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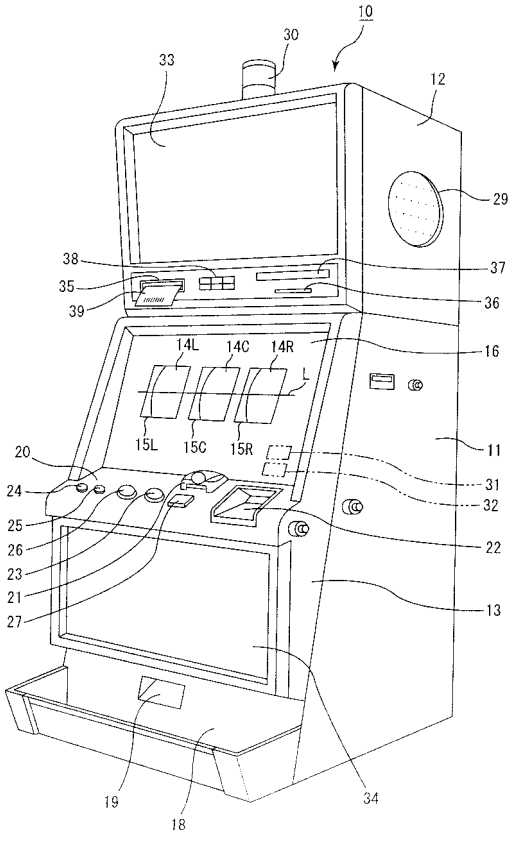
(54) **Gaming machine, game control method and game system**

(57) An object of the present invention is to provide a gaming machine which can prevent for a player who has spent many of the game media from feeling unpleasant against the game, building up distrust thereto, or losing interest in or a concern on the game. The gaming machine comprising: output means capable of outputting an image or a sound; winning combination determination means for determining a winning combination by a lottery; means for generating a first special game state that is a game state advantageous to a player when the determined winning combination is a special winning combination; means for, when a predetermined variable accumulatively counted each time a game is played reaches a set value that is an object of comparison with said predetermined variable, and that is selected from plural candidate values stepwise determined in advance, generating a second special game state that is a game state advantageous to a player and in which a degree of advantage corresponding to the set value is determined; and means for notifying that said second special game state has been generated based on said set value by outputting an image or a sound to said output means.

Fig. 2



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Description

TECHNICAL FIELD

[0001] The present invention relates to a gaming machine such as a slot machine in which a game is conducted using a game media (game valuable) such as a coin and the like, a game control method for the gaming machine, and a game system comprising the gaming machine and a control device.

BACKGROUND ART

[0002] Conventionally, in a facility in which gaming machines such as a slot machine are installed, a game is played by inserting various kinds of game media such as a coin, cash and the like into a gaming machine. Each gaming machine pays out a dividend to a player according to a prize wining state (a result of playing the game) generated while the game is in progress.

[0003] In a casino where plural slot machines are installed, a credit spent in each slot machine is partly reserved and in a case where the reservation reaches a predetermined amount, one of the slot machines provides a so-called "jackpot" paying out a big amount, which is not paid out in an ordinaryhit (for example, see Patent Document 1). In such slot machines, a hit in each machine usually occurs on a preset probability and a player advances a game with expectation of the hit to be encountered. One of the slot machines has a chance to hit a jackpot at a timing in a lottery different from a common lottery in which a hit based on the above-mentioned probability is set in the slot machines. Generally, plural casinos are interconnected in a network in order to increase a payout amount in a jackpot.

[0004] Furthermore, a system has been available in which a host computer and plural gaming machines are interconnected on a network and the generating of a bonus in the gaming machines is controlled by the host computer (for example, see Patent Document 2). In this system, not only is the number of coins inserted into each gaming machine added up, but part of a total number of inserted coins in the plural gaming machines are separately added up as a bonus pool. The host computer gives a bonus qualification to a gaming machine in which the number of inserted coins reaches a predetermined number. The host computer transmits a command to one gaming machine selected from gaming machines having bonus qualification, when a value of the bonus pool reaches a predetermined threshold value. The gaming machine which received the command is enabled to play a bonus game high in gambling characteristic.

[0005] Patent Document 1: JP-A 2003-117053
Patent Document 2: U.S. Patent No. 5,820,459

DISCLOSURE OF THE INVENTION PROBLEMS TO BE SOLVED BY THE INVENTION

[0006] In a slot machine described in Patent Document 1, however, it is a player who plays a game in a gaming machine selected in a lottery that enjoys a profit from a jackpot. Hence, there has arisen a case where a player having spent many coins cannot enjoy a jackpot at all, but another player who has just started the game acquires a jackpot profit.

[0007] In the system described in Patent Document 2 as well, a chance to acquire the profit of a bonus game is given to one of gaming machines in which a total number of inserted coins reaches a predetermined number. A chance to acquire the profit of a bonus game is not always given to a player having spent many coins. Therefore, in the system described in Patent Document 2, there has arisen a case where a player having spent many coins cannot secure the profit of a bonus game and another player who has just started the game acquires a bonus game profit, in a similar way to that in a slot machine described in Patent Document 1.

[0008] In the system described in Patent Document 2, part of the number of inserted coins in each of plural gaming machines is added up as a bonus pool. Hence, in a case where an operation rate of the gaming machines in the system is low, a player, who has spent many of coins, has had a possibility not to be rewarded by the profit of a bonus game since the value of the bonus pool does not reaches a predetermined threshold value. Moreover, since the bonus game in the system described in Patent Document 2 is high in gambling characteristic, there has arisen a case where the profit of the bonus game cannot be acquired sufficiently by a player, even when he is given a chance capable of acquiring the profit.

[0009] If such circumstances occur, a player who has spent many coins may feel unpleasant against the game, build up distrust thereto, or lose interest in or a concern on the game.

[0010] The present invention has been made in light of the above-mentioned problems and it is an object of the present invention to provide: a gaming machine capable of preventing a player who has spent many of the game media such as coins from feeling unpleasant against a game, building up a distrust thereto, or losing interest in or a concern on the game; a game control method related to the gaming machine; and a gaming machine system equipped with the gaming machine and a control device.

MEANS FOR SOLVING THE PROBLEMS

[0011] In order to solve the above-mentionedprobl ems, the present invention provides the following configuration:

(1) A gaming machine comprising:

output means capable of outputting an image or a sound;
winning combination determination means for determining a winning combination by a lottery;
means for generating a first special game state that is a game state advantageous to a player when the determined winning combination is a special winning combination;
means for, when a predetermined variable accumulatively counted each time a game is played reaches a set value that is an object of comparison with the predetermined variable, and that is selected from plural candidate values stepwise determined in advance, generating a second special game state that is a game state advantageous to a player and in which a degree of advantage corresponding to the set value is determined; and
means for notifying that the second special game state has been generated based on the set value by outputting an image or a sound to the output means.

[0012] According to the configuration (1), when the predetermined variable (for example, the number of games, a payment balance in terms of the game media, a total number of paid-out game media and a total number of inserted game media), accumulatively counted each time a game is played reaches a set value that is an object of comparison with the predetermined variable, and that is selected fromplural candidate values stepwise determined in advance, the second special game state that is a game state advantageous to a player and in which a determined degree of advantage corresponding to the set value is generated. Hence, even if the first special game state is not generated for a long period leading to the spending of many of the game media, the second special game state is generated as long as the game is played such that the predetermined variable reaches the set value and thus a player can make profit for playing the game.

[0013] It is notified by outputting an image or a sound to the output means that the second special game state has been generated based on the set value. Therefore, a player can recognize the based set value on which the second special game state has been generated by the image or the sound. As a result, an impression can be made on the player that a return is carried out as a result of playing the game such that the predetermined variable reaches the set value.

[0014] Therefore, it can be prevented for a player who has spent many of the game media from feeling unpleasant against the game, building up distrust thereto, or losing interest in or a concern on the game.

[0015] The first aspect of the present invention provides the following configuration:

(2) A gaming machine comprising:

output means capable of outputting an image or a sound;
winning combination determination means for determining a winning combination by a lottery;
means for generating a first special game state that is a game state advantageous to a player when the determined winning combination is a special winning combination;
means for, when the number of games accumulatively counted each time a game is played reaches a set value that is an object of comparison with the number of games, and that is selected from plural candidate values stepwise determined in advance, generating a second special game state that is a game state advantageous to a player and in which a degree of advantage corresponding to the set value is determined; and
means for notifying that the second special game state has been generated based on the set value by outputting an image or a sound to the output means when the second special game state is generated.

[0016] According to the configuration (2), when the number of games reaches a set value that is an object of comparison with the number of games, which is selected from plural candidate values stepwise determined in advance (for example, "500", "1000" and "2000"), the second special game state that is a game state advantageous to a player and in which a determined degree of advantage corresponding to the set value is generated. Hence, even if the first special game state is not generated for a long period leading to the spending of many of the game media, the second special game state is generated as long as the game is played such that the number of games reaches the set value and thus a player can make profit for playing the game.

[0017] When the second special game state is generated, it is notified by outputting an image or a sound to the output means that the second special game state has been generated based on the set value. Therefore, a player can recognize the based set value on which the second special game state has been generated, that is, to which set value the number of games played reached generated the second special game state, by the image or the sound. As a result, an impression can be made on the player that a return is carried out as a result of playing the game such that the number of games reaches the set value.

[0018] Therefore, it can be prevented for a player who has spent many of the game media from feeling unpleasant against the game, building up distrust thereto, or losing interest in or a concern on the game.

[0019] The first aspect of the present invention provides the following configuration:

(3) A gaming machine connected through a commu-

nication line to a control device which counts the number of games accumulatively for every gaming machine of plural gaming machines, comprising:

output means capable of outputting an image or a sound;
winning combination determination means for determining a winning combination by a lottery;
means for generating a first special game state that is a game state advantageous to a player when the determined winning combination is a special winning combination;
means for transmitting an identification information of a gaming machine to the control device through the communication line each time a game is played;
means for receiving a command signal transmitted from the control device when the number of games counted accumulatively by the control device based on the identification information of the gaming machine reaches a set value that is an object of comparison with the number of games, and that is selected from plural candidate values stepwise determined in advance;
means for generating a second special game state that is a game state advantageous to a player, and in which a degree of advantage corresponding to the set value is determined, based on the command signal; and
means for notifying that the second special game state has been generated based on the set value by outputting an image or a sound to the output means when the second special game state is generated.

[0020] According to the configuration (3), the second special game state is generated by the receiving of a command signal transmitted from the control device when the number of games counted in the control device reaches a set value selected from plural candidate values stepwise determined in advance. It is then notified by outputting an image or sound to the output means that the second special game state has been generated based on the set value. Therefore, it can be prevented for a player who has spent many of the game media from feeling unpleasant against the game, building up distrust thereto, or losing interest in or a concern on the game.

[0021] The first aspect of the present invention provides the following configuration:

(4) A gaming machine comprising:

output means capable of outputting an image or a sound;
winning combination determination means for determining a winning combination by a lottery;
means for generating a first special game state that is a game state advantageous to a player when the determined winning combination is a special winning combination;
means for counting accumulatively the number of games each time a game is played;
means for selecting a set value that is an object of comparison with the number of games from plural candidate values stepwise determined in advance;
means for determining whether or not the number of games has reached the set value;
means for generating a second special game state that is a game state advantageous to a player and in which a degree of advantage corresponding to the set value is determined, when the number of games is determined to have reached the set value; and
means for notifying that the second special game state has been generated based on the set value by outputting an image or a sound to the output means when the second special game state is generated.

[0022] According to the configuration (4), a set value that is an object of comparison with the number of games is selected from plural candidate values stepwise determined in advance and the number of games is counted accumulatively each time a game is played. Moreover, it is determined whether or not the number of games reaches the set value, and when it is determined that the number of games has reached the set value, the second special game state is generated. It is then notified by outputting an image or sound to the output means that the second special game state has been generated based on the set value. Therefore, it can be prevented for a player who has spent many of the game media from feeling unpleasant against the game, building up distrust thereto, or losing interest in or concern on the game.

[0023] The first aspect of the present invention provides the following configuration:

(5) The gaming machine according to any of the configurations (2) to (4), wherein the larger a set value the number of games reaches, the means for generating the second special game state generates a second special game state in which a larger degree of advantage is determined.

[0024] According to the configuration (5), since a larger profit can be made in the second special game state with larger number of games, a profit matching the number of games played by the player can be given to the player in the second special game state. Therefore, it can be prevented for a player who has spent many of the game media from feeling unpleasant against the game, building up distrust thereto, or losing interest in or a concern on the game.

[0025] The first aspect of the present invention provides the following configuration:

(6) The gaming machine according to any of the configurations (2) to (4), wherein reception means that can accept for one game an insertion of game media up to a predetermined upper limit value is provided, and the means for generating the second special game state generates a second special game state if the number of inserted game media for the game played by the player is equal to the upper limit when the number of games reaches the set value.

[0026] According to the configuration (6), a player can be urged to insert the game media up to the upper limit, thereby enabling a facility such as a casino to increase its profit.

[0027] The first aspect of the present invention provides the following configuration:

(7) A gaming machine equipped with a processing device, a storage device and an image or sound output device,
wherein
the processing device executes:

a processing determining one winning combination selected from plural winning combinations determined in advance by executing a lottery program stored in the storage device;
a processing reading from the storage device a program for generating a first special game state that is a game state advantageous to a player when the determined winning combination is a special winning combination, and executing the program;
a processing reading from the storage device a program for generating a second special game state that is a game state advantageous to a player and in which a degree of advantage corresponding to the set value is determined when the number of games counted accumulatively each time a game is played reaches a set value that is an object of comparison with the number of games, and that is selected fromplural candidate values stepwise determined in advance, and executing the program; and
a processing reading from the storage device notification data for notifying that the second special game state has been generated based on the set value when the second special game state is generated, and outputting an image or a sound to the output device based on the notification data.

[0028] According to the configuration (7), the second special game state is generated when the number of games reaches a set value that is an object of comparison with the number of games and that is selected from plural candidate values stepwise determined in advance. An image or sound is then output to the output device based on the notification data for notifying that the second special game state has been generated based on the set value. Therefore, it can be prevented for a player who has spent many of the game media from feeling unpleasant against the game, building up distrust thereto, or losing interest in or a concern on the game.

[0029] The first aspect of the present invention provides the following configuration:

(8) A gaming machine equipped with a processing device, a storage device and an image or sound output device, and connected through a communication line to a control device which counts the number of games accumulatively for every gaming machine of plural gaming machines,
wherein
the processing device executes:

a processing determining one winning combination selected from plural winning combinations determined in advance by executing a lottery program stored in the storage device;
a processing reading from the storage device a program for generating a first special game state that is a game state advantageous to a player when the determined winning combination is a special winning combination, and executing the program;
a processing transmitting an identification information on a gaming machine stored in the storage device to the control device through the communication line each time a game is played;
a processing receiving a command signal transmitted from the control device when the number of games counted accumulatively by the control device based on the identification information on the gaming machine reaches a set value that is an object of comparison with the number of games and that is selected from plural candidate values stepwise determined in advance;
a processing reading from the storage device a program for generating a second special game state that is a game state advantageous to a player and in which a degree of advantage corresponding to the set value is determined based on the command signal, and executing the program; and
a processing reading from the storage device notification data for notifying that the second special game state has been generated based on the set value when the second special game state is generated, and outputting an image or a sound to the output device based on the notification data.

[0030] According to the configuration (8), the second special game state is generated by the receiving of the command signal transmitted from the control device

when the number of games counted in the control device reaches a set value selected from plural candidate values stepwise determined in advance. It is then notified by outputting an image or sound to the output device that the second special game state has been generated based on the set value. Therefore, it can be prevented for a player who has spent many of the game media from feeling unpleasant against the game, building up distrust thereto, or losing interest in or a concern on the game.

[0031] The first aspect of the present invention provides the following configuration:

(9) A gaming machine equipped with a processing device, a storage device and an image or sound output device,
wherein
the processing device executes:

a processing determining one winning combination selected from plural winning combinations determined in advance by executing a lottery program stored in the storage device;
a processing reading from the storage device a program for generating a first special game state that is a game state advantageous to a player when the determined winning combination is a special winning combination, and executing the program;
a processing counting the number of games accumulatively each time a game is played;
a processing selecting a set value that is an object of comparison with the number of games from plural candidate values stepwise determined in advance;
a processing determining whether or not the number of games has reached the set value;
a processing reading from the storage device a program for generating a second special game state that is a game state advantageous to a player and in which a degree of advantage corresponding to the set value is determined when the number of games is determined to have reached the set value, and executing the program; and
a processing reading from the storage device notification data for notifying that the second special game state has been generated based on the set value when the second special game state is generated, and outputting an image or a sound to the output device based on the notification data.

[0032] According to the configuration (9), a set value that is an object of comparison with the number of games is selected from plural candidate values stepwise determined in advance and the number of games is counted accumulatively each time a game is played. Moreover, it is determined whether or not the number of games has reached the set value and if it is determined that the number of games has reached the set value, the second special game state is generated. It is then notified by outputting an image or sound to the output device that the second special game state has been generated based on the set value. Therefore, it can be prevented for a player who has spent many of the game media from feeling unpleasant against the game, building up distrust thereto, or losing interest in or a concern on the game.

[0033] The first aspect of the present invention provides the following configuration:

(10) The gaming machine according to any of the configurations (7) to (9), wherein the larger a set value the number of games reaches, the processing device executes a program for generating the second special game state in which a larger degree of advantage is determined.

[0034] According to the configuration (10), since a larger profit can be made in the second special game state with larger number of games, a profit matching the number of games played by the player can be given to the player in the second special game state. Therefore, it can be prevented for a player who has spent many of the game media from feeling unpleasant against the game, building up distrust thereto, or losing interest in or a concern on the game.

[0035] The first aspect of the present invention provides the following configuration:

(11) The gaming machine according to any of the configurations (7) to (9), wherein the processing device executes a program for generating the second special game state in a case where the number of games reaches the set value when the number of inserted game media for a game played by the player is the upper limit value of the number of game media to be inserted for one game.

[0036] According to the configuration (11), a player can be urged to insert game media up to the upper limit, thereby enabling a facility such as a casino to increase its profit.

[0037] The first aspect of the present invention provides the following configuration:

(12) A gaming machine comprising:

output means capable of outputting an image or a sound;
winning combination determination means for determining a winning combination by a lottery;
means for generating a first special game state that is a game state advantageous to a player when the determined winning combination is a special winning combination;
means for generating a second special game state that is a game state advantageous to a

player and in which a degree of advantage corresponding to a set value is determined when a payment balance in terms of the game media is equal to or less than the set value that is selected from plural candidate values stepwise determined in advance and that is an obj ect of comparison with a payment balance in terms of the game media; and

means for notifying that the second special game state has been generated based on the set value by outputting an image or a sound to the output means when the second special game state is generated.

[0038] According to the configuration (12), when the payment balance in terms of the game media reaches a value equal to or less than a set value that is an object of comparison with a payment balance in terms of the game media and that is selected fromplural candidate values stepwise determined in advance (for example, "-500", -1000" and -2000"), the second special game state that is a game state advantageous to a player and in which a degree of advantage corresponding to the set value is determined is generated. Therefore, if many of the game media are spent and a payment balance in terms of the game media is equal to or less than the set value, the second special game state is generated and thus the player can earn a profit for playing the game.

[0039] When the second special game state is generated, it is notified by outputting an image or a sound to the output means that the second special game state has been generated based on the set value. Therefore, a player can recognize on which set value the second special game state generated is based, that is, to which set value the payment balance in terms of the game media is equal or less made the second special game state to be generated, by the image or the sound. As a result, an impression can be made on the player that a return is carried out as a result of playing the game such that the payment balance in terms of the game media is equal to or less than the set value.

[0040] Therefore, it can be prevented for a player who has spent many of the game media from feeling unpleasant against the game, building up distrust thereto, or losing interest in or a concern on the game.

[0041] The first aspect of the present invention provides the following configuration:

(13) A gaming machine connected through a communication line to a control device which counts the payment balance in terms of the game media accumulatively for every gaming machine of plural gaming machines, comprising:

output means capable of outputting an image or a sound;

winning combination determination means for determining a winning combination by a lottery;

means for generating a first special game state that is a game state advantageous to a player when the determined winning combination is a special winning combination;

means for transmitting a payment balance in terms of the game media in a game played by a player together with an identification information of the gaming machine to the control device through the communication line each time a game is played;

means for receiving a command signal transmitted from the control device when the payment balance in terms of the game media counted accumulatively by the control device based on the identification information of the gaming machine and the payment balance in terms of the game media in a game played by the player is equal to or less than a set value that is selected from plural candidate values stepwise determined in advance and that is an object of comparison with the payment balance in terms of the game media;

means for generating a second special game state that is a game state advantageous to a player and in which a degree of advantage corresponding to the set value is determined, based on the command signal; and;

means for notifying that the second special game state has been generated based on the set value by outputting an image or a sound to the output means when the second special game state is generated.

[0042] According to the configuration (13), the second special game state is generated by the receiving of a command signal transmitted from the control device when the payment balance in terms of the game media counted by the control device is equal to or less than the set value selected from plural candidate values stepwise determined in advance. It is then notified by outputting an image or a sound to the output means that the second special game state has been generated based on the set value. Therefore, it can be prevented for a player who has spent many of the game media from feeling unpleasant against the game, building up distrust thereto, or losing interest in or a concern on the game.

[0043] The first aspect of the present invention provides the following configuration:

(14) A gaming machine comprising:

output means capable of outputting an image or a sound;

winning combination determination means for determining a winning combination by a lottery;

means for generating a first special game state that is a game state advantageous to a player when the determined winning combination is a

special winning combination;
means for counting a payment balance in terms of the game media accumulatively each time a game is played;
means for selecting a set value that is an object of comparison with the payment balance in terms of the game media from plural candidate values stepwise determined in advance;
means for determining whether or not the payment balance in terms of the game media is equal to or less than the set value;
means for generating a second special game state that is a game state advantageous to a player and in which a degree of advantage corresponding to the set value is determined, when the payment balance in terms of the game media is determined to have reached the set value; and
means for notifying that the second special game state has been generated based on the set value by outputting an image or a sound to the output means when the second special game state is generated.

[0044] According to the configuration (14), a set value that is an object of comparison with the payment balance in terms of the game media is selected from plural candidate values stepwise determined in advance, and the payment balance in terms of the game media is counted accumulatively each time a game is played. Moreover, it is determined whether or not the payment balance in terms of the game media is equal to or less than the set value, and when it is determined that the payment balance in terms of the game media is equal to or less than the set value, the second special game state is generated. It is then notified by outputting an image or a sound to the output means that the second special game state has been generated based on the set value. Therefore, it can be prevented for a player who has spent many of the game media from feeling unpleasant against the game, building up distrust thereto, or losing interest in or a concern on the game.

[0045] The first aspect of the present invention provides the following configuration:

(15) The gaming machine according to any of the configurations (12) to (14), wherein the smaller a set value the payment balance in terms of the game media reaches, the means for generating the second special game state generates a second special game state in which a larger degree of advantage is determined.

[0046] According to the configuration (15), since a larger profit can be made in the second special game state with a lower payment balance in terms of the game media, a profit supplementing a loss of a player can be given to the player in the second special game state. Therefore, it can be prevented for a player who has spent many of the game media from feeling unpleasant against the game, building up distrust thereto, or losing interest in or a concern on the game.

[0047] The first aspect of the present invention provides the following configuration:

(16) The gaming machine according to any of the configurations (12) to (14), wherein reception means that can accept for one game an insertion of gamemediaup to a predetermined upper limit value is provided, and the means for generating the second special game state generates a second special game state in a case where the number of inserted game media for the game played is at the upper limit value when the payment balance in terms of the game media is equal to or less than the set value.

[0048] According to the configuration (16), a player can be urged to insert the game media up to the upper limit, thereby enabling increase in profit in a facility such as a casino.

[0049] The first aspect of the present invention provides the following configuration:

(17) A gaming machine equipped with a processing device, a storage device and an image or sound output device,
wherein
the processing device executes:

a processing determining one winning combination selected from plural winning combinations determined in advance by executing a lottery program stored in the storage device;
a processing reading from the storage device a program for generating a first special game state that is a game state advantageous to a player when the determined winning combination is a special winning combination, and executing the program;
a processing reading from the storage device a program for generating a second special game state that is a game state advantageous to a player and in which a degree of advantage corresponding to the set value is determined when a payment balance in terms of the game media counted accumulatively each time a game is played is equal to or less than a set value that is selected from plural candidate values stepwise determined in advance and that is an object of comparison with a payment balance in terms of the game media, and executing the program; and
a processing reading from the storage device notification data for notifying that the second special game state has been generated based on the set value when the second special game state is generated, and outputting an image or

a sound to the output device based on the notification data.

[0050] According to the configuration (17), the second special game state is generated when the payment balance in terms of the game media is equal to or less than the set value that is an object of comparison with the payment balance in terms of the game media and that is selected from plural candidate values stepwise determined in advance. An image or a sound is then output to the output device based on notification data for notifying that the second special game state has been generated based on the set value. Therefore, it can be prevented for a player who has spent many of the game media from feeling unpleasant against the game, building up distrust thereto, or losing interest in or a concern on the game.

[0051] The first aspect of the present invention provides the following configuration:

(18) A gaming machine equipped with a processing device, a storage device and an image or sound output device, and connected through a communication line to a control device which counts the payment balance in terms of the game media accumulatively for every gaming machine of plural gaming machines,
wherein
the processing device executes:

a processing determining one winning combination selected from plural winning combinations determined in advance by executing a lottery program stored in the storage device;
a processing reading from the storage device a program for generating a first special game state that is a game state advantageous to a player when the determined winning combination is a special winning combination, and executing the program;
a processing transmitting the number of inserted game media and the number of payout game media in the game played by a player together with an identification information on the gaming-machine which are stored in the storage device to the control device through the communication line each time a game is played;
a processing receiving a command signal transmitted from the control device when the payment balance in terms of the game media counted accumulatively by the control device based on the identification information on the gaming machine, the number of inserted game media and the number of payout game media in the game played by a player is equal to or less than a set value that is an obj ect of comparison with the payment balance in terms of the game media and that is selected from plural candidate values stepwise determined in advance;
a processing reading from the storage device a program for generating a second special game state that is a game state advantageous to a player and in which a degree of advantage corresponding to the set value is determined based on the command signal, and executing the program; and
a processing reading from the storage device notification data for notifying that the second special game state has been generated based on the set value when the second special game state is generated, and outputting an image or a sound to the output device based on the notification data.

[0052] According to the configuration (18), the second special game state is generated by the receiving of a command signal transmitted from the control device when the payment balance in terms of the game media counted in the control device reaches a value equal to or less than the set value that is selected from plural candidate values stepwise determined in advance. It is then notified by outputting an image or a sound to the output device that the second special game state has been generated based on the set value. Therefore, it can be prevented for a player who has spent many of the game media from feeling unpleasant against the game, building up distrust thereto, or losing interest in or a concern on the game.

[0053] The first aspect of the present invention provides the following configuration:

(19) A gaming machine equipped with a processing device, a storage device and an image or sound output device,
wherein
the processing device executes:

a processing determining one winning combination selected from plural winning combinations determined in advance by executing a lottery program stored in the storage device;
a processing reading from the storage device a program for generating a first special game state that is a game state advantageous to a player when the determined winning combination is a special winning combination, and executing the program;
a processing counting a payment balance in terms of the game media accumulatively each time a game is played;
a processing selecting a set value that is an object of comparison with the payment balance in terms of the game media from plural candidate values stepwise determined in advance;
a processing determining whether or not the payment balance in terms of the game media is

equal to or less than the set value;
a processing reading from the storage device a program for generating a second special game state that is a game state advantageous to a player and in which a degree of advantage corresponding to the set value is determined when the payment balance in terms of the game media is determined to be equal to or less than the set value, and executing the program; and
a processing reading from the storage device notification data for notifying that the second special game state has been generated based on the set value when the second special game state is generated, and outputting an image or a sound to the output device based on the notification data.

[0054] According to the configuration (19), a set value that is an object of comparison with the payment balance in terms of the game media is selected from plural candidate values stepwise determined in advance and the payment balance of the game media is counted accumulatively counted each time a game is played. Moreover, it is determined whether or not the payment balance in terms of the game media is equal to or less than the set value and if it is determined that the payment balance in terms of the game media has been equal to or less than the set value, the second special game state is generated. It is then notified by outputting an image or a sound to the output device that the second special game state has been generated based on the set value. Therefore, it can be prevented for a player who has spent many of the game media from feeling unpleasant against the game, building up distrust thereto, or losing interest in or a concern on the game.

[0055] The first aspect of the present invention provides the following configuration:

(20) The gaming machine according to any of the configurations (17) to (19), wherein the smaller a set value the payment balance in terms of the game media reaches, the processing device executes a program for generating the second special game state in which a larger degree of advantage is determined.

[0056] According to the configuration (20), since a larger profit can be made in the second special game state with a smaller payment balance in terms of the game media, a profit compensating a loss to a player can be given in the second special game state. Therefore, it can be prevented for a player who has spent many of the game media from feeling unpleasant against the game, building up distrust thereto, or losing interest in or a concern on the game.

[0057] The first aspect of the present invention provides the following configuration:

(21) The gaming machine according to any of the configurations (17) to (19), wherein the processing device executes a program for generating the second special game state when the payment balance in terms of the game media is equal to or less than the set value in a case where the number of inserted game media for a game played by the player is the upper limit value of the number of inserted game media to be inserted for one game.

[0058] According to the configuration (21), a player can be urged to insert game media up to the upper limit, thereby enabling increase in profit in a facility such as a casino.

[0059] The first aspect of the present invention provides the following configuration:

(22) A gaming machine comprising:

means for giving a stepwise different profit to a player according to the number of games played by the player; and
means for notifying to the player by outputting an image or a sound different according to the number of games that the stepwise different profit is given according to the number of games played by the player.

[0060] According to the configuration (22), a stepwise different profit according to the number of games is given. It is then notified to a player by an image or a sound different according to the number of games that the stepwise different profit according to the number of games is given. Therefore, it can be prevented for a player who has spent many of the game media from feeling unpleasant against the game, building up distrust thereto, or losing interest in or a concern on the game.

[0061] The first aspect of the present invention provides the following configuration:

(23) A gaming machine comprising:

means for giving a stepwise different profit to a player according to a payment balance in terms of the game media of the player; and
means for notifying to the player by outputting an image or a sound different according to the payment balance in terms of the game media that the stepwise different profit is given according to the payment balance in terms of the game media.

[0062] According to the configuration (23), a stepwise different profit according to the payment balance in terms of the game media is given. It is then notified to the player by an image or a sound different according to the payment balance in terms of the game media that the stepwise different profit according to the payment balance in terms of the game media is given. Therefore, it can be prevented for a player who has spent many of the game

media from feeling unpleasant against the game, building up distrust thereto, or losing interest in or a concern on the game.

[0063] The first aspect of the present invention provides the following configuration:

(24) A game control method comprising:

a step of giving a stepwise different profit to a player according to the number of games played by the player; and
a step of notifying to the player by an image or a sound different according to the number of games that the stepwise different profit according to the number of games played by the player is given.

[0064] According to the configuration (24), a stepwise different profit according to the number of games is given. It is then notified to a player by an image or a sound different according to the number of games that the stepwise different profit according to the number of games is given. Therefore, it can be prevented for a player who has spent many of the game media from feeling unpleasant against the game, building up distrust thereto, or losing interest in or a concern on the game.

[0065] The first aspect of the present invention provides the following configuration:

(25) A game control method comprising:

a step of giving a stepwise different profit to a player according to a payment balance in terms of the game media of the player; and
a step of notifying to the player by an image or a sound different according to the payment balance in terms of the game media that the stepwise different profit according to the payment balance in terms of the game media of the player is given.

