US 20120309489A1

(19) **United States**

(12) **Patent Application Publication**

Scott

(10) **Pub. No.: US 2012/0309489 A1**

(43) **Pub. Date: Dec. 6, 2012**

(54) **VALUE ENGINE PROVIDING CURRENT CASH VALUE FOR WAGERING GAME INDICIA**

(76) Inventor: **James R. Scott**, Las Vegas, NV (US)

(21) Appl. No.: **13/134,299**

(22) Filed: **Jun. 3, 2011**

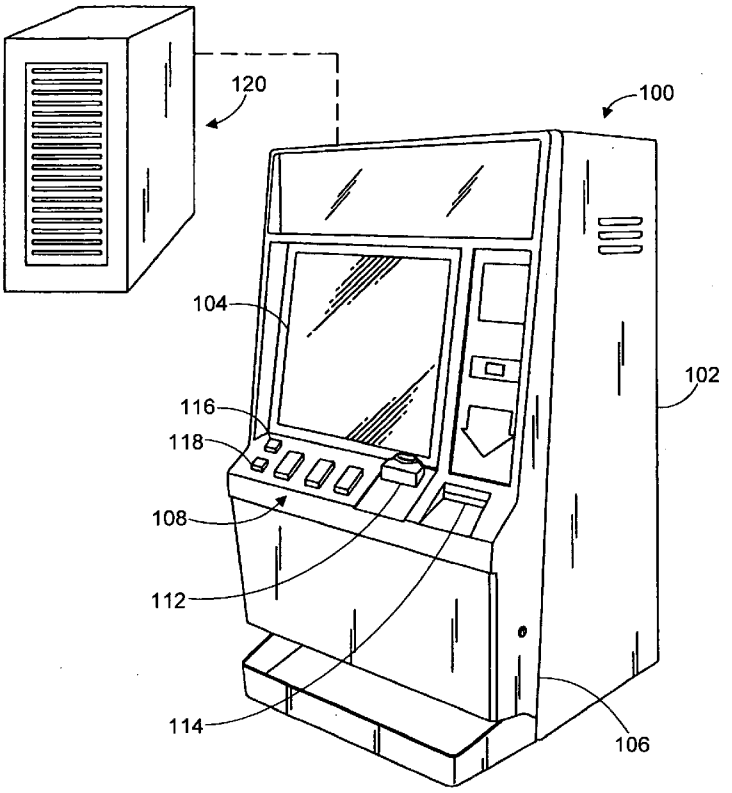
Publication Classification

(51) **Int. Cl.**
A63F 9/24 (2006.01)

(52) **U.S. Cl.** **463/20**; 463/25

(57) **ABSTRACT**

A value engine for a gaming machine generally determines a cash value for player cards, symbols, or other gaming indicia even though the indicia does not form a winning outcome. The value engine may determine the cash value for the indicia at various times or stages during a game. The cash value may be presented to the player, and the player may be permitted to accept or decline the cash value. If accepted, the cash value may be paid out to the player. If declined the player may continue playing the game. The value engine is may be used with or implemented as part of a variety of wagering games and presents a challenging and engaging choice to players to to further continued play and entertainment at a gaming machine.



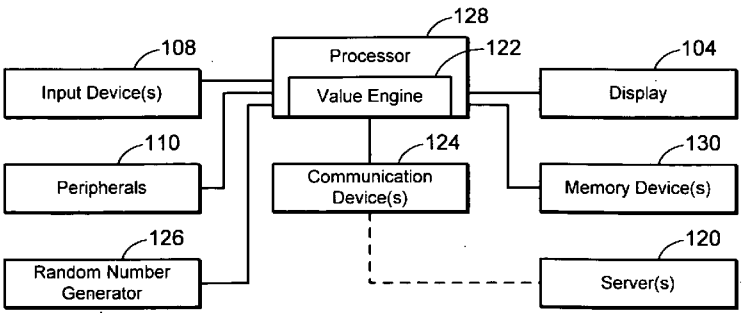


Fig. 1A

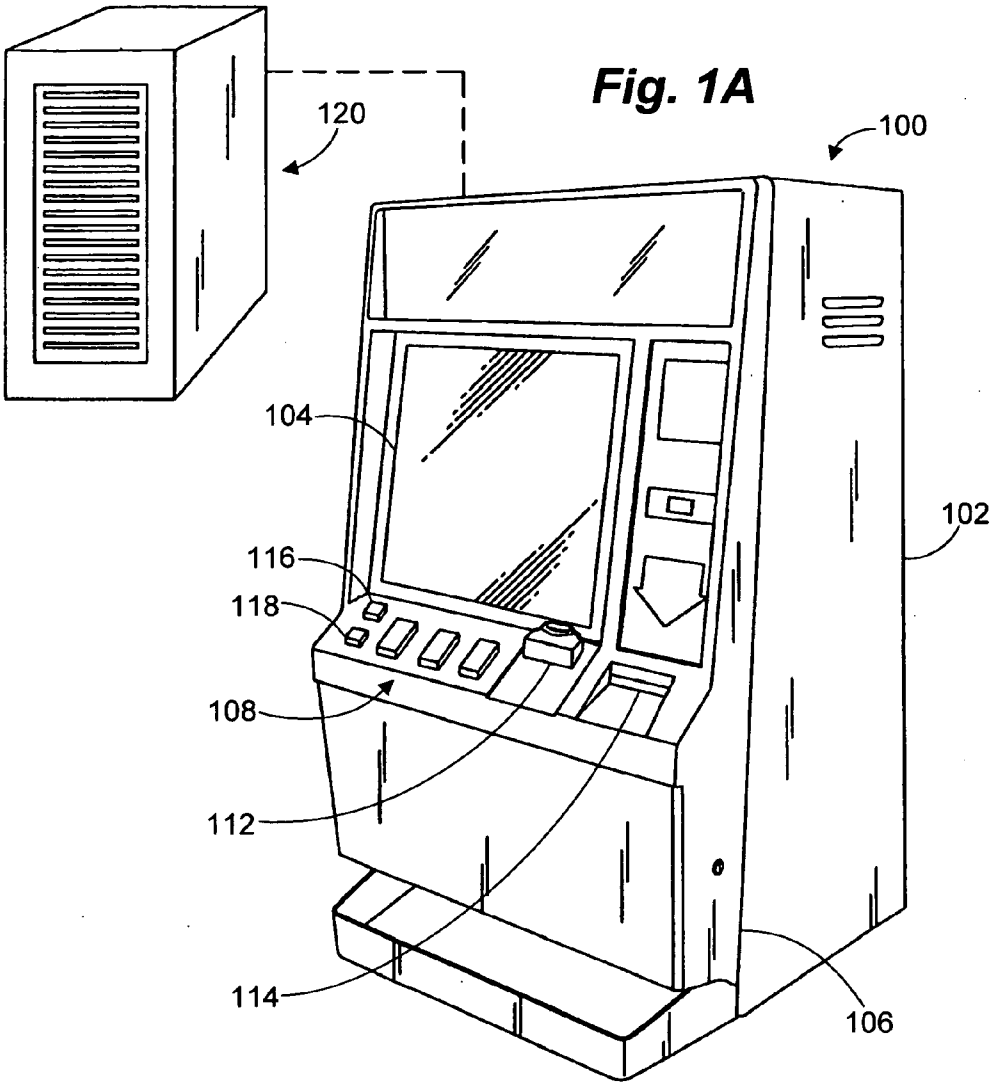

120
100
104
102
116
118
108
112
114
106

Fig. 1B

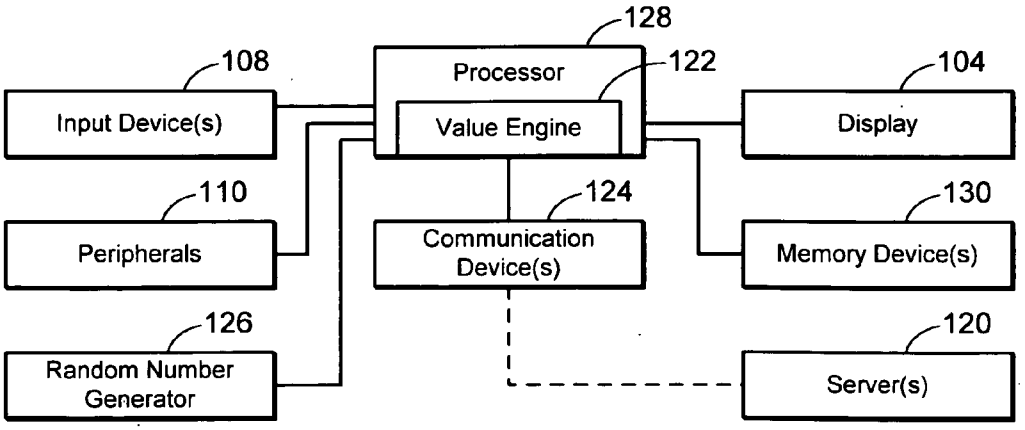

128
Processor
122
Value Engine
108
Input Device(s)
104
Display
110
Peripherals
124
Communication Device(s)
130
Memory Device(s)
126
Random Number Generator
120
Server(s)

