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I, Yukie Hirose, hereby declare:

I possess advanced knowledge of the Japanese and English languages. The attached translation is, to the best of my knowledge and belief, a true and accurate translation from Japanese to English of Japanese Patent Application Laid-Open Publication No. H04-10191.

I declare under penalty of perjury that the foregoing is true and correct.

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Online-based Automated Software Vending Machine

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Description

1. Title of the Invention

Online-based Automated Software Vending Machine

2. What Is Claimed Is:

(1) An online-based, automated software vending machine being connected online via telephone line to a host station, in which various kinds of software are stored and managed, so as to provide an online supply of said various kinds of stored and managed software to a computer connected thereto, doing so on a rent-by-the-hour basis, said online-based, automated software vending machine comprising:

A first storage means for storing software rental times that are set via the user of said computer;

A second storage means for storing software transmitted from said host station;

A supply control means for controlling the supply of the software stored in said second storage means to said computer; and

A software purging means for automatically purging the software stored in said second storage means upon the expiration of the software rental time stored in said first storage means.

(2) The online-based, automated software vending machine according to Claim 1, wherein said software transmitted from said host station is superimposed with an encryption signal, said automated software vending machine further comprising: a decryption means, which is interpositioned between said second storage means and said supply control means in order to transmit said software, which is stored in the second storage means, to said supply control means while decrypting and eliminating said encryption signal.

(3) An online-based, automated software vending machine being connected online via telephone line to a host station, in which various kinds of software are stored and managed, so as to provide an online supply of said various kinds of stored and managed software to a computer connected thereto, doing so on a rent-by-the-hour basis or for purchase through communications-media-based sales, said online-based, automated software vending machine comprising:

A first storage means for storing software rental times or sales contract information set by the user of said computer;

A second storage means for storing software transmitted from said host station;

A supply/copy control means for controlling the supply of the software stored in said second storage means to said computer or copying said software to a specified storage medium in said computer, doing so based on the contractual contents stored in said first storage means; and

A software purging means for automatically purging the software stored in said second storage means upon the expiration of the software rental time stored in said first storage means, or upon the completion of the copying of the software stored in said second storage means.

(4) The online-based, automated software vending machine according to Claim 1, wherein:

Said software transmitted from said host station is superimposed with an encryption signal; and

Said automated software vending machine further comprises a decryption means, which is interpositioned between said second storage means and said supply/copy control means in order to transmit said software stored in said second storage means to said supply/copy control means while decrypting and eliminating said encryption signal.

3. Detailed Description of the Invention

[Applicable Industrial Application]

The present invention pertains to an online-based, automated software vending machine, which is connected online to a host station, which stores and manages various kinds of software, via telephone lines so as to provide online such stored and managed software to the computers of contract users on a pay-by-the-hour basis or for purchase through communications-media-based sales.

[Prior Art]

In recent years, we have witnessed the remarkable spread of personal computers, office computers, workstations and the like (hereinafter collectively referred to as "computers"). Additionally, there has been active pursuit of the development of software, which can be considered the motive power in the utilization of such computers. Moreover, the fields of such development encompass diverse, wide-ranging fields, ranging from

so-called business software (such as word processors, spreadsheet software, database software, etc.)--needless to say--to painting software, music software, game software, etc.

Now, lately such various kinds of software have at last become available in the market at relatively low prices, in the form of so-called software packages. Nonetheless, the reality is that many are still expensive in view of the degree of utilization and the cost value--not only for individual users, but also for corporate users, in which [such software packages] somewhat fail to meet the needs of computer users who would like to use various types of application software in an easy, simple, convenient manner. In other words, even if superior software is completed through development that requires enormous cost and effort, then the conventional means for introducing it to users has been, at best, only through the placement of advertisements in magazines/periodical journals, hosting large-scale presentation meetings intended for advertisement, or distributing a demo with limited functionality, etc., thus making it difficult to help users understand the superior functions of the software concerned in a manner that is effective, simple and convenient. Consequently, quite a few software products have ended up buried amid the clutter of the market without being truly used or utilized.

