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(54) **GAMING MACHINE MANAGEMENT
CONTROLLER FOR PROGRESSIVE GAME**

(52) **U.S. Cl. 463/26**

(57) **ABSTRACT**

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A gaming machine management controller including at least a gaming machine, which receives a bet for a game, performs a plurality of games in a first session and a second session, and performs a payout, a bonus pool device, which accumulates a bonus pool amount from each of a plurality of games performed during the first session, and a bonus controller, which recognizes a bet amount and a payout amount of a player from each of the plurality of games, and determines a bonus pool amount to be accumulated into the bonus pool device, wherein the bonus controller controls the bonus pool device to stop accumulating the bonus pool amount in the case that a predetermined condition associated with the bonus pool device is satisfied, and starts paying out a predetermined bonus award amount every time when the player wins the game performed in the second session.

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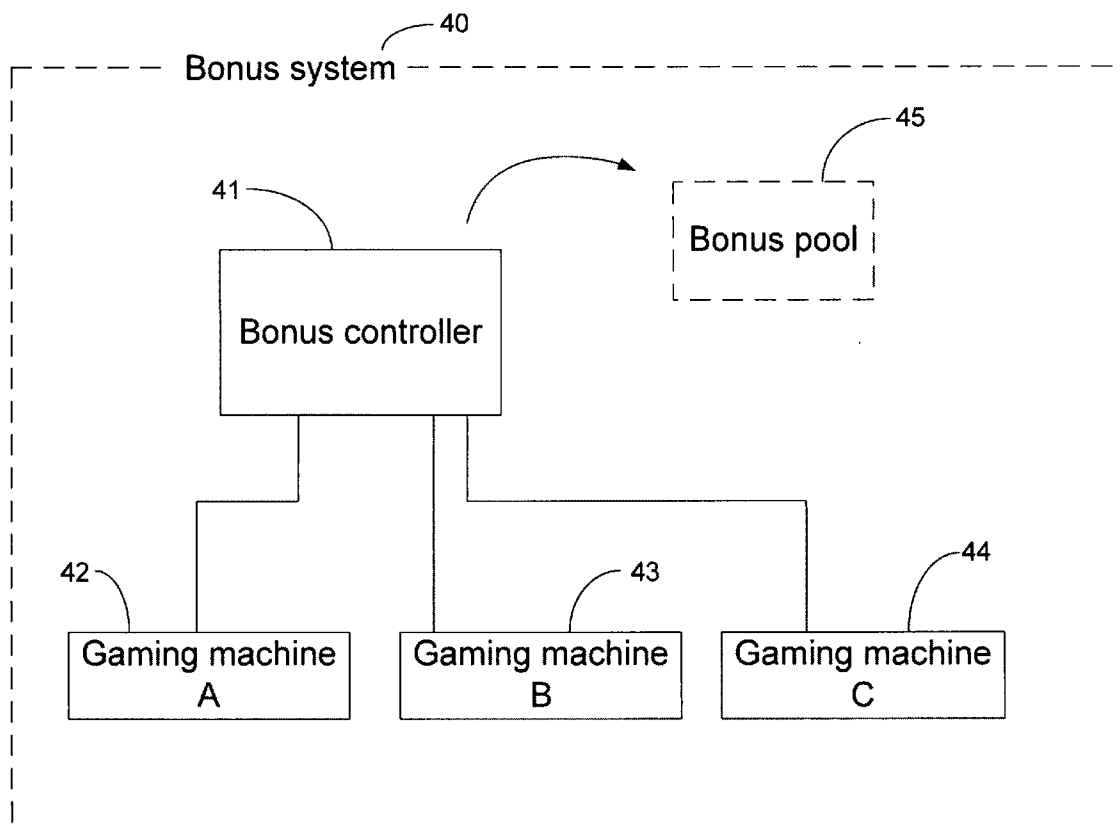


FIG. 1

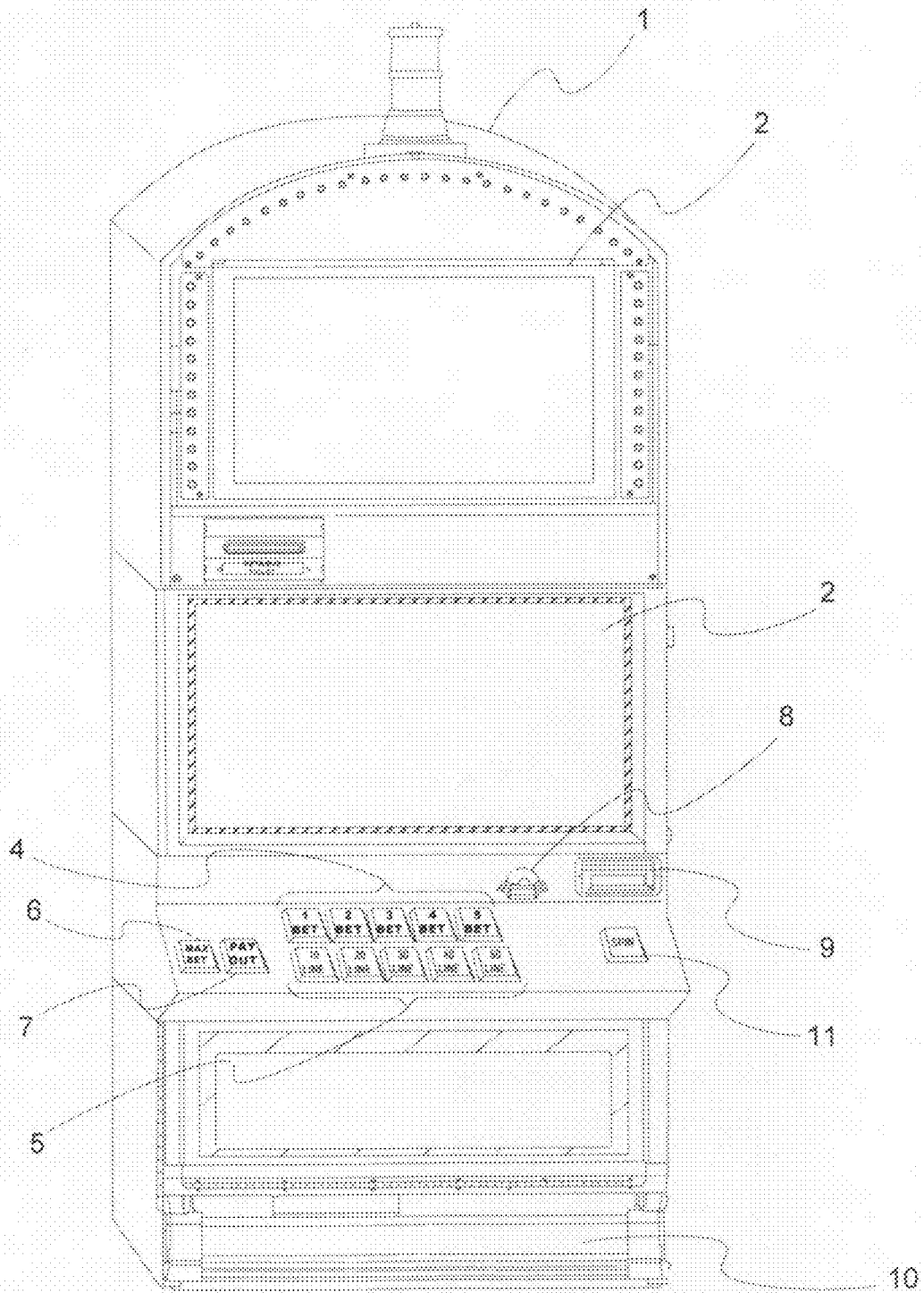
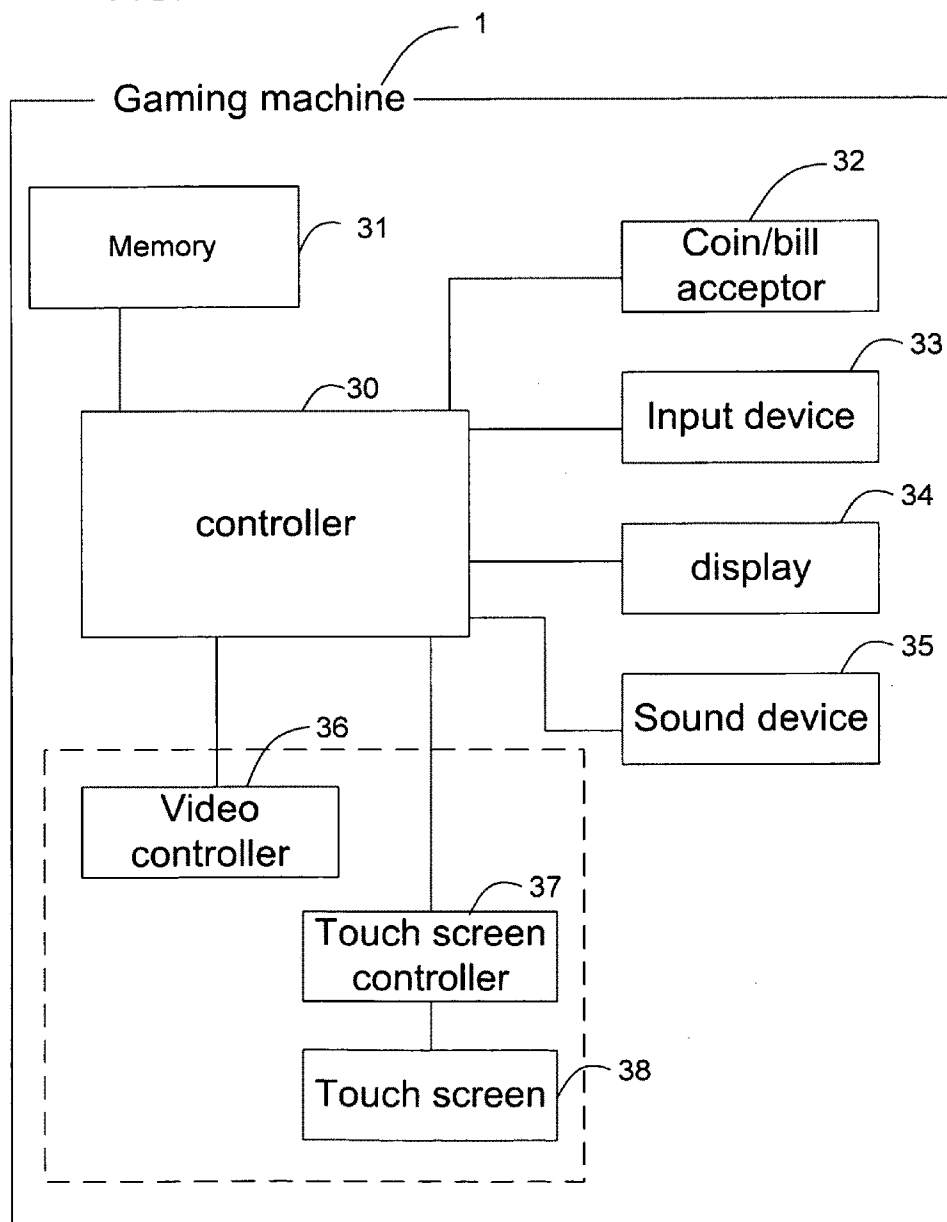
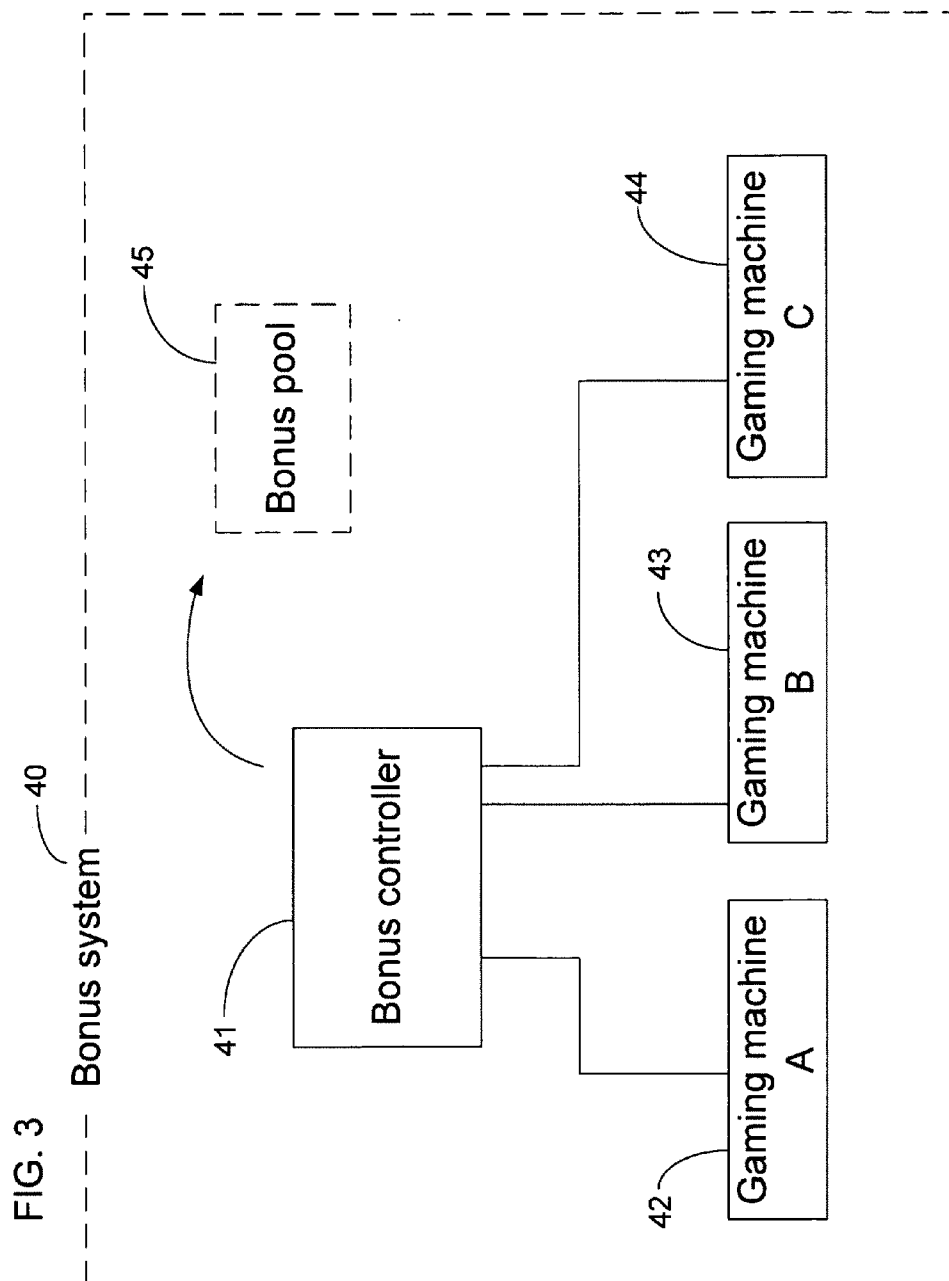


