



US010949839B2

(12) **United States Patent**
Emori

(10) **Patent No.:** **US 10,949,839 B2**

(45) **Date of Patent:** **Mar. 16, 2021**

(54) **INFORMATION PROCESSING APPARATUS
AND CONVERSION APPARATUS**

(71) Applicant: **Universal Entertainment Corporation,**
Tokyo (JP)

(72) Inventor: **Kazuki Emori,** Tokyo (JP)

(73) Assignee: **Universal Entertainment Corporation,**
Tokyo (JP)

(*) Notice: Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(b) by 193 days.

(21) Appl. No.: **16/185,296**

(22) Filed: **Nov. 9, 2018**

(65) **Prior Publication Data**

US 2019/0156333 A1 May 23, 2019

(30) **Foreign Application Priority Data**

Nov. 22, 2017 (JP) 2017-225175

(51) **Int. Cl.**

G07F 17/32 (2006.01)

G06Q 20/38 (2012.01)

G06Q 50/34 (2012.01)

G07F 17/34 (2006.01)

(52) **U.S. Cl.**

CPC **G06Q 20/381** (2013.01); **G06Q 50/34**
(2013.01); **G07F 17/323** (2013.01); **G07F**
17/3213 (2013.01); **G07F 17/3227** (2013.01);
G07F 17/3246 (2013.01); **G07F 17/3248**
(2013.01); **G07F 17/3288** (2013.01); **G07F**
17/34 (2013.01)

(58) **Field of Classification Search**

CPC **G07F 17/3244**; **G07F 17/3246**; **G06Q**
20/381

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

6,253,119 B1* 6/2001 Dabrowski **G07F 5/24**
700/231

2005/0239540 A1 10/2005 Inamura
2008/0058065 A1* 3/2008 Okada **G07F 17/3244**
463/20

2009/0054149 A1* 2/2009 Brosnan **G07F 17/3244**
463/42

2009/0163270 A1* 6/2009 Crivelli **G07F 17/32**
463/25

2012/0094748 A1* 4/2012 Brosnan **G07F 17/3244**
463/25

(Continued)

Primary Examiner — Jay Trent Liddle

(74) *Attorney, Agent, or Firm* — Simpson & Simpson,
PLLC; S. Peter Konzel

(57) **ABSTRACT**

[Problem] The object of the present invention is to provide
an information processing apparatus and a conversion appa-
ratus capable of making it easy for a user to understand
display contents are provided.

[Solution] The information processing apparatus, which
performs a process based on specified currency information
including a specified currency unit, comprises: a display
device, which displays progress of the process, and a control
device, which performs a first process that converts the
specified currency information into other currency informa-
tion including a currency unit different from the specified
currency unit, and a second process that has the display
device display the other currency information converted by
the first process.

7 Claims, 10 Drawing Sheets

BET AMOUNT TABLE (CREDITS (pesos))

	3WAYS	9WAYS	27WAYS	81WAYS	243WAYS
1—BET	1(1peso)	3(3pesos)	7(7pesos)	15(15pesos)	25(25pesos)
2—BET	2(2pesos)	6(6pesos)	14(14pesos)	30(30pesos)	50(50pesos)
3—BET	3(3pesos)	9(9pesos)	21(21pesos)	45(45pesos)	75(75pesos)
5—BET	5(5pesos)	15(15pesos)	35(35pesos)	75(75pesos)	125(125pesos)
10—BET	10(10pesos)	30(30pesos)	70(70pesos)	150(150pesos)	250(250pesos)

(56)

References Cited

U.S. PATENT DOCUMENTS

2012/0252556 A1* 10/2012 Doyle G07F 17/3246
463/25
2014/0349742 A1* 11/2014 Takeda G06Q 20/381
463/25
2015/0034451 A1* 2/2015 Takeda G06Q 20/0457
194/207
2015/0038217 A1* 2/2015 Okada G07D 11/14
463/25
2016/0247354 A1* 8/2016 Amone G07F 17/3288

* cited by examiner

FIG. 1

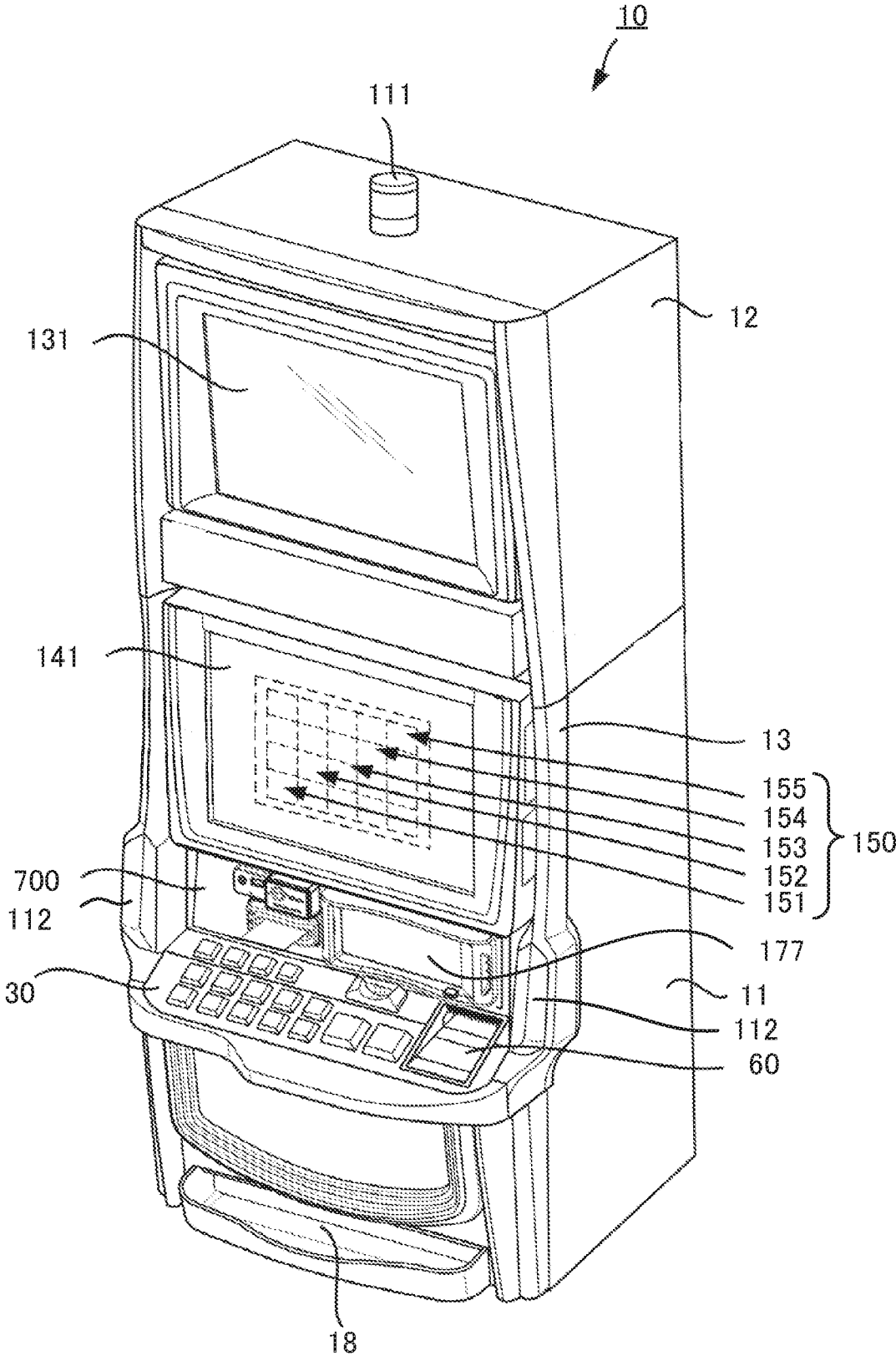
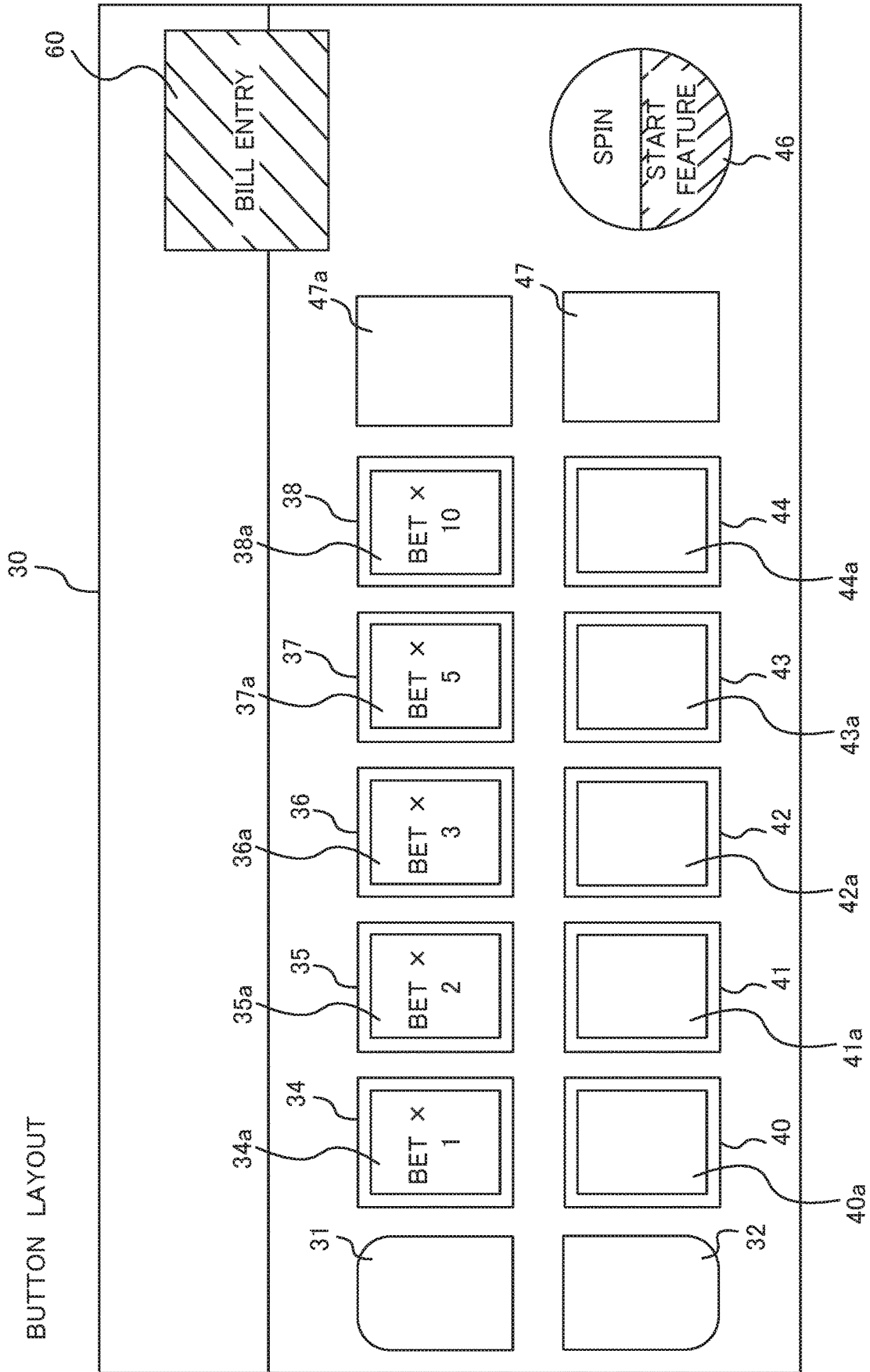