[Problems to Be Resolved by the Invention]

As such, conventionally there has been practically no environment or means for the introduction and utilization of such

[software] in an easy, simple, convenient way, even when the user side has a demand or desire for such software or when the software-house side, which engages in the development and sales of the software, wants users to truly utilize its superior software. Consequently, under the current circumstances software development and operation do not seem to be in a form that is truly desirable for said two parties.

The present invention was achieved in view of such an actual circumstance, and it is intended to provide an online-based, automated software vending machine that can supply various kinds of software provided by software houses online to the computers of contract users in an easy, simple, convenient manner and in an orderly manner, to thereby concurrently resolve the above-described inconveniences sustained by both the computer users and the software houses.

[Means for Resolving the Problems]

According to the present invention, assuming the installation of a host station capable of collectively storing and managing various kinds of software provided by various software houses, said host station and the present automated software vending machine are connected online via telephone lines in order to embody such an automated software vending environment. And the present automated software vending machine comprises at least the following elements:

(a) A first storage means for storing the software rental times that are set via the computer users, who have subscribed to an automated vending contract;

(b) A second storage means for storing software, which is transmitted from the aforementioned host station;

(c) A supply control means for controlling the supply of the software stored in said second storage means to the aforementioned target computers; and

(d) A software purging means for automatically purging the software stored in the aforementioned second storage means upon the expiration of the software rental time stored in the above-mentioned first storage means.

[Operational Advantages]

The above-mentioned first storage means is a storage means for storing the contractual contents of the automated vending contract concerned, so to speak. And the aforementioned second storage means is a storage means for storing the actual software, which is subscribed as per the automated vending contract. Hence, according to this automated software vending machine, the automated-vending contract software concerned, which is transmitted online from the aforementioned host station, is temporarily stored in the second storage means based on the

contract information stored in the first storage means. Then, said software stored in the second storage means is supplied to a computer intended for the use thereof through the supply control executed by the aforementioned supply control means. Moreover, because the software stored in the second storage means will be automatically purged by the aforementioned software purging means upon the expiration of the contract time stored in the first storage means, the minimum level of orderliness in terms of prohibiting the unlawful use of the software will also be maintained.

It should be noted that the second storage means, being a storage medium with a large capacity sufficient to collectively store all the software subscribed based on the aforementioned automated vending contract (e.g., consisting of a hard disk, etc.). The software (a program) is supplied from such a storage medium to the computer intended for the use of said software, thereby making it possible for said computer to assume this automated vending machine as a sort of external memory device and use it with a sufficient margin with respect to the storage capacity.

Additionally, in order to prohibit the unlawful use of software it is an effective method, for example, to superimpose an encryption signal on the software (thus protecting the software, so to speak) when the software is transmitted from the aforementioned host station.

In this case, the aforementioned automated vending machine further comprises (e) a decryption means, which is

interpositioned between the aforementioned second storage means and the aforementioned supply control means in order to transmit the aforementioned software being stored in the second storage means to the aforementioned supply control means while decrypting and eliminating the encryption signal.

The provision of a decryption means in such a configuration allows the software transmitted from the aforementioned host station to maintain its protected state while it is stored in the aforementioned second storage means so that the protection will be cleared for the first time when [the software] is supplied to the computer for which the use of the software is intended, thus achieving more orderly use.

Also, while reference is herein made only to the case of renting the software, which is stored at and managed by the aforementioned host station, on a pay-by-the-hour basis through said automated vending machine, it should be understood that a system for allowing the purchase of said software through communications-media-based sales may be incorporated in conjunction with such a rent-by-the-hour system.

[Embodiments]

Figure 7 shows the concept of an automated software vending environment that provides a premise for the use of the automated software vending machine as claimed by the present invention. As shown in said Figure 7, the present invention assumes the installation of a host station H, which can collectively store

and manage various kinds of software provided from various software houses or individuals. This host station H is mainly comprised of the following elements:

A storage part H1, which consists of a mass storage medium for the purpose of storing these various kinds of software;

A management part H2, which provides and executes the latter-mentioned various user services as said host station H, as it manages software stored in said storage part H1;

A modem H3, which is connected to a plurality of automated software vending machines as claimed by the present invention via telephone lines in order to modulate and demodulate a variety of information (including the software itself), which is transferred between these automated vending machines and the aforementioned management part H2, into signals of a predetermined format; and

A recording part H4 for collectively registering, through the aforementioned management part H2, primarily each user's software utilization status, contract record, etc., in the automated software vending environment concerned.

