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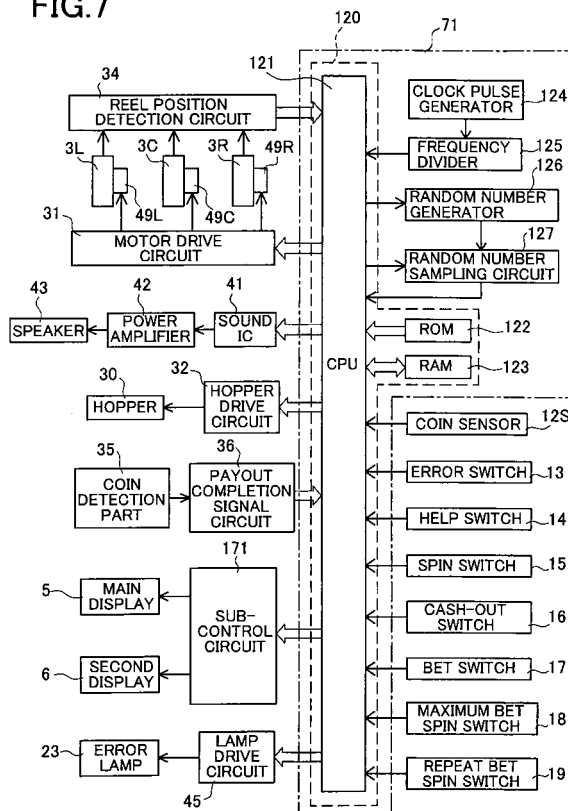
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(54) **Gaming machine**

(57) In the slot machine 1, it is provided the reels 3L, 3C, 3R for variably displaying plural kinds of symbols necessary for games and the main control circuit 71 which determines the symbols stopped along the pay line 8 based on the random number value sampled every game and conducts stop control of variable display of the reels 3L, 3C, 3R based on the determined result. The main control circuit 71 conducts stop control of variable display operation of more than two reels which variably display more than two symbols so that any more than two symbols constructing the symbol combination with the predetermined display mode simultaneously stop along the pay line 8, in a case that the symbol combination stopped along the pay line 8 becomes the predetermined display mode.

FIG.7



Description

BACKGROUND OF THE INVENTION

1. Field of the Invention

[0001] The present invention relates to a gaming machine, and in particular, relates to a gaming machine such as a slot machine, a Japanese pachislot machine, a video poker gaming machine, the gaming machine having a plurality of variable display devices for displaying a plural kinds of symbols necessary for a game and a controller such as a microcomputer for conducting stop control of the variable display devices.

2. Description of Related Art

[0002] Conventionally, as the gaming machines mentioned above, there exists, for example the slot machine. Game in the slot machine is started by inserting medals therein or betting medals within the number of medals credited in the slot machine, and thereafter by operating a start lever or spin button by a player. When the game in the slot machine is started, reels on which a plurality of symbols are described start to rotate and thereafter each of the reels is stopped in a predetermined order. Thereafter, one game is terminated.

[0003] Here, in the conventional gaming machine, a plurality of reels, which are rotating, are serially stopped (for example, the left reel is first stopped and remaining reels are stopped in a predetermined order). At that time, when all reels except for one reel are stopped and the stopped reels display symbols concerning with a winning combination and the remaining reel is rotating, game condition becomes so-called "reach mode". And as shown in Japanese Unexamined Patent Publication No. 2003-62177, it is generally well known a gaming machine that when game condition becomes the "reach mode", it is conducted a reach effect in which illumination of lamps and various display effects are done according to a pattern different from the ordinary pattern. Thereby, expectation of the player can be raised.

[0004] However, in the above mentioned gaming machine, since the timing at which each reel is stopped till the "reach mode" is realized and the stop order of the reels are constantly set, it lacks in interest and the player loses interest for the game.

[0005] And in the above slot machine, there is little room that the player technically intervenes in the game, in comparison with so-called Japanese Pachislot gaming machine or Japanese Pachinko gaming machine. Therefore, there is fear that the player loses interest for the game.

SUMMARY OF THE INVENTION

[0006] The present invention has been done to dissolve the above problems and has an object to provide

a gaming machine in which a reel stop timing variably changed, thereby interest of a player for games can be raised.

[0007] And the present invention has another object to provide a gaming machine in which a reel stop order is variably changed, thereby interest of a player for games can be raised.

[0008] Further, the present invention has a further another object to provide a gaming machine in which a player can intervene in the game with a phantom state, thereby interest of the player for games can be raised.

[0009] In order to accomplish the above object, according to one aspect of the present invention, it is provided a gaming machine comprising:

a plurality of variable display devices for variably displaying a plural kinds of symbols;
a stop symbol determination device for determining the symbol stopped along a predetermined line every the variable display device based on a random number value sampled every game; and
a stop control device for conducting stop control of variable display operation of the variable displaying devices based on a determination result determined by the stop symbol determination device;

wherein the stop control device has function to conduct the stop control of the variable display operation of more than two variable display devices variably displaying more than two symbols so that any more than two symbols are simultaneously stopped along the predetermined line, two symbols constructing a predetermined symbol combination with a specific display mode, in a case that the symbols determined by the stop symbol determination device constructs the predetermined symbol combination with the specific display mode.

[0010] According to the above constructed gaming machine, the stop control device conducts the stop control of the variable display operation of more than two variable display devices variably displaying more than two symbols so that any more than two symbols are simultaneously stopped along the predetermined line, two symbols constructing a predetermined symbol combination with a specific display mode. That is to say, the stop control device controls and stops the variable display devices so that the symbols constructing the symbol combination with the specific display mode, for example, so-called "reach mode" are simultaneously stopped. Therefore, expectation can be given to the player. And the stop control device controls and stops the variable display devices according to the stop order different from the ordinary stop order, for example, the stop order according to which the variable display devices are serially stopped from the left one to the right one. Thus, variation in stop states of the variable display devices can be realized, as a result, interest of the player for games can be raised.

[0011] And according to another aspect of the present

invention, it is provided a gaming machine comprising:

a plurality of variable display devices for variably displaying plural kinds of symbols;
 a stop symbol determination device for determining the symbol stopped along a predetermined line every variable display device based on a random number value sampled every game; and
 a stop control device for conducting stop control of variable display operation of the variable display devices based on a determination result determined by the stop symbol determination device;

wherein the stop control device has function to conduct the stop control of the variable display operation of the variable display devices according to a stop order different from an ordinary stop order in a case that a symbol combination stopped along the predetermined line and determined by the stop symbol determination device becomes a specific display mode.

[0012] According to the above constructed gaming machine, the stop control device controls and stops the variable display operation of the variable display devices according to a stop order different from an ordinary stop order in a case that a symbol combination stopped along the predetermined line and determined by the stop symbol determination device becomes a specific display mode. That is to say, in a case that the symbol combination becomes the specific display mode, for example, so-called "reach mode", the stop control device controls and stops the variable display devices according to the stop order according to which, for example, among three variable display devices the left one first stops, the right one next stops and the center one finally stops, different from the ordinary stop order according to which, for example, among three variable display devices the left one first stops, the center one next stops and the right one finally stops. Therefore, the player pays attention to the unexpected stop order of the variable display devices, thus interest for games can be raised. And since the stop control device controls and stops the variable display devices according to the stop order different from the ordinary stop order only when the symbol combination becomes the specific display mode, expectation can be given to the player.

[0013] Further, according to another aspect of the present invention, it is provided a gaming machine comprising:

a plurality of variable display devices for variably displaying plural kinds of symbols; and
 a stop symbol determination device for determining the symbol stopped along a predetermined line every variable display device based on a random number value sampled every game;
 a stop operation device capable for controlling and stopping variable display operation of any more than one variable display device among the variable

display devices based on operation by a player in a case that a symbol combination stopped along a predetermined line and determined by the stop symbol determination device becomes a specific display mode; and

a stop control device for conducting stop control of the variable display operation of the variable display devices based on a determination result determined by the stop symbol determination device when the player operates the stop operation device.

[0014] According to the above constructed gaming machine, in a case that a symbol combination stopped along a predetermined line and determined by the stop symbol determination device becomes a specific display mode, any more than one variable display device among the variable display devices becomes capable for being controlled and stopped based when the player operates the stop operation device. Therefore, in the gaming machine, the player can technically intervene in the game, thus it can give to the player real feeling to participate in the game. Accordingly, interest for games can be raised. And in the gaming machine, since the variable display operation of the variable display devices is unexpectedly controlled and stopped in comparison with a case that the variable display operation is automatically controlled and stopped, it can make the player pay attention to the unexpected variable display operation of the variable display devices. Further, in the gaming machine, only in a case that the symbol combination becomes the specific display mode, the variable display operation of more than one variable display device becomes capable for being controlled and stopped by the operation of the stop operation device by the player. Therefore, expectation can be given to the player.

[0015] The above and further objects and novel features of the invention will more fully appear from the following detailed description when the same is read in connection with the accompanying drawings. It is to be expressly understood, however, that the drawings are for purpose of illustration only and not intended as a definition of the limits of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

[0016] The accompanying drawings, which are incorporated in and constitute a part of this specification illustrate embodiments of the invention and, together with the description, serve to explain the objects, advantages and principles of the invention.

[0017] In the drawings,

Fig. 1 is a perspective view of a slot machine according to the first embodiment,

Fig. 2 is an explanatory view showing a main display of the slot machine according to the first embodiment,

Fig. 3 is an explanatory view showing a second dis-

play of the slot machine according to the first embodiment,

Fig. 4 is an explanatory view showing symbol rows each of which is described on each of reels in the slot machine according to the first embodiment,

Fig. 5 is an explanatory view showing a payout table utilized in the slot machine according to the first embodiment,

Fig. 6 is an explanatory view showing a probability lottery table for each of the reels in the slot machine according to the first embodiment,

Fig. 7 is an electrical block diagram of the slot machine according to the first embodiment,

Fig. 8 is an explanatory view showing a predetermined display mode for each of the reels in the slot machine according to the first embodiment,

Fig. 9 is an explanatory view showing an example of variable display operation on the reels in the slot machine according to the first embodiment,

Fig. 10 is an explanatory view showing an example of variable display operation on the reels in the slot machine according to the first embodiment,

Fig. 11 is an explanatory view showing an example of variable display operation on the reels in the slot machine according to the first embodiment,

Fig. 12 is an explanatory view showing a simultaneous stop symbol selection lottery table utilized in the slot machine according to the first embodiment,

Fig. 13 is an electrical block diagram of a sub-control circuit in the slot machine according to the first embodiment,

Fig. 14 is an explanatory view showing an example of variable display operation on the reels in the slot machine according to the first embodiment,

Fig. 15 is an explanatory view showing an example of variable display operation in a bonus game displayed on the second display of the slot machine according to the first embodiment,

Fig. 16 is an explanatory view showing an example of variable display operation in a bonus game displayed on the second display of the slot machine according to the first embodiment,

Fig. 17 is an explanatory view showing an example of variable display operation in a bonus game displayed on the second display of the slot machine according to the first embodiment,

Fig. 18 is a first flowchart showing an outline of gaming process in the slot machine according to the first embodiment,

Fig. 19 is a second flowchart showing an outline of gaming process in the slot machine according to the first embodiment,

Fig. 20 is an explanatory view showing an example of variable display operation on the reels in the slot machine according to the second embodiment,

Fig. 21 is an explanatory view showing an example of variable display operation on the reels in the slot machine according to the second embodiment,

Fig. 22 is an explanatory view showing an example of variable display operation on the reels in the slot machine according to the second embodiment,

Fig. 23 is an explanatory view of a stop order selection lottery table utilized in the slot machine according to the second embodiment,

Fig. 24 is a flowchart showing an outline of gaming process in the slot machine according to the second embodiment,

Fig. 25 is an explanatory view showing an example of variable display operation on the reels in the slot machine according to the third embodiment,

Fig. 26 is an explanatory view showing an example of variable display operation on the reels in the slot machine according to the third embodiment, and

Fig. 27 is a flowchart showing an outline of gaming process in the slot machine according to the third embodiment.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0018] Hereinafter, one example of the preferred first embodiment according to the present invention will be described with reference to the drawings.

[0019] As game media utilized in the gaming machine, coins, medals, tokens are generally used. Here, explanation of the gaming machine in which coins are utilized will be done.

[construction of the gaming machine]

[0020] The slot machine 1 according to one first embodiment is shown in Fig. 1, which is a perspective view of the slot machine 1.

[0021] In front of an under side of a cabinet 2 which wholly constructs the gaming machine 1, a main display 5 is arranged at the center of which rectangular display windows 4L, 4C, 4R are formed. At the center of each of the windows 4L, 4C, 4R, one pay line 8 is described.

[0022] At the front side of the slot machine 1 in the cabinet 2, three reels 3L, 3C, 3R are rotatably supported. On an outer periphery of each of the reels 3L, 3C, 3R, a symbol row constructed from a plural kinds of symbols is described. The reels 3L, 3C, 3R are arranged along a horizontal line and each reel functions as a variable display device.

[0023] At the under side of the cabinet 2 in the slot machine 1, a main display 5 is provided in front of the reels 3L, 3C, 3R, the main display 5 being utilized for digitally displaying images of slot games and bonus games. The slot games and bonus games are described hereinafter. And at an upper side of the cabinet 2, a second display 6 for digitally displaying the image of the bonus game is provided. These main display 5 and second display 6 are constructed from LCD. The main display and the second display will be described hereinafter.

[0024] Although the main display 5 and the second display 6 in the slot machine 1 of the first embodiment are constructed from the liquid crystal display device (LCD), and one main display 5 and one second display 6 are utilized, the present invention is not limited to this. For example, as the main display 5 and the second display 6, CRT or plasma display may be utilized. And such displays 5, 6 may be constructed from one or plural display devices.

[0025] On a display area 5a of the main display 5, there are formed two display areas, one of which is a PAID meter 7 for indicating payouts paid out when winning combinations are got in the slot game which is a base game in the slot machine 1, and the other of which is a BET meter 9 for indicating coin numbers which can be betted in one game. And on the display area 5a of the main display 5 and at the upper of the display window 4R, a CREDIT meter 10 indicating coin number presently stored in the slot machine 1 is displayed.

[0026] In a control panel 11 arranged under the main display 5, it is formed a coin insertion slot 12 into which a player inserts coins.

[0027] And on the control panel 11, a spin switch 15 for starting rotation of the reels 3L, 3C, 3R is arranged. Further, on the control panel 11, there are provided an error switch 13, a help switch 14, a cash-out switch 16, a BET switch 17, a maximum BET switch 18 and a repeat BET spin switch 19.

[0028] Here, the error switch 13 is a switch pressed when troubles occur in the slot machine 1, thereby an error lamp 23 arranged on a ceiling portion of the cabinet 2 is turned on. Thus, an attendant in a game arcade is called.

[0029] The help switch 14 is pressed when the player cannot understand gaming method in the slot machine 1 or game contents of the bonus game, thereby explanation thereof is displayed on the sub-display 6.

[0030] The cash-out switch 16 is a switch which is utilized to pay out coins stored in the slot machine 1 to a coin tray 21 from a payout chute 20.

[0031] The BET switch 17 is a switch which is utilized when coins stored in the slot machine 1 are betted for the game. Every the BET switch 17 is pressed one time, one coin is betted. Here, the coin number betted for one game is called the "BET number".

[0032] The maximum BET switch 18 is a switch to bet a maximum number of coins which can be betted for one game, for example, four coins for the game. When the maximum BET switch 18 is pressed, the reels 3L, 3C, 3R are started to rotate.

[0033] The repeat BET spin switch 19 is a switch to bet for the game the same number of coins as the BET number in the previous game and to start rotation of the reels 3L, 3C, 3R.

[0034] And at the upper side of the coin tray 21, which becomes a receiving dish for coins paid out from the payout chute 20, there are formed speaker grills 22 to output toward outside of the cabinet 2 sounds emitted

from speakers 43 (see Fig. 9) installed in the cabinet 2.

[main display and sub-display]

5 **[0035]** With reference to Fig. 2, construction of the main display 5 will be described.

[0036] At the lower side of the cabinet 2 of the slot machine 1, the main display 5 is arranged, and at the upper side of the cabinet 2 of the slot machine 1, the second display 6 is arranged.

10 **[0037]** Fig. 2 is a sectional view showing the main display 5 and the reel 3C. The main display 5 is constructed from a picture sheet 53 formed from the transparent film material on which various pictures are printed, the picture sheet 53 being arranged inside of an acrylic resin plate 52 functioning as a protect cover, a liquid crystal display device 54 formed from a transparent liquid crystal display device in which transparent electrodes are arranged and a light guiding plate 36. The picture sheet 53, the liquid crystal display device 54 and the light guiding plate 36 are stacked with each other. And in front of the main display 5, it is arranged a touch panel 51 which detects coordinates corresponding to the contact area on which the player contacts.

25 **[0038]** And at the upper side and the lower side of the liquid crystal display device 54, liquid crystal backlights 292, 293 as illumination of the liquid crystal display device 54 are arranged. By turning on the liquid crystal backlights 292, 293, the player can clearly seen and recognize the image displayed on the liquid crystal display device 54.

30 **[0039]** At the inner upper side and the lower side of the main display 5, symbol illumination lamps 57, 58 for illuminating the symbols on the reels 3L, 3C, 3R are arranged. The symbol illumination lamps 57, 58 are controlled so as to turn on when electric power is supplied, thereby the symbols on the reels 3L, 3C, 3R can be clearly seen and recognized. As the symbol illumination lamps 57, 58, although cold cathode ray tubes are generally utilized, the present invention is not limited to this.

35 **[0040]** The pictures described on the picture sheet 53 are always seen and recognized by the player, in spite of effect control state in the slot machine 1. The liquid crystal display device 54 constructs the effect area of image not only in the slot game mentioned later but also in the bonus game.

40 **[0041]** Near the front inner side of the reels 3L, 3C, 3R, it is provided a lamp housing 62 in which reel back lamps (not shown) turned on to easily see and recognize the symbols are installed.

50 **[0042]** In Fig. 3, the sectional of the sub-display 6 is shown. Similar to the main display 5, the sub-display 6 is constructed from a picture sheet 63, a liquid crystal display device 64 and a light guiding plate 67, which are stacked with each other at the inner side of a transparent acrylic resin plate 65. And at the upper side and the lower side of the liquid crystal display device 64, liquid crystal backlights 296, 297 are provided. Since the reels are

not arranged behind the sub-display 6, symbol illumination lamps are not arranged.