FIG. 2





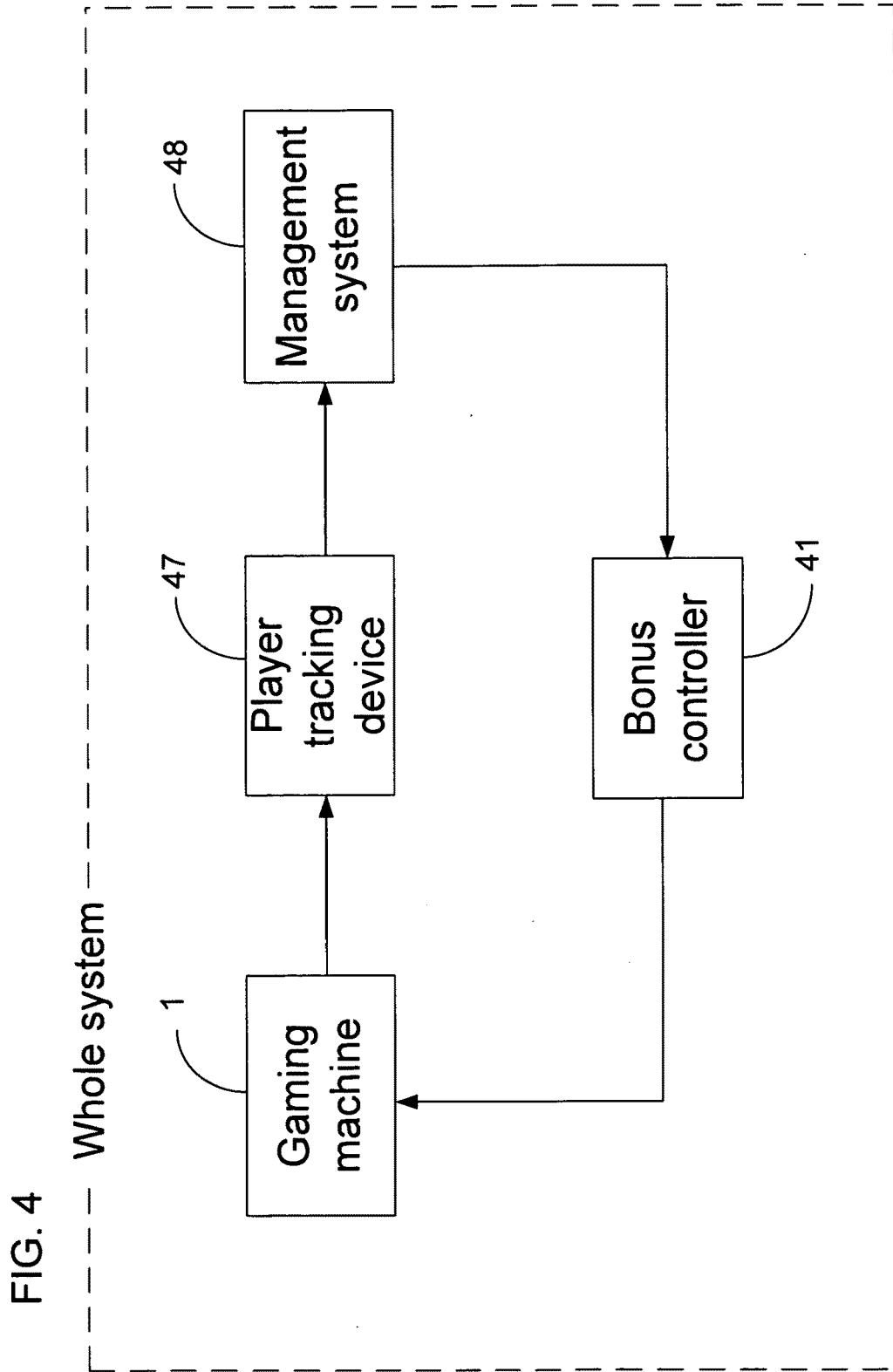


FIG. 4

FIG. 5

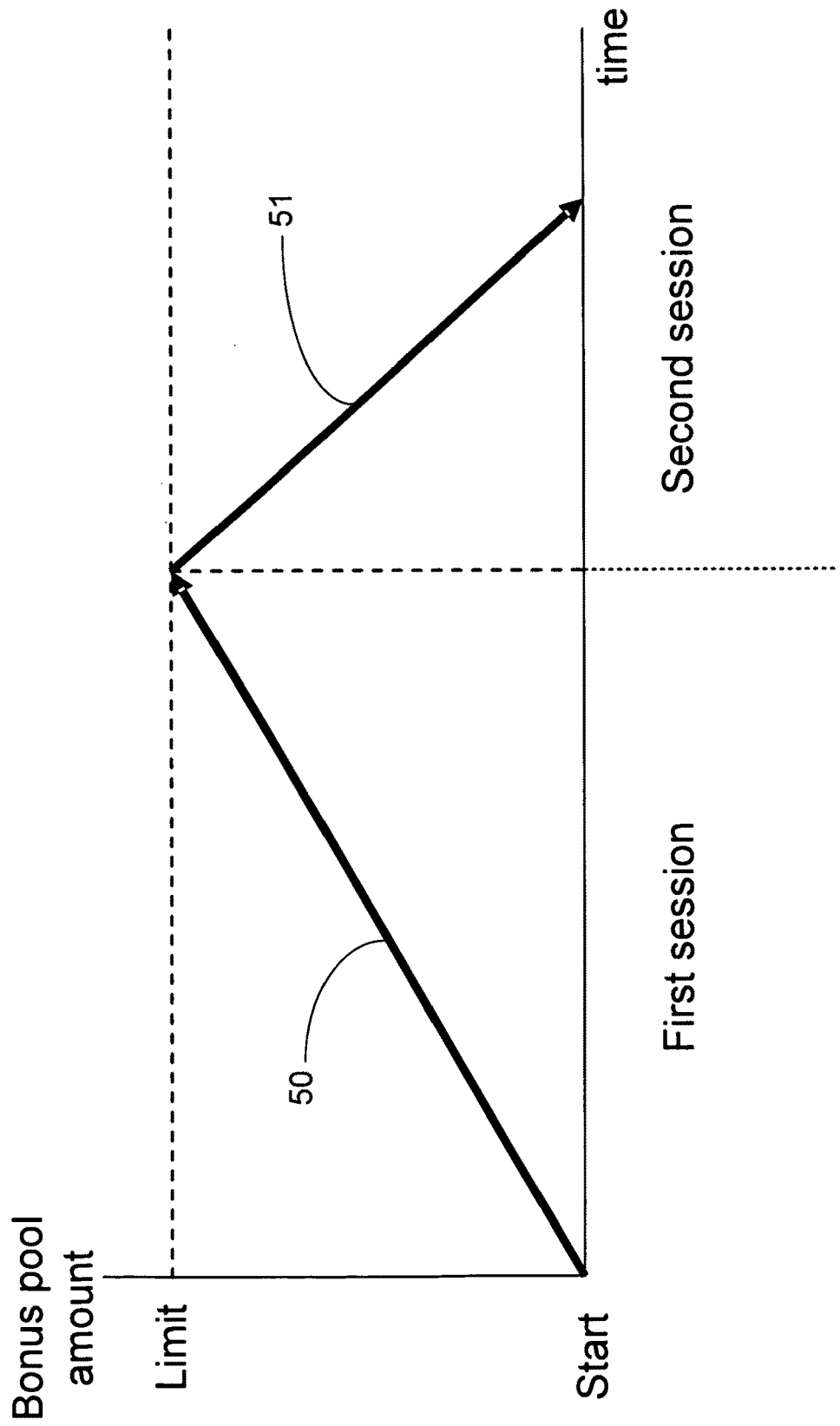


FIG. 6

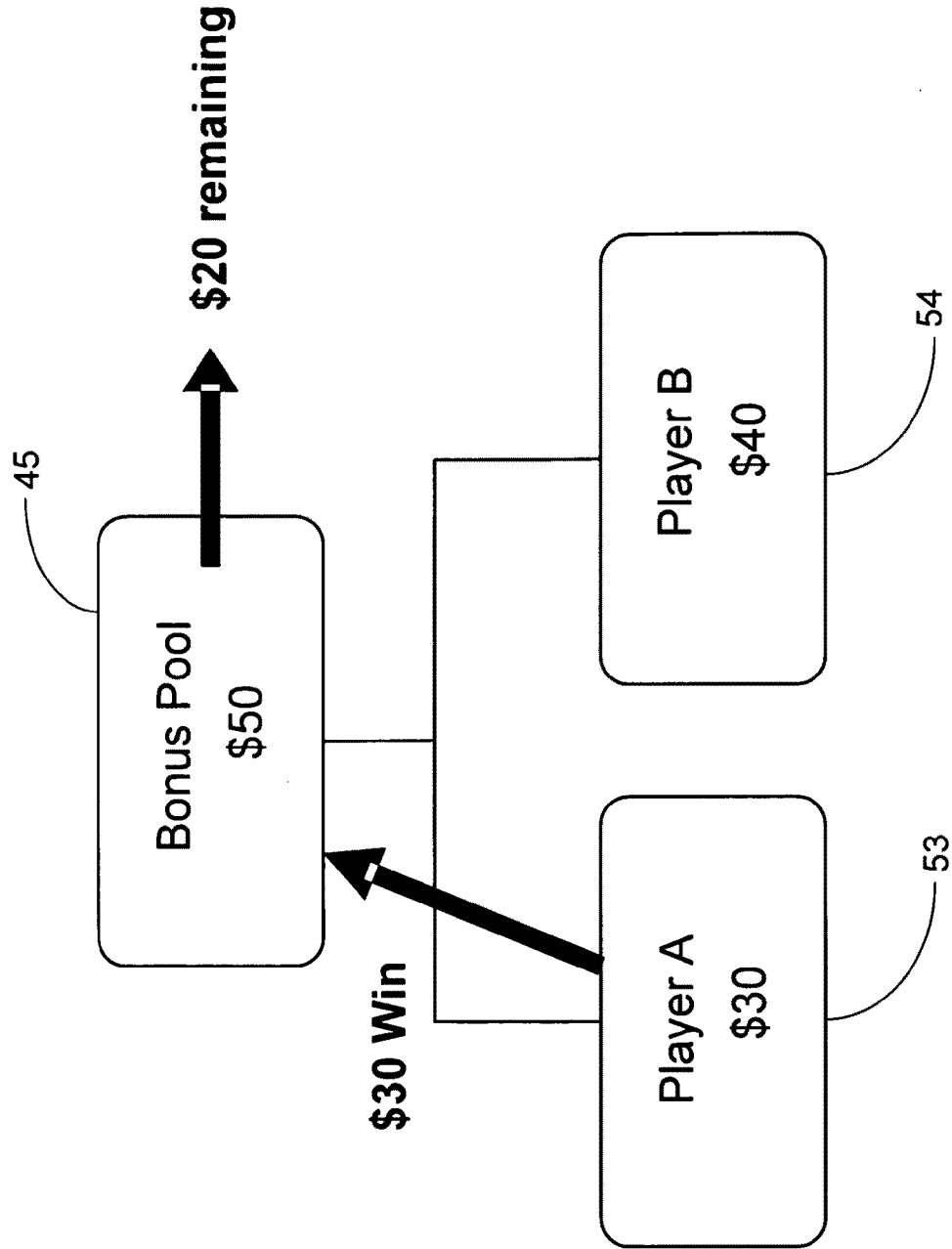


FIG. 7

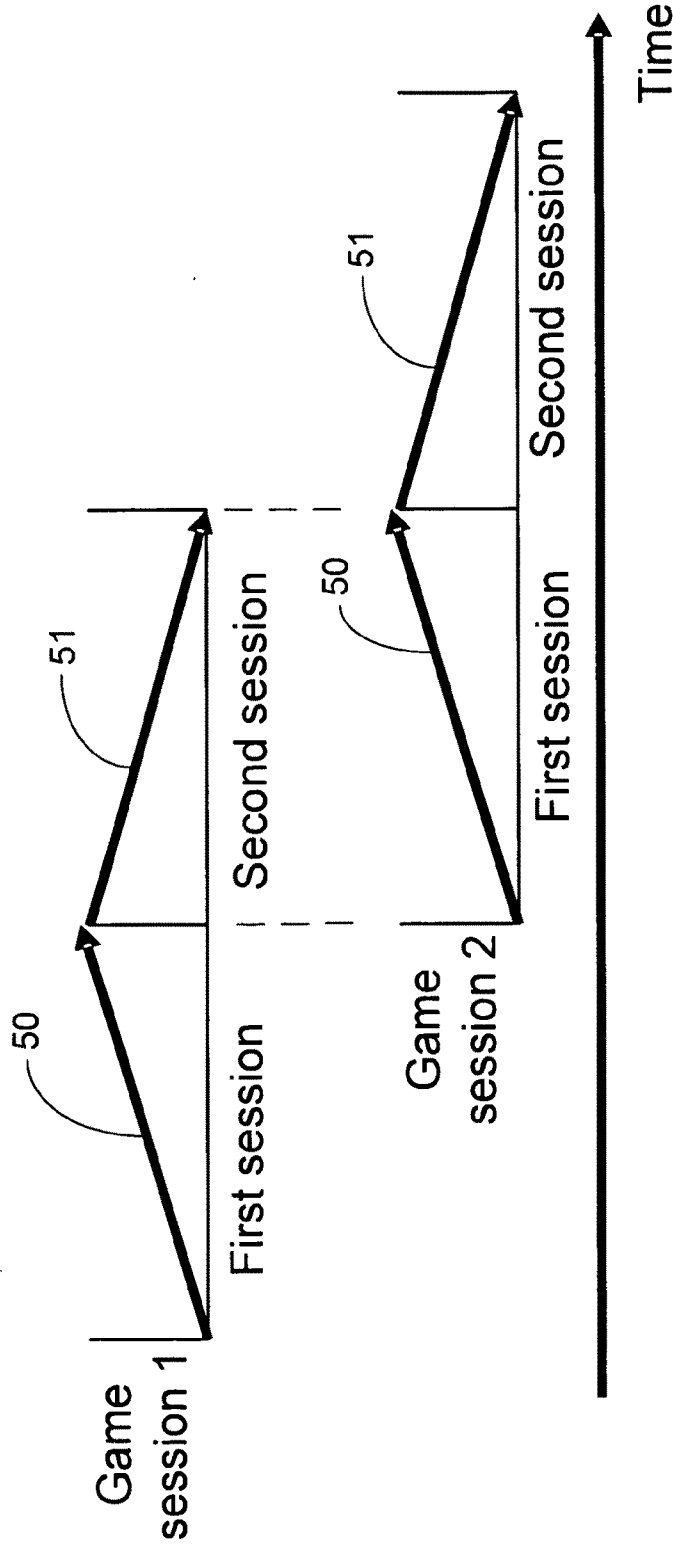


