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(56) Related Art
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US 6322446

ABSTRACT OF THE DISCLOSURE

Disclosed is a wire/wireless Internet lottery game using a random-number generator, which is capable of allowing a user to optionally select a desired lottery number on an Internet lottery site, and displaying the scene of determining a winning number using the random-number generator in real time, thereby providing reliability and realism for the winning number determination process.

WIRE/WIRELESS INTERNET LOTTERY SYSTEM USING RANDOM-NUMBER GENERATOR

BACKGROUND OF THE INVENTION

Field of the Invention

The present invention relates to a technique for enhancing the participation of clients in an Internet lottery event while achieving an improvement in the reliability of the lottery. In particular, the present invention relates to a wire or wireless Internet lottery system using a random-number generator, which is capable of allowing a user to optionally select a desired lottery number on an Internet lottery site, and displaying the scene of determining a winning number using a random-number generator in real time.

Description of the Related Art

Recently, use of Internet services has been greatly increased. In pace with such an increase, various Internet games have been developed. In particular, Internet lottery games have been highlighted.

In a conventional Internet lottery game, authorized users are allowed to select desired lottery numbers on an Internet lottery site. Whenever a predetermined period of time (for example, one week) elapses, a winning number is determined.

Only the result of the winning number determination is simply informed to the users.

That is, the winning number is determined using an internal probability program without being open to the users participating in the Internet lottery game. The determined winning number is published on an associated web page.

However, the above described conventional Internet lottery game has a problem in that the users may doubt the result of the lottery game because the winning number is determined using an internal probability program without being open to the users, and only the determined winning number is published on an associated web page.

SUMMARY OF THE INVENTION

Therefore, an object of the invention is to provide a wire or wireless Internet lottery system using a random-number generator, which is capable of allowing a user to optionally select a desired lottery number on an Internet lottery site, and displaying the scene of determining a winning number using a random-number generator in real time, thereby allowing a plurality of users participating in the same lottery game to view the same result of the lottery game in real time.

In accordance with the present invention, this object is accomplished by providing a wire/wireless Internet lottery

system comprising: at least one random-number generator for rotating a transparent case containing a die, sensing the number of points on an upper surface of the die after the rotation of the case, and outputting the sensed point number as one digit of a winning number; a relay camera for picking up an image of the upper surface of the die after the rotation of the die in order to allow a user to directly identify the number of points shown on the die based on the picked-up image; a plurality of terminals each for displaying a window for allowing the user to select a desired lottery number, transmitting the selected lottery number to an associated one of game servers, and displaying an image signal representing a procedure of determining the winning number using the random-number generator, along with the winning number; a master server for outputting a drive control signal at a predetermined point of time at which the determination of the winning number is to begin, transmitting, to the game servers, the winning number determined by the random-number generator, and the image signal acquired by the relay camera; and the game servers each selectively connected to the terminals via the Internet, each of the game servers managing the progress of a lottery game in association with the connected terminals, and managing personal histories of users associated with the connected terminals, and a database.

BRIEF DESCRIPTION OF THE DRAWINGS

The above objects, and other features and advantages of the present invention will become more apparent after a reading of the following detailed description when taken in conjunction with the drawings, in which:

Fig. 1 is a view illustrating the entire configuration of a wire/wireless Internet lottery system using a random-number generator in accordance with the present invention;

Fig. 2 is a perspective view illustrating the random-number generator according to the present invention;

Fig. 3 is a perspective view illustrating a rotating device according to the present invention;

Fig. 4 is a sectional view illustrating the rotating device;

Fig. 5 is a view illustrating a pop-up window for selection of a lottery number;

Fig. 6 is a view illustrating a window for displaying the scene of determining a winning number in real time, along with the winning number;

Fig. 7a is a flow chart illustrating a lottery game processing procedure executed in a terminal;

Fig. 7b is a flow chart illustrating a lottery game processing procedure executed in a master server;

Fig. 7c is a flow chart illustrating a lottery game

processing procedure executed in a game server;

Fig. 7d is a flow chart illustrating a lottery game processing procedure executed in a common server;

Fig. 7e is a flow chart illustrating a lottery game processing procedure executed in a database server; and

Fig. 8 is a front view illustrating a terminal according to another embodiment of the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Fig. 1 is a view of the entire configuration of a wire/wireless Internet lottery system using a random-number generator in accordance with the present invention. As shown in Fig. 1, the Internet lottery system includes a random-number generator 101 for periodically rotating a case containing a die for a number of times corresponding to the number of digits of a lottery number at desired intervals of time, sensing the number of points on an upper surface of the die after every rotation of the case using a sensor, and sending, to a master server 104, the resultant point numbers sensed as respective digits of a winning number. The Internet lottery system also includes a relay camera 102 for picking up an image of the upper surface of the die after every rotation of the case, and sending the picked-up image in the form of an image signal to the master server 104, in order to allow the user to directly

identify the number of points shown on the die based on the picked-up image. The Internet lottery system further includes terminals 103A to 103C each for displaying a pop-up window for allowing the user to select a desired lottery number, transmitting the selected lottery number to the game server 105A, and displaying the image signal and the winning number transmitted from the game server 105A in order to allow the user to directly identify the procedure of determining the winning number using the random-number generator 101. The master server 104, which is also included in the Internet lottery system, outputs a drive control signal at a predetermined point of time at which the lottery is to begin, in order to determine a winner using the random-number generator 101. The master server 104 transmits, to the game server 105A, the winning number determined by the random-number generator 101, and the image signal generated from the relay camera 102. The game server 105A is also included in the Internet lottery system. This game server 105A is selectively connected to the terminals 103A to 103C, in order to manage the progress of a lottery game to which the participating terminals 103A to 103C are connected. The game server 105A also manages the personal histories of the users, and a database 108. The Internet lottery system also includes game servers 105B and 105C having the same functions as those of the game server 105A. A common server 106 is also included in the Internet

lottery system. The common server 106 performs a user log-in test in association with each terminal, and then links the terminal to a selected one of the game servers 105A to 105C. The Internet lottery system further includes a database server 107 for receiving lottery numbers selected by respective users, and the winning number via the game servers 105A to 105C, recording the received lottery numbers and winning number, settling a premium based on the result of the lottery game, and updating the database 108, while performing collection of or search for desired information using the database 108.

Each of the terminals 103A to 103C may include a personal computer (PC) having access to the Internet via a LAN or dedicated line, a portable phone enabling wireless Internet communications, or a personal digital assistant (PDA) enabling wireless Internet communications. Diverse examples of pop-up windows described hereinafter are based on the PC which can display diverse windows. Where such a pop-up window is displayed on the portable phone or PDA, only the kernel of the content in the pop-up window is displayed in the form of text.