Fig. 2

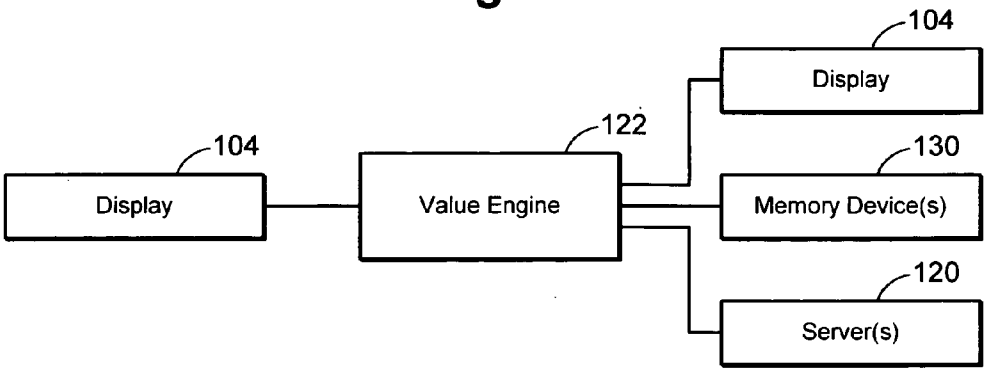

104
Display
122
104
Display
Value Engine
130
Memory Device(s)
120
Server(s)

Fig. 3A

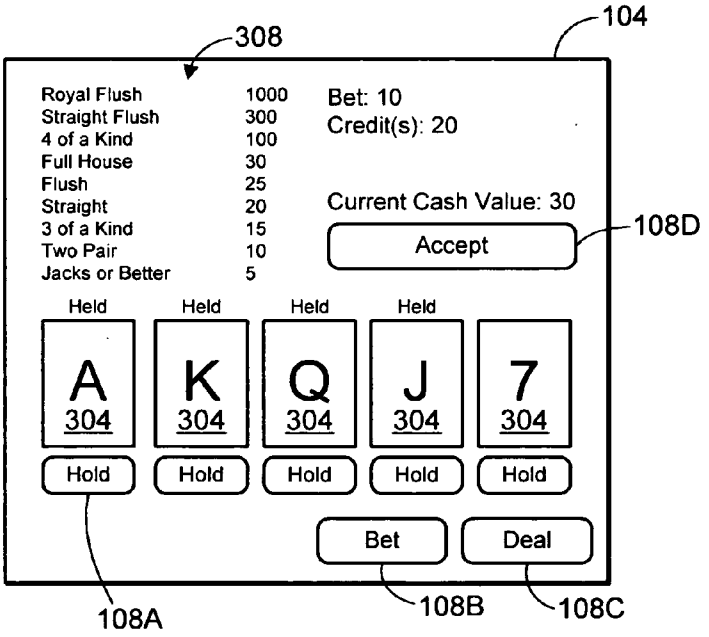

308
104
Royal Flush 1000
Straight Flush 300
4 of a Kind 100
Full House 30
Flush 25
Straight 20
3 of a Kind 15
Two Pair 10
Jacks or Better 5
Bet: 10
Credit(s): 20
Current Cash Value: 30
Accept
108D
Held
Held
Held
Held
A 304
K 304
Q 304
J 304
7 304
Hold
Hold
Hold
Hold
Hold
Bet
Deal
108A
108B
108C

Fig. 3B

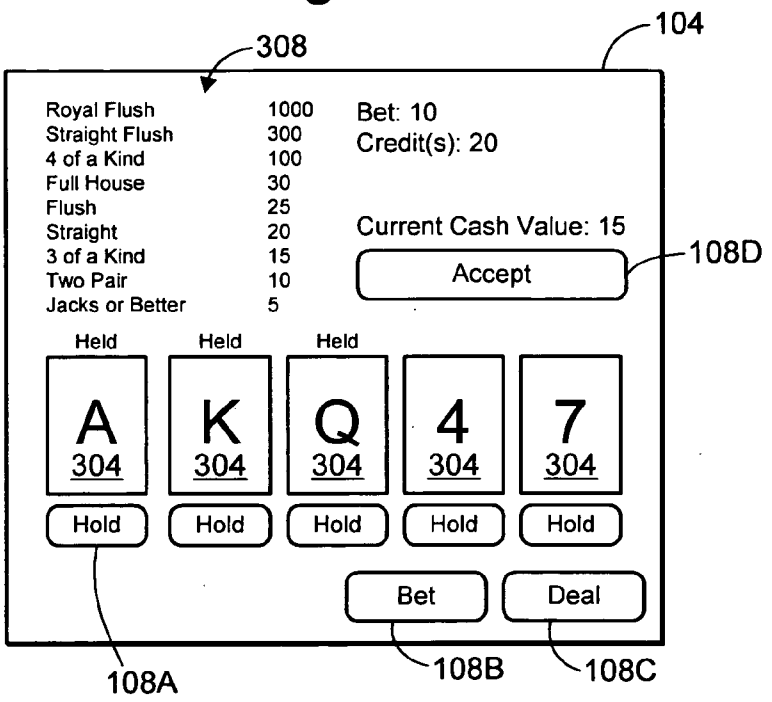

308
104
Royal Flush 1000
Straight Flush 300
4 of a Kind 100
Full House 30
Flush 25
Straight 20
3 of a Kind 15
Two Pair 10
Jacks or Better 5
Bet: 10
Credit(s): 20
Current Cash Value: 15
Accept
108D
Held
Held
Held
A 304
K 304
Q 304
4 304
7 304
Hold
Hold
Hold
Hold
Hold
Bet
Deal
108A
108B
108C

Fig. 3C

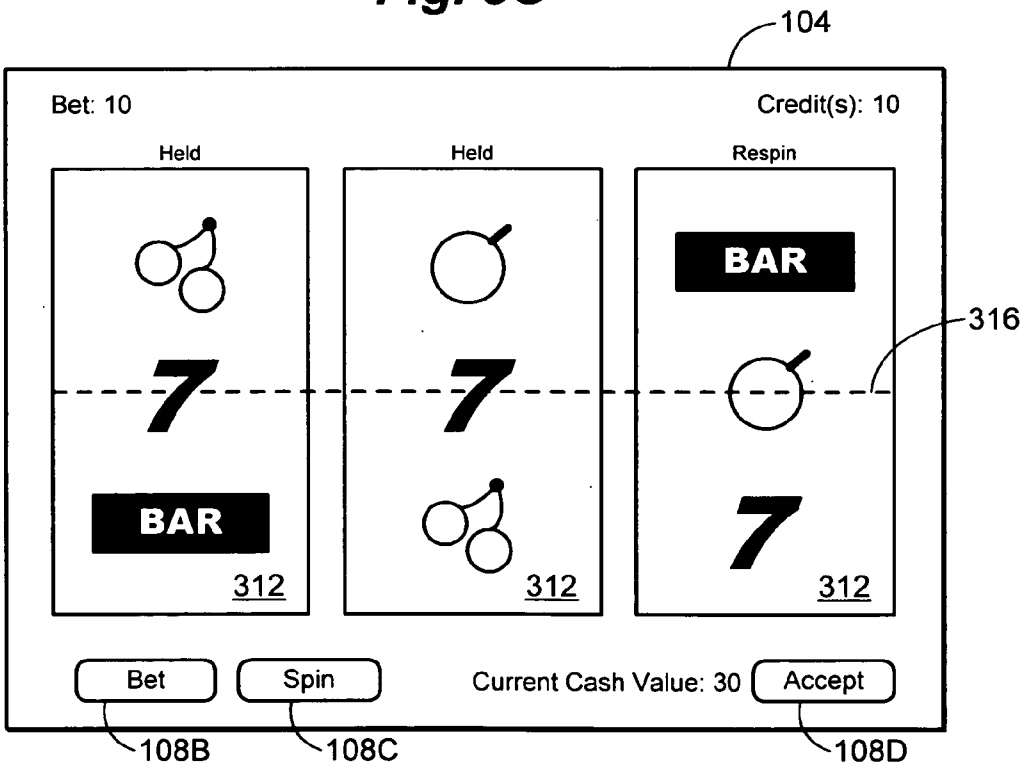

104
Bet: 10
Credit(s): 10
Held
Held
Respin
BAR
7
7
BAR
7
312
312
312
316
Bet
Spin
Current Cash Value: 30
Accept
108B
108C
108D