FIG. 8

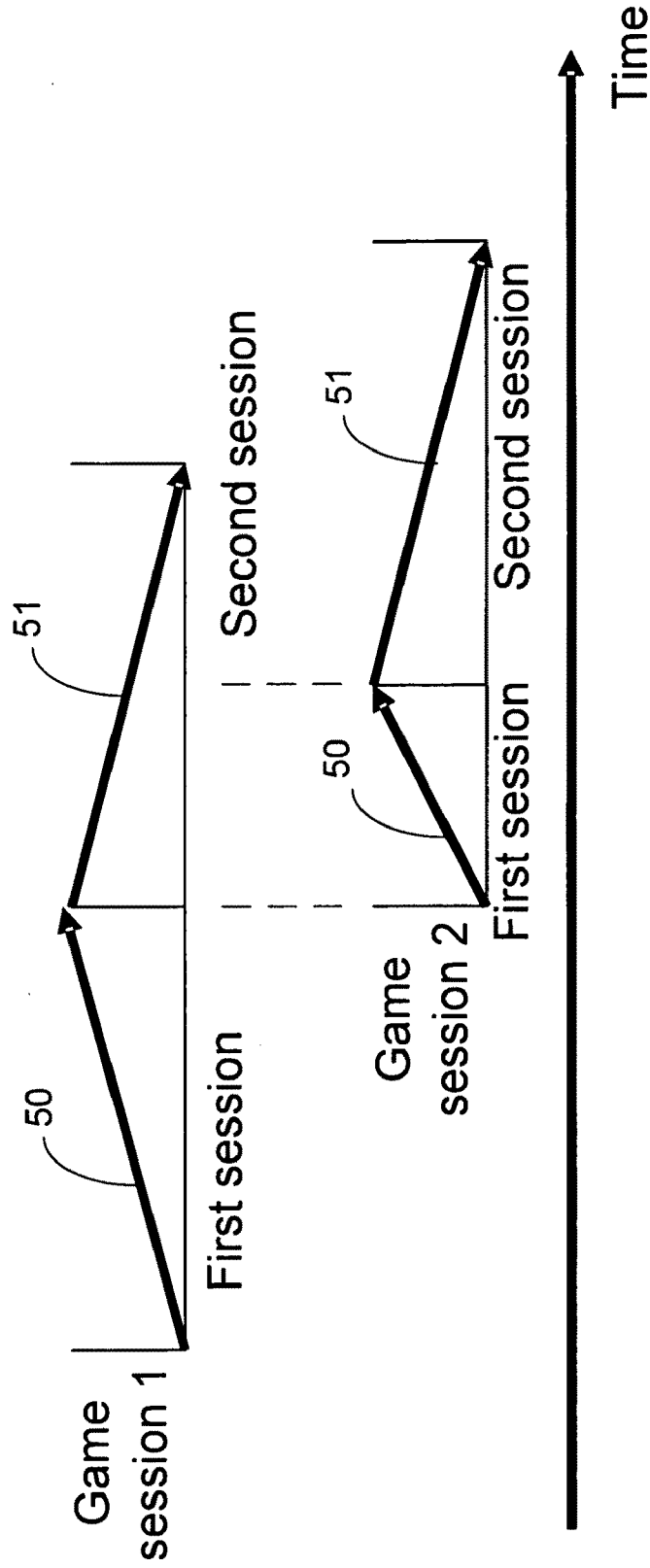


FIG. 9

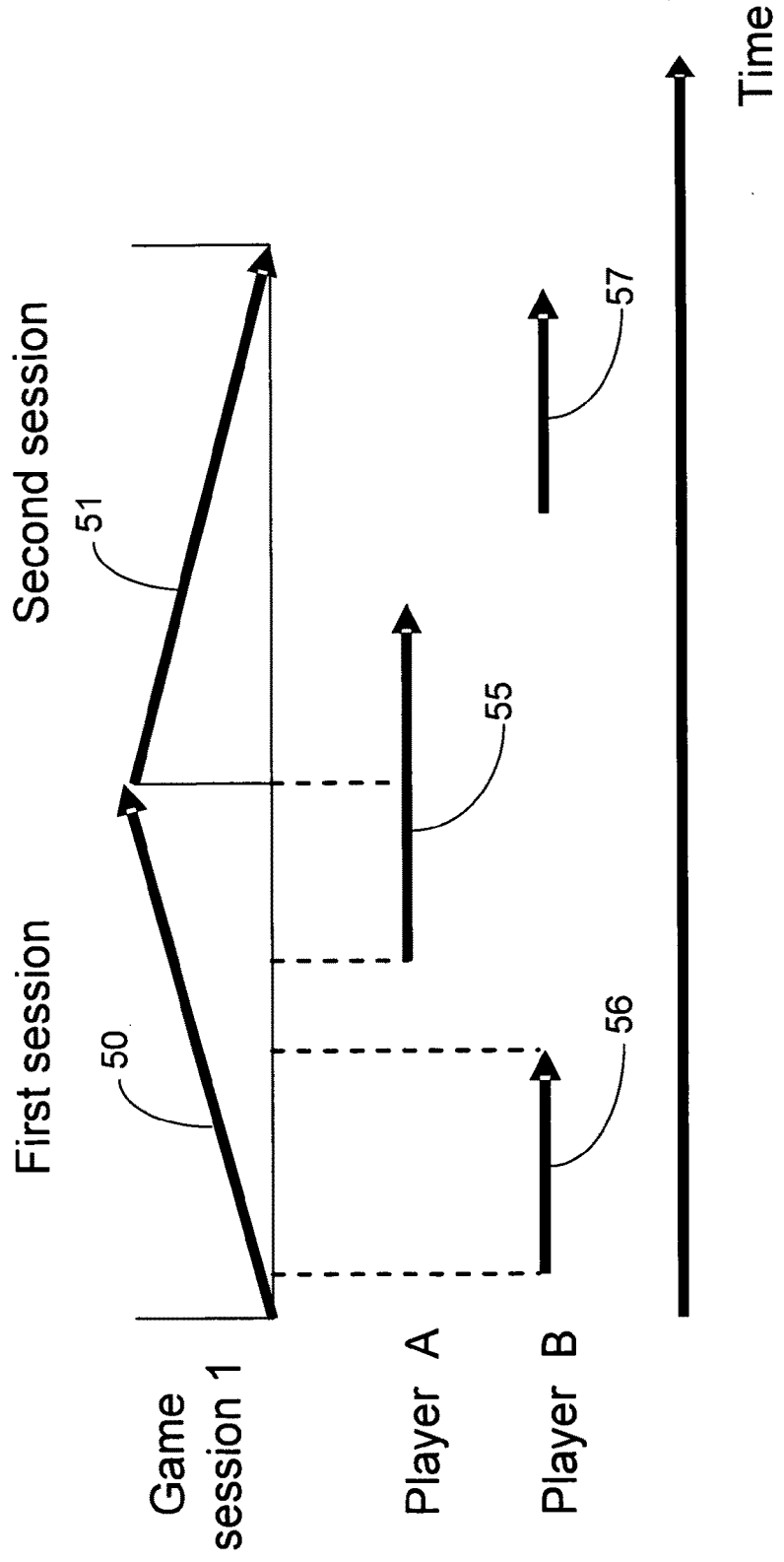
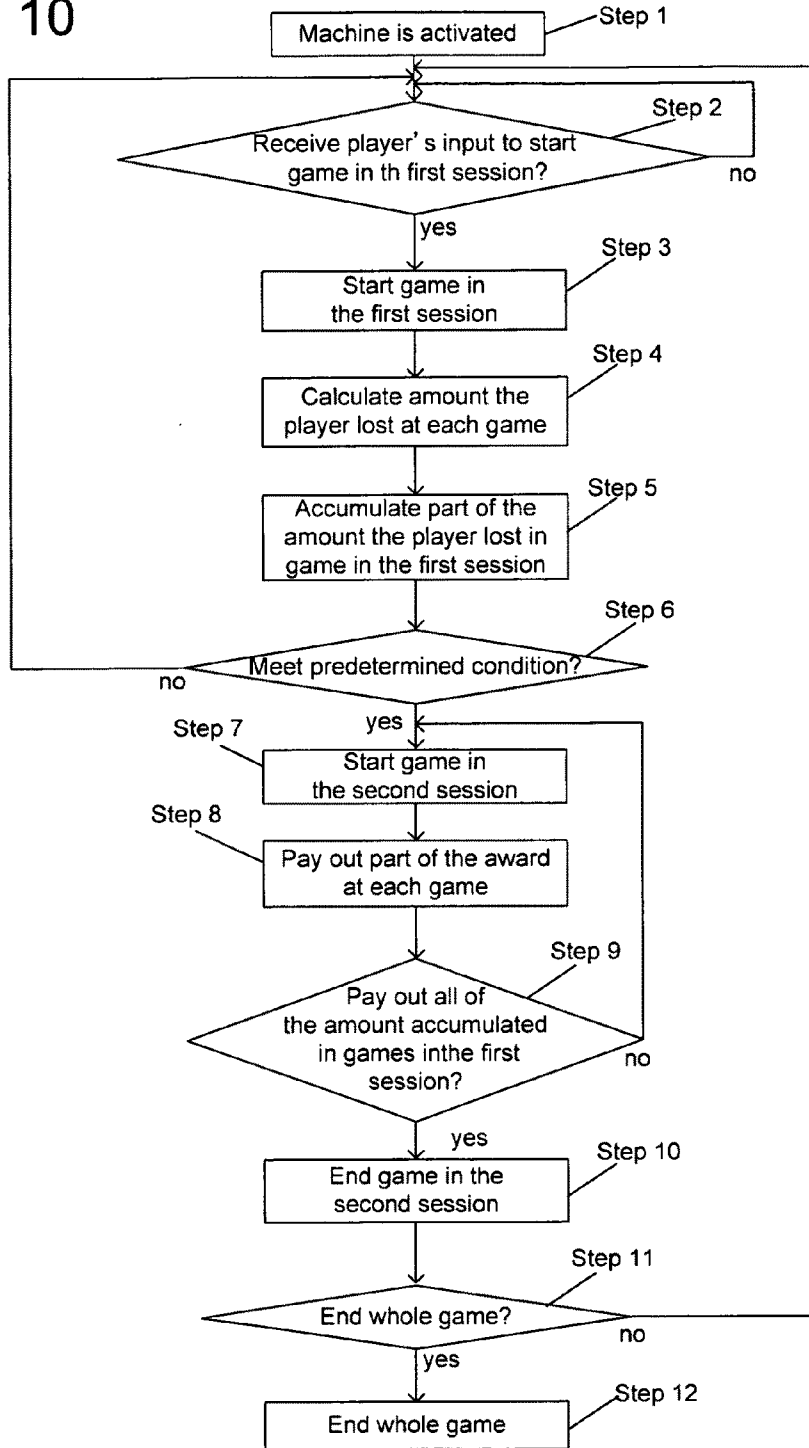


FIG. 10



GAMING MACHINE MANAGEMENT CONTROLLER FOR PROGRESSIVE GAME

TECHNICAL FIELD

[0001] The present invention relates to a gaming machine management controller for controlling gaming machines for use in casinos, pachisuro slot machine parlors, etc.