As shown in Figs. 2 to 4, the random-number generator 101 includes a body 1 provided with a manipulation panel 1A, a case 2 for containing a die 3 therein, and applying a rotating force to the die 3 in order to rotate the die 3 in random directions, a rotating device 4 for rotating the case 2, a sensing unit 5 for recognizing the number of points formed on an upper surface

of the die 3 seated on the bottom surface of the case 2 in a state in which the rotation of the case 2 is stopped, based on the combination of magnets attached to a lower surface of the die 3, and a display 6 for displaying the point number recognized by the sensing unit 5.

The case 2 is made of a transparent acryl so as to allow the user to identify movement of the die 3 in the case 2 with the naked eye. The case 2 has a polygonal structure having an upper case portion 2A and a lower case portion 2B. A plurality of protrusions 2C are formed on an inner surface of the case 2 in order to make the die 3 move in random directions during rotation of the case 2. The case 2 is provided at its opposite lateral ends with mounting portions 2D, respectively.

The rotating device 4 includes a base plate 7, a bracket 9 mounted to the base plate 7, a pair of support members 4A and 4B mounted to the bracket 9 such that they extend vertically while being parallel to each other, and a shaft 10 including a drive shaft 10A and a driven shaft 10B respectively journalled in the support members 4A and 4B. A bevel gear 11A is fixedly mounted to the drive shaft 10A, whereas an encoder 12 is coupled to the driven shaft 10B. A motor M is fixedly mounted to a selected one of the support members, that is, the support member 4A. A bevel gear 11 is axially mounted to the motor M so that it is engaged with the bevel gear 11A. An RPM sensor 13 is mounted to the other support member 4B in order to sense the

RPM of the encoder 12.

The sensing unit 5 includes a vertical moving member 14 configured to be vertically movable through a through hole centrally formed at the bracket 9, and provided with a magnetic field sensor 14A at an upper surface thereof in order to sense the combination of magnets attached to a lower surface of the die 3, and a solenoid 8 fixedly mounted to the bracket 9, and adapted to vertically move the vertical moving member 14.

Now, the operation of the Internet lottery system having the above described configuration according to the present invention will be described in detail with reference to Figs. 5 to 7.

First, the operation of the random-number generator 101 will be described with reference to Figs. 2 to 4.

The master server 104 outputs a drive control signal to the random-number generator 101 at every point of time at which an Internet lottery is to begin, for example, at intervals of one minute. In response to the drive control signal, the motor M is driven. The drive force of the motor M is transmitted to the case 2 containing the die 3 via the bevel gears 11 and 11A, thereby causing the case 2 to rotate. In accordance with the rotation of the case, the die 3 is rotated in random directions while being struck against the protrusions 2C formed at the inner surface of the case 2. At this time, the RPM sensor 13 senses the RPM of the case 2 in cooperation with the encoder 12

mounted to the driven shaft 10B, and transmits the sensed RPM to the master server 104.

When the rotation of the case 2 is stopped, the die 3 stops its rotation, and then falls to the bottom surface of the case 2. At this time, the vertical moving member 14 is upwardly moved in accordance with an activation of the solenoid 8, so that the magnetic field sensor 14A comes into contact with the lower surface of the case 2.

A plurality of magnets are arranged at each surface of the die 3 in such a fashion that their arrangement corresponds to the number of points indicated on a surface of the die 3 opposite to the die surface on which the magnets are arranged. That is, the die 3 has different magnet arrangements at respective surfaces thereof using different combinations of magnets. For example, where "H" represents an S-polarity, "L" represents an N-polarity, and "X" represents a non-polarity, the die surface with one point has a magnet arrangement "XHLH", the die surface with two points has a magnet arrangement "XHHL", the die surface with three points has a magnet arrangement "XHHX", the die surface with four points has a magnet arrangement "LLLL", the die surface with five points has a magnet arrangement "XLHL", and the die surface with six points has a magnet arrangement "XLLH".

Accordingly, when the magnetic sensor 14A senses the magnet arrangement "XHLH" of the die surface with one point,

the number "6" is displayed on the display 6 because the upper die surface opposite to the sensed die surface has six points. The magnetic sensor 14A also sends the point number information of the upper die surface to the master server 104. In such a manner, the point number of the upper surface of the die 3 is sensed, and the sensed result is displayed on the display 6 while being transmitted to the master server 104.

The scene of determining the winning number using the random-number generator 101 is shot by the relay camera 102 which, in turn, transmits the shot scene to the user terminals 103A to 103C in real time.

Although the above description has been given to determine one digit of the winning number using one random-number generator 101, it may be possible to determine the winning number using various methods because the lottery number practically has several digits.

For example, where the lottery number has 8 digits, the winning number can be determined using only one random-number generator 101, In this case, the random-number generator 101 is driven 8 times in the above described manner to determine the 8 digits of the winning number.

Alternatively, the determination of the winning number having 8 digits may be achieved using 8 random-number generators 101 aligned with one another. In this case, the random-number generators 101 are sequentially driven to

determine respective digits of the winning number. The sequential scenes of determining the winning number by the random-number generators 101 may be shot by one relay camera 102. In this case, the shooting of the sequential scenes may be carried out by horizontally moving the relay camera 102 above and along the random-number generators 101. Alternatively, the shooting of the sequential scenes may be achieved using 8 relay cameras. In this case, the relay cameras are sequentially driven to shoot respective scenes associated with the 8 digits of the winning number.

The operations of the user terminals and servers for Internet lottery games will now be described. First, the operation of the user terminal 103A will be described with reference to Fig. 7b.

User terminals are connected to respective game servers 105A to 105C. The following description will be given in conjunction with the terminal 103A. Initialization is executed (Step SA1). At step SA1, various parameters of the Internet lottery system and terminal 103A are initialized. The link of the terminal 103A to the common server 106 is also initialized.

A log-in window is displayed on the terminal 103A in order to allow log-in information entered by the user to be transmitted to the common server 106 (Steps SA2 and SA3). When a successful log-in is made (Step SA4), the terminal 103A is connected to one of the game servers 105A to 105C by the common

server 105 (Step SA5). The following description will be given in conjunction with the case in which the terminal 103A is connected to the game server 105A.

Subsequently, user information is displayed on the screen of the terminal 103A (Step SA6). The user information may include residual amount of money, available amount of money, and a countdown to the point of time at which the lottery is to begin. A pop-up window shown in Fig. 5 is also displayed in order to allow the user to select a desired lottery number (Step SA7). The user may select a desired lottery number in a manual fashion or in an automatic fashion. The lottery number manually or automatically selected by the user is recognized by the terminal, and displayed on the screen of the terminal.