[0066] According to the configuration (25), a stepwise different profit according to the payment balance in terms of the game media is given. It is then notified to the player by an image or a sound different according to the payment balance in terms of the game media that the stepwise different profit according to the payment balance in terms of the game media is given. Therefore, it can be prevented for a player who has spent many of the game media from feeling unpleasant against the game, building up distrust thereto, or losing interest in or a concern on the game.

[0067] The first aspect of the present invention provides the following configuration:

(26) A game system equipped with a gaming machine and a control device,
wherein
the control device includes:

means for transmitting a signal to the gaming machine according to the number of games played in the gaming machine by a player, and
the gaming machine includes:

means for giving a stepwise different profit according to the number of games based on the signal received from the control device; and
means for notifying to the player by an image or a sound different according to the number of games that the stepwise different profits according to the number of games is given.

[0068] According to the configuration (26), a stepwise different profit according to the number of games is given. It is then notified to a player by an image or a sound different according to the number of games that the stepwise different profit according to the number of games is given. Therefore, it can be prevented for a player who has spent many of the game media from feeling unpleasant against the game, building up distrust thereto, or losing interest in or a concern on the game.

[0069] The first aspect of the present invention provides the following configuration:

(27) A game system equipped with a gaming machine and a control device,
wherein
the control device includes:

means for transmitting a signal to the gaming machine according to a payment balance in terms of the game media of a player in the gaming machine, and
the gaming machine includes:

means for giving a stepwise different profit according to the payment balance in terms of the game media based on the signal received from the control device; and
means for notifying to the player by an image or a sound different according to the payment balance in terms of the game media that the stepwise different profit according to the payment balance in terms of the game media is given.

[0070] According to the configuration (27), a stepwise different profit according to the payment balance in terms of the game media is given. It is then notified to the player by an image or a sound different according to the payment balance in terms of the game media that the stepwise different profit according to the payment balance in terms of the game media is given. Therefore, it can be

prevented for a player who has spent many of the game media from feeling unpleasant against the game, building up distrust thereto, or losing interest in or a concern on the game.

[0071] The second aspect of the present invention provides the following configuration:

(28) A gaming machine comprising:

output means capable of outputting an image or a sound;
winning combination determination means for determining a winning combination by a lottery;
means for generating a first special game state that is a game state advantageous to a player when the determined winning combination is a special winning combination;
means for, when the number of games accumulatively counted each time a game is played reaches a set value that is an object of comparison with the number of games, generating a second special game state that is a game state advantageous to a player and which is the same type as, or a different type from the first special game state;
means for notifying that the second special game state has been generated based on the set value by outputting an image or a sound to the output means when the second special game state is generated; and
means for providing such notification notifying that the first special game state has been generated according to the number of games by outputting an image or a sound to the output means when the first special game state is generated.

[0072] According to the configuration (28), when the number of games reaches a set value, the second special game state that is a game state advantageous to a player and which is the same type as, or a different type from the first special game state is generated. Hence, even if the first special game state is not generated for a long period leading to the spending of many of the game media, the second special game state is generated as long as the game is played such that the number of games reaches the set value and thus a player can make profit for playing the game.

[0073] When the second special game state is generated, it is notified by outputting an image or a sound to the output means that the second special game state has been generated based on the set value. Therefore, an impression can be made on the player that a return is carried out as a result of playing the game such that the number of games reaches the set value.

[0074] Further, such notification notifying that the first special game state has been generated according to the number of games is provided by outputting an image or sound to the output means when the first special game state is generated. Namely, when the first special game state has been generated according to the result of a lottery, a notification which shows as if a return in the first special game state is being generated according to the number of games is provided.

[0075] Therefore, it can be prevented for a player who has spent many of the game media from feeling unpleasant against the game, building up distrust thereto, or losing interest in or a concern on the game.

[0076] The second aspect of the present invention provides the following configuration:

(29) A gaming machine connected through a communication line to a control device which counts the number of games accumulatively for every gaming machine of plural gaming machines, comprising:

output means capable of outputting an image or a sound;
winning combination determination means for determining a winning combination by a lottery;
means for generating a first special game state that is a game state advantageous to a player when the determined winning combination is a special winning combination;
means for transmitting identification information of a gaming machine to the control device through the communication line each time a game is played;
means for receiving a command signal transmitted from the control device when the number of games counted accumulatively by the control device based on the identification information of the gaming machine reaches a set value that is an object of comparison with the number of games;
means for generating a second special game state that is a game state advantageous to a player and which is the same type as, or a different type from the first special game state, based on the command signal;
means for notifying that the second special game state has been generated based on the set value by outputting an image or a sound to the output means when the second special game state is generated; and
means for providing such notification notifying that the first special game state has been generated according to the number of games by outputting an image or a sound to the output means when the first special game state is generated.

[0077] According to the configuration (29), the second special game state is generated by the receiving of a command signal transmitted from the control device when the number of games counted in the control device reaches a set value. It is then notified by outputting an image or sound to the output means that the second spe-

cial game state has been generated based on the set value. Furthermore, when the first special game state has been generated according to the result of a lottery, a notification which shows as if a return in the first special game state is being generated according to the number of games is provided. Therefore, it can be prevented for a player who has spent many of the game media from feeling unpleasant against the game, building up distrust thereto, or losing interest in or a concern on the game.

[0078] The second aspect of the present invention provides the following configuration:

(30) A gaming machine comprising:

output means capable of outputting an image or a sound;
winning combination de termination means for determining a winning combination by a lottery;
means for generating a first special game state that is a game state advantageous to a player when the determined winning combination is a special winning combination;
means for counting accumulatively the number of games each time a game is played;
means for determining whether or not the number of games has reached a set value that is an object of comparison with the number of games;
means for generating a second special game state that is a game state advantageous to a player and which is the same type as, or a different type from the first special game state, when the number of games is determined to have reached the set value;
means for notifying that the second special game state has been generated based on the set value by outputting an image or a sound to the output means when the second special game state is generated; and
means for providing such notification notifying that the first special game state has been generated according to the number of games by outputting an image or a sound to the output means when the first special game state is generated.

[0079] According to the configuration (30), the number of games is counted accumulatively each time a game is played. Moreover, it is determined whether or not the number of games reaches the set value, and when it is determined that the number of games has reached the set value, the second special game state is generated. It is then notified by outputting an image or sound to the output means that the second special game state has been generated based on the set value. Furthermore, when the first special game state has been generated according to the result of a lottery, a notification which shows as if a return in the first special game state is being generated according to the number of games is provided. Therefore, it can be prevented for a player who has spent many of the game media from feeling unpleasant against the game, building up distrust thereto, or losing interest in or a concern on the game.

[0080] The second aspect of the present invention provides the following configuration:

(31) The gaming machine according to any one of the configurations (28) to (30), wherein reception means that can accept for one game an insertion of game media up to a predetermined upper limit value is provided, and the means for generating the second special game state generates a second special game state in a case where the number of inserted game media for the game played by the player is equal to the upper limit when the number of games reaches the set value.

[0081] According to the configuration (31), a player can be urged to insert the game media up to the upper limit, thereby enabling a facility such as a casino to increase its profit.

[0082] The second aspect of the present invention provides the following configuration:

(32) A gaming machine equipped with a processing device, a storage device and an image or sound output device,
wherein
the processing device executes:

a processing determining one winning combination selected from plural winning combinations determined in advance by executing a lottery program stored in the storage device;
a processing reading from the storage device a program for generating a first special game state that is a game state advantageous to a player when the determined winning combination is a special winning combination, and executing the program;
a processing reading from the storage device a program for generating a second special game state that is a game state advantageous to a player and which is the same type as, or a different type from the first special game state when the number of games counted accumulatively each time a game is played reaches a set value that is an object of comparison with the number of games, and executing the program;
a processing reading, when the second special game state is generated, notification data stored in the storage device, and based on the notification data, outputting to the output device, an image or a sound which notifies that the second special game state is generated based on the set value; and
a processing reading, when the first special

game state is generated, notification data stored in the storage device, and based on the notification data, outputting to the output device, an image or a sound which provides such notification notifying that the first special game state is generated according to the number of games.

[0083] According to the configuration (32), the second special game state is generated when the number of games reaches a set value. Then, based on the notification data, an image or a sound which notifies that the second special game state is generated based on the set value is output with the output device. Furthermore, when the first special game state has been generated according to the result of a lottery, a notification which shows as if a return in the first special game state is being generated according to the number of games is provided. Therefore, it can be prevented for a player who has spent many of the game media from feeling unpleasant against the game, building up distrust thereto, or losing interest in or a concern on the game.

[0084] The second aspect of the present invention provides the following configuration:

(33) A gaming machine equipped with a processing device, a storage device and an image or sound output device, and connected through a communication line to a control device which counts the number of games accumulatively for every gaming machine of plural gaming machines,
wherein
the processing device executes:

a processing determining one winning combination selected from plural winning combinations determined in advance by executing a lottery program stored in the storage device;
a processing reading from the storage device a program for generating a first special game state that is a game state advantageous to a player when the determined winning combination is a special winning combination, and executing the program;
a processing transmitting identification information on a gaming machine stored in the storage device to the control device through the communication line each time a game is played;
a processing receiving a command signal transmitted from the control device when the number of games counted accumulatively by the control device based on the identification information on the gaming machine reaches a set value that is an object of comparison with the number of games;
a processing reading from the storage device, based on the command signal, a program for generating a second special game state that is a game state advantageous to a player and which is the same type as, or a different type from the first special game state, and executing the program;
a processing reading, when the second special game state is generated, notification data stored in the storage device, and based on the notification data, outputting to the output device, an image or a sound which notifies that the second special game state is generated based on the set value; and
a processing reading, when the first special game state is generated, notification data stored in the storage device, and based on the notification data, outputting to the output device, an image or a sound which provides such notification notifying that the first special game state is generated according to the number of games.

[0085] According to the configuration (33), the second special game state is generated by the receiving of the command signal transmitted from the control device when the number of games counted in the control device reaches a set value. It is then notified by outputting an image or sound to the output device that the second special game state has been generated based on the set value. Furthermore, when the first special game state has been generated according to the result of a lottery, a notification which shows as if a return in the first special game state is being generated according to the number of games is provided. Therefore, it can be prevented for a player who has spent many of the game media from feeling unpleasant against the game, building up distrust thereto, or losing interest in or a concern on the game.

[0086] The second aspect of the present invention provides the following configuration:

(34) A gaming machine equipped with a processing device, a storage device and an image or sound output device,
wherein
the processing device executes:

a processing determining one winning combination selected from plural winning combinations determined in advance by executing a lottery program stored in the storage device;
a processing reading from the storage device a program for generating a first special game state that is a game state advantageous to a player when the determined winning combination is a special winning combination, and executing the program;
a processing counting the number of games accumulatively each time a game is played;
a processing determining whether or not the number of games has reached a set value that is an object of comparison with the number of games;

a processing reading from the storage device, when the number of games is determined to have reached the set value, a program for generating a second special game state that is a game state advantageous to a player and which is the same type as, or a different type from the first special game state, and executing the program;

a processing reading, when the second special game state is generated, notification data stored in the storage device, and based on the notification data, outputting to the output device, an image or a sound which notifies that the second special game state is generated based on the set value; and

a processing reading, when the first special game state is generated, notification data stored in the storage device, and based on the notification data, outputting to the output device, an image or a sound which provides such notification notifying that the first special game state is generated according to the number of games.

[0087] According to the configuration (34), the number of games is counted accumulatively each time a game is played. Moreover, it is determined whether or not the number of games has reached the set value and if it is determined that the number of games has reached the set value, the second special game state is generated. It is then notified by outputting an image or sound to the output device that the second special game state has been generated based on the set value. Furthermore, when the first special game state has been generated according to the result of a lottery, a notification which shows as if a return in the first special game state is being generated according to the number of games is provided. Therefore, it can be prevented for a player who has spent many of the game media from feeling unpleasant against the game, building up distrust thereto, or losing interest in or a concern on the game.

[0088] The second aspect of the present invention provides the following configuration:

(35) The gaming machine according to any one of the configurations (32) to (34), wherein the processing device executes a program for generating the second special game state when the number of games reaches the set value in a case where the number of inserted game media for a game played by the player is the upper limit value of the number of game media to be inserted for one game.

[0089] According to the configuration (35), a player can be urged to insert game media up to the upper limit, thereby enabling a facility such as a casino to increase its profit.

[0090] The second aspect of the present invention provides the following configuration:

(36) A gaming machine comprising:

output means capable of outputting an image or a sound;

winning combination determination means for determining a winning combination by a lottery;

means for generating a first special game state that is a game state advantageous to a player when the determined winning combination is a special winning combination;

means for, when a payment balance in terms of the game media becomes equal to or less than a set value that is an object of comparison with the payment balance in terms of the game media, generating a second special game state that is a game state advantageous to a player and which is the same type as, or a different type from the first special game state;

means for notifying that the second special game state has been generated based on the set value by outputting an image or a sound to the output means when the second special game state is generated; and

means for providing such notification notifying that the first special game state has been generated according to the payment balance in terms of the game media by outputting an image or a sound to the output means when the first special game state is generated.

[0091] According to the configuration (36), when the payment balance in terms of the game media becomes equal to or less than a set value, the second special game state that is a game state advantageous to a player and which is the same type as, or a different type from the first special game state is generated. Therefore, if many of the game media are spent and a payment balance in terms of the game media is equal to or less than the set value, the second special game state is generated and thus the player can earn a profit for playing the game.

[0092] When the second special game state is generated, it is notified by outputting an image or a sound to the output means that the second special game state has been generated based on the set value. Therefore, an impression can be made on the player that a return is carried out as a result of playing the game such that the payment balance in terms of the game media is equal to or less than the set value.

[0093] Further, such notification notifying that the first special game state has been generated according to the payment balance in terms of the game media is provided by outputting an image on or sound to the output means when the first special game state is generated. Namely, when the first special game state has been generated according to the result of a lottery, a notification which shows as if a return in the first special game state is being generated according to the payment balance in terms of the game media is provided.

[0094] Therefore, it can be prevented for a player who has spent many of the game media from feeling unpleasant against the game, building up distrust thereto, or losing interest in or a concern on the game.

[0095] The second aspect of the present invention provides the following configuration:

(37) A gaming machine connected through a communication line to a control device which counts the payment balance in terms of the game media accumulatively for every gaming machine of plural gaming machines, comprising:

output means capable of outputting an image or a sound;
winning combination determination means for determining a winning combination by a lottery;
means for generating a first special game state that is a game state advantageous to a player when the determined winning combination is a special winning combination;
means for transmitting a payment balance in terms of the game media in a game played by a player together with identification information of the gaming machine to the control device through the communication line each time a game is played;
means for receiving a command signal transmitted from the control device when the payment balance in terms of the game media counted accumulatively by the control device based on the identification information of the gaming machine and the payment balance in terms of the game media in a game played by the player is equal to or less than a set value that is an obj ect of comparison with the payment balance in terms of the game media;
means for generating a second special game state that is a game state advantageous to a player and which is the same type as, or a different type from the first special game state, based on the command signal;
means for notifying that the second special game state has been generated based on the set value by outputting an image or a sound to the output means when the second special game state is generated; and
means for providing such notification notifying that the first special game state has been generated according to the payment balance in terms of the game media by outputting an image or a sound to the output means when the first special game state is generated.

[0096] According to the configuration (37), the second special game state is generated by the receiving of a command signal transmitted from the control device when the payment balance in terms of the game media counted by the control device is equal to or less than the set value. It is then notified by outputting an image or a sound to the output means that the second special game state has been generated based on the set value. Furthermore, when the first special game state has been generated according to the result of a lottery, a notification which shows as if a return in the first special game state is being generated according to the payment balance in terms of the game media is provided. Therefore, it can be prevented for a player who has spent many of the game media from feeling unpleasant against the game, building up distrust thereto, or losing interest in or a concern on the game.

[0097] The second aspect of the present invention provides the following configuration:

(38) A gaming machine comprising:

output means capable of outputting an image or a sound;
winning combination determination means for determining a winning combination by a lottery;
means for generating a first special game state that is a game state advantageous to a player when the determined winning combination is a special winning combination;
means for counting a payment balance in terms of the game media accumulatively each time a game is played;
means for determining whether or not the payment balance in terms of the game media has become equal to or less than a set value that is an object of comparison with the payment balance in terms of the game media;
means for generating a second special game state that is a game state advantageous to a player and which is the same type as, or a different type from the first special game state, when the payment balance in terms of the game media is determined to have become equal to or less than the set value;
means for notifying that the second special game state has been generated based on the set value by outputting an image or a sound to the output means when the second special game state is generated; and
means for providing such notification notifying that the first special game state has been generated according to the payment balance in terms of the game media by outputting an image or a sound to the output means when the first special game state is generated.

[0098] According to the configuration (38), the payment balance in terms of the game media is counted accumulatively each time a game is played. Moreover, it is determined whether or not the payment balance in terms of the game media is equal to or less than the set

value, and when it is determined that the payment balance in terms of the game media is equal to or less than the set value, the second special game state is generated. It is then notified by outputting an image or a sound to the output means that the second special game state has been generated based on the set value. Furthermore, when the first special game state has been generated according to the result of a lottery, a notification which shows as if a return in the first special game state is being generated according to the payment balance in terms of the game media is provided. Therefore, it can be prevented for a player who has spent many of the game media from feeling unpleasant against the game, buildingup distrust thereto, or losing interest in or a concern on the game.

[0099] The second aspect of the present invention provides the following configuration:

(39) The gaming machine according to any one of the configurations (36) to (38), wherein reception means that can accept for one game an insertion of game media up to a predetermined upper limit value is provided, and the means for generating the second special game state generates a second special game state in a case where the number of inserted game media for the game played is at the upper limit value when the payment balance in terms of the game media is equal to or less than the set value.

[0100] According to the configuration (39), a player can be urged to insert the game media up to the upper limit, thereby enabling increase in profit in a facility such as a casino.

[0101] The second aspect of the present invention provides the following configuration:

(40) A gaming machine equipped with a processing device, a storage device and an image or sound output device,
wherein
the processing device executes:

a processing determining one winning combination selected from plural winning combinations determined in advance by executing a lottery program stored in the storage device;
a processing reading from the storage device the program for generating a first special game state that is a game state advantageous to a player when the determined winning combination is a special winning combination, and executing the program;
a processing reading from the storage device a program for generating a second special game state that is a game state advantageous to a player and which is the same type as, or a different type from the first special game state when the payment balance in terms of the game media counted accumulatively each time a game is played becomes equal to or less than a set value that is an obj ect of comparison with the payment balance in terms of the game media, and executing the program;
a processing reading, when the second special game state is generated, notification data stored in the storage device, and based on the notification data, outputting to the output device, an image or a sound which notifies that the second special game state is generated based on the set value; and
a processing reading, when the first special game state is generated, notification data stored in the storage device, and based on the notification data, outputting to the output device, an image or a sound which provides such notification notifying that the first special game state is generated according to the payment balance in terms of the game media.

[0102] According to the configuration (40), the second special game state is generated when the payment balance in terms of the game media is equal to or less than the set value. An image or a sound is then output to the output device based on notification data for notifying that the second special game state has been generated based on the set value. Furthermore, when the first special game state has been generated according to the result of a lottery, a notification which shows as if a return in the first special game state is being generated according to the payment balance in terms of the game media is provided. Therefore, it can be prevented for a player who has spent many of the game media from feeling unpleasant against the game, building up distrust thereto, or losing interest in or a concern on the game.

[0103] The second aspect of the present invention provides the following configuration:

(41) A gaming machine equipped with a processing device, a storage device and an image or sound output device, and connected through a communication line to a control device which counts the payment balance in terms of the game media accumulatively for every gaming machine of plural gaming machines,
wherein
the processing device executes:

a processing determining one winning combination selected from plural winning combinations determined in advance by executing a lottery program stored in the storage device;
a processing reading from the storage device a program for generating a first special game state that is a game state advantageous to a player when the determined winning combination is a special winning combination, and executing the

program;
a processing transmitting the number of inserted game media and the number of payout game media in the game played by a player together with an identification information on the gaming machine which are stored in the storage device to the control device through the communication line each time a game is played;
a processing receiving a command signal transmitted from the control device when the payment balance in terms of the game media counted accumulatively by the control device based on the identification information on the gaming machine, the number of inserted game media and the number of payout game media in the game played by a player is equal to or less than a set value that is an obj ect of comparison with the payment balance in terms of the game media;
a processing reading from the storage device, based on the command signal, a program for generating a second special game state that is a game state advantageous to a player and which is the same type as, or a different type from the first special game state, and executing the program;
a processing reading, when the second special game state is generated, notification data stored in the storage device, and based on the notification data, outputting to the output device, an image or a sound which notifies that the second special game state is generated based on the set value; and
a processing reading, when the first special game state is generated, notification data stored in the storage device, and based on the notification data, outputting to the output device, an image or a sound which provides such notification notifying that the first special game state is generated according to the payment balance in terms of the game media.

[0104] According to the configuration (41), the second special game state is generated by the receiving of a command signal transmitted from the control device when the payment balance in terms of the game media counted in the control device reaches a value equal to or less than the set value. It is then notified by outputting an image or a sound to the output device that the second special game state has been generated based on the set value. Furthermore, when the first special game state has been generated according to the result of a lottery, a notification which shows as if a return in the first special game state is being generated according to the payment balance in terms of the game media is provided. Therefore, it can be prevented for a player who has spent many of the game media from feeling unpleasant against the game, building up distrust thereto, or losing interest in or a concern on the game.

[0105] The second aspect of the present invention provides the following configuration:

(42) A gaming machine equipped with a processing device, a storage device and an image or sound output device,
wherein
the processing device executes:

a processing determining one winning combination selected from plural winning combinations determined in advance by executing a lottery program stored in the storage device;
a processing reading from the storage device a program for generating a first special game state that is a game state advantageous to a player when the determined winning combination is a special winning combination, and executing the program;
a processing counting a payment balance in terms of the game media accumulatively each time a game is played;
a processing determining whether or not the payment balance in terms of the game media has become equal to or less than a set value that is an obj ect of comparison with the payment balance in terms of the game media;
a processing reading from the storage device, when the payment balance in terms of the game media is determined to have become equal to or less than the set value, a program for generating a second special game state that is a game state advantageous to a player and which is the same type as, or a different type from the first special game state, and executing the program;
a processing reading, when the second special game state is generated, notification data stored in the storage device, and based on the notification data, outputting to the output device, an image or a sound which notifies that the second special game state is generated based on the set value; and
a processing reading, when the first special game state is generated, notification data stored in the storage device, and based on the notification data, outputting to the output device, an image or a sound which provides such notification notifying that the first special game state is generated according to the payment balance in terms of the game media.

[0106] According to the configuration (42), the payment balance of the game media is counted accumulatively counted each time a game is played. Moreover, it is determined whether or not the payment balance in terms of the game media is equal to or less than the set value and if it is determined that the payment balance in terms of the game media has been equal to or less than

the set value, the second special game state is generated. It is then notified by outputting an image or a sound to the output device that the second special game state has been generated based on the set value. Furthermore, when the first special game state has been generated according to the result of a lottery, a notification which shows as if a return in the first special game state is being generated according to the payment balance in terms of the gamemedia is provided. Therefore, it can be prevented for a player who has spent many of the game media from feeling unpleasant against the game, building up distrust thereto, or losing interest in or a concern on the game.

[0107] Further, the second aspect of the present invention provides the following configuration.

(43) The gaming machine according to any one of the configurations (40) to (42), wherein the processing device executes a program for generating the second special game state when the payment balance in terms of the game media is equal to or less than the set value in a case where the number of inserted game media for a game played by the player is the upper limit value of the number of inserted game media to be inserted for one game.

[0108] According to the configuration (43), a player can be urged to insert game media up to the upper limit, thereby enabling increase in profit in a facility such as a casino.

[0109] The second aspect of the present invention provides the following configuration:

(44) A gaming machine comprising:

means for giving a profit to a player according to result of a lottery;
means for giving to the player a profit according to the number of games played by the player;
means for notifying to the player by outputting an image or a sound, that the profit according to the number of games is given; and
means for providing such notification to the player by the output of an image or a sound, notifying that the profit according to the number of games is given when the profit is being given according to the result of a lottery.

[0110] According to the configuration (44), a profit according to the number of games played by the player (for example, the second special game state) is given to the player. Then, it is notified to the player by outputting an image or a sound, that the profit according to the number of games is given. Furthermore, when the profit is being given according to the result of a lottery (for example, the first special game state), a notification which shows as if the profit is being given according to the number of games is provided by the output of an image or a sound. Therefore, it can be prevented for a player who has spent many of the game media from feeling unpleasant against the game, building up distrust thereto, or losing interest in or a concern on the game.

[0111] The second aspect of the present invention provides the following configuration:

(45) A gaming machine comprising:

means for giving a profit to a player according to result of a lottery;
means for giving to the player a profit according to the payment balance in terms of the game media of the player;
means for notifying to the player by outputting an image or a sound, that the profit according to the payment balance in terms of the game media is given; and
means for providing such notification to the player by the output of an image or a sound, notifying that the profit according to the payment balance in terms of the game media is given when the profit is being given according to the result of a lottery.

[0112] According to the configuration (45), a profit according to the payment balance in terms of the game media of the player (for example, the second special game state) is given to the player. Then, it is notified to the player by outputting an image or a sound, that the profit according to the payment balance in terms of the game media is given. Furthermore, when the profit is being given according to the result of a lottery (for example, the first special game state), a notification which shows as if the profit is being given according to the payment balance in terms of the game media is provided by the output of an image or a sound. Therefore, it can be prevented for a player who has spent many of the game media from feeling unpleasant against the game, building up distrust thereto, or losing interest in or a concern on the game.

[0113] The second aspect of the present invention provides the following configuration:

(46) A game control method comprising:

a step for giving a profit to a player according to result of a lottery;
a step for giving to the player a profit according to the number of games played by the player;
a step for notifying to the player by outputting an image or a sound, that the profit according to the number of games is given; and
a step for providing such notification to the player by the output of an image or a sound, notifying that the profit according to the number of games is given when the profit is being given according to the result of a lottery.

[0114] According to the configuration (46), a profit according to the number of games played by the player (for example, the second special game state) is given to the player. Then, it is notified to the player by outputting an image or a sound, that the profit according to the number of games is given. Furthermore, when the profit is being given according to the result of a lottery (for example, the first special game state), a notification which shows as if the profit is being given according to the number of games is provided by the output of an image or a sound. Therefore, it can be prevented for a player who has spent many of the game media from feeling unpleasant against the game, building up distrust thereto, or losing interest in or a concern on the game.

[0115] The second aspect of the present invention provides the following configuration:

(47) A game control method comprising:

a step for giving a profit to a player according to result of a lottery;
a step for giving to the player a profit according to the payment balance in terms of the game media of the player;
a step for notifying to the player by outputting an image or a sound, that the profit according to the payment balance in terms of the game media is given; and
a step for providing such notification to the player by the output of an image or a sound, notifying that the profit according to the payment balance in terms of the game media is given when the profit is being given according to the result of a lottery.

[0116] According to the configuration (47), a profit according to the payment balance in terms of the game media of the player (for example, the second special game state) is given to the player. Then, it is notified to the player by outputting an image or a sound, that the profit according to the payment balance in terms of the game media is given. Furthermore, when the profit is being given according to the result of a lottery (for example, the first special game state), a notification which shows as if the profit is being given according to the payment balance in terms of the game media is provided by the output of an image or a sound. Therefore, it can be prevented for a player who has spent many of the game media from feeling unpleasant against the game, building up distrust thereto, or losing interest in or a concern on the game.

[0117] The second aspect of the present invention provides the following configuration:

(48) A game system equipped with a gaming machine and a control device,
wherein
the control device includes:

means for transmitting a signal to the gaming machine according to the number of games played in the gaming machine by a player, and
the gaming machine includes :

means for giving a profit to a player according to result of a lottery;
means for giving profit according to the number of games based on the signal received from the control device;
means for notifying to the player by outputting an image or a sound, that the profit according to the number of games is given; and
means for providing such notification to the player by the output of an image or a sound, notifying that the profit according to the number of games is given when the profit is being given according to the result of a lottery.

[0118] According to the configuration (48), a profit according to the number of games played by the player (for example, the second special game state) is given to the player. Then, it is notified to the player by outputting an image or a sound, that the profit according to the number of games is given. Furthermore, when the profit is being given according to the result of a lottery (for example, the first special game state), a notification which shows as if the profit is being given according to the number of games is provided by the output of an image or a sound. Therefore, it can be prevented for a player who has spent many of the game media from feeling unpleasant against the game, building up distrust thereto, or losing interest in or a concern on the game.

[0119] The second aspect of the present invention provides the following configuration:

(49) A game system equipped with a gaming machine and a control device,
wherein
the control device includes:

means for transmitting a signal to the gaming machine according to a payment balance in terms of the media of a player in the gaming machine, and
the gaming machine includes:

means for giving a profit to a player according to result of a lottery;
means for giving profit according to the payment balance in terms of the game media based on the signal received from the control device;
means for notifying to the player by outputting an image or a sound, that the profit according to the payment balance in terms of

the game media is given; and
means for providing such notification to the player by the output of an image or a sound, notifying that the profit according to the payment balance in terms of the game media is given when the profit is being given according to the result of a lottery.

[0120] According to the configuration (49), a profit according to the payment balance in terms of the game media of the player (for example, the second special game state) is given to the player. Then, it is notified to the player by outputting an image or a sound, that the profit according to the payment balance in terms of the game media is given. Furthermore, when the profit is being given according to the result of a lottery (for example, the first special game state), a notification which shows as if the profit is being given according to the payment balance in terms of the game media is provided by the output of an image or a sound. Therefore, it can be prevented for a player who has spent many of the game media from feeling unpleasant against the game, building up distrust thereto, or losing interest in or a concern on the game.

EFFECTS OF THE INVENTION

[0121] As a result, according to the present invention, it can be prevented for a player who has spent many of the game media from feeling unpleasant against the game, building up distrust thereto, or losing interest in or a concern on the game.

DESCRIPTION OF THE EMBODIMENTS

[First Embodiment]

[0122] Fig. 1 is a schematic diagram showing the entire construction of a game system according to one embodiment of the first aspect of the present invention.
A game system 100 includes: plural gaming machines 10 and a control device 200 connected to the gaming machines 10 through a predetermined communication line 101. Such a game system 100 may be constructed in one recreation facility capable of playing various kinds of games such as a bar, a casino and the like, or between plural recreation facilities. When the game system is constructed in one recreation facility, the game system 100 may be constructed on each floor or section of the recreation facility. The communication line 101 is not particularly limited, and may be wired or wireless, and either a dedicated line or a switched line can be used.

[0123] In the embodiment, the gaming machine 10 is a slot machine. In the first aspect of the present invention, however, a gaming machine is not limited to a slot machine, and for example, a so-called single gaming machine such as a video slot machine, a video card gaming machine and the like may be adopted, and a so-called mass game (multi-terminal gaming machine) such as a racing game, a bingo game, a public lottery and the like, which is a game that takes a predetermined time for a result to be displayed, may also be adopted.

[0124] In the gaming machine 10, a coin, a note or an electronic valuable information corresponding thereto is used as a game media. In the first aspect of the present invention, however, the game media is not particularly limited, and for example, a medal, a token, an electronic money and a ticket can be used. The ticket is not particularly limited and may include, for example, a ticket with a bar code as described later, and of the like tickets.

[0125] The control device 200 controls plural gaming machines 10. Especially, in the present embodiment, the control device 200 controls a transition to a return mode in each of the gaming machines 10. The return mode corresponds to the second special game state in the first aspect of the present invention and many coins are paid out in the return mode. The control device 200 may be a device which controls the return rate by controlling the transition to the return mode. In such a construction, the control device 200 may be a device which controls the return rates of each of the gaming machines 10 individually, or a device which controls the return rate across all gaming machines 10 collectively.

[0126] The control device 200 may further function as a so-called hole server which is installed in a recreation facility having plural gaming machines 10, or as a server which collectively controls plural recreation facilities. Moreover, every gaming machine 10 has its own identification number, and the source of data transmitted to the control device 200 from each of the gaming machines 10 is distinguished therein by their identification numbers. The identification number is also used to designate a transmission destination of data transmitted to the gaming machine 10 from the control device 200.