[symbol rows]

[0043] In Fig. 4, it is shown symbol rows in each of which different kinds of symbols are arranged, the symbols being formed on the outer periphery of each reel 3L, 3C, 3R. The symbol row is constructed from plural kinds of symbols which are positioned at odd positions and plural blank symbols 92 positioned at even positions. To each symbol, a code number among 1 to 22 is attached and these code numbers are stored in a ROM 122 (see Fig. 9 mentioned later) as a data table. On each of the reels 3L, 3C, 3R, the "WILD" symbol 91 represented by the word "WILD", the "1BAR" symbol 100 represented by one "BAR", the "2BAR" symbol 93 represented by two "BAR"s, the "3BAR" symbol 94 represented by three "BAR"s and the "RED7" symbol 95 represented by the red numeral "7" are described. And on the reel 3L, the "map 1" symbol 96 which shows a part of the map is described. On the reel 3C, the "map 2" symbol 97 which shows another part of the map is described. Further, on the reel 3R, the "map 3" symbol 98, which includes a condor in a part of the map and completes one map picture with the "map 1" symbol 96 and the "map 2" symbol 97, is described. Further, on the reel 3R, the "map 4" symbol 99, which includes a gate in a part of the map and completes one map picture with the "map 1" symbol 96 and the "map 2" symbol 97, is described. Here, the map picture represents a treasure map and an item appearing in a treasure-hunting which is a theme of the slot machine 1. Thus, by representing things concerning with the theme as the symbols of the reels, the image of the theme is strongly effected, thereby interest of the player for games can be highly raised.

[0044] Fig. 5 shows a payout table displayed on the second display 6 when the slot game, which is the base game in the slot machine 1, is conducted. The payout table indicates how many coins are paid out corresponding to each of the winning combinations.

[0045] As game state in the first embodiment, there are two states, one of which is the slot game and the other of which is the bonus game as the secondary game. In the slot game, after coins are betted by pressing the BET switch 17, the reels 3L, 3C, 3R are started to rotate by depressing the maximum BST spin switch 18 or the repeat BET spin switch 19. And after a predetermined time is elapsed, the reels 3L, 3C, 3R are stopped in a predetermined order. At that time, if the symbol combination stopped along the pay line 8 corresponds to the predetermined symbol combination, that is, the winning combinations is won, coins are paid out to the player.

[0046] On the other hand, the bonus game is a game which occurs when the specific symbol combination, for example, the combination of the "map 1" symbol 96, the "map 2" symbol 97 and the "map 3" symbol 98 ("map

1-map 2-map 3") is stopped along the pay line 8. In the bonus game, more coins than coins obtained in the slot game are paid out to the player as the specific award. Hereinafter, the description "map 1-map 2-map 3" means a case that the "map 1" symbol, the "map 2" symbol and the "map 3" symbol are stopped along the pay line 8 which positions in the center of each of the display windows 4L, 4C, 4R.

[0047] In the slot game, the payouts will be described according to Fig. 5 when the symbol combinations stopped along the pay line 8 become the predetermined combinations. Here, when the reels 3L, 3C, 3R are stopped in the slot game, the symbol combination stopped along the pay line 8 is determined based on the probability lottery table (mentioned later) by utilizing the random number sampled every the game.

[0048] As shown in Fig. 5, in spite of kind of the "BAR, if any "BAR" of the "1BAR", the "2BAR" and the "3BAR" lines up along the pay line 8 when all reels 3L, 3C, 3R are stopped, five coins are paid out in a case that one coins is betted, ten coins are paid out in a case that two coins are betted and fifteen coins are paid out in a case that three or four coins are betted. Thus, the payout is given to the player.

[0049] And if three "1BAR"s are line up along the pay line 8 when all reels 3L, 3C, 3R are stopped, ten coins are paid out in a case that one coins is betted, twenty coins are paid out in a case that two coins are betted and thirty coins are paid out in a case that three or four coins are betted. Thus, the payout is given to the player.

[0050] Further, three "2BAR"s are line up along the pay line 8 when all reels 3L, 3C, 3R are stopped, twenty coins are paid out in a case that one coins is betted, forty coins are paid out in a case that two coins are betted and sixty coins are paid out in a case that three or four coins are betted. Thus, the payout is given to the player.

[0051] And if three "3BAR"s line up along the pay line 8 when all reels 3L, 3C, 3R are stopped, forty coins are paid out in a case that one coins is betted, eighty coins are paid out in a case that two coins are betted and one hundred and twenty coins are paid out in a case that three or four coins are betted. Thus, the payout is given to the player.

[0052] And if three "RED7" line up along the pay line 8 when all reels 3L, 3C, 3R are stopped, fifty coins are paid out in a case that one coins is betted, one hundred coins are paid out in a case that two coins are betted and two hundreds coins are paid out in a case that three or four coins are betted. Thus, the payout is given to the player.

[0053] And if three "WILD" line up along the pay line 8 when all reels 3L, 3C, 3R are stopped, one hundred coins are paid out in a case that one coins is betted, two hundreds coins are paid out in a case that two coins are betted and four hundreds coins are paid out in a case that three or four coins are betted. Thus, the payout is given to the player. Here, the "WILD" symbol has substitutational function for each symbol of the "1BAR." sym-

bol, the "2BAR" symbol, the "3BAR" symbol and the "RED7" symbol, which are mentioned above. For example, in the symbol combination "1BAR-1BAR-WILD", the "WILD" symbol substitutes for the "1BAR" and it concludes that the symbol combination "1BAR-1BAR-1BAR", that is, the winning combination "1BAR" is won.

[0054] And if the symbol combination "map 1-map 2-map 3" or "map 1-map 2-map 4" lines up along the pay line 8 when all reels 3L, 3C, 3R are stopped, two hundreds coins are paid out in a case that one coin is betted, four hundreds coins are paid out in a case that two coins are betted and one thousand coins are paid out in a case that three or four coins are betted. Thereafter, game condition shifts to the bonus game from the slot game, thereby there occurs a chance that the specific award is given to the player. That is to say, in each bonus game, there is probability that the player can get further more coins with high payout than those in the slot game by conducting the predetermined game play. Here, the bonus game will be described hereinafter.

[probability lottery table]

[0055] Next, with reference to Fig. 6, the probability lottery table for the reels 3L, 3C, 3R will be explained. The probability lottery table is a table utilized when the symbols which line up along the pay line 8 are determined at the time that all reels 3L, 3C, 3R are stopped in the slot game.

[0056] Fig. 6 shows the probability lottery table for the reels 3L, 3C, 3R to determine the symbols which line up along the pay line 8 when all reels 3L, 3C, 3R are stopped in a case that four coins are betted, that is, the bet number is four. Here, there exist another probability lottery tables in a case that the bet number is one ~ three although such tables are not shown.

[0057] In each of the probability lottery tables, it is indicated the range of the random number every symbol on each reel 3L, 3C, 3R which line up along the pay line 8. The concrete method to determine the symbol which line up along the pay line 8 by lottery is as follows. The CPU 21 (see Fig. 9) refers the random number value extracted from the predetermined random number range (for example, the range of 0 ~ 255) every each reel 3L, 3C, 3R with the probability lottery table shown in Fig. 6. Further, the CPU 21 judges that the extracted random number value lies in the random number range corresponding to which symbol and determines the symbol which line up along the pay line 8. For example, if the extracted random number value to determine the symbol on the left reel 3L lies in a range of 116 ~ 170, the symbol which line up along the pay line 8 when the left reel 3L is stopped becomes the "2BAR" symbol.

[0058] Here, in the first embodiment, although the lottery is done every each reel 3L, 3C, 3R and the symbol which line up along the pay line 8 is determined, the present invention is not limited to this. For example, at first the winning combination corresponding to the sym-

bol combination, that is, the internal winning combination may be determined and the symbol which line up along the pay line 8 may be determined according to the internal winning combination. That is to say, the slot machine 1 may have internal winning combination determination means to determine the winning combination based on the random number value sampled every game.

10 [construction of control system in the slot machine]

[0059] Fig. 7 shows circuitry construction including a main control circuit 71 for controlling game process operation in the slot machine 1, periphery device (actuator) connected to the main control circuit 71 and a sub-control circuit 171 for controlling the main display 5 and the sub-display 6 based on control instruction transmitted from the main control circuit 71.

[0060] The main control circuit 71 is mainly constructed from a microcomputer 120 arranged on a circuit board to which a circuit for sampling the random number. The microcomputer 120 includes the CPU 121 as a control device for conducting control operation according to a preset program and a ROM 122 and a RAM 123 which are memory means.

[0061] To the CPU 121, a clock pulse generator 124 for generating standard clock pulses, a frequency divider 125, a random number generator 126 for generating random numbers sampled and a random number sampling circuit 127 are connected. Here, as the means for sampling the random number, random number generation and sampling thereof may be executed by calculation through the CPU 121 in the microcomputer 120. In that case, the random number generator 126 and the random number sampling circuit 127 can be omitted, or the random number generator 126 and the random number sampling circuit 127 may be remained so as to back up the random number sampling operation.

[0062] In the ROM 122 of the microcomputer 120, a program for controlling game in the slot machine 1, a symbol table referred when the symbols lining up along the pay line 8 are determined in a case that all reels 3L, 3C, 3R are stopped, a winning symbol combination table referred after stop control of the reels 3L, 3C, 3R is done and thereafter the reels are stopped and a probability lottery table referred when the symbols lining up along the pay line 8 are determined in a case that all reels 3L, 3C, 3R are stopped, are stored.

[0063] And in the ROM 122 of the microcomputer 120, as mentioned later, it is stored a simultaneous stop symbol selection lottery table which is utilized when more than two reels, variable display operation of which is controlled and stopped, are selected among the reels 3L, 3C, 3R by the lottery, so that more than two symbols constructing a symbol combination with a predetermined display mode are simultaneously stopped along the pay line 8, in a case that the symbol combination stopped along the pay line 8 becomes a predetermined

display mode (for example, the "map 1-map 2-map 3") when all reels 3L, 3C, 3R are stopped. Further, various control commands to send to the sub-control circuit 171 are stored in the ROM 122. These commands include "demonstration display command", "all reels stop command", "bonus game start command" to start image display of the bonus game on the second display 6.

[0064] In the circuit of Fig. 7, as the actuator controlled its operation by a control signal from the microcomputer 120, stepping motors 49L, 49C, 49R for rotating the reels 3L, 3C, 3R respectively, a hopper 30 including a drive part to pay out and storing coins therein, the main display 5 and the sub-display 6, various lamps 60 (error lamp 23, symbol illumination lamp 57 and the like). These are connected to the CPU 121 through a motor drive circuit 31, a hopper drive circuit 32, a sub-control circuit 171, a lamp drive circuit 45, respectively. These drive circuits controls operation of each actuator by receiving control signals such as drive instructions output from the CPU 121.

[0065] The sub-control circuit 171 conducts effect control of the main display 5 and the second display 6 based on the control command from the microcomputer 120. The sub-control circuit 171 will be described hereinafter.

[0066] A power amplifier 42 functioning as an amplifier for amplifying sounds output from the speaker 43 is connected to the output terminal of the CPU 121 through a sound source IC 41. The sound source IC 41 controls the power amplifier 42 and the speaker 43 based on the control signal such as control command output from the CPU 121.

[0067] As the input signal generation means generating input signals necessary for the microcomputer 120 to generate control signals, a coin sensor 12S for detecting coins inserted in the coin insertion slot 12, an error switch 13, a help switch 14, a spin switch 15, a cash-out switch 16, a BET switch 17, a maximum BET spin switch 18, a repeat BET spin switch 19, a reel position detection circuit 34 supplying signals to detect positions of the reels 3L, 3C, 3R to the CPU 121 based on pulse signals output from a reel position detector (not shown) and a payout completion signal circuit 36 supplying a signal to detect coin payout completion to the CPU 121 in a case that the count number counted by a coin detection portion 35, which detects coins paid out from the hopper 30, reaches to the predetermined coin number data.

[0068] And if all reels are stopped and the symbol combination stopped along the pay line 8 becomes the stop mode indicating realization of the winning combination, the CPU 121 supplies the payout command signal to the hopper drive circuit 32, thereby the hopper 30 pays out the predetermined number of coins. At that time, the coin detection portion 35 counts the number of coins paid out from the hopper 30 and when the counted number of coins reaches to the predetermined number, the coin payout completion signal is input to the CPU

121. Thereby, the CPU 121 stops drive of the hopper 30 through the hopper drive circuit 32 and coin payout process is finished.

[0069] Here, the main control circuit 71, the hopper 30 and the hopper drive circuit 32 constructs award providing means for providing award to the player when the symbol combination determined by stop symbol determination means and stopped along the pay line 8 becomes the predetermined display mode.

[0070] In the circuit of Fig. 7, the random number generator 126 generates random numbers within a predetermined value range and the random number sampling circuit 127 samples the random number at a voluntarily timing after the spin switch 15, the maximum BET spin switch 18 and the repeat BET spin switch 19 are pressed. The sample random number is determined whether such random number belongs to which range in the probability lottery table stored in the storing part in the ROM 122. If the sampled random number belongs to a predetermined range, the stop symbol signal is generated, thereby control of the reels 3L, 3C, 3R mentioned later is conducted and the determined symbol is stopped along the pay line 8.

[0071] After the reels 3L, 3C, 3R are started to rotate, the number of drive pulses supplied to each of the stepping motors 49L, 49C, 49R are counted, and the counted number value is written in a predetermined area in the RAM 123. A reset pulse is obtained from each of the reels 3L, 3C, 3R every one rotation thereof and such reset pulses are input to the CPU 121 through the reel position detection circuit 34. The CPU 121 clears the counted number of drive pulses stored in the RAM 123 to "0" based on the reset pulses obtained as mentioned. Thereby, in the RAM 123, the count number value corresponding to the rotational position of each of the reels 3L, 3C, 3R within one rotation thereof.

[0072] And in order to correspond the rotational position of each of reels 3L, 3C, 3R to the symbol, the symbol table is stored in the ROM 122. In this symbol table, by utilizing the rotational position generated on the basis of the above mentioned reset pulse as the standard, code number serially given every a predetermined rotation pitch of each of the reels 3L, 3C, 3R and symbol code representing the symbol provided every each code number are corresponded with each other.

[0073] Here, the main control circuit 71 including the CPU 121, the ROM 122, the clock pulse generator 124, the frequency divider 125, the random number generator 126 and the random number sampling circuit 127, constructs stop symbol determination means for determining the symbol stopped along the pay line 8 every the variable display device based on the random number value sampled every game.

[0074] And the main control circuit 71 including the CPU 121 and the ROM 122 constructs stop control means for stopping and controlling variable display operation of a plurality of the variable display devices based on a determination result by the stop symbol de-

termination means.

[0075] Further, in Th ROM 122, the winning symbol combination table is also stored. In the winning symbol combination table, the symbol combinations corresponding to the winning combinations, the coin payout number corresponding to the winning combinations and the winning judgement codes representing the winning combinations are corresponded. The winning symbol combination table is referred when variable display operation of the left reel 3L, the center reel 3C and the right reel 3R is controlled to stop and when the winning combination is confirmed after all reels are stopped.

[variable display operation of reels 3L, 3C, 3R]

[0076] Next, variable display operation of the reels 3L, 3C, 3R will be described. As mentioned, in the slot game, after coins are betted all reels 3L, 3C, 3R start to rotate based on a predetermined switch operation. Each of the reels 3L, 3C, 3R is stopped in a predetermined order after a predetermined time is elapsed. However, in the slot machine 1 of the first embodiment, in a case that the symbol combination stopped along the pay line 8 becomes a predetermined display mode shown in Fig. 8 when all reels 3L, 3C, 3R are stopped, variable display operation of two reels among the reels 3L, 3C, 3R is controlled and stopped so that any two symbols constructing a symbol combination with a predetermined display mode are simultaneously stopped along the pay line 8. Thereafter, variable display operation of the remaining one reel is controlled and stopped. Here, "variable display operation of two reels among the reels 3L, 3C, 3R is controlled and stopped so that two symbols constructing a symbol combination with a predetermined display mode are simultaneously stopped along the pay line 8" includes a case that the player can feel that variable display of the two reels is stopped substantially at the same time when seeing the reels. Therefore, such sentence includes a case that one reel is first stopped and thereafter the other reel is stopped.

[0077] With reference to Figs. 8 to 11, it will be described in detail a case that variable display operation of two reels is controlled and stopped so that any two symbols constructing a symbol combination with a predetermined display mode are simultaneously stopped along the pay line 8. Fig. 8 shows symbol combinations with a predetermined display mode in a case that variable display operation of two reels are controlled and stopped so that any two symbols constructing a symbol combination with a predetermined display mode are simultaneously stopped along the pay line 8.

[0078] Here, it is supposed that the symbol combination stopped at present time is determined as the symbol combination "map 1-map 2-any" ("any" means the symbol except for the map 1 symbol, the map 2 symbol and WILD symbol). And when coins are betted and the predetermined switch is operated, all reels 3L, 3C, 3R start to rotate as shown in Fig. 9. Here, the symbol combina-

tion stopped at present time corresponds to the predetermined display mode which is shown by No. 2 in Fig. 8. That is to say, the symbol to be stopped on the left reel 3L is the map 1 symbol, and the symbol to be stopped on the center reel 3C is the map 2 symbol. Therefore, as shown in Fig. 10, variable display operation of the left reel 3L and variable display operation of the center reel 3C are controlled and stopped so that the map 1 symbol stopped along the pay line 8 when the left reel 3L is stopped and the map 2 symbol stopped along the pay line 8 when the center reel 3C is stopped are simultaneously stopped. And after a predetermined time is elapsed, variable display operation of the right reel 3R is controlled and stopped (see Fig. 11).