When the user clicks a transmission button displayed on the screen of the terminal 103A under the condition in which he selects all digits (for example, 8 digits) of a desired lottery number (Step SA8), the selected lottery number is transmitted to the game server 105A (Step SA9). Thereafter, the transmission button is disabled in order to prevent the lottery number from being transmitted again when the transmission button is re-clicked (Step SA10).

A window for displaying the scene of determining a winning number in real time is then displayed (Step SA11). It is then determined whether or not a lottery number transmission prohibiting command from the game server 105A is received (Step

SA12). When the lottery number transmission prohibiting command is received, the transmission button on the screen is disabled in order to prevent the user from transmitting a lottery number for a predetermined period of time (Step SA13). Accordingly, it is possible for a user to avoid unnecessary submission of an unavailable lottery number during the procedure of determining a winning number or preparing the determination of the winning number.

When the winning number is determined using the random-number generator 101 at the point of time when the determination of the winning number is to begin, the scene of determining the winning number is picked up by the relay camera 102 which, in turn, transmits an image signal indicative of the picked-up scene to the terminal 103A via the master server 104 and the game server 105A. Simultaneously, the winning number sensed by the magnetic field sensor 14A is also transmitted through the same channel as that of the image signal. The terminal 103A processes the received signals, and then displays the processed signals on a window shown in Fig. 6. These procedures are executed at steps SA14 and SA15.

Thus, the user can identify the winning number determining procedure and the determined winning number displayed on the screen of the terminal 103A with the naked eye in real time.

For instance, when a button P on the window of Fig. 6 is

clicked, the lottery number selecting window shown in Fig. 5 is displayed. When the user sequentially clicks buttons horizontally aligned with one another beneath a die picture on the window of Fig. 6, numeric buttons vertically aligned with one another are displayed for every button clicking operation. Using the displayed numeric buttons, the user can select a desired lottery number. For example, when the user clicks the leftmost one of the buttons on the window of Fig. 6, numeric buttons corresponding to "1", "2", "3", "4", "5", and "6" are displayed in a vertically-aligned state, as shown in Fig. 5. The user selects a desired one of the displayed numeric buttons, thereby selecting one digit of a desired lottery number. The remaining digits of the desired lottery number may be selected by repeatedly performing the above described numeric button clicking operation. Thus, a desired lottery number of 8 digits can be selected. In Fig. 6, the upper one of two numeric rows displayed over the die picture, that is, the number of "16144653", represents the winning number, whereas the lower number of "66556511" represents the lottery number selected by the user.

It is then determined whether or not a game-over signal from the game server 105A is received in accordance with completion of the above described winning number determining procedure (Step SA16). When the game-over signal is received, a game-over message is displayed (Step SA17). The overall

procedure is thereby completed. When a log-out is made or the user requests completion of the overall procedure, the overall procedure is also completed (Step SA18).

Now, the operation of the master server 104 will be described with reference to Fig. 7b.

Initialization is executed (Step SB1). At step SB1, the master server 104 initializes various parameters and units thereof. The master server 104 also initializes the link to the game servers 105A to 105C. For a real-time image transmission, the master server 104 then starts an image transmission task (Step SB2).

At step SB3, the maser server 104 determines whether or not the procedure of determining a winning number is to begin. Where the procedure of determining a winning number is to begin, the master server 104 informs the game servers 105A to 105c of the start of the winning number determination procedure (Step SB4). The master server 104 then sends a winning number determination procedure start command to the random-number generator 101 (Step SB5).

After the random-number generator 101 completes a winning number determining operation for one digit of a winning number executed in accordance with the winning number determination procedure start command (Step SB6), the master server 104 generates another winning number determination procedure start command for the next digit of the winning number. In such a

manner, winning number determination procedure beginning commands for respective digits of the winning number are sequentially sent to the random-number generator 101 at predetermined intervals of time (Step SB7). The determination of the winning number may be achieved by repeatedly operating one random-number generator 101 or sequentially operating several random-number generators. The master server 104 receives the number for each digit of the winning number and the corresponding image signal picked up by the relay camera 102, and transmits the received signals to the game servers 105A to 105C. This procedure is executed at steps SB7 to SB10.

After the winning number determining procedure for one lottery event is completed, the master server 104 informs the game servers 105A to 105C of this fact (Step SB11), and then stops the operation of the image transmission task (Step SB12). When it is determined that the winning number determining procedure is not completed yet, the master server 104 returns to step SB5 after waiting for a predetermined period of time at step SB13.

The operations of the game servers 105A to 105C will now be described with reference to Figs. 7c. The following description will be given only in conjunction with the game server 105A.

Initialization is executed (Step SC1). At step SC1, the game server 105A initializes the link to the master server 104,

common server 106, and data server 107. For a real-time image transmission, the game server 105A then starts an image transmission task (Step SC2).

When the user of an optional one of the terminals 103A to 103C requests an access to the game server 105A (Step SC3), this game server 105A receives user information from the common server 106 (Step SC4), and adds the user to a list of users for receiving real-time images (Step SC5). Subsequently, the game server 105A waits for reception of a game start command from the master server 104 (Step SC6).

When the game start command is received, the game server 105A stores, in the database 108, the lottery number optionally selected by the user on the lottery number selecting pop-up window and transmitted from the user (Steps SC7 and SC8). Thereafter, the game server 105A waits for reception of a stop operation warning command from the master server 104 (SC9).

When the stop operation warning command is received, the game server 105A informs the terminal 103A of stopping of a further lottery number selection (Step SC10). The game server 105A waits for reception of the result of the lottery game from the master server 104 (Step SC11).

When the lottery result from the master server 104 is received, the game server 105A informs the terminal 103A of the lottery game result (Step SC12). The game server 105A settles a premium given to the user based on the result of the lottery

game (Step SC13), and updates the database 108 based on the settled premium (Step SC14).

When the game server 105A receives an all-game completion command (for example, for all games for one day) from the master server 104 (Step SC15), it informs the terminal 103A of this fact (Step SC16), and then stops the operation of the image transmission task (Step SC17).

Now, the operation of the common server 106 will be described with reference to Fig. 7d.

Initialization is executed (Step SD1). At step SD1, the common server 106 initializes various parameters and units thereof. The common server 106 also initializes the link to the game servers 105A to 105C.