[0127] The identification number of a gaming machine corresponds to the identification information on a gaming machine of the first aspect of the present invention. The identification information on a gaming machine of the first aspect of the present invention is not particularly limited, and examples thereof may include: a letter, a symbol, a figure, a combination thereof, and the like.

[0128] Fig. 2 is a perspective view schematically showing a gaming machine according to one embodiment of the first aspect of the present invention.
The gaming machine 10 includes: a cabinet 11; a top box 12 placed on the upper side of the cabinet 11; and a main door 13 provided at the front face of the cabinet 11. Inside the cabinet 11, three reels 14 (14L, 14C and 14R) are rotatably installed. Twenty two designs (hereinafter, also referred to as symbols) are depicted as symbol sequences on the outer circumferential surface of each of the reels 14.

[0129] A lower image display panel 16 is provided over the reels 14 in the main door 13. The lower image display panel 16 is provided with a transparent liquid crystal panel, and various kinds of information, representation image

and the like associated with the game are displayed while the game is played. The lower image display panel 16 is an output device for an image and functions also as output means capable of outputting an image.

A number-of-credits display section 31 and a number-of-payouts display section 32 are formed on the lower image display panel 16. The number of credited coins is displayed as an image on the number-of-credits display section 31. The number of coins to be paid out is shown as an image on the number-of-payouts display section 32, when a combination of symbols stop displayed on a winning line L is a predetermined combination.

[0130] Three display windows 15 (15L, 15C and 15R), the back faces of which are visually recognizable, are formed on the lower image display panel 16, and through each of the display windows 15, three of the symbols depicted on the outer circumferential surface of each of the reels 14 are displayed. One winning line L traversing horizontally the three display windows 15 is formed on the lower image display panel 16. The winning line L defines a combination of symbols. When a combination of symbols stop displayed on the winning line L is a predetermined combination, the number of coins corresponding to the combination and the number of inserted coins (the number of BETs) is paid out.

[0131] Moreover, in the first aspect of the present invention, for example, when: plural winning lines L which traverse horizontally or obliquely the three display windows 15 are formed; the winning lines L, the number thereof which becomes effective set to be dependent on the number of coin-in, become effective; and a combination of symbols stop displayed on the winning line L which became effective is a predetermined combination, the number of coins corresponding to the stop-displayed combination may be paid out.

[0132] A touch panel 69, which is not shown in the figure, is provided on the front face of the lower image display panel 16 and the player can input various kinds of commands by operating the touch panel 69.

[0133] Provided below the lower image display panel 16 are: a control panel 20 constituting of plural buttons 23 to 27 which are input by the player, commands associated with progress of the game; a coin receiving slot 21 accepting coins into the cabinet 11; and a note identifier 22.

[0134] The control panel 20 is provided with: a spin button 23; a change button 24; a CASHOUT button 25; a 1-BET button 26; and a maximum BET button 27. The spin button 23 is used for inputting a command to start the rotating of the reels 14. The change button 24 is used in a case where a player requests an attendant of a recreation facility to exchange money. The CASHOUT button 25 is used for inputting a command to pay out credited coins to a coin tray 18.

[0135] The 1-BET button 26 is used for inputting a command to bet one coin of the credited coins. The maximum BET button 27 is used for inputting a command to bet the maximum number of coins that can be bet on one game (50 coins in the present embodiment) of the credited coins.

[0136] In the first aspect of the present invention, insertion of a game media means that a game media is bet on a game. For example, when coins inserted into the coin receiving slot 21 are directly bet on a game, insertion of coins into the coin receiving slot 21 corresponds to insertion of a game media. However, when coins inserted into the coin receiving slot 21 are temporarily credited, and the credited coins are bet on a game by operating the 1-BET button 26 or the maximum BET button 27, as in the present embodiment, the bet of the credited coins on the game corresponds to insertion of a game media.

[0137] The note identifier 22 is used not only for discriminating a false note from a true note but also for accepting the true note into the cabinet 11. The note identifier 22 may be configured such that a ticket 39 with a bar code which will be described later can be read. A belly glass 34 on which characters and the like of the gaming machine 10 are depicted is provided on the front face of the lower portion of the main door 13, that is, below the control panel 20.

[0138] An upper image display panel 33 is provided at the front face of a top box 12. The upper image display panel 33 is provided with a liquid crystal panel and, for example, an image to introduce the contents of the game or explain a game rule is displayed thereto. Although the lower image display panel 16 is an image output device and functions also as the output means of an image in the present embodiment, in the first aspect of the present invention, the upper image display panel 33 may also be an image output device, which functions also as the output means of an image.

[0139] A speaker 29 is provided in the top box 12. The speaker 29 is a sound output device and functions as output means capable of outputting a sound. A ticket printer 35, a card reader 36, a data display 37 and a key pad 38 are provided beneath the upper image display panel 33. The ticket printer 35 prints on a ticket a bar code in which data such as the number of credits, date, time, identification number of the gaming machine 10 and of the like data are encoded, and outputs the ticket 39 with a bar code. A player can make the ticket 39 with a bar code to be read by a second gaming machine and play a game in the second gaming machine, or exchange in a predetermined place (for example, at a cashier in the casino) of a recreation facility the ticket 39 with a bar code to notes.

[0140] The card reader 36 is used for reading data from a smart card and writing data onto a smart card. The smart card is a card to be carried by a player, and for example, data to identify a player and data concerning a history of a game played by a player are stored thereon. Data corresponding to a coin, a note or a credit may also be stored on the smart card. As an alternative of a smart card, a magnetic stripe card may be adopted. The data display 37 is a fluorescent display and the like, and it is used, for example, to display data read by the card reader

36 and data input by a player from the key pad 38. The key pad 38 is used for inputting a command or data to issue a ticket and the like.

[0141] Fig. 3 is a schematic view showing the symbol sequence depicted on the outer circumferential surface of each reel.

Twenty two symbols each are depicted on the outer circumferential surface of the left reel 14L, the middle reel 14 C and the right reel 14 R. A sequence of the symbols depicted on the outer circumferential surface of each of the reels 14 is different from one another. The sequences of the symbols are combinations of the following symbols: "JACKPOT 7", "BLUE 7", "BELL", "CHERRY", "STRAWBERRY", "PLUM", "ORANGE" and "APPLE".

[0142] When the same three symbols of one of the symbols of "JACKPOT 7", "BLUE 7", "BELL", "CHERRY", "STRAWBERRY", "PLUM" and "ORANGE" are stop displayed on the winning line L, a predetermined number of credits is added to the account of the player as a credit owned by the player (see Fig. 14). As for "CHERRY" and "ORANGE", even if one or two of one of the symbols are stop displayed, a predetermined number of credits are added to the account of the player as credits owned by the player according to the number of the symbols stop displayed (see Fig. 14).

[0143] The symbol sequence "APPLE" is a bonus game trigger (a symbol to transit to a bonus game). When three of the "APPLE" are stop displayed on the winning line L, a game state shifts to a bonus game. The bonus game corresponds to the first special game state. In the present embodiment, a bonus game is a free game (a game in which a predetermined number thereof can be played without inserting coins for BET).

[0144] In the first aspect of the present invention, the first special game state is not particularly limited as far as it is a game state advantageous to the player. A game state that is advantageous to the player is not particularly limited as far as it is more advantageous than an ordinary game state (a game state other than the first special game state or the second special game state) and examples thereof include: a state where more of the game media can be earned than in an ordinary game state, a state where the game media can be earned on a probability higher than in an ordinary game state, a state where the number of the game media spent by a player is less than in an ordinary game state and of the like state. More specifically, examples of the first special game state include a free game, a second game, a mystery bonus and the like.

[0145] The sequence of symbols depicted on each of the reels 14 are, when the spin button 23 is pressed after the 1-BET button or the maximum BET button 27 is pressed to start a game, scroll displayed by scrolling downwards in the display windows 15 during the rotating of the reels 14, and after a predetermined time elapses, the rotating of the reels 14 comes to a stop, and thus the sequence of symbols are stop displayed in the display windows 15. Various kinds of winning combinations (see Fig. 14) are predetermined based on combinations of symbols and when a combination of symbols corresponding to a winning combination stops on the winning line L, the number of payout coins corresponding to the winning combination is added to credits owned by the player. When a bonus game trigger has been established, a bonus game is generated.

[0146] When a return mode flag which will be described later has been set to the state "ON", a game state shifts to a return mode after the symbols are stop displayed as described above. When a bonus game has been generated, the game state shifts to the return mode after the bonus game is over. The return mode corresponds to the second special game state. In the present embodiment, if a game state shifts to the return mode, a predeterminedpayout number of coins are paid out. In the present embodiment, the payout number of coins in the return mode is set according to a set value described later.

[0147] In the first aspect of the present invention, the second special game state is not particularly limited as far as it is a game state advantageous to the player. Examples of such a game state include: a state where more of the game media can be earned than in an ordinary game state, a state where the game media can be earned on a probability higher than in an ordinary game state, a state where the number of the game media spent by a player is less than in an ordinary game state and of the like state. More specifically, examples of the second game state include a free game, a second game, a mystery bonus game and the like.

[0148] In the first aspect of the present invention, the second special game state may be a game state of the same kind as the first special game state, or a game state of a kind different from the first game state as in the present embodiment. When the second special game state is made to be a game state different from the first special game state, games can be high in versatility, which can enhance a sense of expectation for the second special game state. Moreover, a game state of the second special game state may be an exclusive game state generated only when the second special game state occurs. In such a situation, a sense of expectation for the second special game state can be further enhanced.

[0149] Fig. 4 is a block diagram showing the internal construction of the gaming machine shown in Fig. 2.

A gaming board 50 includes: CPU (Central Processing Unit) 51, ROM 55 and boot ROM 52 which are interconnected to one another by an internal bus; a card slot 53S which accepts a memory card 53; an IC socket 54S which accepts GAL (Generic Array Logic) 54.

[0150] The memory card 53 is constituted of non-volatile memories such as CompactFlash (registered trademark) and stores a game program and a game system program. The game program contains a lottery program. The lottery program is a program for determining symbols (code Nos. corresponding to the symbols) on each of the reels 14 which are to be stop displayed on the winning

line L. The lottery program contains one or more of symbol weighting determination data, each corresponding to respective plural kinds of payout rates (for example, 80%, 84% and 88%). The symbol weighting determination data is data showing a correspondence relationship between a code No. (see Fig. 3) of each symbol and one or plural random number values from a predetermined numerical value range (0 to 255), for each of the three reels 14. A payout rate is determined based on data for setting a payout rate output from the GAL 54, and the lottery is executed based on symbol weighting determination data corresponding to the payout rate.

[0151] The card slot 53S is configured so that the memory card 53 can be inserted therein or drawn out therefrom, and connected to a mother board 40 through IDE bus. Therefore, a kind or contents of a game played in the gaming machine 10 can be changed by drawing out the memory card 53 from the card slot 53S, writing a different game program and game system program thereon, and inserting the memory card 53 into the card slot 53S thereafter. Moreover, a kind or contents of a game played in the gamingmachine 10 can also be changed by changing a memory card 53 on which a game program and a game systemprogram are stored to a different memory card 53 on which a different game program and game system program are stored. The game program includes a program related to progress in a game; a program for generating the first special game state; and a program for generating the second special game state. The game program further includes: image data and sound data output while a game is played and image data and sound data used as notification data.

[0152] GAL 54 is one kind of PLD having an OR fixed array structure. GAL 54 is equipped with a plurality of an input port and an output port and when a predetermined data is input to the input port, data corresponding to the input data is output from the output port. The data output from the output port is the above-mentioned data for setting a payout rate.

The IC socket 54S is configured such that GAL 54 can be mounted thereto or demounted therefrom, and connected to the mother board 40 through PCI bus. Therefore, data for setting a payout rate output from GAL 54 can be changed by drawing out GAL 54 from the IC socket 54S, rewriting a program stored on GAL 54, mounting GAL 54 to the IC socket 54S thereafter. Moreover, data for setting a payout rate can also be changed by changing GAL 54 to a different GAL 54.

[0153] CPU 51, ROM 55 and boot ROM 52 interconnected to each other by the internal bus are connected to the mother board 40 by PCI bus. The PCI bus not only conducts signal transmission between the mother board 40 and the gaming board 50, but also supplies electric power to the gaming board 50 from the mother board 40. ROM 55 stores country identification information and an authentication program therein. Boot ROM 52 stores a preliminary authentication program, a program for CPU 51 to activate the preliminary authentication program (a boot code) and the like therein.

[0154] The authentication program is a program to authenticate a game program and a game system program (an alteration check program). The authentication program is stated along a procedure for confirmation and certification that the game program and the game system program that are objects of an authentication capture processing are not altered, that is, a procedure for conducting authentication of the game program and the game system program (an authentication procedure). The preliminary authentication program is a program for authenticating the above-mentioned authentication program. The preliminary authentication program is stated along a procedure for certification that an authentication program that is an object of an authentication processing is not altered, that is, a procedure for authenticating the authentication program (an authentication procedure).

[0155] The mother board 40 is constructed with a general-purpose mother board commercially available (a printed circuit board on which basic parts of a personal computer are mounted) and includes: a main CPU 41; ROM (Read Only Memory) 42; RAM (Random Access Memory) 43 and a communication interface 44. The main CPU 41 is the processing device of the first aspect of the present invention.

[0156] ROM 42 is constituted of a memory device such as a flash memory and stores thereon a program such as BIOS (Basic Input/Output System) executed by the main CPU 41 and permanent data. When BIOS is executed by the main CPU 41, not only is an initialization processing for predetermined peripheral devices conducted, but a capture processing for the game program and the game system program stored on the memory card 53 is also started via the gaming board 50. In the first aspect of the present invention, contents of ROM 42 may be rewritable or not rewritable.

[0157] RAM 43 stores data and a program used at the time of operation of the main CPU 41. RAM 43 can store the authentication program read through the gaming board 50 together with the game program and the game system program. RAM 43 is the storage device of the first aspect of the present invention.

[0158] RAM 43 is provided with a storage region for a return mode flag. The return mode flag is a flag to be referred to when a game state is to be selected whether it should be shifted to a return mode corresponding to the second special game state or not. The storage region of the returnmode flag is constituted of a storage region with, for example, a predetermined number of bits and the return mode flag is turned "ON" or "OFF" according to storage contents in the storage region. If the return mode flag is set to the state "ON", the game state thereafter shifts to the return mode without fail. RAM 43 further stores data on the number of credits, the number of coin-in or coin-out for one game, and the like.

[0159] The communication interface 44 is used to communicate with the control device 200 through the communication line 101. The main CPU 41 transmits the

number of coin-in and the number of coin-out together with the gaming machine identification number of the gaming machine 10 to the control device 200 each time a game is played. The number of games, an accumulative number of coin-in and an accumulative number of coin-out is made to be associated with each gaming machine identification number, and stored in the control device 200. In the control device 200, a set value that is an object of comparison with the number of games is preliminary determined with respect to each gaming machine identification number, and when the number of games of one gaming machine 10 reaches a set value determined for that gaming machine 10, a return command signal is transmitted from the control device 200. When the main CPU 41 receives the return command signal through the communication interface 44, the return mode flag is set to the state "ON".

[0160] Both a body PCB (Printed Circuit Board) 60 and a door PCB 80 which will be described later are connected to the mother board 40 by USB. A power supply unit 45 is also connected to the mother board 40. When electric power is supplied from the power supply unit 45 to the mother board 40, not only is the main CPU 41 of the mother board 40 activated, but CPU 51 is also activated from electric power supplied through the PCI bus to the gaming board 50.

[0161] Equipment and devices which generate input signals to be input to the main CPU 41, and equipment and devices of which operations are controlled by a control signal output from the main CPU 41 are connected to the body PCB 60 and the door PCB 80. The main CPU 41 executes a game program and a game system program stored in RAM 43 based on an input signal input to the main CPU 41, and thereby performs a predetermined computational processing, stores results of thereof into RAM 43 and transmits a control signal to each equipment and device as a control processing for each of the equipment and devices.

[0162] A lamp 30, a sub CPU 61, a hopper 66, a coin detecting section 67, a graphic board 68, a speaker 29 as an output device, a touch panel 69, a note identifier 22, a ticket printer 35, a card reader 36, a key switch 38S and a data display 37 are connected to the body PCB 60. The lamp 30 is lit up in a predetermined pattern based on a control signal output from the main CPU 41.

[0163] The sub CPU 61 controls the rotation and stopping of the reels 14 (14L, 14C and 14R) . Amotor driving circuit 62 equipped with FPGA (Field Programmable Gate array) 63 and a driver 64 is connected to the sub CPU 61. FPGA 63 is an electronic circuit such as LSI capable of programming and works as a control circuit of a stepping motor 70. The driver 64 works as an amplifier circuit of a pulse to be input to the stepping motor 70. The stepping motors 70 (70L, 70C and 70R) which rotate each of the reels 14, are connected to the motor driving circuit 62. The stepping motor 70 is a 1-2 phase excitation type stepping motor.

[0164] In the first aspect of the present invention, an excitation type of the stepping motor is not particularly limited, and for example, a motor of a 2 or 1 phase excitation type can be adopted. A DC motor may be adopted instead of a stepping motor. When a DC motor is adopted, a deviation counter, a D/A converter and a servo amplifier are sequentially connected to the sub CPU 61 in this order and the DC motor is connected to the servo amplifier. A rotational position of the DC motor is detected by a rotary encoder and a current rotational position of the DC motor is supplied as data from the rotary encoder to the deviation counter.

[0165] An index detecting circuit 65 and a position change detecting circuit 71 are connected to the sub CPU 61. The index detecting circuit 65 is used for detecting positions (indexes described later) of the rotating reels 14 and can also detect an out-of-order state of the reels 14. As for the control of the rotating and stopping of the reels 14, detailed description will be given later by making reference to the figures.

[0166] The position change detecting circuit 71 detects a change of stoppage positions of the reels 14 after the stopping of the rotating of the reels 14. The position change detecting circuit 71 detects the change of stoppage positions of the reels 14, for example, in a case where the stoppage position is changed by force by a player as if the combination of symbols was in a wining state, despite the fact that the combination of symbols is not actually in a wining state, and of the like cases. The position change detecting circuit 71 is configured to be capable of detecting the change of stoppage position of the reel 14 by, for example, detecting fins (not shown in the figure) attached with a predetermined space on the inner side of the reel 14.

[0167] The hopper 66 is installed in the cabinet 11 and pays out a predetermined number of coins from a coin payout exit 19 to a coin tray 18 based on a control signal output from the main CPU 41. A coin detecting section 67 is installed inside the coinpayout exit 19 and when detecting that apredeterminednumber of coins has been paid out from the coin payout exit 19, outputs an input signal to the main CPU 41.

[0168] The graphic board 68 controls, based on a control signal output from the main CPU 41, image displays on the upper image display panel 33 and the lower image display panel 16 as an output device. The number of credits stored in RAM 43 is displayed on the number-of-credits display section 31 of the lower image display panel 16. The number of coin-out is displayed on the number-of-payouts display section 31 of the lower image display panel 16.

The graphic board 68 is equipped with VDP (Video Display Processor) which generates image data based on a control signal output from the main CPU 41 and a video RAM which temporarily stores image data generated by VDP, and of the like equipments. Note that image data used in generating image data with VDP is read from the memory card 53 and contained in a game program stored in RAM 43.

[0169] The note identifier 22 not only discriminates a true note from a false note, but also accepts the true note into the cabinet 11. The note identifier 22, when accepting a true note, outputs an input signal to the main CPU 41 based on a face amount of the note. The main CPU 41 stores the number of credits corresponding to the amount of the note transmitted with the input signal into RAM 43.

[0170] The ticket printer 35, based on a control signal output from the main CPU 41, prints on a ticket a bar code obtained by encoding data such as the number of credits, date and time, the identification number of the gaming machine 10, and of the like data stored in RAM 43, and outputs the ticket 39 with a bar code.

The card reader 36 transmits to the main CPU 41 data read from the smart card and writes data onto the smart card based on a control signal from the main CPU 41. The key switch 38S is provided on the key pad 38, and when the key pad 38 is operated by a player, outputs a predetermined input signal to the main CPU 41. The data display 37 displays, based on a control signal output from the main CPU 41, data read by the card reader 36 and data input by a player through the key pad 38.

[0171] The control panel 20, a reverter 21S, a coin counter 21C and a cold cathode tube 81 are connected to the door PCB 80. The control panel 20 is provided with a spin switch 23S corresponding to the spin button 23, a change switch 24S corresponding to the change button 24, a CASHOUT switch 25S corresponding to the CASHOUT button 25, a 1-BET switch 26S corresponding to the 1-BET button 26, and a maximum BET switch 27S corresponding to the maximum BET button 27. When the buttons 23 to 27 are operated by a player, each of the switches 23S to 27S corresponding thereto outputs input signals to the main CPU 41.

[0172] The coin counter 21C is installed inside the coin receiving slot 21, and discriminates whether a coin inserted by a player into the coin receiving slot 21 is true or false. Coins other than the true ones are discharged from the coin payout exit 19. The coin counter 21C also outputs an input signal to the main CPU 41 when a true coin is detected.

[0173] The reverter 21S operates based on a control signal output from the main CPU 41 and distributes coins recognized by the coin counter 21C as true coins into a cash box (not shown in the figure) or the hopper 66, which are disposed in the gaming machine 10. In other words, when the hopper 66 is filled with coins, true coins are distributed into the cashbox by the reverter 21S. On the other hand, when the hopper 66 is not filled with coins, true coins are distributed into the hopper 66. The cold cathode tube 81 works as a backlight installed on the back face sides of the lower image display panel 16 and the upper image display panel 33 and is lit up based on a control signal output from the main CPU 41.

[0174] Fig. 5 is a block diagram showing the internal construction of a control device according to one embodiment of the first aspect of the present invention.

A control device 200 includes: CPU 201 as a processing device; ROM 202; RAM 203 as a temporary storage device; a communication interface 204; and a hard disc drive 205. The communication interface 204 is connected to the communication interface 44 of the gaming machine 10 through the communication line 101. ROM 202 stores a system program for controlling operations of the control device, a permanent data, and the like. RAM 203 temporarily stores data received from each of the gaming machines 10 and data such as results of the computational operation. Moreover, a game history of a gaming machine 10 is stored in the hard disc drive 205, by being associated with the gaming machine identification number of each of the gaming machines 10.

[0175] Fig. 6 is a figure schematically showing an example of correspondence table between a gaming machine identification number and a game history.

Each of the gaming machine identification numbers correspond to a game history based on the number of games, an accumulative number of coin-in, an accumulative number of coin-out, a payment balance in terms of the coins and a return rate of coin-out.

[0176] A set value that is an object of comparison with the number of games is determined for each of the gaming machine identification numbers. The set value is selected from plural candidate values "600", "1200" and "2400" stepwise determined in advance. A set value "600" is assigned to the gaming machine 10 with the gaming machine identification number "001". A set value "600" is assigned to the gaming machine 10 with the gaming machine identification number "002". A set value "1200" is assigned to the gaming machine 10 with the gaming machine identification number "003". In the first aspect of the present invention, the values or number of the candidate values is not particularly limited, and may be set according to circumstances. Moreover, the set value does not need to be set individually for each of the gaming machines 10, but assigned to plural gaming machines 10 collectively.

[0177] When CPU 201 receives the number of coin-in, the number of coin-out and the gaming machine identification number from the gaming machine 10 through the communication interface 204, a game history corresponding to the gamingmachine identification number is updated. More specifically, 1 is added to the number of games, the number of coins inserted is added to the accumulative number of coin-in and the number of coins paid out is added to the accumulative number of coin-out. Furthermore, a payment balance in terms of the coins and a return rate are calculated based on the accumulative number of coin-in and the accumulative number of coin-out. When CPU 201 determines that the number of games updated has reached a set value, CPU 201 determines the number of coin-out in the return mode based on the set value.

[0178] Fig. 7 is a figure schematically showing an example of correspondence table between a set value and the number of payouts.

The number of coin-out "1000" in the returnmode is as-

signed at a set value of "600". The number of coin-out "2000" in the return mode is assigned at a set value of "1200". The number of coin-out "4000" in the return mode is assigned at a set value of "2400". Since, in the present embodiment, the number of coin-out in the payout return mode is larger the larger a set value is, a profit matching the number of games played by a player is given to the player in the return mode. Therefore, it can be prevented for a player who has spent many of the game media from feeling unpleasant against the game, building up distrust thereto, or losing interest in or a concern on the game. Note that the correspondence table shown in Fig. 7 is stored on the hard disc drive 205 as data.

[0179] In the first aspect of the present invention, it is not necessary for the number of coin-out set to correspond to a set value to be constantly the same, and for example, the number of coin-out set to correspond to a set value may be changeable according to a game history and the like.

Fig. 8 is a figure schematically showing another example of correspondence table between a set value and the number of payouts.

At a set value "600", "(- payment balance) x 50% (provided that the number of coin-out = 1000 if a payment balance ≥ 0) " is set as the number of coin-out in the return mode. Hence, if a payment balance is "-2000" when the number of games reaches 600, the number of coin-out is 1000, and if a payment balance is "-4000", the number of coin-out is 2000. At a set value "1200", "(- payment balance) x 60% (provided that the number of coin-out = 2000 if payment balance ≥ 0)" is set as the number of coin-out in the return mode. At a set value "2400", " (- payment balance) x 70% (provided that the number of coin-out = 4000 if payment balance ≥ 0)" is set as the number of coin-out in the return mode.

[0180] Next, description will be given of a processing performed in the gaming machine 10.

Fig. 9 is a flowchart showing a procedure in an authentication reading processing for a game program and a game system program executed by a mother board and a gaming board shown in Fig. 4. Note that the memory card 53 is inserted into the card slot 53S on the gaming board 50 and GAL 54 is mounted to the IC socket 54S.

[0181] When a power supply switch is turned on in the power supply unit 45, the mother board 40 and the gaming board 50 are activated (steps S1-1 and S2-1). When the mother board 40 and the gaming board 50 are activated, separate processing are performed at the same time. That is, in the gaming board 50, CPU 51 reads a preliminary authentication program stored in the boot ROM 52 and performs the preliminary authentication which in advance, prior to capturing the authentication program into the mother board 40, confirms or certificates that the program is not altered according to the read preliminary authentication program (step S2-2). On the other hand, in the mother board 40, the main CPU 41 executes BIOS stored in ROM 42 to expand on RAM 43 compressed data incorporated in BIOS (step S1-2). Then, the main CPU 41 executes BIOS expanded on RAM 43 to perform diagnosis on and initialization of various kinds of the peripheral devices (step S1-3).

[0182] Then, since ROM 55 on the gaming board 50 is connected to the main CPU 41 through PCI bus, the main CPU 41 not only performs reading of the authentication program stored in ROM 55, but also stores the read authentication program into RAM 43 (step S1-4) . On this occasion, the main CPU 41 takes a checksum according to ADDSUM method (a standard check function) with the help of the function of a standard BIOS of BIOS, and by performing a confirmation processing for whether or not storage is conducted without error, stores the authentication program into RAM 43.

[0183] Then, after confirming what is connected to the IDE bus, the main CPU 41 accesses the memory card 53 inserted into the card slot 53S through the IDE bus, and conducts reading of the game program and the game system program from the memory card 53. In this case, the main CPU 41 reads 4 bites at a time of data constituting the game program and the game system program. Next, the main CPU 41 authenticates by confirming and certifying according to the authentication program stored in RAM 43, that the read game program and game system program has not been altered (step S1-5). When the authentication processing is normally completed, the main CPU 41 writes and stores in RAM 43 the game program and the game system program that have been an object of authentication (have been authenticated) (step S1-6). Then, main CPU 41 accesses through the PCI. bus to GAL 54 mounted to the IC socket 54S, reads data for setting a payout rate from GAL 54 and writes and stores the data in RAM 43 (step S1-7). Then, the main CPU 41 not only reads through the PCI bus country identification information stored in ROM 55 on the gaming board 50, but also stores the read country identification information into RAM 43 (step S1-8).

[0184] After the processing is over, the main CPU 41 sequentially reads and executes the game program and the game system program to such that a game is progressed.

[0185] After the processing shown in Fig. 9 is over, the main CPU 41 performs a game mode selection processing.

Fig. 10 is a flowchart showing a subroutine of a game mode selection processing.

The main CPU 41 conducts a processing for adding credits stored in RAM 43 as an interrupt processing when it receives a detection signal output from the coin counter 21C in a case where the coin counter 21C detects a coin inserted into the coin receiving slot 21 while executing the subroutine.

Figs. 11A and 11B are figures showing an image displayed on the lower image display panel when a game mode selection processing is executed.

[0186] To begin with, the main CPU 41 conducts a processing to display on the lower image display panel 16 an image for requesting to the player selection of a

game mode (step S3). In this processing, the main CPU 41 transmits a depiction command for the game mode selection image to the graphic board 68. On the graphic board, VDP extracts image data from RAM 43 and expands the data on the video RAM to produce image data for one frame and to output the image data to the lower image display panel 16p based on the depiction command. As a result, for example, an image as shown in Fig. 11A is displayed on the lower side display panel 16.

[0187] Fig. 11A is a figure showing an example of game mode selection image displayed on the lower image display panel. In the figure, numerical reference 15 (15L, 15C and 15R) indicates display windows. An image showing "Select a mode !!" is displayed in the upper portion of the lower image display panel 16. The image is an image for requesting a player to select a game mode. Moreover, images showing "INSURANCE" and "NO INSURANCE" are displayed in the lower portion of the lower image display panel 16. The images are images indicating game mode options and the player touches a predetermined site of the touch panel 69 corresponding to a display region of the image, and is thereby enabled to input a command for selecting a game mode.

[0188] The option "INSURANCE" corresponds to the with-insurance mode. A predetermined number of credits (for example, number of credits equivalent to 1 dollar) is required for selecting the with-insurance mode. As an alternative of the number of credits, a note or a coin equivalent to the number of credits may be inserted. In a case where the with-insurance mode has been selected, when the number of games reaches a set value (for example, 600) without a bonus game being generated, the return mode flag is set to the state "ON" and a game state shifts to the return mode. In the return mode, the player can receive payout of coins corresponding to the set value. In other words, in the with-insurance mode, a game can be played in a state where an insurance is carried for compensating all or part of a loss arising in a case where no bonus game has arisen for a long time. On the other hand, an option "NO INSURANCE" corresponds to the without-insurance mode. In a case where the without-insurance mode has been selected, the return mode flag is not set to the state of "ON" and a game state does not shift to the return mode even if no bonus game has arisen for a long time after the without-insurance mode is selected.

[0189] After the processing in step S3, the main CPU 41 determines whether the with-insurance mode has been selected or not (step S4). In a case where it is determined that the with-insurance mode has been selected, the main CPU 41 conducts a processing for subtracting a predetermined number of credit from the number of credits stored in RAM 43 (step S5). Thereafter, the game execution processing in the with-insurance mode is conducted (step S6) .

While detailed description of the above-mentioned processing will be given later by making reference to Fig. 12, when played in the with-insurance mode, an image showing "INSURED" is displayed in the upper left of the lower image display panel 16, as shown in Fig. 11B. The image is an image showing that a game mode is in the with-insurance mode.

[0190] On the other hand, in the case where, in step S4, it is determined that the without-insurance mode has been selected, the main CPU 41 conducts the game execution processing in the without-insurance mode (step S7). Since this processing is a processing almost the same as the game execution processing in the with-insurance mode (see Fig. 12) except that neither a processing related to transition to the return mode nor a processing related to counting of the number of games is conducted, description thereof is omitted here. When the processing in step S6 or S7 has been executed, the process is returned to step S3 thereafter.

[0191] Fig. 12 is a flowchart showing a subroutine of a game execution processing in the with-insurance mode that is called and executed in step S6 of the subroutine shown in Fig. 10.