BACKGROUND OF THE INVENTION

[0002] Slot machines are popular gaming machines in casinos. There are many types of slot machines and some of the slot machines have a display for displaying a plurality of cells or columns in which symbols (or indicia) are shown randomly in each game. When the symbols shown in the cells or columns form one or more winning combinations, a corresponding award is paid to the player. Also, recent slot machines typically have a primary game and a secondary game. The secondary game may include any type of game, either similar to or completely different from the primary game. The secondary game is initiated upon the occurrence of a selected event or outcome of the primary game. For example, the secondary game may be embodied as a progressive game. If a predetermined condition is met in a primary game, a progressive award is paid out to a player in the progressive game. The progressive award is gradually updated to increase by accumulating a player's bet of the primary game.

[0003] There are many examples of the progressive game of the gaming machine. One of them is disclosed in U.S. Pat. No. 6,203,010. This invention is related to the gaming machine of paying out the award continuously in the secondary game if a player hits a progressive winning in the primary game. Concretely, a player who wins the progressive winning receives a payout equal to the base value of the progressive award and subsequently continues to earn a percentage of wagers until the next win.

[0004] The other example of them is disclosed in Japanese Patent Application Publication No. 2004-105473. The gaming machine of the prior art recognizes the amount of the progressive award, which has been paid out to the player, and compares the recognized amount with those of the past progressive awards. After that, the gaming machine places the recognized progressive awards in the order of the past progressive awards and represents them on a display with that order.

[0005] The other example is disclosed in Japanese Patent Application Publication No. 2007-275245. This gaming machine is related to a poker game. The gaming machine represents several cards on a display and urges a player to select a card for discarding. At this point, the gaming machine anticipates which card is the best for discarding to get a higher hand for the player. Then, if the player chooses a different card from the cards, which the gaming machine has anticipated, the gaming machine recognizes a difference between the card, which the player has received, and the card, which the gaming machine has anticipated. Then, the gaming machine figures out a balance between the hand, which the player has received, and a higher hand, which the gaming machine has anticipated. Eventually, the gaming machine accumulates the balance in a progressive award.

[0006] The other example is disclosed in Japanese Patent Application Publication No. 1998-118247 and U.S. Patent Publication No. 2002/0180152. In those prior art, a different kind of progressive awards are set in the progressive game.

Only one of the progressive awards is shown on a display as a visible award for a player. The other progressive awards are hidden against the player. The amounts of the other progressive awards increases while those are hidden. Then, if the visible progressive award is hit, the hit progressive award is paid out and the other progressive awards are shown on the display.

[0007] However, as the players get used to the gaming machines having the above progressive game, the excitement provided by the gaming machines tends to be insufficient to fully satisfy the players. Thus, new features are necessary to satisfy demands of the players for greater excitement. However, designing a totally new game for the secondary game would require a considerable time and cost. Under such circumstances, there is a need for a novel gaming machine having a progressive game that can provide a higher level of excitement to the player with minimum modifications to the existing gaming machines. The gaming machine of the present invention is directed to satisfying these needs.

SUMMARY OF INVENTION

[0008] One aspect of the present invention is a gaming machine management controller including,

[0009] at least a gaming machine, which receives a bet for a game, performs a plurality of games in a first session and a second session, and performs a payout;

[0010] a bonus pool device, which accumulates a bonus pool amount from each of a plurality of games performed during the first session; and

[0011] a bonus controller, which recognizes a bet amount and a payout amount from each of the plurality of games for a player, and determines a bonus pool amount to be accumulated into the bonus pool device,

[0012] wherein the bonus controller controls the bonus pool device to stop accumulating the bonus pool amount in the case that a predetermined condition associated with the bonus pool device is satisfied, and starts the second session which pays out a predetermined award amount from the bonus pool device every time when the player wins the game performed in the second session.

[0013] According to an embodiment of the present invention described above, since the bonus pool amount is accumulated for each of the plurality of games played on the gaming machine, in order to complete the bonus award accumulation in a short time, it is necessary for the player to play as many games as possible in a short time. Also, the bonus pool device is shared among the players and payout of the bonus award from the bonus pool device is performed every time when the player wins the game in the second session upon satisfying a predetermined condition associated with the bonus pool. Therefore, in order to obtain the bonus award as much as possible from the bonus pool device before the other players obtain the bonus award from the bonus pool device, the players rush into playing games, which is good for the game operator.

[0014] Further, it is possible to attract players with a new bonus system. Namely, since the new bonus system pays out the bonus award from the bonus pool device in a plurality of times and does not limit the payout of the bonus award in one time, the period of time to pay out the bonus award will be longer than that of a traditional bonus system for the progressive game. If all the bonus pool amount in the bonus pool device is paid out in one time, the players may leave the gaming machines after the bonus award is paid out because

the next bonus award payout is unexpected. Accordingly, this new bonus system results in preventing players from leaving the gaming machines in a short time.

[0015] The bonus pool amount to be accumulated into the bonus pool device from each of a plurality of games performed during the first session is set at a predetermined percentage of the balance amount obtained by subtracting the payout amount from the bet amount for each game during the first session.

[0016] By providing the gaming machine management controller having a newly designed game, it is possible to attract players with a new bonus system for the progressive game. Namely, since a predetermined percentage of the balance amount obtained by subtracting the amount of payout from the amount of bet is accumulated as the bonus award, and the accumulated bonus award is paid out to the players as a reward for winning the game, the players attempt to earn the accumulated bonus award as much as possible, which gives a new excitement to game players.

[0017] Another aspect of the present invention is a gaming machine management controller including,

[0018] at least a gaming machine, which receives a bet for a game, performs a plurality of games in a first session and a second session, and performs a payout;

[0019] a first bonus pool device, which accumulates a bonus pool amount from each of the plurality of games performed during the first session;

[0020] a second bonus pool device, which accumulates a bonus pool amount from each of the plurality of games performed during the first session of the second bonus pool device; and

[0021] a bonus controller, which recognizes a bet amount and a payout amount for each of the plurality of games in the first session and the second session for a player, and determines a bonus pool amount to be accumulated into the first bonus pool device and the second bonus pool device,

[0022] wherein the bonus controller starts a first session of the second bonus pool device for accumulating a bonus pool amount after finishing the first session of the first bonus pool device.

[0023] By providing the gaming machine having a newly designed game, it is possible to attract players with a new bonus system for the progressive game. Namely, while the bonus award is paid out from the first bonus pool during the second session of a game session 1 or first game cycle, another bonus pool can be accumulated into the second bonus pool device from a plurality of games being performed in the second session of the game session 1. Accordingly, the second session or bonus session of a game session 2 or a second game cycle starts just after the bonus session of the game session 1 ends. Thus players can enjoy a bonus sessions without interruption. Further, the second session or bonus session of the game session 2 may start even though the second session of the game session 1 is in progress. In other words, two bonus sessions are operated simultaneously, which gives new excitement to game players.

[0024] The gaming machine management controller further includes,

[0025] controller, the player tracking device being for recognizing a player and transmitting information of the player to the bonus controller, wherein the bonus controller a) recognizes a bet amount and a payout amount regarding the player via the player tracking device, b) recognizes a total amount that the player has bet via the player tracking device

and c) pays out the bonus award according to the information retrieved by the player tracking device.

[0026] The player tracking device retrieves the information regarding the player from a storage medium.

[0027] By utilizing the player tracking device, a corresponding bonus award can be paid out to the player by referring to the information retrieved by the player tracking device.

BRIEF DESCRIPTION OF THE DRAWINGS

[0028] Other and further objects, features, and advantages of the invention will appear more fully from the following description with reference to the appended drawings, in which:

[0029] FIG. 1 is a perspective view illustrating an example of a gaming machine of the present invention;

[0030] FIG. 2 is a block diagram illustrating an example of a gaming machine of the present invention;

[0031] FIG. 3 is a block diagram illustrating an example of a bonus system of the present invention;

[0032] FIG. 4 is a block diagram illustrating an example of a whole system of the present invention;

[0033] FIG. 5 is a diagram illustrating an example of the increase and decrease of a bonus pool amount in terms of the progress of the games in a first session and the games in a second session;

[0034] FIG. 6 is a diagram illustrating an example showing how the bonus pool is controlled in terms of gaming machines;

[0035] FIG. 7 illustrates a state of a game session 1 and a game session 2 each of which represents an operational phase of a game in terms of paying out of the bonus award and accumulation of the bonus pool;

[0036] FIG. 8 illustrates a state that the second session of the game session 2 starts before the second session of the game session 1 ends;

[0037] FIG. 9 illustrates a state where two players A and B participate in a progressive game via individual gaming machine; and

[0038] FIG. 10 is a flowchart illustrating an operation of a gaming machine management controller of the present invention.

