A gaming machine of the present invention includes: background image storing unit for storing plural types of first background image data for displaying a first background image; effect display controlling unit for, when a specific variable display pattern is decided, allowing variable display unit to perform variable display of identification information based on the specific variable display pattern, and allowing the variable display unit to display a second background image after allowing the variable display unit to display the first background image; background image data selecting unit for selecting any of the plural types of first background image data when a predetermined background image selection condition is established; and background image display control unit for, after the second background image is displayed on the variable display unit, allowing the variable display unit to display the first background image based on the first background image data selected by the background image data selecting unit.
FIG. 4A

SYSTEM TIMER INTERVENTION PROCESS

S100

REGISTER SAVING

S110

RANDOM NUMBER UPDATE PROCESS (JACKPOT DETERMINING RANDOM NUMBER, INITIAL VALUE RANDOM NUMBER, JACKPOT SYMBOL RANDOM NUMBER, NORMAL SYMBOL WINNING DETERMINING RANDOM NUMBER)

S120

SWITCH INPUT DETECTION PROCESS

S130

TIMER UPDATE PROCESS

S140

GAMING INFORMATION OUTPUT PROCESS

S150

PORT OUTPUT PROCESS

S160

COMMAND OUTPUT PROCESS

S170

LAMP CONTROL PROCESS

S180

PAYOUT PROCESS

S190

REGISTER RETURNING

RET1

FIG. 4B

MAIN PROCESS

S10

INITIALIZATION PROCESS

S20

SPECIAL SYMBOL CONTROL PROCESS

S30

REGULAR SYMBOL CONTROL PROCESS

S40

RANDOM NUMBER UPDATE PROCESS (LOOSING SYMBOL, INITIAL VALUE RANDOM NUMBER, EFFECT RANDOM NUMBER)
FIG. 5

SWITCH INPUT DETECTION PROCESS

S121

WINNING BALL-RELATED SWITCH INPUT PROCESS

S122

SPECIAL SYMBOL-RELATED SWITCH INPUT PROCESS

S123

REGULAR SYMBOL-RELATED SWITCH INPUT PROCESS

RET
FIG. 6

S122-1  WHETHER INPUT SIGNAL INPUTTED BY COUNT SWITCH IS DETECTED?

S122-2  COUNT SWITCH DETECTION TIME PROCESS

S122-3  WHETHER INPUT SIGNAL INPUTTED BY V-COUNT SWITCH IS DETECTED?

S122-4  V-COUNT SWITCH DETECTION TIME PROCESS

S122-5  WHETHER INPUT SIGNAL INPUTTED BY STARTING OPENING SWITCH IS DETECTED?

S122-6  STARTING OPENING DETECTION TIME PROCESS

RET
FIG. 7

SPECIAL SYMBOL CONTROL PROCESS

S20-1
LOAD CONTROL STATE FLAG

S20-2
SPECIAL SYMBOL MEMORY CHECKING PROCESS

S20-3
SPECIAL SYMBOL VARIABLE DISPLAY TIME MANAGEMENT PROCESS

S20-4
SPECIAL SYMBOL DISPLAY TIME MANAGEMENT PROCESS

S20-5
JACKPOT STARTING INTERVAL MANAGEMENT PROCESS

S20-6
SPECIAL WINNING OPENING OPENING PERIOD PROCESS

S20-7
INTRA-SPECIAL WINNING OPENING REMAINING BALL MONITORING PROCESS

S20-8
SPECIAL WINNING OPENING OPENING WAITING TIME MANAGEMENT PROCESS

S20-9
SPECIAL WINNING ENDING INTERVAL PROCESS

S20-10
SPECIAL SYMBOL GAME ENDING PROCESS

RET
Special Symbol Memory Checking Process

S20-2-1: Whether Control State Flag is Equal to Value (00) indicating Special Symbol Memory Check?
  - NO: RET
  - YES: S20-2-2

S20-2-2: Whether Number of Starting Memory is Equal to 0?
  - NO: S20-2-4
  - YES: S20-2-3

S20-2-3: Demonstration Display Process

S20-2-4: Set Value (01) indicating Special Symbol Variable Display Time Management in Control State Flag

S20-2-5: Jackpot Determination Process

S20-2-6: Whether This is Jackpot?
  - NO: S20-2-8
  - YES: S20-2-7

S20-2-7: Determine Losing Symbol

S20-2-8: Determine Jackpot Symbol

S20-2-9: Variable Display Pattern Decision Process

S20-2-10: Set Variable Display Time Corresponding to Decided Variable Display Pattern in Waiting Time Timer (t)

S22-2-11: Clear Storage Area for Use in Variable Display at This Time

RET
### FIG.9

<table>
<thead>
<tr>
<th>VARIABLE DISPLAY PATTERN</th>
<th>LOSING</th>
<th>REACH LOSING</th>
<th>JACKPOT</th>
</tr>
</thead>
<tbody>
<tr>
<td>00 REGULAR VARIATION</td>
<td>0～99</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>01 NORMAL REACH</td>
<td>-</td>
<td>0～89</td>
<td>-</td>
</tr>
<tr>
<td>02 NORMAL REACH WINNING</td>
<td>-</td>
<td>-</td>
<td>0～39</td>
</tr>
<tr>
<td>03 SUPER REACH</td>
<td>-</td>
<td>70～99</td>
<td>-</td>
</tr>
<tr>
<td>04 SUPER REACH WINING</td>
<td>-</td>
<td>-</td>
<td>40～94</td>
</tr>
<tr>
<td>05 ENTIRE ROTATION</td>
<td>-</td>
<td>-</td>
<td>95～99</td>
</tr>
</tbody>
</table>
FIG. 10

MAIN PROCESS

INITIALIZATION PROCESS S200

IMAGE DISPLAY CONTROL PROCESS S210

SOUND OUTPUT CONTROL PROCESS S220

LAMP LIGHTING CONTROL PROCESS S230

FIG. 11

COMMAND RECEPTION PROCESS

WHETHER DEMONSTRATION DISPLAY COMMAND IS RECEIVED? S400

NO

YES

SET DEMONSTRATION DISPLAYING FLAG EQUAL TO 1, SET DEMONSTRATION EFFECT DATA S410

WHETHER VARIABLE DISPLAY PATTERN COMMAND IS RECEIVED? S420

NO

YES

SET DEMONSTRATION DISPLAYING FLAG EQUAL TO 0 S430

SET CONTROL DATA CORRESPONDING TO OTHER RECEIVED COMMANDS S450

SET CONTROL DATA CORRESPONDING TO RECEIVED VARIABLE DISPLAY PATTERN COMMAND S440

RET
FIG. 12

SYSTEM TIMER INTERVENTION PROCESS

REGISTER SAVING

SELECTION BUTTON INPUT CHECKING PROCESS

DECISION BUTTON INPUT CHECKING PROCESS

TIMER UPDATE PROCESS

REGISTER RETURNING

RET
FIG.15A

REACH FLOW

REACH FLOW AND EXPECTATION
VALUES OF RESPECTIVE
REACHES ARE DISPLAYED

RETURN

JACKPOT
INTER-JACKPOT
INFORMATION

REACH
REACH FREQUENCY
INFORMATION

CHART
REACH FLOW

JACKPOT SYMBOL

PROBABILITY
TODAY'S JACKPOT
PROBABILITY

RETURN
DECIDE

RETURN
DECIDE
REACH FLOW

REACH FLOW AND EXPECTATION VALUES OF RESPECTIVE REACHES ARE DISPLAYED

RETURN

JACKPOT

INTER-JACKPOT INFORMATION

REACH

REACH FREQUENCY INFORMATION

CHART

REACH FLOW

JACKPOT SYMBOL

PROBABILITY

TODAY'S JACKPOT PROBABILITY

RETURN

DECIDE

RETURN

DECIDE
FIG. 15C

NUMBER OF SUPER REACHES, APPEARANCE PROBABILITY, AND RELIABILITY ARE DISPLAYED

REACH FREQUENCY INFORMATION

RETURN

JACKPOT

INTER-JACKPOT INFORMATION

RETURN

REACH FREQUENCY INFORMATION

CHART

REACH FLOW

JACKPOT SYMBOL

RETURN

PROBABILITY

TODAY'S JACKPOT PROBABILITY

RETURN

DECIDE

RETURN

DECIDE
FIG. 15D

<table>
<thead>
<tr>
<th>REACH</th>
<th>REACH FREQUENCY INFORMATION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TOTAL NUMBER OF ROTATIONS</td>
</tr>
<tr>
<td>FIREWORK</td>
<td>△</td>
</tr>
<tr>
<td>FIREWORK</td>
<td>△</td>
</tr>
<tr>
<td>FIREWORK</td>
<td>△</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>REACH TYPE</th>
<th>NUMBER OF TIMES</th>
<th>APPEARANCE RATE</th>
<th>RELIABILITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>NORMAL</td>
<td>ONCE</td>
<td>1/196</td>
<td>○ %</td>
</tr>
<tr>
<td>LARGE-CYLINDER</td>
<td>ONCE</td>
<td>1/196</td>
<td>△ %</td>
</tr>
<tr>
<td>NIAGARA</td>
<td>TWICE</td>
<td>2/196</td>
<td>□ %</td>
</tr>
</tbody>
</table>

RETURN

SELECT

SELECT

DECIDE

DECIDE

RETURN

SELECT

DECIDE
FIG. 18

Flowchart for selecting and deciding on a display of a large-cylinder firework.
<table>
<thead>
<tr>
<th>JACKPOT SYMBOL</th>
<th>PROBABILITY VARIATION SYMBOL</th>
<th>REGULAR SYMBOL</th>
</tr>
</thead>
<tbody>
<tr>
<td>111</td>
<td>222</td>
<td>444</td>
</tr>
<tr>
<td>333</td>
<td>555</td>
<td>666</td>
</tr>
<tr>
<td>555</td>
<td></td>
<td>888</td>
</tr>
<tr>
<td>777</td>
<td></td>
<td>000</td>
</tr>
<tr>
<td>999</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**FIG. 19**
FIG. 20

<table>
<thead>
<tr>
<th>PROBABILITY</th>
<th>TODAY'S JACKPOT PROBABILITY</th>
<th>TOTAL NUMBER OF JACKPOT TIMES</th>
<th>TOTAL NUMBER OF ROTATIONS</th>
<th>TIMES NUMBER OF PROBABILITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>NORMAL</td>
<td>1/178</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PROBABILITY</td>
<td>1/9</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RETURNING DURING TIME REDUCTION</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

SELECT
DECIDE
RETURN
FIG. 21

COMPREHENSIVE MENU

CLEAR COMPREHENSIVE DATA

INFORMATION AND
HISTORY OF GUIDE
MENU ARE ENTIRELY
DELETED

CLEAR COMPREHENSIVE DATA

GUIDE

GUIDE OPTION

RETURN

SELECT

DETERMINE

SELECT

DETERMINE
FIG. 24

<table>
<thead>
<tr>
<th>NORMAL BACKGROUND IMAGE</th>
<th>RANDOM NUMBER VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>NORMAL BACKGROUND DISPLAY IMAGE A</td>
<td>0～39</td>
</tr>
<tr>
<td>NORMAL BACKGROUND DISPLAY IMAGE B</td>
<td>-</td>
</tr>
<tr>
<td>NORMAL BACKGROUND DISPLAY IMAGE C</td>
<td>-</td>
</tr>
</tbody>
</table>
FIG. 29

STARTING OPENING DETECTION TIME PROCESS

S122-61

WHETHER STARTING MEMORY NUMBER IS EQUAL TO OR LARGER THAN 42?

YES

NO

S122-62

ADD 1 TO STARTING MEMORY NUMBER

EXTRACT JACKPOT DETERMINING RANDOM NUMBER VALUE AND JACKPOT SYMBOL RANDOM NUMBER VALUE

STORE RESPECTIVE EXTRACTED RANDOM NUMBER VALUES

S122-64

S122-65

WHETHER CONTINUOUS ANNOUNCEMENT COUNTER IS EQUAL TO OR LARGER THAN 1?

YES

S122-66

COMPARE EXTRACTED JACKPOT DETERMINING RANDOM NUMBER VALUE AND JACKPOT DETERMINATION VALUE WITH EACH OTHER

S122-67

WHETHER JACKPOT DETERMINING RANDOM NUMBER VALUE IS EQUAL TO JACKPOT DETERMINATION VALUE?

YES

CONTINUOUS ANNOUNCEMENT EXECUTION LOTTERY (WINNING PROBABILITY: 1/2)

S122-68

CONTINUOUS ANNOUNCEMENT EXECUTION LOTTERY (WINNING PROBABILITY: 1/200)

S122-69

NO

S122-70

WHETHER ANNOUNCEMENT EXECUTION LOTTERY IS WON?

YES

S122-71

CONTINUOUS ANNOUNCEMENT EXECUTION LOTTERY (WINNING PROBABILITY: 1/200)

NO

S122-72

SET VALUE IN CONTINUOUS ANNOUNCEMENT COUNTER, SETO IN ANNOUNCEMENT EXECUTION COUNTER, SET STARTING MEMORY NUMBER DESIGNATION COMMAND

RET
<table>
<thead>
<tr>
<th>VARIABLE DISPLAY PATTERN</th>
<th>SELECTED IN CASE OF LOSING REACH JACKPOT AND WHEN CONTINUOUS ANNOUNCEMENT COUNTER VALUE IS EQUAL TO OR LARGER THAN 1</th>
<th>SELECTED IN CASE OF LOSING REACH JACKPOT AND WHEN CONTINUOUS ANNOUNCEMENT COUNTER VALUE IS EQUAL TO OR LARGER THAN 2</th>
<th>SELECTED IN CASE OF LOSING REACH JACKPOT AND WHEN CONTINUOUS ANNOUNCEMENT COUNTER VALUE IS EQUAL TO OR LARGER THAN 3</th>
<th>SELECTED IN CASE OF LOSING REACH JACKPOT AND WHEN CONTINUOUS ANNOUNCEMENT COUNTER VALUE IS EQUAL TO OR LARGER THAN 4</th>
<th>SELECTED IN CASE OF LOSING REACH JACKPOT AND WHEN CONTINUOUS ANNOUNCEMENT COUNTER VALUE IS EQUAL TO OR LARGER THAN 5</th>
<th>SELECTED IN CASE OF LOSING REACH JACKPOT AND WHEN CONTINUOUS ANNOUNCEMENT COUNTER VALUE IS EQUAL TO OR LARGER THAN 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>VARIABLE DISPLAY PATTERN</td>
<td>SELECTED IN CASE OF LOSING REACH JACKPOT AND WHEN CONTINUOUS ANNOUNCEMENT COUNTER VALUE IS EQUAL TO OR LARGER THAN 1</td>
<td>SELECTED IN CASE OF LOSING REACH JACKPOT AND WHEN CONTINUOUS ANNOUNCEMENT COUNTER VALUE IS EQUAL TO OR LARGER THAN 2</td>
<td>SELECTED IN CASE OF LOSING REACH JACKPOT AND WHEN CONTINUOUS ANNOUNCEMENT COUNTER VALUE IS EQUAL TO OR LARGER THAN 3</td>
<td>SELECTED IN CASE OF LOSING REACH JACKPOT AND WHEN CONTINUOUS ANNOUNCEMENT COUNTER VALUE IS EQUAL TO OR LARGER THAN 4</td>
<td>SELECTED IN CASE OF LOSING REACH JACKPOT AND WHEN CONTINUOUS ANNOUNCEMENT COUNTER VALUE IS EQUAL TO OR LARGER THAN 5</td>
<td>SELECTED IN CASE OF LOSING REACH JACKPOT AND WHEN CONTINUOUS ANNOUNCEMENT COUNTER VALUE IS EQUAL TO OR LARGER THAN 6</td>
</tr>
<tr>
<td>CONTINUOUS ANNOUNCEMENT</td>
<td>SUPER REACH JACKPOT</td>
<td>SUPER REACH JACKPOT</td>
<td>SUPER REACH JACKPOT</td>
<td>SUPER REACH JACKPOT</td>
<td>SUPER REACH JACKPOT</td>
<td>SUPER REACH JACKPOT</td>
</tr>
<tr>
<td>NORMAL MODE SUPER REACH</td>
<td>NORMAL MODE SUPER REACH</td>
<td>NORMAL MODE SUPER REACH</td>
<td>NORMAL MODE SUPER REACH</td>
<td>NORMAL MODE SUPER REACH</td>
<td>NORMAL MODE SUPER REACH</td>
<td>NORMAL MODE SUPER REACH</td>
</tr>
<tr>
<td>NORMAL MODE ENTIRE ROTATION</td>
<td>NORMAL MODE ENTIRE ROTATION</td>
<td>NORMAL MODE ENTIRE ROTATION</td>
<td>NORMAL MODE ENTIRE ROTATION</td>
<td>NORMAL MODE ENTIRE ROTATION</td>
<td>NORMAL MODE ENTIRE ROTATION</td>
<td>NORMAL MODE ENTIRE ROTATION</td>
</tr>
<tr>
<td>SUCCESSFUL CONTINUATION</td>
<td>LOSING</td>
<td>LOSING</td>
<td>LOSING</td>
<td>LOSING</td>
<td>LOSING</td>
<td>LOSING</td>
</tr>
<tr>
<td>UNSUCCESSFUL CONTINUATION</td>
<td>LOSING</td>
<td>LOSING</td>
<td>LOSING</td>
<td>LOSING</td>
<td>LOSING</td>
<td>LOSING</td>
</tr>
<tr>
<td>NORMAL MODE LOSING</td>
<td>LOSING</td>
<td>LOSING</td>
<td>LOSING</td>
<td>LOSING</td>
<td>LOSING</td>
<td>LOSING</td>
</tr>
</tbody>
</table>
FIG. 32

COMMAND RECEPTION PROCESS

S700

WHETHER VARIABLE DISPLAY PATTERN COMMAND IS RECEIVED

NO

S720

WHETHER THIS IS VARIABLE DISPLAY PATTERN BECOMING JACKPOT?

YES

S730

WHETHER SUCCESSFUL CONTINUATION LOSING VARIABLE DISPLAY PATTERN?

NO

S740

SET 0 IN CONTINUOUS ANNOUNCEMENT EXECUTION COUNTER

YES

S750

ADD 1 TO CONTINUOUS ANNOUNCEMENT EXECUTION COUNTER

S760

SET CONTINUOUS ANNOUNCEMENT ATTRACTION DATA CORRESPONDING TO CONTINUOUS ANNOUNCEMENT EXECUTION COUNTER VALUE

S770

SET SYMBOL VARIATION DISPLAY DATA BASED ON RECEIVED VARIABLE DISPLAY PATTERN COMMAND

S780

WHETHER VARIABLE DISPLAY PATTERN IS EQUAL TO UNSUCCESSFUL CONTINUATION LOSING?

YES

S790

SET 0 IN CONTINUOUS ANNOUNCEMENT EXECUTION COUNTER

NO

S800

WHETHER VARIATION PATTERN IS EQUAL TO CONTINUOUS ANNOUNCEMENT SUPER REACH LOSING VARIABLE DISPLAY PATTERN?

YES

S810

SET CONTROLL DATA CORRESPONDING TO RECEIVED COMMAND

RET
<table>
<thead>
<tr>
<th>ANNOUNCEMENT ATTRACTION DATA</th>
<th>SUCCESSFUL FIREWORK MAKING</th>
<th>UNSUCCESSFUL FIREWORK MAKING</th>
<th>SUCCESSFUL FIREWORK SETTING</th>
<th>UNSUCCESSFUL FIREWORK SETTING</th>
<th>SUCCESSFUL FIREWORK LIGHTING</th>
<th>UNSUCCESSFUL FIREWORK LIGHTING</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONTINUOUS ANNOUNCEMENT EXECUTION COUNTER VALUE</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>CONTENTS</td>
<td>SUCCESSFUL FIREWORK MAKING</td>
<td>UNSUCCESSFUL FIREWORK MAKING</td>
<td>SUCCESSFUL FIREWORK SETTING</td>
<td>UNSUCCESSFUL FIREWORK SETTING</td>
<td>SUCCESSFUL FIREWORK LIGHTING</td>
<td>UNSUCCESSFUL FIREWORK LIGHTING</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>
FIG. 34A

LET'S LAUNCH FIREWORK!

FIG. 34B

YES!

FIG. 34C

VERY SORRY
### FIG. 38A

**First Variable Display Pattern Selection Table**

<table>
<thead>
<tr>
<th>Winning/Losing</th>
<th>Presence of Reach</th>
<th>Variable Display Pattern</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOSING</td>
<td>NONE</td>
<td>NORMAL LOSING</td>
</tr>
<tr>
<td></td>
<td>PRESENT</td>
<td>UNSUCCESSFUL CONTINUATION LOSING</td>
</tr>
<tr>
<td>JACKPOT</td>
<td>PRESENT</td>
<td>NORMAL-MODE NORMAL REACH LOSING</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NORMAL-MODE SUPER REACH LOSING</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NORMAL-MODE NORMAL REACH JACKPOT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NORMAL-MODE SUPER REACH JACKPOT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NORMAL-MODE ENTIRE-ROTATION REACH JACKPOT</td>
</tr>
</tbody>
</table>

### FIG. 38B

**Second Variable Display Pattern Selection Table**

<table>
<thead>
<tr>
<th>Winning/Losing</th>
<th>Presence of Reach</th>
<th>Variable Display Pattern</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOSING</td>
<td>NONE</td>
<td>SUCCESSFUL CONTINUATION LOSING</td>
</tr>
<tr>
<td>JACKPOT</td>
<td>PRESENT</td>
<td>CONTINUOUS ANNOUNCEMENT SUPER REACH JACKPOT 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CONTINUOUS ANNOUNCEMENT SUPER REACH JACKPOT 2</td>
</tr>
</tbody>
</table>

### FIG. 38C

**Third Variable Display Pattern Selection Table**

<table>
<thead>
<tr>
<th>Winning/Losing</th>
<th>Presence of Reach</th>
<th>Variable Display Pattern</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOSING</td>
<td>NONE</td>
<td>UNSUCCESSFUL CONTINUATION LOSING</td>
</tr>
<tr>
<td></td>
<td>PRESENT</td>
<td>CONTINUOUS ANNOUNCEMENT SUPER REACH LOSING 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CONTINUOUS ANNOUNCEMENT SUPER REACH LOSING 2</td>
</tr>
<tr>
<td>JACKPOT</td>
<td>PRESENT</td>
<td>CONTINUOUS ANNOUNCEMENT SUPER REACH JACKPOT 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CONTINUOUS ANNOUNCEMENT SUPER REACH JACKPOT 2</td>
</tr>
</tbody>
</table>

### FIG. 38D

**Fourth Variable Display Pattern Selection Table**

<table>
<thead>
<tr>
<th>Winning/Losing</th>
<th>Presence of Reach</th>
<th>Variable Display Pattern</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOSING</td>
<td>PRESENT</td>
<td>CONTINUOUS ANNOUNCEMENT SUPER REACH LOSING 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CONTINUOUS ANNOUNCEMENT SUPER REACH LOSING 2</td>
</tr>
<tr>
<td>JACKPOT</td>
<td>PRESENT</td>
<td>CONTINUOUS ANNOUNCEMENT SUPER REACH JACKPOT 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CONTINUOUS ANNOUNCEMENT SUPER REACH JACKPOT 2</td>
</tr>
</tbody>
</table>
GAMING MACHINE, RECORDING MEDIUM RECORDED SIMULATION PROGRAM FOR GAMING MACHINE THEREIN

CROSS REFERENCE TO RELATED APPLICATION


BACKGROUND OF THE INVENTION

[0002] 1. Field of the Invention

[0003] The present invention relates to a gaming machine such as a pachinko gaming machine, and a recording medium recording a simulation program of the gaming machine.

[0004] 2. Description of the Related Art

[0005] As a gaming machine such as a related pachinko gaming machine, "pachinko" refers to a ball-shooting gaming machine in which iron balls (pachinko balls) are shot, and when the iron balls enter specific holes of a gaming machine erected substantially vertically, balls are paid out, there is one in which, together with a predetermined image, a background image showing a background thereof is displayed on a display unit. In this related gaming machine, when a predetermined background image is displayed on the display unit, the predetermined background image has been switched to another background image based on formation of a predetermined condition (for example, a case where the number of variations of a special symbol reaches a predetermined number and a predetermined lottery is won); and the switched background image has been displayed (for example, Japanese Patent Laid-Open Publication No. 2003-236164). Thus, a player can visually recognize a variety of the background images, and accordingly, enhancement of visual effects in the gaming machine is achieved.