In the game execution processing, the main CPU 41 at first determines whether or not a coin is BET (step S10). In the processing, the main CPU 41 determines whether an input signal output from the 1-BET switch 26S or the maximum BET switch 27S has been received or not when the 1-BET button 26 or the maximum BET button 27 is operated, respectively. If it is determined that a coin has not been BET, the process returns to step S10.

[0192] On the other hand, if it is determined in step S10 that a coin is BET, the main CPU 41 conducts a processing for subtracting the number of credits stored in RAM 43 according to the number of BET coins (step S11). In a case where the number of BET coins is more than the number of credits stored in RAM 43, the process returns to step S10 without conducting subtraction on the number of credits stored in RAM 43. In a case where the number of BET coins exceeds the upper limit (50 coins in the present embodiment) up to which a BET is possible in one game, the processing advances to step S12 without conducting a processing for subtracting the number of BET coins from the number of credits stored in RAM 43.

[0193] Then, the main CPU 41 determines whether the spin button 23 has been turned ON or not (step S12). In the processing, the main CPU 41 d determines, when the spin button 23 is pressed, whether an input signal output from the spin switch 23S has been received or not. If it is determined that the spin button 23 has not been turned ON, the processing returns to step S10. Note that in a case where the spin button has not been turned ON (for example, in a case where a command of terminating a game has been input without turning ON the spin button 23), the main CPU 41 cancels a result of the subtracting processing in step S11.

[0194] In the present embodiment, description will be given of a case in which: after a coin is BET (step S10), a processing for conducting subtraction on the number of credits (step S11) is conductedprior to the determination on whether the spinbutton 23 has been turned ON

or not (step S12). However, the first aspect of the present invention is not limited to this example. For example, a processing for subtraction on the number of credits (step S11) may be conducted after a coin is BET (step S10), determined whether the spin button 23 has been turned ON or not (step S12), and when determined that the spin button 23 has been turned ON (YES in step S12).

[0195] Meanwhile, in step S12 of Fig. 12, if it is determined that the spin button 23 has been turned ON therein, the main CPU 41 conducts a lottery processing (step S13) . In the lottery processing, the main CPU 41 (processing device) executes a lottery program stored in RAM 43 (storage device) to thereby determine a code No. of the stopped reels 14. Thus, a combination of symbols stop displayed is determined. Detailed description of the processing will be given later by making reference to Figs. 13 and 14. When the processing in step S13 is executed, the main CPU 41 works as winning combination determination means for determining a winning combination by a lottery. In the present embodiment, description will be given of a case where a combination of symbols stop displayed is determined, and one winning combination of plural winning combinations is determined thereafter. However, in the first aspect of the present invention, one winning combination selected from plural winning combinations may at first be determined by a lottery, and the combination of symbols to be stop displayed may be determined thereafter, based on the determined winning combination.

[0196] Then, the main CPU 41 conducts a reel rotating control processing (step S14). The processing is a processing which, after all of the reels 14 starts to rotate, stops the rotating of each of the reels 14 such that a combination of symbol sequences corresponding to the winning combination determined in step S13 is stop displayed on the winning line L. Detailed description of the processing will be given later by making reference to Figs. 15 to 17.

[0197] Then, the main CPU 41 determines whether a bonus game trigger has been established or not, that is whether "APPLE" is stop displayed in the display window 15 or not (step S15). If it is determined that the bonus game trigger has been established, the main CPU 41 (processing device) reads a program for conducting abonus game fromRAM 43 (storage device) to execute a bonus game processing (step S16). Here, the first special game state is generated. Detailed description of the bonus game processing will be given later by making reference to Fig. 18. When the processing in step S16 is executed, the main CPU 41 functions as means for generating the first special game state.

[0198] On the other hand, if it is determined that the bonus game trigger has not been established, the main CPU 41 determines whether a winning combination has been established or not (step S17) . If it is determined that a winning combination has been established, the main CPU 41 conducts payout of a coin corresponding to the number of coin-in and the winning combination (step S18).

In a case where coins are reserved, the main CPU 41 conducts a processing to add the coins to the number of credits stored in RAM 43. On the other hand, in a case where payout of a coin is conducted, the main CPU 41 transmits a control signal to the hopper 66 and conducts payout of a predetermined number of coins. In that situation, the coin detecting section 67 counts the number of coins paid out from the hopper 66 and when the number of counts reaches a designated number, transmits a payout completion signal to the main CPU 41. Thus, the main CPU 41 stops the driving of the hopper 66 to terminate the coin payout processing.

[0199] When the processing in step S16 or S18 is executed, or when it is determined that no winning combination has been established (that a winning combination has failed to be established) in step S17, the main CPU 41 determines whether the return mode flag stored in RAM 43 is set to the state "ON" or not (step S19). If it is determined that the return mode flag has been set to the state "ON", the main CPU 41 (processing device) reads from RAM 43 (storage device) a program for shifting a game state to the return mode, executes the return mode processing, to thus shift a game state to the return mode (step S20). Here, the second special game state has been generated. Detailed description will be given of the payout return mode processing later using Fig. 19. The main CPU 41, when executing the processing in step S20, functions as means for generating the second special game state.

[0200] If the processing in step S20 has been executed, or if it is determined that the return mode flag has not been set to the state "ON" in step S19, the main CPU 41 determines whether the bonus game (step S16) has been executed or not or whether a game state has shifted to the return mode (step S20) or not (step S21).

[0201] If it is determined that a bonus game has not been executed, or that a game state has not shifted to the return mode, the main CPU 41 executes a counting processing (step S22).

The counting processing is a processing conducted between the gaming machine 10 and the control device 200. The number of coin-in and the number of coin-out for one game together with the gaming machine identification number are transmitted from the gaming machine 10 to the control device 200. In the control device 200, the number of games, an accumulative number of coin-in, an accumulative number of coin-out and the like are updated with respect to each gaming machine identification number. When the number of games reaches a set value, the number of coin-out in the return mode is determined according to the set value, and a return command signal showing the set value and the number of coin-out is transmitted to the gaming machine 10 from the control device 200. The main CPU 41, when receiving the return command signal, sets the return mode flag to the state "ON". Detailed description of the counting processing will be given later by making reference to Fig.

21. After the processing in step S22 is executed, the main CPU 41 returns the process to the processing in step S10 and subsequently executes a game in the with-insurance mode.

[0202] On the other hand, when it is determined that a bonus game has been executed or a game state has shifted to the payout return mode, the present subroutine is completed and the process returns to the processing shown in Fig. 10. As a result, a player can once again select whether a game is to be played by the with-insurance mode or the without-insurance mode.

[0203] Fig. 13 is a flowchart showing a subroutine of a lottery processing called and executed in step S13 of the subroutine shown in Fig. 12. The processing is a processing conducted by executing a lottery program stored in RAM 43 with the main CPU 41. The main CPU 41 executes a random number generating program included in the lottery program, and a random number value from the numerical value range of 0 to 255 is selected thereby such that each of the selected random number values correspond to each of the three reels 14 (step S31) . In the present embodiment, description will be given of a case where random numbers are generated on a program (a case where so-called software random numbers are used). In the first aspect of the present invention, however, a random number generatormaybe used, and random numbers may be extracted therefrom (so-called hardware random numbers may be used).

[0204] After the random number values are selected, the main CPU 41 (processing device) refers to symbol weighting determination data corresponding to payout rate setting data which is output from GAL 54 and stored in RAM 43, and determines, based on the selected three random number values, code Nos. (see Fig. 3) for each of the reels 14 (step S32). The code Nos. of the reels 14 correspond to code Nos. of the symbols stop displayed on the winning line L. The main CPU 41 determines code Nos. of the reels 14 to thereby determine a winning combination. For example, in a case where code Nos. of the reels 14 are determined "00", "00" and "00", it means that the main CPU 41 determined a winning combination as "JACKPOT". Based on the code Nos. determined for each of the reels, a reel rotating control processing which will be described later is conducted. On this occasion, the main CPU 41 functions as winning combination determination means.

[0205] Here, description of a winning combination in the present embodiment will be given.

Fig. 14 is a figure describing a relationship among winning combinations of plural kinds, establishment possibility of each winning combination and the number of coin-out in the present embodiment. The establishment possibilities of each of the winning combinations shown in Fig. 14 are of a case where a payout rate is set to 88% in a game other than a bonus game. The establishment possibilities shown in the figure show possibilities of the establishment of each of the shown winning combinations in such a case that code Nos. of each of the reels 14 are determinedbased on the selected three random number values by referring to a symbol weighting determination data. In other words, the random number values are not made to correspond to each of the winning combinations.

[0206] An establishment possibility of a bonus game trigger is 0.5%. If a player hits the bonus game trigger, three "APPLE" symbols are stop displayed on the winning line L and a bonus game is generated. In the bonus game, executed is a free game of which the number of games is determined by a lottery.

[0207] An establishment possibility of "JACKPOT 7" is 0.5%. If the winning combination has been established, three "JACKPOT 7" symbols are stop displayed on the winning line L, and 30 coins per one coin-in are paid out. The lower the establishment possibility of the winning combination is, the higher the number of coin-out is set. When a combination of symbols stop displayed is not hitting any of the winning combinations shown in Fig. 14, this is a failure, and there is no coin-out.

[0208] Fig. 15 is a flowchart showing a reel rotating control processing called and executed in step S14 of the subroutine shown in Fig. 12. This processing is a processing conducted between the main CPU 41 and the sub CPU 61.

[0209] The main CPU 41 transmits to the sub CPU 61 a start signal that starts the rotating of reels (step S40). The sub CPU 61 conducts a reel rotating processing when it receives the start signal from the main CPU 41 (step S51). In the processing, the sub CPU 61 supplies a pulse to the motor driving circuit 62. The pulse output from the sub CPU 61 is amplified by the driver 64 and supplied to each of the stepping motors 70 (70L, 70C and 70R) . As a result, the stepping motors 70 rotate, there by making the reels 14 (14L, 14C and 14R) to rotate. A stepping motor 70 is a 1-2 phase excitation type stepping motor which has a step angle of 0.9 degree and requires the number of steps of 400 for one rotation. Hence, if 400 pulses are supplied to the stepping motor 70, the reels 14 rotate once.

[0210] When the reels 14 start to rotate, the sub CPU 61 supplies to the motor driving circuit 62 pulses at a lower frequency, and the pulse frequency is gradually raised. A rotational speed of the reels 14 is thereby increased. When a predetermined time elapses, the pulse frequency is controlled to be constant. As a result, the reels 14 rotate at a constant speed.

[0211] Here, description of a rotational operation of the reels 14 will be given, by using Fig. 16.

Figs. 16A to 16D are side views for describing a rotating operation of a reel 14.

As shown in Fig. 16A, a semicircular metal plate 14a is attached to the side surface of a reel 14. The metal plate 14a rotates together with the reel 14. Twenty two symbols (see Fig. 3) are depicted on the circumferential surface of the reel 14. Three symbols of the twenty two symbols depicted on the circumferential surface of the reel 14 can be visually recognizable through the display window 15

formed in front of the reel 14 . The arrowmark of a heavy line in the figure indicates a rotating direction of the reel 14. A proximity sensor 65a is provided on the side of the reel 14. The proximity sensor 65a is used to detect the metal plate 14a. The proximity sensor 65a does not rotate nor move even if the reel 14 rotates.

[0212] Fig. 16A shows a position of the meal plate 14a when the metal plate 14a starts being detected by the proximity sensor 65a (hereinafter also referred to as a position A) . If the reel 14 rotates when the metal plate 14a is at the position A, the metal plate 14a moves to a position shown in Fig. 16B. Fig. 16B shows a position of the metal plate 14a when the metal plate 14a is being detected by the proximity sensor 65a (hereinafter also referred to as a position B). If the reel 14 rotates when the metal plate 14a is at the position B, the metal plate 14a moves to a position shown in Fig. 16C. Fig. 16C shows a position of the metal plate 14a when the metal plate 14a will no longer be detected by the proximity sensor 65a (hereinafter also referred to as a position C).

[0213] If the reel 14 rotates when the metal plate 14a is at the position C, the metal plate 14a moves to a position shown in Fig. 16D. Fig. 16D shows a position of the metal plate 14a when the metal plate 14a is not detected by the proximity sensor 65a (hereinafter also referred to as a position D). If the reel 14 further rotates, a position of the metal plate 14a returns to the position A. As described above, together with the rotating of the reel 14, the metal plate 14a changes its position in the order from the position A, to the position B, to the position C, to the position D, to the position A and so forth.

[0214] The proximity sensor 65a constitutes an index detecting circuit 65 (see Fig. 3). When it is referred to as "High" at a state where the proximity sensor 65a detects the metal plate 14a, and as "Low" at a state where the proximity sensor 65a does not detect the metal plate 14a, a state of the index detecting circuit 65 is "High" during the period when the metal plate 14a moves from the position A to the position B and to the position C, and a state of the index detecting circuit 65 is "Low" during the period when the metal plate 14a moves from the position C to the position D and to the position A. The sub CPU 61 assigns a rise from "Low" to "High" as an index (origin) 1 and a fall from "High" to "Low" as an index (origin) 2 to thereby recognize the rotating position of the reel 14.

[0215] The main CPU 40, after transmitting in step 40 a start signal to the sub CPU 61, executes representation to be executed while the reels are rotating (step S41). The process is a processing which conducts display of an image on the lower image display panel 16 and output of a sound from the speaker 29 over a period (for example, 3 seconds) determined according to a result and the like of the lottery processing (step S13 in Fig. 12) .

[0216] Then, the main CPU 40 determines whether it is the timing at which a command is to be issued so as to stop the rotating of the reel 14, or not (step S42).
The timing at which a command is issued so as to stop rotation of a reel 14 is a timing before the time when the representation to be executed while the reels are rotating is terminated, which is an interval having the minimum time necessary for stopping the rotating of the reel 14. Note that the minimum time necessary for stopping the rotating of the reel 14 is determined in advance.

[0217] If it is determined in step S42 that it is not the timing at which the command to stop the rotating of the reel 14 is to be issued, the process returns to the processing in step S42 and the representation to be executed while the reels are rotating continues to be conducted. On the other hand, if it is determined in step S42 that it is the timing at which the command to stop the rotating of the reel 14 is to be issued, the main CPU 41 transmits to the sub CPU 61 a code No. of the reel which is stored in RAM 43 (step S43). When the sub CPU 61 receives a code No. of the reel from the main CPU 41, the code No. is converted to a stopping position of the reel (the number of steps) from an index, based on a correspondence table between the number or steps and the code Nos. stored in ROM (not shown in the figure) included in the sub CPU 61 (step S52).

[0218] Fig. 17 is a schematic diagram showing a correspondence table between the number of steps and the code No.. Each of the code Nos. are related to an index and the number of steps.
Each code No. corresponds to the symbols depicted on the circumferential surfaces of the reels 14 (see Fig. 3) and symbols of code Nos. "00" to "10" correspond to the index 1. Moreover, symbols of code Nos. "11" to "21" correspond to the index 2. The number of steps in the correspondence table shown in Fig. 17 is the number of steps with the index 1 as a reference. For example, if a code No. is "08", a stopping position of the reel is at 145 steps from the index 1. If a code No. is "12", a stopping position of the reel is at 218 steps from the index 1.

[0219] Then, the sub CPU 61 executes a reel stopping processing (step S53). In the processing, the sub CPU 61 detects a rise in the index detecting circuit 65 from "Low" to "High" (the index 1) on each of the reels 14, and supplies to the motor driving circuit 65 pulses corresponding to the number of steps which were converted in step S52 from a code No. at a timing at which the index 1 is detected, and supply of pulses is ceased thereafter.

[0220] For example, when, in step S52, the stopping positions of the reels are determined to be 145 steps from the index 1, the sub CPU 61 supplies 145 pulses to the motor driving circuit 65 at a timing at which the index 1 is detected, and the supply of pulses is terminated thereafter. Furthermore, when, instep S52, the stopping positions of the reels are determined to be 218 steps from the index 1, the sub CPU 61 supplies 218 pulses to the motor driving circuit 65 at a timing at which the index 1 is detected. As a result, the reels 14 stop at the code No. determined in step 32 of Fig. 13 and the combination of symbols corresponding to the winning combination determined in step S32 of Fig. 13 is stop displayed on the winning line L. On the other hand, the main CPU 41 terminates the representation to be executed while the reels

are rotating. After the processing in steps S44 and S53 are over, the present reel rotating control processing is completed.

[0221] Moreover, when an index corresponding to the code No. transmitted in step S43 is different from an index detected by the index detecting circuit 65 when the rotating of the reels 14 stop, this means that an out-of-order state occurred on the reels 14; therefore, the main CPU 41 conducts a processing for displaying an error message on the lower image display panel 16 to temporarily stop a game.

For example, in a case where, even though a processing for stopping the reel 14L was executed at the code No. 12 corresponding to the index 2, the index 1 is detected by the index detecting circuit 65 when the rotating of the reel 14L stops, the game is temporarily stopped.

[0222] Fig. 18 is a flowchart showing a subroutine of a bonus game processing called and executed in step S16 of the subroutine shown in Fig. 12. In the bonus game processing, firstly, the main CPU 41 determines a number T of bonus games from 10 to 25 games, based on a random number value obtained by executing a random number generation program included in a lottery program stored in RAM 43 (step S60). The main CPU 41 stores as data into RAM 43 the number of games of the determined bonus games.

[0223] Next, the main CPU 41 conducts a lottery processing (step S61) and a reel rotating control processing (step S63). The processing in step S61 is a processing almost the same as the processing described using Fig. 13. The processing in step S63 is a processing almost the same as the processing described using Fig. 15. Since descriptions of these processing have already been given, descriptions thereof are omitted herein.

[0224] Then, the main CPU 41 determines whether a bonus game trigger has been established or not, that is, whether three "APPLE" are stop displayed in the display windows 15 or not (step S64). If it is determined that the bonus game trigger has been established, the number t of additional games of the bonus game is determined in a lottery (step S65) and the determined number t of additional games is added to the number T of games of the bonus game (step S66) . Thus, when a bonus game is hit during the bonus game, a remaining number of bonus games increases. More specifically, for example, in a case where a game state shifts to 20 bonus games for the first time, and hits 17 bonus games upon conducting 12 of the bonus games, another 25 bonus games (20 bonus games - 12 bonus games + 17 bonus games) are to be conducted.

[0225] If a bonus game trigger has not been established, the main CPU 41 determines whether a winning combination has been established or not (step S67). If it is determined that the winning combination has been established, the main CPU 41 conducts payout of coins corresponding to the number of coin-in and the winning combination (step S68). Since the processing is similar to the processing in step S18 and description thereof has already been given, the description of the present processing is omitted herein.

[0226] In a case where the processing in step S66 or S68 has been executed, or if it is determined in step S67 that any winning combination has not been established (if it is determined that a failure has occurred), the main CPU 41 reads the number T of bonus games stored in RAM 43, and one bonus game is subtracted from the read number T of bonus games. The number T of bonus games after the subtraction is again stored into RAM 43 (step S69) .

[0227] Then, the main CPU 41 determines whether the number T of bonus games reaches the number of games determined in step S60 or not (step S70) . More specifically, it is determined whether the number T of games stored in RAM 43 has become 0 or not, and if the number T of games is not 0, that is, if it is determined that the number of bonus games played does not reach the number of games which were determined in step S60, the process returns to step S61 and the above-mentioned processing is repeated. On the other hand, if the number T of games is 0, that is, if it is determined that the number T of games has reached the number of games which were determined in step S60, a number-of-games reset signal is transmitted to the control device 200 (step S71), and the present subroutine is completed thereafter. The number-of-games reset signal includes the gaming machine identification information of the gaming machine 10, and CPU 201 of the control device 200, when receiving the number-of-games reset signal, resets to 0 the number of games of which is stored in the hard disc drive 205 by being made to correspond to the gaming machine identification information included in the number-of-games reset signal.

[0228] Fig. 19 is a flowchart showing a subroutine of a return mode processing called and executed in step S20 of the subroutine shown in Fig. 12.

Firstly, themainCPU41 (processing device) extracts image data corresponding to a set value from image data as notification data which is stored in RAM 43 (storage device), conducts, based on the image data, a processing for displaying an image corresponding to a set value on the lower image display panel 16 (output device), and notifies the transition to the return mode by an image (step S80) . The set value is transmitted as data to the gaming machine 10 from the control device 200 and stored in RAM 43 by step S22 of Fig. 12. Image data for notifying the transition to the return mode is read from the memory card 53 and included in a game program stored into RAM 43. In the game program, as image data for notifying the transition to the payout return mode, included are a plurality of image data which are made to correspond to the set values.

[0229] The main CPU 41 determines the image to be displayed on the lower image display panel 16, based on the set value stored in RAM 43. The main CPU 41 transmits to the graphic board 68 a depiction command based on the result determined. In the graphic mode 68, VDP

extracts from RAM 43 image data corresponding to the set value, expands the data on the video RAM, produces image data for one frame and outputs the image data to the lower image display panel 16. As a result, for example, images as shown in Figs . 20A to 20C are displayed on the lower image display panel 16.

[0230] Figs. 20A to 20C are figures showing an example of image displayed on the lower image display panel when a game state shifts to the return mode (when the second special game state is generated). Numerical reference 15 (15L, 15C and 15R) in the figures indicates display windows. An image shown in Fig. 20A is an image displayed on the lower image display panel 16 when a game state shifts to the return mode at a set value of 600. On the lower image display panel 16, an image showing "BONUS !!", together with two images showing fireworks are displayed. An image showing "TIME OF PLAY 600" is also displayed in the lower portion of the lower image display panel 16. This image is an image showing that the number of games reached 600.

[0231] An image shown in Fig. 20B is an image displayed on the lower image display panel 16 when a game state shifts to the return mode at a set value of 1200. On the lower image display panel 16, an image showing "BONUS ! ! ", together with four images showing fireworks are displayed. An image showing "TIME OF PLAY 1200" is also displayed in the lower portion of the lower image display panel 16. This image is an image showing that the number of games reached a set value of 1200.

[0232] An image shown in Fig. 20C is an image displayed on the lower image display panel 16 when a game state shifts to the return mode at a set value of 2400. On the lower image display panel 16, an image showing "BONUS ! !", together with six images showing six fireworks are displayed. An image showing "TIME OF PLAY 2400" is displayed in the lower portion of the lower image display panel 16.

[0233] In the gaming machine 10, when the game state shifts to the return mode, an image showing on which set value the return mode generated is based is thus displayed on the lower image display panel 16. When the processing in step S80 is executed, the main CPU 41 functions as means for notification by outputting an image which shows, on which set value the second special game state generated is based, to the lower image display panel 16 as the output means.

[0234] Then, the main CPU 41 (processing device) extracts from sound data as data for notification stored in 43 (storage device), sound data corresponding to a set value, and based on the sound data, outputs from the speaker 29 (output device) a sound corresponding to the set value, to thereby notify transition to the return mode with a sound (step S81).

The sound data for notifying transition to the return mode is included in a game program read from the memory card 53 and stored in RAM 43. In the game program, sound data of plural kinds which are made to correspond to the set values are included as sound data which notifies that the game state has shifted to the return mode.

[0235] The main CPU 41 determines the sound output from the speaker 29, based on the set value stored in RAM 43. The main CPU 41 extracts a sound data from RAM 43, based on the result determined, and converts the sound data to a sound signal to supply the signal to the speaker 29. As a result, a sound showing on which set value the return mode generated is based, is output from the speaker 29. When the processing in step S81 is executed, the main CPU 41 functions as means for notifying on which set value the second special game state generated is based, by outputting a sound from the speaker 29 as output means.

[0236] Then, the main CPU 41 conducts payout of the number of coins determined according to a set value (step S82) . The number of payout coins in step S82 is the number of coin-out in the return mode and is determined according to the set value by the control device 200. The number of coins in the return mode is included in the return command signal as data transmitted to the gaming machine 10 from the control device 200 in step S22 of Fig. 12. The number of coin-out in the return mode is stored as data in RAM 43 of the gaming machine 10 which received the return command signal.

[0237] In a case where coins are reserved, the main CPU 41 conducts a processing for adding the number of credits stored in 43. On the other hand, in a case where the coins are to be paid out, the main CPU 41 transmits a control signal to the hopper 66 to conduct a predetermined number of coin-out. In the payout of coins, the coin detecting section 67 counts the number of coins paid out from the hopper 66 and when the number of counts reaches a designated number, and transmits a payout completion signal to the main CPU 41. The main CPU 41 thereby ceases the driving of the hopper 66 to end the coin-out processing, sets the return mode flag to the state "OFF" (step S83) thereafter, and thus the present subroutine is completed.

[0238] Fig. 21 is a flowchart showing a counting processing called and executed in step S22 of the subroutine shown in Fig. 12.

The processing is a processing conducted between the main CPU 41 of a gaming machine 10 and CPU 201 of the control device 200. Here, one set value selected from plural candidate values "600", "1200" and "2400" stepwise determined in advance is set to each of the plural gaming machines 10 (see Fig. 6).

[0239] To begin with, the main CPU 41 transmits by the communication interface 44 the number of coin-in and the number of coin-out stored in RAM 43 together with the gaming machine identification number to the control device 200 through the communication line 101 (step S90). The number of coin-in and the number of coin-out transmitted to the control device 200 from the gaming machine 10 are those of the game concerned.

The processing in step S90 is a processing in which the main CPU 41 (processing device) transmits the identification information of the gaming machine 10 stored in

the RAM 43 (storage device) to the control device 200 through the communication line 101, each time a game is played. When the processing in step S90 is executed, the main CPU 41 functions as means for transmitting the identification information of the gaming machine 10 to the control device 200 through the communication line 101.

[0240] On the other hand, the CPU 201 of the control device 200, when receiving from the gaming machine 10 the number of coin-in, the number of coin-out and the gaming machine identification number through the communication line 101 by the communication interface 204, updates the number of games, the accumulative number of coin-in and the accumulative number of coin-out corresponding to the received gaming machine identification number (step S100), by choosing the data, which are made to correspond to each of the gaming machine identification numbers, of the number of games, the accumulative number of coin-in, the accumulative number of coin-out stored in the hard disc drive 205 (see Fig. 6).

[0241] Then, CPU 201 determined whether the number of games after the updating has reached the set value or not (step S101). If it is determined that the number of games after the updating has not reached the set value, the subroutine is terminated.

[0242] On the other hand, if it is determined in step S101 that the number of games after the updating has reached the set value, CPU 201 determines the number of coin-out corresponding to the set value, based on a correspondence table (see Fig. 7) between the set value and the number of coin-out stored in the hard disc drive 205 (step S102).

[0243] Then, CPU 201 transmits through the communication line 101 by the communication interface 204 to the gaming machine 10 in which the number of games has reached the set value, a return command signal showing the set value and the number of payout coins (step S103). Thereafter, CPU 201 resets to 0 the number of games stored in the hard disc drive 205 which are made to correspond to the gaming machine identification number of the gaming machine 10 (step S104). In succession thereto, CPU 201 selects a new set value by lottery and the selected set value is stored in the hard disc drive 205, being made to correspond to the gaming machine identification number of the concerned gaming machine 10 (step S105).

[0244] The main CPU 41 of the gaming machine 10, when receiving the return command signal transmitted from the control device 200 in step S103, sets the return mode flag to the state "ON" (step S91). The processing in step S91 is a processing for receiving a command signal transmitted from the control device 200 when the number of games accumulatively counted by the control device 200 based on the identification information of the gaming machine 10 reaches a set value selected from plural candidate values stepwise determined in advance. In step S91, the main CPU 41 functions as means for receiving a command signal transmitted from the control device 200. The main CPU 41 thereafter stores into RAM 43 data showing the set value and the number of payout coins, included in the return command signal (step S92). Thereafter, the present processing is terminated.

[0245] In the present embodiment, description has been given of a case where a game state shifts to the return mode when the number of games reaches a set value (see Fig. 21). The first aspect of the present invention is, however, not limited to this example. For example, in a case where the number of inserted game media for a game played by the player is at the upper limit value that can be accepted in one game when the number of games reaches the set value, the second special game state may be generated (the game state shifts to the return mode). This is because in such a case, a player can be urged to insert game media up to the upper limit and a facility such as a casino and the like can increase a profit.

Moreover, in a case where the second special game state is generated when the number of inserted game media is at the upper limit value, the second special game state maybe generated not when the number of games reaches the set value, but when the number of inserted game media is at the upper limit value for a game played by a player when the number of games in which insertion of game media is conducted to the upper limit value reaches a set value. This is because, in such a case, it can be prevented from a small number of game media to be inserted in a game, thereby leading to a fact that the second special game state is generated by the spending of only a small number of game media in total.

[0246] A gaming machine 10 according to the present embodiment includes: the main CPU 41 (processing device); RAM 43 (storage device) ; the lower image display panel 16 (output device); and the speaker 29 (output device), is a gaming machine 10 connected through the communication line 101 to the control device 200 which accumulatively counts the number of games in each gaming machine 10 of plural gaming machines 10, and wherein the main CPU 41 executes: aprocessingdetermining one winning combination selected from plural winning combinations determined in advance by executing a lottery program stored in RAM 43 (see Fig. 13); a processing reading from RAM 43 a program for generating a bonus game (the first special game state) when the determined winning combination is a special winning combination, "bonus game trigger", and executing the program (see Fig. 18) ; a processing transmitting through the communication line to the control device 200 the identification information of the gaming machine 10 stored in RAM 43 each time a game is played (step S90 in Fig. 21); a processing for receiving a command signal transmitted from the control device when the number of games accumulatively counted, based on the identification information of the gaming machine, by the control device 200 reaches a set value selected fromplural candidate values stepwise determined in advance (step S91 in Fig. 21); a processing reading from RAM 43 a program for

performing transition to the return mode (the generating of the second special game state) based on the command signal, and executing the program (see Fig. 19); and a processing reading from RAM 43 notification data for notifying that the second special game state has been generated based on the set value when the second special game state is generated, and executing a processing to output an image on the lower image display panel 16 and output a sound from the speaker 29, based on the notification data (see Fig. 19).

[0247] A gaming machine 10 is connected through the communication line 101 to the control device 200 which accumulatively counts the number of games for each gaming machine 10 of plural gaming machines 10 wherein: provided are output means (for example, the lower image display panel and the speaker 29) capable of outputting an image or a sound; winning combination determination means (for example, the main CPU 41) for determining a winning combination by lottery; means (for example, the main CPU 41) for generating a bonus game (the first special game state) when the determined winning combination is a special winning combination, "bonus game trigger"; means (for example, the main CPU 41) for transmitting the identification information of the gaming machine 10 through the communication line 101 to the control device 200 each time a game runs; means (for example, the main CPU 41) for receiving a command signal transmitted from the control device 200 when the number of games accumulatively counted by the control device 200 based on the identification information of the gaming machine reaches a set value selected from plural candidate values stepwise determined in advance; means (for example, the main CPU 41) for generating the second special game state based on the command signal; and means (for example, the main CPU 41) for notifying that the second special game state has been generated based on a set value when the second special game state is generated, by outputting an image or a sound to the output means.

[0248] According to the gaming machine 10, a game state shifts to the return mode without fail by receiving a command signal transmitted from the control device 200 when the number of games counted in the control device 200 reaches a set value selected from plural candidate values stepwise determined in advance. Hence, even in a case where many coins are spent without the generating of the first special game state for a long period, the game state shifts to the return mode without fail if the game is played until the number of games reaches a set value, and a player can earn a profit from the game.

[0249] Moreover, when a game state shifts to the return mode, it is notified by an output of an image to the lower image display 16 and an output of a sound from the speaker 29 that the game state has transitioned to the return mode, based on the set value. Hence, a player can recognize to which set value the number of games played reached, and by what the game state is shifting to the return mode. As a result, a player can be given an impression that return has been given for the fact that a game is played until the number of games reaches a set value.

[0250] Therefore, it can be prevented for a player who has spent many of game media from feeling unpleasant against the game, building up distrust thereto, or losing interest in or a concern on the game.