It should be noted that, in the example shown below, the aforementioned management part H2, when transmitting software to each automated software vending machine from said host station H, superimposes one or multiple encryption signals consisting of several predetermined patterns onto said software to be transmitted--thus protecting the software, so to speak--in order to thereby prevent the unauthorized use of said software.

Additionally, in said Figure 7, VM1 through VMn represent the present automated software vending machine connected to the aforementioned modem H3 of such a host station H via telephone lines. When software sold through said automated vending machines VM1 through VMn is actually used, these automated vending machines VM1 through VMn are externally connected to computers CP used by the respective users, as shown in said Figure 7, in combination. Figure 8 shows an external configuration of one embodiment of such an automated software vending machine VM. In the automated software vending machine shown in Figure 8, the reference numeral 11 represents a keyboard, the reference numeral 12 represents a display and the reference numeral 7 represents a floppy disk drive unit, which are connected to a computer's main body via appropriate cables (not shown) in such a manner that they are freely attachable and detachable. Among the keys illustrated in this Figure 8 on the above-mentioned keyboard 11:

The "M" key is for displaying a software menu screen;

The "R" key is for displaying the past usage record up to that point and the contract record, etc., of the software sold through the automated software vending machine concerned;

The "S" key is pressed to save the data and the like generated through the use of various kinds of software to a diskette (a floppy disk) inserted in the above-mentioned floppy disk drive unit 7;

The "O" key is pressed beforehand to execute a communications operation with the host station, such as the latter-described operation performed to place an order for software, through the above-mentioned keyboard 11 and the display 12 of the automated software vending machine;

The "C" key is pressed to call the host station;

The "Y" key is pressed to select "Yes" in response to the so-called "Yes (Y) or No (N)" questions from the automated software vending machine;

The "N" key is pressed to select "No" in response to the so-called "Yes (Y) or No (N)" questions from the automated software vending machine;

The key group 11a is a numeric key group;

The key group 11b is an arrow key group (or a cursor-movement key group); and

The [key] 11c represents the Enter key.

Figure 1 schematically shows the internal configuration of such an automated software vending machine presented as an embodiment. The following is an explanation of a specific configuration and functionality of said automated vending machine presented as an embodiment, with reference to said Figure 1.

In this automated vending machine, the reference numeral 1 represents a power supply device (a battery) for use in supplying power to each of the following elements constituting the automated software vending machine, and the reference numeral 2 represents a modem embedded in said automated vending machine in order to modulate and demodulate various kinds of information (including software), which is transferred from the above-mentioned host station H via telephone lines, into signals of predetermined formats.

The reference numeral 3 represents an input/output device primarily for use in controlling the input/output of the various signals to be transferred between the above-mentioned modem 2/the computer CP and the main body of the automated software vending

machine. This input/output device 3 comprises the following elements:

A computer interface 31 exclusively for the purpose of executing input/output control and the conversion of signal forms in order for such signals to be transferred between the computer CP and said automated software vending machine;

A decryption part 32 for use in decrypting the encryption n signal superimposed on the software to be transmitted from the host station H; and

A modem interface 33 exclusively for the purpose of executing input/output control and the conversion of signal forms in order for the signals to be transferred between the modem 2 and said automated software vending machine.

Additionally, in the present embodiment the reference numeral 4 represents a main control part (CPU) for the integrated control of various operations of the automated software vending machine. The reference numeral 51 represents a program memory (e.g., a ROM), which pre-stores various control programs to be executed by said main control part 4. The reference numeral 52 represents a data memory (e.g., a RAM) for the purpose of temporarily storing the data that is generated each time a control

operation is executed by the main control part 4, such data including various kinds of data such as the sales contract information input through the previously mentioned keyboard 11. Substantially, primary control and processing as said automated software vending machine are executed through the above-mentioned elements. It should be noted that the above-mentioned program memory 51 also comprises the following elements:

(a) A program for automatically calling out a host station via telephone lines based on a given predefined key operation;

(b) A program for automatically dispatching an equipment number unique to each of the automated software vending machines (e.g., the number information set by a DIP switch <not shown> is loaded into the data memory 52 at the time of startup) to the host station at the logical connection to said host station, i.e., at the time of line connection;