Fig. 4

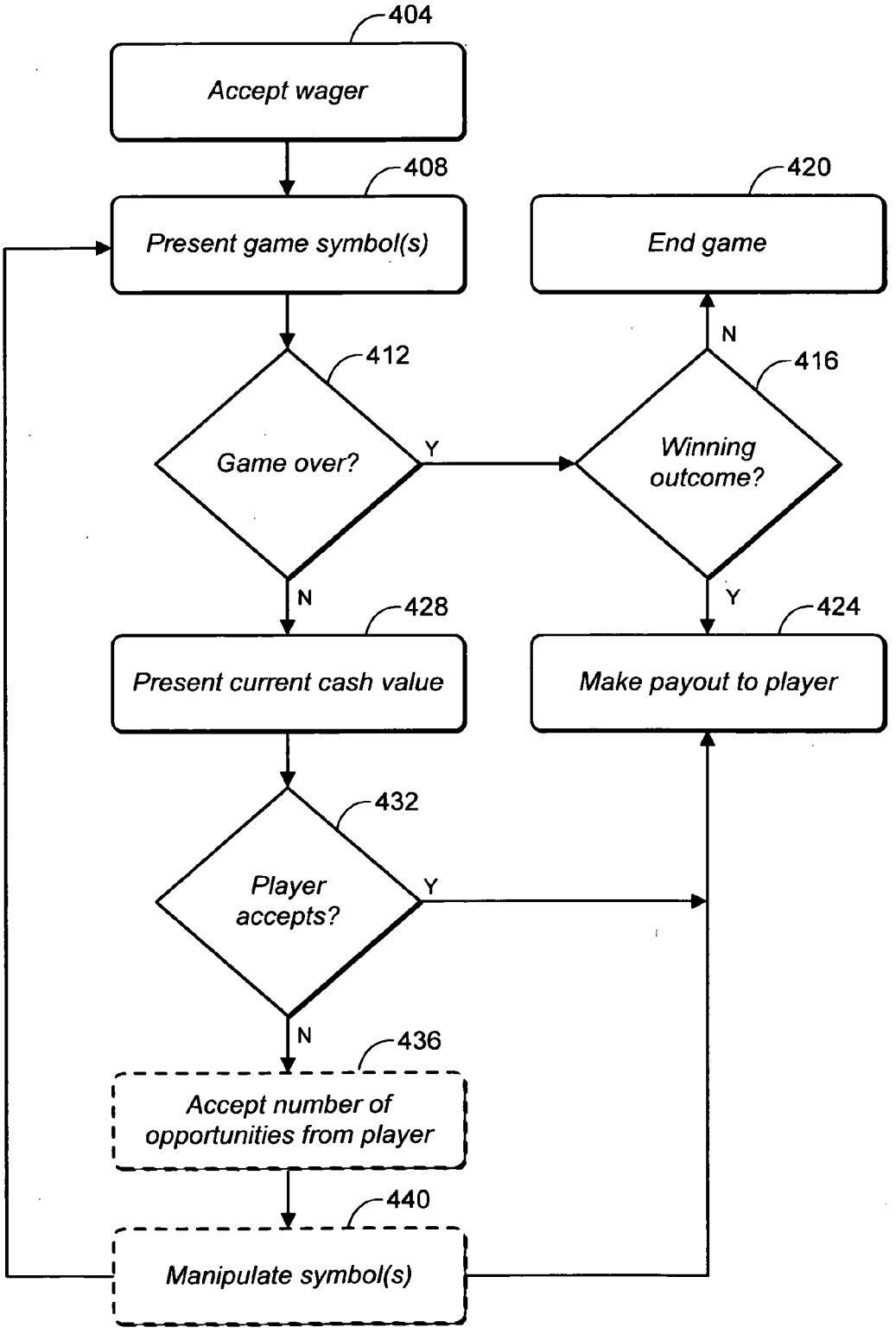
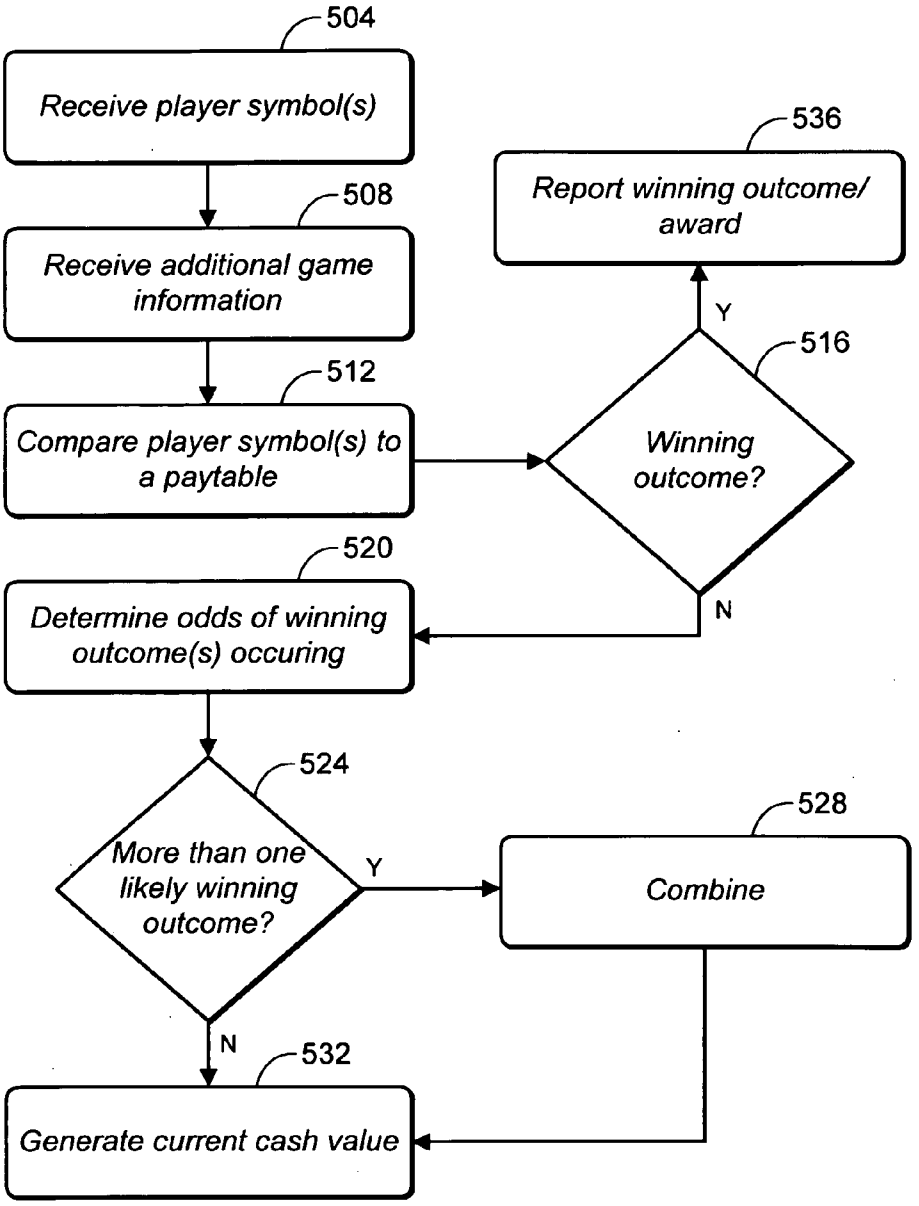

404
Accept wager
408
Present game symbol(s)
412
Game over?
Y
N
420
End game
416
Winning outcome?
N
Y
428
Present current cash value
424
Make payout to player
432
Player accepts?
Y
N
436
Accept number of opportunities from player
440
Manipulate symbol(s)

Fig. 5


504
Receive player symbol(s)
508
Receive additional game information
512
Compare player symbol(s) to a paytable
516
Winning outcome?
Y
536
Report winning outcome/ award
N
520
Determine odds of winning outcome(s) occuring
524
More than one likely winning outcome?
Y
528
Combine
N
532
Generate current cash value

VALUE ENGINE PROVIDING CURRENT CASH VALUE FOR WAGERING GAME INDICIA

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention.