DETAILED DESCRIPTION OF INVENTION

[0039] FIG. 1 is a perspective view showing an example of a gaming machine of the present invention. This gaming machine 1 is designed as a video slot machine. As shown in FIG. 1, the gaming machine 1 is provided with two displays 2. Immediately under the displays 2, there are provided BET switches 4, selection switches 5, a MAXBET switch 6, a PAYOUT switch 7, a coin slot 8, a bill acceptor 9 and a spin button 11. The BET switches 4 are provided for selecting a wager per pay line. The BET switches 4 include five switches from 1BET to 5BET in this embodiment. The selection switches 5 are provided to determine how many pay lines should be active in each slot game. The selection switches 5 include five switches from 10LINE to 50LINE. A coin payout mouth 10 is provided in the lower part of gaming machine 1 in this embodiment. The spin button 11 may be used to start a slot game executed in the gaming machine 1. The above-mentioned components equipped in the gaming machine 1 maybe used to execute a primary game and a secondary game on the display.

[0040] The “primary game” used in this specification means a game initiated on a gaming machine at first after the gaming machine receives a bet from a player and also means a game most frequently executed in an entire game executed by the gaming machine. In general, the “primary game” may be any game such as a slot game, a poker game or a roulette game.

[0041] The “secondary game” used in this specification means a game secondly executed in an entire game executed in the gaming machine when a predetermined condition is satisfied. Whether the predetermined condition is satisfied or not may depend on a result of the primary game or may not depend on the result of the primary game. The gaming machine used in game business in recent years is likely to be configured to be able to execute the primary game and the secondary game. The secondary game is generally executed in order to provide a bonus to the player and therefore, it may be called “a bonus game”. Thus, an award of the secondary game is generally higher than that of the primary game in average. Also, a probability of winning in the secondary game is generally higher than that in the primary game in average. The secondary game may be configured by the same kind of game as the primary game. For example, slot games may be executed both as the primary game and as the secondary game. Alternatively, the secondary game may be configured by a different kind of game from the primary game. Typically, the secondary game is the above-mentioned progressive game.

[0042] The displays **2** are adapted to display information required by the player to play a game. For example, such information may include symbols used in the slot game, selected wager per pay line, activated pay lines, etc. The information may also include an indication to prompt a player to make certain choices in a progressive game if the gaming machine **1** is adapted to provide a progressive game. The “progressive game” is a game having a progressive award, which is gradually updated according to a player’s bet. In general, the progressive game has some kinds of progressive awards, and one of the progressive awards is selected to pay out to a player if the player wins the game. In such a case, the displays **2** may also display the amount of each kind of progressive awards that the player has a chance to obtain. Moreover, information that corresponds to a status of the progressive game, a credit that the player has input into the gaming machine **1**, and play history of the player may be displayed on the displays **2**. It should be noted that in general, the information provided by the displays **2** can change depending on the game that the gaming machine **1** provides. For example, if the gaming machine **1** is adapted to provide a card game, the information may include images of cards, and if the gaming machine **1** is adapted to provide a roulette game, the information may include an image of the roulette.

[0043] As mentioned above, the BET switches **4** are switches for inputting a wager in each game. As is well known, if one credit (or unit of bet) is 5 cents, for example, the player can select 5 cents/line by pushing 1BET switch, and 10 cents/line by pressing 2BET switch, and so on. The selection switches **5** are switches that can be used for determining how many pay lines should be active in each slot game, as mentioned above. However, the switches **5** may also be used to select a card or cards, which the player wants to discard, in the case where the gaming machine **1** provides a card game (in the poker game, for example, 10LINE switch may be used to indicate the left-end card to be discarded, 20LINE switch may

be used to indicate the card on the right of the left-end card, and so on.). The number of BET switches **4** and selection switches **5** may not be limited to five, but may be any suitable number. The gaming machine **1** may additionally have a switch for casting a bet as an extra bet.

[0044] The MAXBET switch **6** is a switch for inputting the maximum bet that a player can spend at a time in a single game. The PAYOUT switch **7** is a switch to be operated by the player when the player wants to quit the game and collect the amount of money, which has been credited onto the gaming machine **1**. The coin slot **8** is a hole for receiving coins as credit for playing the games. The bill acceptor **9** is a hole used to accept a bill or a cash card as credit for playing the games, or to pay out the amount of money, which has been credited in the gaming machine **1**, to the player. The coin payout mouth **10** is a tray to pay out the amount of money, which has been credited in the gaming machine **1**, to the player.

[0045] The gaming machine **1** related to the present invention is not limited to the above, but it may have other various functions, and/or some of the above-mentioned functions may be omitted. For example, the gaming machine **1** may have a lighting apparatus for providing illumination in a color or a plurality of colors when the player proceeds into the bonus game or secondary game. The gaming machine **1** may also have an apparatus for outputting music or any other sound and/or an apparatus for vibrating the whole gaming machine when the player proceeds into the secondary game, for example. The gaming machine **1** may have three or more displays or only a single display. The gaming machine **1** may have a REPEAT switch for choosing the bet per line and number of activated pay lines that the player selected in the last game again.

[0046] Reels, roulette, etc., which are used in the game, may not necessarily be those displayed on the display. A stepper (mechanical reels), mechanical roulette, etc. may be mounted in the gaming machine **1** instead of or in addition to images of the reels, roulette, etc. There may be a display etc., which is used by a plurality of gaming machines in common.

[0047] FIG. 2 is a block diagram illustrating an example of an operational structure of the gaming machine **1** of the present invention. The gaming machine **1** is configured with a controller **30**, a memory **31**, a coin/bill acceptor **32**, an input device **33**, a display **34**, a sound device **35**, a video controller **36**, a touch screen controller **37** and a touch screen **38**. The memory **31** stores information regarding a game status, a game program and data. The coin/bill acceptor **32** equipped as the coin slot **8** and the bill acceptor **9** of FIG. 1 receives a coin or a bill from a player. The input device **33**, which is equipped as the BET switches **4**, the selection switches **5**, the MAXBET switch **6**, the PAYOUT switch **7** and the spin button **11** of FIG. 1, receives an operation from the player and transmits the operation to the controller **30**. The display **34** corresponding to the displays **2** in FIG. 1 indicates information regarding a game. The sound device **35** can be used to make a sound to excite the player. The video controller **36** is used to process a game image to be displayed on the display **34**. The touch screen controller **37** controls the touch screen **38**, which can be disposed over the displays **2** in FIG. 1 to receive an operation from the player. The controller **30** is connected to the memory **31**, the coin/bill acceptor **32**, the input device **33**, the display **34**, the sound device **35**, the video controller **36** and the touch screen controller **37** to process

information received from these component parts and control them to carry out the game provided by the gaming machine 1.

[0048] FIG. 3 is a block diagram illustrating an example of a bonus system of the present invention. The bonus system 40 has a bonus controller 41, a plurality of gaming machines 42, 43 and 44 and a bonus pool 45. In this example, the bonus pool 45 is configured as a bonus pool device in a memory (not illustrated) of the bonus controller 41. The number of the bonus pool devices is not limited to one. A plurality of bonus pool devices can be configured in the memory (not illustrated) of the bonus controller 41. Several players play games on the plurality of gaming machines 42, 43 and 44. Those players bet a credit on a game and win an award or lose the credit in the game on each gaming machine. The bonus controller 41 recognizes a bet amount and a payout amount from each of the plurality of games for a player during the game. Then the bonus controller 41 determines a bonus pool amount to be accumulated into a bonus pool 45. The bonus controller 41 determines the bonus pool amount by calculating a balance amount for each gaming machine. The balance amount is obtained by subtracting the player's payout amount from the player's bet amount. Then, the bonus controller 41 controls a bonus pool 45 to accumulate a part of the balance amount from each gaming machine as a bonus pool amount which will be paid out as a bonus award. The bonus award may be called a progressive award. The accumulation is performed for every gaming machine separately under the control of the bonus controller 41. Eventually, the accumulated bonus pool is paid out to each player who has won in the progressive game based on each player's balance amount if a predetermined condition is met during the game. On the other hand, it is also possible that the accumulated bonus pool is paid out to each player who has won in the progressive game without separately recognizing each player's balance amount. The bonus controller 41 controls not only one gaming machine but also a plurality of gaming machines as illustrated in FIG. 3.

[0049] In addition, since the bonus controller 41 controls the bonus pool 45 to accumulate a part of the balance amount of each gaming machine as a bonus award, a new concept of the progressive game can be provided to meet player's needs as described below.

[0050] FIG. 4 is a block diagram illustrating an example of a whole system of the present invention. The whole system has a gaming machine 1, a player tracking device 47, a management system 48 and the bonus controller 41. The gaming machine 1 is for providing games to a player. The player tracking device 47 is for identifying a player of the game and transmitting player's game history information, such as how much the player has bet, how much the player has won during the game, etc. to the management system 48. For example, the player tracking device 47 utilizes a player's card to identify the player. In general, the player registers himself on a casino list with his information, such as his name, address, or date of birth, etc. Thus, by utilizing the player tracking device 47, the bonus controller 41 can recognize who the player is and how much the player lost in the games, which the player played in a past, from the player's card. However, the player's card can be used, but does not need to be used to identify the player. In this case, the balance amount is not used as a factor for determining the bonus pool amount. The foregoing player tracking device 47 can give the progressive game of these invention new features by utilizing the management of the player's information.

[0051] With respect to the player's card, any type of storage medium, such as a magnetic medium, an optical medium or a semiconductor, is used, for example. Further, the player tracking device 47 may identify the player with a fingerprint authentication, a voice authentication or a face authentication. The various means may be used on the player tracking device 47 for tracking a player. Thus, a game designer can arbitrarily choose one of them to solve an existing problem or an expected problem. The player tracking device 47 may be mounted on the gaming machine 1.

