaluated to determine whether any designated symbols are displayed. As used herein, a "designated symbol" may include any symbol that displays a credit or cash value. For example, in FIG. **4**, a first designated symbol **408** appears on column or reel **403***a* at row **404***a* within matrix **402**. As shown, designated symbol **408** includes a credit value of "25" credits. In the example embodiment, a variety of designated symbols having the same and/or different credit or cash values may be included on the reel strips used to populate matrix **402**. In other words, different designated symbols having different credit values may be displayed (or "land") in matrix **402** during one or more spins. Finally, although the terminology "designated symbol" is generally used herein, in some cases, designated symbols may also be referred to as "free game scatter symbols" to refer to the fact that designated symbols may also be used (as described below) to trigger a bonus game.

In response to the occurrence of a trigger condition to increment bonus meter, a cash or credit value associated with the designated symbols that form the trigger condition may be added to bonus meter **405**. A trigger condition to increment bonus meter may be a quantity of designated symbols being displayed in the base game outcome either anywhere, or in a predefined, predetermined, or randomly determined quantity of consecutive columns (or reels) in matrix **402**, For example, in FIG. **4**, the credit value of "25" credits displayed on designated symbol **408** may be added (in "bulk") to bonus meter **405**, thereby increasing a bonus prize displayed by bonus meter **405** from "575" credits to "600" credits. The trigger condition, in this example, is the occurrence of designated symbols in a predefined quantity of consecutive columns, which in this example is one or more but less than three, starting from the leftmost column in which the first designated symbol occurs. Therefore, in this example, the first designated symbol occurs in column **403***a* and the quantity of consecutive columns with designated symbols starting with column **403***a* is one (which is within the range of one or more but less than three), the trigger condition is met and the value of designated symbol **408** is added to the bonus meter. Designated symbol **409** also occurs at on reel **403***c* in row **402***a* but its value is not added to the credit meter since it is not part of the trigger condition in this example. In various embodiments, the trigger condition may be different, such as consecutive columns with designated symbols starting from the leftmost column, designated symbols in reels **403***b-d* etc. and other variations as will be apparent to those skilled in the art. In certain embodiments, the trigger condition is defined as a near miss to a bonus trigger condition. For example, a bonus trigger condition may require designated symbols to occur in three consecutive columns, starting from the leftmost column in which the first designated symbol appears. For example, designated symbols appearing in (a) columns **403***a-c*; (b) columns **403***b-d*; or (c) columns **403***c-e* may be part of a bonus trigger. Therefore, designated symbols occurring in (a) columns **403***a* and **403***b* but not **403***c*; (b) columns **403***b* and **403***c* but not **403***d*; or (c) columns **403***c* and **403***d* but not **403***e* would constitute a near miss condition. However, designated symbols occurring in columns **403***d* and **403***e* but not **403***c* would not constitute a near miss condition, since the moment reel **403***c* stopped spinning and doesn't include a designated symbol in reels **403***a-c*, a player would realize that there is no opportunity to form a bonus trigger condition. In certain of these embodiments, reels **403***a-e* are displayed stopping in a left to right order, i.e., reels **403***a-e* stop in order, one after the other.

In at least one embodiment, trigger conditions for determining whether to add a credit value to bonus meter **405** from one or more designated symbols appearing in matrix **402** may specify that a credit value of a designated symbol landing in a leftmost column (i.e., column **403***a*), is added to bonus meter **405** only when no designated symbols land in columns **403***b* and **403***c*. This type of outcome would have 1 out of the 3 symbols required to trigger the bonus game. Similarly, if one or more designated symbols land in columns **403***a* and **403***b* and a designated symbol is not displayed in the column **403***c*, the credit values displayed by the designated symbols in columns **403***a* and **403***b* are added to bonus meter **405**. This type of outcome would have 2 out of the 3 columns required to trigger the bonus game. Further, in this circumstance, credit values associated with designated symbols appearing on rightmost reels **403***d* and **403***e* may or may not be added to bonus meter **405**. However, if designated symbols land in either of columns **403***b* or **403***c*,

but no designated symbol is also displayed in the leftmost column (i.e., column **403***a*), the credit values displayed by the designated symbols in columns **403***b* and **403***c* are not added to bonus meter **405**. In this circumstance, credit values associated with designated symbols appearing on rightmost reels **403***d* and **403***e* are also not added to bonus meter **405**. Thus, in more general terms, and in at least some embodiments, a determination whether to add credit values to bonus meter **405** from one or more designated symbols may depend upon whether a designated symbol lands in the leftmost column (i.e., column **403***a*). Evaluation proceeds thereafter from left to right within matrix **402**.