SUMMARY OF THE INVENTION

[0006] However, the above-described related art has had a problem as below. In the related gaming machine, after the predetermined background image is displayed on the display unit, another background image is suddenly displayed thereon. Therefore, sometimes, the player has come to feel a feeling of wrongness on the effects of the background on the display unit, and has lost a willingness thereof to play pachinko. A description will be made of such a problematic point of the related art by using the drawings. For example, in the related art, a background display based on the same background image data is performed from a start of a variation display of a special symbol, which is as shown in FIG. 44A, until a stop of the variation display of the special symbol, which is as shown in FIG. 44B. Then, as shown in FIG. 44C, at a time of a start of a new variation display, a display of a background based on another background image data is suddenly performed. Accordingly, since the background is suddenly changed without any sign, the player feels the feeling of wrongness on the effects of the background. As a result, the player cannot enjoy the effects of the background even if viewing the same, for example, when the player plays pachinko with such a gaming machine.

[0007] The present invention has been made in order to solve the problem as described above. It is an object of the present invention to provide a gaming machine which achieves the enhancement of the visual effects by switching the display of the background, and is capable of avoiding giving the player the feeling of wrongness on the effects of the background, which may be caused thereby, and to provide a recording medium recording a simulation program of the gaming machine.

[0008] In order to achieve the above-described object, a first aspect of the present invention is summarized to be a gaming machine including: a specific gaming state determining unit (for example, a main CPU 31) for determining that a gaming state has transferred to a specific gaming state advantageous for a player when a predetermined starting condition is established; a variable display pattern deciding unit (for example, the main CPU 31) for deciding a variable display pattern for executing variable display of identification information based on a determination result by the specific gaming state determining unit; a variable display unit (for example, a liquid crystal display device 4) for performing variable display of the identification information based on the variable display pattern decided by the variable display pattern deciding unit, and displaying a first background image during an operation of the variable display of the identification information; a display controlling unit (for example, a sub-CPU 41) for controlling the variable display unit; and a background image storing unit (for example, an image data ROM 54) for storing plural types of first background image data for displaying the first background image (for example, a regular background image).

[0009] Here, the display controlling unit includes: an effect display controlling unit for, when a specific variable display pattern is decided by the variable display pattern deciding unit, allowing the variable display unit to perform the variable display of the identification information based on the specific variable display pattern, and allowing the variable display unit to display a second background image (a special background image) after allowing the variable display unit to display the first background image; a background image data selecting unit for selecting any of the plural types of first background image data when a predetermined background image selection condition is established; and a background image display controlling unit for, after the second background image is displayed on the variable display unit by the effect display controlling unit, allowing the variable display unit to display the first background image based on the first background image data selected by the background image data selecting unit.

[0010] According to the first aspect of the present invention, when the display of the first background image is switched on an occasion of the display of the second background image, and
accordingly, it can be said that the player does not feel that the background is suddenly changed. As a result, by switching the display of the background, the feeling of wrongness on the effect of the background can be avoided being given to the player.

Moreover, the background image data selecting unit selects any of the plural types of first background image data, and the background display controlling unit allows the variable display unit to perform the switching display of the first background image based on the selected first background image data. Accordingly, the player can view the variety of background images, and the demonstration effect in the gaming machine is enhanced.

A second aspect of the present invention is summarized to be a recording medium recording a program allowing a computer to execute a simulation of a gaming machine including a specific gaming state determining unit for determining that a gaming state has transferred to a specific gaming state advantageous for a player when a predetermined starting condition is established, a variable display pattern deciding unit for deciding a variable display pattern for executing variable display of identification information based on a determination result by the specific gaming state determining unit, a variable display unit for performing variable display of the identification information based on the variable display pattern decided by the variable display pattern deciding unit, and displaying a first background image during an operation of the variable display of the identification information, a display controlling unit for controlling the variable display unit, and a background image storing unit for storing plural types of first background image data for displaying the first background image, the program including: an effect display control process which, when a specific variable display pattern is decided by the variable display pattern deciding unit, allows the variable display unit to perform the variable display of the identification information based on the specific variable display pattern, and allows the variable display unit to display a second background image after allowing the variable display unit to display the first background image; a background image data selection process which selects any of the plural types of first background image data when a predetermined background image selection condition is established; and a background image display control process which, after the second background image is displayed on the variable display unit by the effect display controlling unit, allows the variable display unit to display the first background image based on the first background image data selected by the background image data selection process.

According to the second aspect of the present invention, when the display of the first background image is switched on the variable display unit, display of a certain first background image is not suddenly switched to display of another first background display, but in the case where the second background image is displayed on the variable display unit by the effect display control process after the first background image is displayed, the background image display control process allows the display unit to display the first background image based on the first background image data selected by the background image data selection process after the display of the second background image. Therefore, the display of the first background image is switched on an occasion of the display of the second background image, and accordingly, it can be said that the player does not feel that the background is suddenly changed. As a result, by switching the display of the background, the feeling of wrongness on the effect of the background can be avoided being given to the player.

Hence, according to the first or second aspect of the present invention, by switching the display of the background, the demonstration effect is enhanced, and the feeling of wrongness on the effect of the background can be avoided being given to the player.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is an overview view of a gaming machine according to a first embodiment of the present invention.

FIG. 2 is an exploded view of the gaming machine according to the first embodiment of the present invention.

FIG. 3 is a block diagram showing a control unit of the gaming machine according to the first embodiment of the present invention.

FIGS. 4A and 4B are flowcharts showing operations of the gaming machine according to the first embodiment of the present invention.

FIG. 5 is a flowchart showing a switch input detection process according to the first embodiment of the present invention.

FIG. 6 is a flowchart showing a special symbol-related switch input process according to the first embodiment of the present invention.

FIG. 7 is a flowchart showing a special symbol control process according to the first embodiment of the present invention.

FIG. 8 is a flowchart showing a special symbol memory checking process according to the first embodiment of the present invention.

FIG. 9 is a diagram showing a variable display pattern selection table according to the first embodiment of the present invention.

FIG. 10 is a flowchart showing a main process of a sub-control circuit of the gaming machine according to the first embodiment of the present invention.

FIG. 11 is a flowchart showing a command reception process according to the first embodiment of the present invention.

FIG. 12 is a flowchart showing a system timer intervention process of the sub-control circuit of the gaming machine according to the first embodiment of the present invention.

FIGS. 13A to 13E are views showing an example of demonstration effect displays according to the first embodiment of the present invention.

FIG. 14 is a flowchart showing a selection button input checking process according to the first embodiment of the present invention.

FIGS. 15A to 15D are views showing examples of displays of guide menus and displays of game information,
which are displayed on a liquid crystal display device 4 according to the first embodiment of the present invention.

[0030] FIG. 16 is a flowchart showing a decision button input checking process according to the first embodiment of the present invention.

[0031] FIGS. 17A and 17B are views showing examples of the displays of the gaming information displayed on the liquid crystal display device 4 according to the first embodiment of the present invention.

[0032] FIG. 18 is a view showing an example of the display of the gaming information displayed on the liquid crystal display device 4 according to the first embodiment of the present invention.

[0033] FIG. 19 is a view showing an example of the display of the gaming information displayed on the liquid crystal display device 4 according to the first embodiment of the present invention.

[0034] FIG. 20 is a view showing an example of the display of the gaming information displayed on the liquid crystal display device 4 according to the first embodiment of the present invention.

[0035] FIG. 21 is a view showing an example of a display of a regular menu displayed on the liquid crystal display device 4 according to the first embodiment of the present invention.

[0036] FIG. 22 is a view showing an example of the display of the gaming information displayed on the liquid crystal display device 4 according to the first embodiment of the present invention.

[0037] FIG. 23 is a view showing an example of the display of the gaming information displayed on the liquid crystal display device 4 according to the first embodiment of the present invention.

[0038] FIG. 24 is a diagram showing a usual background image selection table according to a second embodiment of the present invention.

[0039] FIG. 25 is a flowchart showing a command reception process according to the second embodiment of the present invention.

[0040] FIGS. 26A to 26F are views showing special symbols and usual background images, which are displayed on a liquid crystal display device according to the second embodiment of the present invention.

[0041] FIGS. 27G to 27L are views showing special symbols, transfer images, and special background images, which are displayed on the liquid crystal display device according to the second embodiment of the present invention.

[0042] FIG. 28 is a view showing special symbols and a usual background image, which are displayed on the liquid crystal display device according to the second embodiment of the present invention.

[0043] FIG. 29 is a flowchart showing a starting opening detection-time process according to a third embodiment of the present invention.

[0044] FIG. 30 is a flowchart showing a variable display pattern decision process according to the third embodiment of the present invention.

[0045] FIG. 31 is a diagram showing a variable display pattern selection table according to the third embodiment of the present invention.

[0046] FIG. 32 is a flowchart showing a command reception process according to the third embodiment of the present invention.

[0047] FIG. 33 is a diagram showing a previously noticed effect data selection table according to the third embodiment of the present invention.

[0048] FIGS. 34A to 34C are views showing examples of previously noticed effects according to the third embodiment of the present invention.

[0049] FIGS. 35A to 35C are views showing examples of the previously noticed effects according to the third embodiment of the present invention.

[0050] FIGS. 36A to 36C are views showing examples of the previously noticed effects according to the third embodiment of the present invention.

[0051] FIGS. 37A to 37C are views showing examples of variable displays and effect displays based on a variable display pattern of a “super reach jackpot (special winning)” for a continuous announcement according to the third embodiment of the present invention.

[0052] FIGS. 38A to 38D are diagrams showing variable display pattern selection tables in Modification example 1 of the third embodiment of the present invention.

[0053] FIGS. 39A to 39C are views showing gaming panel bases in Modification example 1 of the first to third embodiments of the present invention.

[0054] FIG. 40 is a view showing an arrangement relationship between a liquid crystal display device and peripheral portions thereof in Modification example 2 of the first to third embodiments of the present invention.

[0055] FIG. 41 is a view showing an arrangement relationship of a video device by a projector system in Modification example 3 of the first to third embodiments of the present invention.

[0056] FIGS. 42A and 42B are views for explaining a method of executing a simulation in Modification example 4 of the first to third embodiments of the present invention.

[0057] FIG. 43 is a view for explaining the method of executing the simulation in Modification example 4 of the first to third embodiments of the present invention.

[0058] FIGS. 44A, 44B and 44C are views for explaining a problem of the related art.

[0059] A description will be made below of first to third embodiments of the present invention based on the drawings.

DETAILED DESCRIPTION OF THE INVENTION
First Embodiment

A description will be made of a configuration of a ball-shooting gaming machine (hereinafter, referred to as a gaming machine) 1 according to a first embodiment while referring to the drawings. FIG. 1 is a perspective view showing the whole of the gaming machine 1 according to the first embodiment. FIG. 2 is an exploded explanatory view showing a state where the respective portions constituting the gaming machine 1 are disassembled.

As shown in FIGS. 1 and 2, the gaming machine 1 includes an outer frame 80 for fixing the gaming machine 1 to a game island (the game island refers to one block where the gaming machines are installed) provided in a game arcade, and a base door 60 attached to the outer frame 80. On an upper left portion and a lower left portion on a front surface of the outer frame 80, hinge projection portions 80a are provided. On an upper left portion and a lower left portion on a front surface of the base door 60, hinge recess portions 60a are provided. The hinge projection portions 80a are fitted to the hinge recess portions 60a, and the base door 60 is thus attached to the outer frame 80 so as to be openable and closable. The base door 60 is also a body portion constituting a body of the gaming machine.

On a back surface of the base door 60, a rail portion (not shown) capable of inserting a liquid crystal display device 4 thereinto from an overhead side of the base door 60 is provided. In a state where the liquid crystal display device 4 is inserted into this rail portion, the liquid crystal display device 4 is attached to the base door 60. The liquid crystal display device 4 is a display device having a display area visually recognizable by a player through a transparent member of a gaming panel base 32. The liquid crystal display device 4 is displaying unit where a display state is changeable in response to gaming. The liquid crystal display device 4 is variable displaying unit which performs a variable display of a special symbol when a predetermined starting condition is established. Specifically, the liquid crystal display device 4 executes the variable display of the special symbol on the display area under a condition where a gaming ball has passed through a starting area provided in a starting opening 6. The variable display of the special symbol is executed based on a jackpot determining random number value extracted under the condition where the gaming ball has passed through the starting area, and the like. Here, the random numbers refer to numbers of which appearing values do not have regularities. For the random numbers here, not perfect random numbers but pseudo random numbers which can be regarded as random numbers may be used.

In the state where the liquid crystal display device 4 is inserted into the above-described rail portion, the display area of the liquid crystal display device 4 is disposed at a position opposite to an opening portion 60c of the base door 60.

On an upper portion of the front surface of the base door 60, opening portions 60d/l capable of housing speakers 50 fitted thereinto are provided, and the speakers 50 are fitted into the opening portions 60d/l.

Onto a center of the front surface of the base door 60, a gaming panel 30a to which a spacer 110 is attached is attached so as to be detachable therefrom. On the spacer 110, there are provided a illuminating light-emitting board, an illuminating lens member, a ball passage portion as a passage of the gaming balls, and the like. In a state where the gaming panel 30a is attached to the front surface of the base door 60, a gaming area of the gaming panel 30a is disposed at a position opposite to the opening portion 60e of the base door 60. The gaming panel 30a includes the gaming panel base 32, and a variety of gaming members (a first gaming ball guiding member 3 and the like) to be described later, which are arranged on the gaming panel base 32. At least a part of the gaming panel base 32 is formed of the transparent member through which the display area of the liquid crystal display device 4 is visually recognizable when viewed from a front surface side thereof.

As shown in FIG. 1, on the gaming panel base 32 of the gaming panel 30a, there are provided the first gaming ball guiding member 3, a second gaming ball guiding member 2, regular winning openings 5, the starting opening 6, an out opening 7, and a special winning opening 8.

The first gaming ball guiding member 3 and the second gaming ball guiding member 2 are ones which largely change a flowing-down direction of the gaming balls. The first gaming ball guiding member 3 is composed of a wall body which is disposed so as to be located on an upper portion of the gaming area where the gaming balls are able to flow down and is erected perpendicularly to a surface of the gaming panel 30a. The second gaming ball guiding member 2 is composed of a wall body which is disposed so as to be located on a lower portion of the gaming area concerned and is erected perpendicularly to the surface of the gaming panel 30a.

The regular winning openings 5 are composed so that, when the gaming ball enters any of the regular winning openings 5 concerned, a predetermined number (for example, fifteen) of gaming balls (winning balls) can be paid out. The winning balls refer to balls paid back as gains for the fact that the ball has entered the winning opening. The starting opening 6 is composed so that a random number value for jackpot determination, a random number value for jackpot symbol determination, and the like can be extracted when the gaming ball has entered the starting opening 6 concerned. The out opening 7 receives a gaming ball which has not entered any of the starting opening 6, the special winning opening 8, and the regular winning openings 5. The special winning opening 8 includes a specific area (a so-called V-zone) and a regular area, and is controlled so as to open and close according to a predetermined setting in response to a result of the jackpot determination based on the random number value for the jackpot determination.

On the upper left portion of the front surface of the base door 60, a hinge recess portion 60f (a state of the recess is not shown) is provided, and on a center left portion of the front surface, a hinge projection portion 60g (a state of the projection is not shown) is provided. On an upper left portion of a back surface of a glass frame 10, a hinge projection portion (not shown) is provided, and on a center left portion of the back surface, a hinge recess portion (not shown) is provided. The hinge projection portion provided on the glass frame 10 is fitted into the hinge recess portion 60f provided on the upper left portion of the base door 60, the hinge recess portion provided on the glass frame 10 is
fitted onto the hinge projection portion 60g, and the glass frame 10 is thus attached to the base door 60 so as to be openable and closable. A hinge projection portion (not shown) provided on a back surface of a receiving tray 20 is fitted into the hinge recess portion 60f provided on the lower left portion of the front surface of the base door 60, and the receiving tray 20 is attached to the base door 60 so as to be openable and closable. Into the glass frame 10, a front glass 11 which covers the front surface of the gaming panel 30a is fitted.

[0070] To the lower portion of the front surface of the base door 60, the receiving tray 20 is attached. The receiving tray 20 is composed of an upper receiving tray for reserving the gaming balls paid out owing to the winning balls, and the like, and a lower receiving tray for reserving the gaming balls which have overpassed the upper receiving tray, and the like.

[0071] Onto a right side of the receiving tray 20 attached to the front surface of the base door 60, a launcher handle unit 40a is attached. Specifically, the launcher handle unit 40a is engaged with a lower right portion of the base door 60, and the launcher handle unit 40a is thus attached to the base door 60. On the lower right side of the base door 60, a through hole 60h for inserting a harness (not shown; a harness for connecting a volume switch and a launcher device 82 to be described later to each other) provided in the launcher handle unit 40a therethrough is provided.

[0072] On a right side (a left side when viewed from the front side) of the back surface of the base door 60, a first unit portion 90 is attached through a hinge mechanism (not shown) so as to be openable and closable. In the first unit portion 90, there are provided a ball tank for reserving the gaming balls, a payout device for paying out the gaming balls for rental or winning, a gaming ball passage as a passage of the gaming balls such as the rental balls and the winning balls, and the like. The rental balls refer to balls rented out to the player.

[0073] On a left side (a right side when viewed from the front side) of the back surface of the base door 60, a second unit portion 100 is attached. In the second unit portion 100, there are provided a display control board which makes a display control for the symbol displayed on the liquid crystal display device 4, a lamp control board which makes turning-on and flashing controls for a variety of lamps arranged on the front surface and the like of the gaming panel 30a; a main control board which controls overall gaming processes including a jackpot determination, a payout/launch control board which makes a control regarding the payout of the rental balls and the winning balls and a control regarding the launch of the gaming balls, a power supply board which supplies power necessary for operations of the respective boards, and the like.

[0074] FIG. 3 is a block diagram of a control unit of the gaming machine 1 according to the first embodiment. As shown in FIG. 3, the control unit of the gaming machine 1 is composed of a main control circuit 30, a sub-control circuit 40, and a payout/launch control circuit 83.

[0075] The main control circuit 30 includes a main CPU 31, a main ROM 34, a main RAM 33, and an IC 36 for serial communication.

[0076] To the main control circuit 30, there are connected a V-count switch 28S for counting the number of gaming balls which have passed through the specific area (V-zone) provided in the special winning opening 8, a count switch 29S for counting the number of gaming balls which have passed through the regular area provided in the special winning opening 8, a regular winning ball switch 17S for detecting that the gaming ball has won the regular winning openings 5, a passed ball switch 7S for detecting that a gaming ball has passed a regular symbol activation gate (not shown), a starting winning ball switch 6S for detecting that the gaming ball has passed the starting area provided in the starting opening 6, a starting opening solenoid 6a for opening and closing a pair of blades provided in the starting opening 6, a special winning opening solenoid 8a for opening and closing a gate of the special winning opening 8, and a seesaw solenoid 8b for driving a seesaw which distributes the gaming balls which have entered the special winning opening 8 to the specific area and the regular area.

[0077] The main CPU 31 performs the respective processes in a “system timer intervention process (refer to FIG. 4A)” and a “main process (refer to FIG. 4B)”, which are to be described later.

[0078] The main CPU 31 counts the number of starting memories as described above, and stores the counted number of starting memories in the main RAM 33. The main CPU 31 detects that the number of starting memories stored in the main RAM 33 has reached a predetermined number of starting memories (for example, four).

[0079] The main CPU 31 is jackpot determining unit for determining the jackpot under a condition where the gaming ball has passed through the starting area. In other words, the main CPU 31 is specific gaming state determining unit for determining that the gaming state has transferred to a jackpot gaming state (an example of a specific gaming state) advantageous for the player when a predetermined starting condition is established, that is, when the gaming ball has passed through the starting area provided in the starting opening 6. Specifically, the main CPU 31 extracts the determining random number value under a condition where an input signal inputted by the starting winning ball switch 6S is detected, that is, under a condition where the gaming ball has passed through the starting area provided in the starting opening 6, and performs the jackpot determination (determination that the gaming state has transferred to the jackpot gaming state) based on the extracted jackpot determining random number value.

[0080] The main CPU 31 is gaming controlling unit for transferring the gaming state to the jackpot gaming state advantageous for the player when a result of the variable display of the special symbol displayed on the liquid crystal display device 4 has become a predetermined variable display result (for example, a display result representing 7-7-7), that is, when it is determined that the gaming state is to be transferred to the jackpot gaming state.

[0081] The main CPU 31 is variable display pattern deciding unit for deciding a variable display pattern for executing the variable display of the special symbol based on the jackpot determination result. Specifically, the main CPU 31 determines that the predetermined starting condition is established when the gaming ball has passed through the starting area, and generates and sets a variable display pattern command which instructs the variable display pattern for executing the variable display of the special symbol.
and a command which instructs a stopping symbol of the variable display based on the jackpot determination result.

[0082] The main CPU 31 controls the special winning opening solenoid 8a to open and close the gate of the special winning opening 8 when the gaming state has transferred to the jackpot gaming state. The main CPU 31 controls the seesaw solenoid 8b to drive the seesaw.

[0083] The main CPU 31 detects input signals inputted by the respective switches such as the regular winning ball switch 17S, the V-count switch 28S, and the count switch 29S, and generates a command which issues an instruction to pay out the predetermined number of gaming balls as the winning balls.

[0084] In the first embodiment, the main CPU 31 constitutes number-of-starting-memories counting unit for counting the number of starting memories stored in the main RAM 33, and number-of-starting-memories detecting unit for detecting that the number of starting memories has reached the predetermined number of starting memories.

[0085] The main ROM 34 stores programs for performing the respective processes in the “system timer intervention process (refer to FIG. 4A)” and the “main process (refer to FIG. 4B)”, which are to be described later, and the like.

[0086] The main RAM 33 is composed of a DRAM and the like, and stores the starting memories (including the jackpot determining random number value), and the like. The main RAM 33 includes a starting memory counter for storing the number of starting memories, which is counted by the main CPU 31.

[0087] In the first embodiment, the main RAM 33 is starting storing unit for storing, as such a storing memory, the fact that the gaming ball has passed through the starting area, as well as decision information for deciding the variable display result, until there comes a state where it is possible to execute the variable display of the special symbol when it is impossible to execute the variable display of the special symbol, which corresponds to the passage of the gaming ball through the starting area, though the gaming ball has passed through the starting area concerned. The above-described decision information refers to the jackpot determining random number value and a random number value for a jackpot symbol, which are to be described later.

[0088] The IC 36 for serial communication outputs the respective commands set by the main CPU 31 to the sub-control circuit 40.

[0089] The sub-control circuit 40 includes a sub-CPU 41, a sub-Rom 42, a sub-RAM 43, an image control circuit 45, a voice control circuit 46, and a lamp control circuit 47.

[0090] The sub-CPU 41 controls the image control circuit 45, the voice control circuit 46, and the lamp control circuit 47 in response to the variety of commands received from the main control circuit 30. To the sub-CPU 41, a decision button 301 and a selection button 300 are connected as operating unit for which operations (for example, pressing operations) by the player are possible.

[0091] The sub-CPU 41 is display controlling unit for controlling the display on the liquid crystal display device 4. For example, the sub-CPU 41 is information display controlling unit for allowing the liquid crystal display device 4 to perform switched display from a predetermined display state (for example, a display state of demonstration effects) on the liquid crystal display device 4 to display information (for example, display of a guide menu) regarding the game thereon.

[0092] The sub-CPU 41 is operation determining unit for determining whether or not a predetermined operation such as the pressing operation of the decision button 301 and the pressing operation of the selection button 300 is performed by the decision button 301 or the selection button 300. Specifically, the sub-CPU 41 makes the above-described determination under a condition where the gaming state is a plying state where a predetermined game is not played. A specific description of the above is as follows.

[0093] For example, when the player performs the pressing operation for the selection button 300, an operation signal is sent from the selection button 300 to the sub-CPU 41. When the player performs the pressing operation for the decision button 301, an operation signal is sent from the decision button 301 to the sub-CPU 41. Upon receiving the operation signal from the selection button 300, the sub-CPU 41 determines that the pressing operation for the selection button 300 has been performed, and upon receiving the operation signal from the decision button 301, the sub-CPU 41 determines that the pressing operation for the decision button 301 has been performed. A detailed description of processes performed by the operation for the decision button 301 and the operation for the selection button 300 will be made in a description of an input checking process of the selection button 300 in Step 310 and an input checking process of the decision button 301 in Step 320, which are to be described later.