FIG. 2



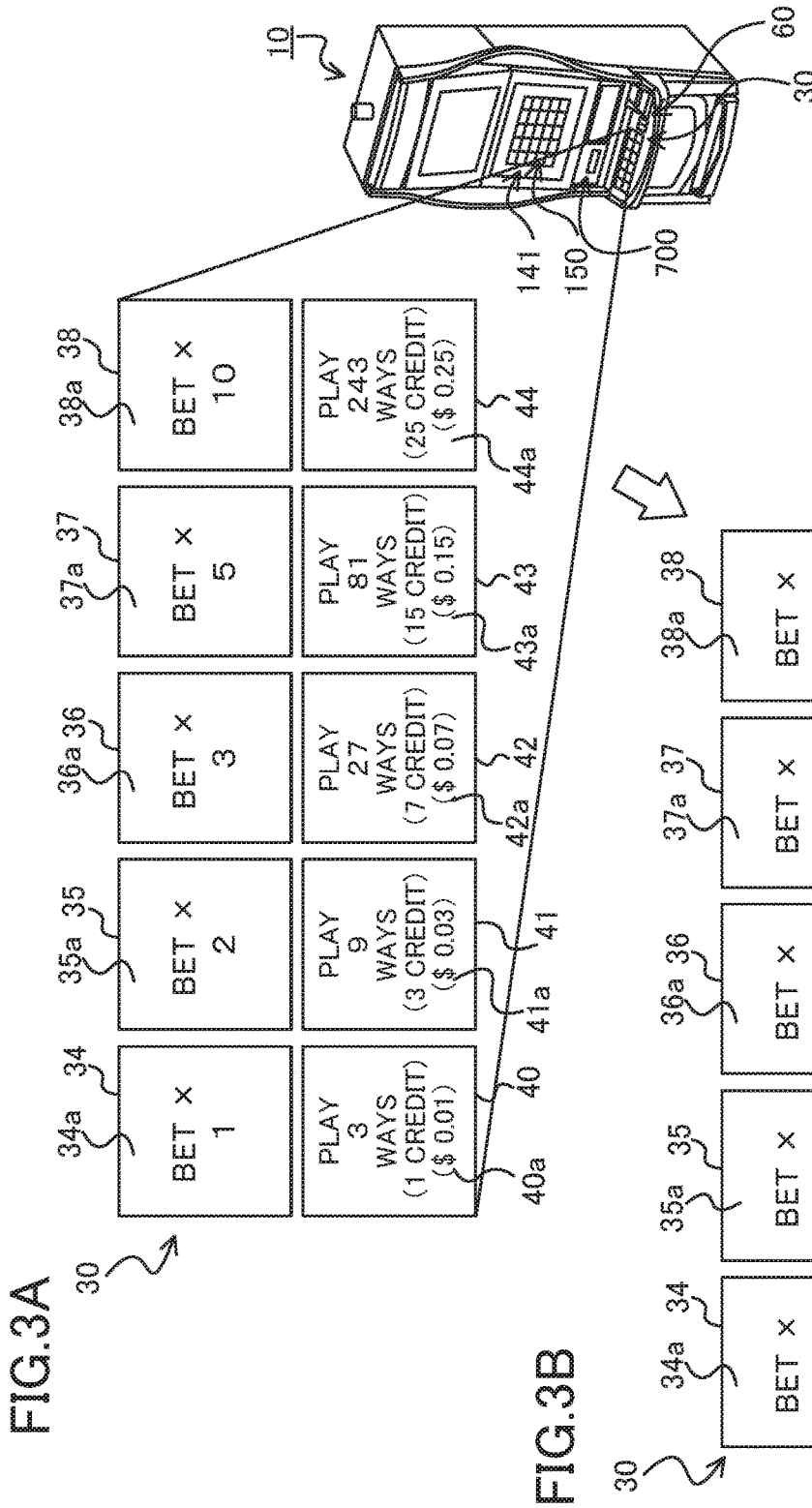


FIG. 4

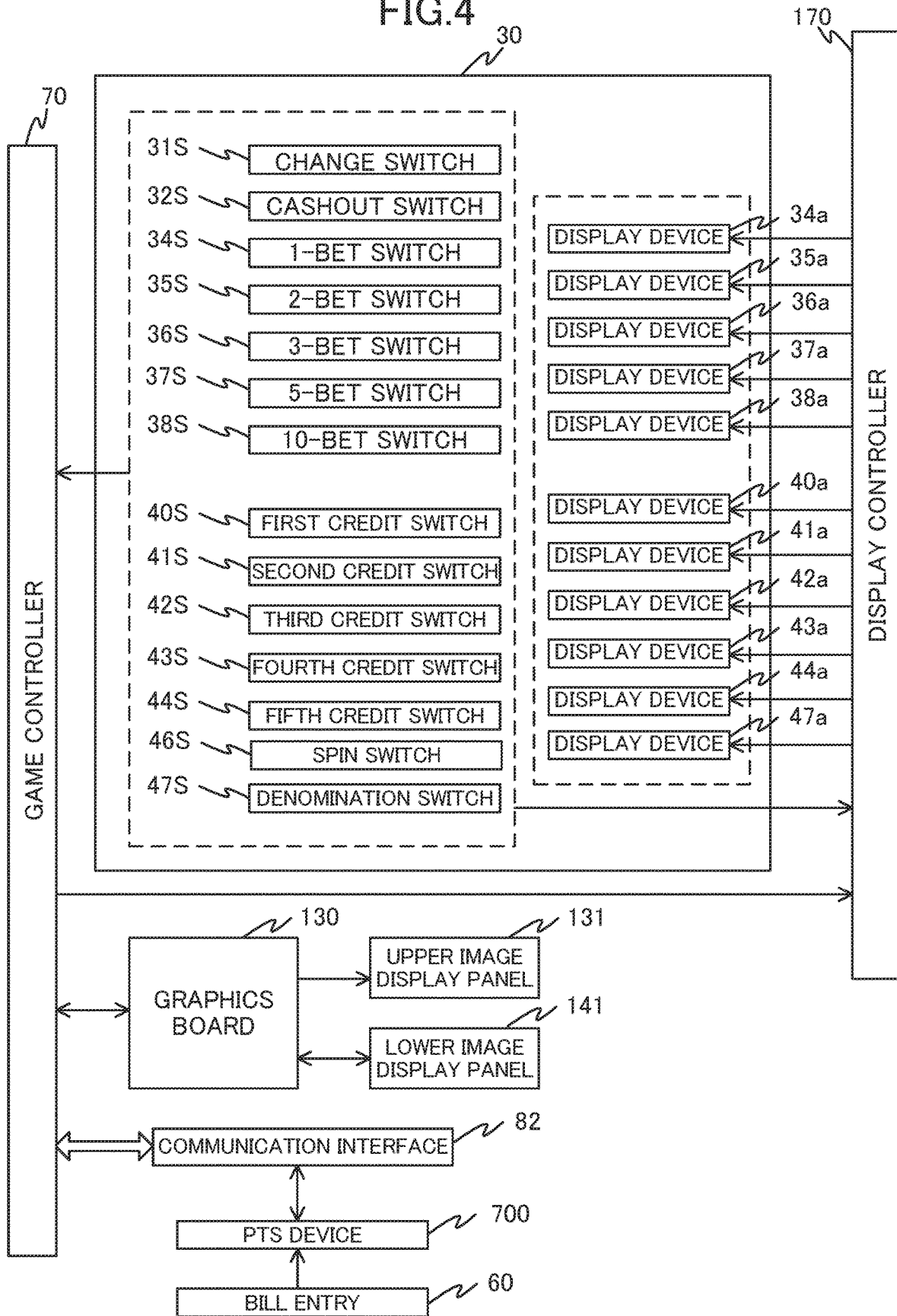


FIG.5

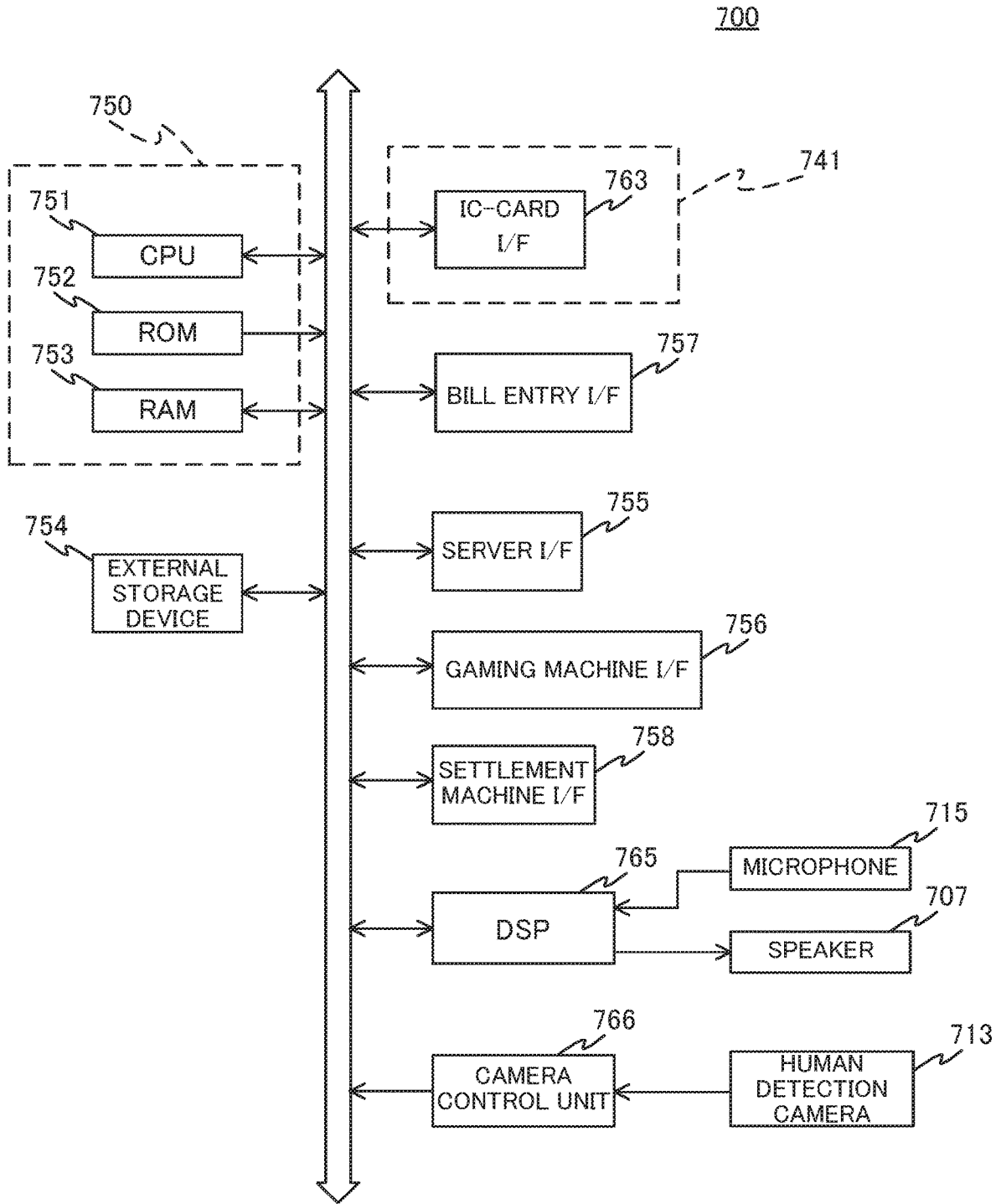


FIG.6A

753
↙

INSERTED CURRENCY UNIT	Dollars
EXCHANGE RATE	1 peso = 0.01 dollars

FIG.6B

BET AMOUNT TABLE (CREDITS (pesos))

	3WAYS	9WAYS	27WAYS	81WAYS	243WAYS
1—BET	1 (1peso)	3 (3pesos)	7 (7pesos)	15 (15pesos)	25 (25pesos)
2—BET	2 (2pesos)	6 (6pesos)	14 (14pesos)	30 (30pesos)	50 (50pesos)
3—BET	3 (3pesos)	9 (9pesos)	21 (21pesos)	45 (45pesos)	75 (75pesos)
5—BET	5 (5pesos)	15 (15pesos)	35 (35pesos)	75 (75pesos)	125 (125pesos)
10—BET	10 (10pesos)	30 (30pesos)	70 (70pesos)	150 (150pesos)	250 (250pesos)