[0079] As mentioned, in a case that the symbol combination is stopped with a predetermined display mode along the pay line 8, variable display operation of the reels 3L, 3C, 3R is controlled and stopped so that the symbols constructing the reach mode (for example, the stopped symbol on the left reel 3L is the map 1 symbol and the stopped symbol on the center reel 3C is the map 2 symbol) are simultaneously stopped. Thereby it can be given to the player expectation that game condition may shift to the bonus game and coins may be paid by the winning combination. As a result, interest of the player for games can be raised. And since variable display of all reel 3L 3C, 3R is controlled and stopped in the stop order different from the ordinary order according to which variable display operation of the reels 3L, 3C, 3R is serially stopped from the left reel, stop operation of the reels 3L, 3C, 3R can be changed, thereby interest of the player for games can be raised.

[0080] Here, in the first embodiment, although the symbols constructing the symbol combination with a predetermined display mode are limited to the map 1 symbol, the map 2 symbol, the map 3 symbol and the WILD symbol, the present invention is not limited to this. For example, the symbols constructing the symbol combination with a predetermined display mode may be the other symbols such as the RED 7 symbol, the 1BAR symbol, the 2BAR symbol or the 3BAR symbol.

[0081] And the main control circuit 71 constructing the stop control means has function to control and stop variable display operation of more than two variable display devices which variably display more than two symbols so that an more than two symbols constructing the symbol combination with a predetermined display mode are stopped along the pay line 8, in a case that the symbol combination stopped along the pay line 8 and determined by the stop symbol determination means becomes the predetermined display mode.

[simultaneous stop symbol selection lottery table]

[0082] Next, with reference to Fig. 12, simultaneous stop symbol selection lottery table will be described.

[0083] When all reels 3L, 3C, 3R are stopped, if the symbol combination stopped along the pay line 8 be-

comes the predetermined display mode (see Fig. 8), for example, the "map 1-map 2- map 3", any two symbols are selected among the map 1 symbol on the left reel 3L, the map 2 symbol on the center reel 3C and the map 3 symbol on the right reel 3R by the lottery. Here, the simultaneous stop symbol selection lottery table shown in Fig. 12 is utilized when any two symbols are selected among the map 1 symbol, the map 2 symbol and the map 3 symbol. And in the slot machine 1 of the first embodiment, two reels variably displaying the selected two symbols are controlled and stopped so that the selected symbols are simultaneously stopped. Here, "-" shown in the simultaneous stop symbol selection lottery table in Fig. 12 means that symbols are not selected.

[0084] When all reels 3L, 3C, 3R are stopped, if the symbol combination stopped along the pay line 8 becomes the predetermined mode, two symbols constructing the symbol combination with the predetermined display mode is selected as follows by the lottery. The concrete method to select two symbols will be described hereinafter.

[0085] At first, the CPU 121 extracts a random number within a predetermined range (for example, range of 0 ~ 255). And based on the extracted random number, the simultaneous stop symbol selection lottery table is referred shown in Fig. 12, and the symbol combination with the predetermined display mode is obtained. Thereafter, based on such symbol combination, it is selected that the symbol combination with the predetermined display mode belongs to which reel. For example, if the extracted random number lies in a range of 0 ~ 150, the selected two symbols correspond to the map 1 symbol on the left reel 3L and the map 3 symbol on the right reel 3R. Therefore, the left reel 3L and the right reel 3R are controlled and stopped so that the map 1 symbol on the left reel 3L and the map 3 symbol on the right reel 3R are simultaneously stopped.

[0086] As mentioned, if the symbol combination stopped along the pay line 8 becomes the predetermined display mode, more than two reels which are simultaneously stopped are changed according to the predetermined display mode. Therefore, by paying attention to the reel combination in which more than two symbols are simultaneously stopped, the player can concentrate for games and interest for games can be raised.

[0087] And as shown in Fig. 12, if the symbol combination stopped along the pay line 8 becomes the "map 1-map 2-map 3", the map 1 symbol on the left reel 3L and the map 3 symbol on the right reel 3R are simultaneously stopped with higher probability than the other case. Therefore, when the map 1 symbol on the left reel 3L and the map 3 symbol on the right reel 3R are simultaneously stopped, the symbol combination becomes the "map 1-map 2-map 3" with relatively probability. Thus, in a case that variable display operation of the left reel 3L and the right reel 3R is controlled and stopped so that the map 1 symbol on the left reel 3L and the map

3 symbol on the right reel 3R are simultaneously stopped, and the symbol combination "map 1-map 2-map 3" becomes a chance to shift to the bonus game, expectation of the player for the bonus game can be expanded and also interest for games can be raised.

[0088] Here, the table in Fig. 12 shows the simultaneous stop symbol selection lottery table in which the symbol combination with the predetermined display mode is only the "map 1-map 2-map 3". Of course, although the simultaneous stop symbol selection lottery table in which the symbols constructing the symbol combination with the predetermined display mode is the WILD symbol, its explanation will be omitted in the first embodiment.

[0089] And in the first embodiment, in a case that the symbol combination stopped along the pay line 8 becomes the display mode shown in Fig. 8 when all reels 3L, 3C, 3R are stopped, the reels 3L, 3C, 3R are stopped so that any two symbols always constructing the symbol combination with the predetermined display mode are simultaneously stopped along the pay line 8. The present invention is not limited to this. For example, even if the symbol combination stopped along the pay line 8 becomes the display mode shown in Fig. 8 when all reels 3L, 3C, 3R are stopped, there may be a case that the reels 3L 3C, 3R are controlled and stopped so that two symbols, one of which constructs the symbol combination with the predetermined display mode and the other of which does not construct the symbol combination with the predetermined display mode, are simultaneously stopped along the pay line 8.

[0090] Further, in the first embodiment, in a case that the symbol combination stopped along the pay line 8 becomes the predetermined display mode shown in Fig. 8 when all reels 3L, 3C, 3R are stopped, the reels 3L, 3C, 3R are stopped so that any two symbols constructing the symbol combination with the predetermined display mode are simultaneously stopped along the pay line 8. However, the present invention is not limited to this. For example, even if the symbol combination stopped along the pay line 8 becomes the display mode shown in Fig. 8 when all reels 3L, 3C, 3R are stopped, there may be a case that the reels 3L, 3C, 3R are stopped according to the stop order of the reel 3L, 3C, 3R after a predetermined time is elapsed, or all reels 3L, 3C, 3R are simultaneously stopped.

[0091] And the main control circuit 71 constructs the simultaneous stop symbol selection lottery means to select any more than two symbols constructing the symbol combination with the predetermined display mode by the lottery according to the predetermined display mode, if the symbol combination stopped along the pay line and determined by the stop symbol determination means becomes the predetermined display mode.

[electric construction of the sub-control circuit]

[0092] Next, the sub-control circuit 171 shown in Fig.

16 will be explained. The sub-control circuit 171 is constructed from the sub-CPU 221, the sub-ROM 222, the sub-ram 223 and the image display control circuit 224, 225. Here, between the main control circuit 71 and the sub-control circuit 171 and between the sub-CPU 221 and each of the actuators, IN port and OUT port are voluntarily arranged.

[0093] The sub-CPU 221 determines how to make the main display 5 and the sub-display 6 display based on a game information command transmitted from the main control circuit 71 and transmits data of display contents to the image display control circuits 224 and 225.

[0094] In the sub-ROM 222, a sequence program to utilized for transmission to the main control circuit 71, programs necessary for the slot game and the bonus game and various data are stored.

[0095] The sub-ram 223 is utilized for work area when these programs are executed.

[0096] The image display control circuit 224 has a video RAM (not shown) and controls display contents of the main display 5. The image display control circuit 225 has a video RAM (not shown) and controls display contents of the sub-display 6. In particular, the image display control circuit 225 controls the sub-display 6 so as to display the image of the bonus game based on a bonus game start command transmitted from the main control circuit 71.

[0097] Here, the main control circuit 71 constructs the secondary game start means to start the bonus game as the secondary game to give the specific award to the player, on condition that the symbol combination stopped along the predetermined pay line determined by the stop symbol determination means becomes the specific display mode.

[bonus game]

[0098] Next, with reference to Fig. 14 to 17, the bonus game will be described. The bonus game is mainly conducted on the second display 6 when the symbol combination stopped along the pay line 8 when all reels 3L, 3C, 3R are stopped becomes the predetermined display mode (for example, in the first embodiment, the "map 1-map 2-map 3", see Fig. 14).

[0099] In the slot game, if the symbol combination stopped along the pay line 8 when all reels 3L, 3C, 3R are stopped becomes the predetermined display mode, for example, the symbol combination "map 1-map 2-map 3" (see Fig. 14) in the first embodiment, as mentioned, the reels 3L, 3C, 3R are controlled and stopped so that two symbols constructing the "reach mode" (for example, the stopped symbol (map 1) on the left reel 3L and the stopped symbol (map 2) on the center reel 3C) are simultaneously stopped. Thereafter, variable display operation of the other remaining reel is controlled and stopped.

[0100] Next, after the predetermined demonstration image is displayed, the image to determine the BET

number 301 for the bonus game is displayed on the main display 5, as shown in Fig. 15. Next, based on contact operation of the touch panel 51 (see Fig. 2) by the player, the BET number 301 for the bonus game is determined.

Thereafter, the image shown in Fig. 16 is displayed on the second display 6. Here, the game in which a hero automatically climbs upward by using a rope is progressed. Every the hero climbs upward by using the rope a magnification indicated in a magnification meter 302 displayed at the right position becomes larger. Here, the BET number for the bonus game becomes larger the probability with which the bonus game is terminated is controlled so as to become higher at the stage of low magnification.

And As shown in Fig. 17, when the image that an exit appears is displayed, the bonus game is terminated. Thereafter, coins calculated by multiplying the BET number for the bonus game with the magnification are paid out to the player. For example, if the BET number for the bonus game is 50 as shown in Fig. 15 and the magnification is 20 as shown in Fig. 17, 1000 coins calculated by multiplying 50 with 20 are paid out to the player.

As mentioned, if any two symbols constructing the symbol combination with the predetermined display mode are simultaneously stopped along the pay line 8, probability with which the bonus game giving the specific award to the player is started becomes high (see Fig. 12). That is to say, since the reels 3L, 3C, 3R are differently operated from the ordinary case, it can be recognized by the player that the probability with which the bonus game is started becomes high. Therefore, expectation of the player for games can be highly raised.

[operation of the gaming machine]

[0103] Next, with reference to the flowcharts shown in Figs. 18 and 19, control operation by the CPU 121 in the main control circuit 71 will be described.

[0104] At first, as shown in Fig. 18, the CPU 121 judges whether the game start input is done or not in step 1 (abbreviated as "S1" herein after). Concretely, the CPU 121 judges whether or not input process of the start signal from the spin switch 15, the maximum BET spin switch 18 or the repeat BET spin switch 19 is done.

[0105] In process of S1, if it is judged that the input process of the start signal from the spin switch 15, the maximum BET spin switch 18 or the repeat BET spin switch 19 is not done, the CPU 121 repeats process of S1.

[0106] In process of S1, if it is judged that the input process of the start signal from the spin switch 15, the maximum BET spin switch 18 or the repeat BET spin switch 19 is done, the CPU 121 executes rotation process of the reels 3L, 3C, 3R (S2). Concretely, the CPU 121 sends a drive signal to the motor drive circuit 31 and rotates the reels 3L, 3C, 3R through the motor drive circuit 31. After this process is done, the CPU 121 shifts

procedure to S3.

[0107] Next, the CPU 121 executes random number sampling process and winning combination judgement process (S3). In the random number sampling process, the CPU 121 generates a signal to generate random number against the random number generator 126 and makes the random number generator 126 extract random number every each of the reels 3L, 3C, 3R. And the CPU 121 stores the extracted random number value in the predetermined area of the RAM 123. Next, in the winning combination judgement process, the CPU 121 judges every each of the reels 3L, 3C, 3R that the random number value stored in the RAM 123 belongs to which range in the probability lottery table stored in the ROM 122, thereby the CPU 121 determines the symbols stopped along the pay line 8 and stores the symbols in the RAM 123. Next, the CPU 121 judges that the determined symbols corresponds to which winning combination in the winning symbol combination table stored beforehand in the ROM 122.

[0108] Next, the CPU 121 judges whether or not the symbol combination stopped along the pay line 8 is the predetermined display mode shown in Fig. 8 (S4).

[0109] In process of S4, it is judged that the symbol combination stopped along the pay line 8 is not the predetermined display mode (for example, the symbol combination "WILD-RED7-RED7" which is not shown in Fig. 8), the CPU 121 conducts stop process of the left reel 3L (S5). In this process, the CPU 121 sends to the motor drive circuit 31 a signal to control and stop variable display operation of the left reel 3L corresponding to the stop symbols determined in process of S3, and the motor drive circuit 31 stops the left reel 3L through the stepping motor 49L after a predetermined time is elapsed. After this process is done, the CPU 121 shifts procedure to S6.

[0110] Next, the CPU 121 conducts stop process of the center reel 3C (S6). In this process, the CPU 121 sends to the motor drive circuit 31 a signal to control and stop variable display operation of the center reel 3C corresponding to the stop symbols determined in process of S3, and the motor drive circuit 31 stops the center reel 3C through the stepping motor 49C after a predetermined time is elapsed. After this process is done, the CPU 121 shifts procedure to S7.

[0111] Next, the CPU 121 conducts stop process of the right reel 3R (S7). In this process, the CPU 121 sends to the motor drive circuit 31 a signal to control and stop variable display operation of the right reel 3R corresponding to the stop symbols determined in process of S3, and the motor drive circuit 31 stops the right reel 3R through the stepping motor 49R after a predetermined time is elapsed. After this process is done, the CPU 121 shifts procedure to S11.

[0112] In process of S4, if it is judged that the symbol combination stopped along the pay line 8 is the predetermined display mode, the CPU 121 selects two symbols simultaneously stopped among a plurality of sym-

bols constructing the predetermined display mode by the lottery (S8). For example, in this process, the CPU 121 selects two symbols simultaneously stopped by referring the extracted random number value with the simultaneous stop symbol selection lottery table shown in Fig. 12. Concretely, the CPU 121 extracts the random number from a predetermined random number range (for example, range of 0 ~ 255). And if the predetermined display mode is the "map 1- map 2-map 3" and the extracted random number value lies in a range of 151 ~ 200, the selected two symbols become the "map 2" on the center reel 3C and the "map 3" on the right reel 3R (see Fig. 12). After this process is done, the CPU 121 shifts procedure to S9.

[0113] As mentioned, if the symbol combination stopped along the pay line 8 becomes the predetermined display mode, two symbols simultaneously stopped are selected from a plurality of symbols constructing the predetermined display mode. Therefore, combination of more than two reels simultaneously stopped is variously changed. Thus, combination of more than two reels simultaneously stopped can be appealed to the player, as a result, it can make the player concentrate for the game without losing interest of the player.

[0114] Next, the CPU 121 conducts stop process of two reels so that the selected two reels are simultaneously stopped (S9). In this process, the CPU 121 controls and stops variable display operation of two reels variably displaying two symbols so that two symbols selected in S8 are simultaneously stopped. For example, if two symbols selected in S8 are the "map 2" on the center reel 3C and the "map 3" on the right reel 3R, the CPU 121 sends to the motor drive circuit 31 a signal to control and stop variable display operation of the center reel 3C and the right reel 3R and controls and stops the center reel 3C and the right reel 3R so that the "map 2" on the center reel 3C and the "map 3" on the right reel 3R are simultaneously stopped through the stepping motors 49C and 49R. After this process is done, the CPU 121 shifts procedure to S10.

[0115] Next, the CPU 121 conducts stop process of the remaining reel not stopped yet (S10). In this process, the CPU 121 controls and stops variable display operation of the reel different from two reels controlled and stopped in S9. For example, in S9, if the center reel 3C and the right reel 3R are stopped so that the "map 2" on the center reel 3C and the "map 3" on the right reel 3R are simultaneously stopped, the remaining reel 3L which is rotating is stopped. After this process is done, the CPU 121 shifts procedure to S11.

[0116] As mentioned, if the symbol combination corresponds to the symbol combination with the predetermined display mode, for example, the "reach mode" (for example, the stop symbol of the left reel 3L is the "map 1" and the stop symbol of the center reel 3C is the "map 2"), variable display operation of the reels 3L, 3C, 3R is controlled and stopped so that the symbols constructing

the "reach mode" are simultaneously stopped. Therefore, it can be given to the player expectation that game condition may shift to the bonus game or coins may be paid out by the winning combination. As a result, interest of the player for games can be raised. And since variable display of all reel 3L 3C, 3R is controlled and stopped in the stop order different from the ordinary order according to which variable display operation of the reels 3L, 3C, 3R is serially stopped from the left reel, stop operation of the reels 3L, 3C, 3R can be changed, thereby interest of the player for games can be raised.

[0117] Next, the CPU 121 judges whether or not the winning combination is won at present time based on the result in the winning combination judgement process in S3.

[0118] In S11, if it is judged that the winning combination is not won at present time, the CPU 121 returns procedure to S1.

[0119] In S11, if it is judged that the winning combination is won at present time, the CPU 121, as shown in Fig. 19, the CPU 121 conducts payout process of coins (S12). In this process, the CPU 121 sends to the hopper drive circuit 32 a coin payout signal corresponding to the kind of the winning combination, thereby a predetermined number of coins are paid out from the hopper 30. At that time, the coin detection part 35 counts number of coins paid out from the hopper 30 and the payout completion signal circuit 36 outputs the payout completion signal to the CPU 121 at the time that the counted value reaches to the predetermined coin number data. Thereby, the CPU 121 stops drive of the hopper 30 through the hopper drive circuit 32 and coin payout process is terminated.

[0120] Next, the CPU 121 judges whether or not the symbol combination stopped along the pay line 8 is the predetermined display mode (S13). Concretely, the CPU 121 judges whether or not the symbol combination stopped along the pay line 8 is the symbol combination "map 1- map 2- map 3" which gives a chance to shift the slot game to the bonus game.

[0121] In S13, if it is judged that the symbol combination stopped along the pay line 8 is not the predetermined display mode, the CPU 121 returns procedure to S1 (S14).

[0122] In S13, if it is judged that the symbol combination stopped along the pay line 8 is the predetermined display mode, the CPU 121 executes bonus game start process (S15). In this process, the CPU 121 sends the bonus game start command to the sub-control circuit 171. In the sub-control circuit 171 to which the bonus start command is sent, the image of the bonus game is displayed on the second display 6. After this process is done, the CPU 121 returns procedure to S1.