In some embodiments, an animation (e.g., a lightning bolt or an electrical spark) may be used to show transfer of a credit value on a designated symbol to bonus meter **405**.

In some embodiments, the trigger condition to increment bonus meter is met when a quantity of designated symbols are displayed in the base game outcome. The quantity of designated symbols may be a predefined, predetermined, or randomly determined quantity. For example, the bonus meter **405** may be incremented when the quantity of designated symbols is less than six, but greater than zero.

FIG. **5** and FIG. **6** show continued progression of the base game begun with reference to FIG. **4**. Specifically, FIG. **5** is a screenshot of user interface **400**, in which a first designated symbol **502**, a second designated symbol **504**, a third designated symbol **506**, and a fourth designated symbol **508** are displayed in matrix **402** in response to a subsequent wager placed by the player and following a subsequent spin or play of the base game. Accordingly, as shown, the credit values shown in association with one or more designated symbols **502-508** may be added to bonus meter **405**. As discussed with reference to FIG. **4**, the trigger condition requires designated symbols to occur in consecutive columns, therefore, only credit values associated with trigger symbols **502-506** may be added to bonus meter **405**.

In some embodiments, a credit value displayed by each designated symbol may always be added to bonus meter **405**. However, in at least some embodiments, a plurality of trigger conditions may be used to determine whether a credit value displayed by a designated symbol occurring in matrix **402** will be added to bonus meter **405**.

In various embodiments, the trigger condition is based on a near miss event, i.e., an outcome that did not triggered the play of a bonus game, provided a jackpot win, provided a line win (or Reel Power win), etc. but was close to providing the bonus game, jackpot win, line win, etc., and to compensate the player (and build some equity in the prize) the bonus meter is incremented.

Accordingly, in the example outcome of FIG. **5**, the credit values from the designated symbols **502**, **504**, and **506** are added to bonus meter **405** to increase the prize value displayed by bonus meter to a total of 1700 credits.

In addition to adding credit values from one or more designated symbols to bonus meter **405**, processor **204** may evaluate the designated symbols displayed in matrix **402** to determine whether a bonus game triggering condition is satisfied. Specifically, in at least some embodiments, a bonus game may be triggered if each of the first three columns of matrix **402** (i.e., columns **403***a-c*) include a designated symbol. In other embodiments, other suitable trigger conditions may be used to determine whether to trigger the bonus game. In some embodiments, the credit values associated with the designated symbols that form the bonus trigger condition may be added to bonus meter **405**. In some embodiments, the credit values associated with the designated symbols that form the bonus game triggering condition may not be added to bonus meter **405**.

At the start of a bonus game, a volatility selection interface **700** may be displayed, which permits selection, via an input device by the player, of one volatility option of a plurality of volatility options. FIG. **7** is a screenshot of an exemplary volatility selection interface **700**.

In the example embodiment, volatility selection interface **700** displays three volatility options. These include a first volatility option **702**, a second volatility option **704**, and a third volatility option **706**. Although three volatility options are shown, in other embodiments, any suitable number of volatility options may be provided.

Each volatility option **702-706** is associated with a multiple or similar increment or percentage of the bonus prize displayed in bonus meter **405** at the start of the bonus game. Each volatility option is also associated with a plurality of free spins. For example, volatility option **702** is associated with a prize value of 1400 credits and eight free spins, where 1400 credits is the same as the value displayed by bonus meter **405** (as described above). Thereafter, as above, the remaining volatility options **704-706** may be associated with increasing percentages of the prize value displayed by bonus meter **405**. However, in this embodiment, one advantage may be that the first volatility option **702** does not provide a credit value that is less than the prize value displayed in bonus meter **405**. In the example embodiment, volatility option **704** is associated with a prize value of 2800 credits and five free spins, where 2800 credits is twice of the value displayed by bonus meter **405**. In addition, volatility option **706** is associated with a prize value of 4200 credits and three free spins, where 4200 credits is approximately three times the credits displayed by bonus meter **405**.