FIG.6C

BET AMOUNT TABLE (CREDITS (dollars))

	3WAYS	9WAYS	27WAYS	81WAYS	243WAYS
1—BET	1 (0.01 dollars)	3 (0.03 dollars)	7 (0.07 dollars)	15 (0.15 dollars)	25 (0.25 dollars)
2—BET	2 (0.02 dollars)	6 (0.06 dollars)	14 (0.14 dollars)	30 (0.30 dollars)	50 (0.50 dollars)
3—BET	3 (0.03dollars)	9 (0.09 dollars)	21 (0.21 dollars)	45 (0.45 dollars)	75 (0.75 dollars)
5—BET	5 (0.05 dollars)	15 (0.15 dollars)	35 (0.35 dollars)	75 (0.75 dollars)	125 (1.25 dollars)
10—BET	10 (0.10 dollars)	30 (0.30 dollars)	70 (0.70 dollars)	150 (1.50 dollars)	250 (2.50 dollars)

FIG. 7

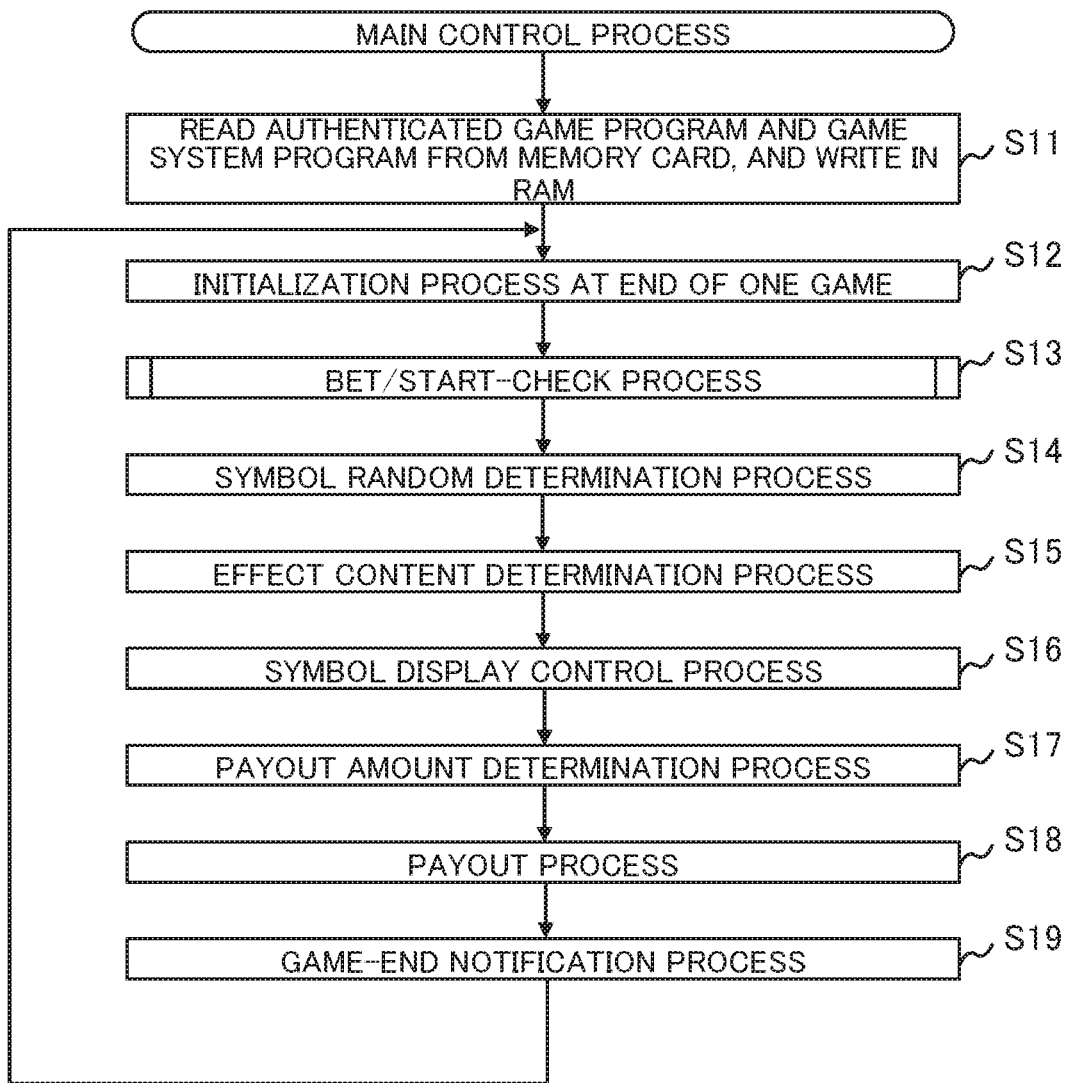


FIG.8

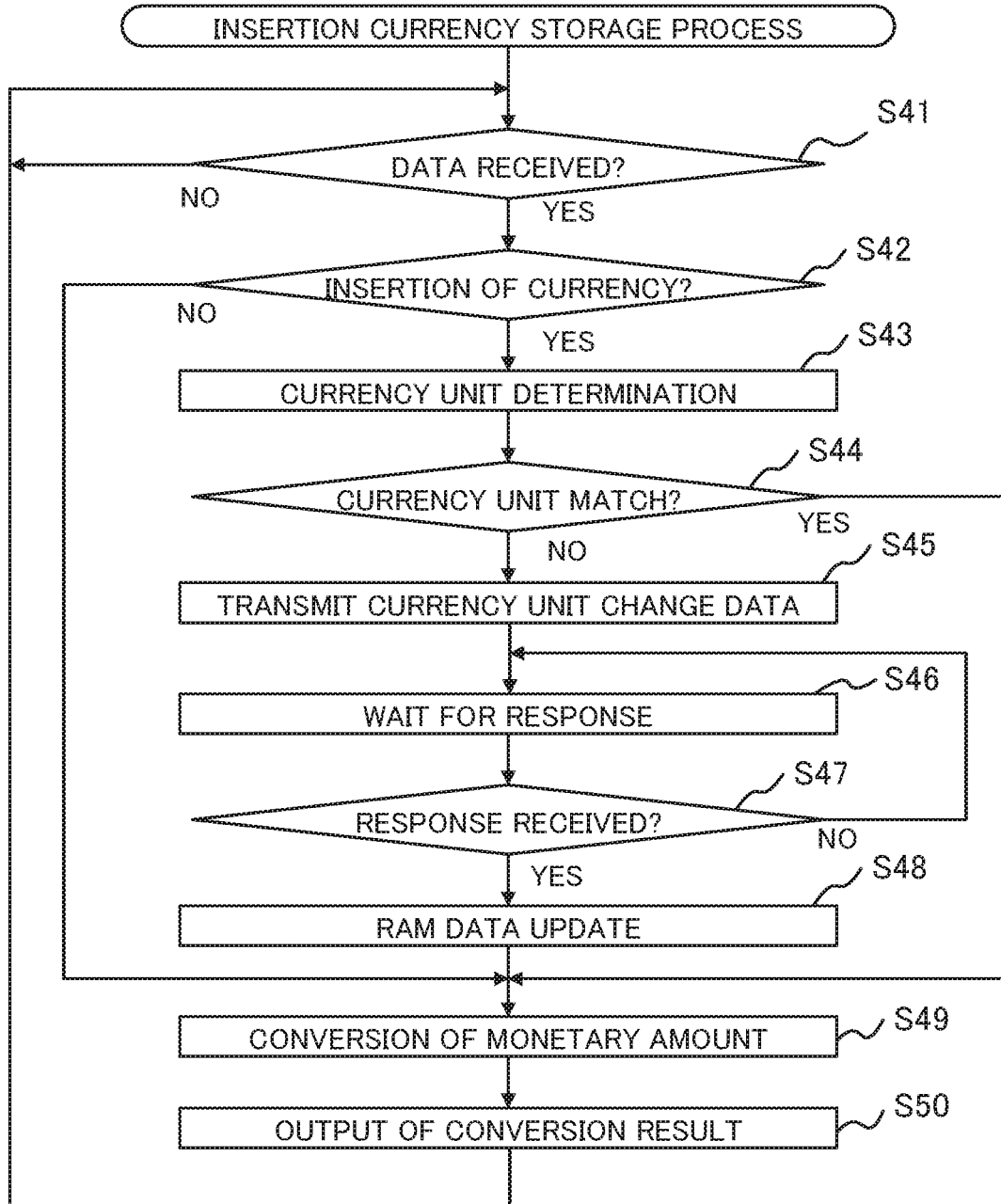


FIG. 9

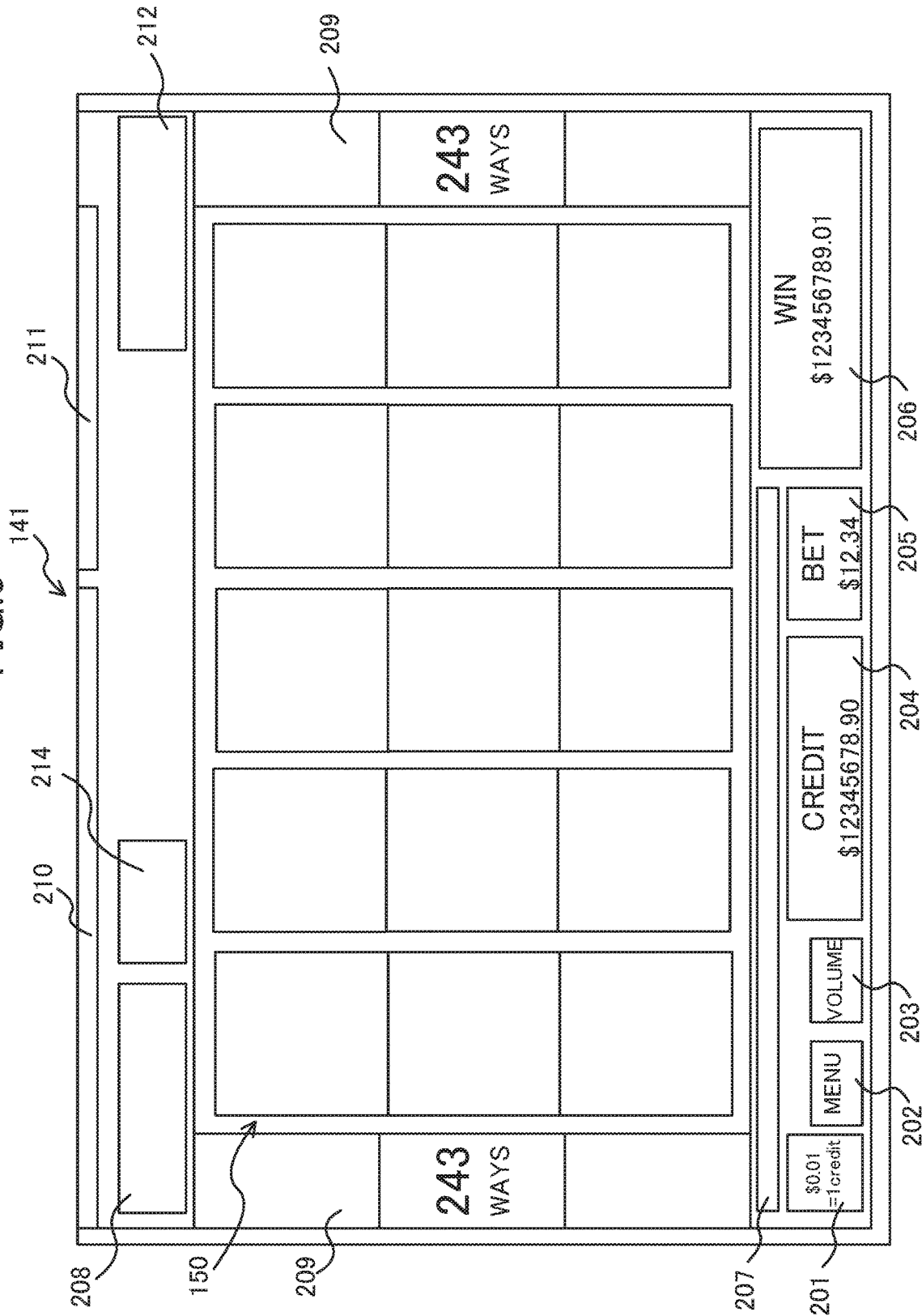


FIG. 10A

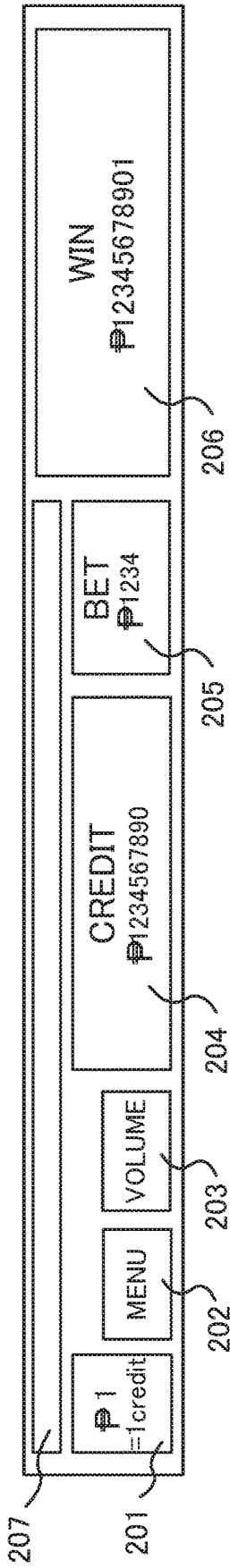


FIG. 10B

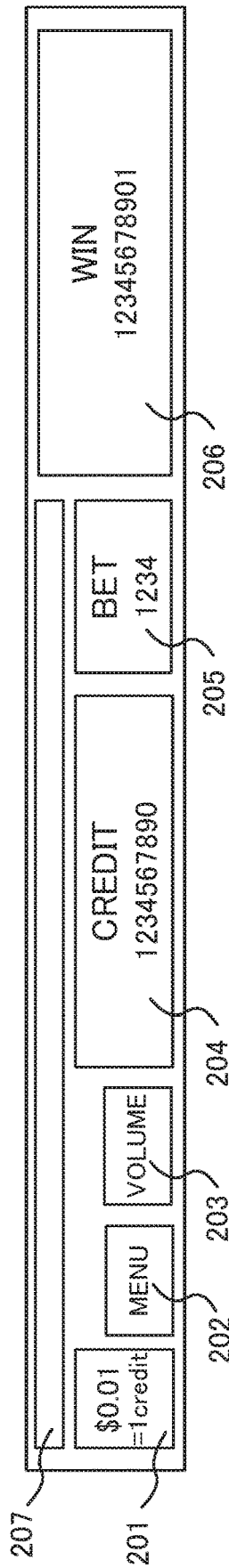
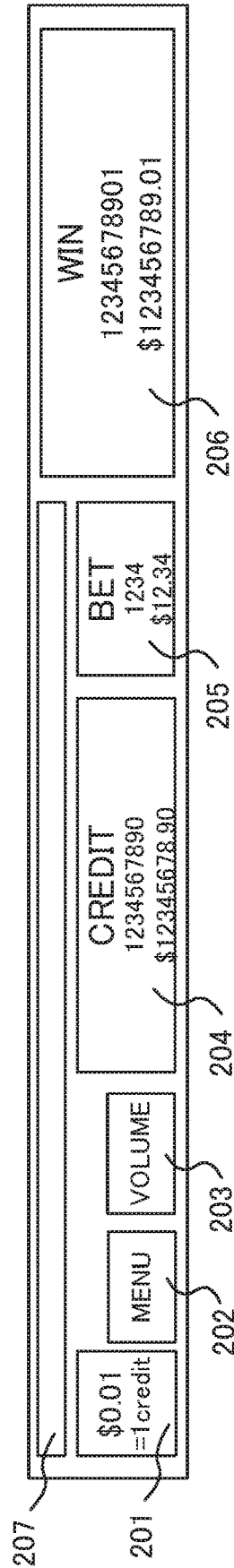


FIG. 10C



INFORMATION PROCESSING APPARATUS AND CONVERSION APPARATUS

CROSS-REFERENCE TO RELATED APPLICATION

This application claims the benefit of Japanese Patent Application No. 2017-225175, filed on Nov. 22, 2017, which application is incorporated herein by reference in its entirety.

FIELD OF THE INVENTION

The present invention relates to an information processing apparatus and a conversion apparatus that is incorporated in the information processing apparatus.

BACKGROUND OF THE INVENTION

A gaming machine in which a symbol array is scrolled and displayed on a display, and a plurality of symbols are rearranged in a symbol display area, on which a plurality of paylines are set, has been known (for example, Patent Document 1). In such a gaming machine, a player operates a control panel, on which a plurality of buttons are arranged, to decide on bet information for one game.

Patent Literature

[Patent Document 1] U.S. Patent Application Publication No. 2005/0239540

BRIEF SUMMARY OF THE INVENTION

When a game is played on the above-mentioned gaming machine, as a result of the player inserting cash into a bill identification device provided on the gaming machine, credit data, for playing the game according to the amount of cash inserted, is acquired and the bet information for playing the game one time are determined by using the credit data.

In such a gaming machine, receiving of bets or awarding of prizes is performed based on credit data converted from a predetermined currency unit (e.g., a currency unit such as "pesos"), and when a monetary amount corresponding to the credit amount is displayed, the monetary amount is displayed in the predetermined currency unit.

In this way, in addition to the player preparing cash in a specified currency unit that can be handled by the gaming machine and playing the game by inserting the cash, the amount in the specified currency unit is displayed as the credit amount necessary for the game to progress in the gaming machine. However, it is difficult for the player to understand the displayed monetary amount if the monetary amount is in a currency unit that is different (e.g., "pesos") from a currency unit the player is accustomed to using (e.g., "dollars" for an American).

The present invention has been made in consideration of the above points and provides an information processing apparatus and a conversion apparatus that enables the player to easily understand display contents.

The information processing apparatus of the present invention is an information processing apparatus for performing a process based on specified currency information, including a specified currency unit, and is provided with a display device for displaying progress of the processing, and a control device for performing the following:

(a) converting the specified currency information into other currency information, including a currency unit different from the specified currency unit, and

(b) displaying the other currency information, converted in (a), on the display device.

With this configuration, regardless of the currency unit processed by the information processing apparatus, the progress of the process can be displayed with currency information that includes another currency unit.

Further, the information processing apparatus of the present invention in the above configuration has an insertion slot into which paper stock is inserted, the paper stock having currency information including either the specified currency unit or another currency unit, and a reading device for reading currency information of the paper stock to be inserted into the insertion slot.

The control device further executes the following:

(c) The control device converts the currency information of the paper stock into the specified currency information when the currency unit of the paper stock read by the reading device is another currency unit.

(d) The control device displays currency information of the paper stock read by the reading device on the display device.

With this configuration, in which processing is performed based on the specified currency information, the display of currency information on the display device is performed based on the currency unit read by the reading device and, as a result, the currency unit of the displayed currency information can be matched with the currency unit of the inserted paper stock.