[0094] The sub-ROM 42 stores programs for controlling the image control circuit 45, the voice control circuit 46, and the lamp control circuit 47. For example, in the sub-ROM 42, background display data is stored, which includes a background display pattern by which the image control circuit 45 allows the liquid crystal display device 4 to perform background scroll display, deceleration of the background scroll display, stopping of the background scroll display, and static display of a background image at a time of the stopping. In the sub-ROM 42, there are stored demonstration effect data including a demonstration effect pattern for allowing the liquid crystal display device 4 to display the demonstration effects, guide menu display data including a guide menu display pattern for allowing the liquid crystal display device 4 to display the respective pieces of gaming information, data including a variety of effect patterns for allowing the liquid crystal display device 4 to display effect images, and the like.

[0095] The sub-RAM 43 is composed of the DRAM and the like, and stores the variety of commands received from the main control circuit 30.

[0096] The image control circuit 45 is one which executes the display such as the variable display of the special symbol on the liquid crystal display device 4 in response to the instructions from the sub-CPU 41. The image control circuit 45 includes an image data ROM 54, a video display processor (VDP) 51, a D/A converter 52, an initial reset circuit
and a VRAM 55. The image data ROM 54 stores a variety of image data. The VDP 51 generates data for executing the display such as the variable display of the special symbol by using the image data stored in the image data ROM 54 based on the instructions from the sub-CPU 41. The D/A converter 52 converts the display image data generated by the VDP 51 into an analog signal. The initial reset circuit 53 returns a variety of settings to initial values thereof in the case of abnormalities. The instructions from the above-described sub-CPU 41 are instructions based on control data set in a predetermined work area of the sub-RAM 43 so as to correspond to the command received from the main control circuit 30.

[0097] Here, to the VDP 51, the VRAM 55 in which two buffer areas are provided is connected. Based on the instructions from the sub-CPU 41, which are transmitted every predetermined time (for example, every 1/30 second), the VDP 51 performs the following processes in the case of generating the data for executing the display on the liquid crystal display device 4. The VDP 51 reads out predetermined image data from the image ROM 54, and expands the read image data on the VRAM 55, and further, reads out the expanded image data from the VRAM 55. Specifically, the VDP 51 performs an expansion process for one of the buffer areas provided in the VRAM 55, and reads out the image data already subjected to the expansion process from the other buffer area. Based on the instruction of the sub-CPU 41, the VDP 51 switches the buffer area to be subjected to the expansion process and the buffer area to be read out every time of receiving the instruction. The VDP 51 allows the liquid crystal display device 4 to scan the read image data through the D/A converter 52, thereby displaying the read image data on the liquid crystal display device 4.

[0098] The image data ROM 54 stores background image data for displaying the background on the display screen of the liquid crystal display device 4, demonstration effect image data for displaying the demonstration effects, guide menu image data for displaying the guide menu, and gaming information image data for displaying a variety of gaming information (for example, a reach flow, reach frequency information, and the like, which are to be described later). The respective image data include a plurality of pixel data (data per dot) necessary for displaying the respective images on the display screen of the liquid crystal display device 4.

[0099] The sub-CPU 41 is display controlling unit for performing the display control for the liquid crystal display device 4. For example, the sub-CPU 41 is effect display controlling unit for allowing the liquid crystal display device 4 to perform a predetermined plying effect display (for example, the demonstration effect display) when the gaming state is the plying state where the predetermined game is not played. A detailed description of this process will be made as below.

[0100] Upon receiving the demonstration effect command from the main control circuit 30 when the gaming state is the plying state where the predetermined game is not played, the sub-CPU 41 sets the demonstration effect data. The plying state mentioned here refers to a state without the starting memory, for example, where the variable display of the special symbol is not performed, or the jackpot gaming is not performed. In the case of having read out the demonstration effect data from the sub-ROM 42, followed by the setting, the sub-CPU 41 instructs the VDP 51 to allow the liquid crystal display device 4 to display the respective pixel data included in the demonstration image data individually on predetermined positions on the display screen (for example, on X-coordinates and Y-coordinates in the case of setting a longitudinal direction as a Y-axis, a lateral direction as an X-axis, and a predetermined position as an origin on the display screen of the liquid crystal display device 4) for a predetermined time based on a demonstration effect pattern included in the demonstration effect data. Based on the instruction from the sub-CPU 41, the VDP 51 reads out the demonstration image data from the image data ROM 54, and displays the respective pixel data included in the above-described demonstration effect image data on the predetermined positions on the display screen through the expansion process and the reading process for the VRAM 55. The sub-CPU 41 changes the data for issuing the instruction to the VDP 51 with the elapse of time, thereby allowing the liquid crystal display device 4 to perform the demonstration effect display.

[0101] The sub-CPU 41 is gaming information selection display controlling unit for allowing the liquid crystal display device 4 to display the image of the guide menu (gaming information selection image) representing that the current state is a state where the player is capable of selecting any gaming information among the plurality of gaming information under a condition where the operation for allowing the display of the gaming information regarding the game has been performed by the decision button 301 or the selection button 300 in the case where the demonstration effect display is being performed on the liquid crystal display device 4. A detailed description of this process will be made as below.

[0102] The sub-CPU 41 sets the guide menu display data upon receiving the operation signal from the decision button 301 or the selection button 300 in the case where the demonstration effect data is being set. After setting the guide menu display data, the sub-CPU 41 instructs the VDP 51 to allow the liquid crystal display device 4 to display the respective pixel data included in the guide menu image data individually on the predetermined positions on the display screen based on the guide menu display pattern included in the guide menu display data. Based on the instruction from the sub-CPU 41, the VDP 51 reads out the guide menu image data from the image data ROM 54, allows the liquid crystal display device 4 to display the respective pixel data included in the guide menu image data on the predetermined positions through the expansion process and the reading processing for the VRAM 55, thereby allowing the liquid crystal display device 4 to display the guide menu. On this display of the guide menu, there are displayed item images showing items corresponding to names of the gaming information, an image for explaining functions of the selection button 300 and the decision button 301, and an image of a predetermined character. On the display of the guide menu, there are displayed a cursor image indicating any item image among the respective item images, an image of the item name indicated by the cursor image, and a comment image showing a simple comment to the item concerned.

[0103] The sub-CPU 41 sets item switching display data upon receiving the operation signal from the selection button 300 while the guide menu display data is being set. In the case of having set the item switching display data, the
The sub-CPU 41 instructs the VDP 51 to move, for example, a display position of the cursor image to a position indicating an item image under the currently indicated item image. However, such a movement target position may be a position indicating an item image above the currently indicated item image. The VDP 51 executes the instruction from the sub-CPU 41, and the display position of the cursor image on the liquid crystal display device 4 is thus moved from the position of the currently indicated item image to the position indicating the item image thereunder. The sub-CPU 41 manages the item currently indicated by the cursor image.

The sub-CPU 41 is a gaming information display controlling unit for allowing the liquid crystal display device 4 to display the gaming information selected from the plurality of gaming information when the operation for selecting any gaming information among the plurality of gaming information is performed by the decision button 301 in the case where the guide menu is being displayed on the liquid crystal display device 4. A detailed description of this process will be made as below.

Upon receiving the operation signal from the decision button 301 while the guide menu display data is being set, the sub-CPU 41 sets gaming information display data (for example, reach flow display data) corresponding to the item image currently indicated by the cursor image. The sub-CPU 41 instructs the VDP 51 to allow the liquid crystal display device 4 to display the respective pixel data included in predetermined gaming information image data (for example, reach flow image data) individually on predetermined positions on the display screen based on the gaming information display pattern (for example, a reach flow display pattern) included in the gaming information display data. The VDP 51 reads out the above-described predetermined gaming information image data from the image data ROM 54 based on the above-described instruction. The VDP 51 performs the expansion process and the reading process for the VRAM 55, and thus, on the liquid crystal display device 4, the respective pixel data included in the above-described predetermined gaming information image data are displayed on the predetermined positions on the display screen, and the predetermined gaming information (for example, reach flow) is displayed.

The sub-CPU 41 is background display controlling unit for allowing the liquid crystal display device 4 to perform the background scroll display as display to move the background image in a predetermined direction in response to the gaming state. In the above-described background scroll display, the sub-CPU 41 allows the liquid crystal display device 4 to perform the display to move, in the predetermined direction, the background image displayed when the guide menu is displayed. For example, in the gaming state where the variable display is not performed or the jackpot gaming state is not performed, the sub-CPU 41 allows the liquid crystal display device 4 to perform the background scroll display as well as the display of the guide menu. In this case, the CPU 41 performs the display control while setting a moving speed of the background image on the background scroll display at a predetermined moving speed.

A specific description will be made of this process as below. In the case where the guide menu display data has been set, based on the background display pattern included in predetermined background display data, the sub-CPU 41 transmits the instruction to display the background to the VDP 51 every predetermined time, and changes the data for instructing the VDP 51 with the elapse of time. The respective pixel data in the background image data stored in the image data ROM 54 are associated, for example, with predetermined coordinates on the area where the above-described background image data is expanded in the VRAM 55 (for example, the X-coordinates and the Y-coordinates in the case of setting the longitudinal direction as the Y-axis, the lateral direction as the Y-axis, and the predetermined position as the origin on the above-described area). For example, the area where the above-described background image data is expanded in the VRAM 55 is assumed to be located in a range from Xa to Xz in the X-direction and in a range from Ya to Yz in the Y-direction.

The sub-CPU 41 instructs the VDP 51 to allow the liquid crystal display device 4 to display the background by using image data corresponding to a predetermined area (area corresponding to a size of the display screen area of the liquid crystal display device 4) among the background image data stored in the image data ROM 54 while taking a specific coordinate (for example, X1, Y1) as a reference. Then, the sub-CPU 41 instructs the VDP 51 on the background image display so that the background scroll display can be performed on the liquid crystal display device 4 every fixed time (for example, every T1). In this case, the sub-CPU 41 instructs the VDP 51 to increase (decrease) an X-value by a predetermined amount from the above-described specific coordinate (for example, X1, Y1) every fixed time, and to allow the liquid crystal display device 4 to display the background by using the image data corresponding to the above-described predetermined area among the background image data while taking a coordinate indicating a result of the increase (or the decrease) as a reference coordinate.

For example, when it is time Tn, the sub-CPU 41 instructs the VDP 51 to allow the liquid crystal display device 4 to display the background by using image data corresponding to a predetermined area while taking the coordinate (X1, Y1) as a reference. Then, when it is time Tn+T1, the sub-CPU 41 instructs the VDP 51 to allow the liquid crystal display device 4 to display the background by using image data corresponding to a predetermined area while taking a coordinate (X1+Xn, Y1) as a reference. When it is time Tn+2×T1, the sub-CPU 41 instructs the VDP 51 to allow the liquid crystal display device 4 to display the background by using image data corresponding to a predetermined area while taking a coordinate (X1+2×Xn, Y1) as a reference. As described above, the reference coordinate for the background display is changed with the elapse of time (for example, X1, X1+Xn, X1+2×Xn . . . ).

When the X-coordinate of the reference coordinate becomes Xw as a value exceeding Xz, the X-coordinate is set at Xw-Xz. The moving speed of the background image is a value, for example, determined by an expression of: (variation of the above-described reference coordinate) / (predetermined fixed time). In the first embodiment, as an example, the moving speed of the background image is a predetermined moving speed (X0/T1).

The VDP 51 executes the above-described instructions through the expansion process and the reading process for the VRAM 55, and thus, in the liquid crystal display.
device 4, the background scroll display is performed at the predetermined moving speed as well as the display of the guide menu.

[0112] The sub-CPU 41 is stopping condition determining unit for determining whether a predetermined background scroll stopping condition is established in the background scroll display. The sub-CPU 41 determines that the background scroll stopping condition is established in the case where a predetermined stopping operation has been performed by the decision button 301. A specific description will be made as below of an example.

[0113] For example, in the case where the background scroll display is performed as described above as well as the display of the guide menu on the liquid crystal display device 4, the player performs an operation to press the selection button 300, and the position of the cursor image is thus switched. Here, the player performs an operation to press the decision button 301 for selecting gaming information corresponding to a predetermined item image. This operation is one which corresponds to a predetermined stopping operation for stopping the background scroll display. An operation signal by the decision button 301 is sent to the sub-CPU 41. Upon receiving the operation signal by the decision button 301 in the case where the background scroll display is being displayed (for example, the case where the guide menu is being displayed) on the liquid crystal display device 4, the sub-CPU 41 determines that the background scroll stopping condition is established.

[0114] The sub-CPU 41 is also background display stopping controlling unit for stopping the background scroll display on the liquid crystal display device 4 and for statically displaying the background image at the time of the stopping when it is determined that the background scroll stopping condition is established. For example, when the operation for selecting any gaming information is performed by the decision button 301, the sub-CPU 41 stops the background scroll display on the liquid crystal display device 4, and statically displays the background image at the time of the stopping. Specifically, the sub-CPU 41 stops the background scroll display after the moving speed of the background image in the background scroll display is decremented from the above-described predetermined moving speed. A specific description will be made as below of this process.

[0115] After setting the predetermined gaming information display data as described above, the sub-CPU 41 instructs the VDP 51 on the background display every predetermined time so that the deceleration and the stopping of the background scroll display can be performed. Specifically, the sub-CPU 41 changes the data for issuing the instruction to the VDP 51 every fixed time (for example, every T1) so that the background scroll display can be performed on the liquid crystal display device 4. In this case, the sub-CPU 41 instructs the VDP 51 to increase (or decrease) the X-value every fixed time so that an increment (or decrement) thereof can be reduced with the elapse of time from the reference coordinate at the point of time when the predetermined gaming information display data is set, and to allow the liquid crystal display device 4 to display the background by using image data corresponding to the above-described predetermined area among the background image data while taking a coordinate indicating a result of the increase (or the decrease) as a reference coordinate.

[0116] For example, the sub-CPU 41 instructs the VDP 51 to allow the liquid crystal display device 4 to display the background by using the image data corresponding to the above-described predetermined area among the background image data while taking the coordinate (X1, Y1) as a reference at the time T1 as the point of time when the predetermined gaming information display data is set. The sub-CPU 41 instructs the VDP 51 to allow the liquid crystal display device 4 to display the background by using the image data corresponding to the above-described predetermined area among the background image data while taking a coordinate (X1+x0, Y1) as a reference at the time T1+x1. The sub-CPU 41 instructs the VDP 51 to allow the liquid crystal display device 4 to display the background by using the image data corresponding to the above-described predetermined area among the background image data while taking a coordinate (X1+x0+x1, Y1) as a reference at the time T1+x1+x1.

[0117] Finally, the sub-CPU 41 instructs the VDP 51 to allow the liquid crystal display device 4 to display the background by using the image data corresponding to the above-described predetermined area among the background image data while taking the same coordinate (X1+x0+x1+x1, Y1) as a reference irrespective of the elapse of time. The VDP 51 executes the above-described instructions, and thus the moving speed of the background image in the background image scroll display on the liquid crystal display device 4 becomes zero, the background scroll display is stopped, and the background image is statically displayed.

[0118] When the operation for selecting any gaming information among the plurality of gaming information is performed by the decision button 301, the sub-CPU 41 allows the background scroll display on the liquid crystal display device 4 to be stopped, and allows the background image at the time of the stopping to be statically displayed. Specifically, in the case where the guide menu is displayed on the liquid crystal display device 4 and the cursor image indicates the predetermined item image, when the player performs the operation for the decision button 301, the operation signal thereof is sent to the sub-CPU 41. The sub-CPU 41 sets the gaming information display data corresponding to the predetermined item image, and as described above, allows the background scroll display on the liquid crystal display device 4 to be stopped, and allows the background image at the time of the stopping to be statically displayed.

[0119] The sub-CPU 41 includes a clock counter which counts the time in the case where it is determined by an operation determination function that the operation by the decision button 301 or the predetermined operation by the selection button 300 is performed when the information
regarding the game (for example, the guide menu, the respective pieces of gaming information) is displayed on the liquid crystal display device 4 by an information display control function.

[0120] For example, in the case where it is determined that the predetermined operation by the decision button 301 or the selection button 300 is performed when the guide menu is displayed on the liquid crystal display device 4 by the information display control function, the clock counter counts an elapsed time from the time when it has been determined that the predetermined operation by the decision button 301 or the selection button 300 was performed.

[0121] The clock counter may count the elapsed time from the time when the predetermined operation for performing the switching display to the information regarding the game by the decision button 301 or the selection button 300 was performed no matter whether the information regarding the game might be displayed on the liquid crystal display device 4 by the information display control function.

[0122] The sub-CPU 41 is display state controlling unit for returning, to a predetermined display state, the display state (for example, a state where the guide menu is being displayed) on the liquid crystal display device 4 in the case where the elapsed time counted by the clock counter has reached a predetermined time (for example, 30 seconds; however may be any seconds without being limited to this) without determining by the operation determination function that the predetermined operation by the decision button 301 or the selection button 300 was performed after the start of counting by the clock counter. Such a predetermined display state refers to a display state on the liquid crystal display device 4 before the above-described predetermined operation was performed by the selection button 300 or the decision button 301, for example, the state where the demonstration effect display is performed. A detailed description of this process will be made in explanations of a decision button input checking process and a selection button input checking process, which are to be described later.

[0123] When the predetermined starting condition is established, in the case where the information regarding the game (for example, the guide menu and the gaming information) is displayed on the liquid crystal display device 4, the sub-CPU 41 allows the liquid crystal display device 4 to display an effect image regarding the variable display of the special symbol from the above-described information regarding the game. An example of a specific description of this process will be made as below.

[0124] When the predetermined starting condition has been established (for example, in the case where the gaming ball has passed through the starting area, and so on) the main CPU 31 generates and sets the variable display pattern command. When the sub-CPU 41 receives the variable display pattern command from the main control circuit 30, in the case where any of the demonstration effect data, the guide menu display data, the item switching display data, and the gaming information display data is set, the sub-CPU 41 sets the control data corresponding to the received variable display pattern command in place of the data thus set.

[0125] The sub-CPU 41 changes the data for issuing the instruction to the VDP 51 with the elapse of time so that the VDP 51 can allow the liquid crystal display device 4 to perform the display according to the effect pattern included in the set control data.

[0126] The VDP 51 executes the instructions from the sub-CPU 41, which are transmitted every predetermined time, and thus, for example, the effect image corresponding to the variable display pattern is displayed on the liquid crystal display device 4.

[0127] The voice control circuit 46 allows the speakers 50 to output an effect sound and a voice, which notify the player of a predetermined gaming state, in response to the control data from the sub-CPU 41.

[0128] The lamp control circuit 47 turns on/off a lamp 26 in response to the control data from the sub-CPU 41.

[0129] In response to the command from the main control circuit 30, which is outputted under the condition where the gaming balls have entered the regular winning openings 5, the special winning opening 8, and the like, the payout/launch control circuit 83 controls the payout device 81 which pays out a predetermined number of gaming balls as the winning balls, and the launcher device 82 which launches the gaming balls toward the gaming area on the gaming panel 30a.

[0130] The respective processes in the gaming machine 1 are controlled by the main control circuit 30 and the sub-control circuit 40. However, the main control circuit 30 may process the whole or a part of the processes controlled by the sub-control circuit 40, and the sub-control circuit 40 may process the whole or a part of the processes controlled by the main control circuit 30.

Operation of Gaming Machine in First Embodiment

[0131] A description will be made below of the operation of the gaming machine 1 in the first embodiment. FIG. 4A is a flowchart showing the system timer intervention process executed so as to intervene in the main process in a predetermined cycle (for example, 2 ms per). FIG. 4B is a flowchart showing the main process of the gaming machine 1 in the first embodiment.

[0132] A description will be made of the system timer intervention process with reference to the drawings. As shown in FIG. 4A, in Step 100, the main CPU 31 saves information stored in a register.

[0133] In Step 110, the main CPU 31 updates a value such as the jackpot determining random number value.

[0134] In Step 120, the main CPU 31 performs the switch input detection process. A specific description will be made below of the switch input detection process. FIG. 5 is a flowchart showing the switch input detection process in the first embodiment.

[0135] In Step 121, the main CPU 31 detects the input signals inputted by the V-count switch 28S, the count switch 29S, the starting winning ball switch 6S, the regular winning ball switch 18S, and the like.

[0136] In Step 122, the main CPU 31 executes a special symbol-related switching process. A specific description will be made below of the special symbol-related switching process. FIG. 6 is a flowchart showing the special symbol-related switching process in the first embodiment.
[0137] In Step 122-1, the main CPU 31 detects the input signal inputted by the count switch 29S. In the case of having detected the input signal, the main CPU 31 proceeds to a process of Step 122-2, and in the case of not having detected the input signal, the main CPU 31 proceeds to a process of Step 122-3.

[0138] In Step 122-2, the main CPU 31 counts the number of gaming balls which have entered the special winning opening 8 during one round in the jackpot gaming state. One round refers to a period from a start of the opening state of the special winning opening 8 till an elapse of a predetermined time (for example, 29.5 seconds), or a period from the start of the opening state of the special winning opening 8 until a predetermined number of (for example, ten) gaming balls enter the special winning opening 8.

[0139] In Step 122-3, the main CPU 31 detects the input signal inputted by the V-count switch 28S. In the case of having detected the input signal, the main CPU 31 proceeds to a process of Step 122-4, and in the case of not having detected the input signal, the main CPU 31 proceeds to Step 122-5.

[0140] In Step 122-4, the main CPU 31 detects that the gaming balls have passed through the specific area during one round in the jackpot gaming state, and counts the number of gaming balls which have entered the special winning opening 8.

[0141] In Step 122-5, the main CPU 31 detects the input signal inputted by the starting winning ball switch 6S provided in the starting opening 6. In the case of having detected the input signal, the main CPU 31 proceeds to a process of Step 122-6, and in the case of not having detected the input signal, the main CPU 31 ends the special symbol-related switch input process.

[0142] In Step 122-6, the main CPU 31 executes a starting opening detection time process. Specifically, the main CPU 31 verifies the value of the starting memory counter, and in the case where the above-described value is three or less, adds "1" to the value of the starting memory counter (the number of starting memories stored in the main RAM 33), extracts the jackpot determining random number value and the jackpot symbol determining random number value, and stores the extracted values as the starting memories in a predetermined storage area of the main RAM 33.

[0143] In Step 130, the main CPU updates a remaining variable display time of the regular symbol or the special symbol which is being variably displayed, a remaining opening time of the starting opening 6 or the special winning opening 8 which is set in the opening state, and the like.

[0144] In Step 140, the main CPU 31 outputs the gaming information such as the number of gaming balls paid out as the winning balls and an occurrence of the jackpot to a hall computer installed in a game arcade.

[0145] In Step 150, the main CPU 31 outputs the signal for driving the solenoid which drives the starting opening 6 or the special winning opening 8, or the like.

[0146] In Step 160, the main CPU 31 outputs the command to indicate the stopping symbol of the special symbol and the variable display pattern command to indicate the variable display pattern of the set special symbol to the sub-control circuit 40.

[0147] In Step 170, the main CPU 31 outputs the instruction command to display the number of starting memories stored in the main RAM 33 on the predetermined area of the liquid crystal display device 4, and the instruction command to display an error such as out of gaming balls and a fill-up of the lower receiving tray on the predetermined lamp.

[0148] In Step 180, the main CPU 31 outputs the instruction command to pay out the predetermined gaming balls as the winning balls in response to the type of the winning opening which the gaming balls have entered (the type includes the regular winning openings 5 and the special winning opening 8) to the payout/launch control circuit 83.

[0149] In Step 190, the main CPU 31 returns the information saved in Step 104 to the register.

[0150] A description will be made of the main process while referring to the drawing. As shown in FIG. 4B, in Step 10, the main CPU 31 returns the variety of settings in the gaming machine 1 to settings when a power supply was cut at the previous time, or initializes the settings.

[0151] In Step 20, the main CPU 31 executes the special symbol control process. A specific description will be made as below of the special symbol control process. FIG. 7 is a flowchart showing the special symbol control process.

[0152] In Step S20-1, the main CPU 31 executes a process of loading a control state flag. The control state flag is a flag showing the gaming state of the special symbol game, and based on the control state flag, the main CPU 31 determines whether or not the respective processes from Step 20-2 to Step 20-10 are to be executed.

[0153] In Step 20-2, the main CPU 31 performs a special symbol memory checking process. A specific description will be made as below of the special symbol memory checking process. FIG. 8 is a flowchart showing the special symbol memory checking process in the first embodiment.

[0154] In Step 20-2-1, the main CPU 31 verifies whether the control state flag is a value (00) indicating the special symbol memory check. When the control state flag is the value (00) indicating the special symbol memory check, the main CPU 31 proceeds to a process of Step 20-2-2. When the control state flag is not the value (00) indicating the special symbol memory check, the main CPU 31 ends the processes in the special symbol control process.

[0155] In Step 20-2-2, the main CPU 31 verifies whether or not the number of starting memories is "0". When the number of starting memories is "0", the main CPU 31 proceeds to a process of Step 20-2-3. When the number of starting memories is not "0", the main CPU 31 proceeds to a process of Step 20-2-4.