Although each volatility option **702-706** displays a specific percentage of the prize value displayed by bonus meter **405** and a specific number of free spins in the example of FIG. **7**, it will be appreciated that these numbers are merely illustrative, and that any multiple or percentage of the prize value displayed by bonus meter **405** may be used in conjunction with any suitable number of free spins. Generally, in at least some embodiments, the multiple or percentage of the prize value display by bonus meter **405** provided in association with a volatility option **702-706** may increase as the number of free spins decreases. For example, in some embodiments, the prize values associated with the volatility option may be 2800, 5600, and 11200.

In certain embodiments, the prize value and the quantity of free spins associated with each volatility option may be predefined. For example, volatility option 1 may be predefined as 1× bonus meter **405** with 8 free spins, volatility option 2 may be predefined as 2× bonus meter **405** with 5 free spins, and volatility option 3 may be predefined as 3× bonus meter **405** with 3 free spins. In certain embodiments, the prize value and quantity of free spins may be determined by processor **204**. For example, for each volatility option, weighted table may be provided that may have options corresponding to the prize value and another weighted table for the quantity of free spins. In certain embodiments, processor **204** may receive prize values and quantity of free spins for one or more of the volatility options from a central server, such as a bingo server, a central determination server, or a progressive server. In certain embodiments, the quantity of volatility options may be predetermined, randomly determined or player determined. In certain embodiments, it may be based on a player's wager level. For example, at a first level, only two of the three volatility options shown in FIG.

7 may be available, and at a second, usually higher level, all three volatility options shown in FIG. 7 may be available and displayed.

FIG. 8 is a screenshot of the bonus game of user interface 800. More particularly, once a player makes a volatility selection from volatility selection interface 700, matrix 402 may once again be displayed, and the reel strips spun and stopped within matrix 402 to display a plurality of symbols. In certain embodiments, reel strips used for the bonus game may differ from the reel strips used in the base game. In certain embodiments, matrix 402 may be replaced with another matrix having a different quantity of rows and/or columns than those in matrix 402. Processor 204 may evaluate the symbols displayed in matrix 402 to determine whether any designated symbols (e.g., free game scatter symbols) are displayed, and if so, processor 204 may award the prize value associated with the selected volatility option of the volatility options 702-706 to the player for each occurrence of the designated symbol in matrix 402.

For instance, in the example of FIG. 8, it can be seen that the player has selected volatility option 702, which is associated with a prize value of 1400 credits, and eight free spins. Accordingly, during a first spin of the eight free spins, a designated symbol lands in symbol positions "2C" and "3E." As a result, the prize value of 1400 credits is added to the win meter (i.e., once for each occurrence of the designated symbol in matrix 402). Thereafter, the reels are re-spun and the symbols landing in matrix 402 are reevaluated as described to determine whether to provide additional 1400 credit prizes to the player.

In the example shown in FIG. 8, the prize value associated with the selected volatility option may be repeatedly provided, such as each time a designated symbol appears in matrix 402 during a bonus game of user interface 400. In addition, as described herein, the prize value may be a multiple or percentage of a prize value display within bonus meter 405, which is accumulated during a base game of user interface 400 based upon credit values displayed on designated symbols appearing within matrix 402. In various embodiments, the designated symbol displayed in the bonus game does not display any associated credit value or currency value on its face, since the credit value associated with the designated symbol is the value of the bonus meter. In some embodiments, the value of the bonus meter at the start of the bonus game is displayed on the designated symbol. After each spin of the quantity of free spins has been displayed and the outcomes determined, a total prize value accumulated during the free spin bonus game is added to the credit meter. This may be in addition to any award amounts resulting from winning symbol outcomes in the free spin bonus game.

In certain embodiments, reel strips used in the play of the bonus free spin game may be different than the reel strips used in the play of the base game. The reel strips may use different set of symbols, have a different paytable than the base game, and/or employ a different quantity of rows or columns.