The conversion apparatus of the present invention is a conversion apparatus integrated into the information processing apparatus, which includes the control device that performs a process based on the specified currency information which includes the specified currency unit, and the display device that displays the progress of the process, wherein a processing device of the conversion apparatus

(a) converting the specified currency information into other currency information, including a currency unit different from the specified currency unit, and

(b) displaying the other currency information, converted in (a), on the display device.

With this configuration, regardless of the currency unit processed by the information processing apparatus, the progress of the processing can be displayed by currency information including other currency units.

The present invention provides an information processing apparatus and a conversion apparatus that enables a user to easily understand display contents.

BRIEF DESCRIPTION OF THE DRAWINGS

The nature and mode of operation of the present invention will now be more fully described in the following detailed description of the invention taken with the accompanying drawing figures, in which:

FIG. 1 is a perspective view showing an external appearance of a slot machine.

FIG. 2 is a plan view showing a configuration of a control panel.

FIGS. 3A-3B are plan views showing a configuration of a control panel.

FIG. 4 is a block diagram showing an internal configuration of the slot machine and the control panel.

FIG. 5 is a block diagram showing a configuration of a PTS (Player Tracking System) device.

FIGS. 6A-6C are schematic diagrams showing a storage state of an exchange rate and a bet amount table.

FIG. 7 is a flowchart showing a main control process.

FIG. 8 is a flowchart showing input currency storage processing.

FIG. 9 is a front view showing an example of a display of a lower image display panel.

FIGS. 10A-10C are schematic diagrams showing a portion of the display of the lower image display panel.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

A gaming machine will be described as an information processing apparatus of the present invention with reference to the drawings.

[Overall Structure of Slot Machine]

The overall structure of a slot machine 10 will be described.

In the slot machine 10, bills, coins, medals, tokens, bar-coded tickets, and the like are used as gaming value in addition to electronic value information such as cyber money.

As shown in FIG. 1, a lower image display panel 141 is provided at the center of the front surface of a housing 11 of the slot machine 10. The lower image display panel 141 is a liquid crystal panel and constitutes a display. The lower image display panel 141 has a symbol display area 150 for displaying images of a plurality of video reels 151-155. A portion of a front panel 13 is provided with a lamp 112 used for effects rendering. Various indicating lamps 111 are provided above the slot machine 10.

In the present embodiment, a video reel is a reel that simulates the rotation and stop operations of a mechanical reel in which a plurality of symbols are drawn on its peripheral surface. A symbol array composed of a plurality of symbols is assigned to the video reel.

In the present embodiment, a video reel system for displaying a simulated reel is adopted, but the slot machine 10 may be a system with a reel unit of a mechanical reel system, or may be a system in which the video reel and the mechanical system are mixed.

Above the lower image display panel 141, an upper image display panel 131 is provided on the front of an upper housing 12. The upper image display panel 131 is a liquid crystal panel and constitutes a display. The upper image display panel 131 displays images related to the effects rendering or images which introduce game contents or explain rules.

Below the lower image display panel 141, a control panel 30 on which various buttons are arranged, a PTS device 700 that functions as a conversion apparatus, and a bill entry 60 are provided.

The bill entry 60 identifies whether the bill is proper or not and accepts genuine bills into the slot machine 10. The bill entry 60 is electrically connected to the PTS device 700 and transmits an input signal based on the amount of the bill to the PTS device 700 upon receipt of a genuine bill. The input signal includes inserted currency information (e.g., "1 php") including the currency unit of the inserted bill (Philippine pesos: php (hereinafter simply referred to as "pesos" or "php"), dollars: usd, yen: jpy, etc.) and the monetary amount in the currency unit.

In the present embodiment, in addition to the inserted currency information of the bill inserted into the bill entry 60, there is a concept of currency information (e.g., "1 php, 1 credit"). This currency information is a concept that

includes a currency unit ("php (pesos)," "usd (dollars)," "jpy (yen)," etc.), the monetary amount in this currency unit (e.g., "1 php (peso)," etc.), and the credit amount corresponding to the monetary amount information (e.g., "1 php, 1 credit," etc.).