[0156] In Step 20-2-3, the main CPU 31 generates and sets the demonstration effect command instructing the execution of the demonstration effect display. The demonstration effect command is generated in the case where the gaming state is the plying state (state where the operation for the special symbol variable display is not performed, the jackpot gaming is not performed, either, and no starting memory is present).

[0157] In Step 20-2-4, the main CPU 31 sets a value (01) indicating the special symbol variable display time management in the control state flag.
In Step 20-2-5, the main CPU 31 performs the jackpot determination based on the jackpot determining random number value included in the starting memory.

In Step 20-2-6, the main CPU 31 verifies whether a result of the jackpot determination is one to transfer the gaming state to the jackpot gaming state. When the result of the jackpot determination is one to transfer the gaming state to the jackpot gaming state, the main CPU 31 proceeds to a process of Step 20-2-8. When the result of the jackpot determination is not one to transfer the gaming state to the jackpot gaming state, the main CPU 31 proceeds to a process of Step 20-2-7.

In Step 20-2-7, the main CPU 31 decides a loosing symbol based on a predetermined random number value.

Specifically, based on the random number value extracted from the reach determining random numbers, the main CPU 31 determines whether or not the reach (reach variation display and the like) is to be executed in the variable display of the special symbol. In the case of executing the reach (reach variation display and the like) in the variable display of the special symbol, the main CPU 31 decides the “left” and “right” symbols based on the random number value extracted from the reach symbol deciding random numbers, and decides the “center” symbol based on the random number value extracted from “center-loosing” symbol deciding random numbers. In the case of not executing the reach in the variable display of the special symbol, the main CPU 31 decides the “left”, “center”, and “right” symbols based on random number values extracted from loosing symbol deciding random numbers individually corresponding to the “left”, the “center”, and the “right”.

In Step 20-2-8, the main CPU 31 decides the jackpot symbols (“left”, “center”, “right”) based on the jackpot symbol determining random number values included in the starting memory.

In Step 20-2-9, the main CPU 31 performs a deciding process of the variable display pattern of the special symbols. Specifically, the main CPU 31 extracts one random number value among random numbers generated within a range from 0 to 99 by a random number generating circuit. Then, the main CPU 31 compares the extracted random number value and a variable display pattern selection table shown in FIG. 9 with each other, and decides the variable display pattern of the special symbols.

For example, in the case where the result of the jackpot determination is not one to move the gaming state to the jackpot gaming state, and the reach is not executed in the variable display of the special symbols, the main CPU 31 decides “regular variation” as the variable display pattern of the special symbols. In the case where the result of the jackpot determination is not one to move the gaming state to the jackpot gaming state, and the reach is executed in the variable display of the special symbols, the main CPU 31 decides “normal reach” as the variable display pattern of the special symbols when the extracted random number value is included in a range from 0 to 69, and decides “super reach” as the variable display pattern of the special symbols when the extracted random number value is included in a range from 70 to 99. In the case where the result of the jackpot determination is one to move the gaming state to the jackpot gaming state, the main CPU 31 decides “normal reach winning” as the variable display pattern of the special symbols when the extracted random number value is included in a range from 0 to 39, decides “super reach winning” as the variable display pattern of the special symbols when the extracted random number value is included in a range from 40 to 94, and decides “entire rotation” as the variable display pattern of the special symbols when the extracted random number value is included in a range from 95 to 99.

The variable displays of the special symbols, which are performed based on the respective variable display patterns, are, for example, as follows. In the case where the variable display pattern of the special symbols is the “regular variation”, a variation display of the “left”, “center” and “right” special symbols is stopped in ten seconds after a start thereof in the variable display of the special symbols. In the case where the variable display pattern of the special symbols is the “normal reach” or the “normal reach winning”, in the variable display of the special symbols, for example, the variation display of the “left” and “right” special symbols is stopped in eight seconds after the start of the variation display of the “left”, “center” and “right” special symbols, and for example, the variation display of the “center” special symbol is stopped in five seconds after the stop concerned. In the case where the variable display pattern of the special symbols is the “super reach” or the “super reach winning”, in the variable display of the special symbols, for example, the variation display of the “left” and “right” special symbols is stopped in eight seconds after the start of the variation display of the “left”, “center” and “right” special symbols, and for example, the variation display of the “center” special symbol is stopped temporarily in five seconds after the stop concerned. Thereafter, the variation display of the “center” special symbol is performed again for five seconds, and thereafter, the variation display of the “center” special symbol is stopped. In the case where the variable display pattern of the special symbols is the “entire rotation”, in the variable display of the special symbols, the variation display is performed while keeping the “left” special symbol, the “center” special symbol, and the “right” special symbol into the same symbol for fifteen seconds after the start of the variation display of the “left”, “center” and “right” special patterns. Thereafter, the variation display of the special symbols is stopped. Then, the main CPU 31 sets a stop symbol command indicating stop symbols of the special commands, the variable display pattern command (for example, “00” in the case where the variable display pattern is the “regular variation”, and the like as shown in FIG. 9), and the like.

In Step 20-2-10, the main CPU 31 sets the variable display time corresponding to the variable display pattern decided in Step 20-2-9 in a waiting timer.

In Step 20-2-11, the main CPU 31 deletes the random number values used in the variable display of the special symbols at this time from the predetermined storage area.

In Step 20-3, in the case where the control state flag is the value (01) indicating the special symbol variable display time management process, and a value of the waiting time timer in which the variable display time is set is “00”, the main CPU 31 sets a value (02) indicating the special symbol variable display time management process in the control
state flag, and sets a post-definition waiting time (for example, one second) in the waiting time timer.

[0169] In Step 20-4, in the case where the control state flag is the value (02) indicating the special symbol display time management process, a value of the waiting time timer in which the post-definition waiting time is set is “0”, and the result of the jackpot determination performed in Step 20-2-5 is one to move the gaming state to the jackpot gaming state, the main CPU 31 sets a value (03) indicating a jackpot starting interval management process in the control state flag, and sets a time (for example, ten seconds) corresponding to the jackpot starting interval in the waiting time timer. Here, the main CPU 31 generates and sets a jackpot gaming start command. In the case where the result of the jackpot determination performed in Step 20-2-5 is not one to move the gaming state to the jackpot gaming state (in the case of the loosing), the main CPU 31 sets a value (08) indicating a special symbol game ending process in the control state flag.

[0170] In Step 20-5, in the case where the control state flag is the value (03) indicating the jackpot starting interval management process, and the value of the waiting time timer in which the corresponding time to the jackpot starting interval is set is “0”, the main CPU 31 controls the special winning opening solenoid 8c to open the special winning opening 8. The main CPU 31 sets a value (04) indicating a special winning opening opening period process in the control state flag, and sets an upper-limit opening time (for example, thirty seconds) in a special winning opening opening time timer.

[0171] In Step 20-6, in the case where the control state flag is the value (04) indicating the special winning opening opening period process, the main CPU 31 verifies whether or not any of the following conditions is established, which are: a condition where the value of the special winning opening time timer in which the upper-limit opening time is set is “0”; and a condition where ten or more gaming balls have entered the special winning opening 8. In the case where any of the above-described conditions is established, the main CPU 31 controls the special winning opening solenoid 8c to close the special winning opening 8. Moreover, the main CPU 31 sets a value (05) indicating an intra-special winning opening remaining ball monitoring process in the control state flag, and sets an intra-special winning opening remaining ball monitoring time (for example, one second) in the waiting time timer.

[0172] In Step 20-7, in the case where the control state flag is the value (05) indicating the intra-special winning opening remaining ball monitoring process, and the value of the waiting time timer in which the intra-special winning opening remaining ball monitoring time is set is “0”, the main CPU 31 verifies whether or not any of the following conditions is established, which are: a condition where the gaming balls have not passed through the specific area provided in the special winning opening 8; and a condition where a value of a special winning opening opening number counter is “15” or more (final round). The special winning opening opening number counter is one to count the number of rounds in the jackpot gaming state. In the case where any of the above-described conditions is established, the main CPU 31 sets a value (07) indicating a jackpot ending interval process in the control state flag, and sets a time corresponding to the jackpot ending interval in the waiting time timer. In the case where any of the above-described conditions is not established, the main CPU 31 sets a value (06) indicating a special winning opening opening waiting time management process in the control state flag, and sets a time corresponding to such an inter-round interval in the waiting time timer.

[0173] In Step 20-8, in the case where the control state flag is the value (06) indicating the special winning opening opening waiting time management process, and the value of the waiting time timer in which the corresponding time to the inter-round interval is set is “0”, the main CPU 31 adds “1” to the value of the special winning opening opening number counter. The main CPU 31 sets the value (04) indicating the special winning opening opening period process in the control state flag, and sets the upper-limit opening time (for example, thirty seconds) in the special winning opening opening time timer.

[0174] In Step 20-9, in the case where the control state flag is the value (07) indicating the jackpot ending interval process, and the value of the waiting time timer in which the time corresponding to the jackpot ending interval is set is “0”, the main CPU 31 sets the value (08) indicating the special symbol game ending process in the control state flag. The main CPU 31 generates and sets a jackpot game ending command. The main CPU 31 sets a high probability flag in the case where a predetermined probability variation condition is established. The high probability flag is a flag for determining whether or not the gaming state is a probability variation state. The probability variation refers to, for example, that the jackpot probability is raised after the first jackpot.

[0175] In Step 20-10, in the case where the control state flag is the value (08) indicating the special symbol game ending process, the main CPU 31 subtracts “1” from the number of starting memories. The main CPU 31 shifts the data individually stored in special symbol storage areas (“1” to “4”) to special symbol storage areas (“0” to “3”), respectively, and sets the value (00) indicating the special symbol memory checking process in the control state flag. The special symbol storage areas are starting memory areas, which are provided in the main RAM 33, and in which the jackpot determining random number values extracted under the condition where the gaming balls have passed through the starting area are stored sequentially from the special symbol storage area “1”. The jackpot determining random number values and the like, which are stored in the special symbol storage areas (“1” to “4”), correspond to the above-described starting memories. The jackpot determining random number values and the like, which are stored in the special symbol storage area “0”, are used for the jackpot determination in Step 20-2-5.

[0176] In Step 530, the main CPU 31 executes the respective processes regarding the regular symbols. Specifically, the main CPU 31 generates and sets an instruction command to perform regular winning determination based on a random number value extracted under a condition where the gaming balls have passed through a regular symbol activation gate (not shown), and to execute variable display of the regular symbol based on a result of the regular winning determination.

[0177] In Step 40, the main CPU 31 updates the values of the random numbers for determining the variable display pattern of the special symbols, and the like.
The main CPU 31 repeatedly performs the above-described processes from Step 20 to Step 40.

Next, a description will be made of the main process, the system timer intervention process executed so as to intervene in the main process in the predetermined cycle (for example, 2 msec), and a command reception process executed so as to intervene in the main process on an occasion of the command reception from the main control circuit 30 in the sub-control circuit 40 in the first embodiment. FIG. 10 is a flowchart showing the main process of the sub-control circuit 40 of the first embodiment. FIG. 11 is a flowchart showing the command reception process of the sub-control circuit 40 of the first embodiment. FIG. 12 is a flowchart showing the system timer intervention process of the first embodiment.

A description will be made of the command reception process while referring to FIG. 11. The command reception process is performed every time when the sub-control circuit 40 receives the command from the main control circuit 30.

In Step 400, the sub-CPU 41 verifies whether or not the received command is the demonstration effect command from the main control circuit 30. In the case where the received command is the demonstration effect command, the sub-CPU 41 proceeds to a process of Step 410, and in the case where the received command is not the demonstration effect command, the sub-CPU 41 proceeds to a process of Step 420.

In Step 410, the sub-CPU 41 sets a demonstration displaying flag at 1, and sets demonstration effect data. The demonstration displaying flag is a flag set at 1 in the case where the demonstration effect display is performed. Specifically, the demonstration displaying flag is set at 1 in the case where the demonstration effect data is set.

Here, when the demonstration displaying flag is set at 1, the sub-CPU 41 changes, with the elapse of time, the data for instructing the VDP 51 to allow the liquid crystal display device 4 to perform demonstration effect display according to the demonstration effect pattern included in the demonstration effect data in an image display control process in Step 210 to be described later. The VDP 51 executes the above-described instruction transmitted every predetermined time, thereby allowing the liquid crystal display device 4 to display the demonstration effect. FIGS. 13A to 13E show examples of the demonstration effect display. Immediately after the sub-CPU 41 received the demonstration effect command, an image shown in FIG. 13A is displayed on the liquid crystal display device 4. After an elapse of thirty seconds after the sub-CPU 41 received the demonstration effect command, demonstration effects shown in FIGS. 13B to 13E are displayed on the liquid crystal display device 4, and the display becomes still on a demonstration effect shown in FIG. 13E.

In Step 420, the sub-CPU 41 verifies whether or not the received command is the variable display pattern command. In the case where the received command is the variable display pattern command, the sub-CPU 41 proceeds to a process of Step 430, and in the case where the received command is not the variable display pattern command, the sub-CPU 41 proceeds to a process of Step 450.

In Step 430, the sub-CPU 41 sets the demonstration displaying flag at 0.

In Step 440, the sub-CPU 41 sets control data corresponding to the received variable display pattern (the control data corresponding to any data of “00” to “05” shown in FIG. 9).

In Step 450, the sub-CPU 41 sets the control data in a predetermined work area of the sub-RAM 43 so that the control data can correspond to the received command (for example, the jackpot game starting command instructing to direct the jackpot start).

Next, a description will be made of the system timer intervention process of the sub-control circuit 40 of the first embodiment while referring to FIG. 12. In Step 300, the sub-CPU 41 saves the information stored in the register.

In Step 310, the sub-CPU 41 performs the selection button input checking process. A specific description will be made as below of the selection button input checking process. FIG. 14 is a flowchart showing the selection button input checking process.

In Step S310-1, the sub-CPU 41 verifies whether or not the input has been made by the selection button 300. Specifically, the sub-CPU 41 verifies whether or not to have received the operation signal indicating the operation by the selection button 300 (for example, the pressing operation). In the case where the input has been made by the selection button 300, the sub-CPU 41 proceeds to a process of Step 310-2, and in the case where the input has not been made by the selection button 300, the sub-CPU 41 proceeds to a process of Step 310-9.

In Step 310-2, the sub-CPU 41 verifies whether or not 1 is set in the demonstration displaying flag. In the case where 1 is set in the demonstration displaying flag, the sub-CPU 41 proceeds to a process of Step 310-3, and in the case where 1 is not set in the demonstration displaying flag, the sub-CPU 41 ends the selection button input checking process.

In Step 310-3, the sub-CPU 41 sets the value of the clock timer at thirty seconds. Thus, for example, in the case where the operation is performed by the selection button 300 (YES in the determination in Step 310-1) in a state where the guide menu is displayed, it can be said that the clock timer counts the time by this Step 310-3.

In the case where the demonstration effect display is being performed, when the operation by the selection button 300 is performed, the demonstration effect display is switched to the guide menu display (the information regarding the game) by Step 310-5. Accordingly, it can be said that the above-described operation by the selection button 300 is an operation for performing the switching display to the information regarding the game. Therefore, it can also be said that the clock timer starts the time count from the time when the operation by the selection button 300 for performing the switching display to the information regarding the game was performed. Here, the clock timer performs a time count process in a manner of countdown. However, the clock timer may also perform the time count process in a manner of count-up. The value set in the clock timer is not limited to thirty seconds, either, and may also be other values. In a similar way, a value set in the clock timer in Step 320-3 to be described later is not limited, either.

In Step 310-4, the sub-CPU 41 verifies whether or not the demonstration effect is being displayed on the liquid
crystal display device 4. A period while the demonstration effect is being displayed, which is mentioned here, also includes the thirty-seconds from the time when the sub-CPU 41 received the demonstration effect command, and this is also applied similarly to the cases of processes of Step 310-10, Step 320-4, and Step 320-12, which are to be described later.

[0195] Specifically, in the case where the demonstration effect data is set, the sub-CPU 41 determines that the demonstration effect is being displayed, and in the case where the demonstration effect data is not set, the sub-CPU 41 determines that the demonstration effect is not being displayed. In the case where the demonstration effect is being displayed on the liquid crystal display device 4, the sub-CPU 41 proceeds to a process of Step 310-5, and in the case where the demonstration effect is not being displayed, the sub-CPU 41 proceeds to a process of Step 310-6.

[0196] In Step 310-5, the sub-CPU 41 sets the guide menu display data. After setting the guide menu display data, the sub-CPU 41 instructs the VDP 51 to allow the liquid crystal display device 4 to perform the liquid crystal display device 4 display according to the guide menu display pattern included in the guide menu display data in an image display control process in Step 210 to be described later. The VDP 51 executes the above-described instruction, thereby allowing the liquid crystal display device 4 to display the guide menu. As a result, as described above, on the liquid crystal display device 4, there are displayed the cursor image indicating any of the respective item images, the image of the item name indicated by the cursor image, and the comment image showing a simple comment for the item concerned.

[0197] The sub-CPU 41 performs the control for the above-described background scroll display, and thus the scroll display of the background image is performed on the liquid crystal display device 4.

[0198] In Step 310-6, the sub-CPU 41 verifies whether or not the guide menu is being displayed on the liquid crystal display device 4. Specifically, in the case where the guide menu display data or the item switching display data is set, the sub-CPU 41 determines that the guide menu is being displayed, and in the case where either the guide menu display data or the item switching display data is not set, the sub-CPU 41 determines that the guide menu is not being displayed. In the case where the guide menu is being displayed on the liquid crystal display device 4, the sub-CPU 41 proceeds to a process of Step 310-7, and in the case where the guide menu is not being displayed thereon, the sub-CPU 41 proceeds to a process of Step 310-8.

[0199] In Step 310-7, the sub-CPU 41 sets the item switching display data. Upon receiving the operation signal from the selection button 300 when the guide menu display data is set, the sub-CPU 41 instructs the VDP 51, for example, to move the display position of the cursor image to a position indicating an item image under the currently indicated item image. The VDP 51 executes the instruction, and thus, on the liquid crystal display device 4, the display position of the cursor image is moved from the position of the currently indicated item image to the position indicating the item image thereunder.

[0200] In Step 310-8, the sub-CPU 41 sets the item switching display data in response to the gaming information. For example, upon receiving the operation signal from the selection button 300 in the case where gaming information regarding a reach flow as shown in Fig. 18 to be described later is being displayed, the sub-CPU 41 instructs the VDP 51 to move, for example, the display position of the cursor image to the position indicated by the item image (continuous quick shot) under the currently indicated item image (large-cylinder firework). The VDP 51 executes the instruction, and thus, on the liquid crystal display device 4, the display position of the cursor image is moved from the position of the currently indicated item image (large-cylinder firework) to the position indicating the item image (continuous quick shot) located thereunder.

[0201] Meanwhile, in the case where gaming information regarding a today's jackpot probability as shown in Fig. 20 to be described later is being displayed, since the selection button 300 does not have a function to select the item under display, the sub-CPU 41 does not set the item switching display data.

[0202] FIGS. 15A to 15C show examples of the displays performed on the liquid crystal display device 4 by the processes of Step 310-5 and Step 310-7 and a process of Step 210 to be described later. In FIGS. 15A to 15C, as six item images, there are displayed an item image for returning to the demonstration display, an item image corresponding to the inter-jackpot information (gaming information), an item image corresponding to the reach frequency information (gaming information), an item image corresponding to the reach flow (gaming information), an item image corresponding to the jackpot symbol (gaming information), and an item image corresponding to the today's jackpot probability (gaming information).

[0203] The inter-jackpot information includes the number of variable displays between the jackpots (number of games), a symbol at the time of the jackpot, a reach mode at the time of the jackpot, and the like. The reach frequency information includes the number, appearance rate (appearance ratio), and reliability of the super reaches. The reach flow (gaming information) includes expectation degrees of the reach flow and the respective reaches, and the like. The jackpot symbol (gaming information) includes a probability variation jackpot symbol, a regular jackpot symbol, and the like. The today's jackpot probability (gaming information) includes a jackpot winning probability in the today's regular gaming state, a jackpot winning probability in the probability variation gaming state, and the like. In each of FIG. 15A and FIG. 15B, as examples, there are displayed a cursor image indicating the item image corresponding to the reach flow (gaming information), an image of the item name that is the reach flow, and a comment image showing the simple comment to the item concerned. For example, in the display of FIG. 15B, when the selection button 300 is pressed five times, there are displayed a cursor image indicating the item image corresponding to the reach frequency information (gaming information), an image of the item name that is the reach flow, and a comment image showing the simple comment to the item, which are shown in FIG. 15C.

[0204] In FIGS. 15A to 15C, images for explaining the functions of the selection button 300 and the decision button 301 are displayed. Here, a state where a character image that is "select" is being displayed under a character image that is "select" surrounded by a frame is a state where the selection
button 300 is effective, that is, a state where it is possible to move the cursor image (state where it is possible to select the item under display) when the selection button 300 is pressed. A state where a character image that is “decide” is being displayed under a character image that is “decide” surrounded by a frame indicates that the decision button 301 has a decision function, that is, the gaming information corresponding to the item image indicated by the cursor image is displayed when the decision button 301 is pressed. A state where a character image that is “return” is being displayed under a character image that is “decide” surrounded by a frame indicates that the decision button 301 has a returning function, that is, the display returns to the display before transferring to the current display.

[0205] Each of FIGS. 15A to 15C shows a state where an image that is “firework” is moving from the right to the left, as the background scroll display.

[0206] In Step 310-9, the sub-CPU 41 verifies whether or not the demonstration displaying flag is set at 1. In the case where the demonstration displaying flag is set at 1, the sub-CPU 41 proceeds to a process of Step 310-10. In the case where the demonstration displaying flag is not set at 1, the sub-CPU 41 ends the selection button input checking process.

[0207] In Step 310-10, the sub-CPU 41 verifies whether or not the demonstration effect is being displayed on the liquid crystal display device 4. If the demonstration effect is not being displayed on the liquid crystal display device 4, the sub-CPU 41 proceeds to a process of Step 310-11. If the case where the demonstration effect is being displayed thereon, the sub-CPU 41 ends the selection button input checking process.

[0208] In Step 310-11, the sub-CPU 41 verifies whether or not the value of the clock timer is 0. If the case where the value of the clock timer is not 0, the sub-CPU 41 ends the selection button input checking process. Thus, in the case where no input is made by the selection button 300 since the value of the clock timer was set in Step 310-3, the process of Step 310-11 is performed until the value of the clock timer becomes 0. Meanwhile, in the case where the value of the clock timer is 0, the sub-CPU 41 proceeds to a process of Step 310-12.

[0209] In Step 310-12, the sub-CPU 41 sets the demonstration effect data. By this process, the demonstration effect is displayed on the liquid crystal display device 4 in a similar way to Step 410. Accordingly, in the case where no input is made by the selection button 300 during a time corresponding to the value set in the clock timer, it can be said that the display on the liquid crystal display device 4 is returned from the display of the guide menu to the display of the demonstration effect.

[0210] In Step 320, the sub-CPU 41 performs the decision button input checking process. A specific description will be made as below of the decision button input checking process. FIG. 16 is a flowchart showing the decision button input checking process.

[0211] In Step 320-1, the sub-CPU 41 verifies whether or not the input has been made by the decision button 301. Specifically, the sub-CPU 41 verifies whether or not to have received the operation signal indicating the operation by the decision button 301 from the decision button 301. In the case where the input is made by the decision button 301, the sub-CPU 41 proceeds to a process of Step 320-2, and in the case where no input is made by the decision button 301, the sub-CPU 41 proceeds to a process of Step 320-11.

[0212] In Step 320-2, the sub-CPU 41 verifies whether or not 1 is set in the demonstration displaying flag. In the case where 1 is set in the demonstration displaying flag, the sub-CPU 41 proceeds to a process of Step 320-3, and in the case where 1 is not set in the demonstration displaying flag, the sub-CPU 41 ends the decision button input checking process.

[0213] In Step 320-3, the sub-CPU 41 sets the value of the clock timer at thirty seconds. Thus, for example, in the case where the operation is performed by the decision button 301 (YES in the determination in Step 320-1) in a state where the guide menu is displayed, it can be said that the clock timer counts the time by this Step 320-3.

[0214] In the case where the demonstration effect display is being performed, when the operation by the decision button 301 is performed, the demonstration effect display is switched to the guide menu display (the information regarding the game) by Step 320-5. Accordingly, it can be said that the operation by the decision button 301 is an operation for performing the switching display to the information regarding the game. Therefore, it can also be said that the clock timer starts the time count from the time when the operation by the decision button 301 for performing the switching display to the information regarding the game was performed.