The common server 106 determines whether or not a user performs a log-in procedure (Step SD2). When it is determined that a user logs in, the common server 106 assigns a selected one of the game servers 105A to 105C for the user (Step SD3), and transmits user information to the selected game server (Step SD4). When the common server 106 receives a system completion command, its operation is completed (Step SD5).

Finally, the operation of the database server 107 will be described with reference to Fig. 7e.

Initialization is executed (Step SE1). At step SE1, the database server 107 initializes various parameters and units thereof. The database server 107 identifies whether or not

calculation of a total is to be currently made (Step SE2). A database for totals per day and month is constructed (Step SE3). The database is backed up (Step SE4).

When one of the game servers 105A to 105C requests personal information of a user (Step SE5), the database server 107 searches the histories of all users for the personal information of the user (Step SE6), and transmits the searched personal information (Step SE7). When a system completion command is generated (Step SE8), the database server 107 cuts off its connection to the database 108 (Step SE9).

Although the winning number is determined using the random-number generator 101 using the die, the same effect as described above can be obtained using other random-number generators widely used, such as game machines for bingo games, or game machines using balls printed with numbers.

Fig. 8 illustrates another embodiment of the terminal 103A to which the present invention is applied. As shown in Fig. 8, the terminal 103A is provided with a coin insertion hole 103A1 formed at the front wall of a case, and a hopper 103A2 communicating with the coin insertion hole 103A1, and adapted to discriminate the value of coins inserted through the coin insertion hole 103A1, and process the discriminated value.

Where the coin insertion hole 103A1 is provided at the terminal 103A, it is possible for users to enjoy lottery games while inserting coins into the terminal 103A.

For the terminals 103A to 103C to which the present invention is applied, wire terminals such as PCs, or wireless terminals such as portable phones or PDAs may be typically used. Accordingly, it is possible for a user to access a game server via a wireless terminal while traveling in a car or subway, in order to enjoy an Internet lottery game.

In particular, the Internet lottery system of the present invention is applicable not only to lottery games, but also to any games which several users enjoy in a simultaneously connected state. For example, the Internet lottery system of the present invention may be applied to betting type games such as taisai.

As apparent from the above description, the present invention provides an Internet lottery game capable of allowing a user to optionally select a desired lottery number on an Internet lottery site, and displaying the scene of determining a winning number using a random-number generator in real time, thereby providing reliability and realism for the winning number determination process.

Since the Internet lottery system is operated in a centrally controlled fashion, all users participating in the same lottery game receive the same result of the lottery game, so that it is impossible to rig the result of the lottery game. By virtue of the features of the Internet lottery system according to the present invention, a plurality of games can be

held at desired intervals of time (for example, intervals of several minutes or several hours). Also, the result of the lottery game is immediately released. Accordingly, an increased number of users may participate in the lottery game.

Since the Internet lottery game can be processed using a pop-up window, the user can participate in the Internet lottery game while processing other tasks.

Although the preferred embodiments of the invention have been disclosed for illustrative purposes, those skilled in the art will appreciate that various modifications, additions and substitutions are possible, without departing from the scope and spirit of the invention as disclosed in the accompanying claims.

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A wire/wireless Internet lottery system comprising:

at least one random-number generator for rotating a transparent case containing a die, sensing the number of points on an upper surface of the die after the rotation of the case, and outputting the sensed point number as one digit of a winning number;

a relay camera for picking up an image of the upper surface of the die after the rotation of the die in order to allow a user to directly identify the number of points shown on the die based on the picked-up image;

a plurality of terminals each for displaying a window for allowing the user to select a desired lottery number, transmitting the selected lottery number to an associated one of game servers, and displaying an image signal representing a procedure of determining the winning number using the random-number generator, along with the winning number;

a master server for outputting a drive control signal at a predetermined point of time at which the determination of the winning number is to begin, transmitting, to the game servers, the winning number determined by the random-number generator, and the image signal acquired by the relay camera; and

the game servers each selectively connected to the terminals via the Internet, each of the game servers managing

the progress of a lottery game in association with the connected terminals, and managing personal histories of users associated with the connected terminals, and a database.

2. The wire/wireless Internet lottery system according to claim 1, further comprising:

a common server for performing a user log-in test in association with each of the terminals, and linking the terminal to a selected one of the game servers; and

a database server for receiving lottery numbers selected by respective users, and the winning number via the game servers, recording the received lottery numbers and winning number, settling a premium based on the result of the lottery game, and updating the database, while performing collection of or search for desired information using the database.

3. The wire/wireless Internet lottery system according to claim 1, wherein the at least one random-number generator comprises a plurality of random-number generators corresponding to respective digits of each lottery number, the random-number generators being sequentially driven to determine associated digits of the winning number, respectively.

4. The wire/wireless Internet lottery system according to claim 1, wherein the random-number generator comprises:

the transparent case made of a transparent material, the case having a polygonal structure while having a plurality of protrusions at an inner surface thereof in order to allow the die received therein to be rotated in random directions;

a rotating device for rotating the case; and

a sensing unit for recognizing the number of points formed on an upper surface of the die seated on a bottom surface of the case in a state in which the rotation of the case is stopped, based on the combination of magnets attached to a lower surface of the die.

5. The wire/wireless Internet lottery system according to claim 4, wherein the sensing unit comprises:

a vertical moving member configured to be vertically movable through a through hole centrally formed at a bracket, to which the rotating device is mounted, the vertical moving member having a magnetic field sensor at an upper surface thereof to sense a combination of magnets attached to a lower surface of the die; and

a solenoid fixedly mounted to the bracket, and adapted to vertically move the vertical moving member.