[0123] As mentioned, if any more than two symbols constructing the symbol combination with the predetermined display mode are simultaneously stopped along the pay line 8, the probability with which the bonus game giving the specific award to the player is started be-

comes high. That is to say, since the reels 3L, 3C, 3R are stopped in the stop order different from the ordinary stop order, it can be recognized by the player that the probability with which the bonus game is started becomes high. Therefore, expectation of the player for games can be highly raised.

[0124] Further, the slot machine according to the second embodiment of the present invention will be described. Here, the slot machine of the second embodiment has substantially the same construction as that of the slot machine of the first embodiment already mentioned in the above. Therefore, the second embodiment will be described hereinafter by only taking the characteristic construction of the second embodiment into consideration. Here, as for the same elements, members as in the slot machine of the first embodiment, the same numbers, marks and the like are added.

[0125] At first, in the ROM 122 of the microcomputer 120 provided in the slot machine 1 of the second embodiment, as mentioned later, it is stored a stop order selection lottery table which is utilized when a stop order of the reels 3L, 3C, 3R is selected by the lottery, the stop order being different from an ordinary order according to which, for example, the reels are stopped in the order of the left reel 3L, the center reel 3C and the right reel 3R, in a case that the symbol combination stopped along the pay line 8 becomes a predetermined display mode (for example, the "map 1-map 2-map 3) when all reels 3L, 3C, 3R are stopped.

[variable display operation of reels 3L, 3C, 3R]

[0126] In the slot machine 1 of the second embodiment, in a case that the symbol combination stopped along the pay line 8 becomes a predetermined display mode shown in Fig. 8 when all reels 3L, 3C, 3R are stopped, variable display operation of the reels 3L, 3C, 3R is controlled and stopped so that the reels 3L, 3C, 3R are stopped in the stop order, for example, in the stop order of the left reel 3L, the right reel 3R and the center reel 3C, differently from the ordinary stop order according to which, for example, the left reel 3L, the center reel 3C and the right reel 3R are stopped in this order.

[0127] With reference to Figs. 8, 9, 20 to 22, it will be described in detail a case that variable display operation of the reels 3L, 3C, 3R is controlled and stopped according to the stop order different from the ordinary stop order. Fig. 8 shows symbol combinations with a predetermined display mode in a case that variable display operation of two reels are controlled and stopped so that any two symbols constructing a symbol combination with a predetermined display mode are stopped along the pay line 8.

[0128] Here, it is supposed that the symbol combination stopped at present time is determined as the symbol combination "map 1-map 2-any" ("any" means the symbol except for the map 1 symbol, the map 2 symbol and

WILD symbol). And when coins are betted and the predetermined switch is operated, all reels 3L, 3C, 3R start to rotate as shown in Fig. 9. Here, the symbol combination stopped at present time corresponds to the predetermined display mode which is shown by No. 2 in Fig. 8. That is to say, the symbol to be stopped on the left reel 3L is the map 1 symbol, and the symbol to be stopped on the center reel 3C is the map 2 symbol. According to the ordinary stop order, as shown in Fig. 20, variable display operation of the left reel 3L is first controlled and stopped, thereafter variable display operation of the center reel 3C and the right reel 3R is controlled and stopped in this stop order. Thus, the reels 3L, 3C and 3R are stopped according to this stop order. However, if the symbols to be stopped corresponds to the predetermined display mode, variable display operation of the reels 3L, 3C, 3R is controlled and stopped (see Fig. 22) so that, for example shown in Fig. 21, the left reel 3L is first stopped, thereafter variable display operation of the right reel 3R is controlled and stopped and finally variable display operation of the center reel 3C is controlled and stopped, according to the stop order different from the ordinary stop order.

[0129] And in the second embodiment, the main control circuit 71 constructing the stop control means has function to control and stop variable display operation of plural variable display devices according to the stop order different from the ordinary stop order, in a case that the symbol combination stopped along the pay line 8 and determined by the stop symbol determination means becomes the predetermined display mode.

[stop order selection lottery table]

[0130] Next, with reference to Fig. 23, a stop order selection lottery table will be described.

[0131] When all reels 3L, 3C, 3R are stopped, if the symbol combination stopped along the pay line 8 becomes the predetermined display mode (see Fig. 8), for example, the "map 1-map 2-map 3", the left reel 3L, the center reel 3C and the right reel 3R are stopped according to the stop order different from the ordinary stop order. At that time, the stop order of variable display operation of the reels 3L, 3C, 3R is selected by the lottery according to the predetermined display mode. The table which is referred when such selection is done is the stop order selection lottery table shown in Fig. 23. And in the slot machine 1 of the second embodiment, variable display operation of the reels 3L, 3C, 3R is controlled and stopped according to the selected stop order. Here, "-" shown in the stop order selection lottery table shown in Fig. 23 means that such orders are not selected.

[0132] When all reels 3L, 3C, 3R are stopped, if the symbol combination stopped along the pay line 8 becomes the predetermined mode, one stop order of the reels 3L, 3C, 3R is selected according to the predetermined display mode among plural stop orders by the lottery. The concrete method to select one stop order will

be described hereinafter.

[0133] At first, the CPU 121 extracts a random number within a predetermined range (for example, range of 0 ~ 255). And based on the symbol combination of the predetermined display mode and the extracted random number, the stop order of the reels 3L, 3C, 3R is determined with reference to the stop order selection table shown in Fig. 23. For example, if the extracted random number lies in a range of 151 ~ 175 and the symbol combination to be stopped along the pay line 8 is the "map 1-map 2-map 3" when all reels 3L, 3C, 3R are stopped, variable display operation of the reels 3L, 3C, 3R is controlled and stopped according to the stop order of the center reel 3C, the right reel 3R and the left reel 3L.

[0134] As mentioned, if the symbol combination stopped along the pay line 8 becomes the predetermined display mode, the stop order of the reels 3L, 3C, 3R is selected by the lottery. Therefore, since the stop order of the reels 3L, 3C, 3R is made different every one game, the player becomes to pay attention to the stop order of the reels 3L, 3C, 3R. Thus, the player can concentrate for games and interest for games can be raised.

[0135] And as shown in Fig. 23, if the symbol combination stopped along the pay line 8 becomes the "map 1-map 2-map 3", variable display operation of the reels 3L, 3C, 3R is controlled and stopped according to the stop order of the left reel 3L, the right reel 3R and the center reel 3C with higher probability than a case that variable display operation of the reels 3L, 3C, 3R is controlled and stopped according to the other stop order. Therefore, if the stop order of the reels 3L, 3C, 3R is the stop order of the left reel 3L, the right reel 3R and the center reel 3C, the symbol combination stopped along the pay line 8 becomes the "map 1-map 2-map 3" with relatively probability. Thus, in a case that variable display operation is controlled and stopped according to the stop order of the left reel 3L and the right reel 3R, and the symbol combination "map 1-map 2-map 3" becomes a chance to shift to the bonus game, expectation of the player for the bonus game can be expanded and also interest for games can be raised.

[0136] Here, the table in Fig. 23 shows the stop order selection lottery table in which the symbol combination with the predetermined display mode is only the "map 1-map 2-map 3". Of course, although the stop order selection lottery table in which the symbols constructing the symbol combination with the predetermined display mode is the WILD symbol, its explanation will be omitted in the second embodiment.

[0137] And in the second embodiment, in a case that the symbol combination stopped along the pay line 8 becomes the display mode shown in Fig. 8 when all reels 3L, 3C, 3R are stopped, the left reel 3L, the center reel 3C and the right reel 3R are stopped according to the stop order different from the ordinary order. The present invention is not limited to this. For example, even if the symbol combination stopped along the pay line 8 becomes the display mode shown in Fig. 8 when

all reels 3L, 3C, 3R are stopped, there may be a case that the reels are stopped according to the ordinary stop order of the left reel 3L, the center reel 3C and the right reel 3R.

[0138] Further, in the second embodiment, in a case that the symbol combination stopped along the pay line 8 becomes the predetermined display mode shown in Fig. 8 when all reels 3L, 3C, 3R are stopped, variable display operation of the reels 3L, 3C, 3R is controlled and stopped according to the stop order so that the "reach mode" is always realized. However, the present invention is not limited to this. For example, there may be a case that variable display operation of the reels 3L, 3C, 3R is controlled and stopped according to the stop order that the "reach mode" is not realized.

[0139] And the main control circuit 71 constructs the stop order storing means for storing a plurality of stop orders of plural variable display devices.

[0140] And the main control circuit 71 constructs the stop order selection lottery means for selecting one stop order of plural variable display devices among a plurality of stop orders of plural variable display devices stored in the stop order storing means by the lottery corresponding to the predetermined display mode, in a case that the symbol combination stopped along the pay line and determined by the stop symbol determination means becomes the predetermined display mode.

[0141] When the bonus game is conducted in the slot game 1 of the second embodiment, if the symbol combination stopped along the pay line 8 when all reels 3L, 3C, 3R are stopped becomes the predetermined display mode, for example, the symbol combination "map 1-map 2- map 3" (see Fig. 14) in the second embodiment, as mentioned, variable display operation of the reels 3L, 3C, 3R is controlled and stopped according to the stop order different from the ordinary stop order.

[0142] As mentioned, if variable display operation of the reels 3L, 3C, 3R is controlled and stopped according to the stop order different from the ordinary order, probability with which the bonus game giving the specific award to the player is started becomes high (see Fig. 23). That is to say, since the reels 3L, 3C, 3R are controlled and stopped according to the stop order different from the ordinary order, it can be recognized by the player that the probability with which the bonus game is started becomes high. Therefore, expectation of the player for games can be highly raised.

[operation of the gaming machine]

[0143] Next, with reference to the flowchart shown in Fig. 24, control operation by the CPU 121 in the main control circuit 71 of the second embodiment will be described. Here, control operation by the CPU 121 is almost same as that in the first embodiment. That is to say, in Fig. 24, processes in S28 and S29 are provided instead of the processes in S8 to S10 in Fig. 18. The other processes are same in both Figs. 24 and 18. Fur-

ther, control operation by the CPU 121 in the second embodiment is conducted according to the flowchart shown in Fig. 19 after processes in Fig. 24 are done. Therefore, only processes in S28 and 29 shown in Fig. 24, such processes being characteristic to the second embodiment, will be described hereinafter.

[0144] In process of S4, if it is judged that the symbol combination stopped along the pay line 8 is the predetermined display mode, the CPU 121 selects the stop order of the reels by the lottery (S28). In this process, the CPU 121 selects one stop order among a plurality of stop orders of the reels 3L, 3C, 3R by the lottery with reference to the stop order selection lottery table shown in Fig. 23, based on the extracted random number value and the symbol combination determined in S23 (the symbol combination with the predetermined display order). Concretely, the CPU 121 extracts the random number from a predetermined random number range (for example, range of 0 ~ 255). And if the predetermined display mode is the "map 1- map 2-map 3" and the extracted random number value lies in a range of 176 ~ 200, the variable display operation of the reels 3L, 3C, 3R is controlled and stopped according to the stop order of the center reel 3C, the left reel 3L and the right reel 3R (see Fig. 23). After this process is done, the CPU 121 shifts procedure to S29.

[0145] As mentioned, if the symbol combination stopped along the pay line 8 becomes the predetermined display mode, the stop order of the reels 3L, 3C, 3R is selected by the lottery. Therefore, since the stop order of the reels 3L, 3C, 3R is differently changed, the player pays attention to the stop order of the reels 3L, 3C, 3R, thereby the player can concentrate for the game and interest for games can be raised.

[0146] Next, the CPU 121 conducts stop process of the reels according to the stop order selected by the lottery (S29). In this process, the CPU 121 controls and stops variable display operation of the reels 3L, 3C, 3R according to the stop order selected in S 28. For example, if the stop order of the reels 3L, 3C, 3R selected in S28 is the stop order of the center reel 3C, the left reel 3L and the right reel 3R, the CPU 121 first sends to the motor drive circuit 31 a signal to control and stop the center reel 3C and stops the center reel 3C through the stepping motor 49C. Similarly, the CPU 121 sends to the motor drive circuit 31 a signal to control and stop the left reel 3L after a predetermined time is elapsed and stops the left reel 3L through the stepping motor 49L. Further, the CPU 121 sends to the motor drive circuit 31 a signal to control and stop the right reel 3R after a predetermined time is elapsed and stops the right reel 3R through the stepping motor 49R. After this process is terminated, the CPU 121 shifts procedure to S 30.

[0147] As mentioned, if the symbol combination stopped along the pay line 8 becomes the predetermined display mode, variable display operation of the reels 3L, 3C, 3R is controlled and stopped according to the stop order different from the ordinary stop order.

That is to say, if the symbol combination with the predetermined display mode becomes the "reach mode" such as the "map 1-map 2-any", variable display operation of the reels 3L, 3C, 3R is controlled and stopped according to the stop order, for example, the stop order of the center reel 3C, the left reel 3L and the right reel 3R, different from the ordinary stop order, for example the stop order of the left reel 3L, the center reel 3C and the right reel 3R (that is, the reels are stopped from the left reel to the right reel). Therefore, the player pays attention to the unexpected stop order, thereby interest of the player for games can be raised. And since variable display operation of the reels 3L, 3C, 3R is controlled and stopped according to the stop order different from the ordinary stop order in only a case that the symbol combination becomes the predetermined display mode, it can be given expectation to the player.

[0148] As mentioned, if variable display operation of the reels 3L, 3C, 3R is controlled and stopped according to the stop order different from the ordinary stop order, the probability with which the bonus game giving the specific award to the player is started becomes high. That is to say, since the reels 3L, 3C, 3R are stopped according to the stop order different from the ordinary stop order, it can be recognized by the player that the probability with which the bonus game is started becomes high. Therefore, expectation of the player for games can be highly raised.

[0149] Further, the slot machine according to the third embodiment of the present invention will be described. Here, the slot machine of the third embodiment has substantially the same construction as that of the slot machine of the first embodiment already mentioned in the above. Therefore, the third embodiment will be described hereinafter by only taking the characteristic construction of the third embodiment into consideration. Here, as for the same elements, members as in the slot machine of the first embodiment, the same numbers, marks and the like are added.

[0150] The spin switch 15 is a switch to start rotation of the reels 3L, 3C, 3R and has function to control and stop variable display operation of any one reel among the reels 3L, 3C, 3R by player's operation, as mentioned later. Here, in the third embodiment, although the spin switch 15 functions as the switch to control and stop variable display operation of any one of the reels 3L, 3C, 3R, the spin switch 15 may be the switch to control and stop variable display operation of more than one reel among a plurality of reels.

[0151] As mentioned later, in a case that the symbol combination stopped along the pay line 8 when all reels 3L, 3C, 3R are stopped becomes the predetermined display mode (for example, the "map 1-map 2-map 3", see Fig. 8), variable display operation of two reels is controlled and stopped so that more than any two reels constructing the symbol combination with the predetermined display mode are simultaneously stopped along the pay line 8, and thereafter when the spin switch 15 is

operated by the player, variable display operation of any one reel among the reels 3L, 3C, 3R is controlled and stopped. Even in this case, the stop symbols are not determined by operation of the player and stop control of variable display operation of the reels is only started by utilizing the player's operation as the trigger. That is to say, based on that the player operates the spin switch 15, the stop start signal occurs from the spin switch 15 and such stop start signal is supplied to the CPU 121. Further, the stop start signal is supplied to the motor drive circuit 31 from the CPU 121. Thereby, stop control of variable display operation of the reels 3L, 3C, 3R is started.

15 [variable display operation of reels 3L, 3C, 3R]

[0152] Next, variable display operation of the reels 3L, 3C, 3R will be described. As mentioned, in the slot game, after coins are betted all reels 3L, 3C, 3R start to rotate based on a predetermined switch operation. Each of the reels 3L, 3C, 3R is stopped in a predetermined order after a predetermined time is elapsed. However, in the slot machine 1 of the third embodiment, in a case that the symbol combination stopped along the pay line 8 becomes a predetermined display mode shown in Fig. 8 when all reels 3L, 3C, 3R are stopped, variable display operation of two reels among the reels 3L, 3C, 3R is controlled and stopped so that any two symbols constructing a symbol combination with a predetermined display mode are simultaneously stopped along the pay line 8. Thereafter, variable display operation of the remaining one reel is controlled and stopped. And variable display operation of the remaining one reel is controlled and stopped by the player's operation of the spin switch 15.

[0153] Here, "variable display operation of the remaining one reel is controlled and stopped by the player's operation of the spin switch 15" means that the stop symbol is not determined by the player's operation of the spin switch 15 and stop control of variable display operation of the reel is only started by utilizing the player's operation as the trigger. And such sentence includes a case that the player feels as if variable display operation of the remaining reel is controlled and stopped by the player's operation when seeing the reels.

[0154] Here, the main control circuit 71 constructs the stop control means for controlling and stopping variable display operation of a plurality of variable display devices based on the result determined by the stop symbol determination means by utilizing the player's operation as the trigger.

[0155] With reference to Figs. 8 to 11, it will be described in detail a case that variable display operation of two reels is controlled and stopped so that any two symbols constructing a symbol combination with a predetermined display mode are simultaneously stopped along the pay line 8, thereafter variable display operation of any one reel of the reels 3L, 3C, 3R can be con-

trolled and stopped by the player's operation. Fig. 8 shows symbol combinations with a predetermined display mode in a case that variable display operation of two reels are controlled and stopped so that any two symbols constructing a symbol combination with a predetermined display mode are simultaneously stopped along the pay line 8, thereafter variable display operation of any one reel of the reels 3L, 3C, 3R can be controlled and stopped by the player's operation.

[0156] Here, it is supposed that the symbol combination stopped at present time is determined as the symbol combination "map 1-map 2-any" ("any" means the symbol except for the map 1 symbol, the map 2 symbol and WILD symbol). And when coins are betted and the predetermined switch is operated, all reels 3L, 3C, 3R start to rotate as shown in Fig. 9. Here, the symbol combination stopped at present time corresponds to the predetermined display mode which is shown by No. 2 in Fig. 8. That is to say, the symbol to be stopped on the left reel 3L is the map 1 symbol, and the symbol to be stopped on the center reel 3C is the map 2 symbol. Therefore, as shown in Fig. 25, variable display operation of the left reel 3L and variable display operation of the center reel 3C are controlled and stopped so that the map 1 symbol stopped along the pay line 8 when the left reel 3L is stopped and the map 2 symbol stopped along the pay line 8 when the center reel 3C is stopped are simultaneously stopped. And after a predetermined time is elapsed, variable display operation of the right reel 3R is controlled and stopped (see Fig. 26). And the message "Push the Reel Stop Button!" is displayed on the display area 5a of the main display 5. Thereafter, variable display operation of the center reel 3C is controlled and stopped by the player's operation of the spin switch 15. As a result, the "BAR" symbol is stopped (see Fig. 26).