In the slot machine 10 of the present embodiment, one credit, which is a unit of a gaming medium for playing a game, is associated with a monetary amount in "pesos" as a specified currency unit, and currency information with one credit as one peso is set as basic currency information. The monetary amount per credit (1 credit=1 peso) can be switched by a denomination button 47 described later. As described above, in the slot machine 10, a specified currency unit ("pesos") is set as the currency information in advance as the currency unit to be handled when the process is performed so that when the currency unit of a bill inserted into the bill entry 60 is a currency unit (for example, "dollars") other than the specified currency unit, the PTS device 700 converts the currency unit into currency information that is based on the basic currency information "1 php, 1 credit" in the specified currency unit ("pesos"). That is, the bill entry 60 has a function of identifying the currency type ("pesos", "dollars", "yen", etc.) and the monetary amount corresponding to the inserted bill, and when, for example, a dollar bill is inserted into the bill entry 60, the bill entry 60 transmits the inserted currency information including the currency unit information indicating that the currency unit of the inserted bill is "dollars" and the amount information indicating the monetary amount (one dollar) to the PTS device 700. In the PTS device 700, this information is converted to "pesos", which is a specified currency type, based on an exchange rate. For example, when a 1 dollar bill is inserted, the PTS device 700 converts "dollars" to "pesos" based on the inserted currency information transmitted from the bill entry 60 and current exchange rate information (e.g., 1 usd=51 php) and converts it to currency information (e.g., 51 php, 51 credits). Currency information in the specified currency unit calculated in this manner is transmitted from the PTS device 700 to the game controller 70 of the slot machine 10, which will be described later.

The PTS device 700 is a unit in which an LCD (i.e., a liquid crystal display) 177, a human detection camera 713, a microphone 715, a speaker 707, and the like are integrated. The human detection camera 713 makes it possible to detect the presence or absence of a player with a camera. The microphone 715 is used by the player to participate in the game by voice or to authenticate the player by voice recognition. Further, the PTS device 700 has a card insertion slot to allow insertion of an IC card. Thus, the player can insert the IC card into the card insertion slot and use credit, stored on the IC card, in the slot machine 10.

(Control Panel 30)

As shown in FIG. 2, the control panel 30 has a CHANGE button 31 and a CASHOUT/TAKE WIN button 32 arranged in the left area, and a 1-BET button 34, a 2-BET button 35, a 3-BET button 36, a 5-BET button 37, a 10-BET button 38, a first credit button 40, a second credit button 41, a third credit button 42, a fourth credit button 43, and a fifth credit button 44 arranged in the center area. Further, the control panel 30 is provided with the above-mentioned bill entry 60 disposed in the upper stage of the right side region and a spin button 46 disposed in the lower stage of the right side area. A denomination button 47 for switching the amount of money per credit is also provided.

The CHANGE button 31 is an operation button used when leaving a seat or to request a staff member of a gaming facility to exchange money. The CASHOUT/TAKE WIN

button **32** is an operation button used for settling credits deposited in the slot machine **10**.

The first credit button **40**, the second credit button **41**, the third credit button **42**, the fourth credit button **43**, and the fifth credit button **44** are used for selecting the target areas for winning from 15 areas of 5 columns×3 rows on the symbol display area **150**. The first credit button **40**, the second credit button **41**, the third credit button **42**, the fourth credit button **43**, and the fifth credit button **44** each have display devices **40a**, **41a**, **42a**, **43a**, **44a**.

The display devices **40a**, **41a**, **42a**, **43a**, **44a** are liquid crystal devices provided on the upper surfaces of the first credit button **40**, the second credit button **41**, the third credit button **42**, the fourth credit button **43**, and the fifth credit button **44**, respectively.

The 1-BET button **34**, the 2-BET button **35**, the 3-BET button **36**, the 5-BET button **37**, and the 10-BET button **38** are buttons for determining a payout ratio with respect to a basic bet amount. The 1-BET button **34**, the 2-BET button **35**, the 3-BET button **36**, the 5-BET button **37**, and the 10-BET button **38** each have a display device **34a**, **35a**, **36a**, **37a**, **38a**, respectively.

The display devices **34a**, **35a**, **36a**, **37a**, **38a** are liquid crystal devices provided on the upper surface of the 1-BET button **34**, the 2-BET button **35**, the 3-BET button **36**, the 5-BET button **37**, and the 10-BET button **38**, respectively.

In the present embodiment, a unit game is started when the credit amount (i.e., the bet amount) to be bet is determined by selecting an area (i.e., a selection from the five-step WAYS BET (WAYS BET1, WAYS BET2, WAYS BET3, WAYS BET4, WAYS BET5)) of the symbol display area **150** to be the result determination target and a payout (i.e., a selection from the six BET buttons (1-BET button **34**, 2-BET button **35**, 3-BET button **36**, 5-BET button **37**, 10-BET button **38**)).

For example, a value obtained by multiplying the number of credits corresponding to the BET button by the credit amount required for the WAYS BET (i.e., 1 credit for WAYS BET1, 3 credits for WAYS BET2, 7 credits for WAYS BET3, 15 credits for WAYS BET4, and 25 credits for WAYS BET5) becomes the credit amount that is bet at the time of starting the unit game. For example, when the first credit button **40** and the 2-BET button **35** associated with “WAYS BET1” are selected, “1”×“2”=2 credits are bet. When the third credit button **42** and the 3-BET button **36** associated with “WAYS BET3” are selected, “7”×“3”=21 credits are bet. When the fifth credit button **44** and the 10-BET button **38** associated with “WAYS BET5” are selected, “25”×“10”=250 credits are bet.

The spin button **46** is a button used to start scrolling the video reel. The spin button **46** is also used for selecting and determining picks displayed on the lower image display panel **141**.

The denomination button **47** is a button for changing the monetary amount per credit, and a display device **47a** configured with a liquid crystal device is provided adjacent to the denomination button **47**. The monetary amount per credit is displayed on the display device **47a**. When the denomination switch **47S** shown in FIG. 4 is switched on by operating the denomination button **47**, the monetary amount per credit displayed on the display device **47a** is changed. That is, the player can change the monetary amount per credit by operating the denomination button **47** while watching the display of the display device **47a**.

The monetary amount per credit displayed on the display device **47a** is displayed as a monetary amount in the currency unit inserted by the player. Specifically, when the

bill inserted into the bill entry **60** is, for example, “dollars”, the inserted currency information that includes the currency unit and the monetary amount of the inserted bill is transmitted from the bill entry **60** to the PTS device **700**. Even if the basic currency information in the slot machine **10** is set to “pesos” as the currency information per credit, the PTS device **700** displays the currency information in units of the inserted currency (for example, “dollars”) on the display device **47a** of the control panel **30** and the lower image display panel **141** (to be described later) of the slot machine **10** with an amount (for example, “1 credit=\$0.01”) reflecting the current currency exchange rate. In this display control process, the PTS device **700** directly controls the display of the display device **47a** and the lower image display panel **141**, but the present invention is not limited to this, and information for controlling the display may be transmitted from the PTS device **700** to the game controller **70**, and controlling the display may be performed by the game controller **70**. Further, by transmitting the inserted currency information from the bill entry **60** to the game controller **70** without using the PTS device **700**, the monetary amount per credit may be calculated based on the exchange rate in the game controller **70**, and the calculated amount may be displayed on the display device **47a** and the lower image display panel **141**.

As described above, the monetary amount per credit converted into the currency inserted by the player is displayed on the control panel **30**, but in the slot machine **10**, “pesos” is set as the specified currency unit, and therefore, in the process of the game controller **70**, even when the bill inserted into the bill entry **60** is not of the specified currency unit (e.g., “pesos”), the monetary amount per credit is the monetary amount converted into the specified currency “pesos” and the processing of granting a bet or an award is performed according to the monetary amount in the specified currency.

That is, by operating the denomination button **47** while observing the display amount converted into “dollars” on the display device **47a** of the control panel **30**, the player can set the monetary amount per credit while observing the display amount converted into “dollars” which is the currency unit inserted by the player rather than the specified currency unit (“pesos”) handled by the slot machine **10**. Specifically, when the denomination button **47** is sequentially pressed, the display of the display device **47a** is sequentially changed to “\$0.01”, “\$0.1”, and so on. The change result is transmitted from the control panel **30** to the PTS device **700**. In the PTS device **700**, the monetary amount per credit (i.e., the monetary amount converted in dollars) set by the denomination button **47** is converted into an amount of a specified currency unit (e.g., “pesos”) handled by the slot machine **10**, and the conversion result is transmitted to the game controller **70** (described later) of the slot machine **10**. As a result, the game controller **70** performs the betting process and the process related to awarding a prize according to the result of converting the monetary amount per credit set by the player into the monetary amount in the specified currency unit (“pesos”) (e.g., 1 peso per credit). The display for denomination switching in the lower image display panel **141** is configured to perform the same operation as the display and switching operation of the denomination button **47**. The denomination indicator display and switching in the lower image display panel **141** are controlled from the PTS device **700** via the game controller **70** or controlled directly.

(Description of Control Panel Functions)

The control panel **30** of the present embodiment includes credit buttons **40**, **41**, **42**, **43**, **44** (i.e., a first credit button **40**,

a second credit button **41**, a third credit button **42**, a fourth credit button **43**, and a fifth credit button **44**) as a plurality of bet amount input devices for selecting bet objects. Each of the credit buttons **40**, **41**, **42**, **43**, **44** is provided with a display device **40a**, **41a**, **42a**, **43a**, **44a** which can be seen from the outside, and different basic bet amounts are set according to differences in advantages.

Further, the control panel **30** is provided with bet buttons **34**, **35**, **36**, **37**, **38** (i.e., the 1-BET button **34**, the 2-BET button **35**, the 3-BET button **36**, the 5-BET button **37**, the 10-BET button **38**) as a plurality of multiplying factor input devices which allow the player to select the payout ratio. Each of the plurality of multiplying factor input devices is mapped to a different payout ratio. The bet buttons **34**, **35**, **36**, **37**, **38** include display devices **34a**, **35a**, **36a**, **37a**, **38a** that are visible from the outside, and display the payout ratio.

When one of the bet buttons **34**, **35**, **36**, **37**, **38** receives an input, the control panel **30** of the slot machine **10** displays values obtained by multiplying each set basic bet amount by a payout ratio, corresponding to the bet button **34-38** that received the input, on the display devices **40a**, **41a**, **42a**, **43a**, **44a** of each of the credit buttons **40**, **41**, **42**, **43**, **44**. Further, the display devices **40a**, **41a**, **42a**, **43a**, **44a** display an amount obtained by multiplying the basic bet amount by the payout ratio corresponding to the bet button **34-38** that received the input, which is converted to the currency unit (for example, "dollars") inserted by the player. For example, in FIG. 3A, when the 1-BET button **34** is operated, the display devices **40a**, **41a**, **42a**, **43a**, **44a** display 1, 3, 7, 15, and 25 credits, respectively, as values obtained by multiplying the basic bet amount set for the credit buttons **40**, **41**, **42**, **43**, **44** by the payout ratio corresponding to the bet button **34-38** that received the input, and displays \$0.01, \$0.03, \$0.07, \$0.15, \$0.25 in the respective currency unit. That is, a player who has inserted a dollar bill into the bill entry **60** can see the amount converted and displayed in "dollars" as the currency unit on each of the credit buttons **40**, **41**, **42**, **43**, **44**. For example, with respect to the display of 1, 3, 7, 15, and 25 credits displayed as bet amounts in the display devices **40a**, **41a**, **42a**, **43a**, **44a**, respectively, when 1 BET button **34** is inputted, the monetary amount converted to "dollars," which the player himself/herself is accustomed to, is displayed together with the credit display. Thus, when the player designates 1-BET, the display devices **40a**, **41a**, **42a**, **43a**, **44a** of each of the credit buttons **40**, **41**, **42**, **43**, **44** requires 1, 3, 7, 15, 25 credits when placing bets corresponding to WAYS BET1, WAYS BET2, WAYS BET3, WAYS BET4, and WAYS BET5, and the player can easily recognize that these credits are converted into the currency unit of the inserted currency and correspond to \$0.01, \$0.03, \$0.07, \$0.15, and \$0.25, respectively. For instance, when the bill inserted into the bill entry **60** is "pesos", each credit amount is converted into the corresponding "pesos" of which amount is displayed together with the symbol "php" representing the currency "pesos".