(c) A program for storing the information indicative of the encryption pattern of an encryption signal to be superimposed on the software at the time of software transmission from a host station (such information being assumed to be communicated from the host station along with the transmittal of said software) into the data memory 52 and controlling a decryption operation of the

decryption part 32 in accordance with the encryption pattern indicated by the stored information;

(d) A program for causing the software to be purged automatically from a hard disk drive unit 8 (to be described later) when the contract time stored in the data memory 52 is reached in the latter-mentioned "Rental Mode"; and

(e) A program for causing the software to be purged automatically from the hard disk drive unit 8 if the transmittal of software stored in the hard disk drive unit 8 has been completed in the latter-mentioned "purchase mode";

Etcetera, etcetera.

Additionally, in the automated vending machine presented as an embodiment, the reference numeral 6 represents a floppy disk control part for controlling the data read/write operations to be executed with a floppy disk DK inserted in the aforementioned floppy disk drive unit 7, based on commands from the main control part 4. The reference numeral 8 represents a hard disk drive unit for the purpose of storing the software transmitted from a host station H and the information including such software's accumulated usage record, accumulated contract record and the like.

The reference numeral 9 represents a hard disk control device for controlling read/write operations for the data pertaining to the above-mentioned hard disk drive unit 8 based on the commands from the above-mentioned main control part 4. And, the reference numeral 10 represents a console control part for the purpose of transmitting the user commands entered through the above-mentioned keyboard 11 to the main control part 4 and controlling the display operation of the above-mentioned display 12 based on the commands from the above-mentioned main control part 4.

It should be noted that examples of the diskette DK to be inserted in the above-mentioned floppy disk drive unit 7 include those that are generally called data disks as well as menu disks that are pre-distributed to the contract users (i.e., those who utilize the automated software vending machine). In this connection, the menu disk refers to a diskette for use in pre-storing the following:

- (a) Data pertaining to advertisement menu and order placement menu, such as a list, prices, etc., of all software programs stored and managed by the host station;
- (b) A program for displaying the above-mentioned menu data;

(c) A program for guiding an order placement operation,
etc.;

Etcetera, etcetera.

These programs and data are automatically read by the above-mentioned main control part 4 at the startup of said automated software vending machine. Obviously, it should be understood that these programs may be stored in the above-mentioned hard disk drive unit 8.

Next, the figures 2 through 4 show examples of the operations of such an automated software vending machine presented as an embodiment.

And the figures 5 and 6 show examples of the images to be displayed on the above-mentioned display 12 in the course of executing these operations.

With reference to the respective figures stated above, the following describes the actual user operations of said automated software vending machine being presented as an embodiment, as well as the specific operations of said automated vending machine based on said [actual user] operations.

Now, as shown in Figure 2, when the power to said automated vending machine is activated the main control part 4 begins to execute predetermined processing/control operations in any of the

following aspects, on the condition that the battery of the above-mentioned power supply device 1 is in the normal state, i.e., the normal power supply is enabled (steps S1 and S2 shown in Figure 2):

(1) If the "O" key on the keyboard 11 is pressed by the user to specify a software order-placement operation through said automated software vending machine (step S3 shown in Figure 2), then the above-mentioned advertisement menu will be provided in the form of a running display (step S5 shown in Figure 2) if the above-mentioned menu disk is inserted in the floppy disk drive unit 7 (step S4 shown in Figure 2), and [the control action] waits for the next user operation. Meanwhile, if the menu disk is inserted in and read on the computer side to which said automated vending machine is connected but without the user pressing the above-mentioned "O" key, then such menu display and other processing in accordance with the processing listed below will all be executed on the computer side. Additionally, regardless of the processing through said automated vending machine or the processing by the computer side, if the user performs an operation with which to cancel the previously executed operations (e.g., by simultaneously pressing the "Y" and "N" keys, though other key combinations may be arbitrarily defined), then the processing will return to the step S5 shown in Figure 2; and

(2) If the above-mentioned Enter key 11c is pressed within an appropriate timer time (e.g., five minutes) in the state where the above-mentioned advertisement menu is displayed (steps S6 and

S7 shown in Figure 2), then the main control part 4 will display a mode selection screen shown, for example, in Figure 5(a) on the display 12 (step S8 shown in Figure 2), thus entering the standby state.