[0215] In Step 320-4, the sub-CPU 41 verifies whether or not the demonstration effect is being displayed on the liquid crystal display device 4. In the case where the demonstration effect is being displayed on the liquid crystal display device 4, the sub-CPU 41 proceeds to a process of Step 320-5, and in the case where the demonstration effect is not being displayed thereon, the sub-CPU 41 proceeds to a process of Step 320-6.

[0216] In Step 320-5, the sub-CPU 41 sets the guide menu display data. A detailed description of this process is similar to that of the process of Step 320-5 described above, and accordingly, will be omitted.

[0217] In Step 320-6, the sub-CPU 41 verifies whether or not the guide menu is being displayed on the liquid crystal display device 4. Specifically, in the case where the item switching display data is set, the sub-CPU 41 determines that the guide menu is being displayed, and in the case where the item switching display data is not set, the sub-CPU 41 determines that the guide menu is not being displayed. In the case where the guide menu is being displayed on the liquid crystal display device 4, the sub-CPU 41 proceeds to a process of Step 320-7, and in the case where the guide menu is not being displayed thereon, the sub-CPU 41 proceeds to a process of Step 320-9.

[0218] In Step 320-7, the sub-CPU 41 sets the gaming information display data corresponding to the item currently indicated by the cursor image. After setting the gaming information display data, the sub-CPU 41 changes, with the elapse of time, the data for instructing the VDP 51 to allow the liquid crystal display device 4 to perform display according to the gaming information display pattern included in the gaming information display data in the image display con-
control process in Step 210 to be described later. The VDP 51 executes the above-described instruction transmitted every predetermined time, thereby allowing the liquid crystal display device 4 to display the gaming information.

[0219] In Step 320-8, the sub-CPU 41 makes controls for the deceleration and stopping of the above-described background scroll display, and thus, on the liquid crystal display device 4, the deceleration and stopping of the scroll display of the background image are performed.

[0220] FIG. 15D shows an example of the display performed on the liquid crystal display device 4 by the processes of Step 320-7 and Step 320-8 and the process of Step 210 to be described later. For example, if the decision button 301 is pressed when the cursor image indicates the item image of the reach frequency information as shown in FIG. 15C, then, as shown in FIG. 15D, the contents of the reach frequency information are displayed as the gaming information on the liquid crystal display device 4. In the display of the reach frequency information, there are displayed the number of total variable display rotations (number of rotations), types of the reaches, the numbers of the respective reaches, appearance rates of the respective reaches, and reliabilities of the respective reaches. In FIG. 15D, it is displayed that the selection button 300 has a function to select the item on this display, and that the decision button 301 has a decision function thereof.

[0221] After the deceleration process of the background scroll display is performed in the display of the background image shown in FIG. 15C, in the background image shown in FIG. 15D, the background scroll display is stopped, and the background image at the time of the stopping is statically displayed.

[0222] If the decision button 301 is pressed when the cursor image indicates the item image of the inter-jackpot information in the guide menu display, then, as shown in FIGS. 17A and 17B, the contents of the inter-jackpot information are displayed as the gaming information on the liquid crystal display device 4. In the display of the inter-jackpot information, first, display shown in FIG. 17A is performed. In the display shown in FIG. 17A, there are displayed the numbers of probability variation jackpots, the numbers of regular jackpots, and the total numbers of variable displays (total number of rotations) in today, yesterday, and the day before yesterday. Moreover, it is displayed that the selection button 300 has a function to select an item in this display, and that the decision button 301 has a decision function thereof. If the selection button 301 is pressed in this display, the position of the cursor image indicating the item image (any of today, yesterday, and the day before yesterday) is moved. If the decision button 301 is pressed when the cursor image indicates any of the item images of today, yesterday, and the day before yesterday, then the gaming information corresponding to the item image indicated by the cursor image is displayed. If the decision button 301 is pressed when the cursor image indicates the item image that is “return”, the display returns to the display of the guide menu. FIG. 17B shows the contents of the gaming information in the case where the decision button 301 is pressed when the cursor image indicates the item image that is “today”. In this display, there are displayed the jackpot symbols in the respective jackpots, the numbers of games between the jackpots, the types of the reaches at the times of the jackpots, and the like.

[0223] If the decision button 301 is pressed when the cursor image indicates the item image of the reach flow in the guide menu display, then, as shown in FIG. 18, the contents of the reach flows are displayed as the gaming information on the liquid crystal display device 4. In this display, there are displayed flows reaching the respective reaches, a screen showing reaches corresponding to the reach item images (the large-cylinder firework, the continuous quick shot, and the like) indicated by the cursor image, that the selection button 300 has a function to select an item in this display, and that the decision button 301 has a returning function therefrom.

[0224] If the decision button 301 is pressed when the cursor image indicates the item image of the jackpot symbol in the guide menu display, then, as shown in FIG. 19, the contents of the jackpot symbols are displayed as the gaming information on the liquid crystal display device 4. In this display, there are displayed the types of the probability jackpot symbols, the types of the regular jackpot symbols, that the selection button 300 does not have a function to select an item in this display, and that the decision button 301 has a returning function therefrom.

[0225] If the decision button 301 is pressed when the cursor image indicates the item image of the jackpot probability of today in the guide menu display, then, as shown in FIG. 20, the contents of the jackpot probabilities of today are displayed as the gaming information on the liquid crystal display device 4. In this display, there are displayed, with regard to today, the total number of jackpots, the total number of rotations, an occurrence probability of the jackpots in the probability variation gaming state, an occurrence probability of the jackpots in the regular gaming state, an occurrence number of the jackpots in the regular gaming state, an occurrence number of the jackpots in the probability variation gaming state, that the selection button 300 does not have a function to select an item in this display, and that the decision button 301 has a returning function therefrom.

[0226] If the decision button 301 is pressed when the cursor image indicates the item image of “return” in the guide menu display, then, the sub-CPU 41 sets the demonstration effect data. Thus, the display on the liquid crystal display device 4 is returned from the guide menu display to the demonstration effect display. In this case the deceleration and stopping processes of the background scroll display are not performed.

[0227] In Step 320-9, the sub-CPU 41 verifies whether or not the gaming information is being displayed on the liquid crystal display device 4. Specifically, in the case where the gaming information display data is set, the sub-CPU 41 determines that the gaming information is under display, and in the case where the gaming information display data is not set, the sub-CPU 41 determines that the gaming information is not under display. In the case where the gaming information is being displayed on the liquid crystal display device 4, the sub-CPU 41 proceeds to a process of Step 320-10, and in the case where the gaming information is not being displayed thereon, the sub-CPU 41 ends the decision button input checking process.

[0228] In Step 320-10, in response to the gaming information under display, the sub-CPU 41 sets the gaming information display data corresponding to the item image.
currently indicated by the cursor mage, or sets the guide menu display data. A specific description of the above will be made as below.

[0229] For example, the case is considered, where the contents of the inter-jackpot information shown in FIG. 17A are displayed as the display of the contents of the gaming information. Here, it is assumed that the decision button 301 has the decision function, and that the decision button 301 is pressed when the cursor image indicates the item image that is “today”. In this case, the sub-CPU 41 sets the gaming information display data corresponding to the item image (today) currently indicated by the cursor image. As a result, as shown in FIG. 17B, the gaming information corresponding to the above-described gaming information display data is displayed on the liquid crystal display device 4 by the image display control process of Step 210 to be described later.

[0230] Meanwhile, the case is considered, where the contents of the jackpot symbols shown in FIG. 19 are displayed as the display of the contents of the gaming information by the process of Step 320-7. Here, it is assumed that the decision button 301 has the returning function, and that the decision button 301 is pressed. In this case, the sub-CPU 41 sets the guide menu display data. As a result, the guide menu in which the cursor image indicates the predetermined item image is displayed on the liquid crystal display device 4 by the image display control process of Step 210 to be described later. In this case, the sub-CPU 41 performs the control for the background scroll display, and thus the scroll display of the background image is resumed on the liquid crystal display device 4.

[0231] Here, it is assumed that, in order to stop the background scroll display, the sub-CPU 41 instructs the VDP 51 to allow the liquid crystal display device 4 to display the background by using the image data corresponding to the predetermined area among the background image data while taking the above-described coordinate (X1+Xα+Xβ+XY+ . . . +X0, Y1) as a reference irrespective of the elapse of time. Then, in order to resume the background scroll display, the sub-CPU 41 instructs the VDP 51 to allow the liquid crystal display device 4 to display the background by using the image data corresponding to the predetermined area among the background image data while taking the above-described coordinate (X1+Xα+Xβ+XY+ . . . +X0, Y1) as a reference. Thereafter, the sub-CPU 41 changes, with the elapse of time, the data for instructing the VDP 51 to allow the liquid crystal display device 4 to perform the background scroll display every fixed time (for example, every T1). Specifically, the sub-CPU 41 instructs the VDP 51 to increase (or decrease) the V-value by the predetermined amount from the above-described coordinate (X1+Xα+Xβ+XY+ . . . +X0, Y1) taken as the reference coordinate every fixed time, and to allow the liquid crystal display device 4 to display the background by using the image data corresponding to the above-described predetermined area among the background image data while taking the coordinate indicating a result of the increase (or the decrease) as a reference coordinate.

[0232] However, in the case of resuming the background scroll display, the sub-CPU 41 may also allow the VDP 51 to allow the liquid crystal display device 4 to display the background by using the image data corresponding to the above-described predetermined area among the background image data while taking not the above-described coordinate (X1+Xα+Xβ+XY+ . . . +X0, Y1) but the initial reference coordinate (X1, Y1) as a reference.

[0233] In Step 320-11, the sub-CPU 41 verifies whether or not the demonstration displaying flag is set at 1. In the case where the demonstration flag is set at 1, the sub-CPU 41 proceeds to a process of Step 320-12, and in the case where the demonstration displaying flag is not set at 1, the sub-CPU 41 ends the decision button input checking process.

[0234] In Step 320-12, the sub-CPU 41 verifies whether or not the demonstration effect is being displayed on the liquid crystal display device 4. In the case where the demonstration effect is not being displayed on the liquid crystal display device 4, the sub-CPU 41 proceeds to a process of Step 310-13, and in the case where the demonstration effect is being displayed thereon, the sub-CPU 41 ends the decision button input checking process.

[0235] In Step 320-13, the sub-CPU 41 verifies whether or not the value of the clock timer is 0. In the case where the value of the clock timer is not 0, the sub-CPU 41 ends the decision button input checking process. Thus, in the case where no input is made by the decision button 301 since the value of the clock timer was set in Step 320-3, the process of Step 320-13 is performed until the value of the clock timer becomes 0. Meanwhile, in the case where the value of the clock timer is 0, the sub-CPU 41 proceeds to a process of Step 320-14.

[0236] In Step 320-14, the sub-CPU 41 sets the demonstration effect data. By this process, the demonstration effect is displayed on the liquid crystal display device 4 in a similar way to Step 410. Accordingly, in the case where no input is made by the decision button 301 during a time corresponding to the value set in the clock timer, it can be said that the display on the liquid crystal display device 4 is returned from the display of the guide menu to the display of the demonstration effect.

[0237] In Step 330, the sub-CPU 41 updates the value of the clock timer, and the like. In Step 340, the sub-CPU 41 returns the information saved in Step 300 to the register.

[0238] Next, a description will be made of the main process of the sub-control circuit 40 of the first embodiment while referring to FIG. 10. In Step S200, the sub-CPU 41 performs initialization processes for initializing the variety of settings. As one of the initialization processes, for example, the following process is performed. When the power supply is turned on, the sub-CPU 41 instructs the VDP 51 to allow the liquid crystal display device 4 to perform the display according to the comprehensive menu display pattern. The VDP 51 executes the above-described instruction, and thus, on the liquid crystal display device 4, comprehensive menu display shown in FIG. 21 is performed. In this display, as three item images, there are displayed an item image showing characters which are “clear comprehensive data” representing “to entirely delete information and history of guide menu”, an item image showing characters which are “guide option” representing “to increase/decrease items of guide menu”, and an item image showing characters which are “return” representing “to return to display corresponding to current gaming state”.

In FIG. 21, as examples, there are displayed a cursor image indicating the item image corresponding to “clear compre-
hensive data”, an image of an item name that is “clear comprehensive data”, and a comment image showing a simple comment to the item concerned. The sub-CPU 41 performs the control for the background scroll display, and thus, on the liquid crystal display device 4, the scroll display of the background image is performed.

[0239] If the decision button 301 is pressed when the cursor image indicates the item image that is “clear comprehensive data”, then an image shown in FIG. 22 is displayed. In this display, the item image indicated by the cursor image is largely displayed. If the decision button 301 is pressed when the cursor image indicates the item image that is “guide option”, then an image shown in FIG. 23 is displayed. In this display, the five items displayed on the above-described guide menu are displayed, and the cursor image indicates any of the items. If the selection button 300 is pressed in this display, then the position indicated by the cursor image becomes movable. If the decision button 301 is pressed, then ON and OFF of the item are switched. The item (for example, the inter-jackpot information) displayed to be ON is displayed in the case of the guide menu display, and the item to be displayed OFF is not displayed in the case of the guide menu display.

[0240] If the decision button 301 is pressed when the comprehensive menu is being displayed, then the sub-CPU 41 performs the controls for the deceleration and stopping of the background scroll display, and thus, on the liquid crystal display device 4, the deceleration and stopping of the scroll display of the background image are performed.

[0241] In Step 210, the sub-CPU 41 executes the image display control process. A detailed description will be made as below of an example of this process. The image display control processes performed based on the data set by the sub-CPU 41 in Step 410, Step 310-5, Step 310-7, Step 310-12, Step 320-5, Step 320-7, Step 320-10, and Step 320-14, which are described above, are as described above.

[0242] In Step 400, in the case where the control data corresponding to the variable display pattern command is set, the sub-CPU 41 changes, with the elapse of time, the data for instructing the VDP 51 to allow the liquid crystal display device 4 to display the effect according to the effect pattern included in the set control data. The VDP 51 executes the above-described instruction transmitted every predetermined time, and thus, on the liquid crystal display device 4, the effect corresponding to the variable display pattern command is displayed. When the predetermined starting conditions are established by the processes of Step 430 and Step 440, in the case where the guide menu and the gaming information are displayed on the liquid crystal display device 4, it can be said that the effect images regarding the variable display of the special symbols are displayed from the guide menu and the gaming information on the liquid crystal display device 4.

[0243] In Step 220, the sub-CPU 41 executes a sound output control process. A specific description will be made as below of this process. In the case where the control data set in Step 450 is data corresponding to the sound output control, the sub-CPU 41 sends the control data to the voice control circuit 46. Based on the control data, the voice control circuit 46 allows the speakers 50 to output, for example, the sound signals for notifying the player of the predetermined gaming state.

[0244] In Step 230, the sub-CPU 41 executes a lamp turning-on control process. A specific description will be made as below of this process. In the case where the control data set in Step 450 is data corresponding to the lamp turning-on control, the sub-CPU 41 sends the control data to the lamp control circuit 47. Based on the control data, the lamp control circuit 47 allows the lamp 26 to be turned on and off, for example, according to a predetermined turning on/off pattern. The sub-CPU 41 repeatedly performs the processes from Step 210 to Step 230, which are described above.

(Function and Effect 1)

[0245] According to the first embodiment, in the case where it is determined by the sub-CPU 41 that the background scroll stopping condition is established, the background scroll display on the liquid crystal display device 4 is stopped. Accordingly, the scroll display of the background image is avoided being executed for a long time, and therefore, a situation where the player continues to view the scroll display of the background image for a long time is avoided. Thus, for example, in the case where the player is fatigued and concentrates on the game, the player is avoided being made to feel sick, and a gaming will of the player can be prevented from being decreased.

[0246] Hence, according to the first embodiment, the demonstration effect is enhanced by the execution of the scroll display of the background, and in addition, the gaming will of the player can be avoided being decreased.

[0247] The sub-CPU 41 can stop the background scroll display after decelerating the moving speed of the background image in the background scroll display, and accordingly, the player feels that the stopping of the background is performed naturally. As a result, the player comes to have a favorable impression regarding the demonstration of the background, and it is made possible to further enhance the demonstration effect.

[0248] In the case where the player desires to stop the background scroll display, the player performs the operation by using the decision button 301, and thus the sub-CPU 41 determines that the background scroll stopping condition is established. Thus, the background scroll display is stopped after the moving speed of the background image in the background scroll display is decelerated. Accordingly, the background scroll display can be stopped when the player desires so, and therefore, convenience for the player is enhanced.

[0249] In the case where the demonstration effect is displayed on the liquid crystal display device 4, the player performs the operation by the selection button 300 or the decision button 301 (a predetermined operation by operation unit), and thus the guide menu (gaming information selection image) is displayed. When the guide menu is being displayed, the player performs the operation for selecting the gaming information by the decision button 301, and thus the guide menu (gaming information selection image) is displayed. Accordingly, the player performs the operation by the selection button 300 or the decision button 301 when the player desires so, and thus the guide menu and the gaming information are displayed. Therefore, the demonstration effect is enhanced, and in addition, the convenience for the player is further enhanced. In the case where the guide menu
is being displayed on the liquid crystal display device 4, when the operation by the decision button 301 for selecting the gaming information is performed, the background scroll display on the liquid crystal display device 4 is stopped. Accordingly, the player can clearly grasp that the gaming information is displayed.

(Function and Effect 2)

[0250] According to the first embodiment, when the guide menu is displayed as the information regarding the gaming on the liquid crystal display device 4, in the case where the sub-CPU 41 determines that the predetermined operation by the selection button 300 or the decision button 301 is performed, the clock timer performs the time count process. Moreover, in the case where the time counted by the clock timer reaches the predetermined time (for example, thirty seconds) while it is being left undetermined that the predetermined operation by the selection button 300 or the decision button 301 is performed, the sub-CPU 41 returns the display state (for example, the state where the guide menu is being displayed) on the liquid crystal display device 4 to the predetermined display state (for example, the state where the demonstration effect is being displayed). Accordingly, even if the player goes away while leaving the guide menu display and the gaming information display as they are on the liquid crystal display device 4, such a state where the guide menu display and the gaming information display are left as they are is avoided.

[0251] Hence, the guide menu and the gaming information are displayed by the operation by the player, and thus the convenience for the player is enhanced, and in addition, the state where the guide menu display and the gaming information display are left as they are is avoided.

[0252] The sub-CPU 41 allows the liquid crystal display device 4 to perform the switching display under the condition where the gaming state is the plying state where the predetermined game is not performed. In this case, the predetermined operation is performed by the selection button 300 and the like in the case where the demonstration effect for enhancing the gaming will of the player is being displayed, and thus the display is switched to the display of the information regarding the game (for example, guide menu) by the sub-CPU 41. When the information regarding the game is being displayed, in the case where the time counted by the clock timer reaches the predetermined time while it is being left undetermined by the sub-CPU 41 that the predetermined operation by the selection button 300 or the decision button 301 is performed, the display state on the liquid crystal display device 4 is returned from the display state where the information regarding the game is being displayed to the demonstration effect display state for enhancing the gaming will of the player. As a result, in the gaming machine, a situation where the information regarding the game is displayed without end and the demonstration effect is not displayed is avoided, and a situation where the player decreases the will to play the game with the above-described gaming machine is also avoided. Therefore, the state where the information regarding the game is left displayed is avoided, and in addition, the situation where the player decreases the gaming will can be avoided.

[0253] When the predetermined starting condition is established, in the case where the guide menu and the gaming information are displayed on the liquid crystal display device 4, the sub-CPU 41 allows the liquid crystal display device 4 to display the effect image regarding the variable display of the special symbol from the guide menu and the gaming information. Therefore, when the variable display of the special symbol, to which the player pays most attention, is performed, the display is automatically switched form the guide menu display and the gaming information display to the effect image regarding the variable display of the special symbol. As a result, it is not necessary for the player to perform an operation for switching the display from the guide menu display and the gaming information display to the effect image regarding the variable display of the special symbol, and the convenience for the player is further enhanced.

[0254] Also in the case where the clock timer starts the time count from the time when the operation by the selection button 300 or the decision button 301 for performing the switching display to the guide menu display is performed, the above-described effect can be obtained.

Modification Example of First Embodiment

[0255] (1) In the above-described first embodiment, in the case where the background scroll display is stopped, the background scroll display is stopped after the moving speed of the background image in the background scroll image is decelerated. However, without being limited to this, the background scroll display may be stopped suddenly. The information regarding the game may also be information other than the guide menu and the gaming information, for example, a mini game and the like. The mode of the guide menu display may be other modes. With regard to the gaming information, the gaming information may be other than the gaming information shown in the above-described first embodiment.

[0256] (2) In the above-described first embodiment, the background scroll display is stopped in the case where the gaming information is displayed on the liquid crystal display device 4. However, the background scroll display may also be stopped in the case where the variable display of the special symbol is performed on the liquid crystal display device 4, in the case where the effect image during the jackpot gaming is displayed, and in the case where the demonstration effect is displayed. The background scroll display may also be stopped under a condition where other conditions are established, for example, in the case where a predetermined effect is displayed on the liquid crystal display device 4.

[0257] (3) In the above-described first embodiment, the background scroll display is stopped by the operation of the decision button 301 by the player. However, without being limited to this, the background scroll display may also be stopped every predetermined time.

[0258] (4) In the above-described first embodiment, a configuration is adopted, in which, in the case of the demonstration effect display, the guide menu can be displayed by the operation of the selection button 300, and the predetermined gaming information can be selected by the operation of the decision button 301. However, the configuration is not limited to this. For example, a configuration may also be adopted, in which, in the case where the variable display of the special symbol is being performed on the liquid crystal display device 4, and in the case where the
jackpot effect is being displayed thereon, the guide menu can be displayed by the operation of the selection button 300, and the predetermined gaming information can be selected by the operation of the decision button 301.

[0259] (5) In the above-described first embodiment, the description has been made that the display is returned to the display of the demonstration effect in the case where the operation by the decision button 301 or the selection button 300 is not performed for the predetermined time when the guide menu is displayed on the liquid crystal display device 4. However, without being limited to this, the display may not be returned to the display of the demonstration effect in the case where the operation by the decision button 301 or the selection button 301 is not performed for the predetermined time, and the variable display of the special symbol and the effect thereof may be performed in the case where the starting condition of the variable display of the special pattern is established.

[0260] (6) In the above-described first embodiment, the variable display of the special symbol and the effect display thereof are performed when the predetermined starting condition is established after the guide menu is displayed on the liquid crystal display device 4. However, without being limited to this even if the variable display of the special symbol is started, the guide menu may be left displayed for the predetermined time, and after the elapse of the predetermined time, the effect regarding the variable display of the special symbol may also be displayed.

[0261] (7) As described in the first embodiment, the sub-CPU 41 allows the clock counter to start the time count when it is determined that the predetermined operation by the decision button 301 or the selection button 300 is performed. However, without being limited to this, the sub-CPU 41 may also allow the clock counter to start the time count, for example, when it is determined that the information regarding the game, for example, the guide menu and the respective pieces of gaming information are displayed on the liquid crystal display device 4. In this case, the sub-CPU 41 can allow the clock counter to start the time count without determining that the operation by the decision button 301 or the selection button 300 is performed. Also in this case, a similar effect to that of the first embodiment can be obtained.

Second Embodiment

[0262] A gaming machine of a second embodiment further includes the following functions in addition to the functions of the gaming machine of the first embodiment. In the second embodiment, descriptions of same structures and processes as those explained in the first embodiment are omitted or simplified.

[0263] The liquid crystal display device 4 of the second embodiment is variable display unit performing variable display of special symbols based on a variable display pattern determined by the main CPU 31 and displaying a first background image during the variable display of the special symbols. The image data ROM 54 of the second embodiment is background image storing unit storing several types of first background image data (normal background image data) to display the first background image (hereinafter, a normal background image). Herein, display of the normal background image performed in the liquid crystal display device 4 is display of a predetermined moving image.

[0264] A specific description thereof is as follows. The sub-ROM 42 stores data including a background display pattern (hereinafter, referred to as a normal background display pattern) with which the image control circuit 45 causes the liquid crystal display device 4 to display the normal background image. Herein, examples of the normal background display pattern are normal background images A to C, with which the image control circuit 45 causes the liquid crystal display device 4 to display normal background images A to C, respectively.

[0265] The background display patterns used in the second embodiment are different from the background display patterns used in the first embodiment.