[0002] The invention relates to electronic wagering games and systems, particularly to a gaming machine configured to provide value for partial or incomplete game outcomes.

[0003] 2. Related Art.

[0004] Traditional electronic wagering games and systems accept a wager, present a wagering game to a player, evaluate the outcome of the game, and then award the player if the outcome is a winning outcome. For example, in video poker, a player may place his or her wager to receive an initial draw of cards. The player may then choose which cards to hold and which to discard. If, at the end of the game, the player possesses cards which form a winning hand, the player wins an award. If not, the player loses his or her wager.

[0005] In the case of a slot game, the game proceeds in similar fashion. For example, a player places a wager to obtain a spin of one or more slot reels. If, at the end of the game, the reels stop such that a winning outcome is displayed, the player wins. If not, the player loses his or her wager.

[0006] The proliferation of gaming and wagering games has made players very familiar with traditional games. Thus, new games are continuously developed to attempt to renew the enticement and excitement of wagering games to such players. Unfortunately, in seeking newer and perhaps different players some games have become extraordinarily complex. In some cases, the number of ways a winning outcome can be obtained is so numerous and complex that a player cannot readily determine if he or she has won, without relying on the game to inform the player of the same. Though new players may be enticed to play, the player's sense of control and ability to actually play the game is lost since the correlation between player actions, the resulting game outcomes, and actual winning outcomes is not easily discernable.

[0007] From the discussion that follows, it will become apparent that the present invention addresses the deficiencies associated with the prior art while providing numerous additional advantages and benefits not contemplated or possible with prior art constructions.

SUMMARY OF THE INVENTION

[0008] A value engine for determining and presenting current cash value of a player's cards, symbols, or other game indicia is disclosed herein. In general, the value engine provides a current cash value for non-final sets of symbols or hands. The player may be presented with an option to take the current cash value or to continue player to achieve a winning outcome. If the player does not take the current cash value of his or her game indicia or achieve a winning outcome, the player typically will lose his or her wager. In this general manner, the value engine enhances the enjoyment and entertainment of a wagering game by presenting the player with a challenging choice to to accept a current cash value for his or her hand or to forgo the current cash value to attempt to achieve a winning outcome (and possibly a larger award).

[0009] As will be disclosed herein, the value engine may be implemented at or be part of a gaming machine. For instance, in one embodiment a gaming machine configured to present one or more wagering games may include the value engine to gain its functionality and benefits. Such a gaming machine may also have a display configured to present one or more game symbols to a player, and a paytable defining one or more winning outcomes and an associated award for each of the winning outcomes.

[0010] The gaming machine may present various games, such as poker games, card games, or slot games. For example, it is noted that the paytable may comprise one or more poker hands and the game symbols may be numbered playing card symbols. Alternatively, the paytable may comprise one or more sets of slot symbols and the game symbols in such case may be slot symbols.

[0011] The value engine may be configured to determine the odds of at least one of the winning outcomes occurring from the game symbols and to present a current cash value for the game symbols on the display. The current cash value may be generated by the value engine and may be less than the associated award for the at least one winning outcome.

[0012] It is noted that the value engine may be configured to present the current cash value only when the symbols do not form any of the winning outcomes. This is because the value of the symbols will typically be defined by a paytable if the symbols form a winning outcome.

[0013] Current cash value may be determined in various ways. For instance, the value engine may generate the current cash value by calculating the current cash value from at least the odds of at the least one of the winning outcomes occurring from the game symbols, and the associated award of the at least one winning outcome.

[0014] One or more input devices may be used to receive an indication that the player is accepting the current cash value. When engaged, the input devices may cause the gaming machine to pay out the current cash value to the player. The gaming machine may be configured to end a wagering game after an indication that the player is accepting the current cash value is received.

[0015] In another exemplary embodiment, a gaming machine configured to present one or more wagering games may comprise a memory device storing one or more game symbols provided to a player by the gaming machine for use in a wagering game, and a processor configured to determine if the game symbols form a winning outcome, and if not, to generate a cash value for the game symbols.

[0016] It is contemplated that the processor may be further configured to determine the odds of at least one winning outcome occurring from the game symbols. The winning outcome may have an associated award so that the processor can generate a cash value less than the associated award of the winning outcome.

[0017] A display configured to present the current cash value to the player may be provided as well. An input device may be used to receive an indication that the player is accepting the current cash value. When engaged, the input device may cause the gaming machine to pay out the current cash value to the player. The gaming machine may also end a current game being played on the gaming machine when the input device is engaged.

[0018] The gaming machine may include one or more additional input devices configured to accept input from the player to allow the player to play the game. In addition, a payout dispenser configured to pay the cash value to the player as a result of the input device being engaged may be part of the gaming machine.

[0019] The value engine and functionality thereof may be implemented as a method in some embodiments. For example, a method of paying out an award for non-final hands at a gaming machine could be implemented to provide the functionality and benefits of the value engine. In one embodiment, such a method may comprise accepting a wager at the gaming machine, presenting one or more game symbols that do not form a winning outcome on a display of the gaming machine, and presenting a cash value for the game symbols to the player before the game has ended.

[0020] An option for the player to accept the cash value may then be presented. One or more additional game symbols can be presented subsequently. The game may be ended by determining if the game symbols and the additional game symbols form a winning outcome. The player may be paid an award associated with the winning outcome if the game symbols and the additional symbols form the winning outcome. Alternatively, the player's acceptance of the cash value may be received, and if so, the game may be ended immediately thereafter by paying the player the cash value.

[0021] The method may also include determining odds of a winning outcome occurring from the symbols, and generating the cash value based on the odds. Alternatively or in addition, a winning outcome including at least one of the symbols may be identified, and the cash value may be set to an amount less than an award amount associated with the winning outcome. It is contemplated that the cash value may also be set such that it is greater than the wager.

[0022] Other systems, methods, features and advantages of the invention will be or will become apparent to one with skill in the art upon examination of the following figures and detailed description. It is intended that all such additional systems, methods, features and advantages be included within this description, be within the scope of the invention, and be protected by the accompanying claims.

BRIEF DESCRIPTION OF THE DRAWINGS

[0023] The components in the figures are not necessarily to scale, emphasis instead being placed upon illustrating the principles of the invention. In the figures, like reference numerals designate corresponding parts throughout the different views.

[0024] FIG. **1**A illustrates a gaming environment where a value engine may be used;

[0025] FIG. **1**B is a block diagram of an exemplary gaming machine having the value engine;

[0026] FIG. **2** is a block diagram illustrating an exemplary arrangement of gaming machine components;

[0027] FIG. **3**A illustrates a display showing a current cash value at an exemplary poker game;

[0028] FIG. **3**B illustrates a display presenting a current cash value at an exemplary poker game;

[0029] FIG. **3**C illustrates a display presenting a current cash value at an exemplary slot game;

[0030] FIG. **4** is a flow diagram illustrating operation of an exemplary value engine; and

[0031] FIG. **5** is a flow diagram illustrating determination of current cash value by an exemplary value engine.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0032] In the following description, numerous specific details are set forth in order to provide a more thorough description of the present invention. It will be apparent, however, to one skilled in the art, that the present invention may be practiced without these specific details. In other instances, well-known features have not been described in detail so as not to obscure the invention.

[0033] In general, the value engine herein is configured to evaluate game outcomes at various stages of a game. The value engine can then determine a monetary or cash value for the current game outcome and present this value to a player. In one or more to embodiments, the cash value may be offered to the player in exchange for something.

[0034] For example, the player may forgo an opportunity for a large award so that he or she may take the current cash value being offered.