FIG. 9 is an exemplary flowchart illustrating a process implemented by a gaming device in accordance with some embodiments of the present disclosure. Process 900 may begin at block 902 where a base game, such as one shown in FIG. 4, is initiated. The game may be initiated in response to a player input, via an input interface, such as buttons 236. The input may also initiate a wager. At block 904, a base game outcome is determined and displayed by processor 204. The base game outcome may be determined using the output of a random number generator, such as from RNG engine 316. RNG conversion engine 320 may generate a game outcome based on the random number(s) from RNG engine 316. The game outcome is displayed as a number of reels spinning and stopping at positions that correspond to reel stop positions determined by RNG conversion engine 320. FIG. 4 depicts an exemplary outcome generated from RNG conversion engine 320. In certain embodiments, instead of using a random number from RNG engine 316, a bingo outcome may be used. The bingo outcome is based on a bingo ball call, usually from a bingo server, and a bingo card that is specific to the gaming device for a single play. In some embodiments, a central determination system may provide an outcome.

Processor 204 may determine whether the displayed symbols in matrix 402 form a trigger condition to increment bonus meter. As described herein, the trigger condition may be a near miss condition. In certain embodiments, the trigger condition may be symbol based, i.e., based on the symbols in the outcome. In certain embodiments, the trigger condition may not be based on the symbols in the outcome. For example, the trigger condition may be a random determination separate from the one used for determining the symbols. The trigger condition may be based on a jackpot controller or another device. If processor 204 determines that the trigger condition has been satisfied, bonus meter may be incremented at block 908. As shown in FIG. 4, bonus meter 405 is incremented with the value of designated symbol 408 and not 409, as designated symbol 408 forms part of the trigger condition, while symbol 409 is not part of the trigger condition. In certain embodiments, if there are multiple designated symbols in a single column, then the values associated with each of those multiple designated symbols are added to bonus meter 405.

At block 910, processor 204 may determine whether a bonus trigger condition exists. In various embodiments, a bonus trigger condition is different from a trigger condition that increments bonus meter. Further, in certain embodiments, the bonus trigger condition and the trigger condition that increments bonus meter are mutually exclusive. Hence, if processor 204 determines that trigger condition for bonus meter increment is met at 906, control may move to 902 after bonus meter is incremented without checking whether trigger condition for bonus game exists at 910. In certain embodiments, the bonus game trigger condition may require designated symbol in three consecutive columns. Further, in certain embodiments, the values of designated symbols that form the bonus game trigger condition may be added to bonus meter 405.

In certain embodiments, if processor 204 determines that bonus game trigger condition is met, processor 204 determines the quantity and the volatility options to be presented, at 912. Volatility options may be based on be based on the bonus meter 405 value, as discussed herein. At 914, a volatility selected screen is presented, such as the one shown in FIG. 7. The volatility selection screen displays multiple volatility selection options, as determined by processor 204 at 912. An input associated with one of the multiple volatility options indicates the player selected volatility option.

A free spin bonus game may then be initiated, based on the player selected volatility option. A quantity of free spins in the free spin game may be dependents on the selected volatility option. In certain embodiments, where the selected volatility options corresponds to a multiple of the value in bonus meter 405, bonus meter 405 may be updated to reflect the multiple. In certain embodiments, a multiplier may be displayed next to bonus meter 405 to indicate the selected multiple.

At **916**, a free spin outcome for the free spin bonus game is generated by processor **204**. The outcome is displayed, as shown in FIG. **8**. Processor **204** determines whether the free spin outcome includes one or more designated repeat symbols at **918**. If the outcome includes a designated repeat symbol, the processor may provide the award value of bonus meter **405** based on the player selected volatility option in FIG. **7**, at **920**. The award value may be added to bonus win meter **810**. For example, if the player choose volatility option **704** that uses a 2× multiplier, the designated repeat symbol is associated with 2× of the bonus meter value. However, in the example of FIG. **8**, the award provided is 1× the bonus meter value which corresponds to player selected volatility option **702**. In certain embodiments only one instance the repeat award is provided for one or more instances of a designated symbol **802** occurring in the in the free spin outcome. In certain embodiments, for each instance of the designated symbol, such as symbol **802** and **804**, the value of bonus meter is added to bonus win meter **810** as many times. Since there are 2 designated symbols in the free spin outcome shown in FIG. **8**, the value of bonus meter **405** is added twice to bonus win meter **810**. In certain embodiments, the value of bonus meter is awarded when certain trigger conditions are met. For example, a certain quantity of designated symbols might be required in the outcome, in order for the award value of bonus meter **405** being added to bonus win meter **810**. At **922**, processor **204** may determine if any additional free spins remain. If there are free spins remaining, control returns to **916**, otherwise play of the free spin bonus game ends. When the free spin bonus game ends, the value of the bonus win meter **810** may be added to the player's credit meter **410** and control returns to **902**.