[0266] The image data ROM 54 stores, for example, the normal background image data A, B, and C with which the normal background images A, B, and C are displayed on the screen of the liquid crystal display device 4, respectively. Upon receiving a demonstration effect command, the sub-CPU 41 sets demonstration effect data and, based on the normal background display pattern (one of the normal background display patterns A to C), changes data to instruct the VDP 51 with time so as to display the background image based on the normal background image data (one of the normal background image data A to C)

[0267] The VDP 51 reads the normal background image data from the image data ROM 54 based on the above instruction transmitted each predetermined time. The VDP 51 displays each pixel data included in the normal background display data at a predetermined position on the display screen of the liquid crystal display device 4 through processes to develop and read the normal background image data into the VRAM 55. The sub-CPU 41 either does or does not change the data to instruct the VDP 51 with time to cause the liquid crystal display device 4 to perform display of a moving image as the display of the normal background image A.

[0268] Upon receiving a variable display pattern command, the sub-CPU 41 sets control data corresponding to the received variable display pattern command. In this case, the sub-CPU 41 causes the liquid crystal display device 4 to directly display the normal background image A. The sub-CPU 41 changes data to instruct the VDP 51 with time so as to cause the liquid crystal display device 4 to perform variable display corresponding to the control data in the foreground of the display of the normal background image. The VDP 51 executes the above instruction transmitted each predetermined time, and the variable display of the special symbols and display the normal background image are thus performed in the liquid crystal display device 4.

[0269] The sub-CPU 41 holds the type of the normal background image (for example, the normal background image A) which is being displayed in the liquid crystal display device 4.

[0270] The sub-CPU 41 serves as effect display control unit, when a particular variable display pattern is determined by the main CPU 31, causing the liquid crystal display device 4 to perform the variable display of the special symbols based on the above particular variable display patterns.
pattern and causing the liquid crystal display device 4 to perform the display of the normal background image and then a second background image (hereinafter, referred to as a special background image). At this time, between the display of the normal background image and the display of the special background image, the sub-CPU 41 causes the liquid crystal display device 4 to display a series of moving images representing transition from the display of the normal background image to the display of the special background image. A specific description of this process is as follows. The second embodiment is considered taking as an example of the specific variable display pattern a variable display pattern of “super reach” or “super reach winning”.

[0271] The sub ROM 42 stores data including a background display pattern (hereinafter, referred to as a special background display pattern) with which the image control circuit 45 causes the liquid crystal display device 4 to display the special background image. The sub ROM 42 stores data including a transition display pattern A with which the image control circuit 45 causes the liquid crystal display device 4 to display a series of moving images representing transition from the display of the normal background image A to the display of the special background image, data including a transition display pattern B with which the image control circuit 45 causes the liquid crystal display device 4 to display a series of moving images representing transition from the display of the normal background image B to the display of the special background image, and data including a transition display pattern C with which the image control circuit 45 causes the liquid crystal display device 4 to display a series of moving images representing transition from the display of the normal background image C to the display of the special background image.

[0272] The image data ROM 54 stores special background image data to display the special background image on the screen of the liquid crystal display device 4, transition image data A to display the series of moving images representing the transition from the display of the normal background image A to the display of the special background image on the screen of the liquid crystal display device 4, transition image data B to display the series of moving images representing the transition from the display of the normal background image B to the display of the special background image on the screen of the liquid crystal display device 4, and transition image data C to display the series of moving images representing the transition from the display of the normal background image C to the display of the special background image on the screen of the liquid crystal display device 4.

[0273] When the received variable display pattern command relates to “super reach” or “super reach winning”, the sub-CPU 41 sets control data corresponding to the received variable display pattern command. In this case, the sub-CPU 41 changes data to instruct the VDP 51 with time so as to cause the liquid crystal display device 4 to perform variable display corresponding to the control data. The VDP 51 executes the above instruction transmitted each predetermined time, and the variable display of the special symbols corresponding to the variable display pattern of “super reach” or “super reach winning” are performed in the liquid crystal display device 4.

[0274] At this time, based on the transition display pattern (for example, the transition display pattern A) corresponding to the type of the normal background image (for example, the normal background image A) which is being displayed on the liquid crystal display device 4 and the special background display pattern, the sub-CPU 41 instructs the VDP 51 to cause the liquid crystal display device 4 to display the series of moving images representing the transition from the display of the normal background image to the display of the special background image and special background image. Upon receiving the instruction to display the transition image from the sub-CPU 41, the VDP 51 reads from the image data ROM 54 the transition image data (for example, the transition image data A) corresponding to the type of the normal background image (for example, the normal background image A) which is being displayed on the liquid crystal display device 4. The VDP 51 causes each pixel data included in the transition image data to be displayed at a predetermined position on the display screen of the liquid crystal display device 4 through the processes to expand and read the read transition image data onto the VRAM 55. Thereafter, upon receiving the instruction to display the special background image from the sub-CPU 41, the VDP 51 reads the special background image data from the image data ROM 54. The VDP 51 causes each pixel data included in the special image data to be displayed at a predetermined position on the display screen of the liquid crystal display device 4 through the processes to expand and read the read special background image data onto the VRAM 55. The sub-CPU 41 either either does or does not change the data to instruct the VDP 51 with time to cause the liquid crystal display device 4 to display the series of moving images representing the transition from the normal background image to the display of the special background image and the special background image.

[0275] The sub-CPU 41 serves as background image data selecting unit selecting any one of the several types of normal background image data when a predetermined background image selection condition is established in the liquid crystal display device 4. The sub-CPU 41 serves as background image display control unit performing display of the normal background image based on the selected normal background image data after the special background image is displayed in the liquid crystal display device 4. The predetermined background image selection condition is established, for example, in a case where the variable display of the special symbols is performed based on a specific variable display pattern (variable display pattern of “super reach” or “super reach winning”), a case where the gaming machine comes into a jackpot gaming state, and the like. An example of the specific description is as follows.

[0276] For example, upon receiving the variable display pattern command or demonstration effect command after the liquid crystal display device 4 performs the variable display of the special symbols based on the variable display pattern of “super reach” or “super reach winning”, the sub-CPU 41 randomly samples a random number from a random number generator between 0 and 99. The sub-CPU 41 then compares the sampled random number and a normal background image selection table shown in FIG. 24 to select one of the normal background images A to C.
The sub-CPU 41 instructs the VDP 51 to perform display of the normal background image based on the selected normal background image and the normal background display pattern corresponding to the selected normal background image. For example, when selecting the normal background image C, the sub-CPU 41 instructs the VDP 51 to replace display of the special background image with display of the normal background image C based on the normal background display pattern C. The VDP 51 executes the above instruction, and display of the normal background image C based on the normal background image data C is performed after display of the special background image is performed in the liquid crystal display device 4.

Moreover, when the gaming machine is brought into a specific gaming state by the main CPU 31, the sub-CPU 41 causes the liquid crystal display device 4 to perform display of a specific gaming state background image different from the normal background image. Herein, as an example of the specific gaming state, the jackpot gaming state is considered. A specific description of this process is as follows.

The sub ROM 42 stores data including a background display pattern (hereinafter, referred to as a jackpot gaming state background display pattern) to display the jackpot gaming state background image. The image data ROM 54 stores jackpot gaming state background image data to display the jackpot gaming state background image on the screen of the liquid crystal display device 4.

The main CPU 31 generates a jackpot gaming start command when coming into the jackpot gaming state. Upon receiving the jackpot gaming start command, the sub-CPU 41 sets control data corresponding to the jackpot gaming start command. Based on the jackpot state background display pattern included in the set control data, the sub-CPU 41 instructs the VDP 51 to perform display of the background image based on the jackpot gaming state background image data instated of the current display.

Based on the above instruction, the VDP 51 reads the jackpot gaming state background image data from the image data ROM 54 and causes each pixel data included in the jackpot gaming state background image data to be displayed at a predetermined position on the display screen of the liquid crystal display device 4 through processes to expand and read the jackpot gaming state background image data onto the VRAM 55.

After the jackpot gaming state is terminated, based on the normal background image data selected by the sub-CPU 41, the sub-CPU 41 and VDP 51 further cause the liquid crystal display device 4 to replace display of the jackpot gaming state background image with display of the normal background image. A specific description of an example of this process is as follows.

When terminating the jackpot gaming state, the main CPU 31 generates a jackpot gaming state termination command. Upon receiving the jackpot gaming state termination command, the sub-CPU 41 sets control data corresponding to the jackpot gaming state termination command. Based on the above control data, the sub-CPU 41 determines the termination of the jackpot gaming. The sub-CPU 41 selects any one of the normal background images A to C as previously described. The time when the sub-CPU 41 selects the normal background image is not limited to after the jackpot gaming is terminated, and the normal background image to be displayed in the liquid crystal display device 4 may be selected before the jackpot gaming is terminated.

Based on the selected normal background image and normal background display pattern corresponding to the selected normal background image, the sub-CPU 41 instructs the VDP 51 to perform display of the normal background image. For example, when selecting display of the normal background image B, the sub-CPU 41 instructs the VDP 51 to replace display of the jackpoting state background image with display of the normal background image B based on the normal background display pattern B. The VDP 51 executes the above instruction, and, in the liquid crystal display device 4, display of the normal background image B is therefore performed based on the normal background image data B after the jackpot gaming state background image is displayed.

Gaming Machine Operation of Second Embodiment

Hereinafter, a description is given of an operation of the gaming machine 1 in the second embodiment. In the operation of the gaming machine 1 of the second embodiment, a description of the same processes as those explained in the first embodiment are omitted or simplified.

In a command reception process of the sub control circuit 40 of the second embodiment, a command reception process shown in FIG. 25 is further performed. FIG. 25 is a flowchart shown in the command reception process of the sub control circuit 40 of the second embodiment. It is assumed that the normal background image is being already displayed in the liquid crystal display device 4.

In Step 500, the sub-CPU 41 checks whether a received command is the demonstration effect command from the main control circuit 30. When the received command is not the demonstration effect command, the sub-CPU 41 proceeds to a process of Step 510, and when the received command is the demonstration effect command, the sub-CPU 41 proceeds to a process of Step 580.

In Step 510, the sub-CPU 41 checks whether the received command is the variable display pattern command. When the received command is the variable display pattern command, the sub-CPU 41 proceeds to a process of Step 530, and when the received command is not the variable display pattern command, the sub-CPU 41 proceeds to a process of Step 520.

In Step 520, the sub-CPU 41 sets control data in a predetermined work area of the sub RAM 43 corresponding to the received command. For example, when setting control data corresponding to the jackpot gaming start command, in the image display control process of Step 210, based on the jackpot gaming state background display pattern included in the set control data, the sub-CPU 41 instructs the VDP 51 to perform display of the jackpot gaming state background image based on the jackpot gaming state background image data in the liquid crystal display device instead of the current display. By the above instruction being executed by the VDP 51, display of the normal background image is replaced with the jackpot gaming state background image based on the jackpot gaming state background image data. When the received command is the jackpot gaming termination command, the sub-CPU 41 sets control data corresponding to the jackpot gaming termination command.
In Step 530, the sub-CPU 41 checks whether or not the variable display pattern corresponding to the variable display pattern command previously received is the variable display pattern of “super reach” or “super reach winning”. When the variable display pattern corresponding to the variable display pattern command previously received is the variable display pattern of “super reach” or “super reach winning”, the sub-CPU 41 proceeds to a process of Step 550. When the variable display pattern corresponding to the variable display pattern command previously received is not either the variable display pattern of “super reach” or “super reach winning”, the sub-CPU 41 proceeds to a process of Step 540.

In Step 540, the sub-CPU 41 checks whether the jackpot gaming state is terminated. Specifically, when the control data corresponding to the jackpot gaming termination command has been set, the sub-CPU 41 determines the termination of the jackpot gaming state. When the control data corresponding to the jackpot gaming termination command has not been set, the sub-CPU 41 determines that the jackpot gaming state is not terminated. When the jackpot gaming state is terminated, the sub-CPU 41 proceeds to a process of Step 550, and when the jackpot gaming state is not terminated, the sub-CPU 41 proceeds to a process of Step 570.

In the Step 550, the sub-CPU 41 sets control data corresponding to the variable display pattern command. For example, when the variable display pattern corresponding to the received variable display pattern is other than the variable display pattern of “super reach” and “super reach winning”, the sub-CPU 41 sets the control data corresponding to the received variable display pattern command. In this case, in the liquid crystal display device 4, for example, display of the special symbols (display of numerals) and display of the normal background image (other than the numerals) shown in FIG. 26A are replaced with variable display of the special symbols and display of the normal background image shown in FIGS. 26B and 26C, and stop display of the special symbols and display of the normal background image shown in FIG. 26D are then performed. The display of the normal background images of FIGS. 26A to 26C are a little different from each other to provide display of moving images.

When the variable display pattern corresponding to the received variable display pattern command is the variable display pattern of “super reach” or “super reach winning”, the sub-CPU 41 sets control data corresponding to the received variable display pattern command. In this case, in the image display control process of Step 210, the sub-CPU 41 changes data to instruct the VDP 51 with time so as to cause the liquid crystal display device 4 to perform variable display corresponding to the control data. The VDP 51 executes the above instruction transmitted each predetermined time, and, in the liquid crystal display device 4, variable display of the special symbols corresponding to the variable display pattern of “super reach” or “super reach winning” is performed.

At this time, based on the transition display pattern and special background display pattern, the sub-CPU 41 changes data to instruct the VDP 51 with time so as to cause the liquid crystal display device 4 to perform display of the special background image after display of a series of moving images representing transition from display of the normal background image to display of the special background image. The VDP 51 executes the above instruction transmitted each predetermined time, and, in the liquid crystal display device 4, therefore, display of the special background image display is performed after display of the above series of moving images.

When the variable display pattern received is the variable display pattern of “super reach” or “super reach winning” and the sub-CPU 41 sets control data corresponding to the received variable display pattern command, for example, images of FIGS. 26E to 27L are displayed. Herein, in FIGS. 26E and 26F, variable display of the special symbols and display of the normal background image are performed. In FIGS. 27G to 27L, variable display of the special symbols and display of a series of moving images (images of other than numerals) representing the transition from display of the normal background image to display of the special background image are performed. In FIG. 27L, variable display of the special symbols and display of special background image (an image of other than numerals) are performed. When the variable display pattern received is the variable display pattern of “super reach winning”, stop display of the special symbols and display of the special background image are performed as shown in FIG. 27K. When the variable display pattern received is the variable display pattern of “super reach” (“super reach losing”), stop display of the special symbols and display of the special background image are performed as shown in FIG. 27L. FIG. 27H shows the background image moving from right to left. FIG. 27I shows fireworks being set off. Images between FIGS. 27I and 27J show the fireworks moving up. FIG. 27J shows the fireworks being up in the sky. FIG. 27K shows the fireworks being successful. FIG. 27L shows the fireworks being unsuccessful. The sub-CPU 41 terminates the command reception process after the process of Step 570. The sub-CPU 41 terminates the command reception process after the process of Step 550.

In Step 560, the sub-CPU 41 samples a random number for selecting a normal background image. For example, the sub-CPU 41 samples a random number value out of the random numbers for selecting a normal background image generated by the random generator between 0 and 99.

In Step 570, the sub-CPU 41 selects the normal background image based on the sampled random number for selecting a normal background image. Specifically, the sub-CPU 41 compares the sampled random number for selecting a normal background image and the normal background image selection table shown in FIG. 24 and selects one of the normal background images A to C.

The sub-CPU 41 sets the normal background display pattern corresponding to the selected normal background image. In the image display control process of Step 210, based on the set normal background display pattern, the sub-CPU 41 instructs the VDP 51 to perform display of the normal background image. For example, when selecting display of the normal background image C, the sub-CPU 41 instructs the VDP 51 to replace display of the special background image with display of the normal background image C based on the normal background display pattern C. By the VDP 51 executing the above instructions, in the liquid display device 4, the display of the special background image is replaced with the display of the normal background image.
crystal display device 4, display of the normal background image C is performed based on the normal background image data C after display of the special background image is displayed.

[0299] When the sub-CPU 41 determines the termination of the jackpot gaming state and selects display of the normal background image C, in the image display control process of Step 210, the sub-CPU 41 instructs the VDP 51 to replace display of the special background image with display of the normal background image C based on the normal background display pattern C. By the VDP 51 executing the above instruction, in the liquid crystal display device 4, display of the normal background image C based on the normal background image data C is performed after display of the jackpot gaming state background image is performed.

[0300] By the processes of Steps 550, 560, 570, and 210, for example, display of the special symbols and display of the normal background image (display of other than numerals) shown in FIG. 28.

[0301] It can be said that the process to select the normal background image is performed by these processes when the sub-CPU 41 receives the variable display pattern command for the first time after variable display based on “super reach” is performed in the liquid crystal display device 4. The sub-CPU 41 proceeds to the process of Step 550 after the process of Step 570.

[0302] In Step 580, the sub-CPU 41 checks whether or not the variable display pattern command previously received is the variable display pattern of “super reach” or “super reach winning”. When the variable display pattern command previously received is the variable display pattern of “super reach” or “super reach winning”, the sub-CPU 41 proceeds to a process of Step 600, and when the variable display pattern corresponding to the variable display pattern command previously received is not either the variable display pattern of “super reach” or “super reach winning”, the sub-CPU 41 proceeds to a process of Step 590.

[0303] In Step 590, the sub-CPU 41 checks whether the jackpot gaming state is terminated. When the jackpot gaming state is terminated, the sub-CPU 41 proceeds to the process of Step 600, and when the jackpot gaming state is not terminated, the sub-CPU 41 proceeds to a process of Step 620.

[0304] In Step 600, the sub-CPU 41 samples the random number for selecting a normal background image. This process is the same as that of Step 550.

[0305] In Step 610, the sub-CPU 41 selects the normal background image based on the sampled random number for selecting a normal background image. This process is the same as that of Step 560. The process to select the normal background image is performed by this process when the sub-CPU 41 receives the demonstration effect command for the first time after variable display based on “super reach” is performed in the liquid crystal display device 4. After the process of Step 610, the sub-CPU 41 proceeds to the process of Step 620.

[0306] In Step 620, the demo effect display data is set. By this process and the process of Step 210, the demonstration effect is displayed in the liquid crystal display device 4.

(Function and Effect)

[0307] According to the second embodiment, when display of the normal background image is switched in the liquid crystal display device 4, display of a certain normal background image is not suddenly switched to display of another normal background image. When display of the special background image is performed after display of the normal background image is performed, based on display of the normal background image (normal background image data) selected by the sub-CPU 41, the sub-CPU 41 causes the liquid crystal display device 4 to perform display of the normal background image after display of the special background image. Display of the normal background image is therefore switched on an occasion of the special background image. Accordingly, the player cannot feel that the background has suddenly changed. Consequently, according to the second embodiment, switching display of the background can prevent the player from feeling uncomfortable with the effect of the background.

[0308] The sub-CPU 41 selects one of the several types of normal background image data and switches display of the normal background image based on the selected normal background image data. Accordingly, the player can see various types of background images, thus enhancing the impact of the effect in the gaming machine.

[0309] According to the second embodiment, switching display of the background can increase the impact of the effect and prevent the player from feeling uncomfortable with the effect of the background.

[0310] Furthermore, after the jackpot gaming state is terminated, the sub-CPU 41 causes the liquid crystal display device 4 to replace the jackpot gaming state background image with display of the normal background image based on the selected normal background image data. Accordingly, the normal background image is switched more often, and the player can see more types of the normal background image, thus further enhancing the impact of the effect in the gaming machine.

[0311] As display of the normal background image, display of the moving image is performed. Accordingly, the impact of the effect of the background image can be further enhanced, and it is therefore possible to entertain the player. The sub-CPU 41 causes the liquid crystal display device 4 to display a series of moving images representing the transition from display of the normal background image to display of the special background image. Accordingly, the moving images are continuously displayed from display of the normal background image to display of the special background image, and it is therefore possible to prevent the player from feeling uncomfortable with the effect of the background.

Modification of Second Embodiment

[0312] (1) In the aforementioned second embodiment, display of the special background image is performed during variable display based on the variable display pattern of “super reach” but not limited to this. Display of the special background image may be performed during variable display based on another variable display pattern.

[0313] (2) In the aforementioned second embodiment, the display of the normal background image is also switched
even when the jackpot gaming state is terminated but not limited to this. For example, the display of the normal background image may not be switched even when the jackpot gaming state is terminated.

(3) In the aforementioned second embodiment, the display of the normal background image and special background image are predetermined moving images, but not limited to this, and may be predetermined still images.

Third Embodiment

[0314] A gaming machine of the third embodiment further includes the following functions in addition to the functions of the gaming machines of the first and second embodiments. In the third embodiment, descriptions of configurations and processes same as those explained in the first and second embodiments are omitted or simplified.

[0315] The main CPU 31 serves as jackpot determination unit determining a jackpot when a predetermined determination condition is established. For example, under the condition that the main RAM 33 stores a start memory, the main CPU 31 determines based on deciding information corresponding to the starting memory whether a variable display result corresponding to the start memory is a predetermined variable display result (for example, a jackpot variable display result of 7-7-7 or the like) before variable display of identification information corresponding to the starting memory is executed.

[0316] Specifically, for example, the main CPU 31 determines whether a jackpot determining random number value corresponding to a start memory with a start memory number of 3 matches a jackpot determination value (or whether the variable display result corresponding to the above start memory matches the jackpot variable display result) before variable display of the special symbols corresponding to the start memory are performed. This process is performed in a start opening detection process of later described Step 122.

[0317] When determining a jackpot, the main CPU 31 serves as announcement attraction execution deciding unit deciding whether an announcement attraction to predict a jackpot before the variable display result by the liquid crystal display device 4 becomes the predetermined variable display result (for example, the jackpot variable display result of 7-7-7 or the like).

[0318] For example, when the variable display result corresponding to the start memory is determined to be the above predetermined variable display result (for example, the jackpot variable display result of 7-7-7 or the like) as the result of the jackpot determination, the main CPU 31 decides whether to perform the announcement attraction to previously predict a possibility of a jackpot during variable display of the special symbols executed based on a start memory stored before the start memory with the variable display result determined to be the predetermined variable display result (hereinafter, referred to as a losing determination start memory) is stored. This process is performed in Step 122.70 of the start opening detection process of the later described Step 122.

[0319] In the third embodiment, when the variable display result corresponding to the start memory is determined to be a losing variable display result (for example, 1-2-3 or the like) as the result of the jackpot determination, the main CPU 31 decides whether to perform the announcement attraction to previously predict a possibility of a jackpot during variable display of the special symbols executed based on a start memory stored before the start memory with the variable display result determined to be the losing variable display result (hereinafter, referred to as a losing determination start memory) is stored.

[0320] In the third embodiment, as an example, a description is given of a case where the main CPU 31 decides whether to perform a continuous announcement attraction to perform the announcement attraction previously predicting a jackpot during variable display of the special symbols executed based on each of start memories stored before the determination start memory (the jackpot or losing determination start memory) is stored. Note that the present invention can be applied even if the main CPU 31 decides whether to perform the above continuous announcement attraction only for the jackpot determination start memory.

[0321] The continuous announcement attraction is that, for example, when a jackpot determining random number value corresponding to a start memory with the start memory number of 3 matches the jackpot determination value, a announcement attraction is performed during variable display of the special symbols (during variable display performed based on a start memory with the start memory number of 1 and variable display performed based on a start memory with the start memory number of 2) executed before variable display of the special symbols is performed based on the jackpot determination start memory (the start memory with the start memory number of 3).

[0322] The liquid crystal display device 4 serves as announcement attraction executing unit performing the announcement attraction when the main CPU 31 decides to perform the announcement attraction (for example, the continuous announcement attraction). For example, when the main CPU 31 decides to perform the announcement attraction (for example, the continuous announcement attraction), the liquid crystal display device 4 performs the announcement attraction during variable display of the special symbols executed based on a start memory stored before the determination start memory (the jackpot or losing determination start memory) is stored.

[0323] Specifically, when the main CPU 31 decides to execute the continuous announcement attraction, the liquid crystal display device 4 performs the announcement attraction during variable display of the special symbols executed before variable display of the special symbols based on the determination start memory (the jackpot or losing determination start memory). This process is described in detail in a later-described command reception process.

[0324] The sub ROM 42 stores several types of announcement attraction image data to display the announcement attraction image data at a predetermined position on the display screen of the liquid crystal display device 4.