[0035] The value engine is advantageous in that it adds a new element to wagering games that is compatible with a wide variety of wagering games. It is contemplated that the value engine may be used with any wagering game where game symbols or indicia (e.g., playing card symbols, slot symbols, keno numbers, bingo numbers, etc . . .) are revealed in subsequent stages or steps of a game. For example, in a keno type game, the value engine may generate a cash value for a player's keno card based on the numbers the player currently has marked. The value engine may reevaluate the keno card as additional numbers are marked to determine a cash value as each keno number is revealed and/or as individual numbers are marked on the keno card.

[0036] It can be seen from the above example, that determination of a current cash value can be triggered by various events. This is advantageous in that some events that occur during a wagering game may change the odds or other characteristics of a game without changing the game symbols or indicia. For example, in the keno example, the odds of a player winning may be altered when each subsequent number is revealed, even though each number is not marked on the player's keno card (i.e., the player's keno card remains unchanged).

[0037] Since the value engine may be used with a variety of wagering games, it is also advantageous in that it can be used to enhance traditional games, such as to encourage new players to play or to entice existing players to continue playing. In addition, the value engine provides feedback in the form of a current cash value for the player's current set of game symbols or indicia. This allows players to make a connection between their actions and the cash value presented by the value engine.

[0038] Thus, players are able to actively play and participate in a game having the value engine. This gives players a sense of control which makes the game challenging and more entertaining.

[0039] The value engine may also attract new players who are attracted to games where they can easily see the results of their actions. It is noted that, in some embodiments, the value engine also provides the benefit of offering but not requiring players to act upon a cash value presented by the value engine. In this manner, players may play a wagering game as they desire. This reduces, if not eliminates, the risk that players of particular games will be alienated by the value engine.

[0040] FIGS. **1**A-**1**B illustrate an exemplary gaming machine **100** at which the value engine **122** may be implemented or used. In one embodiment, the gaming machine **100** is a wager-based gaming machine configured to present one or more games to a player, which games offer the possibility of an award of winnings. Of course, the gaming machine **100**

DraftKings, Ex. 1006, p. 8

could be configured to present games or amusing activities based upon payment and either not award winnings or offer the opportunity for points, tickets, prizes or the like.

[0041] In one embodiment, the gaming machine **100** defines a generally enclosed interior space for housing one or more components. As illustrated, the gaming machine **100** generally comprises a housing or cabinet **102** for supporting and/or enclosing various components required for operation of the gaming machine. In the embodiment illustrated, the housing **102** may include a door **106** located at a front thereof, the door capable of being moved between an open position which allows access to the interior and a closed position in which access to the interior is generally prevented. The configuration of the gaming machine **100** may vary. In the embodiment illustrated, the gaming machine **100** has an "upright" configuration. However, the gaming machine **100** could have other configurations, shapes or dimensions (such as being of a "slant"-type or other configuration as is well known to those of skill in the art). It is noted that the configuration of the door **106** may vary, such as dependent upon the configuration of the gaming machine **100**.

[0042] The gaming machine **100** preferably includes at least one display device **104** configured to display game information. The display device **104** may be a mechanical, electromechanical or electronic display, such as one or more rotating reels, a video display or the like. When the display device **104** is an electronic video display, it may comprise a cathode ray tube (CRT), high resolution flat panel liquid crystal display (LCD), projection LCD, plasma display, field emission display, digital micro-mirror display (DMD), digital light processing display (DLP), LCD touch screen, a light emitting display (LED) or other suitable displays now known or later developed, in a variety of resolutions, sizes and formats (e.g. 4:3, widescreen or the like). The display **104** may be capable of projecting or displaying a wide variety of information, including images, symbols and other indicia or information associated with game play, game promotion or other events. In one embodiment, the display **104** may be used to present one or more paytables associated with the opportunity for increased awards.

[0043] It is contemplated that if more than one display **104** is provided in the gaming machine **100**, each display **104** may present different information. For example, one display **104** may be used to present one or more paytables while another display is used to present a game. Alternatively or in addition, one display **104** may be used to display current cash values determined by the value engine **122**. The current cash value could also or alternatively be displayed on a main display **104** or a single display of a gaming machine **100**.

[0044] The gaming machine **100** may be configured to present various styles or configurations of games having the inventive features described herein. These may include games in Class III, such as video poker games, keno, slot-type games, and blackjack or other card, dice or various other games now known or later developed, as well as games in Class II, including central determinant games such a video lottery, bingo and bingo-based games, and other games now known or later developed. The games may also be skill based or include one or more skill components. In one embodiment, certain game outcomes may be designated as winning outcomes. Awards may be provided for winning outcomes, such as monetary payments (or representations thereof, such as award of credits), prizes or the like. As is well known in the art, the number of winning outcomes may vary dependent upon the desired payout or winning percentage offered to the players as compared to wagers that are retained by the gaming establishment.

[0045] The gaming machine **100** may include one or more player input devices **108** (such as input buttons, a touch-screen display, joystick, touch-pad or the like) that may be utilized by the player to facilitate game play. For example, the gaming machine **100** may include a "bet credit" button **118**, "cash out" button **116** or the like, such as to permit a player to wager monetary credits credited to the machine. It is contemplated that the player input devices **108** may be physical buttons or touch buttons on a display **104** in one or more embodiments. The player input devices **108** may also or alternatively be other controls, such as sliders, switches, scroll bars, etc . . . , implemented by physical structures or on a display **104**.

[0046] The gaming machine **100** may also include one or more peripherals **110**, such as a currency accepting mechanism **112** for accepting coins and/or a currency or card reader **114** for reading player tracking cards, credit cards, ATM cards, or the like. Some other exemplary peripherals **110** include speakers, voucher/payout ticket printers, voucher/payout ticket scanners, coin or currency dispensers, and the like.

[0047] The gaming machine **100** may include a means for paying a player any winnings accumulated during game play. For example, as stated above, a "cash out" button **116** may be provided. The "cash out" button **116** may permit a player to be paid the winnings or redeeming any credits initially paid into the gaming machine **100**. The term "cash out" is used herein to define an event initiated by the player wherein the player receives a number of coins or currency that is equivalent to the value of the player's accrued credit base. Typically when a player cashes out, the player receives either a paper currency voucher or currency in the form of a coin disbursement. If the player decides to receive a coin disbursement, the gaming machine **100** may activate a coin hopper/dispenser or coin handling device (not shown) which physically counts and delivers the proper number of coins to the player. The coin handling device is commonly configured to transport coins from a supply source (hopper or bin filled with coins) to a coin tray or payout receptacle where the player physically receives the coins. The player might also elect to cash out by having a ticket or other media dispensed, such as via a printer, or electronically such as by transferring credits or currency to the player's bank account or player tracking account.

[0048] In one preferred embodiment, the gaming machine **100** includes one or more controllers or processors **128** for controlling the gaming machine, including receiving player input and sending output signals for controlling the various components of the machine **100** (such as generating game information for display by the display **104**). A processor **128** may be a microprocessor, chip, electronic circuit, or the like in one or more embodiments.

[0049] The processor **128** may be arranged to send signals for determining winning combinations and to cause the display **104** to display winning amount information.

[0050] The processor **128** may communicate with input devices **108**, peripherals **110**, and one or more displays **104** (or other output devices) to allow a player to interact with and play a wagering game at the gaming machine **100**. In addition, the processor **128** may determine if a round of game play has resulted in a win, and if so, the amount to be paid to the player for that win. Also, one or more processors **128** may provide

the value engine **122** and functionality thereof, as described herein, such as by being hardwired to form the value engine or by executing machine readable code that implements the value engine. For instance, as shown, the value engine **122** is provided by the processor **128** of FIG. **1**B. It is noted that the value engine **122** may be a separate component, comprising for example a separate processor **128**, in some embodiments.

[0051] A processor **128** may access one or more memory devices **130**. A memory device **130** may be configured to store the machine readable code to implement and/or operate one or more wagering games. It is contemplated that a memory device **130** may also or alternatively be configured to store information to implement and/or operate the value engine **122**. For example, information related to the play or execution of a game and the value engine **122** such as but not limited to credits, amounts wagered, paytables, paylines, odds for a winning outcome, cards/symbols dealt, jackpot amounts, bonuses, and randomly generated numbers may be stored in a memory device **130**. This and other information may be stored in the memory device **130** for a period of time to the information to be used by a value engine **122** in determining a current cash value.

[0052] As stated, a memory device **130** may store machine readable code to implement a value engine **122**. For example, a processor **128** may retrieve and execute machine readable code to provide the value engine **122**, its features, or its functionality as disclosed herein.