FIG. **10** is a screenshot of a jackpot game **1000** user interface **400**. More particularly, in at least some embodiments, one or more jackpot symbols, such as "coin symbols," may appear in matrix **402** during base game shown in user interface **400**. In response to the occurrence of each jackpot symbol, jackpot meter **406** may "metamorphose," as described above, to provide a visual indication that a prize value of the jackpot has increased. In addition, each time a jackpot symbol lands (or in response to a predefined combination of jackpot symbols, such as three scattered jackpot symbols in matrix **402**), processor **204** may determine whether to provide jackpot game **900**. If jackpot game **900** is provided, the player may be allowed to play a game, such as a "pick" game, as shown, during which the player selects or "overturns" a plurality of jackpot symbols until a predefined number of instances of a particular jackpot prize of plurality of jackpot prizes (in this example, three instances of the MINI jackpot prize) are uncovered. Although a "pick" game is shown in the example of FIG. **10**, any of a variety of suitable jackpot games may be implemented in the present disclosure to provide a jackpot award to a player.

In certain embodiments, credit values associated with the designated symbols displayed in the play of the base game, are predetermined. In certain embodiments, they may be randomly determined. For example, a table may store possible credit values associated with designated symbols. Processor **204** may select credit values from this table to assign to various designated symbols that are to be selected in a particular outcome. The table may be weighted so that certain values have a higher probability of being selected.

In certain embodiments, credit values associated with the designated symbols displayed in the play of the free spin bonus game, are predetermined. In certain embodiments, they may be randomly determined. For example, a table may store possible credit values associated with designated symbols. Processor **204** may select credit values from this table to assign to various designated symbols that are to be selected in a particular outcome. The table may be weighted so that certain values have a higher probability of being selected.

In certain embodiments, a bonus game different from the free spin bonus game may be provided. For example, a selection or pick bonus game may be provided, where certain designated symbols may be hidden and revealed when picked. Those skilled in the art will recognize that other bonus games are within the scope of the present disclosure.

Initially, the value of bonus meter **405** is set to a predetermined or randomly determined value. The value of bonus meter **405** can continue to increase during game play, based on the occurrence of trigger conditions. As the value grows, a player may feel a sense of accomplishment in growing the value and the continued building of equity in the game. This may cause the player to extend a play session, in order to try and win the value accumulated in bonus meter. After the completion of a free spin bonus game in which the value of bonus meter **405** is awarded at least once (or a predetermined times), the value of bonus meter may reset to a starting value (that is predetermined or randomly determined). In certain embodiments, the value may not be reset after completion

Embodiments of the present disclosure thus provide systems and methods for incrementing a bonus prize based upon credit values displayed on designated symbols appearing in a matrix of symbol positions of a base game. In addition to incrementing the bonus prize during the base game, a bonus game may be triggered based upon the occurrence of one or more designated symbols in the matrix. During the bonus game, a player may select a volatility option, which may be used to determine to adjust (e.g., increase) the prize value accumulated in the base game. The selected volatility option may also specify a number of free spins. Once a volatility selection is made by the player, the player is awarded the number of free spins associated with the option, and during each free spin, if any designated symbols land in the matrix, the player is provided the adjusted prize value for each occurrence of a designated symbol. Thus, the adjusted prize value may be repeatedly provided to a player over the course of a plurality of free spins.

Although the flowchart of FIG. **9** shows a specific order of execution, it is understood that the order of execution may differ from that which is depicted. For example, the order of execution of two or more blocks may be scrambled relative to the order shown. Also, two or more blocks shown in succession in FIG. **9** may be executed concurrently or with partial concurrence. Further, in some embodiments, one or more of the blocks shown in FIG. **9** may be skipped or omitted. In addition, any number of counters, state variables, warning semaphores, or messages might be added to the logical flow described herein, for purposes of enhanced utility, accounting, performance measurement, or providing troubleshooting aids, etc. It is understood that all such variations are within the scope of the present disclosure.