[0157] As mentioned, in a case that the symbol combination is stopped with a predetermined display mode along the pay line 8, any one of reels 3L, 3C, 3R can be controlled and stopped by the player's operation. Therefore, according to the third embodiment, the player can technically intervene in the game and it can be given to the player a feeling that the player really participates in the game. Thereby, interest of the player for games can be raised. And since unexpected stop control is conducted comparing with a case that the reels 3L, 3C, 3R are automatically controlled and stopped, it can make the player pay attention to variable display operation of the reels 3L, 3C, 3R. As a result, interest of the player for games can be highly raised. Further, since variable display operation of one reel can be controlled and stopped by the player's operation only in a case that the symbol combination becomes the predetermined display mode, expectation can be given to the player.

[simultaneous stop symbol selection lottery table]

[0158] Next, with reference to Fig. 12, simultaneous

stop symbol selection lottery table will be described.

[0159] When all reels 3L, 3C, 3R are stopped, if the symbol combination stopped along the pay line 8 becomes the predetermined display mode (see Fig. 8), for example, the "map 1-map 2-map 3", any two symbols are selected among the map 1 symbol on the left reel 3L, the map 2 symbol on the center reel 3C and the map 3 symbol on the right reel 3R by the lottery. Here, the simultaneous stop symbol selection lottery table shown in Fig. 12 is utilized when any two symbols are selected among the map 1 symbol, the map 2 symbol and the map 3 symbol. And in the slot machine 1 of the third embodiment, two reels variably displaying the selected two symbols are controlled and stopped so that the selected symbols are simultaneously stopped. Further, after variable display operation of two reels is controlled and stopped, variable display operation of any one reel among the reels 3L, 3C, 3R can be controlled and stopped by the player's operation. That is to say, the simultaneous stop symbol selection lottery table shown in Fig. 12 is a table referred when the any one reel, which can be controlled and stopped by the player's operation, is selected among the reels 3L, 3C, 3R by the lottery, in a case that the symbol combination stopped along the pay line 8 becomes the predetermined display mode. Here, "-" shown in the simultaneous stop symbol selection lottery table in Fig. 12 means that symbols are not selected.

[0160] When all reels 3L, 3C, 3R are stopped, if the symbol combination stopped along the pay line 8 becomes the predetermined mode, two symbols constructing the symbol combination with the predetermined display mode is selected as follows by the lottery. The concrete method to select two symbols, that is, the method that any one reel, which can be controlled and stopped by the player's operation of the spin switch 15, is selected among the reels 3L, 3C, 3R by the lottery, will be described hereinafter.

[0161] At first, the CPU 121 extracts a random number within a predetermined range (for example, range of 0 ~ 255). And based on the extracted random number, the simultaneous stop symbol selection lottery table is referred shown in Fig. 12, and the symbol combination with the predetermined display mode is obtained. Thereafter, based on such symbol combination, it is selected that the symbol combination with the predetermined display mode belongs to which reel. For example, if the extracted random number lies in a range of 0 ~ 150, the selected two symbols correspond to the map 1 symbol on the left reel 3L and the map 3 symbol on the right reel 3R. Therefore, the left reel 3L and the right reel 3R are controlled and stopped so that the map 1 symbol on the left reel 3L and the map 3 symbol on the right reel 3R are simultaneously stopped. And variable display operation of the center reel 3C is controlled and stopped by the player's operation of the spin switch 15.

[0162] As mentioned, if the symbol combination

stopped along the pay line 8 becomes the predetermined display mode, any one reel, which can be controlled and stopped by the player's operation of the spin switch 15, is selected among the reels 3L, 3C, 3R by the lottery. Therefore, based on variable display operation of any one reel which can be controlled and stopped by the player's operation, there is a case that the symbol combination stopped along the pay line 8 can be predicted. Thus, the player pays attention to variable display operation of such reel. As a result, the player can concentrate for the game and interest for games can be raised.

[0163] And as shown in Fig. 12, if the symbol combination stopped along the pay line 8 becomes the "map 1-map 2-map 3", the map 1 symbol on the left reel 3L and the map 3 symbol on the right reel 3R are simultaneously stopped with higher probability than the other case. Therefore, when the map 1 symbol on the left reel 3L and the map 3 symbol on the right reel 3R are simultaneously stopped, that is, when variable display operation of the center reel 3C can be controlled and stopped by the player's operation, the symbol combination becomes the "map 1-map 2-map 3" with relatively probability. Thus, in a case that variable display operation of the left reel 3L and the right reel 3R is controlled and stopped so that the map 1 symbol on the left reel 3L and the map 3 symbol on the right reel 3R are simultaneously stopped, that is, variable display operation of the center reel 3C can be controlled and stopped by the player's operation, and the symbol combination "map 1-map 2-map 3" becomes a chance to shift to the bonus game, expectation of the player for the bonus game can be expanded and also interest for games can be raised.

[0164] Here, the table in Fig. 12 shows the simultaneous stop symbol selection lottery table in which the symbol combination with the predetermined display mode is only the "map 1-map 2-map 3". Of course, although the simultaneous stop symbol selection lottery table in which the symbols constructing the symbol combination with the predetermined display mode is the WILD symbol, its explanation will be omitted in the first embodiment.

[0165] And in the third embodiment, in a case that the symbol combination stopped along the pay line 8 becomes the display mode shown in Fig. 8 when all reels 3L, 3C, 3R are stopped, the reels 3L, 3C, 3R are stopped so that any two symbols always constructing the symbol combination with the predetermined display mode are simultaneously stopped along the pay line 8. The present invention is not limited to this. For example, even if the symbol combination stopped along the pay line 8 becomes the display mode shown in Fig. 8 when all reels 3L, 3C, 3R are stopped, there may be a case that the reels 3L, 3C, 3R are stopped according to the stop order of the reel 3L, 3C, and 3R every a predetermined time is elapsed, similar to the ordinary stop order of reels, and there may be a case that the reels 3L, 3C, 3R are stopped according to the stop order other than

the stop order of the reel 3L, 3C, and 3R. Here, in these cases, in the state that the second reel is stopped, it is desirable that so-called "reach mode" is realized.

[0166] And the main control circuit 71 constructs the variable display device selection lottery means for selecting more than one variable display device, which can be controlled and stopped by the player's operation of the stop operation portion, among a plurality of variable display devices by the lottery according to the predetermined display mode, if the symbol combination stopped along the pay line and determined by the stop symbol determination means becomes the predetermined display mode.

[bonus game]

[0167] Next, with reference to Fig. 14 to 17, the bonus game will be described. The bonus game is mainly conducted on the second display 6 when the symbol combination stopped along the pay line 8 when all reels 3L, 3C, 3R are stopped becomes the predetermined display mode (for example, in the first embodiment, the "map 1-map 2-map 3", see Fig. 14).

[0168] In the slot game, if the symbol combination stopped along the pay line 8 when all reels 3L, 3C, 3R are stopped becomes the predetermined display mode, for example, the symbol combination "map 1-map 2-map 3" (see Fig. 14) in the first embodiment, as mentioned, the reels 3L, 3C, 3R are controlled and stopped so that two symbols constructing the "reach mode" (for example, the stopped symbol (map 1) on the left reel 3L and the stopped symbol (map 2) on the center reel 3C) are simultaneously stopped. Thereafter, variable display operation of the other remaining reel is controlled and stopped by utilizing the player's operation as the trigger.

[0169] Next, after the predetermined demonstration image is displayed, the image to determine the BET number 301 for the bonus game is displayed on the main display 5, as shown in Fig. 15. Next, based on contact operation of the touch panel 51 (see Fig. 2) by the player, the BET number 301 for the bonus game is determined. Thereafter, the image shown in Fig. 16 is displayed on the second display 6. Here, the game in which a hero automatically climbs upward by using a rope is progressed. Every the hero climbs upward by using the rope a magnification indicated in a magnification meter 302 displayed at the right position becomes larger. Here, the BET number for the bonus game becomes larger the probability with which the bonus game is terminated is controlled so as to become higher at the stage of low magnification.

[0170] And as shown in Fig. 17, when the image that an exit appears is displayed, the bonus game is terminated. Thereafter, coins calculated by multiplying the BET number for the bonus game with the magnification are paid out to the player. For example, if the BET number for the bonus game is 50 as shown in Fig. 15

and the magnification is 20 as shown in Fig. 17, 1000 coins calculated by multiplying 50 with 20 are paid out to the player.

[0171] As mentioned, if variable display operation of one reel can be controlled and stopped by the player's operation of the spin switch 15, probability with which the bonus game giving the specific award to the player is started becomes high. That is to say, since variable display operation of one reel in the variable display device can be controlled and stopped by the player's operation, it can be recognized by the player that the probability with which the secondary game is started becomes high. Therefore, expectation of the player for games can be highly raised.

[operation of the gaming machine]

[0172] Next, with reference to the flowchart shown in Fig. 27, control operation by the CPU 121 in the main control circuit 71 of the third embodiment will be described. Here, control operation by the CPU 121 is almost same as that in the first embodiment. That is to say, in Fig. 27, judgement process in S40 is inserted between the process in S9 and the process in S10 in the flowchart shown in Fig. 18. The other processes are same in both Figs. 27 and 18. Further, control operation by the CPU 121 in the third embodiment is conducted according to the flowchart shown in Fig. 19 after processes in Fig. 27 are done. Therefore, only process in S40 shown in Fig. 27, such process being characteristic to the third embodiment, will be described hereinafter.

[0173] In process of S4, if it is judged that the symbol combination stopped along the pay line 8 is the predetermined display mode, the CPU 121 selects two symbols simultaneously stopped among a plurality of symbols constructing the predetermined display mode by the lottery (S8). For example, in this process, the CPU 121 selects two symbols simultaneously stopped by referring the extracted random number value with the simultaneous stop symbol selection lottery table shown in Fig. 12. Concretely, the CPU 121 extracts the random number from a predetermined random number range (for example, range of 0 ~ 255). And if the predetermined display mode is the "map 1- map 2-map 3" and the extracted random number value lies in a range of 151 ~ 200, the selected two symbols become the "map 2" on the center reel 3C and the "map 3" on the right reel 3R (see Fig. 12). That is, it concludes that the left reel 3L is selected as the reel which can be controlled and stopped by the player's operation. After this process is done, the CPU 121 shifts procedure to S9.

[0174] As mentioned, if the symbol combination stopped along the pay line 8 becomes the predetermined display mode, any one reel which can be controlled and stopped by the player's operation of the spin switch 15 is selected among the reels 3L, 3C, 3R by the lottery. Therefore, based on variable display operation of any one reel which can be controlled and stopped by

the player's operation, there is a case that the symbol combination stopped along the pay line 8 can be predicted. Thus, the player pays attention to variable display operation of such reel. As a result, the player can concentrate for the game and interest for games can be raised.

[0175] Next, the CPU 121 judges whether stop operation is conducted or not (S40). In this step, the CPU 121 judges whether or not the spin switch 15 is pressed by the player.

[0176] In S40, if the CPU 121 judges that the stop operation is not conducted, the CPU 121 repeats process in S40.

[0177] In S40, if the CPU 121 judges that the stop operation is conducted, stop process of the remaining reel not stopped yet is executed (S41). In this process, the CPU 121 controls and stops variable display operation of the reel other than two reels variable display operation of which are controlled and stopped in S39, according to the operation in S40 by the player. For example, in S39, if the reel 3C and the reel 3R are stopped so that the "map 2" on the center reel 3C and the "map 3" on the right reel 3R are simultaneously stopped, the CPU 121 stops the left reel 3L which is rotating by utilizing the operation of the spin switch 15 by the player as the trigger. After this process is terminated, the CPU 121 shifts procedure to S42.

[0178] As mentioned, in a case that the symbol combination is stopped with the predetermined display mode along the pay line 8, any one of reels 3L, 3C, 3R can be controlled and stopped by the player's operation. Therefore, according to the third embodiment, the player can technically intervene in the game and it can be given to the player a feeling that the player really participates in the game. Thereby, interest of the player for games can be raised. And since unexpected stop control is conducted comparing with a case that the reels 3L, 3C, 3R are automatically controlled and stopped, it can make the player pay attention to variable display operation of the reels 3L, 3C, 3R. As a result, interest of the player for games can be highly raised. Further, since variable display operation of one reel can be controlled and stopped by the player's operation only in a case that the symbol combination becomes the predetermined display mode, expectation can be given to the player.

[0179] As mentioned, if variable display operation of one reel can be controlled and stopped by the player's operation of the spin switch 15, probability with which the bonus game giving the specific award to the player is started becomes high. That is to say, since variable display operation of one reel in the variable display device can be controlled and stopped by the player's operation, it can be recognized by the player that the probability with which the secondary game is started becomes high. Therefore, expectation of the player for games can be highly raised.

[0180] Here, in the slot machine 1 of the embodi-

ments, although three reels constructing the variable display devices are provided, the present invention is not limited to this. For example, two reels may be provided or more than four reels may be provided. And in the slot machine of the embodiment, although the variable display devices are constructed from the reels, the present invention is not limited to this. For example, the liquid crystal display device as the variable display device may be provided.

[0181] And in the slot machine 1 of the third embodiment, although after variable display of two reels is controlled and stopped, variable display operation of any one reel among the reels 3L, 3C, 3R can be controlled and stopped, the present invention is not limited to this. For example, variable display operation of the reel which is first stopped or the reel which is second stopped may be controlled and stopped.

[0182] And in the third embodiment, although the stop operation part for controlling and stopping variable display operation of any one reel among the reels 3L, 3C, 3R corresponds to the spin switch 15, the present invention is not limited to this. For example, such stop operation part, which can control and stop variable display operation of any one reel among the reels 3L, 3C, 3R, may be constructed from the other switch such as the error switch 13 or the touch panel 51 provided on the main display 5 or the second display 6.

Claims

1. A gaming machine comprising:

a plurality of variable display devices for variably displaying a plural kinds of symbols;
a stop symbol determination device for determining the symbol stopped along a predetermined line every the variable display device based on a random number value sampled every game; and
a stop control device for conducting stop control of variable display operation of the variable displaying devices based on a determination result determined by the stop symbol determination device;

wherein the stop control device has function to conduct the stop control of the variable display operation of more than two variable display devices variably displaying more than two symbols so that any more than two symbols are simultaneously stopped along the predetermined line, two symbols constructing a predetermined symbol combination with a specific display mode, in a case that the symbols determined by the stop symbol determination device constructs the predetermined symbol combination with the specific display mode.

2. The gaming machine according to claim 1, further comprising:

a simultaneous stop symbol selection lottery device for selecting any more than two symbols constructing the predetermined symbol combination with the specific display mode corresponding to the specific display mode by a lottery in a case that the predetermined symbol combination stopped along the predetermined line and determined by the stop symbol determination device becomes the specific display mode;

wherein the stop control device has function to conduct the stop control of the variable display operation of more than two variable display devices variably displaying more than two symbols selected by the simultaneous stop symbol selection lottery device so that more than two symbols selected by the simultaneous stop symbol selection lottery device are simultaneously stopped along the predetermined line.

3. The gaming machine according to claim 1, further comprising:

a secondary game start device for starting a secondary game giving a predetermined award to a player on a condition that the symbol combination stopped along the predetermined line and determined by the stop symbol determination device becomes the specific display mode;

wherein a probability that the secondary game is started by the secondary game start device is set high in a case that the variable display operation of more than two variable display devices variably displaying more than two symbols is controlled and stopped so that any two symbols constructing the predetermined symbol combination with the specific display mode are simultaneously stopped along the predetermined line.

4. A gaming machine comprising:

a plurality of variable display devices for variably displaying plural kinds of symbols;
a stop symbol determination device for determining the symbol stopped along a predetermined line every variable display device based on a random number value sampled every game; and
a stop control device for conducting stop control of variable display operation of the variable displaying devices based on a determination result determined by the stop symbol determination device;

wherein the stop control device has function to conduct the stop control of the variable display operation of the variable display devices according to a stop order different from an ordinary stop order in a case that a symbol combination stopped along the predetermined line and determined by the stop symbol determination device becomes a specific display mode.

5. The gaming machine according to claim 4, further comprising:

a stop order storing device for storing a plurality of stop orders of the variable display devices; and
a stop order selection lottery device for selecting one stop order of the variable display devices among the stop orders stored in the stop order storing device by a lottery in a case that the symbol combination becomes the specific display mode.

6. The gaming machine according to claim 4, further comprising:

a secondary game start device for starting a secondary game giving a predetermined award to a player on a condition that the symbol combination becomes the specific display mode;

wherein a probability that the secondary game is started by the secondary game start device is set high in a case that the variable display operation of the variable display devices is controlled and stopped according the stop order different from the ordinary stop order.

7. A gaming machine comprising:

a plurality of variable display devices for variably displaying plural kinds of symbols; and
a stop symbol determination device for determining the symbol stopped along a predetermined line every variable display device based on a random number value sampled every game;
a stop operation device capable for controlling and stopping variable display operation of any more than one variable display device among the variable display devices based on operation by a player in a case that a symbol combination stopped along a predetermined line and determined by the stop symbol determination device becomes a specific display mode; and
a stop control device for conducting stop control of the variable display operation of the variable display devices based on a determination result determined by the stop symbol determination

device when the player operates the stop operation device.

8. The gaming machine according to claim 7, further comprising:

a variable display device selection lottery device for selecting any more than one variable display device among the variable display devices, the one variable display device being able to be controlled and stopped by the stop control device according to the operation of the stop operation device by the player in a case that the symbol combination becomes the specific display mode.

9. The gaming machine according to claim 7, further comprising:

a secondary game start device for starting a secondary game giving a predetermined award to the player on a condition that the symbol combination becomes the specific display mode;

wherein a probability that the secondary game is started by the secondary game start device is set high in a case that the variable display operation of more than one variable display device is able to be controlled and stopped according the operation of the stop operation device by the player.