[0053] Though shown external to the processor **128**, it is contemplated that one or more memory devices **130** may be internal to the processor. A memory device **130** may utilize various storage technologies to accomplish data storage and retrieval. For example, a memory device may be optical or magnetic media, a hard drive, flash drive, optical drive, RAM, ROM, or the like.

[0054] The gaming machine **100** may include one or more random number generators **126** in some embodiments. In general, the random number generator **126** will be used to provide random game outcomes. For example, the random number generator **126** may be used to deal or present random game symbols or indicia to a player during a to game. The random number generator **126** may be external to the processor **128** or may be integrated or be part of the processor in some embodiments.

[0055] The gaming machine **100** may be configured as a stand-alone device or be in communication with one or more external devices at one or more times, such as through one or more communication devices **124**. For example, the gaming machine **100** may be configured as a client-type device and obtain game code or game outcome information from a remote server **120** through network or other communications. These one or more gaming servers **120** may be configured to perform accounting, player tracking, bonusing, game generation, random number generation, or other functions. To illustrate, in some embodiments, the gaming machine **100** need not have a random number generator **126** since such functionality may be provided by a gaming server **120**.

[0056] The value engine **122** will typically utilize and/or be implemented by various elements of the gaming machine **100**. For example, one or more player input devices **108** may be used to interact with the value engine **122**. In one embodiment for example, a player input device **108** in the form of an "accept" button may be provided to allow a player to accept a current cash value presented on a display **104** by the value engine. One or more peripherals **110** may be used by the value engine **122** as well. For example, the value engine **122** may utilize a ticket printer or coin dispenser to award a current cash value to a player.

[0057] FIG. **2** is a block diagram illustrating the value engine **122** in communication with various other components of a gaming machine. For example, as can be seen, the value engine **122** may be in communication with one or more displays **104**, input to devices **108**, random number generators **126**, memory devices **130**, or various subsets/combinations thereof.

[0058] In operation, the value engine **122** may evaluate game information to determine a current cash value. For example, in one embodiment, the value engine **122** may receive game information identifying the game symbols or indicia the player currently has, the odds the player will win (or lose), the amount the player has wagered, or various combinations thereof. As shown in FIG. **2**, the value engine **122** may obtain or be provided this information from another element of the gaming machine. For example, the value engine **122** may retrieve game information from a memory device **130** of the gaming machine.

[0059] The value engine **122** may process the game information to produce a current cash value for presentation to the player. In general, the value engine **122** will provide a current cash value based on the likelihood that a player will win an award and/or the amount of that award. For example, as will be described further below, a player of a poker game may be given a current cash value for his or her partial hand based on the likelihood (i.e., odds) that the partial (or non-final) hand will become one or more particular winning hands as the poker game progresses. The current cash value may take into account the amount the player may win. For example, the current cash value will typically be lower than the amount the player would win if he or she achieved one of the winning hands. In this manner, the current cash value is an enticing amount, but is less than the amount the player could possibly win. It is noted that the current cash value may also take into account the player's wager so that the current cash value may be set above or below the player's wager amount. This allows a challenging and engaging choice to be presented to the player by the value engine **122**. Namely, the player may choose between taking the current cash value of his or her hand or forgoing this value to attempt to win a larger award for the hand.

[0060] As can be seen, the value engine **122** may communicate the current cash value to a display **104** to present the current cash value to the player for evaluation. An input device **108**, such as an "accept" button, may be provided to allow a player to indicate whether or not the player wishes to accept or take the current cash value. It is contemplated that a random number generator **126** may optionally provided/used in one or more embodiments. For example, if provided, the random number generator **126** may randomize the current cash value so as to make the current cash value unpredictable to players. For example, a random number generator may be used to increase the current cash value a random amount at random or predetermined times. In this manner, players will not be able to easily predict the current cash value and thus will continue to be engaged by the value engine **122**.

[0061] FIGS. **3**A-**3**B illustrate an exemplary display **104** showing the presentation of a current cash value at a poker-type game. As can be seen, the display **104** shows a set of dealt cards **304**, a plurality of "hold" buttons **108**A, a "bet" button **108**B, and a "deal" button **108**C. The "hold" buttons **108**A

may be used to hold one or more of the cards, while the "deal" button **108**C is used to deal and/or replace one or more cards **304**. The "bet" button **108**B may be used to wager a desired amount of credits or currency. A paytable **308** may also be shown on the display **104** (or elsewhere) to allow a player to determine the winning hands or outcomes and their associated award.

[0062] As can also be seen, the display **104** also presents the number of credits a player has, and the amount the player has wagered. In addition, the current cash value of the player's current hand is shown as well. As described above, the current cash value may be determined and presented by the value engine. In the poker example of FIG. **3**A, the value engine has evaluated the player's cards **304** in light of the paytable **308** and determined a current cash value for the cards of **30** credits. This amount is higher than the player's wager of **10** credits and so is enticing to the player. However, the current cash value of **30** credits is less than the **100** credits the player could win if he or she obtains the one card **304** needed to complete a royal flush.

[0063] Therefore, the player has a choice to accept the current cash value or to forgo this value and continue playing the game. As can be seen, one or more input devices **108** may be provided to allow the player to make his or her choice known. For example, FIG. **3**A illustrates an "accept value" button **108**D which, when engaged, would award the player the current cash value, such as by crediting the current cash value to the player's credits or by otherwise paying out the current cash value. In the example of FIG. **3**A, this would be the amount of the current cash value of **30** credits.

[0064] It is noted that a "decline" button could be provided in some embodiments. In such embodiments, the player may be required to accept or decline the current cash value before the game will continue. This brings attention to the current cash value. However, this is optional. In typical embodiments, the value engine will present current cash values and the game may proceed according to its rules, unless the player engages an "accept" button **108**D or the like to indicate that he or she wishes to take the current cash value offered by the value engine.

[0065] FIGS. **3**A-**3**B illustrate that the current cash value is dynamic and may be based on the current situation of the game being played. To illustrate, in FIG. **3**A the player has four cards to a royal flush and thus is close to achieving the royal flush. As such, the value engine has determined a current cash value for this set of cards **304** as 30 credits. In FIG. **3**B, the player requires two cards to achieve a royal flush.

[0066] Because of the lower odds that a winning outcome will be achieved, the value engine has determined a lower current cash value of 15 credits for this set of cards **304**. Both these current cash values are lower than the award of 100 credits that could be won if the player achieves a royal flush. Thus, the player is challenged to make a choice between the current cash value and the larger winning amount.

[0067] It is contemplated that the current cash value may be presented at stages of the game. For example, current cash value may be determined and presented after each card or other game symbol is dealt to a player. This may occur in real time or in substantially real time. For example, as each individual playing card or slot symbol is revealed, a new current cash value may be calculated. This provides an animated presentation which may be engaging to players. Alternatively, current cash value may be determined and presented at the end of each dealing stage of a game. For example, in a video poker game, current cash value may be presented after the initial deal, after one or more cards are held, or after one or more replacement cards are dealt (assuming the game is not over after the replacement cards are dealt).

[0068] Similarly, in a slot type game, current cash value may be calculated for newly revealed slot symbols, held symbols, and/or replacement symbols (assuming the game is not over as a result of revealing such symbol(s)). For example, FIG. **3**C illustrates a slot game where one or more reels **312** may be respun. This feature can be used to replace individual game symbols, such as slot symbols along a payline **316**. In this manner, a player may attempt to obtain a winning outcome while retaining or holding one or more of his or her current slot symbols.

[0069] FIG. **3**C illustrates an embodiment where the player is close to achieving a 777 jackpot of 1000 credits. As can be seen, the gaming machine offers the player a current cash value of 30 credits and an "accept" button **108**D to allow the player to accept the current cash value. Alternatively, the player may forgo the current cash value and attempt to win the jackpot, such as by engaging the "spin" button **108**C.

[0070] FIG. **4** is a flow diagram illustrating operation of an exemplary gaming machine having the value engine. FIG. **4** provides a high level illustration of the operation of the value engine that may be used with a variety of wagering games, such as slot type games, poker type games, keno games, bingo games, or other games.