[0251] A gaming machine 10 according to the present embodiment is connected to the control device 200 through the communication line 101 and the control device 200 conducts counting of the number of games in the gaming machine 10 and determines whether the game state is to be shifted to the return mode or not (whether the second special game state is to be generated or not). The gaming machine 10 is not required to use a network and may be standalone.

[0252] A standalone gaming machine 10 according to the first aspect of the present invention includes: the main CPU 41 (processing device), RAM 43 (storage device), the lower image display panel 16 (output device) and the speaker 29 (output device), wherein the main CPU 41 executes: a processing determining one winning combinationselectedfrom pluralwinning combination determined in advance by executing a lottery program stored in RAM 43; a processing reading from RAM 43 a program for generating a bonus game (the first special game state) when the determined winning combination is a special winning combination, "bonus game trigger", and executing the program; a processing accumulatively counting the number of games each time a game is played; a processing selecting a set value from plural candidate values stepwise determined in advance; a processing determining whether the number of games reaches a set value or not; a processing reading from RAM 43 a program for executing transition to the return mode (the generating of the second special game state) when it is determined that the number of games has reached the set value, and executing the program; and a processing reading from RAM 43, when the game state shifts to the return mode, notification data for notifying that the game state has shifted to the return mode based on a set value, and conducting output of an image to the lower image display panel 16 or output of a sound from the speaker 29, based on the notification data.

[0253] The gaming machine 10 includes: output means (for example, the lower image display panel 16 and the speaker 29) capable of outputting an image or a sound; winning combination determination means (for example, the main CPU 41) for determining a winning combination by a lottery; means (for example, the main CPU 41) for generating a bonus game when the determined winning combination is a special winning combination, "bonus game trigger"; means (for example, the main CPU 41) for accumulatively counting the number of games each time a game is played; means (for example, the main CPU 41) for selecting a set value from plural candidate values stepwise determined in advance; means (for example, main CPU 41) for determining

whether the number of games reaches a set value or not; means (for example, the main CPU 41) for conducting transition to the return mode (the generating of the second special game state) when the number of games is determined to have reached a set value; and means (for example, the main CPU 41) for notifying, when the game state shifts to the return mode, that the game state has shifted to the return mode based on a set value, and conducting output of an image to the lower image display panel 16 or output of a sound from the speaker 29.

[0254] While the gaming machine 10 according to the present embodiment shifts to the returnmode (the generating of the second special game state) when the number of games reaches a set value selected from plural candidate values stepwise determined in advance, the first aspect of the present invention is not limited to this example.

A gaming machine 10 of the first aspect of the present invention may shift to the return mode (the generating of the second special game state) when a payment balance in terms of coins is equal to or less than a set value selected from plural candidate values determined in advance.

[0255] Such a gaming machine 10 includes: the main CPU 41 (processing device) ; RAM 43 (storage device), the lower image display panel 16 (output device); and the speaker 29 (output device), and is connected through the communication line 101 to the control device 200 which accumulatively counts the payment balance in terms of coins in each gaming machine 10 of plural gaming machines 10, and wherein the main CPU 41 executes: a processing determining one winning combination selected from plural winning combinations determined in advance by executing a lottery program stored in RAM 43; a processing reading from RAM 43 a program for generating a bonus game (the first special game state) when the determined winning combination is a special winning combination, "bonus game trigger", and executing the program; a processing transmitting through the communication line 101 to the control device 200 the number of coin-in and the number of coin-out in one game which is stored in RAM 43, together with the identification information of the gaming machine 10, each time a game is played; a processing receiving a command signal transmitted from the control device 200 when, a payment balance in terms of coins accumulatively counted by the control device 200 based on the identification information of the gaming machine 10, the number of coin-in and the number of coin-out in the game reaches a value equal to or less than a set value selected from plural candidate values stepwise determined in advance; a processing reading from RAM 43 a program for conducting transition to the return mode (the generating of the second special game state) based on the command signal, and executing the program; and a program reading from RAM 43, when the game shifts to the return mode, notification data for notifying that a game state has shifted to the return mode based on the set value, and conducting output of an image to the lower image display panel 16 or output of a sound from the speaker 29 based on the notification data.

[0256] The gaming machine 10 includes: an output means (for example, the lower image display panel 16 and the speaker 29) capable of outputting an image or a sound; winning combination determination means (for example, the main CPU 41) for determining a winning combination by a lottery; means (for example, the main CPU 41) for generating a bonus game (the first special game state) when the determined winning combination is a special winning combination, "bonus game trigger"; means (for example, the main CPU 41) for transmitting through the communication line 101 to the control device 200 a payment balance in terms of coins in a game played, together with the identification information of the gaming machine 10, each time a game is (for example, the main CPU 41) for receiving a command signal transmitted from the control device 200 when the payment balance in terms of coins accumulatively counted by the control device 200 based on the identification information of the gaming machine 10 and the payment balance in terms of coins in the game played reaches a set value selected from plural candidate values stepwise determined in advance; means (for example, the main CPU 41) for conducting transition to the return mode (the generating of the second special game state) based on the command signal; means (for example, the main CPU 41) for notifying, when the game transitions to the return mode, that the game state has shifted to the return mode based on the set value, and conducting output of an image to the lower image display panel 16, or output of a sound from the speaker 29.

[0257] Such gaming machine 10 shifts to the return mode without fail, in a case where it receives a command signal transmitted from the control device 200 when a payment balance in terms of coins counted in the control device 200 is equal to or less than a set value selected from plural candidate values stepwise determined in advance. The gaming machine 10 notifies that the game state has shifted to the return mode based on the set value, by outputting an image to the lower image display panel 16 or outputting a sound from the speaker 29. Therefore, it can be prevented for a player who has spent many of game media from feelingunpleasant against the game, buildingup distrust thereto, or losing interest in or a concern on the game.

[0258] The gaming machine 10 is connected through the communication line 101 to the control device 200 and the control device 200 counts payment balance in terms of coins in the gaming machine 10, and determines whether a game state is to be shifted to the return mode or not (whether the second special game state is to be generated or not). The gaming machine 10 is, however, not necessarily required to be those using a network and may be standalone.

[0259] Such a gaming machine 10 includes: the main CPU 41 (processing device); RAM 43 (storage device);

the lower image display panel 16 (output device); and the speaker 29 (output device), wherein the main CPU 41 executes: a processing determining one winning combination selected fromplural winning combinations determined in advance by executing a lottery program stored in RAM 43; a processing reading from RAM 43 a program for generating a bonus game (the first special game state) when the determined winning combination is a special winning combination, "bonus game trigger", and executing the program; a processing accumulatively counting a payment balance in terms of game media each time a game is played; a processing selecting a set value that is an obj ect of comparison with a payment balance in terms of game media, from plural candidate values stepwise determined in advance; a processing determining whether a payment balance in terms of game media is equal to or less than a set value or not; a processing reading from RAM 43 a program for conducting transition to the return mode (the generating of the second special game state) when it is determined that a payment balance in terms of game media is equal to or less than a set value, and executing the program; and a processing reading from RAM 43, when the game state shifts to the returnmode, notification data for notifying that the game state has shifted to the return mode based on the set value, and conducting output of an image to the lower image display panel 16 or output of a sound from the speaker 29 based on the notification data.

[0260] This gamingmachine 10 includes: output means (for example, the lower image display panel 16 or the speaker 29) capable of outputting an image or a sound; winning combination determination means (for example, the main CPU 41) for determining a winning combination by a lottery; means (for example, the main CPU 41) for generating a bonus game (the first special game state) when the determined winning combination is a special winning combination, "bonus game trigger"; means (for example, the main CPU 41) for accumulatively counting a payment balance in terms of game media, each time a game is played; means (for example, the main CPU 41) for selecting a set value from plural candidate values stepwise determined in advance; means (for example, the main CPU 41) for determining whether a payment balance in terms of game media is equal to or less than a set value or not; means (for example, the main CPU 41) for conducting transition to the return mode (the generating of the second special game state) when it is determined that the payment balance in terms of game media is equal to or less than a set value; and means (for example, the main CPU 41) for notifying that, when the game state shifts to the return mode, a game state has shifted to the return mode based on a set value, by outputting an image to the lower image display panel 16 or by outputting a sound from the speaker 29.

[0261] In the present embodiment, description has been given of a case where a game state shifts to the return mode when the return mode flag has been set to the state "ON", without other conditions being established thereafter. The first aspect of the present invention is, however, not limited to this example and, for example, a game state may shift to the return mode when a predetermined condition has been met after the return mode flag is set to the state "ON". In such a case, the predetermined condition for transition to the return mode is not particularly limited, and may include, for example, establishment of a bonus game trigger, stop display of a predetermined combination of symbols, and of the like conditions.

[0262] In the present embodiment, description has been given of a case where a game state shifts to the return mode when the return mode flag is set to the state "ON", regardless of the combination of symbols stop displayed thereafter. However, the first aspect of the present invention is not limited to this example. For example, a combination of symbols corresponding to the transition to the return mode may be set in advance and a game state may shift to the return mode after the symbols are stop displayed in that combination of symbols.

[0263] In the present embodiment, description has been given of a case where symbols are stop displayed (step S14 in Fig. 12), a processing is conducted based on the stop displayed combination of symbols (steps S15 to S20 in Fig. 12), and the number of games is counted (step S22 in Fig. 12) thereafter. In the first aspect of the present invention, however, no specific limitation is placed on a timing at which counting of the number of games is conducted. For example, the timing may be a timing at which BET of a coin is conducted (after step S10 or S11 in Fig. 12) or a timing at which the spin button is turned ON (after step S12 in Fig. 12). The number of games may be counted at a predetermined timing that is in the period from the time when display of a change in symbol is started, to the time when symbol sequences are stop displayed, and a processing based on the stop displayed combination of symbols has been conducted (forexample, a timing at which symbol sequences are stop displayed) . Note that a timing at which a payment balance in terms of game media can be the same as described above.

[0264] In the present embodiment, description has been given of a gaming machine 10 in which in a case where a special winning combination, "bonus game trigger", has been established (step S15 in Fig. 12) in the period from the time when the return mode flag is set to the state "ON" (step S22 in Fig. 12), to the time when transition to the return mode is conducted (step S20 in Fig. 12), transitions to the return mode is further conducted after the bonus game is generated (step S16 in Fig. 12). That is, a gaming machine according to the present embodiment generates the first special game state based on the a special winning combination, and further generates the second special game state, in a case where the special winning combination is established in the period from the time when the number of games reaches a set value, to the time when the second special game

state is generated.

[0265] However, the first aspect of the present invention is not limited to this example. For example, in a case where a special winning combination is established in the period from the time when the number of games reaches a set value, to the time when the second special game state is generated, only the first special game state maybe generated. In a case where the above embodiment is adopted, a player can earn a profit in the first special game state or the second special game state without fail when a game is played until the number of games reaches the set value. The above embodiment is one of the embodiments of the first aspect of the present invention. In a case where the above embodiment is adopted for the gaming machine 10, for example, the following processing has only to be conducted instead of the processing shown in Fig. 12.

[0266] Fig. 22 is a flowchart showing another example of a subroutine of a game execution processing. In the flowchart shown in Fig. 22, the same numerical references are assigned to steps which conduct processing similar to those in the flowchart shown in Fig. 12.

[0267] After the processing in steps S10 to S14 are executed, the main CPU 41 determines whether a bonus game trigger has been established or not (step S15) and if it is determined that the bonus game trigger has been established, a bonus game processing is executed (step S16). Then, it is determined whether a return mode flag is set to the state "ON" or not (step S25) and if the return mode flag is set to "ON", the return mode flag is set to the state "OFF" (step 526) . The processing in step S21 is per formed thereafter and thus the present subroutine is completed. Since the other processing are processing similar to those described in Fig. 12, descriptions thereof are omitted here. In the subroutine shown in Fig. 22, after a coins is BET (step S10), in a case where it is determined whether the spin button 23 has been turned ON or not (step S12), and if it is determined that the spin button has been turned ON (YES in step S12), a processing for subtracting the number of credits (step S11) may be conducted, as in the subroutine shown in Fig. 12.

[0268] A more specific description of the processing shown in Fig. 22 will be given here with a case where a set value is 600. In a case where, in step S22, the number of games reaches 600 and a return mode flag has been established, if a bonus game trigger has been established (step S15) in the 601st game, the bonus game is generated (step S16) but transition to the return mode is not performed (steps S25 and S26). On the other hand, in a case where a bonus game trigger has not been established in the 601st game run, transition to the return mode is conducted (steps S19 and S20).

Hence, in a case where the processing shown in Fig. 22 is performed, a bonus game is generated or transition to the return mode is performed without fail, when the number of games reaches a set value.

[0269] In the first aspect of the present invention, in a case where a special winning combination has been established in the period from the time when the number of games reaches a set value, to the time when the second special game state is generated, only the second special game state may be generated, or alternatively, either the first special game state or the second special game state may be generated depending on a game situation and the like.

[0270] An embodiment similar to the above-mentioned embodiment can also be adopted in a case where the second special game state is generated according to a payment balance in terms of game media. In other words, in a case where a special winning combination has been established in the period from the time when a payment balance in terms of game media is equal to or less than a set value, to the time when the second special game state is generated, only the first special game state may be generated, only the second special game state may be generated, or either the first special game state or the second special game state may be generated depending on a game situation and the like.

[0271] Although this will be a repetition, in the return mode as the second special game state, a return situation to a player may be simply as such that a predetermined number of game media is paid out when the number of games reaches a set value (see Fig. 19). It may alternatively be a situation that when the number of games reaches a set value, the return mode as the second special game state, allowing a player to have a privilege in a similar manner to the first special game state such as a free game, a second game, a mystery game and the like, can be set, and a predetermined number of game media is paid out by one of the above-mentioned game mode.

In the aforementioned embodiment, both embodiments are exemplified. Both embodiments correspond to the second special game state in the first aspect of the present invention.

[0272] A timing at which a predetermined number of game media is paid out is not limited to such a timing at which one game is completed and symbol sequences are stop displayed as in the mystery game described above, and for example, game media may be immediately paid out when the number of games reaches a set value.

[0273] Moreover, a method for paying out a predetermined number of game media is also not particularly limited, and for example, coins may be actually paid out, the number of credits may be increased, or a ticket such as a ticket with a bar code may be issued.

[0274] However, in order to be able to discriminate and recognize whether a player is paid out by an ordinary game or a bonus game (the first special game state), or by the return mode (the second special game state), it is necessary to perform the following way. That is, in a case where coins are actually paid out in mystery bonus of the return mode (the second special game state), the timing for payout is required to be different from those of an ordinary game and bonus game (the first special game

state) . Moreover, it is required that payout in an ordinary game and a bonus game (the first special game state) is performed with actual coins and payout in the return mode (the second special game state) is performed with a ticket described above. With such an embodiment adopted, payout in an ordinary game and a bonus game (the first special game state), and payout in the return mode (the second special game state) can be discriminated from each other.

[Second Embodiment]

[0275] Next, specific description will be given of an embodiment of a gaming machine according to the second aspect of the present invention.

The gaming machine according to the second embodiment has the same configuration as the gaming machine according to the first embodiment except for the points that will be described later. Therefore, in the second embodiment, the same numerical references are assigned to the elements corresponding to those in the first embodiment.

[0276] Since the appearance and the internal construction of the gaming machine 10 and the internal construction of the control device 200 are similar to those of the first embodiment, and description thereof has been given by making reference to Figs. 1 to 8, description will be omitted herein.

Moreover, the processing conducted in the gaming machine 10 is also similar to the processing in the first embodiment except for the processing in concern with the bonus game, later described by making reference to Figs. 23 to 25. Since description of the similar processing has been given by making reference to Figs. 9 to 17 and Figs. 19 to 22, description thereof will be omitted herein.

[0277] Next, a processing according to the bonus game is described.

Fig. 23 is a flowchart showing a subroutine of a bonus game processing called and executed in step S16 of the subroutine shown in Fig. 12.

Fig. 24 is a flowchart showing a subroutine of a content of notification determination processing called and executed in step S60 of the subroutines shown in Fig. 23.

[0278] In the bonus game processing shown in Fig. 23, firstly, the main CPU 41 performs a content of notification determination processing (step S160). The content of notification determination processing is a processing for determining whether or not to provide such notification notifying that the bonus game is executed according to the number of games, and when such a report is determined to be made, the processing is further a processing for determining the number of games to be included in the notification.

In the content of notification determination processing, as shown in Fig. 24, firstly, the main CPU 41 transmits by the communication interface 44 through the communication line 101 to the control device 200, a signal for requesting content of notification determination which includes a gaming machine identification number (step S110).

[0279] On the other hand, the CPU 201 of the control device 200 performs a lottery for determining whether to provide notification or not, when receiving the signal for requesting content of notification determination by the communication interface 204 through the communication line 101 from the gaming machine 10 (step S120). In this processing, first, the CPU 201 executes a random number generating program previously stored in the hard disc drive 205, and selects one random number value belonging to a predetermined numerical value range (for example, 0 to 255). Next, the CPU 201 refers to a table previously stored in the hard disc drive 205, and determines whether or not to provide notification based on the above-mentioned random number value. In the above-mentioned table, each random number value belonging to a predetermined numerical value range is made to correspond to result of a lottery as to whether to provide notification or not. For example, the random number values of 0 to 127 are made to correspond to result of a lottery with determination to provide notification, whereas the randomnumber values of 128 to 255 are made to correspond to result of a lottery with determination not to provide notification.

[0280] Next, the CPU 201 determines whether the determination as the result of the processing in step S120 has been to provide notification or not (step S121). When it has been determined not to provide notification, the present subroutine is completed and the processing is returned to the processing in Fig. 23.

On the other hand, when the determination in step S121 has been to provide notification, a content of notification is determined based on the number of games corresponding to the gaming machine identification number (step S122). In this processing, the CPU 201 refers to a table (see Fig. 25) previously stored in the hard disc drive 205, and then determines a content of notification based on the number of games stored in the hard disc drive 205 corresponding to the gaming machine identification number (see Fig. 6) received from the gaming machine 10.

[0281] Fig. 25 is a figure showing a correspondence table in which the number of games is made to correspond to a content of notification when a bonus game is generated. This correspondence table is stored as data in the hard disc drive 205.

The numbers of games of 0 to 599 are made to correspond to the number of games "None" as a content of notification. Therefore, when the number of games is from 0 to 599, notification is not provided even when it has been determined with the lottery in step S120 that notification is to be provided.

The numbers of games of 600 to 1199 are made to correspond to the number of games of "600" as the content of notification. Therefore, when the number of games is from 600 to 1199, at the time when the bonus game is generated, such notification is provided, notifying that the

bonus game has been generated since the number of 600 games has been played. Further, the numbers of games of 1200 to 2399 are made to correspond to the number of games of "1200" as the content of notification, and the numbers of games not less than 2400 are made to correspond to the number of games of "2400" as the content of notification. It should be noted that a content of notification determined in step S122 is made to correspond to a gaming machine identification number, and stored as data in the hard disc drive 205.

[0282] After the processing in step S122, the CPU 201 determines whether a content of notification exists or not (step S123). In other words, the CPU 201 determines whether the number of games "None" has been selected as a content of notification in step S122 or not in this processing. When it is determined that no content of notification exists, the present subroutine is completed, and the processing is returned to Fig. 23.

[0283] On the other hand, when it is determined in step S123 that a content of notification exists, the CPU 201 determines whether equivalent content of notification has already been provided or not, based on content of notification stored as data in the hard disc drive 205 (step S124).

For example, in the case where the number of games as a content of notification at the time of the generating of the previous bonus game is 600, when the number of games determined as the content of notification in step S122 is 600, it is determined that an equivalent content of notification has already been provided. However, in the case where the game mode is shifted to the return mode after the bonus game in which the number of games as the content of notification was 600, when the number of games subsequently determined as the content of notification in step S122 is 600, it is not determined that an equivalent content of notification has already been provided.

When it is determined in step S124 that an equivalent notification has already been provided, the present subroutine is completed, and the processing is returned to Fig. 23.

[0284] On the other hand, in the case where it is not determined in step S124 that an equivalent notification has already been provided, the CPU 201 transmits by the communication interface 204 through the communication line 101 to the gaming machine 10, a respond signal showing the content of notification determined in step S122 (step S125).

Upon receiving the respond signal through the communication line 101 by the communication interface 44, the main CPU 41 of the gaming machine 10 stores as data in the RAM 43 the content of notification shown by the respond signal (step S111). The present subroutine is completed thereafter, and the processing is returned to Fig. 23.

[0285] After the processing in step S160 in Fig. 23 is completed, the main CPU 41 determines whether data showing a content of notification has been stored in the RAM 43 or not (step S161).

When it is determined that data showing a content of notification has been stored, the main CPU 41 (processing device) extracts image data according to the data showing a content of notification as well as image data showing a representation image from image data as notification data which is stored in RAM 43 (storage device), conducts, based on the image data, a processing for displaying image showing the number of games as content of notification and a representation image, on the lower image display panel 16 (output device), and provides such notification notifying that the bonus game has been generated according to the number of games (step S162).

Image data for providing such notification notifying that the bonus game has been generated according to the number of games is included in a game program read from the memory card 53 and stored in the RAM 43.

[0286] The main CPU 41 determines the image to be displayed on the lower image display panel 16, based on the content of notification stored in RAM 43. The main CPU 41 transmits to the graphic board 68 a depiction command based on the result determined. In the graphic mode 68, VDP extracts from RAM 43 image data, expands the data on the video RAM, produces image data for one frame and outputs the image data to the lower image display panel 16. As a result, for example, images as shown in Figs. 20A to 20C are displayed on the lower image display panel 16. While detailed description of the images shown in Figs. 20A to 20C will be given later, numerical values in Figs. 20A to 20C shown by images of "600", "1200" and "2400", each thereof displayed along with an image showing "TIME OF PLAY", are the images showing content of notification.

[0287] As thus described, when the bonus game is generated in the gaming machine 10, an image for providing such notification notifying that the bonus game has been generated according to the number of games is displayed on the lower image display panel 16. In execution of the processing in step S162, the main CPU 41 functions as means for outputting an image on the lower image display panel 16 to provide such notification notifying that the first special game state has been generated according to the number of games.

[0288] When it is determined in step S161 that no data showing a content of notification has been stored, the main CPU 41 performs a processing for displaying a representation image on the lower image display panel 16 (step S163). When the processing in step S163 is performed, an image showing the content of notification is not displayed on the lower image display panel 16.

[0289] After execution of the processing in step S162 or S163, the main CPU 41 determines a number T of bonus games from 10 to 25 games, based on a random number value obtained by executing a random number generation program included in a lottery program stored in RAM 43 (step S164). The main CPU 41 stores as data into RAM 43 the number of games of the determined

bonus games.

[0290] Next, the main CPU 41 conducts a lottery processing (step S165) and a reel rotating control processing (step S166). The processing in step S165 is a processing almost the same as the processing described using Fig. 13. The processing in step S166 is a processing almost the same as the processing described using Fig. 15. Since descriptions of these processing have already been given, descriptions thereof are omitted herein.

[0291] Then, the main CPU 41 determines whether a bonus game trigger has been established or not, that is, whether three "APPLE" are stop displayed in the display windows 15 or not (step S167). If it is determined that the bonus game trigger has been established, the number t of additional games of the bonus game is determined in a lottery (step S168) and the determined number t of additional games is added to the number T of games of the bonus game (step S169). Thus, when a bonus game is hit during the bonus game, a remaining number of bonus games increases. More specifically, for example, in a case where a game state shifts to 20 bonus games for the first time, and hits 17 bonus games upon conducting 12 of the bonus games, another 25 bonus games (20 bonus games - 12 bonus games + 17 bonus games) are to be conducted.

[0292] If a bonus game trigger has not been established, the main CPU 41 determines whether a winning combination has been established or not (step S170). If it is determined that the winning combination has been established, the main CPU 41 conducts payout of coins corresponding to the number of coin-in and the winning combination (step S171) . Since the processing is similar to the processing in step S18 and description thereof has already been given, the description of the present processing is omitted herein.

[0293] In a case where the processing in step S169 or S171 has been executed, or if it is determined in step S170 that any winning combination has not been established (if it is determined that a failure has occurred), the main CPU 41 reads the number T of bonus games stored in RAM 43, and one bonus game is subtracted from the read number T of bonus games. The number T of bonus games after the subtraction is again stored into RAM 43 (step S172).

[0294] Then, the main CPU 41 determines whether the number T of bonus games reaches the number of games determined in step S164 or not (step S173). More specifically, it is determined whether the number T of games stored in RAM 43 has become 0 or not, and if the number T of games is not 0, that is, if it is determined that the number of bonus games played does not reach the number of games which were determined in step S164, the process returns to step S165 and the above-mentioned processing is repeated. On the other hand, if the number T of games is 0, that is, if it is determined that the number T of games has reached the number of games which were determined in step S164, a number-of-games reset signal is transmitted to the control device 200 (step S174), and the present subroutine is completed thereafter. The number-of-games reset signal includes the gaming machine identification information of the gaming machine 10, and CPU 201 of the control device 200, when receiving the number-of-games reset signal, resets to 0 the number of games of which is stored in the hard disc drive 205 by being made to correspond to the gaming machine identification information included in the number-of-games reset signal.

[0295] In the present embodiment, the case in which such notificationnotifyingthat the bonus game is generated according to the number of games is provided only by the output of an image on the lower image display panel 16. However, the second aspect of the present invention is not limited to this example. For example, such notification may be made only by output of a sound, or by output of an image and a sound.

[0296] A gaming machine 10 according to the present embodiment includes: the main CPU 41 (processing device) RAM 43 (storage device); the lower image display panel 16 (output device); and the speaker 29 (output device), is a gaming machine 10 connected through the communication line 101 to the control device 200 which accumulatively counts the number of games in each gaming machine 10 of plural gaming machines 10, and wherein the main CPU41 executes: a processing determining one winning combination selected from plural winning combinations determined in advance by executing a lottery program stored in RAM 43 (see Fig. 13); a processing reading from RAM 43 a program for generating a bonus game (the first special game state) when the determined winning combination is a special winning combination, "bonus game trigger", and executing the program (see Fig. 23); a processing transmitting through the communication line to the control device 200 the identification information of the gaming machine 10 stored in RAM 43 each time a game is played (step S90 in Fig. 21); a processing for receiving a command signal transmitted from the control device when the number of games accumulatively counted, based on the identification information of the gaming machine, by the control device 200 reaches a set value (step S91 in Fig. 21) ; a processing reading from RAM 43 a program for performing transition to the return mode (the generating of the second special game state) based on the command signal, and executing the program (see Fig. 19) ; a processing reading from RAM 43 notification data for notifying that the second special game state has been generated based on the set value when the second special game state is generated, and executing a processing to output an image on the lower image display panel 16 and output a sound from the speaker 29, based on the notification data (see Fig. 19); and a processing for reading, when the bonus game has been generated, notification data stored in RAM 43, and outputting on the lower image display panel 16 an image for providing such notification notifying that the bonus game has been generated according to

the number of games, based on the notification data (step S162 in Fig. 23).

[0297] A gaming machine 10 is connected through the communication line 101 to the control device 200 which accumulatively counts the number of games for each gaming machine 10 of plural gaming machines 10 wherein: provided are output means (for example, the lower image display panel and the speaker 29) capable of outputting an image or a sound; winning combination determination means (for example, the main CPU 41) for determining a winning combination by lottery; means (for example, the main CPU 41) for generating a bonus game (the first special game state) when the determined winning combination is a special winning combination, "bonus game trigger"; means (for example, the main CPU 41) for transmitting the identification information of the gaming machine 10 through the communication line 101 to the control device 200 each time a game runs; means (for example, the main CPU 41) for receiving a command signal transmitted from the control device 200 when the number of games accumulatively counted by the control device 200 based on the identification information of the gaming machine reaches a set value; means (for example, the main CPU 41) for generating the second special game state based on the command signal; means (for example, the main CPU 41) for notifying that the second special game state has been generated based on a set value when the second special game state is generated, by outputting an image or a sound to the output means; and means (for example, the main CPU 41) for providing such notification notifying that the first special game state has been generated according to the number of games by outputting an image with the output means when the first special game state is generated.

[0298] According to the gaming machine 10, a game state shifts to the return mode without fail by receiving a command signal transmitted from the control device 200 when the number of games counted in the control device 200 reaches a set value. Hence, even in a case where many coins are spent without the generating of the first special game state for a long period, the game state shifts to the return mode without fail if the game is played until the number of games reaches a set value, and a player can earn a profit from the game.

[0299] Moreover, when a game state shifts to the return mode, it is notified by an output of an image to the lower image display 16 and an output of a sound from the speaker 29 that the game state has transitioned to the return mode, based on the set value. Hence, a player can recognize to which set value the number of games played reached, and by what the game state is shifting to the return mode. As a result, a player can be given an impression that return has been given for the fact that a game is played until the number of games reaches a set value.

[0300] Further, when the bonus game has been generated, such notification notifying that the bonus game has been generated according to the number of games is provided by outputting an image on the lower image display panel 16. Namely, when the bonus game has been generated according to the result of a lottery, a notification which shows as if a return in the bonus game is being generated according to the number of games is provided.

[0301] Therefore, it can be prevented for a player who has spent many of game media from feeling unpleasant against the game, building up distrust thereto, or losing interest in or a concern on the game.

[0302] A gaming machine 10 according to the present embodiment is connected to the control device 200 through the communication line 101 and the control device 200 conducts counting of the number of games in the gaming machine 10 and determines whether the game state is to be shifted to the return mode or not (whether the second special game state is to be generated or not). The gaming machine 10 is not required to use a network and may be standalone.

[0303] A standalone gaming machine 10 according to the second aspect of the present invention includes: the main CPU 41 (processing device), RAM 43 (storage device), the lower image display panel 16 (output device) and the speaker 29 (output device), wherein the main CPU 41 executes: a processing determining one winning combination selected from pluralwinning combination determined in advance by executing a lottery program stored in RAM 43; a processing reading from RAM 43 a program for generating a bonus game (the first special game state) when the determined winning combination is a special winning combination, "bonus game trigger", and executing the program; a processing accumulatively counting the number of games each time a game is played; a processing determining whether the number of games reaches a set value or not; a processing reading from RAM 43 a program for executing transition to the return mode (the generating of the second special game state) when it is determined that the number of games has reached the set value, and executing the program; a processing reading from RAM 43, when the game state shifts to the return mode, notification data for notifying that the game state has shifted to the return mode based on a set value, and conducting output of an image to the lower image display panel 16 or output of a sound from the speaker 29, based on the notification data; and a processing for reading, when the bonus game has been generated, notification data stored in RAM 43, and outputting on the lower image display panel 16 an image for providing such notification notifying that the bonus game has been generated according to the number of games, based on the notification data (step S162 in Fig. 23).

[0304] The gaming machine 10 includes: output means (for example, the lower image display panel 16 and the speaker 29) capable of outputting an image or a sound; winning combination determination means (for example, the main CPU 41) for determining a winning combination by a lottery; means (for example, the main CPU 41) for generating a bonus game when the deter-

mined winning combination is a special winning combination, "bonus game trigger"; means (for example, the main CPU 41) for accumulatively counting the number of games each time a game is played; means (for example, main CPU 41) for determining whether the number of games reaches a set value or not; means (for example, the main CPU 41) for conducting transition to the return mode (the generating of the second special game state) when the number of games is determined to have reached a set value; and means (for example, the main CPU 41) for notifying, when the game state shifts to the return mode, that the game state has shifted to the return mode based on a set value, and conducting output of an image to the lower image display panel 16 or output of a sound from the speaker 29, based on the notification data; and means (for example, the main CPU 41) for providing such notification notifying that the first special game state has been generated according to the number of games by outputting an image with the output means when the first special game state is generated.

[0305] While the gaming machine 10 according to the present embodiment shifts to the returnmode (the generating of the second special game state) when the number of games reaches a set value selected from plural candidate values stepwise determined in advance, the second aspect of the present invention is not limited to this example.

A gaming machine 10 of the second aspect of the present invention may shift to the return mode (the generating of the second special game state) when a payment balance in terms of coins is equal to or less than a set value selected from plural candidate values determined in advance.