More specifically, in the control panel **30** shown in FIG. 3A, when the bill with a currency unit of "pesos" is inserted into the bill entry **60** under the condition that the display contents of the display devices **40a** to **44a** are "PLAY 3 WAYS (1 CREDIT)(\$0.01)", "PLAY 9 WAYS (3 CREDITS) (\$0.03)", "PLAY 27 WAYS (7 CREDITS) (\$0.07)", "PLAY 81 WAYS (15 CREDITS) (\$0.15)", "PLAY 243 WAYS (25 CREDITS) (\$0.25)", respectively, the PTS device **700** transmits to the game controller **70** that the currency unit of the inserted currency is "pesos" based on the inserted currency information outputted from the bill

entry **60**. As a result, the game controller **70** switches the display of each of the display devices **40a-44a** of the control panel **30** via a display controller **170** to information having a currency unit of "pesos" as shown in FIG. 3B. That is, when the game controller **70** determines that the currency unit of the inserted bill is "pesos," the amount displayed on each display device **40a-44a** of the control panel **30** (i.e., the monetary amount corresponding to the credit amount) is switched from the display of the monetary amount in the currency unit of "dollars" used until this time to the display of the monetary amount in the currency unit of "pesos". Conversion between currency units is performed by the PTS device **700**. In this case, the amount is displayed together with a symbol representing the currency unit "pesos" (e.g., a symbol obtained by adding two horizontal lines to "P") or an image which can be associated with "pesos". The notation of the currency unit "pesos" is not limited to symbols shown in the respective display devices **40a-44a** in FIG. 3B, and various other notations can be used, for example, characters representing the currency unit of "pesos" such as "1 php" or characters representing the currency unit printed on a bank note such as "1 PISO" can be used.

[Internal Configuration of Slot Machine]

Next, an internal configuration of the slot machine **10** and the control panel **30** provided in the slot machine **10** will be described with reference to FIG. 4.

The game controller **70** is provided on a game circuit board inside the slot machine **10**. The display controller **170** is provided inside the control panel on a control panel circuit board different from the game circuit board of the game controller **70**. The game controller **70** and the display controller **170** each include a CPU (Central Processing Unit) provided on a circuit board for a game and a circuit board for a control panel, a program executed by the CPU and an EEPROM (Electrically Erasable and Programmable Read Only Memory) for rewritably storing data used in these programs, and a Random Access Memory (RAM) for temporarily storing data when the program is being executed. The game controller **70** and the display controller **170** are constructed by cooperation of the hardware and software, in the storage device as described above. Note that the display controller **170** is not limited to being provided separately from the game controller **70**, and the game controller **70** may have the function of the display controller **170**.

For example, data and programs used when the CPU operates are stored in the storage device of the game controller **70**. For example, the game controller **70** may store the aforementioned game programs, game system programs, and authentication programs when they are imported from an external storage device. The storage device of the game controller **70** is provided with a work area for executing the program. For example, an area for storing the credit amount, the number of BETs, the number of payout amounts, the credit amounts, and the like, an area for storing a symbol (i.e., a code number) determined by a random determination, and the like are provided.

As described above, the game controller **70** executes the game, and controls the symbol display device **150** so as to rearrange the symbols according to the game. The game controller **70**, as described above, activates a number of winning lines corresponding to the credit buttons **40**, **41**, **42**, **43**, **44** that have received input in a display frame of three rows and five columns consisting of a plurality of blocks, and provides a line payout corresponding to the type of symbol when the same number of symbols of the same type is rearranged in the enabled winning lines. That is, the game controller **70** is configured to control the slot machine by

way of the CPU executing the game program or the game system program in the storage device. The display controller 170 has a graphics board and displays the bet amount required for the display devices 40a, 41a, 42a, 43a, 44a of the credit buttons 40, 41, 42, 43, 44.

The control panel 30 is provided with a CHANGE switch 31S, a CASHOUT switch 32S, a 1-BET switch 34S, a 2-BET switch 35S, a 3-BET switch 36S, a 5-BET switch 37S, a 10-BET switch 38S, a first credit switch 40S, a second credit switch 41S, a third credit switch 42S, a fourth credit switch 43S, a fifth credit switch 44S, a spin switch 46S, and a denomination switch 47S corresponding to the buttons described above. Each switch detects that the corresponding button has been pressed by the player, and outputs a signal to the game controller 70 and the display controller 170. The game controller 70 controls betting based on signals from the respective switches. The display controller 170 transmits signals from the respective switches to the game controller 70, and the game controller 70 determines the contents to be displayed on the display devices 34a to 38a and 40a to 44a provided on the buttons 34 to 38 and 40 to 44 based on these signals, and transmits the determination result to the display controller 170, thereby causing the buttons to be displayed.

In addition to a speaker, a touch panel, and the like, a graphics board 130, a power supply unit 81, and a communication interface 82 are connected to the game controller 70.

The graphics board 130 controls display of images displayed by the upper image display panel 131 and the lower image display panel 141 based on control signals outputted by the game controller 70. The graphics board 130 includes a VDP for generating image data, a video RAM for storing image data generated by the VDP, and the like.

The graphics board 130 includes a VDP (Video Display Processor) for generating image data based on control signals outputted from the game controller 70, a video RAM for temporarily storing image data generated by the VDP, and the like. The image data used when image data is generated by the VDP is included in the game program of the storage device. The graphics board 130 has a function of outputting operation results of various touch icons provided on the lower image display panel 141 to the game controller 70.

The communication interface 82 is for performing communication with the PTS device 700 and an external controller. When an input signal is received from the bill entry 60, the PTS device 700 transmits the inserted currency information contained in the input signal to the game controller 70 via the communication interface 82. When an IC card is inserted into the card insertion slot, the PTS device 700 transmits credit data stored on the IC card to the game controller 70 via the communication interface 82. The PTS device 700 writes credit data to the IC card inserted into the card insertion slot based on the control signal received from the game controller 70 via the communication interface 82.

The game controller 70 is also enabled to transmit signals to the display controller 170 using known communication protocols and connections. For example, the game controller 70 transmits, to the display controller 170, a signal indicating whether or not various buttons can accept inputs.

(Configuration of the PTS Device)

Next, a configuration of a circuit in the PTS device 700 will be described with reference to FIG. 5.

The PTS controller 750 for controlling the PTS device 700 includes a CPU 751, a ROM 752, and a RAM 753.

The CPU 751 executes and controls the components of the PTS device 700 and executes and calculates various programs stored in the ROM 752.

The ROM 752 comprises a memory device such as a flash memory unit, in which permanent data to be executed by the CPU 751 is stored. For example, a credit updating program or the like for rewriting credit-related data stored on an IC card (not shown) connected via an IC-card I/F (interface) 763 can be stored in the ROM 752.

The RAM 753 temporarily stores data required for executing various programs stored in the ROM 752.

The external storage device 754 is, for example, a storage device such as a hard disk drive, and stores a program executed by the CPU 751 and data used by the program executed by the CPU 751.

A server I/F 755 implements data communication between an external server such as a hall management server and the PTS device 700. The gaming machine I/F (interface) 756 implements data communication between the game controller 70 of the slot machine 10 and the PTS device 700 via the communication interface 82 (see FIG. 4) on the slot machine 10 side, and a prescribed protocol can be used for the data communication.

Further, the PTS device 700 is connected to the bill entry 60, which is a bill validator, via a bill entry I/F (interface) 757, and is also connected to a settlement machine (not shown) via a settlement machine I/F (interface) 758, and can transmit and receive data to and from the settlement machine as necessary.

The IC card control unit 741 controls insertion and ejection of an IC card, writing of credit data, and the like. The IC card control unit 741 includes an IC card R/W (reader/writer) control unit, an IC card suction/discharge control unit, an LED control unit, and the like.

The DSP 765 receives audio data acquired from the microphone 715, performs a predetermined audio process, and then transmits the data to the CPU 751. The DSP 765 also transmits the received audio data to the speaker 707. Further, the DSP 765 outputs the received sound to headphones through an audio terminal connected to the headphones, processes the sound received from the microphone, and transmits the processed sound to the CPU 751. Here, a schematic configuration is shown, and an A/D converter, a D/A converter, an amplifier, and the like are omitted.

A camera control unit 766 acquires an image of the player or the like captured by the human detection camera 713, performs predetermined image processing as required, and transmits the processed data to the CPU 751. The data is transmitted to, for example, a hall management server via the server I/F 755.

(Data Table)

In the PTS device 700 illustrated in FIGS. 4 and 5, when a currency such as a bill is inserted into the bill entry 60, the inserted currency information (i.e., currency unit, amount) outputted from the bill entry 60 is stored in the RAM 753. As shown in FIG. 6A, in the storage area of the RAM 753, the exchange rate of the currency unit (for example, "dollars") of the bill inserted by the player and the specified currency unit (for example, "pesos") set in the slot machine 10 are stored.

Each time a currency is received at the bill entry 60, the CPU 751 communicates with external servers to obtain the exchange rate between the relevant currency unit and the specified currency unit. For example, when the inserted currency is "dollars," the CPU 751 obtains the exchange rate of "dollars" and "pesos", which is a particular currency unit, from outside and stores the exchange rate in the RAM 753.

Thus, in response to a request from the game controller 70 of the slot machine 10, the PTS device 700 can convert the monetary amount of the prize generated in accordance with the progress of the game, for example, from the specified currency unit (e.g., "pesos") used in the processing of the slot machine 10 (i.e., the game controller 70) to a currency unit (e.g., "dollars") of the bill inserted by the player at this time, and return the result to the game controller 70. The result of the conversion (e.g., the amount in "dollars") is displayed on the display panel (i.e., the upper image display panel 131 or the lower image display panel 141, etc.) of the slot machine 10. That is, in the slot machine 10 that processes a game in the specified currency unit (e.g., "pesos"), the monetary amount of a prize or the like generated by the progress of the game is displayed in a monetary amount converted into the currency unit (e.g., "dollars") inserted by the player, and the monetary amount can be displayed in a currency that the player is accustomed to.

The game controller 70 shown in FIG. 4 has a bet amount table in which the credit buttons 40, 41, 42, 43, 44 and the bet buttons 34, 35, 36, 37, 38 are mapped to each other in the storage device.

As shown in FIGS. 6B and 6C, the bet amount table stores bet amounts mapped to a plurality of payout ratios (1-BET, 2-BET, 3-BET, 5-BET, 10-BET) and a plurality of basic bets (3 WAYS, 9 WAYS, 27 WAYS, 81 WAYS, 243 WAYS).

For example, when the second credit button 41 is inputted, the credit amounts (2, 6, 14, 30, 50) in the row 2-BET is displayed on the display devices 40a, 41a, 42a, 43a, 44a, respectively.

Further, each bet amount stored in the bet amount table shown in FIGS. 6B and 6C is stored in a currency amount mapped to each bet amount. The currency amount includes specified currency information such as an amount represented in the currency of "pesos" per credit (for example, one credit is one peso) when the specified currency unit set in advance in the slot machine 10 is "pesos." In the bet amount table, a relationship between a currency unit (e.g., "dollars") other than the specified currency unit and a credit (e.g., one credit is \$0.01) is stored as other currency information (i.e., currency information including a currency unit other than a specified currency unit). This table is periodically overwritten to reflect the current exchange rate. Although the relationship between "pesos", "dollars", and credits is tabulated in FIGS. 6B and 6C, other currency types are also taken in and tabulated as appropriate.

[Program Content]

Next, a program executed by the game controller 70 of the slot machine 10 will be described.

(Main Control Process)

First, a main control process will be described with reference to FIG. 7.

First, when the slot machine 10 is powered on, the game controller 70 reads out the game program and the game system program and writes them in the RAM (S11).