[0052] The management system 48 receives the information including the bet amount and the payout amount from the player tracking device 47. The information is stored and handled on a computer server via network (not illustrated) of the management system 48. The bonus controller 41 receives the information from the management system 48 and controls the bonus pool 45 to gradually accumulate the bonus award based on a part of the balance amount obtained by subtracting the player's payout amount from the player's bet amount on each gaming machine every time when each game is performed. And in the case that the predetermined condition is met during the game, the bonus controller 41 transmits an indication for the gaming machine 1 to pay out the bonus award to the player, for example.

[0053] FIG. 5 is a diagram illustrating an example of the increase and decrease of an accumulated bonus pool amount in terms of the progress of the games performed during the first session and during the second session. As shown by an arrow 50 in FIG. 5, the amount of the accumulated bonus pool gradually increases by a predetermined amount, such as a part of the balance amount obtained by subtracting the player's payout amount from the player's bet amount during the first session. For example, a predetermined percentage of the balance amount is accumulated as a bonus pool amount. About 5% to 15% of the balance amount maybe accumulated as the bonus pool, for example. In this case, the game operators can earn the rest of the balance amount after taking the amount of the predetermined percentage out of the balance amount. Thus, the game operators can arbitrarily determine how much they earn. In this example, a case where the bonus pool 45 is arranged to accumulate the bonus award amount from a situation where the amount in the bonus pool 45 is zero has been described. However, the bonus controller 41 may control the bonus pool 45 so that the bonus pool amount is accumulated into the bonus pool 45 from a situation where a predetermined bonus pool amount is set in advance in the bonus pool 45. For example, a game operator can arbitrarily set the initial amount. In this case, as a special feature for game players, a game operator can set the initial amount to the maximum value of the bonus pool 45 so that the gaming machine starts from the second session. Further, the bonus controller 41 may control the bonus pool 45 so that the bonus pool amount is accumulated from no initial amount or from a predetermined initial amount in the bonus pool 45.

[0054] With respect to a bonus pool amount to be accumulated from each game, the bonus pool amount to be accumulated into the bonus pool 45 from each of the plurality of games being performed during the first session may be set at a predetermined amount within the balance amount obtained by subtracting the payout amount from the bet amount for each game during the first session. It is also possible that the bonus pool amount to be accumulated into the bonus pool 45 from each of the plurality of games being performed during the first session is set at a predetermined amount based on the

bet amount for each of the plurality of games. It is also possible that a bonus pool amount to be accumulated into the bonus pool 45 from each of the plurality of games being performed during the first session is set at a bet amount of each game when winning the game among the plurality of games.

[0055] In ordinary cases, the first session is composed of a plurality of games. In the example above, the balance amount obtained by subtracting the player's payout amount from the player's bet amount is calculated over a time period through a whole game during the first session. However, the time period over which the balance amount is calculated is not limited to the example described above. For example, the balance amount may be calculated for a time period from the start of one of the plurality of games to the end of the first session. The balance amount may also be calculated over one of the plurality of games during the first session. The balance amount may also be calculated for a time period over two or more of the plurality of games during the first session. That is, the balance amount may be calculated for over a predetermined period of time during the first session. Accordingly, a game designer of the gaming machine may arbitrarily design the predetermined period of time for calculating the balance amount. The calculation may be performed not only for a gaming machine but also for a plurality of gaming machines.

[0056] In the case that a predetermined condition is met during the first session, paying out of the bonus award from the bonus pool 45 starts during the second session. The condition for the first session to cease can be arranged so that the first session ends when a predetermined amount has been accumulated in the bonus pool 45. Further, the condition for the first session to cease can be arranged so that the first session ends when a predetermined time has elapsed from a start of the first session. Further, the condition for the first session to cease can be arranged so that the first session ends when a predetermined number of games have finished in the first session.

[0057] In FIG. 5, the interval between the end of the first session and the start of the second session is set as no-interval time. Namely, the second session starts when the first session ends. However, the gaming machine may be arranged so that the interval between the end of the first session and the start of the second session can be arbitrary set at a predetermined time period.

[0058] As shown by an arrow 51 in FIG. 5, since the bonus pool accumulated in the bonus pool 45 is paid out to the player, the amount of the bonus pool accumulated in the bonus pool 45 gradually decreases during the second session. In FIG. 5, in this embodiment, with respect to the bonus award paid out to a player in the second session, the bonus award amount, which the player of the gaming machine can receive from winning a game in the second session, is a multiple of a game value of the game. In other words, in this embodiment, the total payout amount, which can be received by a player in the second session, is determined by a total contribution amount of the player in the related first session. For example, a player bets \$1, wins a game and receives \$3 as an award in the second session. Then, as a bonus award, the player receives additional \$3. That is, the player wins a total of twice the game value when winning the game during the second session. Further, the bonus pool amount in the bonus pool 45 is decreased by \$3, which is the same exact value as the game value. On the other hand, the bonus pool amount in the bonus pool 45 may gradually decrease by a predetermined percentage of the game value during the second session. Also it is

effective to lower the risk that an undesirable situation is concentrated to a specific player. Further, it improves the possibility to recover the loss in the first session for each player. Thus, it can make a player excited during the second session.

[0059] The second session is arranged to cease when the accumulated bonus pool amount in the bonus pool 45 becomes zero or a predetermined amount (not zero). In the case that the second session ends with a predetermined amount (not zero) remaining in the bonus pool 45, a next first session of the next game cycle starts with the bonus pool 45 into which a predetermined bonus amount has already been accumulated. Therefore, the first session of the next game cycle can be completed in a shorter time comparing with the first session of the initial game cycle where the bonus pool 45 starts out with zero bonus pool amount remaining. The detail of the concept of session cycle will be described later in FIG. 7.

[0060] Further, in FIG. 5 the bonus award has been paid out through the whole second session. However, the time period during which the bonus award is paid out in the second session is not limited to the example in FIG. 5. In ordinary cases, the second session is composed of a plurality of games. In that case, the bonus award may be paid out for one of the plurality of games in the second session. The bonus award may be simultaneously paid out in two or more of the plurality of games in the second session. The payout may be performed for not only a gaming machine but also for a plurality of gaming machines.

[0061] FIG. 6 is a diagram illustrating an example showing how the bonus pool is controlled in terms of gaming machines. In FIG. 6, there are two gaming machines 53 and 54 with which players A and B play respectively. The players A and B play a game during the first session. In this example, the players A and B will be eligible for the bonus award up to twice his or her bonus pool amount accumulated in the bonus pool 45. For example, the player A has bet \$100 and \$15 out of \$100 is accumulated in the bonus pool 45 during the first session. Then, the player A is eligible for the bonus award amount up to \$30 during the second session. The player B has bet \$120 and \$20 out of \$120 is accumulated in the bonus pool 45 during the first session. Player B is eligible for the bonus award amount up to \$40 during the second session. Namely, the players A and B become eligible to earn up to \$30 and \$40, respectively, as the bonus award amount during the second session. And, the total bonus pool amount of \$50 is assumed to be left in the bonus pool 45 during the first session, for example. Therefore, the maximum bonus award amount paid out to the players A and B together is \$50 although the players A and B are entitled to earn up to the bonus award amount to be paid out of \$70 together. Namely, a player is not necessarily paid out the maximum bonus award amount, which the player is entitled to earn up to during the second session.

[0062] For instance, if the player A earns \$30 of the bonus award from the bonus pool 45 before the player B earns any bonus award from the bonus pool 45 during the second session, \$20 remains in the bonus pool 45. After the bonus award amount of \$30 is paid out to the player A, the player B can receive up to \$20 of the bonus award amount even though when the player B wins \$40 as a bonus award in a game during the second session and was entitled to earn up to \$40 of the bonus award amount before player A earned the \$30. Thus, in order to earn the bonus award based on the accumulated bonus pool amount as described above, both of the players A and B are more likely to rush to bet money. As a result, a

casino can earn more money. In FIG. 6, an example in which the second session ends or ceases when the accumulated bonus amount in the bonus pool 45 becomes zero is illustrated.

[0063] FIG. 7 illustrates a concept of a game cycle by introducing a game session 1 and a game session 2 each of which represents an operational phase of games in terms of accumulation of the bonus pool, and paying out the bonus pool as the bonus award. Namely, while the bonus award is paid out during the second session of the game session 1, the bonus pool is accumulated from a plurality of games being performed in the second session of the game session 1 into another bonus pool (not illustrated). In this example, by the time when the second session of the game session 1 ends by paying out all accumulated bonus pool amount, the another bonus pool may have already reached its limit value, which is the same as the predetermined bonus pool amount of the bonus pool for the game performed during the first session of the game session 1. Namely, the another bonus pool accumulates the bonus award from the games performed during the second session or the bonus session in the game session 1. In other words, the first session of the another bonus pool device or the second bonus pool device can start accumulating the bonus pool into the second bonus pool device before the end of the second session of the first bonus pool device. Thus, it becomes possible to start accumulating the bonus pool into the second bonus pool device under the heat-up state of the game player, which gives more excitements to the game player.

[0064] In this case, since a player can continue playing the bonus game performed in the second session of the game session 2 as soon as the second session of the game session 1 ends, the player is discouraged from leaving the gaming machine. In FIG. 7, the first session of game session 2 starts at the beginning of the second session of game session 1 and finishes at the end of the second session of game session 1. However, the starting and finishing timing of the first session of game session 2 is not limited to as shown in FIG. 7.

[0065] FIG. 8 illustrates a state that the second session of the game session 2 starts before the end of the second session of the game session 1. When the player bets large wager during the second session of the game session 1, the bonus pool is rapidly accumulated into the bonus pool in the game session 2. Accordingly, the second session of the game session 2 may start before the second session of the game session 1 ends. Thus, the player can earn the bonus award from two-second sessions, which are the second sessions of the game session 1 and of the game session 2. It would make the player more excited for playing the game. As shown in the above example, a game designer can determine the time when those second sessions start and how long the first session and the second session are performed. Of course, the game cycle is not limited to the game session 1 and the game session 2, but may be configured by any number of game sessions.