Dated this 13th day of June, 2002

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Patent Attorneys for the Applicants
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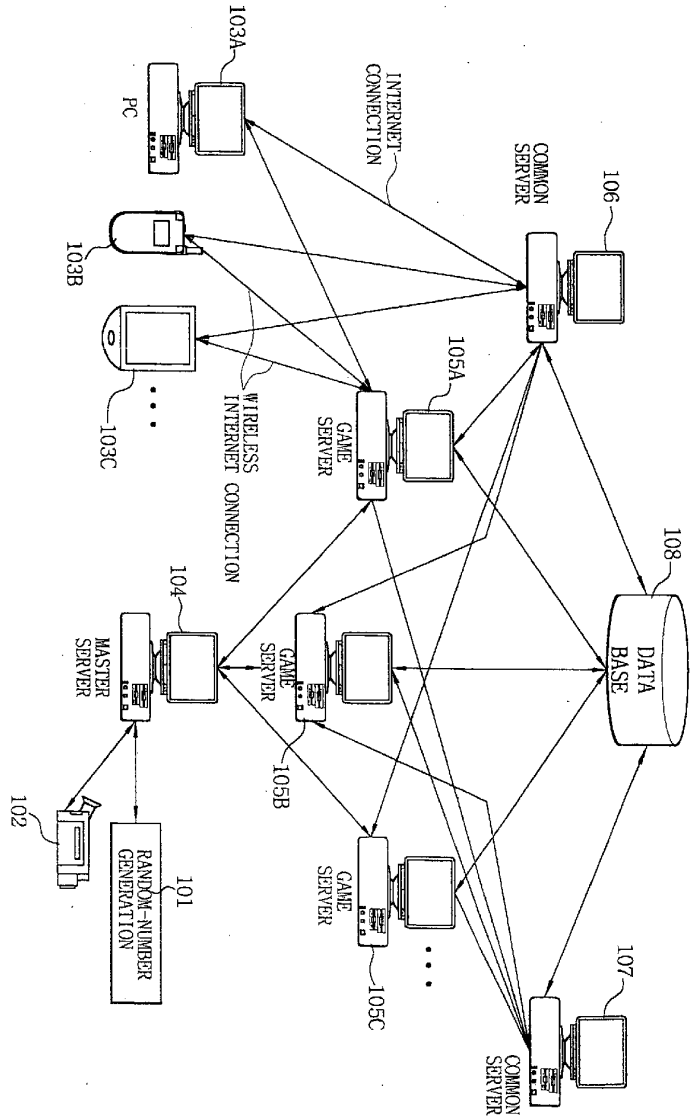

103A
PC
INTERNET CONNECTION
COMMON SERVER
106
103B
105A
GAME SERVER
103C
WIRELESS INTERNET CONNECTION
108
104
DATA BASE
MASTER SERVER
GAME SERVER
105B
102
101
RANDOM-NUMBER GENERATION
GAME SERVER
105C
107
COMMON SERVER