While the invention has been described with respect to the figures, it will be appreciated that many modifications and changes may be made by those skilled in the art without departing from the spirit of the invention. Any variation and derivation from the above description and figures are included in the scope of the present invention as defined by the claims.

What is claimed is:

1. An electronic gaming machine comprising:

a display device;

an input device;

a processor; and

a memory storing instructions, which when executed by the processor, cause the processor to at least:

cause the display device to display a plurality of symbol positions and a bonus meter, the bonus meter displaying a current award amount;

determine a base game outcome, the base game outcome comprising a plurality of symbols displayed at the plurality of symbol positions;

determine that at least one symbol of the plurality of symbols satisfies a bonus meter trigger condition stored in the memory;

cause the display device to display an animation extending between the bonus meter and at least one symbol position associated with the at least one symbol based on the bonus meter trigger condition being satisfied;

cause the current award amount of the bonus meter to be incremented by an amount associated with the at least one symbol to an updated award amount;

determine that the plurality of symbols of the base game outcome satisfies a bonus game trigger condition stored in the memory;

perform a lookup within the memory using the updated award amount to randomly determine a plurality of volatility options to be displayed on the display device including for each volatility option a number of free spins and an associated multiple of the updated award amount;

cause the display device to display the plurality of volatility options, wherein each volatility option is displayed showing the associated with a number of free spins and the multiple of the updated award amount shown on the bonus meter;

receive, from the input device, a selection of a first volatility option of the plurality of volatility options, the first volatility option associated with a first plurality of free spins and a first multiple of the updated award amount shown on the bonus meter; and

cause the display device to initiate the first plurality of free spins, and for each spin of the first plurality of free spins, at least:

determine an outcome for the spin, the outcome of the spin comprising a plurality of symbols;

cause the display device to display the plurality of symbols in a plurality of bonus symbol positions;

evaluate the plurality of bonus symbol positions to determine whether the plurality of bonus symbol positions include a first quantity of bonus award trigger symbols; and

in response to determining that the plurality of bonus symbol positions include the first quantity of bonus award trigger symbols, add the first multiple of the updated award amount shown on the bonus meter to a free spin award amount.

2. The electronic gaming machine of claim 1, wherein the instructions further cause the processor to cause the current award amount to be incremented by an amount to an updated award amount, wherein the amount comprises a sum of amounts associated with the at least one symbol.

3. The electronic gaming machine of claim 1, wherein the instructions further cause the processor to add the first multiple of the updated award amount to the free spin award amount a second time when the first quantity of bonus award trigger symbols is at least two.

4. The electronic gaming machine of claim 1, wherein the bonus game trigger condition is different from the bonus meter trigger condition.

5. The electronic gaming machine of claim 4, wherein the plurality of symbol positions is arranged in a plurality of columns.

6. The electronic gaming machine of claim 5, wherein the bonus meter trigger condition is satisfied when a first quantity of the at least one symbol is displayed in consecutive columns of the plurality of columns.

7. The electronic gaming machine of claim 6, wherein the first quantity is two.

8. The electronic gaming machine of claim 6, wherein the bonus game triggering condition is satisfied when a second quantity of the at least one symbol is displayed in consecutive columns of the plurality of columns, wherein the second quantity is greater than the first quantity.

9. The electronic gaming machine of claim 1, further comprising:

a credit input device; and

a credit output device, wherein the instructions further cause the processor to:

establish a credit balance in response to receiving a physical item representing a monetary value via the credit input device; and

cause the credit output device to dispense an item representing the monetary value of the credit balance in response to receipt of a cash out input.