FIG. 1

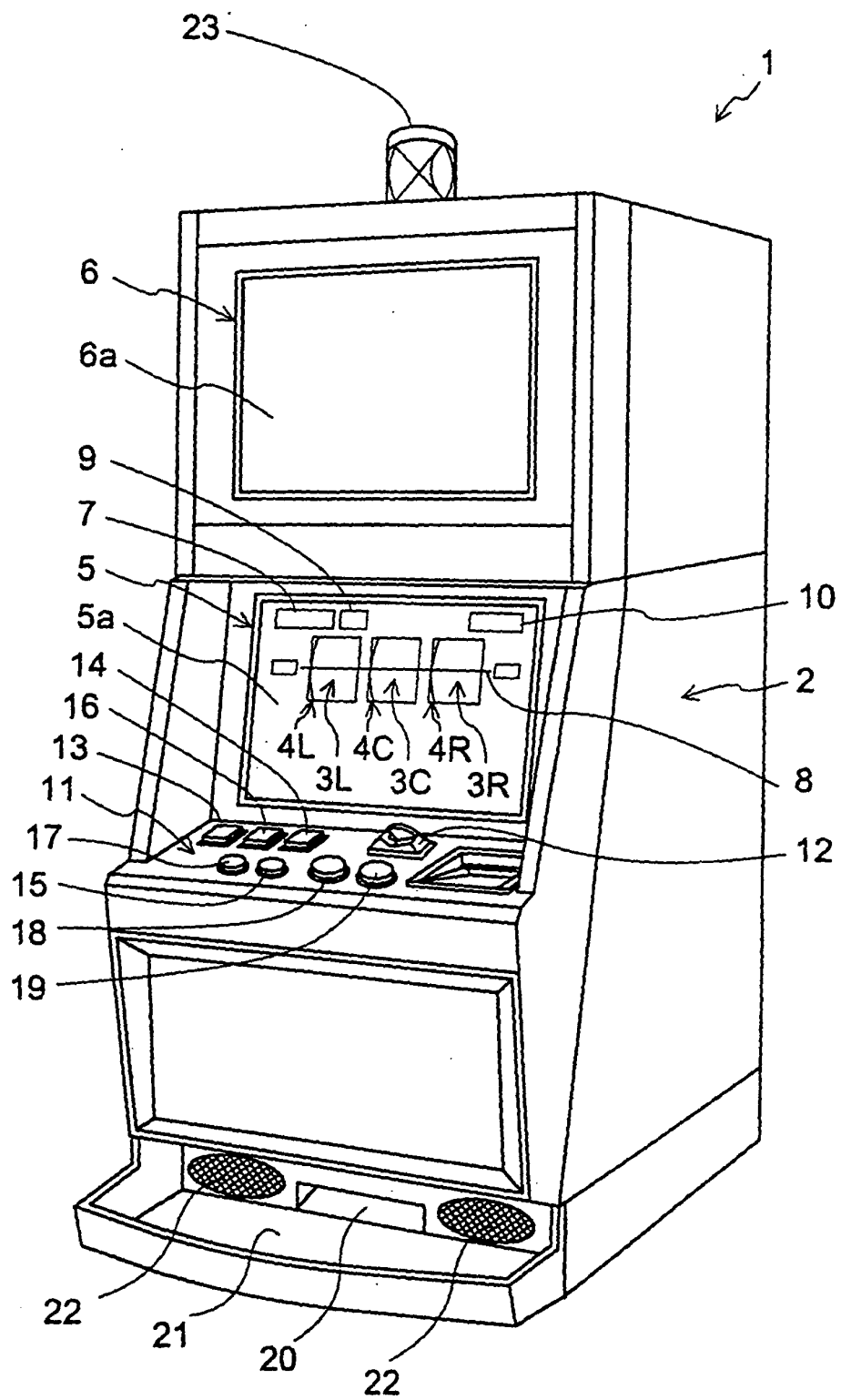


FIG.2

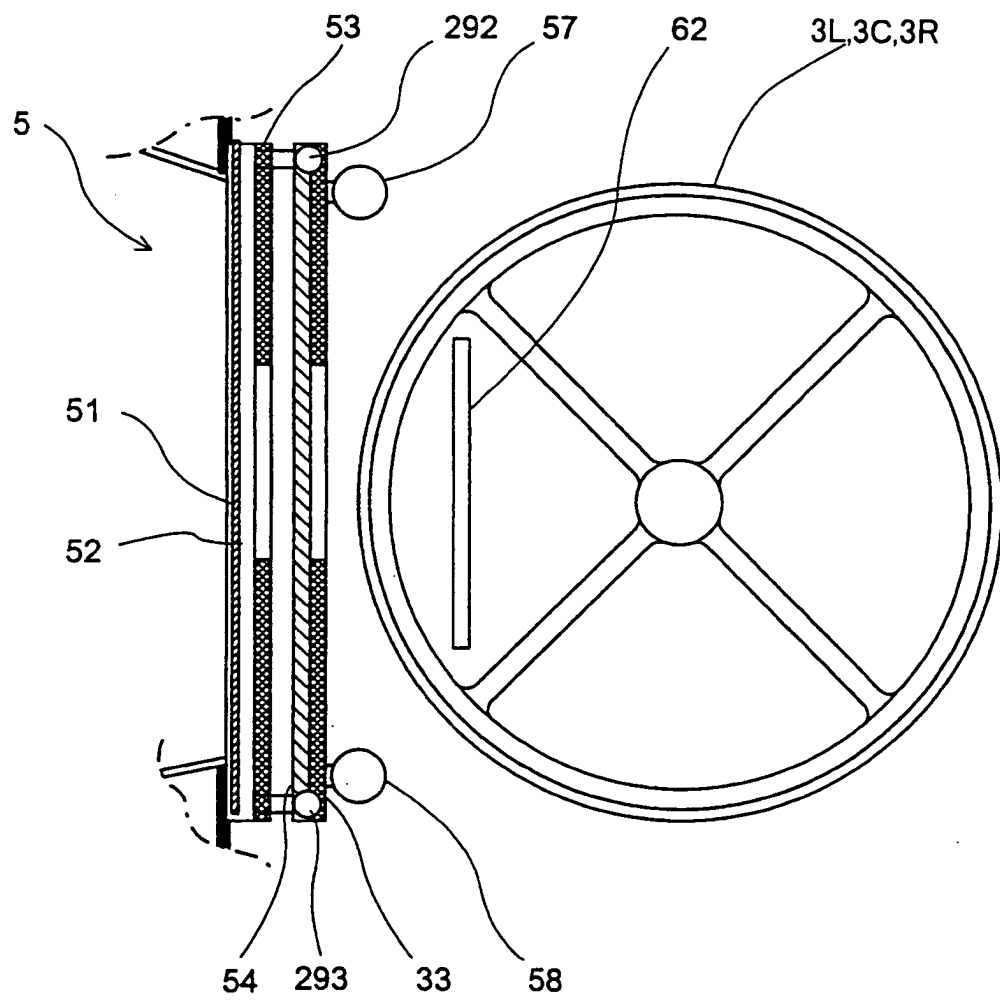


FIG.3

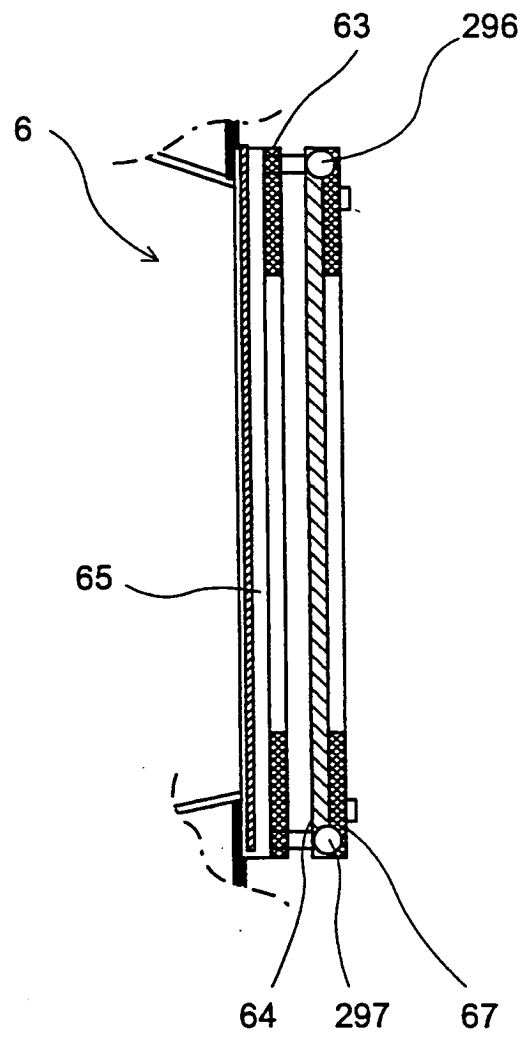


FIG.4

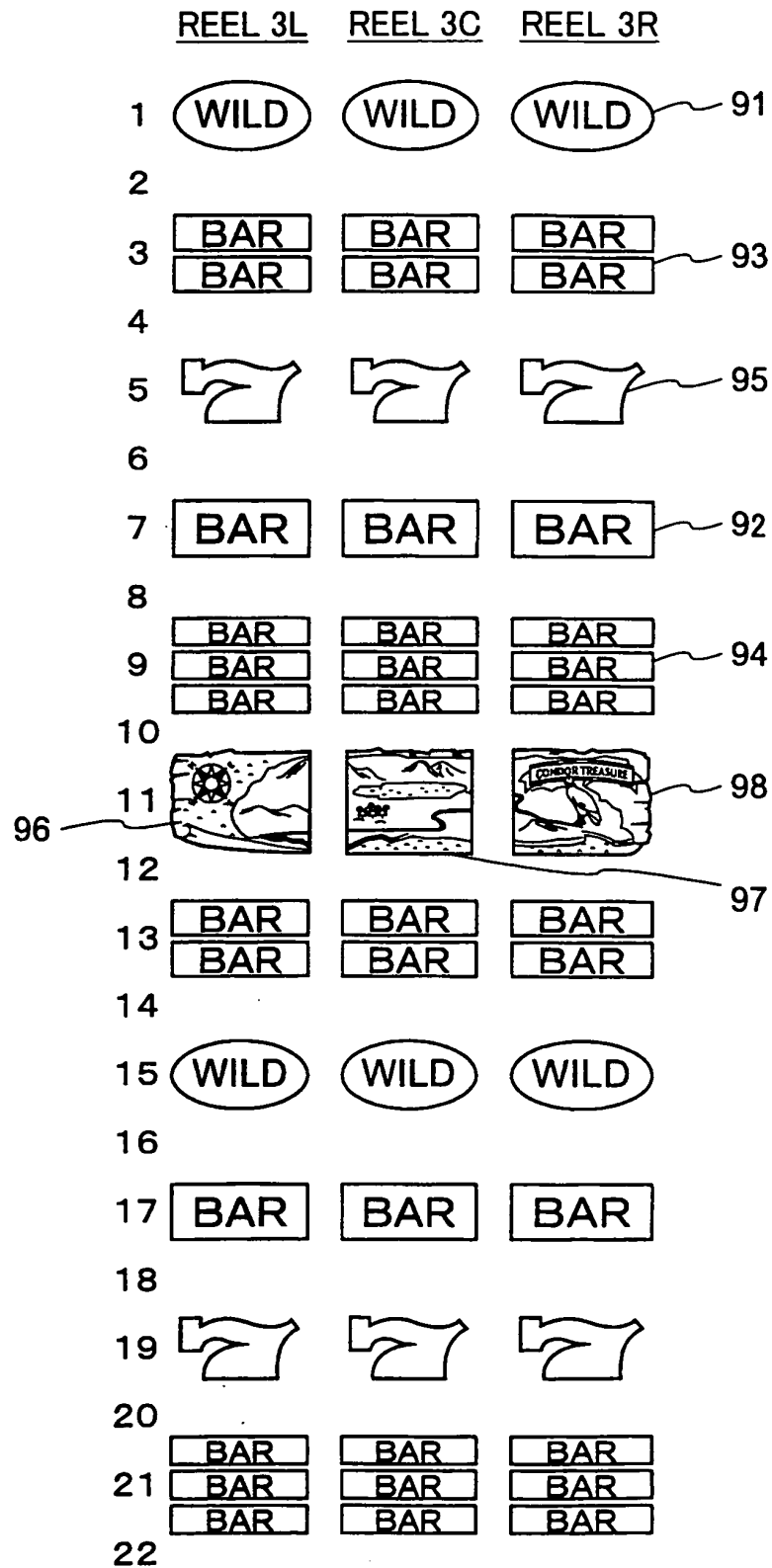


FIG.5

PAYOUT TABLE

SYMBOL COMBINATION	1 BET	2 BET	3,4 BETS
MAP1 – MAP2 – MAP3	200	400	1,000
WILD – WILD – WILD	100	200	400
RED – RED – RED	50	100	200
3BAR – 3BAR – 3BAR	40	80	120
2BAR – 2BAR – 2BAR	20	40	60
1BAR – 1BAR – 1BAR	10	20	30
ANYBAR-ANYBAR-ANYBAR	5	10	15

FIG.6

PROBABILITY LOTTERY TABLE FOR LEFT REEL 3L (RANDOM NUMBER RANGE : 256)		PROBABILITY LOTTERY TABLE FOR CENTER REEL 3C (RANDOM NUMBER RANGE : 256)		PROBABILITY LOTTERY TABLE FOR RIGHT REEL 3R (RANDOM NUMBER RANGE : 256)	
SYMBOL	RANDOM NUMBER RANGE	SYMBOL	RANDOM NUMBER RANGE	SYMBOL	RANDOM NUMBER RANGE
MAP1	0~10	MAP2	0~10	MAP3	0~10
WILD	11~30	WILD	11~30	WILD	11~30
RED7	31~70	RED7	31~70	RED7	31~70
3BAR	71~115	3BAR	71~115	3BAR	71~115
2BAR	116~170	2BAR	116~170	2BAR	116~170
1BAR	171~240	1BAR	171~240	1BAR	171~240
BLANK	241~255	BLANK	241~255	BLANK	241~255

※ AT THE TIME OF 4BETS

FIG. 7

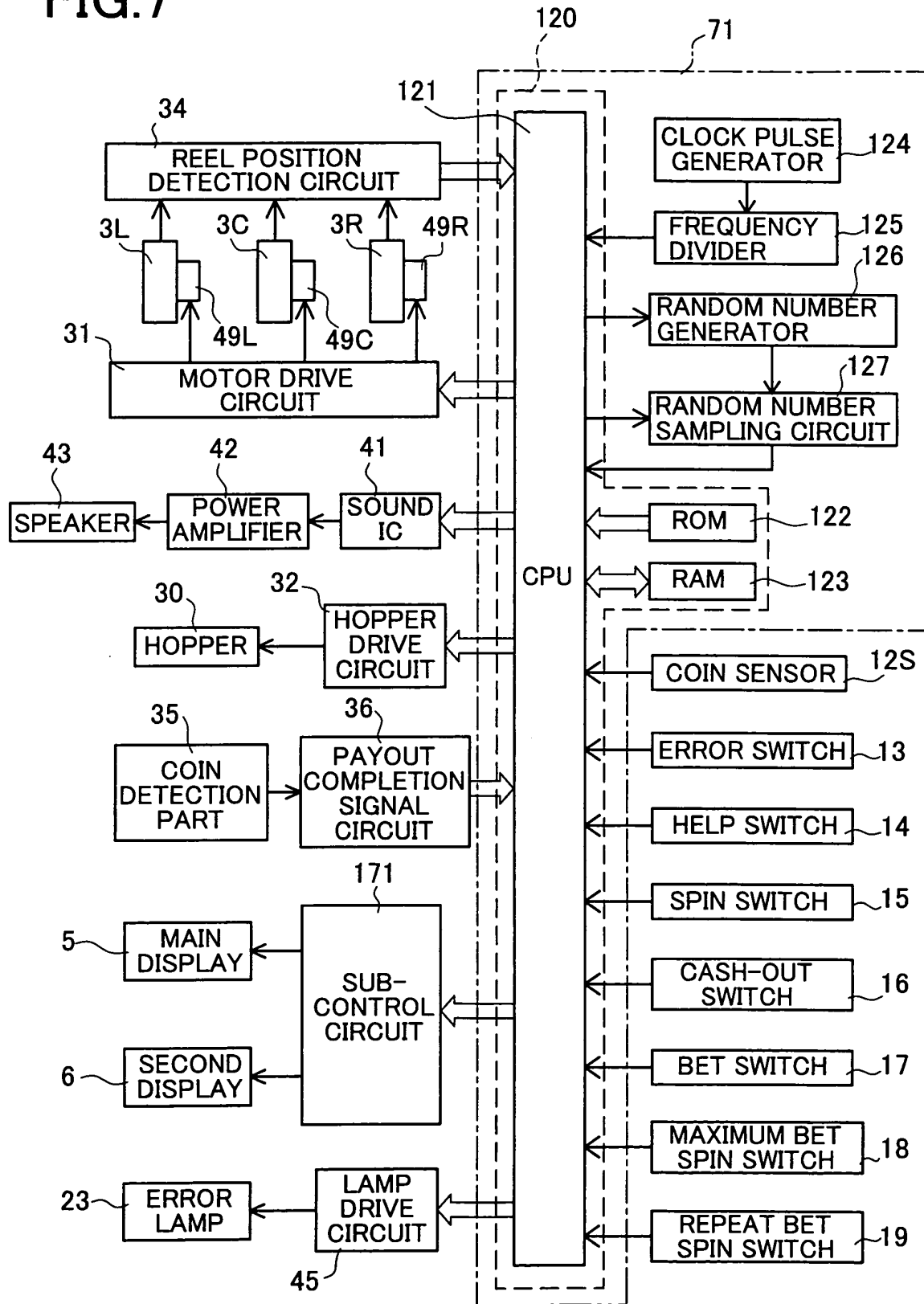


FIG.8

PREDETERMINED DISPALY MODE

NUMBER	LEFT REEL	CENTER REEL	RIGHT REEL
1	MAP1	MAP2	MAP3
2	MAP1	MAP2	ANY
3	MAP1	ANY	MAP3
4	ANY	MAP2	MAP3
5	RED7	RED7	ANY
6	RED7	ANY	RED7
7	ANY	RED7	RED7