Fig.1

Fig.2

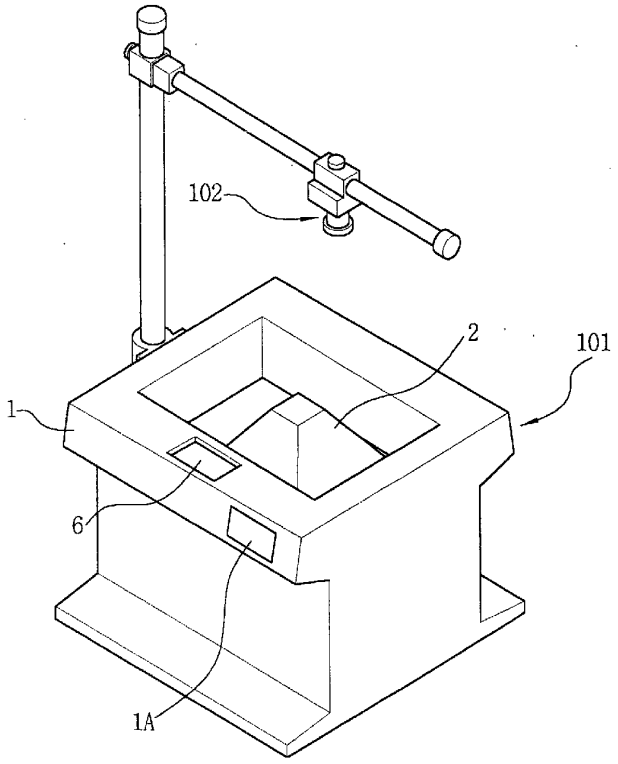


Fig.3

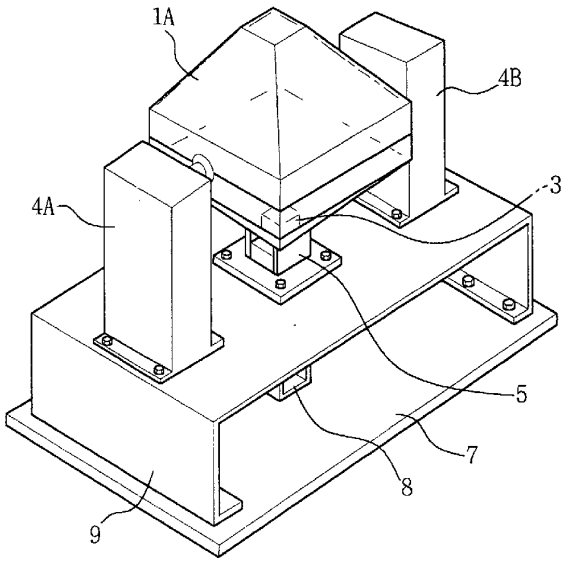


Fig.4

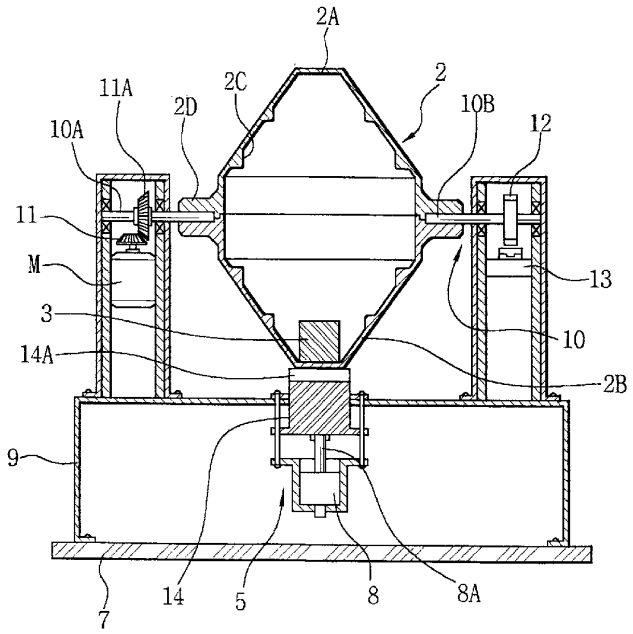


Fig.5

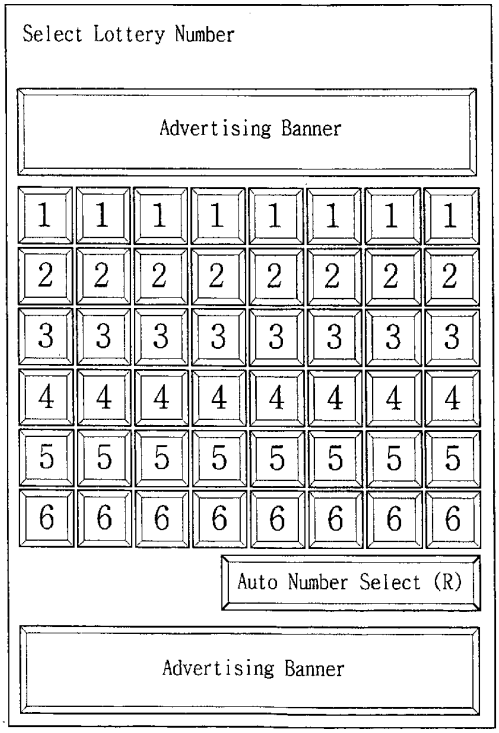

Select Lottery Number
Advertising Banner
1 1 1 1 1 1 1 1
2 2 2 2 2 2 2 2
3 3 3 3 3 3 3 3
4 4 4 4 4 4 4 4
5 5 5 5 5 5 5 5
6 6 6 6 6 6 6 6
Auto Number Select (R)
Advertising Banner

Fig.6

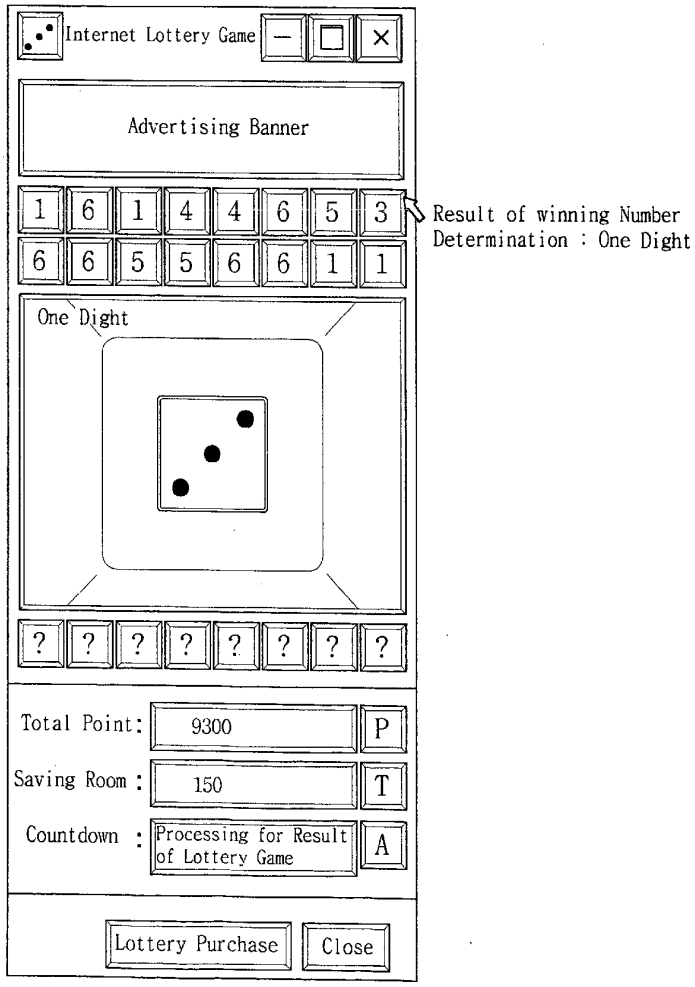
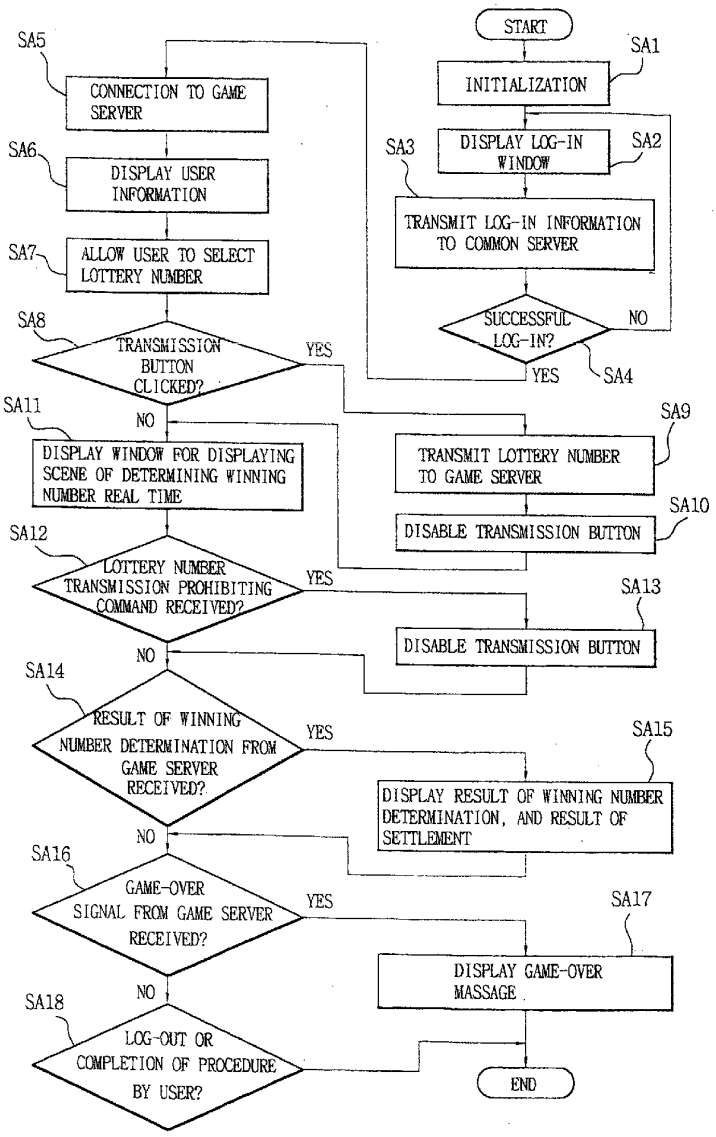
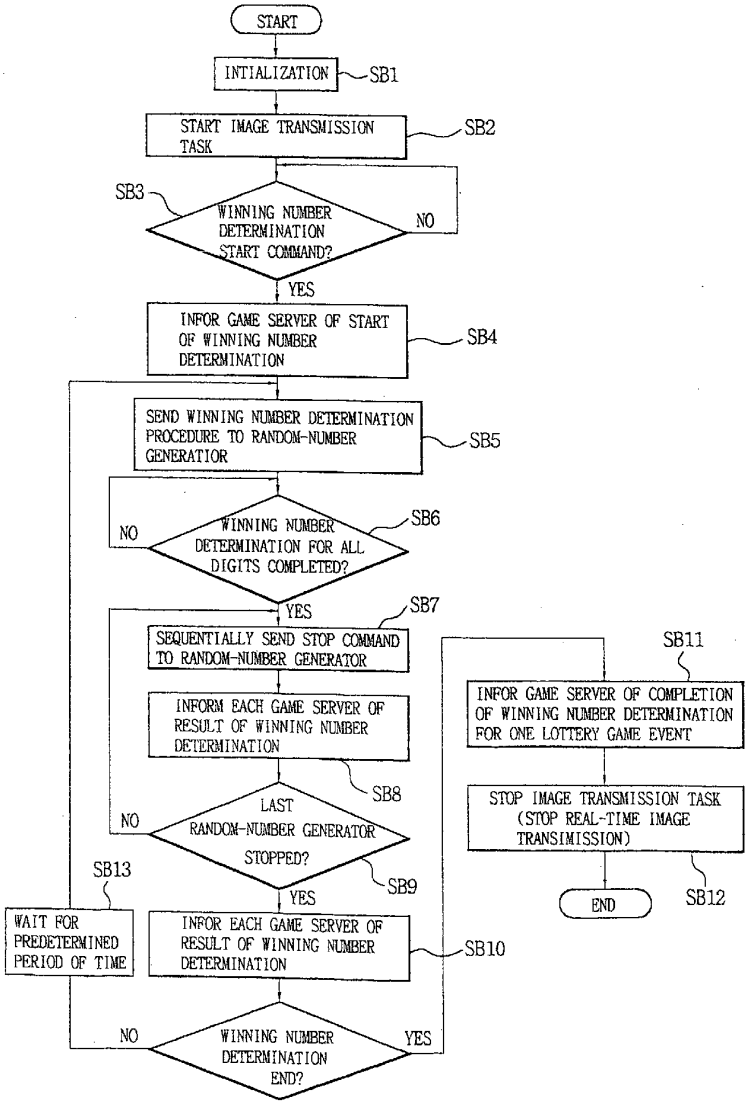