[0306] Such a gaming machine 10 includes: the main CPU 41 (processing device) ; RAM 43 (storage device), the lower image display panel 16 (output device); and the speaker 29 (output device), and is connected through the communication line 101 to the control device 200 which accumulatively counts the payment balance in terms of coins in each gaming machine 10 of plural gaming machines 10, and wherein the main CPU 41 executes: a processing determining one winning combination selected from plural winning combinations determined in advance by executing a lottery program stored in RAM 43; a processing reading from RAM 43 a program for generating a bonus game (the first special game state) when the determined winning combination is a special winning combination, "bonus game trigger", and executing the program; a processing transmitting through the communication line 101 to the control device 200 the number of coin-in and the number of coin-out in one game which is stored in RAM 43, together with the identification information of the gaming machine 10, each time a game is played; a processing receiving a command signal transmitted from the control device 200 when, a payment balance in terms of coins accumulatively counted by the control device 200 based on the identification information of the gaming machine 10, the number of coin-in and the number of coin-out in the game reaches a value equal to or less than a set value; a processing reading from RAM 43 a program for conducting transition to the return mode (the generating of the second special game state) based on the command signal, and executing the program; a program reading from RAM 43, when the game shifts to the return mode, notification data for notifying that a game state has shifted to the return mode based on the set value, and conducting output of an image to the lower image display panel 16 or output of a sound from the speaker 29 based on the notification data; and a processing for reading, when the bonus game has been generated, notification data stored in RAM 43, and outputting on the lower image display panel 16 an image for providing such notification notifying that the bonus game has been generated according to the payment balance in terms of coins, based on the notification data.

[0307] The gaming machine 10 includes: an output means (for example, the lower image display panel 16 and the speaker 29) capable of outputting an image or a sound; winning combination determination means (for example, the main CPU 41) for determining a winning combination by a lottery; means (for example, the main CPU 41) for generating a bonus game (the first special game state) when the determined winning combination is a special winning combination, "bonus game trigger"; means (for example, the main CPU 41) for transmitting through the communication line 101 to the control device 200 a payment balance in terms of coins in a game played, together with the identification information of the gaming machine 10, each time a game is played; means (for example, the main CPU 41) for receiving a command signal transmitted from the control device 200 when the payment balance in terms of coins accumulatively counted by the control device 200 based on the identification information of the gaming machine 10 and the payment balance in terms of coins in the game played reaches a set value; means (for example, the main CPU 41) for conducting transition to the return mode (the generating of the second special game state) based on the command signal; means (forexample, the main CPU 41) for notifying, when the game transitions to the return mode, that the game state has shifted to the return mode based on the set value, and conducting output of an image to the lower image display panel 16, or output of a sound from the speaker 29; and means (for example, the main CPU 41) for providing such notification notifying that the bonus game has been generated according to the payment balance in terms of coins by outputting an image with the output means when the bonus game is generated.

[0308] Such gaming machine 10 shifts to the return mode without fail, in a case where it receives a command signal transmitted from the control device 200 when a payment balance in terms of coins counted in the control device 200 is equal to or less than a set value. The gaming machine 10 notifies that the game state has shifted to the return mode based on the set value, by outputting an image to the lower image display panel 16 or outputting

a sound from the speaker 29. Furthermore, when the bonus game has been generated according to the result of a lottery, a notification which shows as if a return in the bonus game is being generated according to the payment balance in terms of coins is provided. Therefore, it can be prevented for a player who has spent many of game media from feeling unpleasant against the game, building up distrust thereto, or losing interest in or a concern on the game.

[0309] The gaming machine 10 is connected through the communication line 101 to the control device 200 and the control device 200 counts payment balance in terms of coins in the gaming machine 10, and determines whether a game state is to be shifted to the return mode or not (whether the second special game state is to be generated or not). The gaming machine 10 is, however, not necessarily required to be those using a network and may be standalone.

[0310] Such a gaming machine 10 includes: the main CPU 41 (processing device); RAM 43 (storage device); the lower image display panel 16 (output device); and the speaker 29 (output device), wherein the main CPU 41 executes: a processing determining one winning combination selected from plural winning combinations determined in advance by executing a lottery program stored in RAM 43; a processing reading from RAM 43 a program for generating a bonus game (the first special game state) when the determined winning combination is a special winning combination, "bonus game trigger", and executing the program; a processing accumulatively counting a payment balance in terms of game media each time a game is played; a processing determining whether a payment balance in terms of game media is equal to or less than a set value or not; a processing reading from RAM 43 a program for conducting transition to the return mode (the generating of the second special game state) when it is determined that a payment balance in terms of game media is equal to or less than a set value, and executing the program; a processing reading from RAM 43, when the game state shifts to the return mode, notification data for notifying that the game state has shifted to the return mode based on the set value, and conducting output of an image to the lower image display panel 16 or output of a sound from the speaker 29 based on the notification data; and a processing for reading, when the bonus game has been generated, notification data stored in RAM 43, and outputting on the lower image display panel 16 an image for providing such notification notifying that the bonus game has been generated according to the payment balance in terms of coins, based on the notification data.

[0311] This gaming machine 10 includes: output-means (for example, the lower image display panel 16 or the speaker 29) capable of outputting an image or a sound; winning combination determination means (for example, the main CPU 41) for determining a winning combination by a lottery; means (for example, the main CPU 41) for generating a bonus game (the first special game state) when the determined winning combination is a special winning combination, "bonus game trigger"; means (for example, the main CPU 41) for accumulatively counting a payment balance in terms of game media, each time a game is played; means (for example, the main CPU 41) for determining whether a payment balance in terms of game media is equal to or less than a set value or not; means (for example, the main CPU 41) for conducting transition to the return mode (the generating of the second special game state) when it is determined that the payment balance in terms of game media is equal to or less than a set value; means (for example, the main CPU 41) for notifying that, when the game state shifts to the return mode, a game state has shifted to the return mode based on a set value, by outputting an image to the lower image display panel 16 or by outputting a sound from the speaker 29; and means (for example, the main CPU 41) for providing such notification notifying that the bonus game has been generated according to the payment balance in terms of coins by outputting an image with the output means when the bonus game is generated.

[0312] The gaming machine 10 according to the present embodiment is configured as such that a set value that is to be an object of comparison with the number of games is selected from plural candidate values "600", "1200", and "2400", stepwise determined in advance (see Figs. 7 and 8), and that such number of games as a content of notification at the time of the generating of the first special game state is selected from the same values as the candidate values (see Fig. 25).

Therefore, for example, in the case where the set value is 1200, an image (see Fig. 25) showing 600 as the number of games as a content of notification is displayed on the lower image display panel 16 (see Fig. 20A) in the first special game state generated when the number of games is from 600 to 1199, and an image showing 1200 as the number of games as the content of notification can be displayed on the lower image display panel 16 (see Fig. 20B) when the number of games reaches 1200 and the second special game state is generated. In such a case, the content of notification at the time of the generating of the first special game state is allowed to obtain reality, resulting in that the player has a stronger sense as if the first special game state has been generated according to the number of games, although it has actually been generated according to result of a lottery.

[0313] The second aspect of the present invention is not limited to this example, and the set value that is to be an object of comparison with the number of games may be a fixed value. Further, in the second aspect of the present invention, such number of games as a content of notification at the time of the generating of the first special game state is not particularly limited as long as it is set according to the number of games actually played by the player, and it may be, for example, the number of games actually played by the player himself.

Moreover, various kinds of modified embodiments as de-

scribed in the first embodiment can also be applied to the second aspect of the present invention.

[0314] Although the embodiment according to the present invention has been described, the description presents only some of the specific examples, and is not intended to limit the present invention in any way and specific constructions of each means and the like can be properly changed in terms of design. Besides, the effects described in the embodiment of the present invention are only the most preferable effects generated from the present invention and effects to be caused by the present invention is not limited to those described in the embodiment of the present invention.

BRIEF DESCRIPTION OF THE DRAWINGS

[0315]

Fig. 1 is a schematic diagram showing the entire construction of a game system according to the first embodiment;
Fig. 2 is a perspective view schematically showing a gaming machine according to the first embodiment;
Fig. 3 is a schematic view showing the symbol sequence depicted on the outer circumferential surface of each reel;
Fig. 4 is a block diagram showing the internal construction of the gaming machine shown in Fig. 2;
Fig. 5 is a block diagram showing the internal construction of a control device according to the first embodiment;
Fig. 6 is a figure schematically showing an example of correspondence table between a gaming machine identification number and a game history;
Fig. 7 is a figure schematically showing an example of correspondence table between a set value and the number of payouts;
Fig. 8 is a figure schematically showing another example of correspondence table between a set value and the number of payouts;
Fig. 9 is a flowchart showing a procedure in an authentication reading processing for a game program and a game system program executed by a mother board and a gaming board shown in Fig. 4;
Fig. 10 is a flowchart showing a subroutine of a game mode selection processing;
Figs. 11A and 11B are figures showing an image displayed on the lower image display panel when a game mode selection processing is executed;
Fig. 12 is a flowchart showing a subroutine of a game execution processing;
Fig. 13 is a flowchart showing a subroutine of a lottery processing;
Fig. 14 is a figure describing a relationship among winning combinations of plural kinds, establishment possibility of each winning combination and the number of coin-out in the present embodiment;
Fig. 15 is a flowchart showing a subroutine of a reel rotating control processing;
Figs. 16A to 16D are side views for describing a rotating operation of the reel;
Fig. 17 is a schematic diagram showing a correspondence table between the number of steps and the code No.;
Fig. 18 is flowchart showing a subroutine of a bonus game processing;
Fig. 19 is a flowchart showing a subroutine of a return mode processing;
Figs. 20A to 20C are figures showing an example of image displayed on the lower image display panel when a game state shifts to the return mode (when the second special game state is generated);
Fig. 21 is a flowchart showing a subroutine of a counting processing; and
Fig. 22 is a flowchart showing another example of a subroutine of a game execution processing;
Fig. 23 is flowchart showing a subroutine of a bonus game processing according to the second embodiment;
Fig. 24 is a flowchart showing a subroutine of a content of notification determination processing according to the second embodiment;
Fig. 25 is a figure showing a correspondence table in which the number of games is made to correspond to a content of notification when a bonus game is generated according to the second embodiment.

EXPLANATION OF SYMBOLS

[0316]

10	Gaming machine (slot machine)
11	Cabinet
12	Top box
13	Main door
14	(14L, 14C, 14R) Reel
15	(15L, 15C, 15R) Display window
16	Lower image display panel
18	Coin tray
19	Coin payout exit
20	Control panel
21	Coin receiving slot
22	Note identifier
23	Spin button
24	Change button
25	CASHOUT button
26	1-BET button
27	Maximum BET button
29	Speaker
30	Lamp
31	Number-of-credits display section
32	Number-of-payouts display section
33	Upper image display panel
34	Belly glass
35	Ticket printer
36	Card reader

37	Data display
38	Key pad
39	Ticket with a bar code
40	Mother board
41	Main CPU
42	ROM
43	RAM
44	Communication interface
45	Power supply unit
50	Gaming board
51	CPU
52	Boot ROM
53	Memory card
54	GAL
60	Body PCB
61	Sub CPU
62	Motor driving circuit
63	FPGA
64	Driver
65	Index detecting circuit
66	Hopper
67	Coin detecting section
68	Graphic board
69	Touch panel
70	(70L, 70C, 70R) Stepping motor
71	Position change detecting circuit
80	Door PCB
81	Cold cathode tube
100	Game system
200	Control device

Claims

1. A gaming machine comprising:

output means capable of outputting an image or a sound;
winning combination determination means for determining a winning combination by a lottery;
means for generating a first special game state that is a game state advantageous to a player when the determined winning combination is a special winning combination;
means for, when a predetermined variable accumulatively counted each time a game is played reaches a set value that is an object of comparison with said predetermined variable, and that is selected fromplural candidate values stepwise determined in advance, generating a second special game state that is a game state advantageous to a player and in which a degree of advantage corresponding to the set value is determined; and
means for notifying that said second special game state has been generated based on said set value by outputting an image or a sound to said output means.

2. A gaming machine comprising:

output means capable of outputting an image or a sound;
winning combination determination means for determining a winning combination by a lottery;
means for generating a first special game state that is a game state advantageous to a player when the determined winning combination is a special winning combination;
means for, when the number of games accumulatively counted each time a game is played reaches a set value that is an object of comparison with said number of games, and that is selected from plural candidate values stepwise determined in advance, generating a second special game state that is a game state advantageous to a player and in which a degree of advantage corresponding to the set value is determined; and
means for notifying that said second special game state has been generated based on said set value by outputting an image or a sound to said output means when said second special game state is generated.

3. A gaming machine connected through a communication line to a control device which counts the number of games accumulatively for every gaming machine of plural gaming machines, comprising:

output means capable of outputting an image or a sound;
winning combination determination means for determining a winning combination by a lottery;
means for generating a first special game state that is a game state advantageous to a player when the determined winning combination is a special winning combination;
means for transmitting identification information of a gaming machine to said control device through said communication line each time a game is played;
means for receiving a command signal transmitted from said control device when said number of games counted accumulatively by said control device based on said identification information of the gaming machine reaches a set value that is an object of comparison with said number of games, and that is selected from plural candidate values stepwise determined in advance;
means for generating a second special game state that is a game state advantageous to a player, and in which a degree of advantage corresponding to said set value is determined, based on said command signal; and
means for notifying that said second special game state has been generated based on said

set value by outputting an image or a sound to said output means when said second special game state is generated.

4. A gaming machine comprising:

output means capable of outputting an image or a sound;
winning combination determination means for determining a winning combination by a lottery;
means for generating a first special game state that is a game state advantageous to a player when the determined winning combination is a special winning combination;
means for counting accumulatively the number of games each time a game is played;
means for selecting a set value that is an object of comparison with said number of games fromplural candidate values stepwise determined in advance;
means for determining whether or not said number of games has reached said set value;
means for generating a second special game state that is a game state advantageous to a player and in which a degree of advantage corresponding to said set value is determined, when said number of games is determined to have reached said set value; and
means for notifying that said second special game state has been generated based on said set value by outputting an image or a sound to said output means when said second special game state is generated.

5. The gaming machine according to any one of claims 2 to 4,
wherein
the larger a set value said number of games reaches, said means for generating said second special game state generates a second special game state in which a larger degree of advantage is determined.

6. The gaming machine according to any one of claims 2 to 4,
wherein
reception means that can accept for one game an insertion of game media up to a predetermined upper limit value is provided, and said means for generating said second special game state generates a second special game state in a case where the number of inserted game media for the game played by the player is equal to said upper limit when said number of games reaches said set value.

7. A gaming machine comprising:

output means capable of outputting an image or a sound;
winning combination determination means for determining a winning combination by a lottery;
means for generating a first special game state that is a game state advantageous to a player when the determined winning combination is a special winning combination;
means for generating a second special game state that is a game state advantageous to a player and in which a degree of advantage corresponding to a set value is determined when a payment balance in terms of the game media is equal to or less than the set value that is selected from plural candidate values stepwise determined in advance and that is an obj ect of comparison with a payment balance in terms of the game media; and
means for notifying that said second special game state has been generated based on said set value by outputting an image or a sound to said output means when said second special game state is generated.

8. A gaming machine connected through a communication line to a control device which counts a payment balance in terms of the game media accumulatively for every gaming machine of plural gaming machines, comprising:

output means capable of outputting an image or a sound;
winning combination determination means for determining a winning combination by a lottery;
means for generating a first special game state that is a game state advantageous to a player when the determined winning combination is a special winning combination;
means for transmitting a payment balance in terms of the game media in a game played by a player together with an identification information of the gaming machine to said control device through said communication line each time a game is played;
means for receiving a command signal transmitted from said control device when said payment balance in terms of the game media counted accumulatively by said control device based on said identification information of the gaming machine and said payment balance in terms of the game media in a game played by the player is equal to or less than a set value that is selected from plural candidate values stepwise determined in advance and that is an object of comparison with said payment balance in terms of the game media;
means for generating a second special game state that is a game state advantageous to a player and in which a degree of advantage corresponding to said set value is determined,

based on said command signal; and
means for notifying that said second special game state has been generated based on said set value by outputting an image or a sound to said output means when said second special game state is generated.

9. A gaming machine comprising:

output means capable of outputting an image or a sound;
winning combination determination means for determining a winning combination by a lottery;
means for generating a first special game state that is a game state advantageous to a player when the determined winning combination is a special winning combination;
means for counting a payment balance in terms of the game media accumulatively each time a game is played;
means for selecting a set value that is an object of comparison with said payment balance in terms of the game media from plural candidate values stepwise determined in advance;
means for determining whether or not said payment balance in terms of the game media is equal to or less than said set value;
means for generating a second special game state that is a game state advantageous to a player and in which a degree of advantage corresponding to said set value is determined, when said payment balance in terms of the game media is determined to have become equal to or less than said set value; and
means for notifying that said second special game state has been generated based on said set value by outputting an image or a sound to said output means when said second special game state is generated.

10. The gaming machine according to any one of claims 7 to 9,
wherein
the smaller a set value said payment balance in terms of the game media reaches, the means for generating said second special game state generates a second special game state in which a larger degree of advantage is determined.

11. The gaming machine according to any one of claims 7 to 9,
wherein
reception means that can accept for one game an insertion of game media up to a predetermined upper limit value is provided, and said means for generating said second special game state generates a second special game state in a case where the number of inserted game media for the game played is at said upper limit value when said payment balance in terms of the game media is equal to or less than said set value.

12. A gaming machine comprising:

means for giving a stepwise different profit to a player according to the number of games played by the player; and
means for notifying to the player by outputting an image or a sound different according to said number of games that said stepwise different profit is given according to said number of games played by the player.

13. A gaming machine comprising:

means for giving a stepwise different profit to a player according to a payment balance in terms of the game media of the player; and
means for notifying to the player by outputting an image or a sound different according to said payment balance in terms of the game media that said stepwise different profit is given according to said payment balance in terms of the game media.

14. A game control method comprising:

a step of giving a stepwise different profit to a player according to the number of games played by the player; and
a step of notifying to the player by an image or a sound different according to said number of games that said stepwise different profit according to said number of games played by the player is given.

15. A game control method comprising:

a step of giving a stepwise different profit to a player according to a payment balance in terms of the game media of the player; and
a step of notifying to the player by an image or a sound different according to said payment balance in terms of the game media that said stepwise different profit according to said payment balance in terms of the game media of the player is given.

16. A game system equipped with a gaming machine and a control device,
wherein
said control device includes:

means for transmitting a signal to said gaming machine according to the number of games played in said gaming machine by a player, and

said gaming machine includes:

means for giving a stepwise different profit according to said number of games based on said signal received from said control device; and
means for notifying to the player by an image or a sound different according to said number of games that said stepwise different profits according to said number of games is given.

17. A game system equipped with a gaming machine and a control device,
wherein
said control device includes:

means for transmitting a signal to said gaming machine according to a payment balance in terms of the game media of a player in said gaming machine, and
said gaming machine includes:

means for giving a stepwise different profit according to said payment balance in terms of the game media based on said signal received from said control device; and
means for notifying to the player by an image or a sound different according to said payment balance in terms of the game media that said stepwise different profit according to said payment balance in terms of the game media is given.

18. A gaming machine comprising:

output means capable of outputting an image or a sound;
winning combination determination means for determining a winning combination by a lottery;
means for generating a first special game state that is a game state advantageous to a player when the determined winning combination is a special winning combination;
means for, when the number of accumulatively counted each time a game is played reaches a set value that is an object of comparison with said number of games, generating a second special game state that is a game state advantageous to a player and which is the same type as, or a different type from the first special game state;
means for notifying that said second special game state has been generated based on said set value by outputting an image or a sound to said output means when said second special game state is generated; and
means for providing such notification notifying that said first special game state has been generated according to the number of games by outputting an image or a sound to said output means when said first special game state is generated.

19. A gaming machine connected through a communication line to a control device which counts the number of games accumulatively for every gaming machine of plural gaming machines, comprising:

output means capable of outputting an image or a sound;
winning combination determination means for determining a winning combination by a lottery;
means for generating a first special game state that is a game state advantageous to a player when the determined winning combination is a special winning combination;
means for transmitting identification information of a gaming machine to said control device through said communication line each time a game is played;
means for receiving a command signal transmitted from said control device when said number of games counted accumulatively by said control device based on said identification information of the gaming machine reaches a set value that is an object of comparison with said number of games;
means for generating a second special game state that is a game state advantageous to a player and which is the same type as, or a different type from the first special game state, based on said command signal;
means for notifying that said second special game state has been generated based on said set value by outputting an image or a sound to said output means when said second special game state is generated; and
means for providing such notification notifying that said first special game state has been generated according to the number of games by outputting an image or a sound to said output means when said first special game state is generated.

20. A gaming machine comprising:

output means capable of outputting an image or a sound;
winning combination determination means for determining a winning combination by a lottery;
means for generating a first special game state that is a game state advantageous to a player when the determined winning combination is a special winning combination;
means for counting accumulatively the number

of games each time a game is played;
means for determining whether or not said number of games has reached a set value that is an object of comparison with said number of games;
means for generating a second special game state that is a game state advantageous to a player and which is the same type as, or a different type from the first special game state, when said number of games is determined to have reached said set value;
means for notifying that said second special game state has been generated based on said set value by outputting an image or a sound to said output means when said second special game state is generated; and
means for providing such notification notifying that said first special game state has been generated according to the number of games by outputting an image or a sound to said output means when said first special game state is generated.

21. The gaming machine according to any one of claims 18 to 20,
wherein
reception means that can accept for one game an insertion of game media up to a predetermined upper limit value is provided, and said means for generating said second special game state generates a second special game state in a case where the number of inserted game media for the game played by the player is equal to said upper limit when said number of games reaches said set value.

22. A gaming machine comprising:

output means capable of outputting an image or a sound;
winning combination determination means for determining a winning combination by a lottery;
means for generating a first special game state that is a game state advantageous to a player when the determined winning combination is a special winning combination;
means for, when a payment balance in terms of the game media becomes equal to or less than a set value that is an object of comparison with said payment balance in terms of the game media, generating a second special game state that is a game state advantageous to a player and which is the same type as, or a different type from the first special game state;
means for notifying that said second special game state has been generated based on said set value by outputting an image or a sound to said output means when said second special game state is generated; and
means for providing such notification notifying that said first special game state has been generated according to the payment balance in terms of the game media by outputting an image or a sound to said output means when said first special game state is generated.

23. A gaming machine connected through a communication line to a control device which counts a payment balance in terms of the game media accumulatively for every gaming machine of plural gaming machines, comprising:

output means capable of outputting an image or a sound;
winning combination determination means for determining a winning combination by a lottery;
means for generating a first special game state that is a game state advantageous to a player when the determined winning combination is a special winning combination;
means for transmitting the payment balance in terms of the game media in a game played by a player together with identification information of the gaming machine to said control device through said communication line each time a game is played;
means for receiving a command signal transmitted from said control device when said payment balance in terms of the game media counted accumulatively by said control device based on said identification information of the gaming machine and the payment balance in terms of the game media in a game played by the player is equal to or less than a set value that is an object of comparison with said payment balance in terms of the game media;
means for generating a second special game state that is a game state advantageous to a player and which is the same type as, or a different type from the first special game state, based on said command signal;
means for notifying that said second special game state has been generated based on said set value by outputting an image or a sound to said output means when said second special game state is generated; and
means for providing such notification notifying that said first special game state has been generated according to the payment balance in terms of the game media by outputting an image or a sound to said output means when said first special game state is generated.

24. A gaming machine comprising:

output means capable of outputting an image or a sound;

winning combination determination means for determining a winning combination by a lottery;
means for generating a first special game state that is a game state advantageous to a player when the determined winning combination is a special winning combination;
means for counting a payment balance in terms of the game media accumulatively each time a game is played;
means for determining whether or not said payment balance in terms of the game media has become equal to or less than a set value that is an object of comparison with said payment balance in terms of the game media;
means for generating a second special game state that is a game state advantageous to a player and which is the same type as, or a different type from the first special game state, when said payment balance in terms of the game media is determined to have become equal to or less than said set value;
means for notifying that said second special game state has been generated based on said set value by outputting an image or a sound to said output means when said second special game state is generated; and
means for providing such notification notifying that said first special game state has been generated according to said payment balance in terms of the game media by outputting an image or a sound to said output means when said first special game state is generated.

25. The gaming machine according to any one of claims 22 to 24,
wherein
reception means that can accept for one game an insertion of game media up to a predetermined upper limit value is provided, and said means for generating said second special game state generates a second special game state in a case where the number of inserted media for the game played is at the upper limit value when said payment balance in terms of the game media is equal to or less than said set value.

26. A gaming machine comprising:

means for giving a profit to a player according to result of a lottery;
means for giving to the player a profit according to the number of games played by the player;
means for notifying to the player by outputting an image or a sound, that said profit according to said number of games is given; and
means for providing such notification to the player by the output of an image or a sound, notifying that said profit according to said number of games is given when said profit is being given according to said result of a lottery.

27. A gaming machine comprising:

means for giving a profit to a player according to result of a lottery;
means for giving to the player a profit according to a payment balance in terms of the game media of the player;
means for notifying to the player by outputting an image or a sound, that said profit according to said payment balance in terms of the game media is given; and
means for providing such notification to the player by the output of an image or a sound, notifying that said profit according to said payment balance in terms of the game media is given when said profit is being given according to said result of a lottery.

28. A game control method comprising:

a step for giving a profit to a player according to result of a lottery;
a step for giving to the player a profit according to the number of games played by the player;
a step for notifying to the player by outputting an image or a sound, that said profit is given according to said number of games; and
a step for providing such notification to the player by the output of an image or a sound, notifying that said profit according to said number of games is given when said profit is being given according to said result of a lottery.

29. A game control method comprising:

a step for giving a profit to a player according to result of a lottery;
a step for giving to the player a profit according to a payment balance in terms of the game media of the player;
a step for notifying to the player by outputting an image or a sound, that said profit according to said payment balance in terms of the game media is given; and
a step for providing such notification to the player by the output of an image or a sound, notifying that said profit according to said payment balance in terms of the game media is given when said profit is being given according to said result of a lottery.

30. A game system equipped with a gaming machine and a control device,
wherein
said control device includes:

means for transmitting a signal to said gaming machine according to the number of games played in said gaming machine by a player, and said gaming machine includes:

means for giving a profit to a player according to result of a lottery;
means for giving profit according to said number of games based on said signal received from said control device;
means for notifying to the player by outputting an image or a sound, that said profit according to said number of games is given; and
means for providing such notification to the player by the output of an image or a sound, notifying that said profit according to said number of games is given when said profit is being given according to said result of a lottery.

31. A game system equipped with a gaming machine and a control device,
wherein
said control device includes:

means for transmitting a signal to said gaming machine according to a payment balance in terms of the game media of a player in the gaming machine, and
said gaming machine includes:

means for giving a profit to a player according to result of a lottery;
means for giving profit according to said payment balance in terms of the game media based on said signal received from said control device;
means for notifying to the player by outputting an image or a sound, that said profit according to said payment balance in terms of said game media is given; and
means for providing such notification to the player by the output of an image or a sound, notifying that said profit according to said payment balance in terms of the game media is given when said profit is being given according to said result of a lottery.

Fig. 1

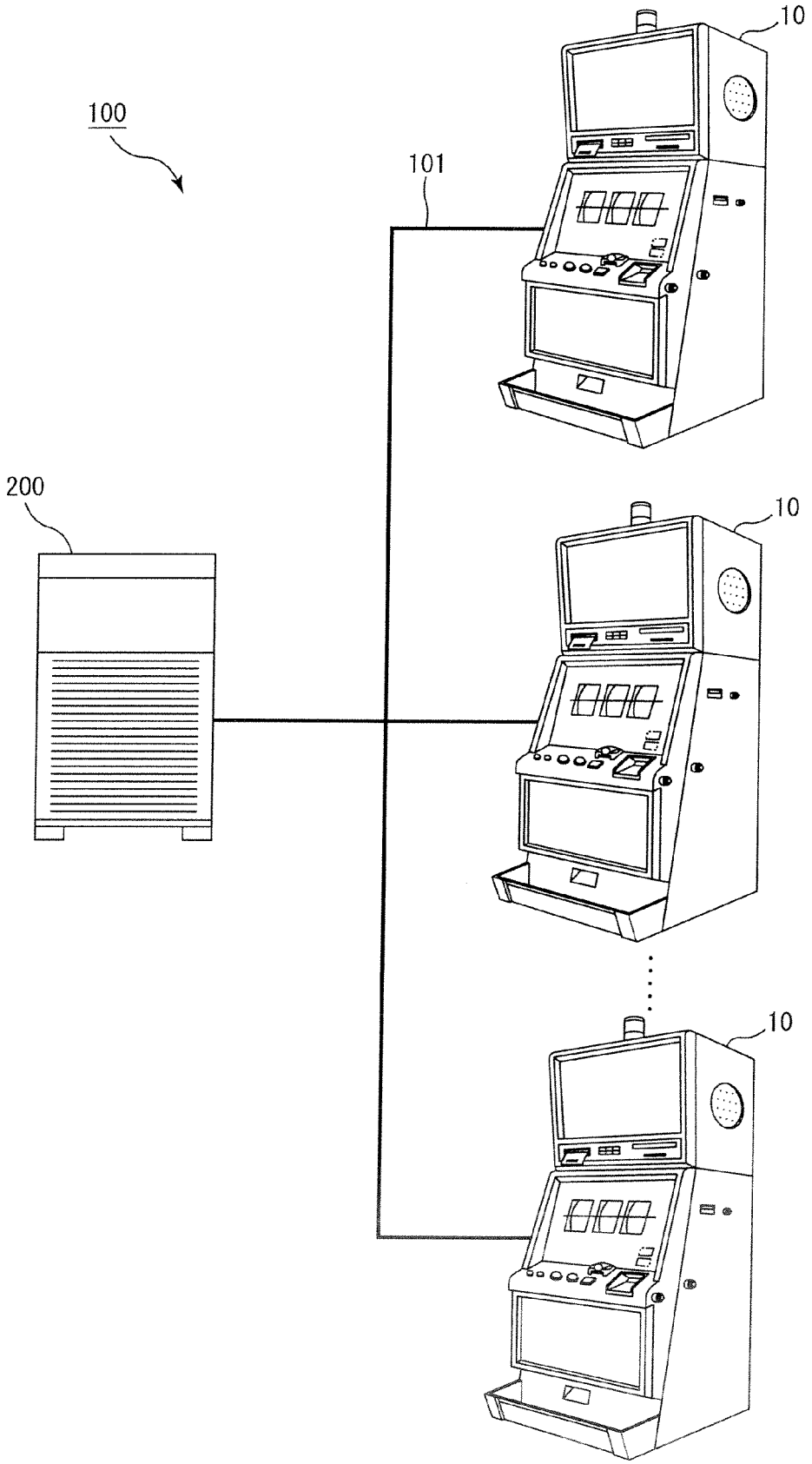

Fig. 2

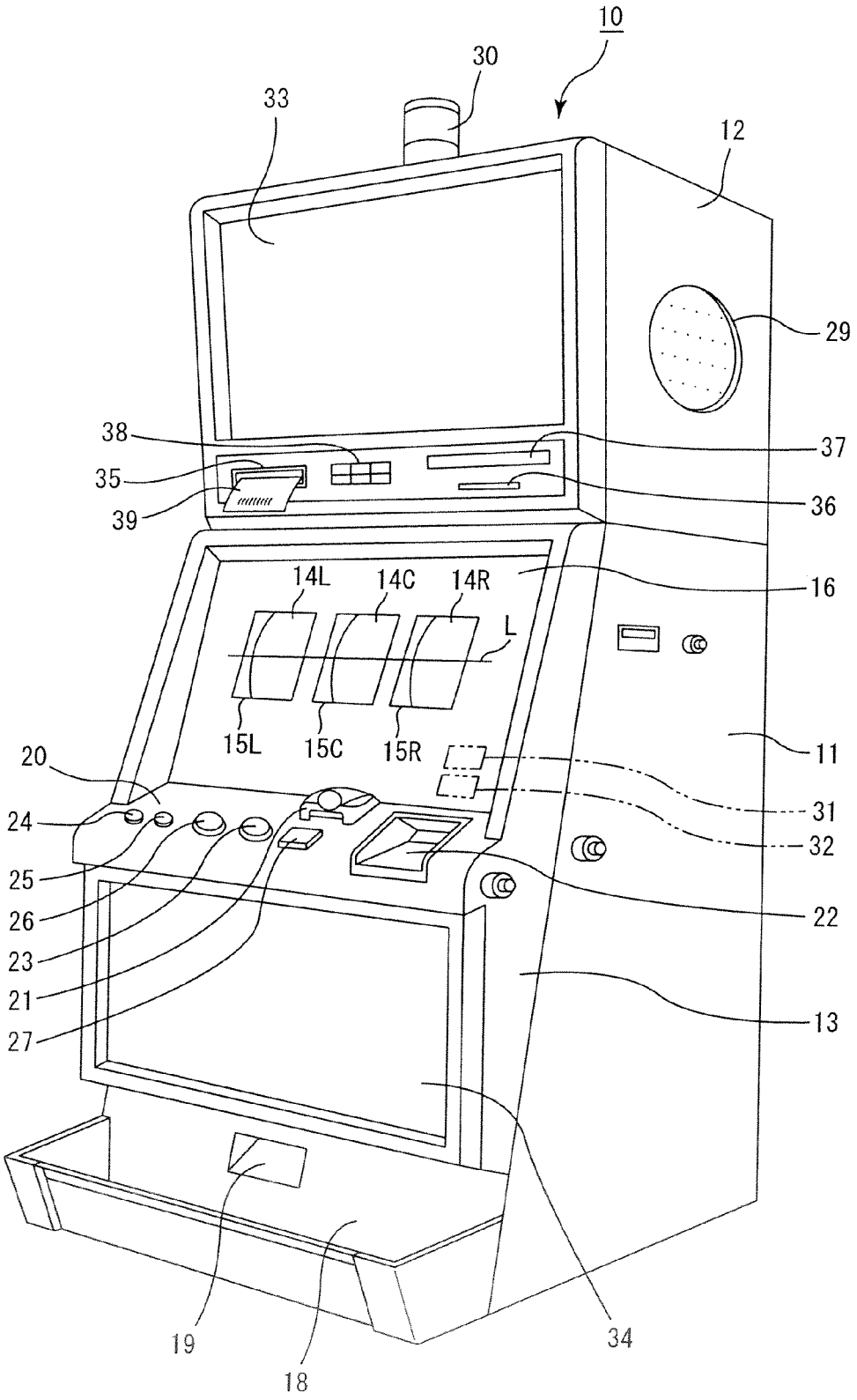
10
30
33
12
29
38
37
35
36
39
14L
14C
14R
16
L
15L
15C
15R
11
20
31
24
32
25
22
26
23
21
13
27
19
34
18