Next, in order to start the game, the game controller 70 performs an initialization process at the end of one game (S12). For example, unnecessary data is cleared for each game in a single normal mode in the RAM work area, such as the bet amounts and symbols determined by random determination.

Next, the game controller 70 performs a bet/start-check process, which will be described later (S13). In this process, the inputs of the 1-BET switch 34S, the 2-BET switch 35S, the 3-BET switch 36S, the 5-BET switch 37S, the 10-BET switch 38S, the first credit switch 40S, the second credit switch 41S, the third credit switch 42S, the fourth credit

switch 43S, the fifth credit switch 44S, the spin switch 46S, the denomination switch 47S, and the like are checked. In the bet/start-check process (S13), when insertion information indicating that a bill has been newly inserted is received from the PTS device 700, the game controller 70 updates the specified currency information (i.e., the monetary amount shown in a particular currency "pesos" and the credit amount corresponding to the monetary amount) stored in the game controller 70 for the player to play the game. Specifically, the specified currency information converted from the amount of the newly inserted bill is added to the specified currency information already stored in the storage unit. That is, the slot machine 10 is configured to perform game processing (i.e., betting, payout calculation, payout, etc.) in the specified currency unit (e.g., "pesos"), and in the game controller 70, the monetary amount of the bill inserted by the player or the award given as a result of a game is managed as specified currency information in the specified currency unit.

When a bill of the specified currency unit (e.g., "pesos") is inserted into the bill entry 60, the monetary amount of the inserted specified currency unit (e.g., "pesos") and the credit amounts corresponding thereto are stored in the storage unit of the game controller 70. Note that "storage" here is a concept that includes adding to the monetary amount and the credit amount of the currency information when specified currency information for the player to play the game has already been stored in the storage unit of the game controller 70. This information may be stored in the storage unit of the PTS apparatus 700.

On the other hand, when the currency unit of the newly inserted bill is different from the specified currency (for example, when "dollars" are inserted), the specified currency information resulting from the conversion from the inserted monetary amount in the inserted currency unit to the monetary amount in the specified currency unit (e.g., "pesos") is stored in the storage unit of the game controller 70. This conversion is executed in the PTS device 700, and the conversion result is transmitted from the PTS device 700 to the game controller 70 and stored.

In this manner, when a bill is inserted into the bill entry 60, the specified currency information for playing the game stored in the game controller 70 is updated based on the amount of the bill inserted at this time, and then the inputs of the 1-BET switch 34S, the 2-BET switch 35S, the 3-BET switch 36S, the 5-BET switch 37S, the 10-BET switch 38S, the first credit switch 40S, the second credit switch 41S, the third credit switch 42S, the fourth credit switch 43S, the fifth credit switch 44S, the spin switch 46S, and the like are checked.

Next, the game controller 70 performs a symbol random determination process (S14). In this process, a symbol to be displayed in a region in the middle stage of the symbol display area 150 is determined as a to-be-stopped symbol from among a plurality of symbols arranged on the video reel. As a result, 15 symbols to be displayed in the symbol display area 150 (the upper stage region, the middle stage region, and the lower stage region) are determined.

The game controller 70 then stores the determined to-be-stopped symbol in a symbol storing area provided in the RAM.

Next, the game controller 70 performs an effect content determination process (S15). The game controller 70 extracts an effect-use random number and determines one of a plurality of effect contents determined in advance by random determination.

Next, the game controller 70 performs a symbol display control process (S16). In this symbol display control process, scrolling of the video reel is started, and after a predetermined time has elapsed, the to-be-stopped symbol determined in the normal mode symbol random determination process of S14 are sequentially stopped in the middle stage of the symbol display area 150. That is, 15 symbols including the to-be-stopped symbol are rearranged in the symbol display area 150. That is, symbols corresponding to code numbers before and after the to-be-stopped symbol are rearranged in the upper and lower stages of the symbol display area 150.

Next, the game controller 70 performs payout amount determination process (S17). In this process, on the basis of the symbol combination table stored in the RAM, it is determined whether or not a predetermined number of symbols of the same type are connected to the first to fifth array area and winning is established in the region which is the target of result determination by the WAYS BET of the symbol display area 150. A privilege such as a payout or a right to execute a free game is awarded in accordance with the value of a winning or bet counter (i.e., the bet credit type). The awarded payout is stored in a payout amount storage area provided in the RAM.

Next, a payout process is performed (S18). The game controller 70 adds the value stored in the payout amount storage area to the value of the credit counter provided in the RAM. For example, when the player presses the CASHOUT button 32 of the control panel 30, the detected CASHOUT switch (not shown) outputs a signal to the main CPU (not shown) of the game controller 70, and the credit amount stored on the IC card stored in the IC card control unit 741 is updated to the value of the credit counter.

Further, coins may be discharged from the slot machine 10 based on input of the CASHOUT button 32.

Next, the main CPU 1071 performs a game-end notification process (S19). This process is a process of transmitting data, indicating that one unit game has ended, to the PTS device 700. The PTS device 700 transmits the data to a hall management server, and a random determination of a bonus game or the like is performed in response to the data. When the process of S19 ends, the routine returns to the process of S12, and the game unit is repeated.

(Inserted Currency Storage Process)

FIG. 8 is a flowchart showing a procedure of inserted currency storage processing with the PTS device 700.

The CPU 751 of the PTS device 700 waits for reception of information from the bill entry 60 (S41). When information is received, it is determined whether or not the received information is information representing the insertion of currency such as bills, which is a gaming medium (S42). When the received information is information representing the insertion of currency, the CPU 751 determines the currency unit ("pesos", "dollars", or the like) included in the received information (S43), and determines whether or not the determined currency unit matches the currency unit stored in the RAM 753 until that time (S44). If the currency units do not match with each other, this means that a new currency unit bill has been inserted into the bill entry 60, and the CPU 751 transmits currency unit change information to the game controller 70 of the slot machine 10 (S45), and waits for a response to the currency unit change information from the game controller 70 (S46).

Upon receiving the currency unit change information from the PTS device 700, the game controller 70 executes a process of paying out a monetary amount corresponding to the game result stored therein to the player. The monetary

amount to be paid out, which is specified currency information converted from the currency inserted by the player, is data that decreases by the input of the bet amount and increases by the generation of the prize (i.e., the payout) in accordance with the progress of the game. In the present embodiment, in the gaming controller 70, "pesos" is set in advance as specified currency information, and the monetary amount expressed (i.e., converted) in "pesos" and the credit amount are stored in the storage unit as specified currency information.

When the payout process is completed, the PTS device 700 is notified of the completion. When the CPU 751 of the PTS device 700 determines whether a response has been received from the game controller 70 (S47), the CPU 751 updates the RAM 753 data (S48). Specifically, the currency unit of the inserted currency (i.e., the inserted currency unit) and the exchange rate shown in FIG. 6A is rewritten in accordance with the currency unit inserted at this time. For example, when the inserted currency is "yen", the inserted currency unit is rewritten as "yen" and the exchange rate is rewritten to a exchange rate for converting from "yen" to "pesos". As a result, in the PTS device 700, it becomes possible to convert the currency unit ("dollars", "yen", or the like) of the newly inserted currency into a specified currency unit (e.g., "pesos") set in the game controller 70 of the slot machine 10.

After updating the data of the RAM 753, the CPU 751 converts the currency unit information of the newly inserted currency (i.e., the information of the inserted monetary amount included in the information determined to be the inserted currency in step S42) with the updated rate, and transmits the monetary amount before and after the conversion to the game controller 70 of the slot machine 10 (S50). As a result, even when a currency unit that differs from the currency unit previously set in the RAM 753 is inserted, the monetary amount of the newly inserted currency unit can be converted into the monetary amount of the particular currency unit set in the game controller 70. Note that once the RAM 753 data is updated in this manner, the conversion process is performed based on the updated data until a new currency is inserted thereafter.

Based on the amount information before and after the conversion sent from the PTS device 700, the game controller 70 displays the monetary amount in the inserted currency unit before the conversion (i.e., the monetary amount in the currency unit of the currency inserted by the player) as, for example, a credit display of the lower image display panel 141, and uses the monetary amount after the conversion to the specified currency unit for processing inside the game controller 70 (e.g., calculating the generation of a prize).

As described above, in the slot machine 10, even when the currency unit of the currency inserted by the player (e.g., "dollars") is different from the specified currency unit (e.g., "pesos") determined by internal processing in the slot machine 10, the internal processing is performed in the specified currency unit while the currency unit of the inserted currency (e.g., "dollars") can be performed on the display and the game can be provided in which the player has no sense of discomfort by performing the display in the currency to which the player is accustomed.

Note that the information indicating the currency unit of the inserted currency, the information of the monetary amount displayed on the display devices 40a, 41a, 42a, 43a, 44a, and the information for image display, such as currency symbols, can be stored in various storage units such as the

storage unit of the PTS device, the display controller 170, and the storage unit of the gaming controller 70.

The conversion with the exchange rate may be performed by a device other than the PTS device 700, for example, the game controller 70, the control panel 30, or the like.

(Display of Display Device)

Information related to currency information and the like shown in FIG. 9 is displayed on the lower image display panel 141 of the slot machine 10.

In addition to the symbol display area 150, the lower image display panel 141 is provided with a denomination touch icon 201, a MENU touch icon 202, a volume touch icon 203, a CREDIT meter 204, a bet meter 205, a win meter 206, a game message display area 207, a free game play counter (FG counter) 208, a WAY number display area 209, an error log indicator area 210, a system message display area 211, a clock display area 212 (including an upper display switching icon), and a stock counter display area 214 at the time of re-triggering.

The denomination touch icon 201 displays a monetary amount (e.g., \$0.01) corresponding to one credit in the currency unit of the bill inserted into the bill entry 60 together with a currency symbol (e.g., a symbol indicating “dollars”) representing the currency unit of the inserted currency. By touching the denomination touch icon 201, the set monetary amount per credit can be changed. More specifically, when the currency unit of the inserted bill is “dollars”, the set monetary amount per credit can be changed to any one of five levels in the range of “\$0.01” to “\$10”. Every time the player touches the denomination touch icon 201, an instruction to change the setting to the content of “\$0.01”, “\$0.1”, “\$1.0”, “\$5.0”, or “\$10” is transmitted to the game controller 70, and the content of the setting is changed to the monetary amount per credit in the game controller 70, and the display of the denomination touch icon 201 is changed to the content of the changed setting by the game controller 70. As described above, the game controller 70 can store the currency unit of the inserted bill and display the monetary amount per credit in the currency unit on the denomination touch icon 201. As a result, the player can understand the amount per credit by displaying in the currency unit inserted by the player. When the currency unit of the bill inserted into the bill entry 60 is “pesos”, the game controller 70 switches the amount displayed on the denomination touch icon 201 and the symbol representing the currency unit to a notation representing “pesos”, for example, as shown in FIG. 10A. Specifically, the monetary amount in “pesos” per credit is converted in the PTS device 700, and the conversion result is displayed on the denomination touch icon 201 by the game controller 70. In this display, a symbol for the currency unit “pesos”, shown by adding two horizontal lines to “P”, is added to the display. In this manner, the monetary amount per credit displayed on the denomination touch icon 201 is switched in accordance with the currency unit of the inserted currency.

In the present embodiment, the case has been described in which the switching of the denomination touch icon 201 can be changed to one of five levels in the range of “\$0.01” to “\$10”, but the present invention is not limited to this, and the range of the monetary amount and the number of levels can be variably set.

The MENU touch icon 202 is an icon for changing the content (e.g., the display language) to be displayed on the lower image display panel 141 as required. By touching this icon, a pop-up icon for selecting a language is displayed. When the player touches the icon, the selected content is transmitted to the game controller 70, and the game con-

troller 70 displays display characters displayed on the lower image display panel 141 in the selected language. As a result, the player can select and display a desired language display. The selected result is transmitted from the game controller 60 to the display roller 170, whereby the display languages of the display devices 34a to 38a, 40a to 44a, and 47a of the control panel 30 can be switched to the selected language and displayed.