Internet Lottery Game
Advertising Banner
1 6 1 4 4 6 5 3
6 6 5 5 6 6 1 1
Result of winning Number Determination : One Dight
One Dight
? ? ? ? ? ? ? ?
Total Point: 9300 P
Saving Room : 150 T
Countdown : Processing for Result of Lottery Game A
Lottery Purchase
Close

Fig.7(a)


START
SA1
INITIALIZATION
SA2
DISPLAY LOG-IN WINDOW
SA3
TRANSMIT LOG-IN INFORMATION TO COMMON SERVER
SUCCESSFUL LOG-IN?
NO
YES
SA4
SA5
CONNECTION TO GAME SERVER
SA6
DISPLAY USER INFORMATION
SA7
ALLOW USER TO SELECT LOTTERY NUMBER
SA8
TRANSMISSION BUTTON CLICKED?
YES
NO
SA9
TRANSMIT LOTTERY NUMBER TO GAME SERVER
SA10
DISABLE TRANSMISSION BUTTON
SA11
DISPLAY WINDOW FOR DISPLAYING SCENE OF DETERMINING WINNING NUMBER REAL TIME
SA12
LOTTERY NUMBER TRANSMISSION PROHIBITING COMMAND RECEIVED?
YES
NO
SA13
DISABLE TRANSMISSION BUTTON
SA14
RESULT OF WINNING NUMBER DETERMINATION FROM GAME SERVER RECEIVED?
YES
NO
SA15
DISPLAY RESULT OF WINNING NUMBER DETERMINATION, AND RESULT OF SETTLEMENT
SA16
GAME-OVER SIGNAL FROM GAME SERVER RECEIVED?
YES
NO
SA17
DISPLAY GAME-OVER MASSAGE
SA18
LOG-OUT OR COMPLETION OF PROCEDURE BY USER?
END

7/12

Fig.7(b)


START
INTIALIZATION
SB1
START IMAGE TRANSMISSION TASK
SB2
SB3
WINNING NUMBER DETERMINATION START COMMAND?
NO
YES
INFOR GAME SERVER OF START OF WINNING NUMBER DETERMINATION
SB4
SEND WINNING NUMBER DETERMINATION PROCEDURE TO RANDOM-NUMBER GENERATOR
SB5
NO
WINNING NUMBER DETERMINATION FOR ALL DIGITS COMPLETED?
SB6
YES
SB7
SEQUENTIALLY SEND STOP COMMAND TO RANDOM-NUMBER GENERATOR
INFORM EACH GAME SERVER OF RESULT OF WINNING NUMBER DETERMINATION
SB8
NO
LAST RANDOM-NUMBER GENERATOR STOPPED?
SB9
YES
SB13
WAIT FOR PREDETERMINED PERIOD OF TIME
INFOR EACH GAME SERVER OF RESULT OF WINNING NUMBER DETERMINATION
SB10
NO
WINNING NUMBER DETERMINATION END?
YES
SB11
INFOR GAME SERVER OF COMPLETION OF WINNING NUMBER DETERMINATION FOR ONE LOTTERY GAME EVENT
STOP IMAGE TRANSMISSION TASK (STOP REAL-TIME IMAGE TRANSIMISSION)
END
SB12

8/12

Fig7(c)