※「ANY」 MEANS SYMBOL EXCEPT FOR
MAP1,MAP2,MAP3 AND WILD

FIG.9

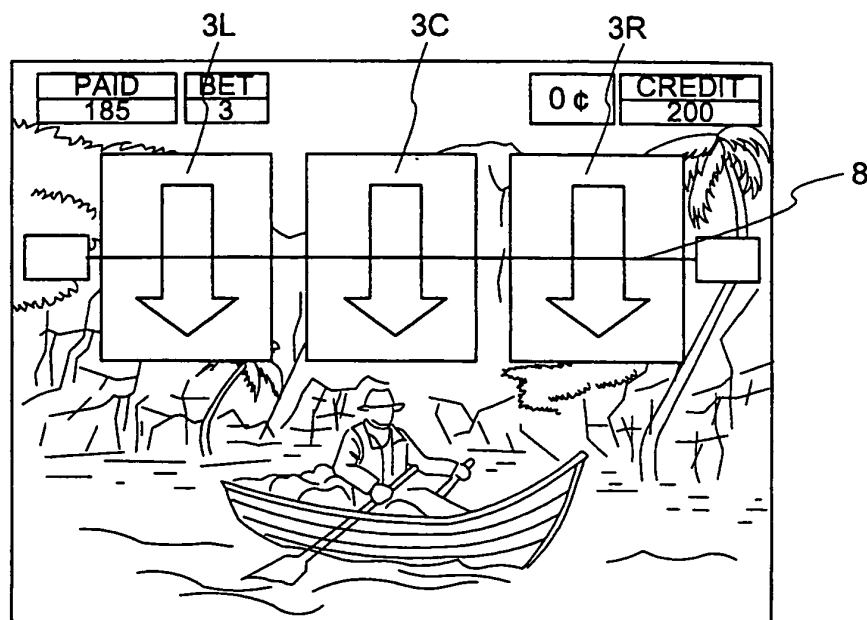


FIG.10

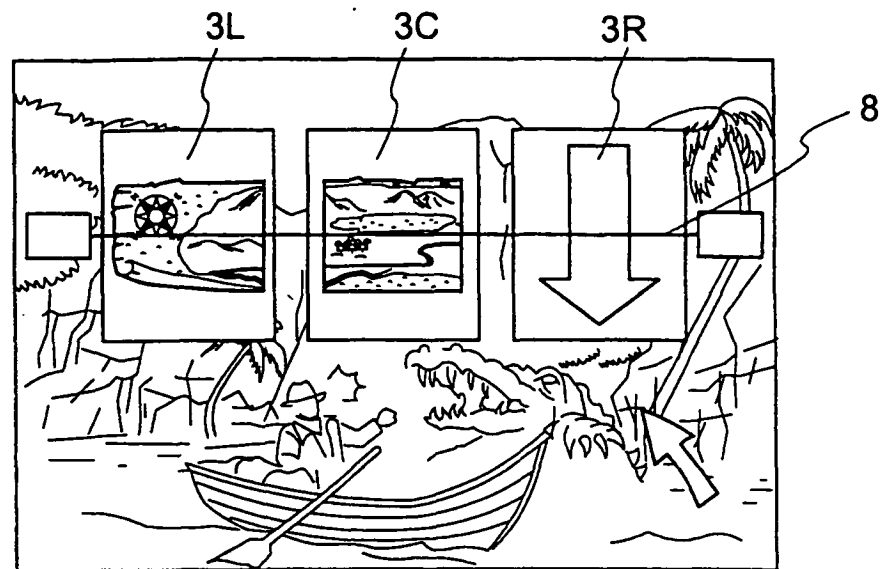


FIG.11

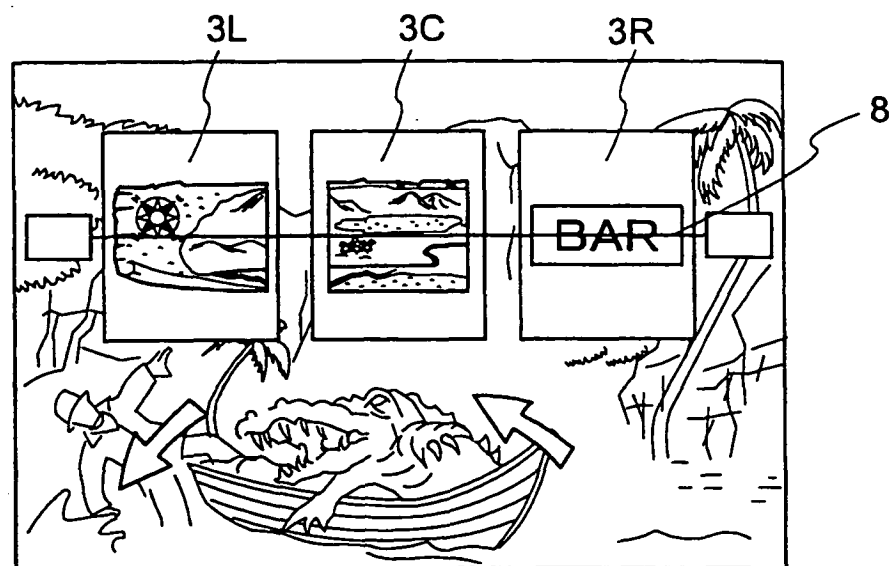


FIG.12

SYMBOL SELECTION LOTTERY TABLE OF SYMBOLS STOPPED AT THE SAME TIME (RANDOM NUMBER RANGE : 256)

IN CASE OF DISPLAY MODE "MAP1-MAP2-MAP3"

SYMBOLS STOPPED AT THE SAME TIME	RANDOM NUMBER RANGE
MAP1 OF LEFT REEL•MAP3 OF RIGHT REEL	0~150
MAP2 OF CENTER REEL•MAP3 OF RIGHT REEL	150~200
MAP1 OF LEFT REEL•MAP2 OF CENTER REEL	201~255

IN CASE OF DISPLAY MODE "MAP1-MAP2-ANY"

SYMBOLS STOPPED AT THE SAME TIME	RANDOM NUMBER RANGE
MAP1 OF LEFT REEL•ANY OF RIGHT REEL	—
MAP2 OF CENTER REEL•ANY OF RIGHT REEL	—
MAP1 OF LEFT REEL•MAP2 OF CENTER REEL	0~255

IN CASE OF DISPLAY MODE "MAP1-ANY-MAP3"

SYMBOLS STOPPED AT THE SAME TIME	RANDOM NUMBER RANGE
MAP1 OF LEFT REEL•MAP3 OF RIGHT REEL	0~255
ANY OF CENTER REEL•MAP3 OF RIGHT REEL	—
MAP1 OF LEFT REEL•ANY OF CENTER REEL	—

IN CASE OF DISPLAY MODE "ANY-MAP2-MAP3"

SYMBOLS STOPPED AT THE SAME TIME	RANDOM NUMBER RANGE
ANY OF LEFT REEL•MAP3 OF RIGHT REEL	—
MAP2 OF CENTER REEL•MAP3 OF RIGHT REEL	0~255
MAP1 OF LEFT REEL•MAP2 OF CENTER REEL	—