[0325] In the third embodiment, as an example, the sub ROM 42 stores announcement attraction data 1 to 6. The announcement attraction data is data to execute display, lighting of lamps, or the like for the announcement attraction. The announcement attraction data 1 includes a announcement attraction pattern 1. This announcement attraction pattern 1 (hereinafter, referred to as a successful announcement attraction pattern 1) is used when the variable display result determined to be the losing variable display result (hereinafter, referred to as a losing determination start memory).
firework making announcement attraction pattern) is to display a situation where a worker successfully makes fireworks (hereinafter, referred to as successful firework making). The announcement attraction data 2 includes an announcement attraction pattern 2. The announcement attraction pattern 2 (hereinafter, referred to as unsuccessful firework making announcement attraction pattern) is to display a situation where the worker fails to make fireworks (hereinafter, referred to as unsuccessful firework making). The announcement attraction data 3 includes an announcement attraction pattern 3. The announcement attraction pattern 3 (hereinafter, referred to as a successful firework setting announcement attraction pattern) is to display a situation where the worker successfully sets fireworks in a launcher (hereinafter, referred to as successful firework setting). The announcement attraction data 4 includes an announcement attraction pattern 4. The announcement attraction pattern 4 (hereinafter, referred to as an unsuccessful firework setting announcement attraction pattern) is to display a situation where the worker fails to set fireworks in the launcher (hereinafter, referred to as unsuccessful firework setting). The announcement attraction data 5 includes an announcement attraction pattern 5. The announcement attraction pattern 5 (hereinafter, referred to as a successful firework lighting announcement attraction pattern) is to display a situation where the worker successfully lights fireworks (hereinafter, successful firework lighting). The announcement attraction data 6 includes a announcement attraction pattern 6. The announcement attraction pattern 6 (hereinafter, referred to as an unsuccessful firework lighting announcement attraction pattern) is to display a situation where the worker fails to light fireworks (hereinafter, referred to as unsuccessful firework lighting).

[0326] As announcement attraction image data to display the announcement attraction on the liquid crystal display device 4, announcement attraction image data necessary to perform display according to each announcement attraction pattern is stored in the image data ROM 54. Each announcement attraction image data is associated with one of a successful continuation losing variable display pattern or unsuccessful continuation losing variable display pattern described later. A detailed description thereof is given in a description of Step 750 in the later-described command reception process.

[0327] The main CPU 31 serves as variable display pattern deciding unit, based on the jackpot determination result, deciding on a variable display pattern to execute at least one of normal varying display of special symbols with a low jackpot possibility and reach variable display of the special symbols with a high jackpot possibility until the variable display result of the special symbols is derived out of a plurality of variable display patterns after the beginning of the variable display of the special symbols. Herein, the liquid crystal display device 4 serves as variable display unit performing variable display of the identification information based on the variable display pattern decided by the main CPU 31.

[0328] Specifically, as the variable display pattern corresponding to the jackpot determination, the main CPU 31 decides between a particular variable display pattern to execute the aforementioned reach varying display after normal varying display shorter than normal varying display in the case where the announcement attraction execution deciding unit decides not to execute the announcement attraction (for example, continuous announcement attraction) and a particular variable display pattern to execute only the reach varying display. For example, the main CPU 31 decides on the above particular variable display pattern as the variable display pattern corresponding to the aforementioned determination start memory (the jackpot or losing determination start memory).

[0329] Herein, as an example, a description is given of the case where, as the variable display pattern corresponding to the aforementioned determination start memory (the jackpot or losing determination start memory), the main CPU 31 decides on a particular variable display pattern to execute the aforementioned reach varying display after normal varying display shorter than normal varying display in the case where the announcement attraction execution deciding unit decides not to execute the announcement attraction (for example, the continuous announcement attraction). Note that the present invention can be also applied when the main CPU 31 decides on the particular variable display pattern to execute only the aforementioned reach varying display.

[0330] Herein, the normal varying display of the special symbols is varying display indicating a low jackpot possibility and, for example, is display in which “left”, “middle”, and “right” symbols are individually varying. The reach varying display of the special symbols is varying display indicating a high jackpot possibility and, for example, is display in which the “left” and “right” symbols are being stopped and the “middle” symbols is varying.

[0331] Generally, the player is playing games in the aforementioned normal varying display wanting to come into a reach state.

[0332] An example of the specific description of the variable display pattern deciding process is as follows. The plurality of variable display patterns are: a variable display pattern to execute the normal varying display for a first predetermined time and then execute losing stop display; a variable display pattern to execute the normal varying display for the first predetermined time, execute the reach varying display with a high jackpot possibility, and then execute the losing stop display; a variable display pattern to execute the normal varying display for the first predetermined time, execute the reach varying display, and then execute losing stop display; a first particular variable display pattern to execute the normal varying display for a second predetermined time (much shorter than the first predetermined time), execute the reach varying display, and then execute the jackpot stop display; and a second particular variable display pattern to execute the normal varying display for the second predetermined time, execute the reach varying display, and then execute the losing stop display.

[0333] When deciding not to execute the continuous announcement attraction, based on the results of the determination whether a jackpot is hit and the determination whether the reach state is attained, the main CPU 31 selects one of the plurality of variable display patterns (except the first and second particular variable display patterns, successful continuation losing variable display pattern, and unsuccessful continuation losing variable display pattern) as the variable display pattern corresponding to variable display of the special symbols.

[0334] When deciding to execute the continuous announcement attraction, based on the result of the deter-
mination whether a jackpot is hit, the main CPU 31 selects one of the first and second particular variable display patterns as the variable display pattern corresponding to variable display of the special symbols based on the determination start memory (the jackpot or losing determination start memory). The detailed description of this process is given in a description of the variable display pattern deciding process of later-described Step 20-2.

Gaming Machine Operation of Third Embodiment

[0335] Hereinafter, a description is given of an operation of the gaming machine 1 in the third embodiment. In the operation of the gaming machine of the third embodiment, descriptions of same processes as those explained in the first and second embodiments are omitted or simplified.

[0336] In the start opening detection process of the third embodiment, the following process is performed. FIG. 29 is a flowchart showing the start opening detection process in the third embodiment.

[0337] In Step 122-61, the main CPU 31 reads a value of a start memory number counter and checks whether the value of the start memory number counter is less than “4”. When the value of the start memory number counter is not less than “4”, the main CPU 31 terminates the start opening detection process. When the value of the start memory number counter is less than “4”, the main CPU 31 proceeds to a process of Step 122-62.

[0338] In Step 122-62, the main CPU 31 increments the start memory number counter by 1.

[0339] In Step 122-63, the main CPU 31 samples the jackpot determining random number value and jackpot symbol random number value as the decision information. In Step 122-64, the main CPU 31 stores the sampled jackpot determining random number value and jackpot symbol random number value in a predetermined storage area of the main RAM 33 as the start memory.

[0340] In Step 122-65, the main CPU 31 checks whether the value of a continuous announcement counter is less than 1. Herein, the continuous announcement counter indicates how many more times the announcement attraction in the continuous announcement attraction will be performed. In later-described Step 122-72, in the continuous announcement counter, the value set in the start memory counter is set in the case of winning a continuous announcement execution lottery. Therefore, the continuous announcement counter is decremented by 1 each time the variable display is performed. Alternatively, when the jackpot variable display is performed after the value set in the start memory counter is set, the continuous announcement counter is set to 0. When the value of the continuous announcement counter is not less than 1, the main CPU 31 terminates the start opening detection process, and when the value of the continuous announcement counter is 0, the main CPU 31 proceeds to Step 122-66.

[0341] In the Step 122-66, the main CPU 31 compares the jackpot determining random number value stored in the Step 122-64 with a predetermined jackpot determination value.

[0342] In Step 122-67, the main CPU 31 checks whether the jackpot determining random number value matches the predetermined jackpot determination value. When the jack-

pot determining random number value matches the predetermined jackpot determination value (in the case of a jackpot), the main CPU 31 proceeds to a process of Step 122-68. When the jackpot determining random number value does not match the predetermined jackpot determination value (in the case of losing), the main CPU 31 proceeds to a process of Step 122-69.

[0343] In Step 122-68, the main CPU 31 performs a lottery process to decide whether to execute the continuous announcement attraction. A specific description thereof is as follows. The main CPU 31 samples a random number value for deciding on execution of the continuous announcement attraction and determines execution of the continuous announcement attraction to be won when the sampled random number value is in a predetermined range. In this process, the probability of winning the execution of the continuous announcement attraction is, for example, 1/2. However, the probability of winning the execution of the continuous announcement attraction may be set to 1 so that the main CPU 1 always determines the execution of the continuous announcement attraction to be won each time the jackpot determining random number value matches the predetermined jackpot determination value.

[0344] In Step 122-69, the main CPU 31 performs a lottery process to decide whether to execute the continuous announcement attraction. Specifically, the main CPU 31 samples a random number value for decision on execution of the continuous announcement attraction and determines the execution of the continuous announcement attraction to be won when the sampled random number value is in a predetermined range. In this process, the probability of winning the execution of the continuous announcement attraction is, for example, 1/200. However, the probability of winning the execution of the continuous announcement attraction may be set to 0 so that the main CPU 31 always determines the execution of the continuous announcement attraction not to be won each time the jackpot determining random number value does not match the predetermined jackpot determination value.

[0345] In Step 122-70, the main CPU 31 checks whether the lottery to decide the execution of the continuous announcement attraction is won. In the case of not winning in the lottery to decide the execution of the continuous announcement attraction, the main CPU 31 proceeds to a process of Step 122-71. In the case of winning in the lottery to decide the execution of the continuous announcement attraction, the main CPU 31 proceeds to a process of Step 122-72.

[0346] In Step 122-71, the main CPU 31 generates and sets a start memory number command indicating the value of the start memory counter. Upon this command being transmitted to the sub control circuit 40, for example, the start memory number is displayed in a predetermined area of the liquid crystal display device 4.

[0347] In Step 122-72, the main CPU 31 sets the continuous announcement counter to the value set to the start memory counter. The main CPU 31 sets an announcement execution counter to 0. This announcement execution counter represents the number of times for which the announcement attraction in the continuous announcement attraction has been performed. Herein, the announcement execution counter is incremented by 1 each time that the
variable display based on the successful continuation losing variable display pattern in a process of later-described Step 20-2-908. By the process of Step 122-72, the announcement execution counter is reset to 0. The main CPU 31 generates and sets the start memory number command indicating the value of the start memory counter.

[0348] As the variable display pattern deciding process of the Step 20-2-9 to implement the function of the third embodiment, the following process is performed. FIG. 30 is a flowchart showing the variable display pattern deciding process of the third embodiment.

[0349] Herein, the main ROM stores a variable display pattern selection table shown in FIG. 31. As shown in this table, when the value of the continuous announcement counter value is not less than 1 in the case of a jackpot, one of continuous announcement super reach jackpot variable display patterns 1 to 4 is selected. Herein, each of the continuous announcement super reach jackpot variable display patterns 1 to 4 is the first particular variable display pattern to perform the normal varying display for the second predetermined time (much shorter than the first predetermined time), perform the reach varying display of the “super reach”, and then perform the jackpot stop display. The effect display performed based on each of the continuous announcement super reach jackpot variable display patterns 1 to 4 is different from another like the effect display concerning the set fireworks and effect display concerning large-tube fireworks.

[0350] When the value of the continuous announcement counter is 1 in the case of losing and reach or when the value of the continuous announcement counter is 1 and the value of the announcement execution counter is 3 in the case of losing, one of continuous announcement super reach losing variable display patterns 1 to 4 is selected. Herein, each of the continuous announcement super reach losing variable display patterns 1 to 4 is the second particular variable display pattern to perform the normal varying display for the second predetermined time, perform the reach varying display of “super reach”, and then perform the losing stop display. The effect display performed based on each of the continuous announcement super reach losing variable display patterns 1 to 4 is different from another like the effect display concerning set fireworks and effect display concerning large-tube fireworks.

[0351] When the value of the continuous announcement counter is 0 in the case of a jackpot, one of a normal-mode normal reach jackpot variable display pattern, a normal-mode super reach jackpot variable display pattern, and a normal-mode entire-rotation reach jackpot variable display pattern. Herein, each of the normal-mode normal reach jackpot variable display pattern, normal-mode super reach jackpot variable display pattern, and normal-mode entire-rotation reach jackpot variable display pattern is the variable display pattern to perform the normal varying display for the first predetermined time, perform the reach varying display of “super reach”, and then perform the jackpot stop display.

[0352] When the value of the continuous announcement counter is 0 in the case of “reach” and losing, one of a normal-mode normal reach losing variable display pattern and a normal-mode super reach losing variable display pattern is selected. Herein, each of the normal-mode normal reach losing variable display pattern and normal-mode super reach losing variable display pattern is the variable display pattern to perform the normal varying display for the first predetermined time, perform the reach varying display of “super reach”, and then perform the losing stop display.

[0353] When the value of the continuous announcement counter is not less than 2 in the case of losing, a successful continuation losing variable display pattern is selected. This variable display pattern is the variable display pattern to perform the normal varying display for the first predetermined time and then perform the losing stop display. When variable display is performed based on the successful continuation losing variable display pattern, display according to one of the successful firework making announcement attraction pattern, successful firework setting announcement attraction pattern, and successful firework lighting announcement attraction pattern is performed.

[0354] When the value of the continuous announcement counter is 1 and the value of the announcement execution counter is not more than 2 in the case of losing and “not reach”, an unsuccessful continuation losing variable display pattern is selected. This variable display pattern is the variable display pattern to perform the normal varying display for the first predetermined time and then perform the losing stop display. When variable display is performed based on the unsuccessful continuation losing variable display pattern, display according to one of the unsuccessful firework making announcement attraction pattern, unsuccessful firework setting announcement attraction pattern, and unsuccessful firework lighting announcement attraction pattern is performed.

[0355] In the case of losing other than the aforementioned cases, a normal losing (normal-mode losing) variable display pattern is selected. This variable display pattern is the variable display pattern to perform the normal varying display for the first predetermined time and then perform the losing stop display.

[0356] In Step 20-2-901, the main CPU 31 checks whether the result of the jackpot determination in the Step 20-2-6 indicates a change of the gaming state into the jackpot gaming state. When the result of the jackpot determination indicates a change of the gaming state into the jackpot gaming state, the main CPU 31 proceeds to a process of Step 20-2-914, and when the result of the jackpot determination does not indicate a change of the gaming state into the jackpot gaming state, the main CPU 31 proceeds to a process of Step 20-2-902.

[0357] In Step 20-2-902, the main CPU 31 checks whether the value of the continuous announcement counter is less than 1. When the value of the continuous announcement counter is not less than 1, the main CPU 31 proceeds to a process of Step 20-2-906. When the value of the continuous announcement counter is 0, the main CPU 31 proceeds to a process of Step 20-2-903.

[0358] In Step 20-2-903, the main CPU 31 checks whether the reach is determined in Step 20-2-7. When “reach” is determined in Step 20-2-7, the main CPU 31 proceeds to a process of Step 20-2-904. When “reach” is not determined in Step 20-2-7, the main CPU 31 proceeds to a process of Step 20-2-905.

[0359] In Step 20-2-904, the main CPU 31 sets the normal-mode reach losing variable display pattern correspond-
In Step 20-2-905, the main CPU 31 sets the normal losing variable display pattern based on the variable display pattern selection table.

In Step 20-2-906, the main CPU 31 checks whether the value of the continuous announcement counter is 1. When the value of the continuous announcement counter is 1, the main CPU 31 proceeds to a process of Step 20-2-909. When the value of the continuous announcement counter is not 1, the main CPU 31 proceeds to a process of Step 20-2-907.

In Step 20-2-907, based on the variable display pattern selection table, the main CPU 31 sets the successful continuous losing variable display pattern corresponding to the case of losing when the value of the continuous announcement counter is not less than 2.

In Step 20-2-908, the main CPU 31 increments the announcement execution counter by 1. Thereafter, the main CPU 31 proceeds to a process of Step 20-2-913.

In Step 20-2-909, the main CPU 31 checks whether “reach” is determined in Step 20-2-7. When “reach” is determined in Step 20-2-7, the main CPU 31 proceeds to a process of Step 20-2-910, and when “reach” is not determined in Step 20-2-7, the main CPU 31 proceeds to Step 20-2-911.

In Step 20-2-910, based on the variable display pattern selection table, the main CPU 31 selects the continuous announcement super reach losing variable display pattern. Herein, the main CPU 31 selects one of the four continuous announcement super reach jackpot variable display patterns by random lottery.

In Step 20-2-911, the main CPU 31 checks whether the value of the announcement execution counter is 3. When the value of the announcement execution counter is 3, the main CPU 31 proceeds to the process of Step 20-2-910. When the value of the announcement execution counter is not 3, the main CPU 31 proceeds to a process of Step 20-2-912.

In Step 20-2-912, based on the variable display pattern selection table, the main CPU 31 sets the unsuccessful continuous losing variable display pattern corresponding to the case of losing “not reach” when the value of the continuous announcement counter is 1 and the value of the announcement execution counter is not more than 2.

In Step 20-2-913, the main CPU 31 decrements the announcement counter by one.

In Step 20-2-914, the main CPU 31 checks whether the value of the continuous announcement counter is not less than 1. When the value of the continuous announcement counter is not less than 1, the main CPU 31 proceeds to a process of Step 20-2-915. When the value of the continuous announcement counter is 0, the main CPU 31 proceeds to a process of Step 20-2-916.

In Step 20-2-915, based on the variable display pattern selection table, the main CPU 31 selects the continuous announcement super reach jackpot variable display pattern. Herein, the main CPU 31 selects one of the four continuous announcement super reach jackpot variable display patterns by random lottery. Thereafter, the main CPU 31 proceeds to a process of Step 20-2-917.

In Step 20-2-916, based on the variable display pattern selection table, the main CPU 31 selects the normal-mode reach jackpot variable display pattern. Herein, the main CPU 31 selects one of the normal-mode normal reach jackpot super reach, normal-mode super reach jackpot, and normal-mode entire-rotation reach jackpot variable display patterns by random lottery. Thereafter, the main CPU 31 proceeds to a process of Step 20-2-917.

In Step 20-2-917, the main CPU 31 sets the value of the continuous announcement counter to 0.

As the command reception process in the sub control circuit 40 to implement the function of the third embodiment, the following process is performed. FIG. 32 is a flowchart showing the command reception process of the third embodiment.

In Step 700, the sub-CPU 41 checks whether the received command is the variable display pattern command from the main control circuit 30. When the received command is the variable display pattern command, the sub-CPU 41 proceeds to a process of Step 720. When the received command is not the variable display pattern command, the sub-CPU 41 proceeds to a process of Step 710.

In Step 710, the sub-CPU 41 sets the control data in a predetermined work area of the sub RAM 43 corresponding to the received command.

In Step 720, the sub-CPU 41 checks whether the variable display pattern indicated by the received variable display pattern command is the jackpot variable display pattern. When the variable display pattern corresponding to the received variable display pattern command is the jackpot variable display pattern, the sub-CPU 41 proceeds to a process of Step 810, and when the variable display pattern indicated by the received variable display pattern command is not the jackpot variable display pattern, the sub-CPU 41 proceeds to a process of Step 730.

In Step 730, the sub-CPU 41 checks whether the variable display pattern indicated by the received variable display pattern command is one of the successful and unsuccessful continuous losing variable display patterns. When the variable display pattern indicated by the received variable display pattern command is one of the successful and unsuccessful continuous losing variable display patterns, the sub-CPU 41 proceeds to a process of Step 740. When the variable display pattern indicated by the received variable display pattern command is neither the successful continuous losing variable display pattern nor unsuccessful continuous losing variable display pattern, the sub-CPU 41 proceeds to a process of Step 760.

In Step 740, the sub-CPU 41 increments the continuous announcement execution counter by 1. This continuous announcement execution counter indicates the number of times that the announcement attraction in the continuous announcement attraction is executed in the sub control circuit 40. In other words, when the sub-CPU 41 receives the variable display pattern command correspond-
ing to the successful or unsuccessful continuation losing variable display pattern, since the announcement attraction in the continuous announcement attraction is performed once in later described Step 750, the sub-CPU 41 increments the continuous announcement execution counter by 1.

[0379] In Step 750, the sub-CPU 41 reads and sets the announcement attraction data from the sub ROM 42 according to the value of the continuous announcement execution counter. The sub-CPU 41 then allows the liquid crystal display device 4 to perform the announcement attraction display based on the announcement attraction pattern included in the set announcement attraction data in the process of Step 210. A detailed description of this process is as follows.

[0380] The sub ROM 42 stores an announcement attraction data selection table shown in FIG. 33. In this selection table, each announcement attraction data is associated with one of the successful and unsuccessful continuation losing variable display patterns and the value of the continuous announcement execution counter.

[0381] The image data ROM 54 stores: announcement attraction image data 1 necessary to perform display according to the successful fireworks making announcement attraction pattern; announcement attraction image data 2 necessary to perform display according to the unsuccessful fireworks making announcement attraction pattern; announcement attraction image data 3 necessary to perform display according to the successful fireworks setting announcement attraction pattern; announcement attraction image data 4 necessary to perform display according to the unsuccessful fireworks setting announcement attraction pattern; and announcement attraction image data 5 necessary to perform display according to the successful fireworks lighting announcement attraction pattern; and announcement attraction image data 6 necessary to perform display according to the unsuccessful fireworks lighting announcement attraction pattern.

[0382] When the sub-CPU 41 receives the variable display pattern command corresponding to the successful continuation losing variable display pattern and the value of the continuous announcement execution counter is 1, the sub-CPU 41 reads and sets announcement attraction data 1 from the sub ROM 42 based on the announcement attraction data selection table. In the image display control process of Step 210, the sub-CPU 41 instructs the VDP 51 to cause the liquid crystal display device 4 to perform the announcement attraction display according to the successful fireworks making announcement attraction pattern included in the announcement attraction data 1. The VDP 51 executes the above instruction, and the announcement attraction display according to the successful fireworks making announcement attraction pattern is performed in the liquid crystal display device 4. For example, in the liquid crystal display device 4, a series of images from an image of FIG. 34A up to an image of FIG. 34C is displayed.

[0384] In a similar way, when the sub-CPU 41 receives the variable display pattern command corresponding to the successful continuation losing variable display pattern and the value of the continuous announcement execution counter is 2, the sub-CPU 41 reads and sets announcement attraction data 2 from the sub ROM 42 based on the announcement attraction data selection table. In the image display control process of Step 210, the sub-CPU 41 instructs the VDP 51 to cause the liquid crystal display device 4 to perform the announcement attraction display according to the successful fireworks setting announcement attraction pattern included in the announcement attraction data 2. The VDP 51 executes the above instruction, and the announcement attraction display according to the successful fireworks setting announcement attraction pattern is performed in the liquid crystal display device 4. For example, in the liquid crystal display device 4, a series of images from an image of FIG. 35A up to an image of FIG. 35B is displayed.

[0385] In a similar way, when the sub-CPU 41 receives the variable display pattern command corresponding to the unsuccessful continuation losing variable display pattern and the value of the continuous announcement execution counter is 2, the sub-CPU 41 reads and sets announcement attraction data 3 from the sub ROM 42 based on the announcement attraction data selection table. In the image display control process of Step 210, the sub-CPU 41 instructs the VDP 51 to cause the liquid crystal display device 4 to perform the announcement attraction display according to the successful fireworks setting announcement attraction pattern included in the announcement attraction data 3. The VDP 51 executes the above instruction, and the announcement attraction display according to the successful fireworks setting announcement attraction pattern is therefore performed in the liquid crystal display device 4. For example, in the liquid crystal display device 4, a series of images from an image of FIG. 35A up to an image of FIG. 35C is displayed.

[0386] In a similar way, when the sub-CPU 41 receives the variable display pattern command corresponding to the successful continuation losing variable display pattern and the value of the continuous announcement execution counter is 3, the sub-CPU 41 reads and sets announcement attraction data 4 from the sub ROM 42 based on the announcement attraction data selection table. In the image display control process of Step 210, the sub-CPU 41 instructs the VDP 51 to cause the liquid crystal display device 4 to perform the announcement attraction display according to the successful fireworks setting announcement attraction pattern included in the announcement attraction data 4. The VDP 51 executes the above instruction, and the announcement attraction display according to the successful fireworks setting announcement attraction pattern is therefore performed in the liquid crystal display device 4. For example, in the liquid crystal display device 4, a series of images from an image of FIG. 35A up to an image of FIG. 35C is displayed.
attraction pattern is therefore performed in the liquid crystal display device 4. For example, in the liquid crystal display device 4, a series of images from an image of FIG. 36A up to an image of FIG. 36B is displayed.

[0387] In a similar way, when the sub-CPU 41 receives the variable display pattern command corresponding to the unsuccessful continuation losing variable display pattern and the value of the continuous announcement execution counter is 3, the sub-CPU 41 reads and sets announcement attraction data 6 from the sub ROM 42 based on the announcement attraction data selection table. In the image display control process of Step 210, the sub-CPU 41 instructs the VDP 51 to cause the liquid crystal display device 4 to perform the announcement attraction display according to the unsuccessful firework lighting announcement attraction pattern included in the announcement attraction data 6. The VDP 51 executes the above instruction, and the announcement attraction display according to the unsuccessful firework lighting announcement attraction pattern is therefore performed in the liquid crystal display device 4. For example, in the liquid crystal display device 4, a series of images from an image of FIG. 36A up to an image of FIG. 36C is displayed.