The volume touch icon 203 is a touch icon for changing the volume of sound or effect sound output from a speaker connected to the game controller 70. Each time this icon is touched, the volume can be selected in a cyclic manner such as small, medium, large, small, and so on.

The CREDIT meter 204 displays the sum total of the monetary amount inserted by the player into the slot machine 10 (i.e., the game controller 70) and the monetary amount awarded to the player as a result of a game in the currency unit of the bill inserted by the player into the bill entry 60. Specifically, when the currency unit of the bill inserted by the player is “dollars”, the PTS device 700 transmits the inserted currency information (i.e., the currency unit in “dollars” and the monetary amount thereof) from the bill entry 60 to the game controller 70 together with the specified currency information including the monetary amount in the specified currency unit (e.g., “pesos”) and the corresponding credit amount. The game controller 70 receives the information and displays the monetary amount on the CREDIT meter 204 in the currency unit (e.g., “dollars”) inserted by the player. In this case, the game controller 70 displays the symbol of the currency unit “dollar” together with the monetary amount based on the information representing the currency unit (e.g., “dollars”) of the inserted currency sent from the PTS device 700 (FIG. 9).

When the currency unit of the bill inserted into the bill entry 60 is “pesos”, the game controller 70 switches the monetary amount displayed on the CREDIT meter 204 and the symbol representing the currency unit to a symbol representing “pesos”, for example, as shown in FIG. 10A. More specifically, the PTS device 700 transmits the inserted currency information (i.e., the currency unit represented by “pesos” and the monetary amount thereof), transmitted from the bill entry 60, to the game controller 70 as specified currency information including the credit amount corresponding to the inserted currency information. The game controller 70 that receives the inserted currency information displays the monetary amount on the CREDIT meter 204 in the currency unit “pesos” inserted by the player. For example, a symbol representing the currency unit “pesos”, shown by adding two horizontal lines to “P”, is added to the display. In this manner, the monetary amount displayed on the CREDIT meter 204 is switched in accordance with the currency unit of the inserted currency.

The player can bet on the games from the monetary amount displayed on the CREDIT meter 204. For instance, the display example shown in FIG. 9 and FIG. 10A shows a case in which the display is in a currency unit inserted by the player, but in the present embodiment, the CREDIT meter 204 is configured by a touch icon, and the player can switch the monetary amount display shown in FIG. 9 to a display with the credit amount as shown in FIG. 10B, for example, by touching the CREDIT meter 204. The display in terms of credit amount is a result obtained by converting the currency unit inserted by the player into the credit amount according to the rate at that time. Specifically, when the currency unit of the bill inserted by the player is “dollars”, the game controller 70 can display the inserted

currency information transmitted from the PTS device 700 and the credit amount converted from the inserted amount (for example, the credit amount corresponding to 1 php=1 credit when “dollars” is converted to “pesos”) on the CREDIT meter 204 based on the result of conversion of the inserted currency information to the specified currency unit (e.g., “pesos”) and the specified currency information including the credit amount corresponding thereto.

Further, by touching the CREDIT meter 204, the game controller 70 may be switched to display both the monetary amount expressed in the currency unit of the inserted bill and the corresponding credit amount, as shown in FIG. 10C.

The CREDIT meter 204 displays the monetary amount that is subtracted every time the player specifies a bet amount, and also displays the monetary amount that is added every time a payout is awarded as a result of a game.

The BET meter 205 displays the total bet amount for executing the game, which is specified by the player operating the control panel 30. When the player specifies a bet amount by operating the control panel 30, information representing the specified bet amount is transmitted from the control panel 30 to the PTS device 700, and the bet amount, expressed in the currency unit of the inserted currency in the PTS device 700, and the corresponding credit amount are calculated and transmitted from the PTS device 700 to the game controller 70. The game controller 70 which has received these pieces of information displays, selectively, the bet amount specified by the player according to the amount in the inserted currency (e.g., “dollars”)(FIG. 9), the credit amount (FIG. 10B), or both (FIG. 10C). The game controller 70 displays the selection when the BET meter 205, having a touch icon configuration, is touched. The game controller 70 adds bet amounts until the player finishes the game and exhausts his/her credits, thereby displaying the bet amount displayed on the BET meter 205 as the total amount until the game is finished and not for each game. The BET meter 205 is updated each time a game is played.

Note that the BET meter 205 shown in FIG. 9 shows a case in which the currency unit of the bill inserted into the bill entry 60 is “dollar”, but when the currency unit of the bill inserted into the bill entry 60 is “pesos”, the game controller 70 is switched to a notation with a symbol (e.g., a symbol obtained by adding two horizontal lines to “P”) representing the monetary amount in “pesos” and the currency unit thereof as shown in FIG. 10A, for example, based on the monetary amount data in the currency unit of “pesos” obtained from the PTS device 700.

The WIN meter 206 displays the amount of the payout (i.e., the prize) to be awarded to the player based on the game results, and when the payout occurs as an execution result, the game controller 70 selectively displays the monetary amount according to the monetary amount of the inserted currency (e.g., “dollars”) (see FIG. 9), the credit amount (FIG. 10B), or both thereof (FIG. 10C). This selection is displayed by touching the WIN meter 206 having a touch icon configuration.

Note that the WIN meter 206 shown in FIG. 9 indicates the case where the currency unit of the bill inserted into the bill entry 60 is “dollars”, but when the currency unit of the bill input to the bill entry 60 is “pesos”, the game controller 70 is switched to the notation by the symbol (e.g., the symbol obtained by adding two horizontal lines to “P”) indicating the monetary amount in pesos and the currency unit thereof as shown in FIG. 10A, for example, based on the monetary amount data in the currency unit of pesos obtained from the PTS device 700.

The game message display area 207 displays a description of the game contents and the like in the form of sentences. The free game play counter (FG counter) 208 displays the number of free game plays. The WAY display area 209 displays the type of WAYS BET specified by the player operating the control panel 30 in the form of characters or the like. The error log indicator area 210 is an area for an error log indicator related to the execution of the game. The system message display area 211 is an area for displaying various messages such as payment, ticket history, communication information, and the like. The upper display switching button 212 is a touch-icon area for switching the display content of the upper image display panel 131. The stock counter 214 at the time of re-triggering indicates the number of remaining features at the time of re-triggering.

Other Embodiments

In the embodiment described above, a case where a bill is used as a gaming medium (i.e., paper stock) has been described, but the present invention is not limited to this, and, for example, coins, medals, tokens, tickets with bar codes, and the like can be applied in addition to electronic value information such as cyber money.

In the embodiment described above, a case where the conversion between the currency unit of the inserted bill and the specified currency unit set in the slot machine 10 is performed in the PTS device 700 has been described, but the conversion is not limited to this, and may be performed in another device such as the game controller 70, for example.

In the embodiment described above, the present invention is applied to the slot machine 10, but the present invention is not limited to this, and can be widely applied to other gaming machines as well as other machines such as vending machines for beverages and the like. When the present invention is applied to a vending machine for beverages or the like, when a user inserts currency of a currency unit other than the specified currency unit into the vending machine, the control unit of the vending machine converts the inserted currency into the specified currency unit and then executes a selling process in the specified currency unit. The sales process refers to a process of deducting the price of a commodity specified by the player by operating the push buttons or the like from the monetary amount inserted and paying out the remaining amount as change. In this case, the control unit displays not the specified currency unit for which the sales process has been performed, but the result of converting from the specified currency unit to the currency unit which the user has inserted so that the user can see the display in his/her familiar currency unit and can easily understand the amount.

In the embodiment described above, the case where conversion into a different currency unit is executed in the PTS device 700 has been described, but the conversion is not limited to this, and may be executed in the game controller 70, for example.

In the embodiment described above, the display control of the credit data (i.e., data such as the bet amount, the credit amount inserted by the player, etc.) on the control panel 30 or the lower image display panel 141 is performed by the PTS device 700, but the present invention is not limited to this, and for example, the game controller 70 may perform the display control.

Thus, it is seen that the objects of the present invention are efficiently obtained, although it should be readily apparent to those having ordinary skill in the art that changes and modifications can be made to the invention without depart-

ing from the spirit and scope of the invention as claimed. Hence, it should be appreciated that variations of the information processing apparatus and conversion apparatus may be made, used and sold, and yet be within the spirit and scope of the claims.

Thus, it is seen that the objects of the present invention are efficiently obtained, although modifications and changes to the invention should be readily apparent to those having ordinary skill in the art, and these modifications are intended to be within the spirit and scope of the invention as claimed.

PARTS LIST

- 10 Slot machine
- 30 Control panel
- 60 Bill entry
- 70 Game controller
- 141 Lower image display panel
- 170 Display controller
- 700 PTS device

What is claimed is:

1. An information processing apparatus that executes a process based on a medium of exchange and currency information, including a currency unit, comprising:

- a display device capable of displaying a progress of the process;
- a medium of exchange accepting apparatus capable of receiving and validating a medium of exchange including at least one of a bill, a ticket, a coin, a token, a magnetic card, an IC card, and electronic data, the received and validated medium of exchange including currency information;
- a control device that executes the process based on a first initial preset currency information that includes a currency unit;

wherein the control device is further configured to:

- (a) upon receiving and validating a received medium of exchange that corresponds to the first initial preset currency information to execute the process, displaying to the display that the received medium of exchange corresponds to the first initial preset currency information, allowing execution of the process based on the first initial preset currency information, and displaying progress of the process according to the first initial preset currency information;
- (b) upon receiving and validating a received medium of exchange that does not correspond to the first initial preset currency information to execute the process, automatically converting the first initial preset currency information to execute the process to second other currency information corresponding to the received medium of exchange, displaying the second other currency information to execute the process to the display device, allowing execution of the process based on the second other currency information, and displaying progress of the process according to the second other converted currency information
- (c) convert the currency information of the at least one of a bill, a ticket, a coin, a token, a magnetic card, or IC card into first initial preset currency information

when the at least one of a bill, a ticket, a coin, a token, a magnetic card, or IC card includes the second other currency information, and

(d) display the second other currency information of the at least one of a bill, a ticket, a coin, a token, a magnetic card, or IC card on the display device.

2. The information processing apparatus of claim 1, wherein, the medium of exchange accepting apparatus comprising a PTS device and the PTS device includes:

an insertion slot capable of receiving the at least one of a bill, a ticket, a coin, a token, a magnetic card, or IC card, the at least one of a bill a ticket, a coin, a token a magnetic card, or IC card having currency information including either the first initial preset currency information or the second other currency information, and

a reading device capable of reading the at least one of a bill, a ticket, a coin, a token, a magnetic card, or IC card.

3. The information processing apparatus of claim 1, wherein, the medium of exchange accepting apparatus comprises a PTS device and the PTS device includes:

the control device; and,
the display device; wherein,
the PTS device is communicatively connected to an external non-transitory computer readable storage device storing currency exchange rate information corresponding to the first initial preset currency and the second other currency, wherein when a medium of exchange including information corresponding to the second other currency is received by the PTS device, the control device;

(a) obtains current exchange rate information from the external non-transitory computer readable storage device; and,

(b) converts the first initial preset currency information into the second other currency information, including a currency unit different from the first initial preset currency unit, and

(c) displays the second other currency information, converted in (b), on the display device.

4. The information processing apparatus of claim 3, wherein the PTS device is in communication with a slot-type gaming machine and the PTS device transmits one or more of the first preset initial currency information and the second other currency information to a controller of the slot-type gaming machine.

5. The information processing apparatus of claim 4, wherein when the second other currency information is received by the slot-type gaming machine, operations of the slot-type gaming machine are displayed in accordance with the second other currency information.

6. The information processing apparatus of claim 4, wherein the controller of the gaming machine displays a monetary amount corresponding to the medium of exchange read by the medium of exchange accepting apparatus before and after performing a conversion operation.

7. The information processing apparatus of claim 1 comprising a slot-type gaming machine.

* * * * *