Fig. 3

	Left reel	Center reel	Right reel
Code No.	Symbol	Symbol	Symbol
00	JACKPOT 7	JACKPOT 7	JACKPOT 7
01	PLUM	BELL	CHERRY
02	ORANGE	APPLE	ORANGE
03	PLUM	BELL	APPLE
04	ORANGE	CHERRY	ORANGE
05	PLUM	ORANGE	PLUM
06	ORANGE	PLUM	ORANGE
07	PLUM	CHERRY	PLUM
08	BLUE 7	BELL	ORANGE
09	CHERRY	APPLE	PLUM
10	ORANGE	BELL	ORANGE
11	BELL	STRAWBERRY	PLUM
12	ORANGE	PLUM	BELL
13	STRAWBERRY	BLUE 7	STRAWBERRY
14	BLUE 7	BELL	BLUE 7
15	ORANGE	APPLE	BELL
16	APPLE	BELL	CHERRY
17	PLUM	STRAWBERRY	PLUM
18	ORANGE	PLUM	ORANGE
19	PLUM	CHERRY	PLUM
20	BLUE 7	BELL	ORANGE
21	CHERRY	APPLE	PLUM

Fig. 4

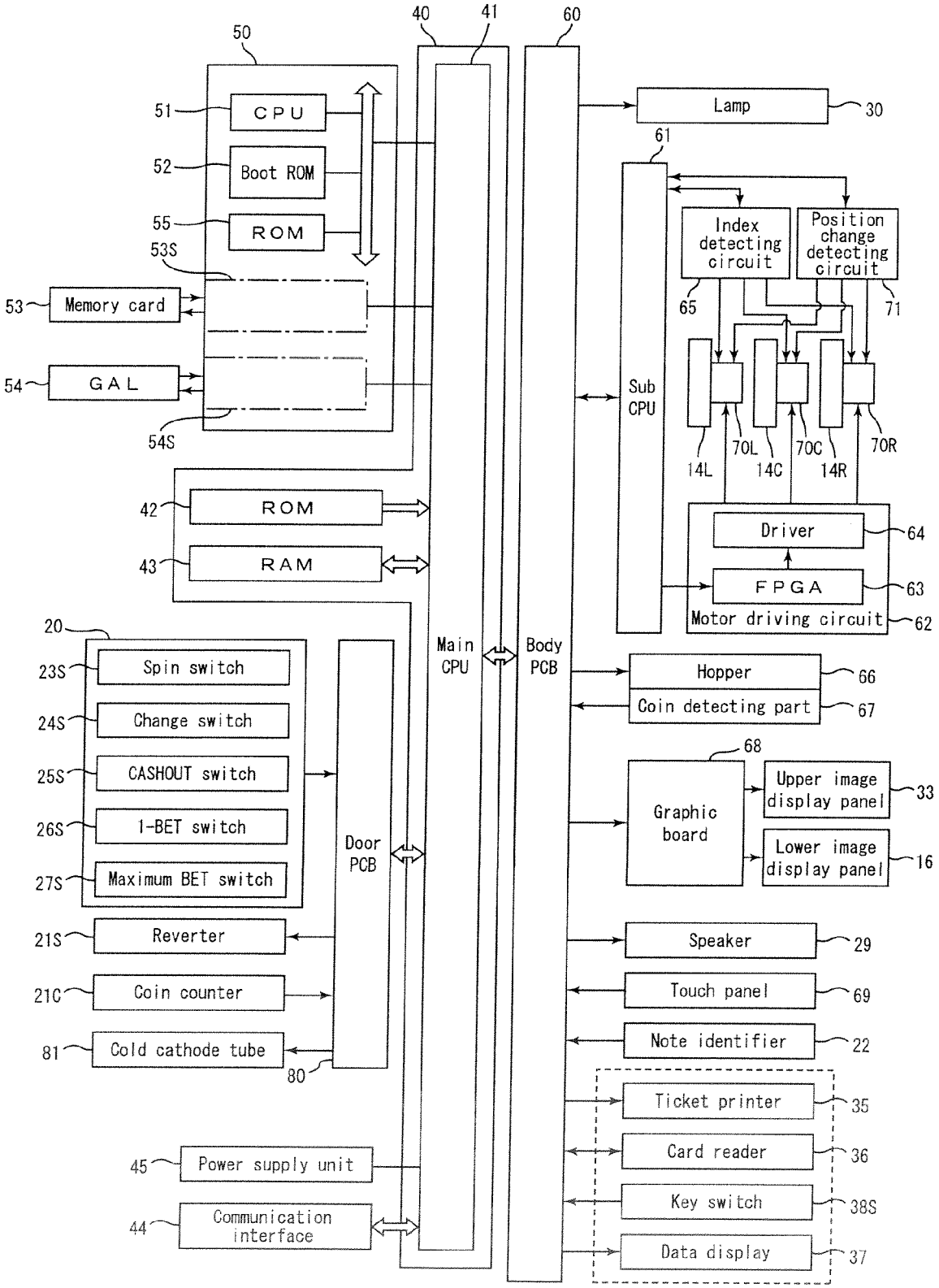
40
41
60
50
51
CPU
52
Boot ROM
55
ROM
53S
53
Memory card
54
GAL
54S
Lamp
30
61
Index detecting circuit
Position change detecting circuit
65
71
Sub CPU
14L
70L
14C
70C
14R
70R
Driver
64
FPGA
63
Motor driving circuit
62
42
ROM
43
RAM
20
23S
Spin switch
24S
Change switch
25S
CASHOUT switch
26S
1-BET switch
27S
Maximum BET switch
Main CPU
Body PCB
Door PCB
Hopper
66
Coin detecting part
67
68
Graphic board
Upper image display panel
33
Lower image display panel
16
21S
Reverter
21C
Coin counter
81
Cold cathode tube
80
Speaker
29
Touch panel
69
Note identifier
22
Ticket printer
35
Card reader
36
Key switch
38S
Data display
37
45
Power supply unit
44
Communication interface

Fig. 5

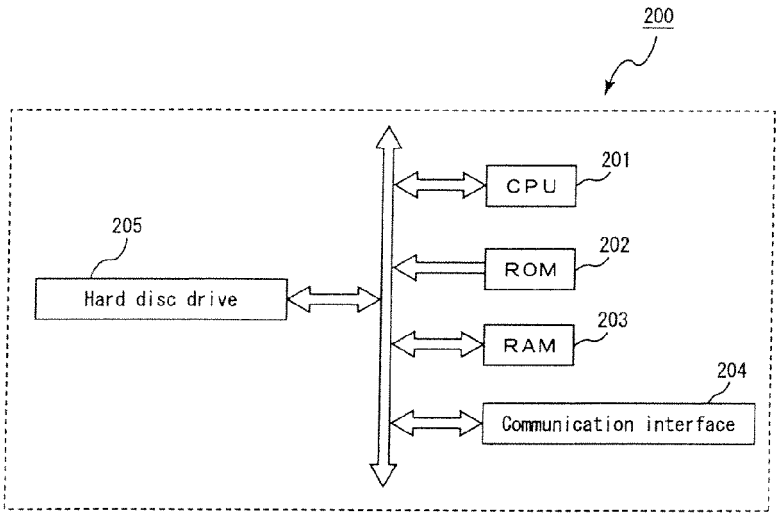

Fig. 6

Gaming machine identification number	Number of games	Accumulative number of coin-in	Accumulative number of coin-out	Payment balance	Return rate (%)	Set value
001	600	30000	27000	-3000	90	600
002	600	30000	33000	3000	110	600
003	1200	60000	45000	-15000	75	1200
⋮	⋮	⋮	⋮	⋮	⋮	⋮

Fig. 7

Set value	Number of coin-out
600	1000
1200	2000
2400	4000

Fig. 8

Set value	Number of coin-out
600	(- payment balance) × 50% (provided that the number of coin-out = 1000 if a payment balance ≧ 0)
1200	(- payment balance) × 60% (provided that the number of coin-out = 2000 if a payment balance ≧ 0)
2400	(- payment balance) × 70% (provided that the number of coin-out = 4000 if a payment balance ≧ 0)

Fig. 9

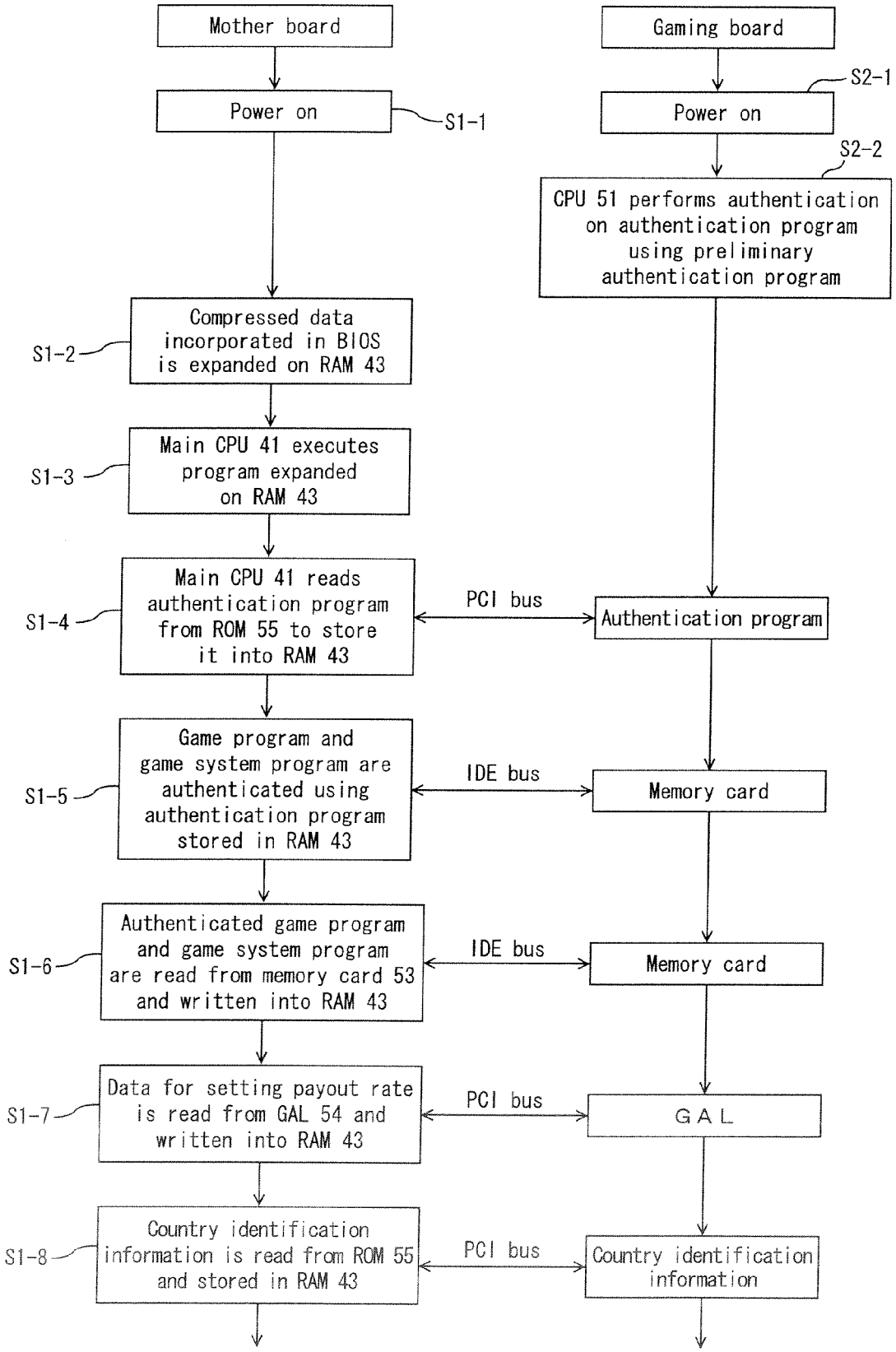
Mother board
Power on
S1-1
Compressed data incorporated in BIOS is expanded on RAM 43
S1-2
Main CPU 41 executes program expanded on RAM 43
S1-3
Main CPU 41 reads authentication program from ROM 55 to store it into RAM 43
S1-4
Game program and game system program are authenticated using authentication program stored in RAM 43
S1-5
Authenticated game program and game system program are read from memory card 53 and written into RAM 43
S1-6
Data for setting payout rate is read from GAL 54 and written into RAM 43
S1-7
Country identification information is read from ROM 55 and stored in RAM 43
S1-8
Gaming board
S2-1
Power on
S2-2
CPU 51 performs authentication on authentication program using preliminary authentication program
PCI bus
Authentication program
IDE bus
Memory card
IDE bus
Memory card
PCI bus
GAL
PCI bus
Country identification information

Fig. 10

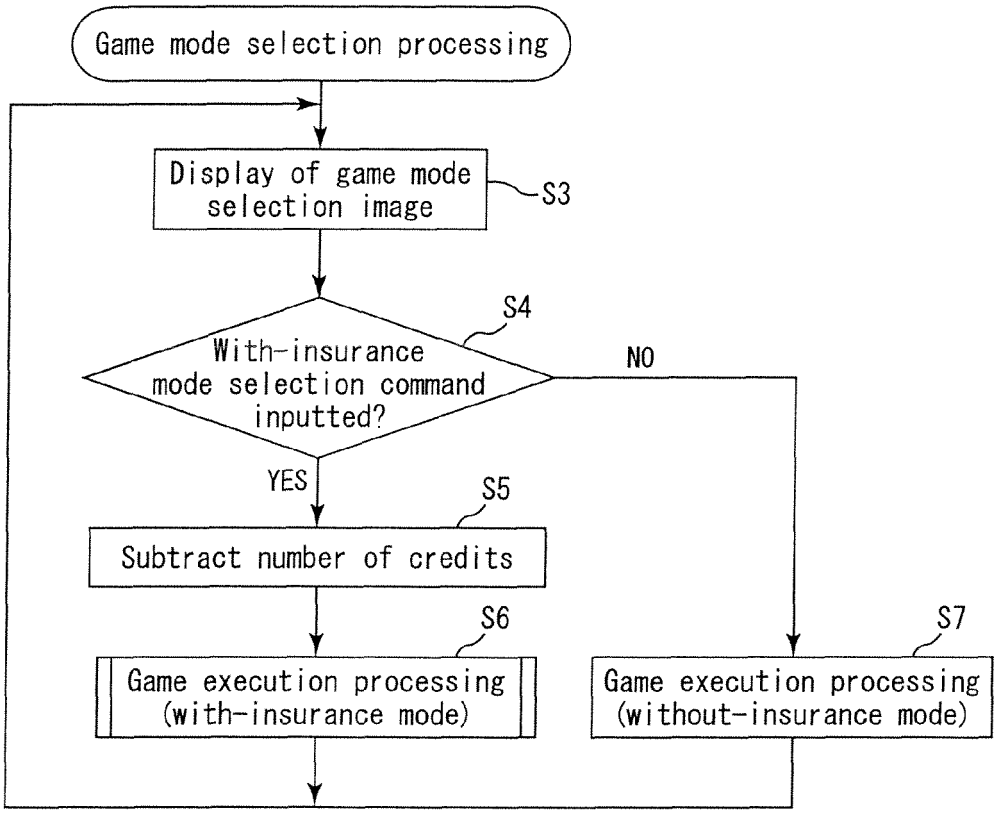
Game mode selection processing
Display of game mode selection image
S3
S4
With-insurance mode selection command inputted?
NO
YES
S5
Subtract number of credits
S6
Game execution processing (with-insurance mode)
S7
Game execution processing (without-insurance mode)

Fig. 11A

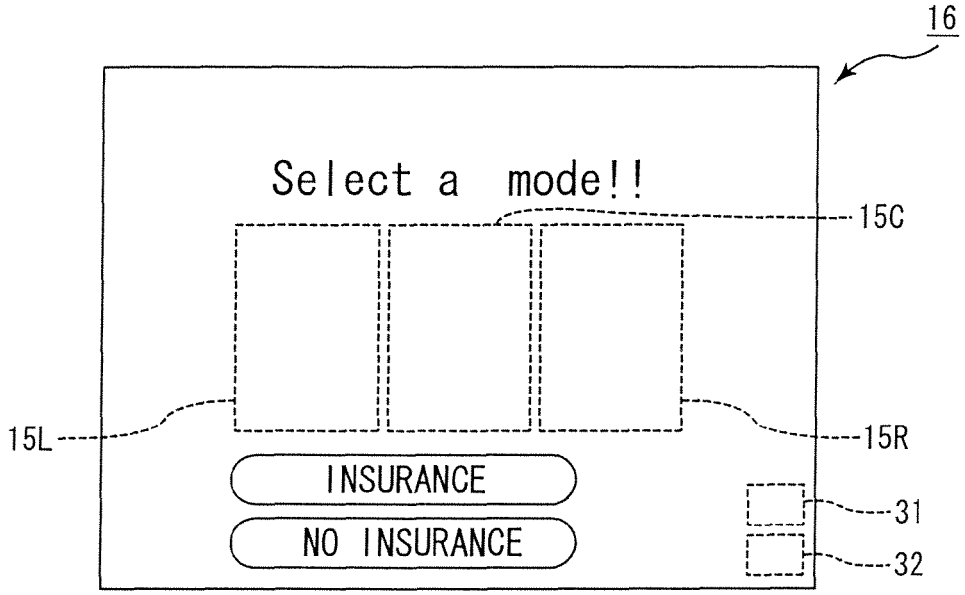

Fig. 11B

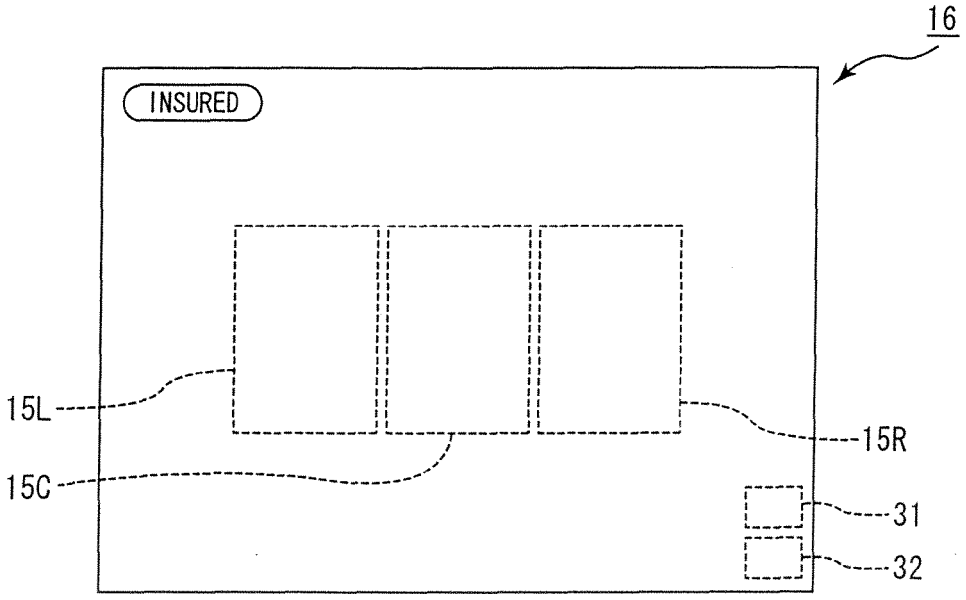

Fig. 12

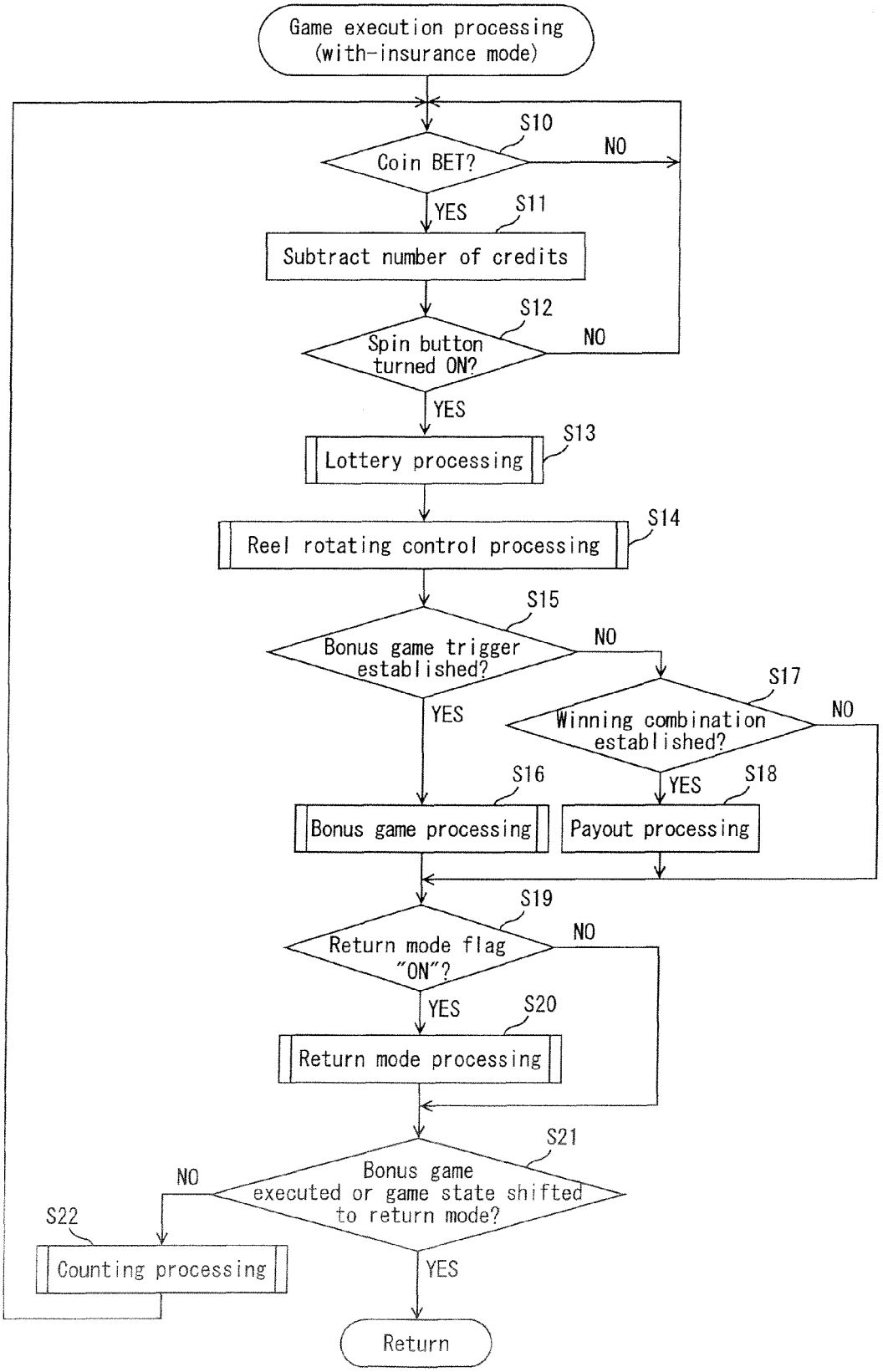
Game execution processing (with-insurance mode)
S10
Coin BET?
NO
YES
S11
Subtract number of credits
S12
Spin button turned ON?
NO
YES
S13
Lottery processing
S14
Reel rotating control processing
S15
Bonus game trigger established?
NO
YES
S17
Winning combination established?
NO
YES
S16
Bonus game processing
S18
Payout processing
S19
Return mode flag "ON"?
NO
YES
S20
Return mode processing
S21
Bonus game executed or game state shifted to return mode?
NO
YES
S22
Counting processing
Return

Fig. 13

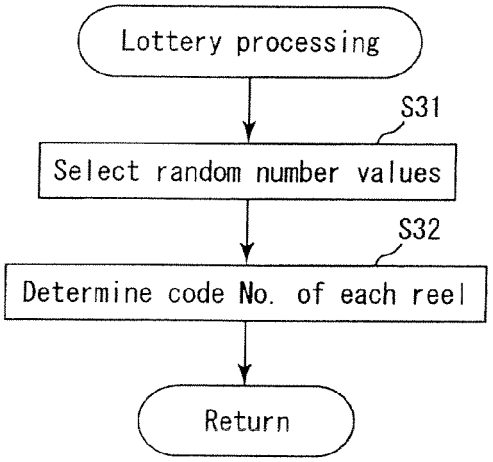

Fig. 14

Winning combination			Establishment possibility (%)	Number of coin-out (※1)
Bonus game trigger			0.5	(※2)
JACKPOT 7	JACKPOT 7	JACKPOT 7	0.5	30
BLUE 7	BLUE 7	BLUE 7	0.8	10
BELL	BELL	BELL	1.1	8
CHERRY	CHERRY	CHERRY	1.5	5
STRAWBERRY	STRAWBERRY	STRAWBERRY	1.5	5
PLUM	PLUM	PLUM	1.8	4
ORANGE	ORANGE	ORANGE	2.3	3
CHERRY	CHERRY	(ANY)	3.0	2
ORANGE	ORANGE	(ANY)	3.0	2
CHERRY	(ANY)	(ANY)	7.5	1
ORANGE	(ANY)	(ANY)	7.5	1

※1: the number of coin-out per one coin-in
※2: the number of free games determined by lottery is performed

Fig. 15

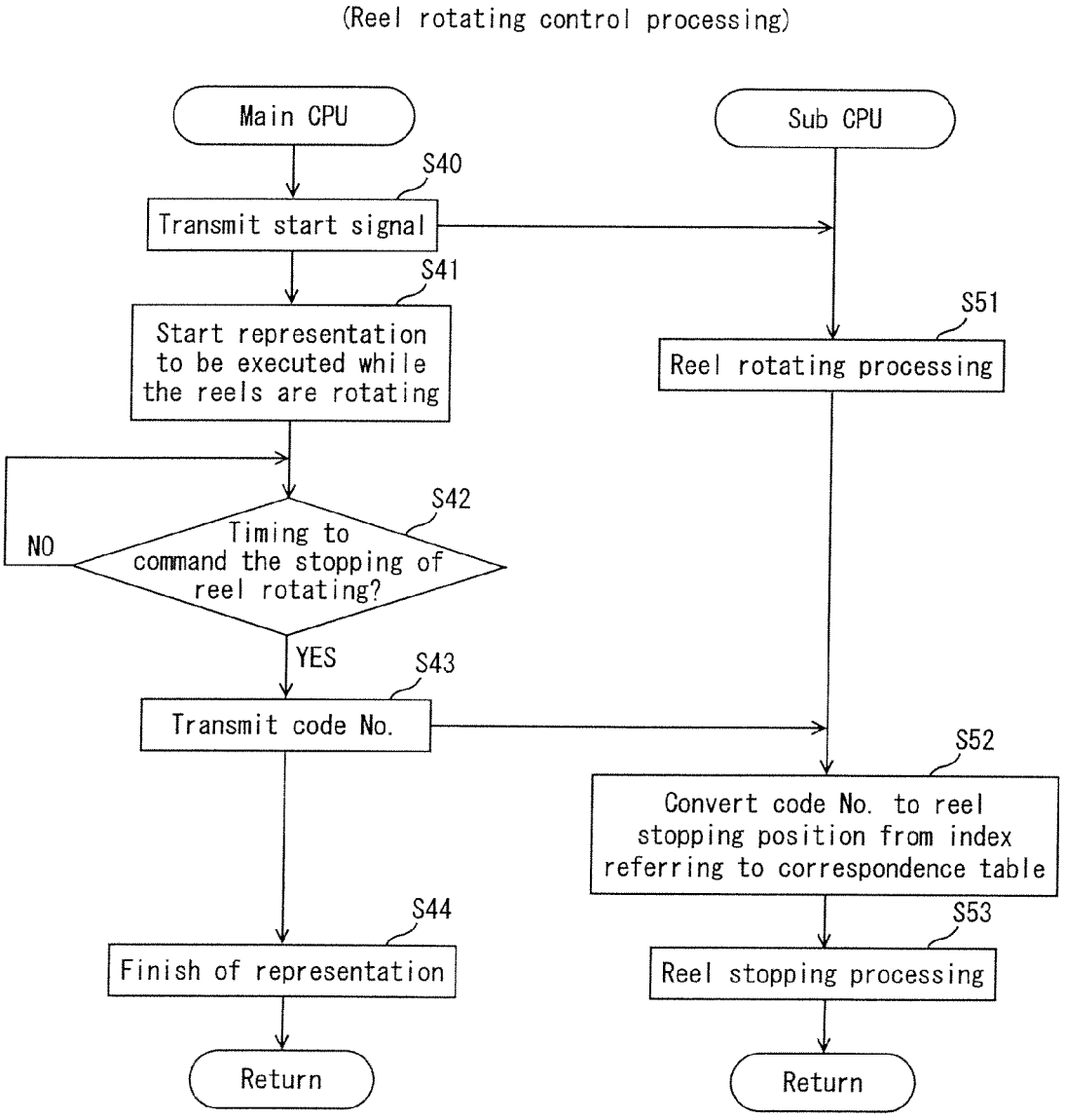
(Reel rotating control processing)
Main CPU
Sub CPU
S40
Transmit start signal
S41
Start representation to be executed while the reels are rotating
S51
Reel rotating processing
S42
NO
Timing to command the stopping of reel rotating?
YES
S43
Transmit code No.
S52
Convert code No. to reel stopping position from index referring to correspondence table
S44
Finish of representation
S53
Reel stopping processing
Return
Return