[0071] At a step **404**, a wager may be received or accepted to begin a wagering game. The wager may be in the form of credits or currency and may be physically or electronically received by a payment acceptor of the gaming machine. At a step **408**, one or more game symbols or indicia may be presented, such as on a display of the gaming machine. This may occur in various ways. For example, in one embodiment, one or more slot symbols may be presented such as by spinning and then stopping one or more reels. Alternatively or in addition, one or more playing cards may be dealt. In a keno embodiment, one or more numbers may be presented so that those that match the player's keno card may be identified.

[0072] At a decision step **412**, it may be determined if the game is over or has concluded. At this stage, the game is most likely not over since the wager was just placed and the first game symbol(s) were just displayed. However, in the event the game is over at decision step **412**, it may then be determined if the player is a winner at a decision step **416**. For example, the player's game symbol(s) may be compared to a paytable or otherwise evaluated to determine if they meet the requirements to be deemed a winning combination or winning outcome. If not, the game ends at a step **420** where the player's wager may be retained by the gaming establishment. If the player is a winner, then at a step **424**, the player may be paid an award associated with the winning outcome he or she has achieved. A paytable may be consulted to determine this amount.

[0073] At the decision step **412**, if the game is not over, at a step **428**, a current cash value for the player's current game symbols may be generated and presented by the value engine of the gaming machine. It is noted that the player's game symbols may be the slot symbols or playing cards that are revealed to the player. Though a number of game indicia may be revealed it is contemplated that only some of them may be considered for purposes of determining current cash value. For example, only indicia along one or more active paylines or at one or more particular positions/locations on the gaming

machine's display may be considered. In a keno (or bingo) embodiment, the numbers marked and their position relative to one another may be considered for purposes of determining current cash value. Alternatively, the unmarked numbers needed to win the keno game and their positions may be considered.

[0074] As stated above, the determination of current cash value occur in various ways. In one embodiment, the odds of achieving a particular winning outcome and the award amount for this outcome may be used to determine current cash value. In addition, the amount wagered may also be used. It is contemplated that the number of credits a player currently has may also be used to determine current cash value. In one or more embodiments, the goal of the value engine may be to provide an interesting or challenging choice to the player with the current cash value. Further details regarding the determination of current cash value will be described below.

[0075] Once presented, it may be determined at a decision step **432** whether or not the current cash value is accepted by the player. For instance, the player may engage a "accept" button or the like to indicate the current cash value has been accepted. It is contemplated that the player may decline current cash value for his or her game symbols by simply continuing to play the game without accepting, or by engaging a "decline" button or the like.

[0076] If the player accepts the current cash value for his or her game symbols at decision step **432**, the current cash value may be paid to the player at step **424**. The game may then end. It is noted that the player may make one or more additional wagers, such as at step **404** to play one or more additional games.

[0077] In some embodiments, if the current cash value is not accepted, at a step **436**, the player may optionally be provided an option to split his or her potential winnings into multiple opportunities to obtain a winning outcome. For example, a player with four cards to a Royal Flush may decline the cash value and indicate a number of opportunities he or she wishes to have to win. This may be indicated via a button or other input device of a gaming machine. The award for a winning outcome may be divided by the number of opportunities. For example, for three opportunities, each winning outcome may pay an equal third of the total winning award. The cards or other indicia dealt or otherwise provided during each opportunity may be recycled into the deck so as to preserve the odds of the game. Also, in this manner, the player has a chance to achieve and thus be paid for the same winning outcome more than one time.

[0078] It is contemplated that in one embodiment the opportunities may only apply to particular winning outcomes. For example, a player with four (or other number of cards) to a particular winning outcome may indicate and subsequently receive a set number of opportunities to win that particular winning outcome. In such case, the player may not be paid if a winning outcome other than the particular winning outcome is achieved.

[0079] In addition or alternatively, if the current cash value is not accepted at decision step **432**, the player may optionally manipulate one or more of his or her game symbols at a step **440**. Such manipulation is optional and is generally to allow the player to further or attempt to further his or her progress towards a game outcome that is hopefully a winning game outcome. For example, in a poker type game, the player may hold one or more or none of the cards he or she currently holds at the symbol manipulation step **440**. In a slot type game the player may hold or retain one or more or no slot symbols at step **440**. In some games, the symbol manipulation step **440** may not be provided. For example, in a keno type game where players have already marked certain numbers, no symbol or number manipulation may be permitted.

[0080] Once the optional symbol manipulation at step **440** is completed, and/or the optional step of accepting a number of opportunities is completed at step **436**, the game may continue, such as by presenting one or more additional game symbols at step **408**. To illustrate, in a poker type game, the player may hit a "deal" button to indicate that symbol manipulation is complete and the unheld cards should be replaced by newly presented cards at step **408**. In a slot type game, the player may engage a "spin" button or the like to continue to step **408** where one or more new slot symbols may be presented. If a number of opportunities has been identified at step **436**, it is contemplated that the subsequently presented symbol or symbols may be recycled into the deck prior to presentation of each opportunity to preserve the odds of the game.

[0081] It is noted that the process of presenting current cash value for a player's game symbols may continue with newly presented game symbols until the game is over at decision step **412** or until the player accepts a current cash value for his or her set of symbols at decision step **432**.

[0082] FIG. **5** is a flow diagram illustrating how current cash value may be determined by an exemplary value engine. In general, the process may begin by the value engine receiving various game information from which it may generate a current cash value. At a step **504**, one or more game symbols or indicia belonging to a player may be received by the value engine. For example, a player's hand of cards, slot symbols, keno numbers, or bingo numbers may be received or retrieved by the value engine. It is contemplated that only the symbol's available to the player may be considered the player's symbols. For example, only held cards in a poker game, marked numbers in a keno game, or slot symbols along one or more active paylines may be considered the player's symbols. The other symbols may be considered unavailable since they would not be usable to form a winning hand/outcome according to the rules of the underlying wagering game. In one exemplary embodiment, a processor of the gaming machine may provide the player symbols to the value engine. In addition or alternatively, as described above, the player's symbols may be retrieved from a memory device.

[0083] At a step **508**, additional information may be received or retrieved by the value engine. For example, the amount wagered, cards or symbols remaining to be dealt, credits remaining, and other information related to a wagering game may be collected at the value engine. This information may be used in determining a current cash value. For example, since a winning award may vary based on the amount wagered, the current cash value may also vary based on the amount wagered. In one or more embodiments, the current cash value may be greater for larger wagers and smaller for smaller wagers.

[0084] Once the desired or necessary information is received, the value engine may evaluate the player's symbols. For example, at a step **516**, the player's symbols may be compared to one or more paytables (defining winning outcomes and their associated awards). In general, a paytable would include one or more sets of game symbols or indicia

associated with an award. A player would have a winning outcome if his or her outcome matches one of these sets of game symbols.

[0085] At a decision step **516**, it may be determined if the player's symbols form a to winning outcome. If yes, then in one or more embodiments there may not be a need to determine a current cash value per say. The "current cash value" for player symbols forming a winning outcome may be that defined by the paytable for instance. In the embodiment of FIG. **5**, this current cash value is reported by the value engine at a step **536** if the player symbols are a winning outcome. It is contemplated that the value engine may notify the processor (or other element(s) of the gaming machine) that the player's symbols are a winning outcome as well. It is noted that decision step **516** and the subsequent reporting/notification step **536** may not be in all embodiments, since the gaming machine may not run or activate the value engine if the player has a winning outcome.

[0086] If at decision step **516**, the player's symbols do not form a winning outcome, the likelihood or odds that the player will achieve a winning outcome from his or her current symbols may be determined at a step **520**. For example, the player's symbols may be compared to each winning outcome in a paytable to determine odds on whether the winning outcome will be achieved from the players' current symbols. For example, in a poker type game, the players' current hand may be compared to winning poker hands to determine how likely it is for the player to achieve each of these hands with his or her current hand. The percentage determined at this step for the winning outcomes may be stored on a memory device.

[0087] At a decision step **524**, it may be determined if more than one of the winning outcomes is likely given the player's current symbols. This may occur in various ways. For example, a winning outcome may be deemed likely if the odds of it occurring from the player's current symbols are above a particular threshold. The value engine may compare the odds of one or more of the winning outcomes to this threshold to identify winning outcomes that are likely. The threshold may be various values and may be changed. For example in one embodiment, the threshold may be 30% while in other embodiments a higher or lower threshold may be selected.