[0388] In Step 760, the sub-CPU 41 sets control data corresponding to the received variable display pattern command. Based on the set control data, the sub-CPU 41 instructs the VDP 51 to perform variable display corresponding to the variable display pattern. VDP 51 causes the liquid crystal display device 4 to perform the variable display corresponding to the variable display pattern. Herein, when the variable display pattern command corresponding to the variable display pattern command received by the sub-CPU 41 is the continuous announcement super reach losing variable display pattern, in the liquid crystal display device 4, the normal varying display is performed for the first predetermined time, which is very short, and then the losing stop display is performed.

[0389] Based on the set control data, the sub-CPU 41 instructs the VDP 51 to cause the liquid crystal display device 4 to perform effect display according to a predetermined effect pattern (for example, when receiving the variable display pattern command corresponding to the normal-mode reach losing variable display pattern, an effect pattern to perform reach effect display). The VDP 51 executes the above instruction, and, for example, the reach effect display or the like is therefore performed in the liquid crystal display device 4.

[0390] In Step 770, the sub-CPU 41 checks whether the variable display pattern corresponding to the received variable display pattern command is the unsuccessful continuation losing variable display pattern. When the variable display pattern corresponding to the received variable display pattern command is the unsuccessful continuation losing variable display pattern, the sub-CPU 41 proceeds to Step 790, and when the variable display pattern corresponding to the received variable display pattern command is not the unsuccessful continuation losing variable display pattern, the sub-CPU 41 proceeds to a process of Step 780.

[0391] In Step 780, the sub-CPU 41 sets the value of the continuous announcement execution counter to 0.

[0392] In Step 790, the sub-CPU 41 checks whether the value of the continuous announcement execution counter is 1 and the variable display pattern corresponding to the received variable display pattern command is the continuous announcement super reach losing variable display pattern. When the variable display pattern corresponding to the received variable display pattern command is the continuous announcement super reach losing variable display pattern, the sub-CPU 41 proceeds to a process of Step 800. When the variable display pattern corresponding to the received variable display pattern command is not the continuous announcement super reach losing variable display pattern, the sub-CPU 41 terminates the command reception process.

[0393] In Step 800, the sub-CPU 41 sets the value of the continuous announcement execution counter to 0.

[0394] In Step 810, the sub-CPU 41 sets the value of the continuous announcement execution counter to 0.

[0395] In Step 820, the sub-CPU 41 sets control data corresponding to the received variable display pattern command. Based on the set control data, the sub-CPU 41 instructs the VDP 51 to perform variable display corresponding to the variable display pattern. The VDP 51 causes the liquid crystal display device 4 to perform the variable display corresponding to the variable display pattern.

[0396] Herein, when the variable display pattern corresponding to the variable display pattern command received by the sub-CPU 41 is the continuous announcement super reach jackpot variable display pattern, in the liquid crystal display device 4, the normal varying display is performed for the very short first predetermined time, and then the jackpot stop display is performed. When the variable display pattern corresponding to the variable display pattern command received by the sub-CPU 41 is the continuous announcement super reach jackpot variable display pattern, based on the set control data, the sub-CPU 41 instructs the VDP 51 to cause the liquid crystal display device 4 to perform effect display according to the effect pattern to perform super reach jackpot effect display. The VDP 51 executes the above instruction, and, for example, reach effect display or the like is therefore performed in the liquid crystal display device 4. When the variable display pattern corresponding to the variable display pattern command received by the sub-CPU 41 is the continuous announcement super reach jackpot variable display pattern, the normal varying display is performed for a very short time, and then as shown in FIG. 37A, reach varying display of the special symbols (display of numerals) and display of the effect image (display of other than numerals) are performed. During the reaching various display, as shown in FIG. 37B, the reaching display of the special symbols and display of the effect image are performed, and as shown in FIG. 37C, stop display of jackpot symbols as the special symbols and display of the effect image are performed.

(Function and Effect)

[0397] In the third embodiment, when deciding to execute the announcement attraction (for example, the continuous announcement attraction), as the variable display pattern corresponding to the determination start memory (for example, the jackpot determination start memory), the main CPU 31 decides whether the particular variable display pattern to execute the reaching display after the normal varying display (for example, the continuous announcement super reach jackpot variable display pattern) which is shorter
than the normal varying display performed when the announcement attraction is decided not to be executed, or the particular variable display pattern to execute only the reach varying display.

[0398] When the player expects the reach varying display to be performed, therefore, the normal varying display is performed for a short time or not performed before the reach varying display is performed in the gaming machine. Accordingly, the player does not feel wasting his/her time during the normal varying display and is prevented from losing the enthusiasm for gaming.

[0399] In the third embodiment, the main CPU 31 can decide whether to execute the continuous announcement attraction to execute the announcement attraction to previously predict a jackpot during the variable display of the special symbols executed based on the start memory stored before the determination start memory (for example, the jackpot determination start memory) is stored, and the sub-CPU 41 can execute the above announcement attraction several times. It is therefore possible to prevent the player from losing the enthusiasm for gaming and increase the impact of the effect.

[0400] According to the third embodiment, execution of the announcement attraction (for example, the continuous announcement attraction) can increase an expectation of the player for a jackpot and prevent the player from losing the enthusiasm for gaming.

[0401] In the third embodiment, variable display based on the continuous announcement super reach variable display pattern and the effect thereof are performed each time the announcement attraction in the continuous announcement attraction is performed three times. Accordingly, the enthusiasm of the player for gaming can be enhanced, and the interest to the game can be further enhanced.

(Modification 1)

[0402] The variable display pattern selection table in the aforementioned third embodiment may be modified as follows. The main ROM 32 stores a first variable display pattern selection table shown in FIG. 38A, a second variable display pattern selection table shown in FIG. 38B, a third variable display pattern selection table shown in FIG. 38C, and a fourth variable display pattern selection table shown in FIG. 38D.

[0403] In each of the variable display pattern selection table, each variable display pattern is associated with one of the jackpot and losing, and information about whether “reach” is attained. In the variable display pattern deciding process of Step 20-2-9, the main CPU 31 decides the variable display pattern using the first variable display pattern selection table when the value of the continuous announcement counter is 0 (or when the continuous announcement attraction is not being executed). When the value of the continuous announcement counter is not less than 2 (or when the continuous announcement attraction is being executed), the main CPU 31 decides the variable display pattern using the second variable display pattern selection table. In the variable display pattern deciding process of Step 20-2-9, the main CPU 31 decides the variable display pattern using the third variable display pattern selection table when the value of the continuous announcement counter is 1 and the value of the announcement execution counter is 2 or less (or when the continuous announcement attraction has been performed twice or less and the variable display based on the determination start memory is performed). The main CPU 31 decides the variable display pattern using the fourth variable display pattern selection table when the value of the continuous announcement counter is 1 and the value of the announcement execution counter is 3 (or when the continuous announcement attraction has been performed three times and the variable display based on the determination start memory is performed). Herein, as shown in FIG. 38A, in some cases, the unsuccessful continuation losing variable display pattern is selected to display images of FIGS. 34A to 34C even when the continuous announcement attraction is decided not to be executed. This can increase a frequency that the continuous announcement attraction appears compared to the case where the continuous announcement attraction is performed only when a jackpot is determined. Accordingly, the enthusiasm of the player for gaming can be enhanced, and the interest to the game can be increased.

[0404] Each time that the announcement attraction in the continuous announcement attraction is performed three times, the variable display based on the continuous announcement super reach variable display pattern and the effect thereof are performed. Accordingly, the enthusiasm of the player for gaming can be enhanced, and the interest to the game can be further increased.

[0405] In the third embodiment, the description is given of the case of executing the continuous announcement attraction, but the present invention is not limited to this. In various types of the variable display of the special symbols executed based on the start memory stored before the determination start memory is stored, the announcement attraction may be performed during some types of the variable display and not performed during other types of the variable display.

[0406] When the execution of the continuous announcement attraction is decided, the announcement attraction may be performed, not limited to during the variable display of the special symbols, at another time.

(Modification 2)

[0407] In the aforementioned third embodiment and modification 1 thereof, the following modification may be made.

[0408] The main CPU 31 decides, based on the result of the jackpot determination, the variable display pattern to execute at least one of the normal varying display and reach varying display out of the plurality of variable display patterns until the variable display result of the special symbols is derived after the variable display of the special symbols is started.

[0409] When a jackpot is determined, the main CPU 31 decides whether to execute an announcement attraction to predict the jackpot (hereinafter, single announcement attraction) during the variable display performed based on the determination to be the jackpot.

[0410] When deciding to execute the single announcement attraction, as the variable display pattern corresponding to the variable display of the special symbols performed based on the determination to be the jackpot, the main CPU 31 decides whether the particular variable display pattern to execute the normal varying display and then execute the
reach varying display or the particular variable display pattern to execute only the normal varying display. Herein, the duration of the normal varying display in the variable display performed based on the particular variable display pattern is shorter than the duration of the normal varying display in the variable display pattern performed when the single announcement attraction is decided not to be executed.

[0411] When the main CPU 31 decides to execute the single announcement attraction, the sub-CPU 41 performs the single announcement attraction during variable display performed based on the determination to be the jackpot. Accordingly, when the single announcement attraction is performed during the normal varying display, subsequent variable display can be configured so that the duration of the normal varying display is shortened or cut to immediately perform the reach varying display.

[0412] The operations of the gaming machines of this modification and the third embodiment are different from each other at the following points and are the same at the other points.

[0413] In this modification, the processes from Step 122-65 to Step 122-72 are not performed, and the following processes are performed.

[0414] In the process of Step 122-64, the start memory number command is set.

[0415] After Step 20-2-8, the main CPU 31 performs the lottery process to decide whether to execute the single announcement attraction. In this process, the probability of winning the execution of the single announcement attraction wins is, for example, 1/2.

[0416] On the other hand, after Step 20-2-7, the main CPU 31 performs the lottery process to decide whether to execute the single announcement attraction. In this process, the probability of winning the execution of the single announcement attraction is, for example, 1/200.

[0417] Subsequently, the main CPU 31 checks whether the lottery to decide the execution of the single announcement attraction is won. In the case of winning the lottery to decide the execution of the single announcement attraction, the main CPU 31 sets a single announcement execution flag on. This single announcement execution flag is set on when execution of the single announcement attraction in the liquid crystal display device is decided.

[0418] The main CPU 31 then proceeds to the process of Step 20-2-9.

[0419] In the variable display pattern selection table shown in FIG. 31, the term “continuous announcement” is replaced with the term “single announcement”. In this selection table, the single announcement super reach jackpot variable display pattern is selected when the single announcement execution flag is on in the case of a jackpot. The single announcement super reach losing variable display pattern is selected when the single announcement execution flag is off in the case of a jackpot. The normal-mode normal reach jackpot variable display pattern and the like are selected when the single announcement execution flag is off in the case of losing in “reach”. The normal-mode losing variable display pattern and the like are selected when the single announcement execution flag is off in the case of losing in “other than reach”. In this modification, the successful and unsuccessful continuation losing variable display patterns are not selected.

[0420] In the variable display pattern deciding process of Step 20-2-9, the main CPU 31 checks whether the single announcement execution flag is on. When the single announcement execution flag is not on, the main CPU 31 performs the processes of Steps 20-2-903, 20-2-904, and 20-2-905 and terminates the variable display pattern deciding process.

[0421] On the other hand, when the single announcement execution flag is on, the main CPU 31 performs the process of Step 20-2-901. When the result of the jackpot determination is to change the gaming state into the jackpot gaming state, the main CPU 31 proceeds to the process of Step 20-2-915 with the term “continuous announcement” replaced with the term “single announcement”. When the result of the jackpot determination is not to change the gaming state into the jackpot gaming state, the main CPU 31 proceeds to the process of Step 20-2-910 with the term “continuous announcement” replaced with the term “single announcement”. Thereafter, the main CPU 31 turns off the single announcement execution flag and then terminates the variable display pattern deciding process.

[0422] The sub-CPU 41 performs the command reception process as follows. First, the sub-CPU 41 checks whether the received command is the variable display pattern command from the main control circuit 30. When the received command is not the variable display pattern command from the main control circuit 30, the sub-CPU 41 performs the same process as that of Step 710 and terminates the command reception process.

[0423] When the received command is the variable display pattern command, the sub-CPU 41 sets control data corresponding to the received variable display pattern command. Based on the set control data, the sub-CPU 41 instructs the VDP 51 to perform variable display corresponding to the variable display pattern. The VDP 51 causes the liquid crystal display device 4 to perform the variable display corresponding to the variable display pattern.

[0424] Herein, when the variable display pattern corresponding to the variable display pattern command received by the sub-CPU 41 is a single announcement super reach jackpot variable display pattern, in the liquid crystal display device 4, the normal varying display is performed for a very short first predetermined time, and the jackpot stop display is then performed. When the variable display pattern corresponding to the variable display pattern command received by the sub-CPU 41 is a single announcement super reach losing variable display pattern, in the liquid crystal display device 4, the normal varying display is performed for a very short first predetermined time, and the losing stop display is then performed.

[0425] Even when the variable display pattern corresponding to the variable display pattern command received by the sub-CPU 41 is the single announcement super reach jackpot variable display pattern, in the liquid crystal display device 4, for example, the reach effect display and the like are performed.
In this modification, the aforementioned execution of the announcement attraction (single announcement attraction) can enhance the expectation of the player for a jackpot and prevent the player from losing the enthusiasm for gaming.

In the third embodiment, the announcement attraction display is different from the varying display of the special symbols, but not limited to this, and may be display in which the display of the special symbols varies.

The particular variable display pattern decided by the main CPU 31 is not limited to the patterns in the case of the third embodiment (the continuous announcement super reach jackpot variable display pattern and continuous announcement super reach losing variable display pattern) and may be a pattern of another form.

Modification Example 1 of Embodiments 1 to 3

The gaming panel base may also be constituted as below. FIGS. 39A to 39C are views showing a configuration of the gaming panel base 32. As shown in FIGS. 39A to 39C, at least a part of the gaming panel base 32 is formed of a transparent member 32a through which a predetermined image displayed on the liquid crystal display device 4 is visually recognizable when viewed from the front side. The transparent member 32a can be formed of a water-clear acrylic resin material, or synthetic resin such as polycarbonate resin and polyamide resin.

As shown in FIG. 39A, the gaming panel base 32 is disposed at such a position where the transparent member 32a covers a part or the entire of the liquid crystal display device 4. The transparent member 32a is composed in such a manner that a bottom portion thereof and an upper portion of a wood member 32b are joined to each other. As shown in FIG. 39B, the gaming panel base 32 may also be composed in such a manner that the transparent member 32a is fitted to a hole provided on a center portion of the wood member 32b. As shown in FIG. 39C, the gaming panel base 32 may also be composed in such a manner that a portion 32c on one surface side of the transparent member is opaquely masked (pointed, printed, and so on), and only the portion 32a is made transparent.

Modification Example 2 of Embodiments 1 to 3

The liquid crystal display device 4 of this modification example is disposed so as to be superposed on the entire or a part of the gaming area of the gaming panel 30a from the front surface side of the gaming panel 30a, and is one to display a display mode visually recognizable by the player when viewed from the front side. A specific description will be made below of the liquid crystal display device 4. FIG. 40 is a view showing an arrangement relationship between the liquid crystal display device 4 of this modification example and peripheral portions thereof.

As shown in FIG. 40, the liquid crystal display device 4 is composed in such a manner that liquid crystal 203 is sealed between a protection cover 201 and a protection cover 202, which have transparency. The liquid crystal display device 4 is provided as a part of the glass frame 10. A liquid crystal backlight (not shown) is provided above the liquid crystal display device 4.

Here, the liquid crystal 203 is disposed on a conductive substance having transparency. The liquid crystal 203 has the transparency, thus making it possible for the player to visually recognize the gaming members provided in the gaming panel 30a from the front side. Organic EL and the like may also be used in place of the liquid crystal.

As shown in FIG. 40, the liquid crystal display device 4 is disposed on the front surface side of the gaming panel 30a, on which the gaming members such as nails 17 are provided. A gaming area 24 is provided between the liquid crystal display device 4 and the gaming panel 30a, thus making it possible for the gaming balls to flow down the gaming area 24.

On the liquid crystal display device 4, the above-described images, special symbols, and the like are displayed. A specific display control process is similar to that of the above-described embodiment, and accordingly, a detailed description thereof will be omitted.

Also in this modification example, the same function and effect as those in the case of the embodiment can be obtained, and in addition, it is not necessary to form the gaming panel 30a of the transparent member. Accordingly, the conventional gaming panel 30a can be used as it is. The disposition of the liquid crystal display device 4 is not limited to the front or back side of the gaming panel 30a, and other dispositions may be adopted.

Modification Example 3 of Embodiments 1 to 3

The liquid crystal display device 4 may be replaced by a video device by a projector system such as a digital light processing projector (DLP). FIG. 41 is a view showing an arrangement relationship of the video device by the projector system. As shown in FIG. 41, the video device by the projector system includes a projector 401, and a screen 402 provided on the back side of the gaming panel 30a. The projector 401 is a device capable of generating plural types of light related to the image, and is disposed at such an angle where the generated light travels toward the screen 402.

The screen 402 is a screen for imaging the image corresponding to the plural types of light emitted from the projector 401, and is disposed at such an angle where the imaged image is visually recognizable when viewed from the front glass 11.

On the screen 402, the above-described images, special symbols, and the like are imaged. A specific display control is similar to that of the above-described embodiment, and accordingly, a detailed description thereof will be omitted.

Modification Example of Embodiments 1 to 3

In this modification example, a terminal such as a personal computer executes a simulation game program stored in a server or the like, thus making it possible to reproduce the operation executed by the gaming machine 1 in the above-described embodiment on a screen thereof. Note that, in the following description, the operation reproduced on the screen of the terminal is referred to as a pseudo operation.

A description will be made below of a method of executing the pseudo operation by the terminal while referring to the drawings. In the following, a description will be made only of differences from the above-described embodiment.
[0442] FIG. 42A is a view for explaining the method of executing the pseudo operation by the terminal. Moreover, FIG. 42B is an overview view showing a terminal 510 in this modification example.

[0443] As shown in FIG. 42A, a terminal 510a and a server 500 are connected each other through a LAN, and a terminal 510b and the server 500 are connected to each other through a communication line network 520.

[0444] The server 500 stores the simulation program for executing the pseudo operation on a screen 511 of the terminal 510. Moreover, the server 500 displays the pseudo operation on the screen 511 of the terminal 510 by executing the simulation program.

[0445] The simulation program includes a program for executing the main process including the special symbol control process, the regular symbol control process, and the like, a program for executing the system timer intervention process including the random number update process, the switch input detection process, and the like, a program for displaying the pseudo operation on the screen 511 of the terminal 510, and the like.

[0446] Specifically, the simulation program includes a program for executing a process of displaying an image showing that the gaming balls enter any winning opening and of giving a predetermined score when a predetermined winning condition is established, and the like. The score refers to a predetermined value given to the player.

[0447] The terminal 510 is connected to the server 500 through the LAN, the communication line network 520, or the like, and displays the pseudo operation on the screen 511 by a WEB browser and the like. The terminal 510 may also be composed so as to execute the simulation program without depending on the server 500 by downloading the simulation program from the server 500.

[0448] Specifically, as shown in FIG. 42B, the terminal 510 includes the screen 511, a body unit 512, and an input unit 513.

[0449] The screen 511 displays an image of the gaming area including the liquid crystal display device 4, the starting opening 6, and the like, displays images of a behavior of the gaming ball, the variable display of the special symbol, and the like on the image of the gaming area, and displays the variety of images shown in the embodiment, and the like.

[0450] The body unit 512 is composed of a CPU, a ROM, a RAM, and the like, and controls the respective processes in the terminal 510. The body unit 512 stores the simulation program in the case of downloading the simulation program.

[0451] The input unit 513 is composed of a keyboard and the like, and carries out a similar function to that of the launcher handle unit 40a.

[0452] The terminal 510 includes a speaker which outputs the effect sound and the voice which notify the player of the predetermined gaming state (winning gaming state and jackpot gaming state).

[0453] The communication line network 520 is the Internet, a satellite communication line network, and the like, which connect the server 500 and the terminal 510 to each other.

[0454] The terminal 510 may also be composed so as to execute a pseudo game based on the simulation program captured from a recording medium such as a CD-ROM, a DVD-ROM, and a ROM cartridge.

[0455] The pseudo operation may also be executed by a portable terminal 530 shown in FIG. 43. A specific description will be made as below. FIG. 43 is an overview view of the portable terminal 530. As shown in FIG. 43, the portable terminal 530 includes a screen 531 having a similar function to that of the above-described screen 511, a speaker 532 having a similar function to that of the above-described speaker, and input units 533 having a similar function to that of the above-described input unit 513.

[0456] According to this modification example, the server 500 (the terminal 510 or the portable terminal 530) executes the pseudo operation based on the simulation program, and the effects of the above-described embodiment and the modification examples thereof are thus obtained.

[0457] The present invention has been described above by the embodiments. However, the present invention is not limited to this, and the configurations of the respective portions can be replaced by arbitrary configurations having similar functions. The scope of rights of this invention is defined by the scope of claims.

What is claimed is:

1. A gaming machine, comprising:

   a specific gaming state determination unit which determines that a gaming state has transferred to a specific gaming state advantageous for a player when a predetermined starting condition is established;

   a variable display pattern decision unit which decides a variable display pattern for executing variable display of identification information based on a determination result by the specific gaming state determination unit;

   a variable display unit which performs variable display of the identification information based on the variable display pattern decided by the variable display pattern decision unit, and displays a first background image during an operation of the variable display of the identification information;

   a background image storage unit which stores plural types of first background image data for displaying the first background image; and

   a display control unit which controls the variable display unit, the display control unit including: an effect display control unit which, when a specific variable display pattern is decided by the variable display pattern decision unit, allows the variable display unit to perform the variable display of the identification information based on the specific variable display pattern, and allows the variable display unit to display a second background image after allowing the variable display unit to display the first background image; a background image data selection unit which selects any of the plural types of the first background image data when a predetermined background image selection condition is established; and a background image display control unit which, after the second background image is displayed on the variable display unit by the effect display control unit, allows the variable display unit to display the first
background image based on the first background image data selected by the background image data selection unit.

2. The gaming machine according to claim 1, further comprising: a gaming control unit which transfers the gaming state to the specific gaming state in a case where a result of the variable display of the identification information, the variable display being displayed on the variable display unit, becomes a predetermined variable display result.

wherein, in a case where the gaming state is transferred to the specific gaming state by the gaming control unit, the effect display control unit allows the variable display unit to display a specific gaming state period background image different from the first background image, and

after the specific gaming state is ended, the background image display control unit allows the variable display unit to switch the display from the specific gaming state period background image to the first background image based on the first background image data selected by the background image data selection unit.

3. The gaming machine according to claim 1,

wherein the first background image displayed on the variable display unit is a display of a predetermined moving image, and

the effect display control unit allows the variable display unit to display a series of moving images showing that the display transfers from the first background image to the second background image in display between the first background image and the second background image.

4. The gaming machine according to claim 2,

wherein the first background image displayed on the variable display unit is a display of a predetermined moving image, and

the effect display control unit allows the variable display unit to display a series of moving images showing that the display transfers from the first background image to the second background image in display between the first background image and the second background image.

5. A recording medium recording a program allowing a computer to execute a simulation of a gaming machine including a specific gaming state determination unit which determines that a gaming state has transferred to a specific gaming state advantageous for a player when a predetermined starting condition is established, a variable display pattern decision unit which decides a variable display pattern for executing variable display of identification information based on a determination result by the specific gaming state determination unit, a variable display unit which performs variable display of the identification information based on the variable display pattern decided by the variable display pattern decision unit, and displays a first background image during an operation of the variable display of the identification information, a display control unit which controls the variable display unit, and a background image storage unit which stores plural types of first background image data for displaying the first background image,

the program comprising:

an effect display control process which, when a specific variable display pattern is decided by the variable display pattern decision unit, allows the variable display unit to perform the variable display of the identification information based on the specific variable display pattern, and allows the variable display unit to display a second background image after allowing the variable display unit to display the first background image;

a background image data selection process which selects any of the plural types of first background image data when a predetermined background image selection condition is established; and

a background image display control process which, after the second background image is displayed on the variable display unit by the effect display control unit, allows the variable display unit to display the first background image based on the first background image data selected by the background image data selection process.

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