10. A computer-implemented method comprising:

causing, by a processor, a display device to display a plurality of symbol positions and a bonus meter, the bonus meter displaying a current award amount;

determining, by the processor, a base game outcome, the base game outcome comprising a plurality of symbols displayed at the plurality of symbol positions;

determining, by the processor, that at least one symbol of the plurality of symbols satisfies a bonus meter trigger condition stored in a memory;

causing, by the processor, the display device to display an animation extending between the bonus meter and at least one symbol position associated with the at least one symbol based on the bonus meter trigger condition being satisfied;

causing, by the processor, the current award amount of the bonus meter to be incremented by an amount associated with the at least one symbol to an updated award amount;

determining that the plurality of symbols of the base game outcome satisfies a bonus game trigger condition stored in the memory;

performing a lookup within the memory using the updated award amount to randomly determine a plurality of volatility options to be displayed on the display device including for each volatility option a number of free spins and an associated multiple of the updated award amount;

causing, by the processor, the display device to display the plurality of volatility options, wherein each volatility option is displayed showing the associated number of free spins and the multiple of the updated award amount shown on the bonus meter;

receiving, from an input device, a selection of a first volatility option of the plurality of volatility options, the first volatility option associated with a first plurality

of free spins and a first multiple of the updated award amount shown on the bonus meter; and

initiating the display of the first plurality of free spins, and for each spin of the first plurality of free spins, at least:

determining an outcome for the spin, the outcome of the spin comprising a plurality of symbols;

causing the display device to display the plurality of symbols in a plurality of bonus symbol positions;

evaluating the plurality of bonus symbol positions to determine whether the plurality of bonus symbol positions include a first quantity of bonus award trigger symbols; and

in response to determining that the plurality of bonus symbol positions include the first quantity of bonus award trigger symbols, adding the first multiple of the updated award amount shown on the bonus meter to a free spin award amount.

11. The computer-implemented method of claim **10**, further comprising causing, by the processor, the current award amount to be incremented by an amount to an updated award amount, wherein the amount comprises a sum of amounts associated with the at least one symbol.

12. The computer-implemented method of claim **10**, further comprising causing, by the processor, addition of the first multiple of the updated award amount to the free spin award amount a second time when the first quantity of bonus award trigger symbols is at least two.

13. The computer-implemented method of claim **10**, wherein the bonus game trigger condition is different from the bonus meter trigger condition.

14. The computer-implemented method of claim **13**, wherein the plurality of symbol positions is arranged in a plurality of columns.

15. The computer-implemented method of claim **14**, wherein the bonus meter trigger condition is satisfied when a first quantity of the at least one symbol is displayed in consecutive columns of the plurality of columns.

16. The computer-implemented method of claim **15**, wherein the bonus game trigger condition is satisfied when a second quantity of the at least one symbol is displayed in consecutive columns of the plurality of columns, wherein the second quantity is greater than the first quantity.

17. A non-transitory, computer-readable storage medium having instructions stored thereon, which when executed by a processor, cause the processor to at least:

cause a display device to display a plurality of symbol positions and a bonus meter, the bonus meter displaying a current award amount;

determine a base game outcome, the base game outcome comprising a plurality of symbols displayed at the plurality of symbol positions;

determine that at least one symbol of the plurality of symbols satisfies a bonus meter trigger condition stored in a memory;

cause the display device to display an animation extending between the bonus meter and at least one symbol position associated with the at least one symbol based on the bonus meter trigger condition being satisfied;

cause the current award amount of the bonus meter to be incremented by an amount associated with the at least one symbol to an updated award amount;

determine that the plurality of symbols of the base game outcome satisfies a bonus game trigger condition stored in the memory;

initiate a lookup within the memory using the updated award amount to randomly determine a plurality of volatility options to be displayed on the display device including for each volatility option a number of free spins and an associated multiple of the updated award amount;

cause the display device to display the plurality of volatility options, wherein each volatility option is displayed showing the associated number of free spins and the multiple of the updated award amount shown on the bonus meter;

receive, from an input device, a selection of a first volatility option of the plurality of volatility options, the first volatility option associated with a first plurality of free spins and a first multiple of the updated award amount shown on the bonus meter; and

cause the display device to initiate the first plurality of free spins, and for each spin of the first plurality of free spins, at least:

determine an outcome for the spin, the outcome of the spin comprising a plurality of symbols;

cause the display device to display the plurality of symbols in a plurality of bonus symbol positions;

evaluate the plurality of bonus symbol positions to determine whether the plurality of bonus symbol positions include a first quantity of bonus award trigger symbols; and

in response to determining that the plurality of bonus symbol positions include the first quantity of bonus award trigger symbols, add the first multiple of the updated award amount shown on the bonus meter to a free spin award amount.

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