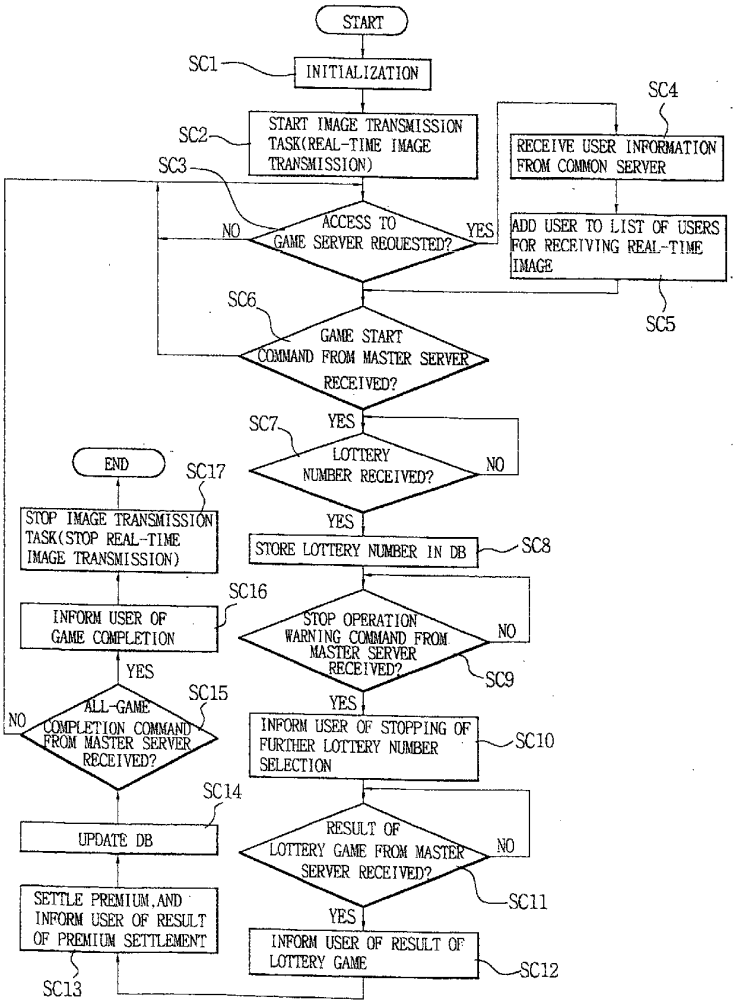

START
SC1
INITIALIZATION
SC2
START IMAGE TRANSMISSION TASK(REAL-TIME IMAGE TRANSMISSION)
SC3
ACCESS TO GAME SERVER REQUESTED?
NO
YES
SC4
RECEIVE USER INFORMATION FROM COMMON SERVER
ADD USER TO LIST OF USERS FOR RECEIVING REAL-TIME IMAGE
SC5
SC6
GAME START COMMAND FROM MASTER SERVER RECEIVED?
YES
SC7
LOTTERY NUMBER RECEIVED?
NO
YES
STORE LOTTERY NUMBER IN DB
SC8
STOP OPERATION WARNING COMMAND FROM MASTER SERVER RECEIVED?
NO
SC9
YES
INFORM USER OF STOPPING OF FURTHER LOTTERY NUMBER SELECTION
SC10
RESULT OF LOTTERY GAME FROM MASTER SERVER RECEIVED?
NO
SC11
YES
INFORM USER OF RESULT OF LOTTERY GAME
SC12
SETTLE PREMIUM, AND INFORM USER OF RESULT OF PREMIUM SETTLEMENT
SC13
UPDATE DB
SC14
ALL-GAME COMPLETION COMMAND FROM MASTER SERVER RECEIVED?
NO
SC15
YES
INFORM USER OF GAME COMPLETION
SC16
STOP IMAGE TRANSMISSION TASK(STOP REAL-TIME IMAGE TRANSMISSION)
SC17
END

Fig.7(d)

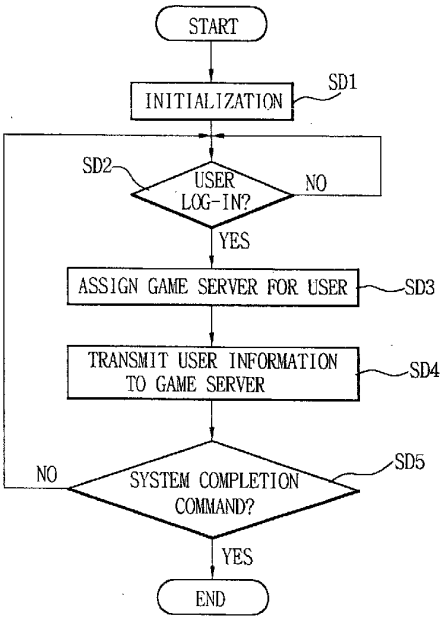

START
INITIALIZATION
SD1
SD2
USER LOG-IN?
NO
YES
ASSIGN GAME SERVER FOR USER
SD3
TRANSMIT USER INFORMATION TO GAME SERVER
SD4
SYSTEM COMPLETION COMMAND?
SD5
NO
YES
END

Fig.7(e)

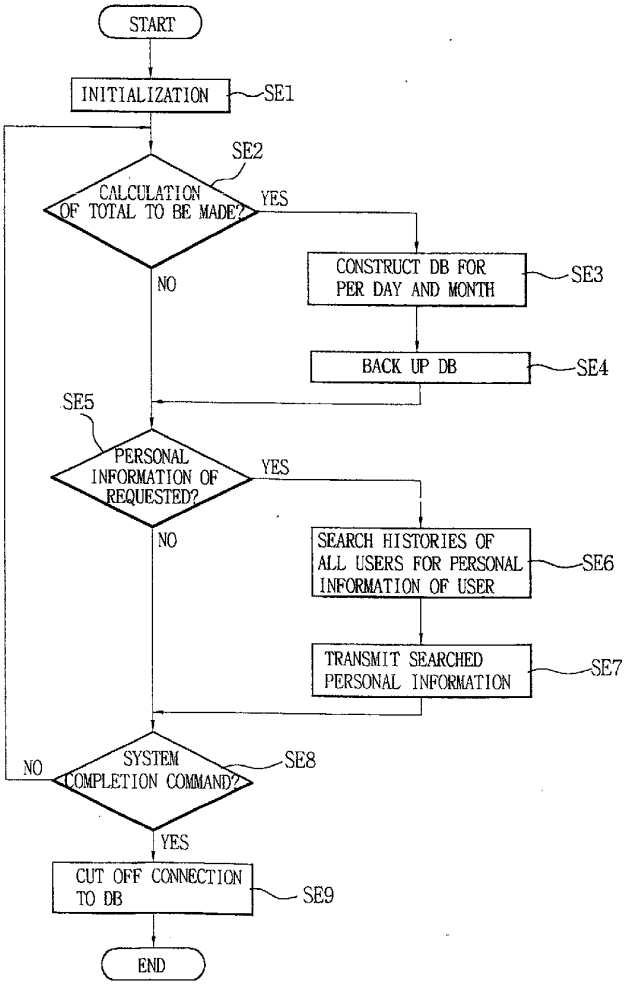

START
INITIALIZATION
SE1
SE2
CALCULATION OF TOTAL TO BE MADE?
YES
NO
CONSTRUCT DB FOR PER DAY AND MONTH
SE3
BACK UP DB
SE4
SE5
PERSONAL INFORMATION OF REQUESTED?
YES
NO
SEARCH HISTORIES OF ALL USERS FOR PERSONAL INFORMATION OF USER
SE6
TRANSMIT SEARCHED PERSONAL INFORMATION
SE7
SYSTEM COMPLETION COMMAND?
SE8
NO
YES
CUT OFF CONNECTION TO DB
SE9
END

Fig.8