Here, as shown in said Figure 5(a), this automated vending machine presented as an embodiment has the following five main processing modes:

1. Software Rental Mode

A mode whereby the software selected and thus specified by the user from among the software (or application programs) stored and managed in the host station is subscribed and distributed on a rent-by-the-hour basis;

2. Software Purchase Mode

A mode whereby the software selected and thus specified by the user from among the software (or application programs) stored and managed in the host station is subscribed and distributed as a purchase by the user;

3. Data Management Mode

A mode whereby a part of a storage part H1 (Figure 7) of the host station is provided for a user without a large-capacity storage device such as a hard disk

drive unit or a user attempting to build a large-scale database, to thereby provide a user data management service in collaboration with the host station;

4. Data Dispatch Mode

A mode whereby the data (including programs) created by the user of said automated software vending machine is dispatched and transmitted to the host station so as to provide or sell said data to the users (e.g., clients) of other automated vending machines;

5. Data Reception Mode

It is the mode in the normal state. For example, by pressing the aforementioned "C" key on the keyboard 11, the user can request the host station for transmittal of the desired data at any time.

For example, the subsequent processing will proceed according to each of these modes when the user presses the corresponding numeric keys. However, in order to simplify the explanation the following describes the specific processing operations in the particular two of the above-listed five modes (1. Software Rental Mode and 2. Software Purchase Mode):

First, if

1. Software Rental Mode

is selected here (step S9 shown in Figure 2) on the above-mentioned mode selection screen, the main control part 4 resumes and executes the predetermined processing in the following aspects listed below, based on the procedure shown in the figures 3(a) through 3(c):

(1) The user is asked, through the display 12, whether to select between displaying the software menu or displaying the user's past usage record of said automated vending machine (e.g., monthly) (step S100 shown in Figure 3(a)).

(2) If the aforementioned "R" key is pressed, thus leading to the determination that [the user] has specified the above-mentioned displaying of the usage record (step S101 in Figure 3(a)), then, based on the information such as an accumulated software usage record, an accumulated contract record and the like that are stored in the hard disk drive unit 8 at that moment, these pieces of information are displayed on the display 12 in a predetermined format (step S102 shown in Figure 3(a)).

Subsequently, when the Enter key 11c is pressed by the user (step S103 shown in Figure 3(a)), the [control action] returns to the above-mentioned processing (1) (step S100 shown in Figure 3(a)).

(3) Also, if the "M" key is pressed here to specify the above-mentioned display of the software menu (step S101 shown in Figure 3(a)), then a genre list having contents as shown in Figure 5(b) is displayed on the display 12 as the upper menu screen (step S104 shown in Figure 3(a)), followed by the standby state.

(4) If the user's desired classification number (e.g., "01" corresponding to "word processor") is entered for the

above-mentioned genre list through the use of the above-mentioned numeric key (step S105 shown in Figure 3(a)), then [the main control part 4] further displays a software list with contents as shown in Figure 5(c), for example (step S106 shown in Figure 3(a)), on the display 12, followed by a return to the standby state.

(5) If the user's desired software number, for example "0123" corresponding to "ABC Word" for example, is entered for this software list through use of the numeric keys (step S107 shown in Figure 3(a)), then [the main control part 4] displays only the specified product (software) on the display 12 and concurrently requests the user's confirmation as to whether to place an order for the specified product or not through the same display 12 (step S108 shown in Figure 3(a)). Here, if the "Y" key is pressed (step S109 shown in Figure 3(a)), then [the main control part 4] displays a new screen having contents as shown in Figure 5(d) as an order screen (step S110 shown in Figure 3(a)).

(6) In such a state where the order screen is displayed, [the main control part 4] accepts the user's password input or an order (in this mode, a contract time associated with rental by the hour) (step S111 shown in Figure 3(a)). Then, once the Enter key is pressed by the user to indicate that the input associated with all items has been completed (step S112 shown in Figure 3(a)), [the main control part 4] again displays the confirmation screen based on this contract on the display 12 (step S113 shown in Figure 3(a)) and concurrently prompts the user to proceed to a host-station call operation by completing the contract through

the display 12. In this example, the aforementioned operation is assumed to be executed by simultaneously pressing the above-mentioned "C" key and the Enter key (step S114 shown in Figure 3(a)).