Fig. 16A

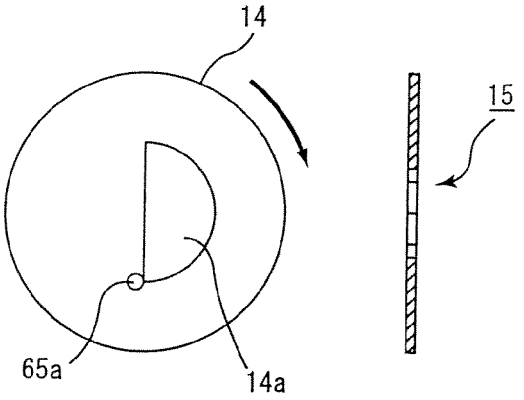

Fig. 16B

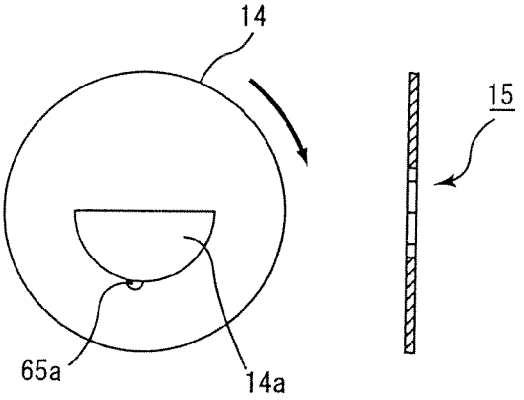

Fig. 16C

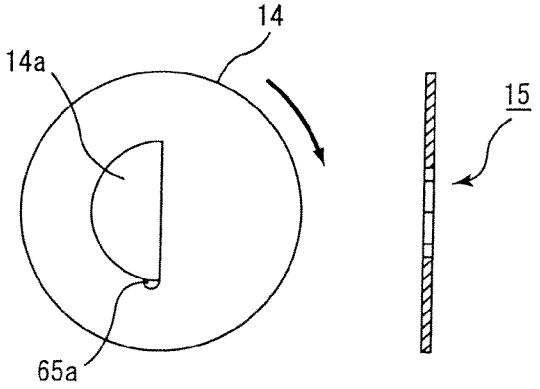

Fig. 16D

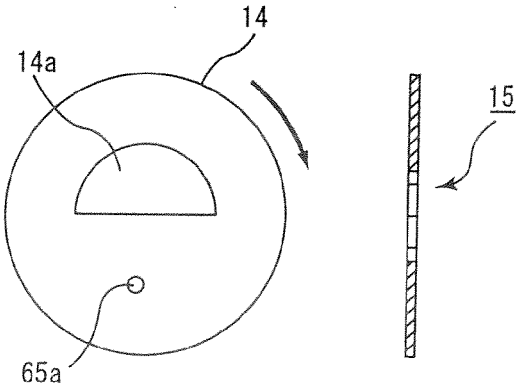

Fig. 17

Code No.	Index	Number of steps (※)
00	1	0
01		18
02		36
03		54
04		72
05		91
06		109
07		127
08		145
09		163
10		182
11	2	200
12		218
13		236
14		254
15		273
16		291
17		309
18		327
19		345
20		364
21		382

※the number of steps with index 1 as a reference

Fig. 18

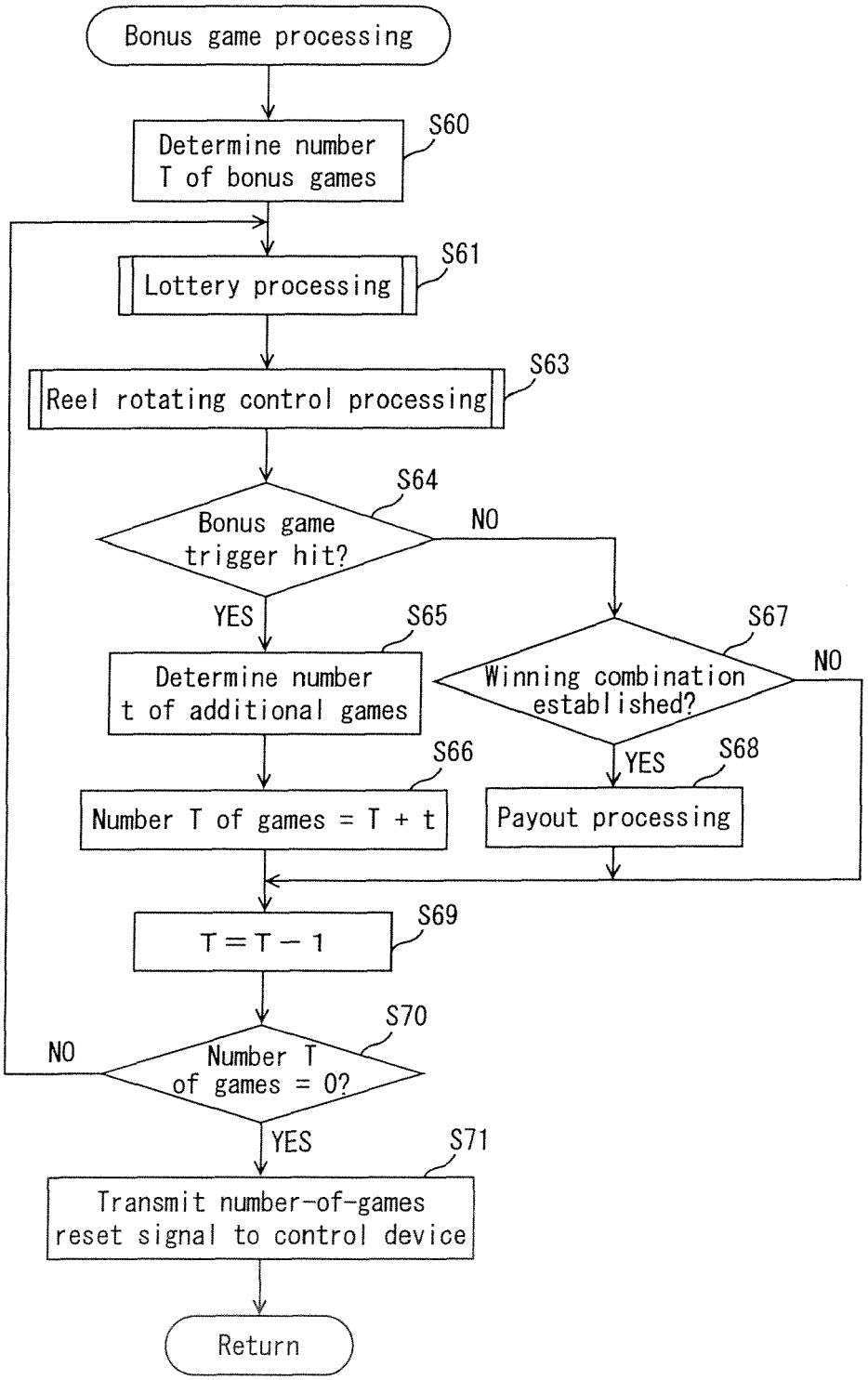
Bonus game processing
Determine number T of bonus games
S60
Lottery processing
S61
Reel rotating control processing
S63
Bonus game trigger hit?
S64
NO
YES
Determine number t of additional games
S65
Winning combination established?
S67
NO
YES
Number T of games = T + t
S66
Payout processing
S68
T = T − 1
S69
Number T of games = 0?
S70
NO
YES
Transmit number-of-games reset signal to control device
S71
Return

Fig. 19

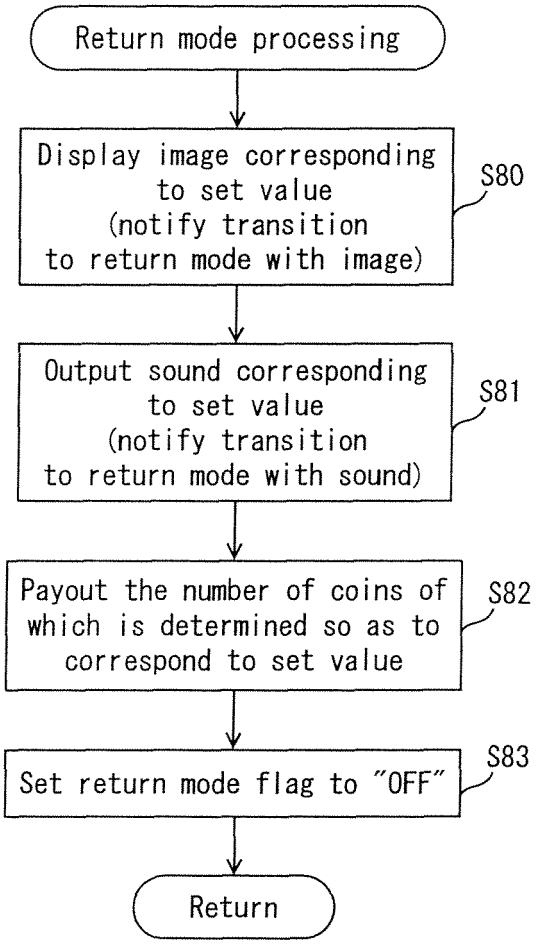
Return mode processing
Display image corresponding to set value (notify transition to return mode with image)
S80
Output sound corresponding to set value (notify transition to return mode with sound)
S81
Payout the number of coins of which is determined so as to correspond to set value
S82
Set return mode flag to "OFF"
S83
Return

Fig. 20A

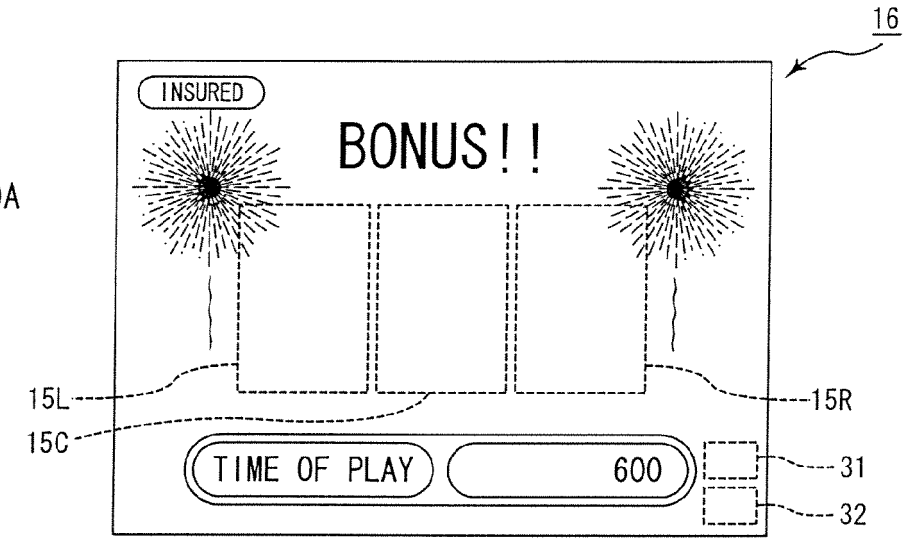

Fig. 20B

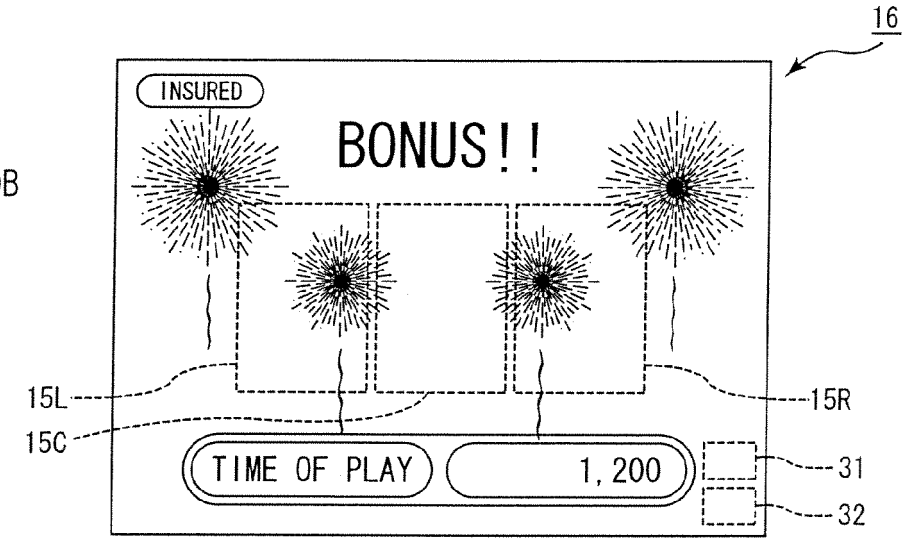

Fig. 20C

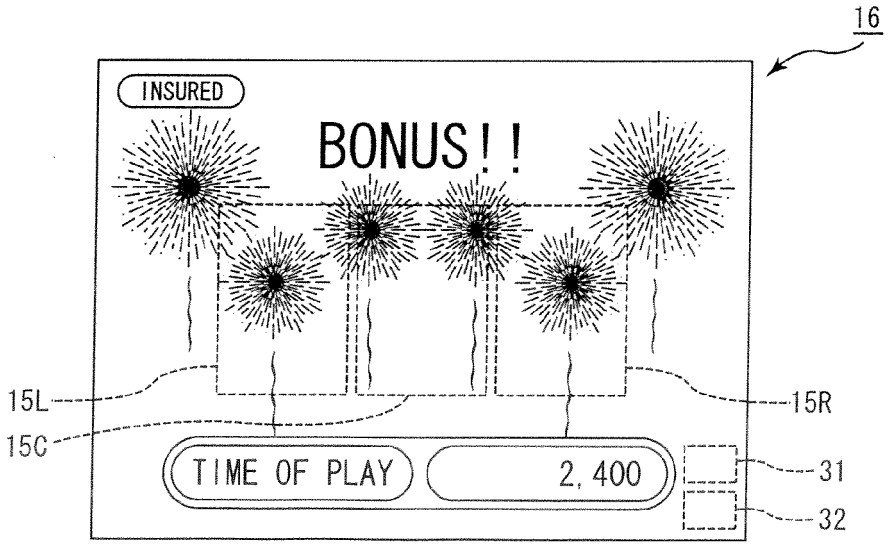

Fig. 21

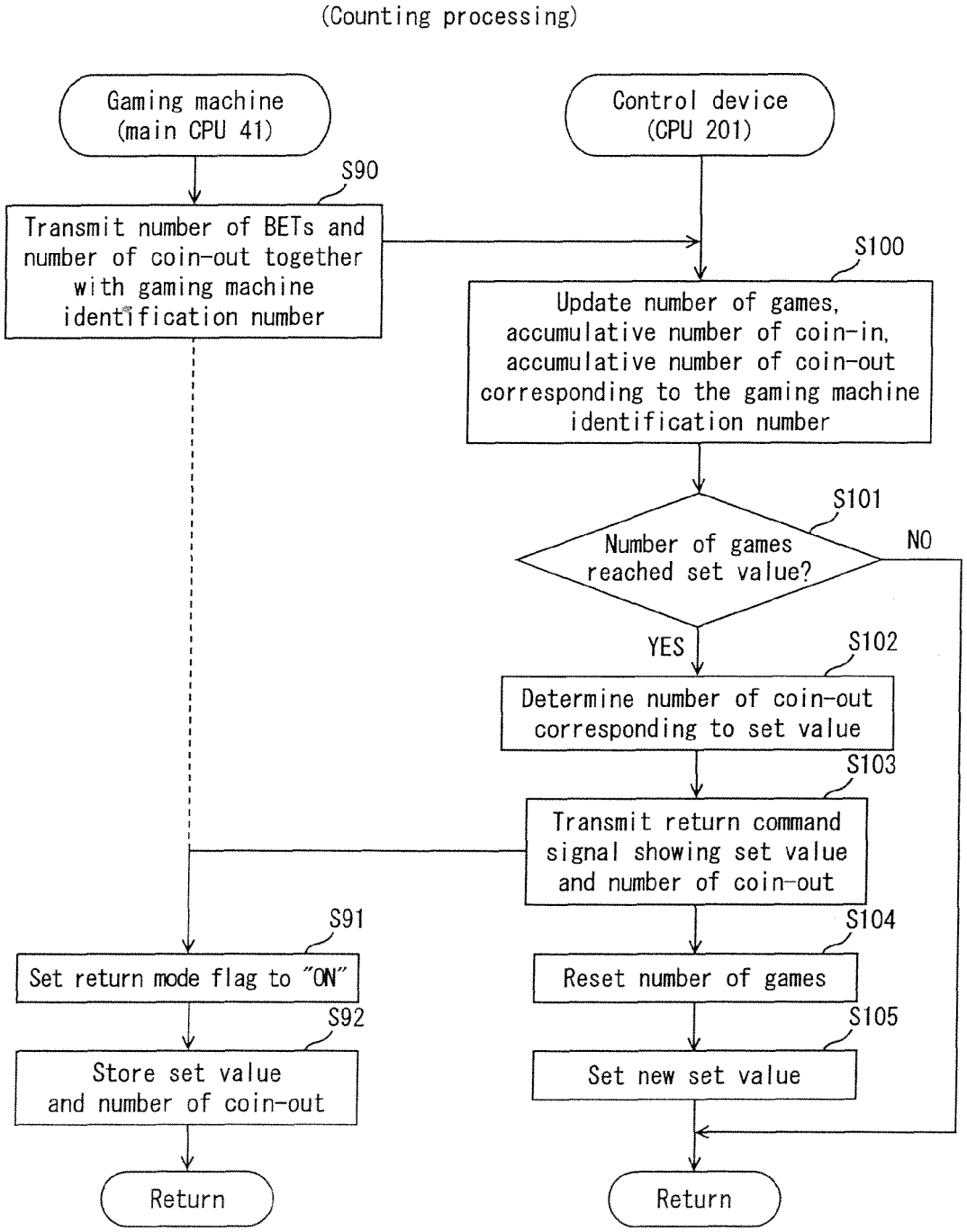
(Counting processing)
Gaming machine (main CPU 41)
Control device (CPU 201)
S90
Transmit number of BETs and number of coin-out together with gaming machine identification number
S100
Update number of games, accumulative number of coin-in, accumulative number of coin-out corresponding to the gaming machine identification number
S101
Number of games reached set value?
NO
YES
S102
Determine number of coin-out corresponding to set value
S103
Transmit return command signal showing set value and number of coin-out
S91
Set return mode flag to "ON"
S92
Store set value and number of coin-out
S104
Reset number of games
S105
Set new set value
Return
Return

Fig. 22

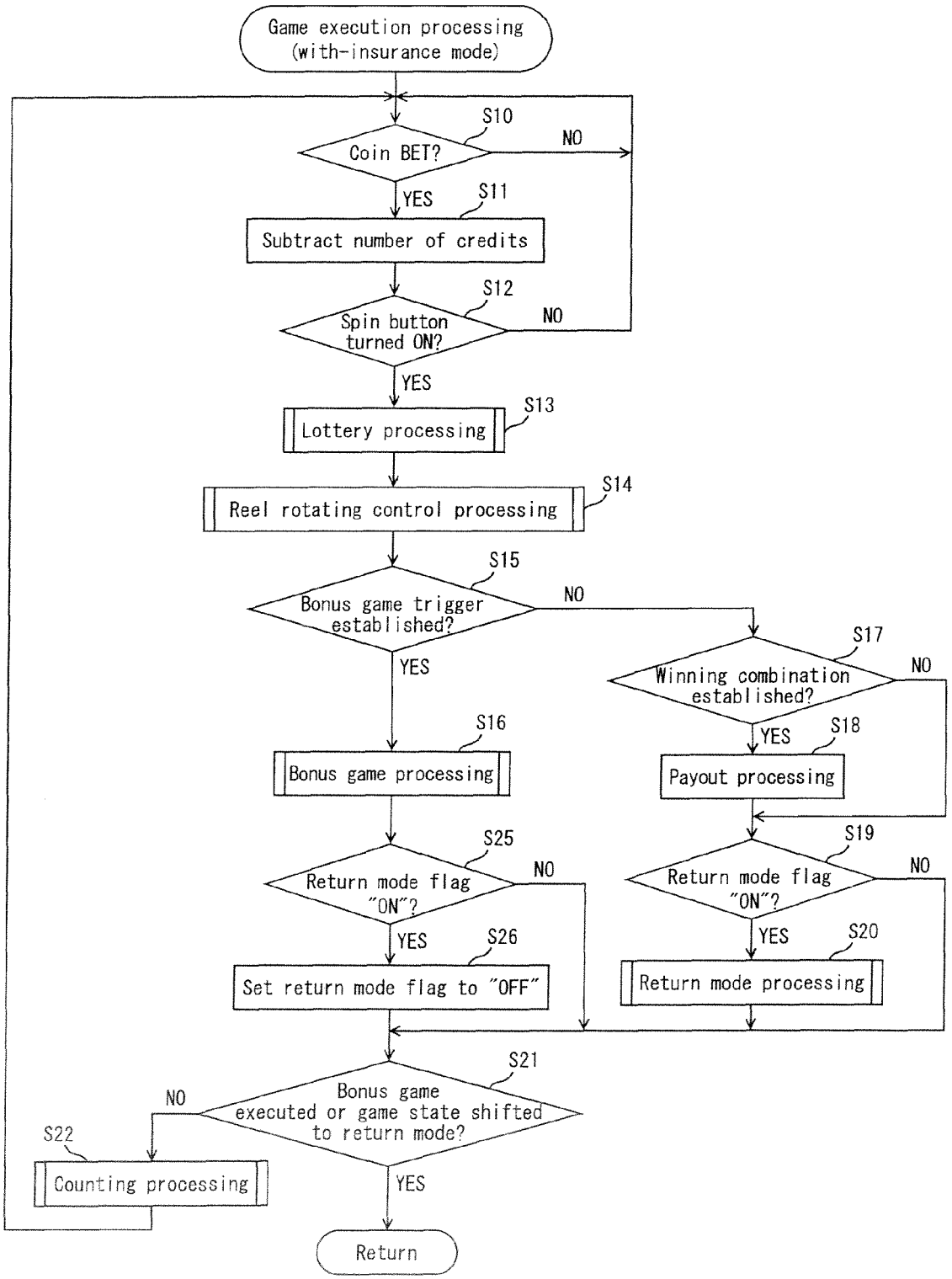
Game execution processing (with-insurance mode)
S10
Coin BET?
NO
YES
S11
Subtract number of credits
S12
Spin button turned ON?
NO
YES
S13
Lottery processing
S14
Reel rotating control processing
S15
Bonus game trigger established?
NO
YES
S16
Bonus game processing
S17
Winning combination established?
NO
YES
S18
Payout processing
S25
Return mode flag "ON"?
NO
YES
S26
Set return mode flag to "OFF"
S19
Return mode flag "ON"?
NO
YES
S20
Return mode processing
S21
Bonus game executed or game state shifted to return mode?
NO
YES
S22
Counting processing
Return

Fig. 23

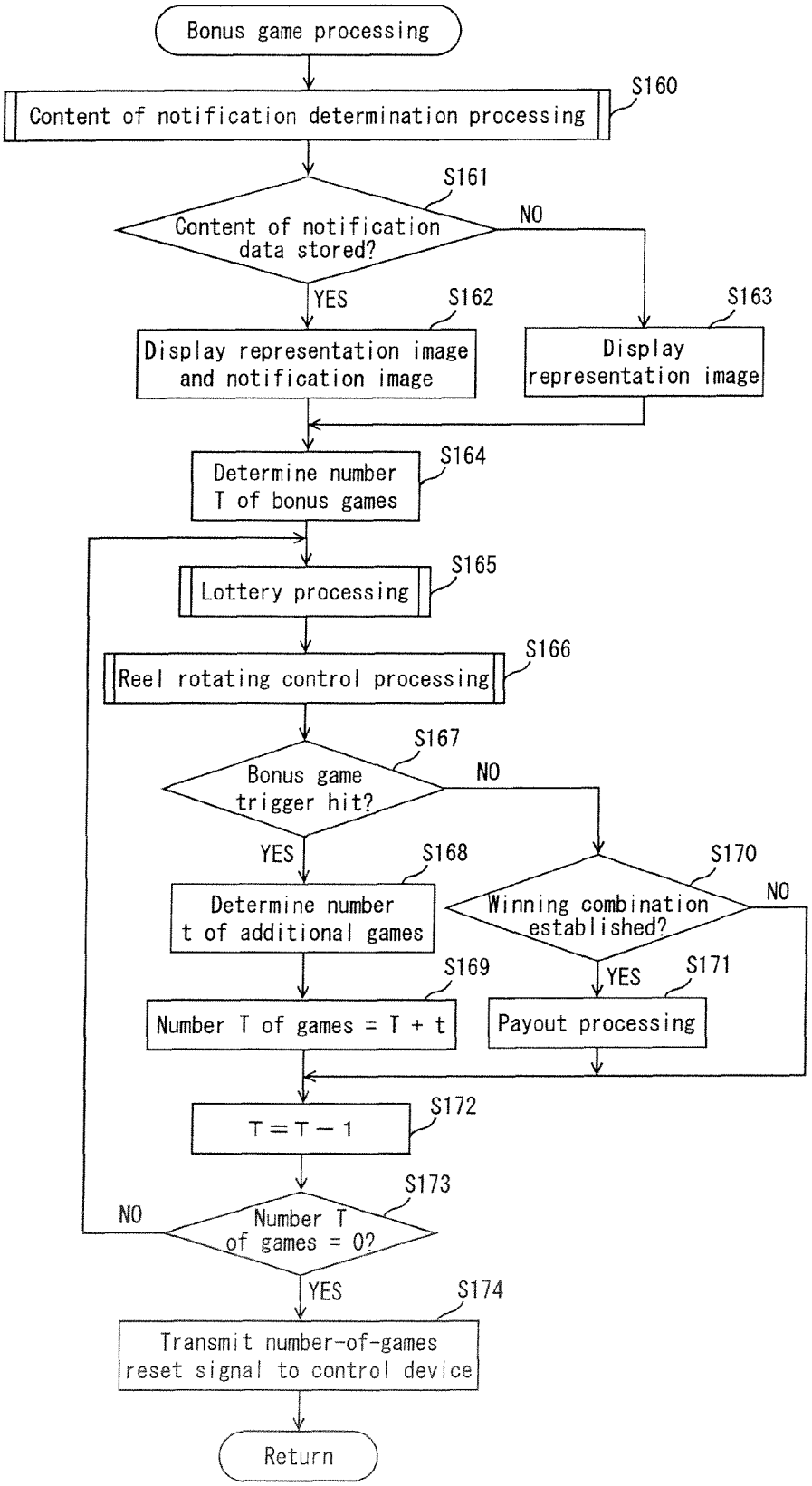
Bonus game processing
Content of notification determination processing
S160
Content of notification data stored?
S161
NO
YES
S162
Display representation image and notification image
S163
Display representation image
Determine number T of bonus games
S164
Lottery processing
S165
Reel rotating control processing
S166
Bonus game trigger hit?
S167
NO
YES
S168
Determine number t of additional games
S170
Winning combination established?
NO
YES
S171
S169
Number T of games = T + t
Payout processing
T = T − 1
S172
S173
NO
Number T of games = 0?
YES
S174
Transmit number-of-games reset signal to control device
Return

Fig. 24

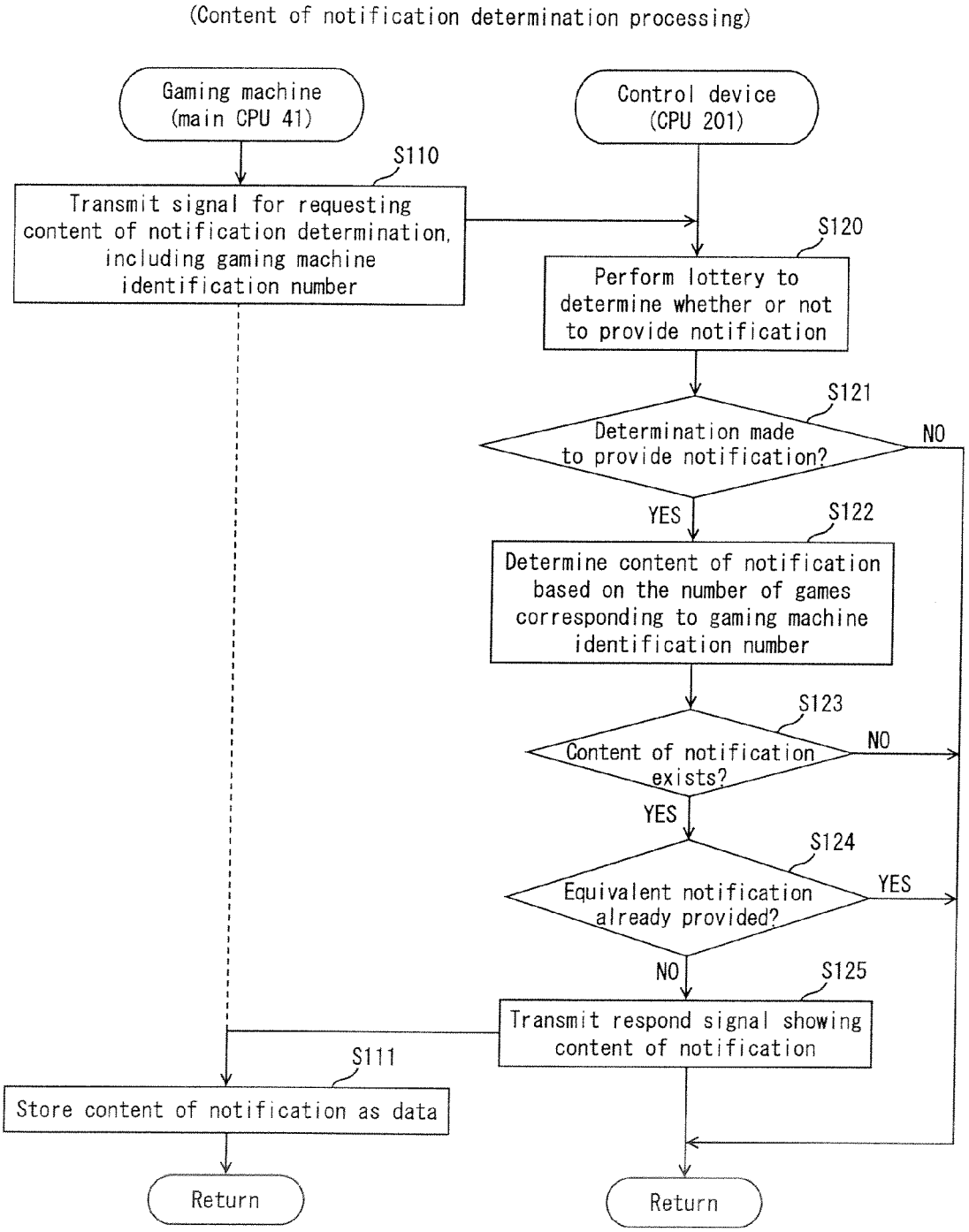
(Content of notification determination processing)
Gaming machine (main CPU 41)
Control device (CPU 201)
S110
Transmit signal for requesting content of notification determination, including gaming machine identification number
S120
Perform lottery to determine whether or not to provide notification
S121
Determination made to provide notification?
NO
YES
S122
Determine content of notification based on the number of games corresponding to gaming machine identification number
S123
Content of notification exists?
NO
YES
S124
Equivalent notification already provided?
YES
NO
S125
Transmit respond signal showing content of notification
S111
Store content of notification as data
Return
Return

Fig. 25

Number of games	Content of notification (number of games)
0～599	None
600～1199	600
1200～2399	1200
2400～	2400

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- JP 2003117053 A **[0005]**
- US 5820459 A **[0005]**