[0088] At decision step **524**, if more than one winning outcome is likely, the value engine may take this into account at step **528**. Typically, the current cash value will be based at least in part on the potential award amount that a player could win. Since a single current cash value is typically desired, it may be beneficial to combine award amounts, odds, and other information from the multiple winning outcomes in generating the single current cash value.

[0089] The current cash value may be generated at a step **532**. For example, in one embodiment, the total amount of awards from all likely winning outcomes may be averaged and this average value may be used to set the current cash value for the winning outcome. Alternatively, the median of the winning amounts may be used to set the current cash value. In another embodiment only the highest winning amount may be used to determine the current cash value. In another embodiment, only the most likely winning outcome's award amount may be used to determine current cash value. In one embodiment, the current cash value may be a percentage of a likely winning outcome's award amounts or a combination of more than one likely winning outcome's award amount.

[0090] The current cash value may then be presented to the player, such as via a display of the gaming machine. As described above, the player may then choose whether or not to accept the current cash value for his or her symbols. If the player accepts, the player will typically be paid the current cash value, and the game may subsequently end. If the player declines, the underlying wagering game will typically continue according to its rules.

[0091] As stated, the determination of a current cash value for a player's symbols may occur at various stages of a game. This is advantageous for the reasons stated above. In addition, the determination of a current cash value can be used for other advantageous purposes. For example, it is contemplated that current cash value can itself be the basis of a wagering game. In one embodiment for example, a player of a current cash value wagering game may be presented with one or more sets of one or more game symbols or indicia and be provided a paytable. The paytable is provided to allow the player to determine the winning outcomes for the game. For example, list of winning poker hands may form the paytable in some embodiments.

[0092] The player may evaluate the sets of game symbols and select one or more of them to play. Each set may have a current cash value associated therewith. To illustrate, one or more non-final poker hands with associated current cash values may be presented to the player for evaluation. The current cash value may be determined based on the symbols in the set and a paytable (among other things) such as described above. It is contemplated that the player may need to purchase the select set(s) of symbols before he or she may play them to completion. For example, a set may be purchased by placing a wager on the selected set of symbols. The purchase price may be based on or equal to the current cash value associated with the set of symbols. It is noted that the purchase price may, in some embodiments, be expressed in terms of credits to allow the player to quickly determine how much he or she must wager to purchase a particular set of symbols.

[0093] Alternatively, the player may be provided an opportunity to select one or more sets upon the occurrence of a triggering event. For example, a player achieving a bonus at a base game may be allowed to select one or more sets for free as a result of obtaining the bonus. In such embodiments, the current cash value game functions as a bonus game.

[0094] It is noted that the current cash value game could be periodically or constantly displayed as a secondary game on a gaming machine's display. For example, list of sets of symbols having associated current cash values may be presented to a player while the player is playing a different game. In this way, if a particular set of symbols catches the player's eye, he or she may purchase the set to attempt to win from it.

[0095] Since the player can see the symbols and the current cash value, the player can attempt to find sets of symbols that are a bargain, purchase these sets, and attempt to form a winning outcome therefrom. The goal would be to form a winning outcome has a larger award than the player's purchase/wager amount.

[0096] In a similar vein, it is contemplated that a player may sell his or her symbols in one or more embodiments. For example, a player having achieved a particular set of symbols (e.g., playing card or slot symbols) may decide that he or she is better off selling the hand to another player than to take the current cash value or to attempt to achieve a winning outcome from the symbols. It is contemplated that the player may engage a "sell" button or the like to suspend the current game

and solicit wagers or credits from other players who may purchase the symbols from the player. The player's symbols may then enter an electronic marketplace for sets of symbols. The player may play a new game at this point, while awaiting the sale of the symbols. Alternatively, the player could simply wait for the symbols to be sold before playing again. With a number of players electronically connected, it can be seen that a substantial marketplace for non-final sets of game symbols may be constructed. It is noted that sets of symbols may not be resold in one or more embodiments. This ensures that the sets are played to completion rather than repeatedly bought and sold. The marketplace for non-final sets of symbols may be displayed as a secondary or bonus game, such as described above with regard to the current cash value game.

[0097] While various embodiments of the invention have been described, it will be apparent to those of ordinary skill in the art that many more embodiments and implementations are possible that are within the scope of this invention. In addition, the various features, elements, and embodiments described herein may be claimed or combined in any combination or arrangement.

1. A gaming machine configured to present one or more wagering games comprising:
- a display configured to present one or more game symbols to a player;
- a paytable defining one or more winning outcomes and an associated award for each of the one or more winning outcomes;
- a value engine configured to determine a current cash value for the one or more game symbols on the display based on the odds of the one or more game symbols forming one or more of the one or more winning outcomes;
- a random number generator configured to generate a randomized current cash value the by combining the current cash value with a randomly generated amount, wherein the randomized current ash value is presented on the display;
- one or more input devices configured to receive an indication that the player is accepting the randomized current cash value, wherein when engaged the one or more input devices cause the gaming machine to pay out the randomized current cash value to the player.

2. The gaming machine of claim **1**, wherein the paytable comprises one or more poker hands and the one or more game symbols are numbered playing card symbols.

3. The gaming machine of claim **1**, wherein the paytable comprises one or more sets of slot symbols and the one or more game symbols are slot symbols.

4. The gaming machine of claim **1**, wherein if the indication that the player is accepting the randomized current cash value is not received, the gaming machine is configured to accept a player selection of a number of opportunities to achieve a winning outcome from the one or more game symbols on the display, and to present one or more additional game symbols for each opportunity.

5. The gaming machine of claim **1**, wherein the value engine is configured to present the randomized current cash value only when the one or more symbols do not form any of the one or more winning outcomes.

6. The gaming machine of claim **1**, wherein the value engine generates the current cash value based on the odds of one one or more of the one or more winning outcomes occurring from the one or more game symbols, and the associated award of the one or more of the one or more winning outcomes.

7. A gaming machine configured to present one or more wagering games comprising:
- a memory device storing one or more game symbols provided to a player by the gaming machine for use in a wagering game;
- a processor configured to determine if the one or more game symbols form a winning outcome, and if not, to:
  - generate a current cash value for the one or more game symbols; and
  - generate a randomized cash value by combining the current cash value with a random amount;
- a display configured to present the randomized current cash value to the player; and
- an input device configured to receive an indication that the player is accepting the randomized current cash value, wherein when engaged the input device causes the gaming machine to pay out the randomized current cash value to the player.

8. The gaming machine of claim **7**, wherein the processor is further configured to determine the odds of at least one winning outcome occurring from the one or more game symbols, the at least one winning outcome having an associated award.

9. The gaming machine of claim **8**, wherein the processor generates a current cash value less than the associated award of the at least one winning outcome.

10. The gaming machine of claim **7**, wherein when engaged the input device also causes the gaming machine to end a current game being played on the gaming machine.

11. The gaming machine of claim **7** further comprising one or more additional input devices configured to accept input from the player to allow the player to play the game.

12. The gaming machine of claim **7** further comprising a payout dispenser configured to pay the randomized current cash value to the player as a result of the input device being engaged.

13. The gaming machine of claim **7**, wherein the one or more game symbols are numbered playing card symbols and the winning outcome is a poker hand.

14. The gaming machine of claim **7**, wherein the one or more game symbols are slot symbols.

15. A method of paying out an award for non-final hands at a gaming machine comprising:
- accepting a wager at the gaming machine;
- presenting one or more game symbols that do not form a winning outcome on a display of the gaming machine;
- determining a current cash value for the one or more game symbols to the player before the game has ended;
- generating a randomized current cash value based on the current cash value;
- presenting an option for the player to accept the randomized current cash value;
- presenting one or more additional game symbols; and
- ending the game by determining if the one or more game symbols and the one or more additional game symbols form a winning outcome.

16. The method of claim **15** further comprising receiving the player's acceptance of the randomized current cash value and ending the game immediately thereafter by paying the player the randomized current cash value.

17. The method of claim **15**, further comprising paying the player an award associated with the winning outcome if the one or more game symbols and the one or more additional symbols form the winning outcome.

18. The method of claim **15** further comprising determining odds of a winning outcome occurring from the one or more symbols, and generating the current cash value based on the odds.

19. The method of claim **15** further comprising identifying a winning outcome including at least one of the one or more symbols, and setting the current cash value to an amount less than an award amount associated with the winning outcome.

20. The method of claim **19**, wherein the current cash value is also set such that it is greater than the wager.

* * * * *