[0066] FIG. 9 illustrates a state where two players A and B participate in a progressive game via respective gaming machine. According to an embodiment of the present invention, the players A and B are not required to play games at all the times during a game session in order to earn the bonus award. That is, in order to be eligible for the bonus award in the second session of the game session 1, the players A and B are required to participate a predetermined game during the first session of the game session 1. However, the players A and B are not required to participate the game and accumulate the

bonus pool amount during the first session of the game session 1 in order to earn the bonus award in the second session of the game session 1 when resuming the game in this embodiment. However, the total accumulated bonus pool amount may have been decreased by the time when resuming the game during the second session of the game session 1. For example, with respect to the player A, the player A may start playing later during the first session and continue to play the game after the second session has started as indicated by an arrow 55. Then the player A may earn the bonus award earlier than the player B in the second session. In other words, since the bonus award pool amount paid out to a player during a whole period of the second session is limited to the amount being up to twice the bonus pool amount accumulated in the bonus pool 45 from each player during the games of the first session in this embodiment, the player A cannot continue to earn the bonus award once the accumulated bonus award, which the player A is entitled to earn, has reached zero.

[0067] With respect to the player B, the player B starts playing earlier than the player A and quits playing during the first session as indicated by an arrow 56. However, the player B is eligible to play the game and is entitled to earn the bonus award in the second session if the player B resumes the game. Thus, the player B earns the bonus award for the time period as indicated by an arrow 57, that is, until the second session ceases. In the case that the game is designed as described above, since the bonus amount being is limited up to twice the accumulated bonus pool amount in the bonus pool 45 accumulated during the first session is designed to be paid out to the player when a certain condition is satisfied in the second session in this embodiment, the player thinks that he or she could recover the credit lost during the game of the first session with the bonus pool amount earned in the second session. Thus, the player is more likely to spend money during the games, and then it results in serving more money to a casino facility.

[0068] In this game, a player cannot earn the amount of money in the second session more than twice the accumulated bonus pool amount during the game of the first session. In other words, the second session is designed to end when the accumulated bonus pool amount has reached zero or a predetermined bonus pool amount in this embodiment. In this embodiment, the bonus award amount to be paid to a player is limited to twice the bonus pool amount accumulated by the player. However, the bonus award amount to be paid to a player may be a multiple number of the bonus pool amount accumulated by the player.

[0069] FIG. 10 is a flowchart illustrating an operation of a gaming machine to which a function of a gaming machine management controller of the present invention is applied. First, the gaming machine is activated when the gaming machine is powered on (step 1). The controller 30 waits for an input operation from a player to start a game in the first session (step 2). When the controller 30 receives the input operation, the controller 30 starts the game in the first session (step 3). If the controller 30 does not receive the input operation from the player, the controller 30 keeps waiting for the input operation.

[0070] The controller 30 calculates the balance amount obtained by subtracting the player's payout amount from the player's bet amount in the first session (step 4). The calculation may be performed for every game or for two or more games. After the calculation and during the games in the first session, the controller 30 accumulates the bonus award to be

paid out in the second session (step 5). The bonus pool amount to be accumulated for a game may be apart of the balance amount or a predetermined percentage of the balance amount. After that, in the case that the accumulated bonus pool amount has reached the predetermined condition (step 6). The controller 30 starts the game in the second session (step 7). If the predetermined condition is not met in step 6, the controller 30 waits for an input operation from a player to start the game in the first session (step 2).

[0071] In step 7, the controller 30 may output an indication to notify an initiation of the game in the second session to the player. The indication of the game starting in the secondary game may be a sign of the initiation on a display or a lighting-up of the gaming machine. After that, the controller 30 starts paying out the bonus award for the game during the second session when the player wins the game performed during the second session (step 8). The controller 30 determines whether all the accumulated bonus pool amount is paid out every time when it is paid out (step 9). If all the accumulated bonus award has been paid out, the controller 30 ends the game in the second session (step 10). If all the accumulated bonus award has not been paid out yet, the controller 30 continues the game in the second session (step 7). The controller 30 may be arranged to end the game in the second session before paying out of all the accumulated bonus pool amount. For example, when the controller 30 pays out half of the accumulated bonus pool amount, the controller 30 may end the game in the second session to start the game in the first session again.

[0072] The controller 30 determines whether or not a whole game ends (step 11). If the controller 30 determines that the whole game ends, the whole game ends (step 12). If the controller 30 determines that the whole game has not ended yet, the controller 30 waits for an input operation from a player to start the game in the first session again (step 2).

[0073] As described above, although the present invention has been concretely described, the present invention is not limited to the above embodiments and various changes and modifications may be made without departing from the scope of the invention. For example, the game pertaining to the present invention is capable of being executed even when either a stepper reel or a video reel (or virtual reel) is used. When executing the game pertaining to the present invention using the stepper reel, the display in the gaming machine may be dual structured. That is, for example, while installing a stepper reel in the gaming machine, a transparent type display can be installed on the surface side. In this way, it is possible to make the symbols on the stepper reel selectively visible to the player by adjusting the transparent type display to a transparent or non-transparent state. It is also possible to display symbols or other visual indications on the transparent type display so as to superimpose or modify the symbols on the stepper reel. For example, a transparent type liquid crystal display, a transparent type organic EL display, etc. can be used as the transparent type display.

What is claimed is:

1. A gaming machine management controller comprising:
 - at least a gaming machine, which receives a bet for a game, performs a plurality of games in a first session and a second session, and performs a payout;
 - a bonus pool device, which accumulates a bonus pool amount from each of a plurality of games performed during the first session; and
 - a bonus controller, which recognizes a bet amount and a payout amount of a player from each of the plurality of

games, and determines a bonus pool amount to be accumulated into the bonus pool device,

wherein the bonus controller controls the bonus pool device to stop accumulating the bonus pool amount in the case that a predetermined condition associated with the bonus pool device is satisfied, and starts the second session which pays out a predetermined bonus award amount from the bonus pool device every time when the player wins the game performed in the second session.

2. The gaming machine management controller of claim 1, further comprising:

another bonus pool device, which accumulates a bonus pool amount from each of the plurality of games performed during the first session of said another bonus pool,

wherein said another bonus pool device accumulates a bonus pool amount from each of a plurality of games while the bonus pool device pays out the predetermined bonus award amount from the bonus pool device in the second session of the bonus pool device.

3. The gaming machine management controller of claim 1, wherein a bonus pool amount to be accumulated into the bonus pool device from each of the plurality of games performed during the first session is set at a predetermined percentage of a balance amount obtained by subtracting the payout amount from the bet amount for each game performed during the first session.

4. The gaming machine management controller of claim 1, wherein a bonus pool amount to be accumulated into the bonus pool device from each of the plurality of games being performed during the first session is set at a predetermined amount within the balance amount obtained by subtracting the payout amount from the bet amount for each game during the first session.

5. The gaming machine management controller of claim 1, wherein a bonus pool amount to be accumulated into the bonus pool device from each of the plurality of games performed during the first session is set at a predetermined amount based on the bet amount for each of the plurality of games.

6. The gaming machine management controller of claim 1, wherein a bonus pool amount to be accumulated into the bonus pool device from each of the plurality of games performed during the first session is set at a bet amount of a game won among the plurality of games.

7. The gaming machine management controller of claim 1, wherein the first session ceases when an accumulated bonus pool amount in the bonus pool device has reached a predetermined amount.

8. The gaming machine management controller of claim 1, wherein the first session ceases when a predetermined time has elapsed from a start of the first session.

9. The gaming machine management controller of claim 1, wherein the first session ceases when a predetermined number of games have finished in the first session.

10. The gaming machine management controller of claim 1, wherein an interval between an end of the first session and a start of the second session is set between substantially zero and a predetermined time period.

11. The gaming machine management controller of claim 1, wherein the second session ceases when an accumulated bonus pool amount in the bonus pool device has reached a prescribed amount.

12. The gaming machine management controller of claim 10, wherein the prescribed amount is zero.

13. The gaming machine management controller of claim 1, wherein the bonus controller starts accumulating the bonus pool amount into the bonus pool device from a certain accumulated amount.

14. The gaming machine management controller of claim 1, wherein a total payout amount, which can be received by a player in the second session, is determined by a total contribution amount of the player in the related first session.

15. The gaming machine management controller of claim 1, further comprising:

a display, which communicates with the bonus controller, the display being arranged to indicate information including the accumulated bonus pool amount.

16. A gaming machine management controller comprising: at least a gaming machine, which receives a bet for a game, performs a plurality of games in a first session and a second session, and performs a payout;

a first bonus pool device, which accumulates a bonus pool amount from each of a plurality of games performed during the first session;

a second bonus pool device, which accumulates a bonus pool amount from each of a plurality of games performed during the first session of the second bonus pool device; and

a bonus controller, which recognizes a bet amount and a payout amount for each of the plurality of games in the first session and the second session for a player, and determines a bonus pool amount to be accumulated into the first bonus pool device and the second bonus pool device,

wherein the bonus controller starts a first session of the second bonus pool device for accumulating a bonus pool amount after finishing the first session of the first bonus pool device.

17. The gaming machine management controller of claim 16, wherein a bonus pool amount to be accumulated into the first bonus pool device from each of the plurality of games performed during the first session is set at a predetermined percentage of the balance amount obtained by subtracting the payout amount from the bet amount for each game during the first session.

18. The gaming machine management controller of claim 16, wherein a bonus pool amount to be accumulated into the second bonus pool device from each of a plurality of games performed during the second session is set at a predetermined percentage of the balance amount obtained by subtracting the payout amount from the bet amount for each game

19. The gaming machine management controller of claim 16, wherein a total payout amount of the bonus award, which can be received by a player in the second session, is limited to a multiple of a bonus pool amount accumulated by the player.

20. The gaming machine management controller of claim 16, further comprising:

a player tracking device, which communicates with the bonus controller, the player tracking device being for identifying a player and transmitting information of the player to the bonus controller,

wherein the bonus controller a) recognizes a bet amount and a payout amount of the player via the player tracking device, b) recognizes a total amount that the player has bet via the player tracking device and c) pays out the bonus award according to the information retrieved by the player tracking device

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