※「ANY」 MEANS SYMBOL EXCEPT FOR
MAP1,MAP2,MAP3 AND WILD

FIG.13

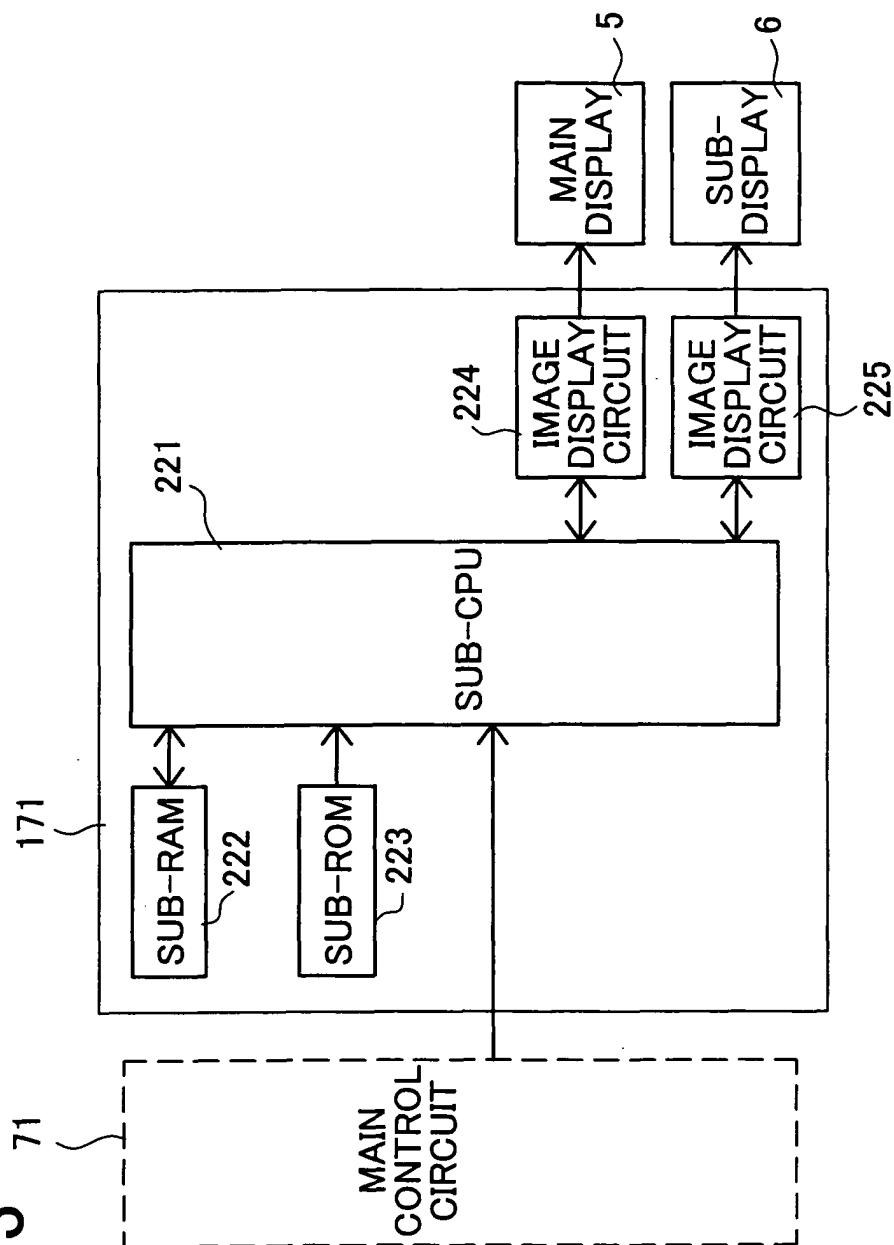


FIG.14

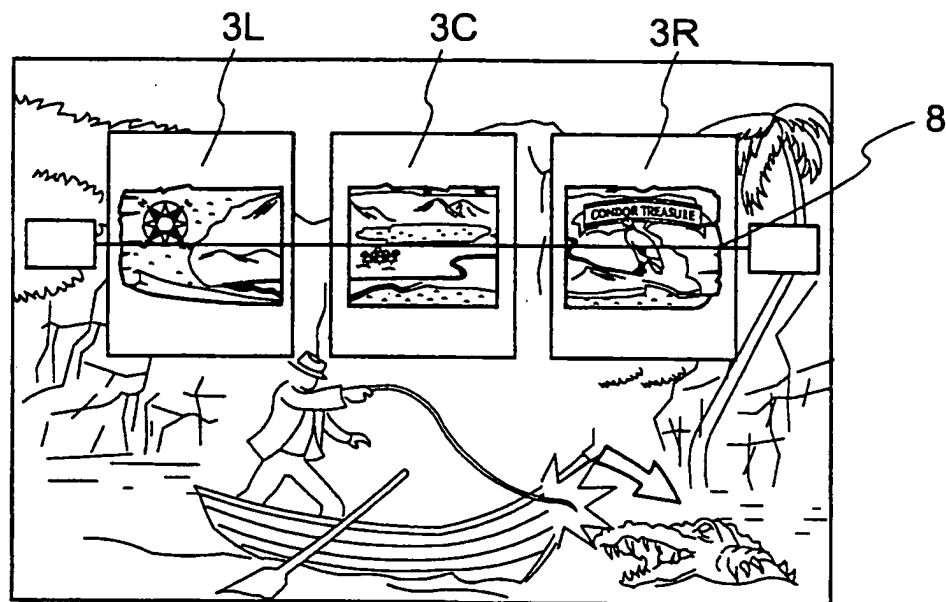


FIG.15

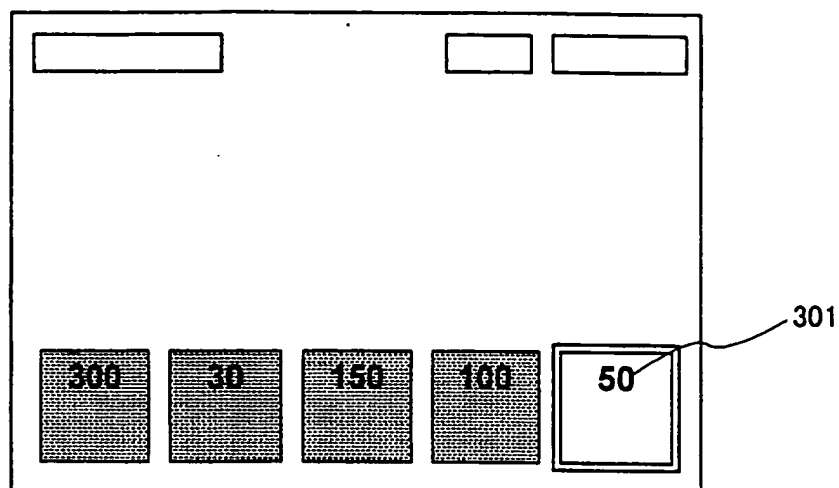


FIG.16

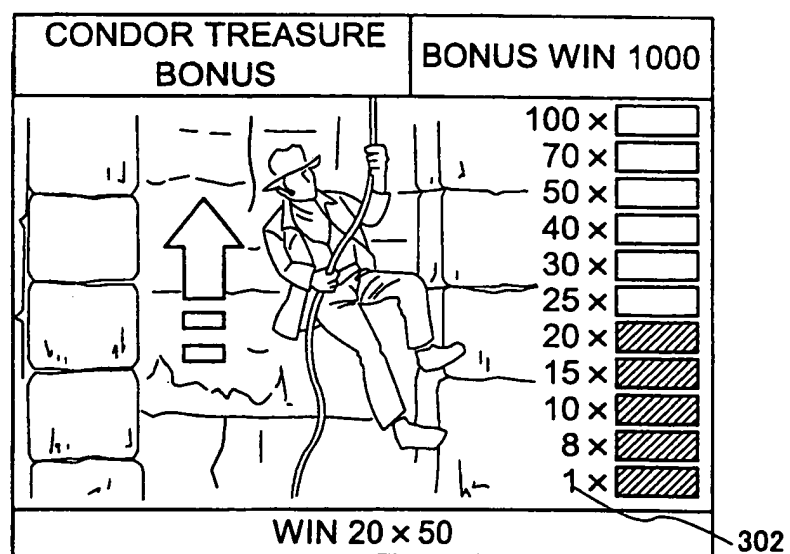


FIG.17

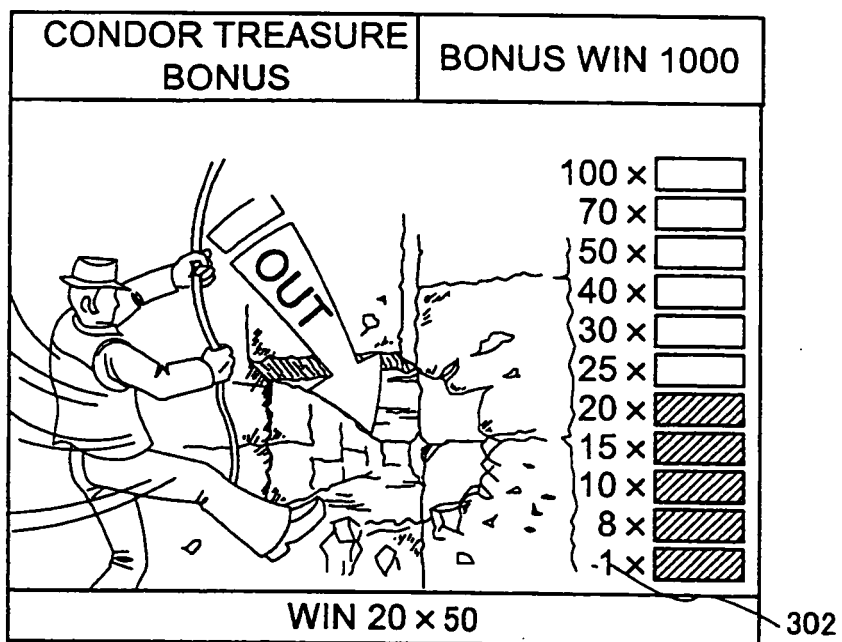


FIG.18

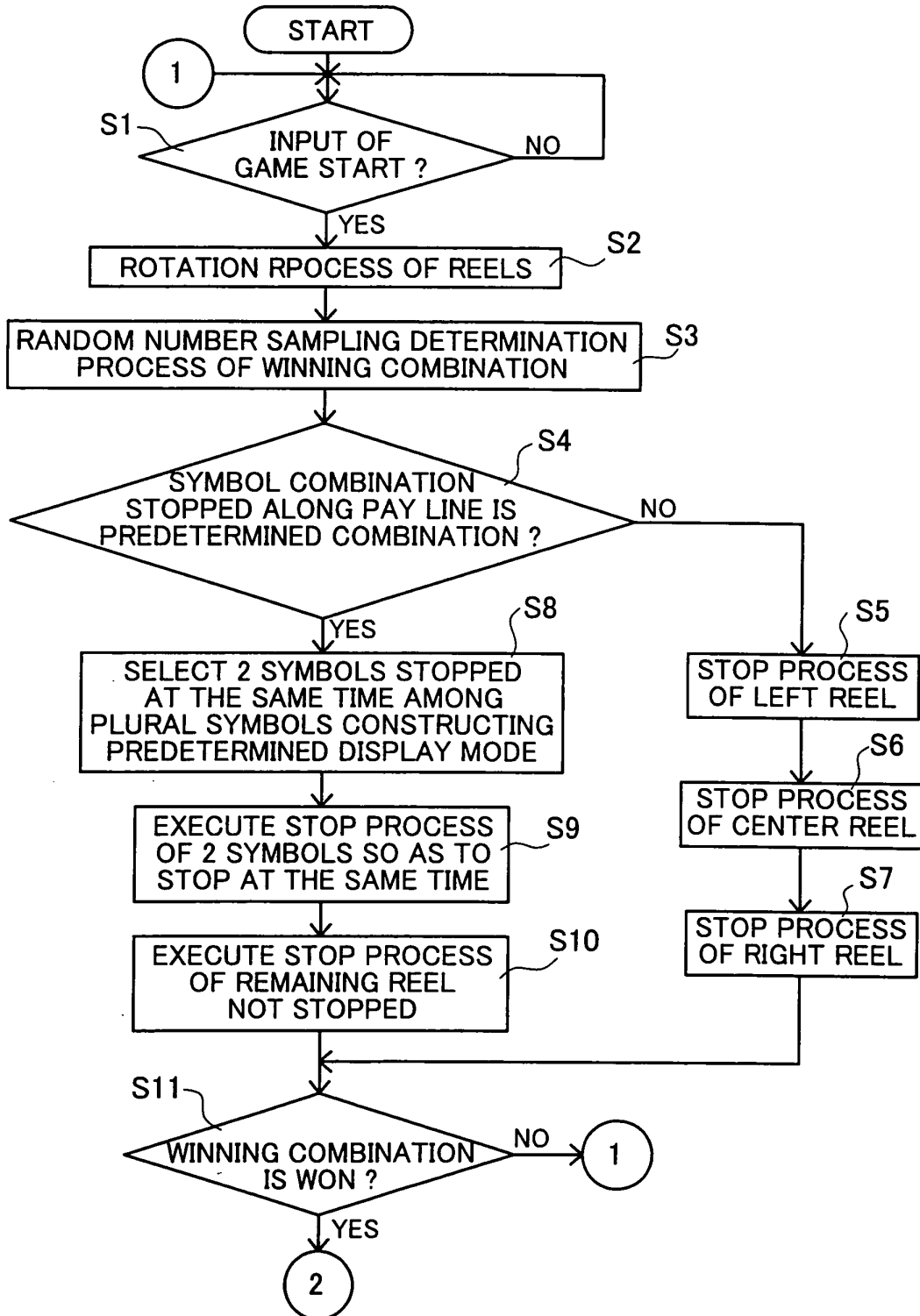


FIG.19

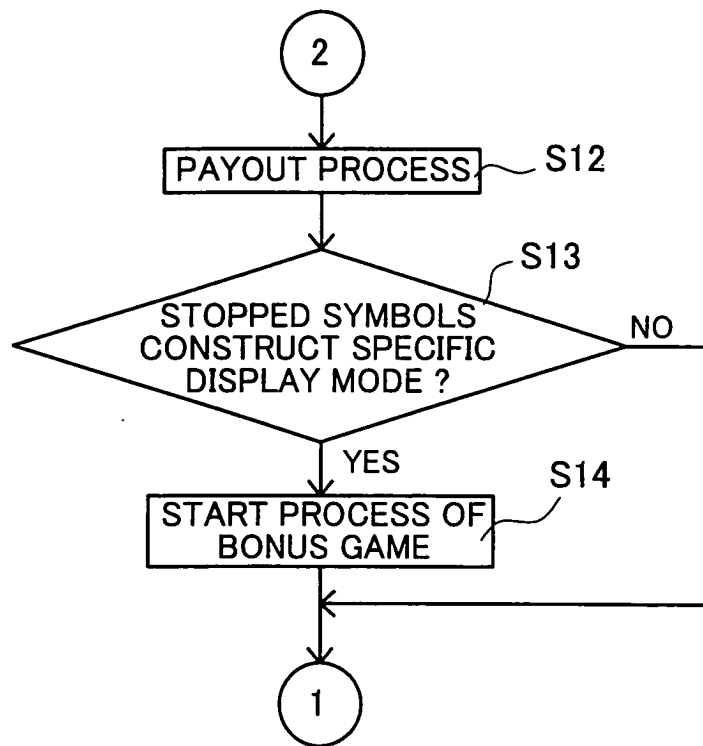


FIG.20

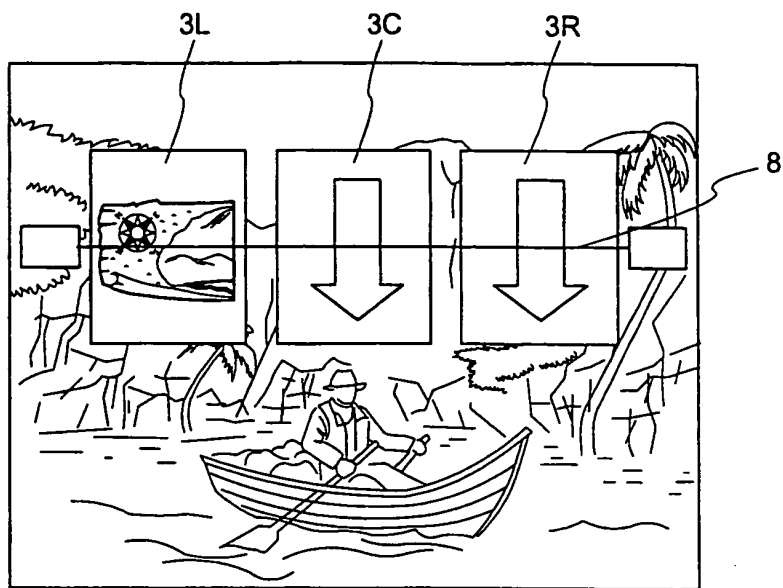


FIG.21

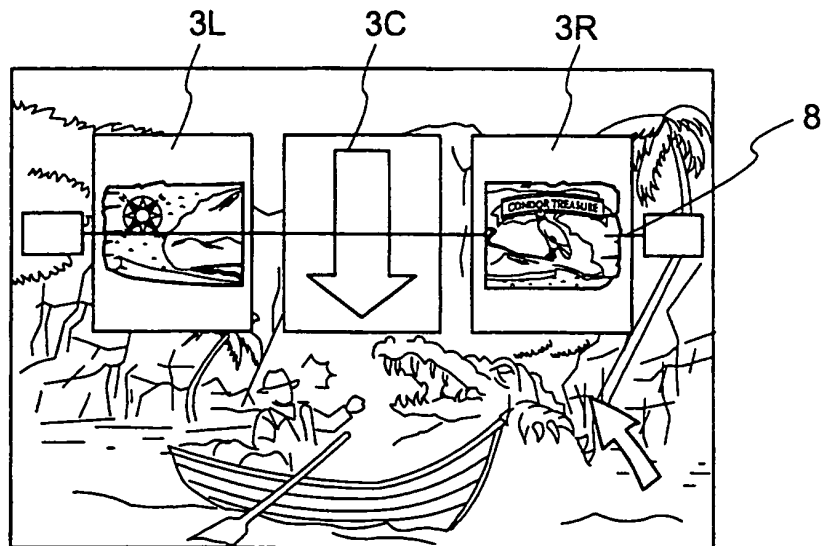


FIG.22

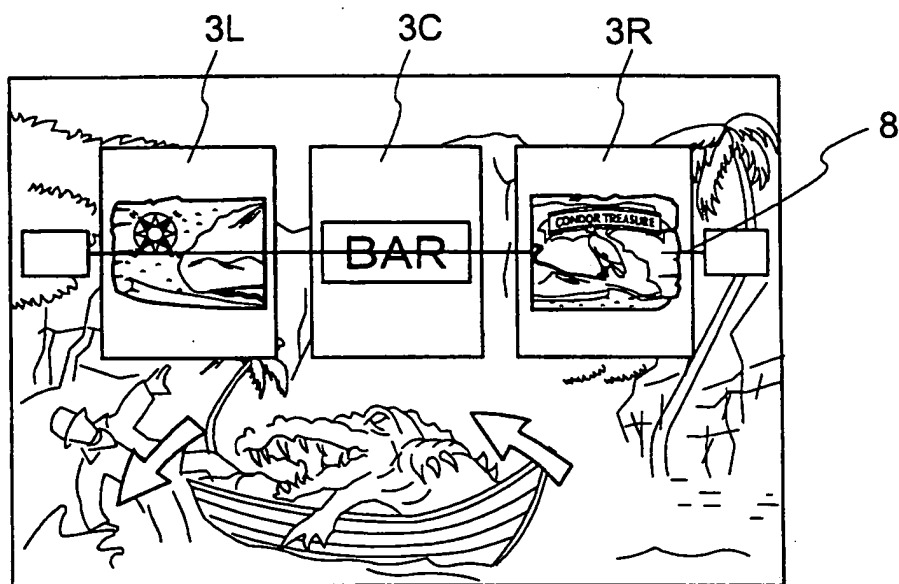


FIG.23

SYMBOL SELECTION LOTTERY TABLE OF SYMBOLS
STOPPED AT THE SAME TIME
(RANDOM NUMBER RANGE : 256)

IN CASE OF DISPLAY MODE "MAP1-MAP2-MAP3"

STOP ORDER OF REEL	RANDOM NUMBER RANGE
LEFT REEL→RIGHT REEL→CENTER REEL	0~150
CENTER REEL→RIGHT REEL→LEFT REEL	150~175
CENTER REEL→LEFT REEL→RIGHT REEL	176~200
RIGHT REEL→CENTER REEL→LEFT REEL	201~225
RIGHT REEL→LEFT REEL→CENTER REEL	226~255

IN CASE OF DISPLAY MODE "MAP1-MAP2-ANY"

SYMBOLS STOPPED AT THE SAME TIME	RANDOM NUMBER RANGE
LEFT REEL→RIGHT REEL→CENTER REEL	—
CENTER REEL→RIGHT REEL→LEFT REEL	—
CENTER REEL→LEFT REEL→RIGHT REEL	0~255
RIGHT REEL→CENTER REEL→LEFT REEL	—
RIGHT REEL→LEFT REEL→CENTER REEL	—

IN CASE OF DISPLAY MODE "MAP1-ANY-MAP3"

SYMBOLS STOPPED AT THE SAME TIME	RANDOM NUMBER RANGE
LEFT REEL→RIGHT REEL→CENTER REEL	0~127
CENTER REEL→RIGHT REEL→LEFT REEL	—
CENTER REEL→LEFT REEL→RIGHT REEL	—
RIGHT REEL→CENTER REEL→LEFT REEL	—
RIGHT REEL→LEFT REEL→CENTER REEL	128~255

IN CASE OF DISPLAY MODE "ANY-MAP2-MAP3"

SYMBOLS STOPPED AT THE SAME TIME	RANDOM NUMBER RANGE
LEFT REEL→RIGHT REEL→CENTER REEL	—
CENTER REEL→RIGHT REEL→LEFT REEL	0~127
CENTER REEL→LEFT REEL→RIGHT REEL	—
RIGHT REEL→CENTER REEL→LEFT REEL	128~255
RIGHT REEL→LEFT REEL→CENTER REEL	—

※「ANY」 MEANS SYMBOL EXCEPT FOR
MAP1,MAP2,MAP3 AND WILD

FIG.24

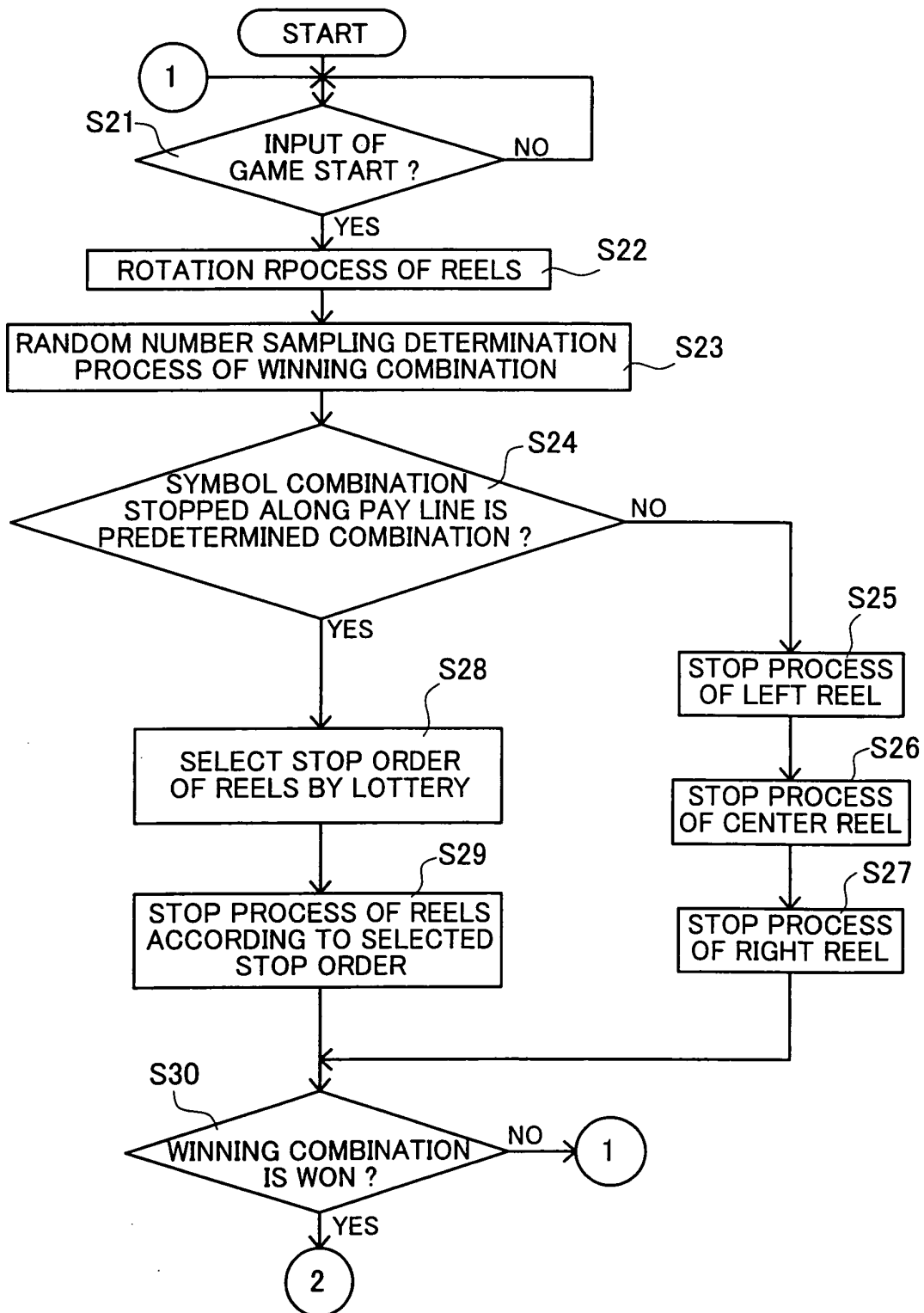


FIG.25

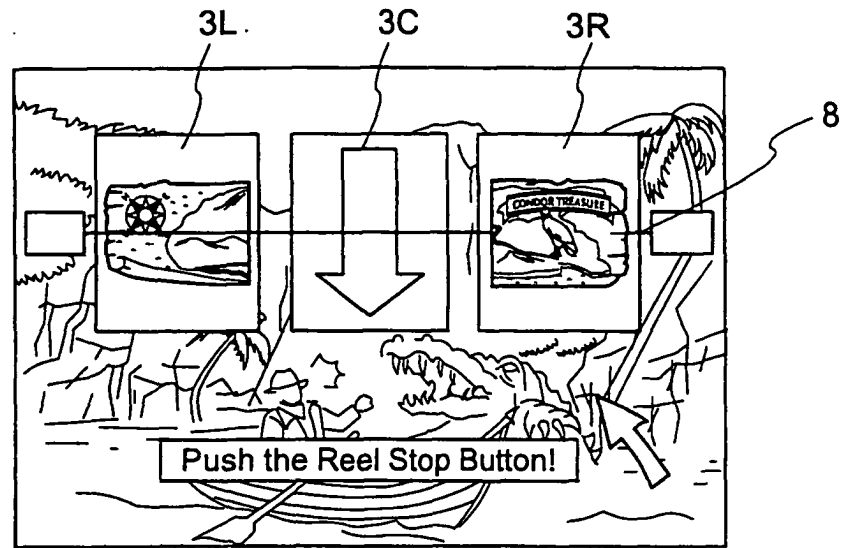


FIG.26

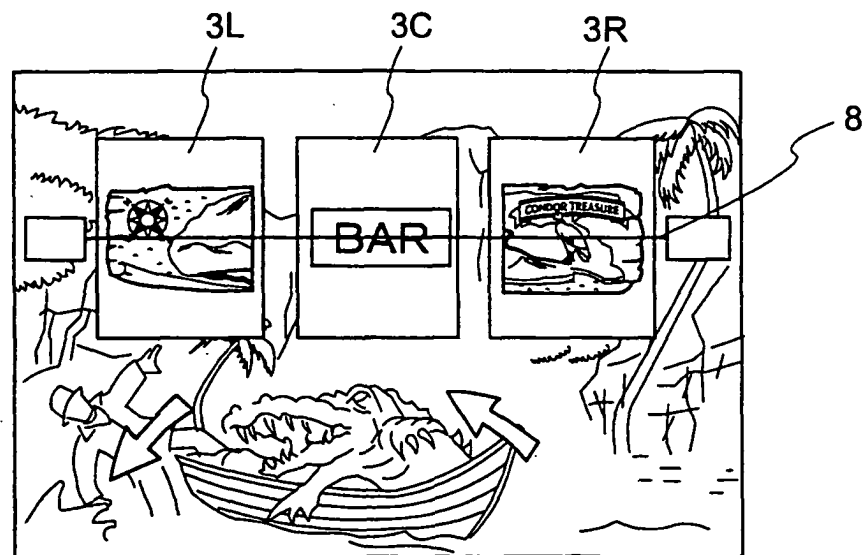


FIG.27