(7) Here, if the user presses the "N" key to cancel the contract (step S115 shown in Figure 3(a)) or if a predetermined period of time (e.g., three minutes) has passed (step S116 shown in Figure 3(a)), the [control action] returns to the above-mentioned processing (1) (step S100 shown in Figure 3(a)); otherwise, it waits for the above-mentioned host-station call operation by the user in the state where the above-mentioned confirmation screen is shown on the display 12.

(8) When this host-station call operation is executed by the user (step S114 shown in Figure 3(a)), [the main control part 4] registers and stores the above-mentioned contractual contents into the above-mentioned data memory 52 (step S117 shown in Figure 3(a)) in order to automatically call the host station (step S118 shown in Figure 3(a)), and then it waits for the connection of line (step S119 shown in Figure 3(a)).

(9) In this example, [the main control part 4] holds the processing, waiting up to three calls for the line connection (step S120 shown in Figure 3(a)). If the line connection is not established even after three calls, [the main control part 4] will execute a busy indication through the display 12 (step S121 shown in Figure 3(a)) and wait again for the user's host-station call operation.

(10) Once the line connection with the host station is confirmed through the above-mentioned call operation, said main control part 4 transmits the above-mentioned equipment number of said automated vending machine and the contractual contents registered in the data memory 52 to the host station (step S122 shown in Figure 3(b)), and then it waits for the determination regarding the validity of the user qualification by the host station (step S123 shown in Figure 3(b)).

(11) If the result of the determination deems the user's qualification to be invalid, an alert message (such as "Wrong password") is displayed on the display 12 (step S124 shown in Figure 3(b)), whereupon the display returns to the previous order screen (step S110 shown in Figure 3(a)).

(12) If the user's qualification is deemed to be valid in the determination of the user qualification, then the above-mentioned contract software is transmitted from the host station in the protected state as previously described (superimposed with an encryption signal) (step S125 shown in Figure 3 (b)). Therefore, said automated vending machine (the main control part 4) stores the transmitted software in the above-mentioned hard disk drive unit 8 in the protected state (step S126 shown in Figure 3(b)) and stores the status information (added to the transmitted software) indicative of the encryption pattern of the encryption signal, which is superimposed on the software at that time, into the aforementioned data memory 52, thereby

disconnecting the above-mentioned logically connected line upon the completion of the transmittal (step S127 shown in Figure 3(b)).

(13) Subsequently, the main control part 4 starts a timer embedded therein (hereafter referred to as a "contract timer") (step S128 shown in Figure 3(b)) and displays a screen, for example as shown in Figure 5(e), on the display 12 as the software usage information (step S129 shown in Figure 3(b)). It should be noted that this usage information is always displayed on the display 12 until the contract time is reached while the information in the "Remaining Time" box is being updated. Additionally, said usage information can be displayed on the display of the computer CP being used in the subsequent operation mode "Computer Operation." In this case, by pressing a given predefined key (e.g., the "Home" key), it is shown as a window in a part of said display screen.

Through the processing of (1) through (13) described above, the software subscribed to a rental contract is stored in the hard disk drive unit 8 within said automated vending machine. Subsequently, the [process] continues to the operation mode based on "Computer Operation," whereby the secured software is actually used on the computer CP. Then, the main control part 4 continues to the processing listed below:

(14) On the condition that said automated vending machine is connected to the computer PC (step S130 shown in Figure 3(b)), the aforementioned decryption part 32 enters an activated status and subsequently transmits a file (program), which is required

each time, to the target computer concerned through the aforementioned computer interface 31 so as to store said file (program) into the system memory of said target computer (step S131 shown in Figure 3(b)), doing so in accordance with an operation of the computer CP by a user, i.e., an operation for the purpose of executing the contract software (an application program). It should be noted that, while the computer interface 31 functions as an interpreter between the program stored in the hard disk drive unit 8 of said automated vending machine and the above-mentioned target computer, the computer interface 31 also has a function capable of preventing the unauthorized use of the software being subscribed to a rental contract, for example, by ignoring any command to forcibly copy any file stored in the hard disk drive unit 8 to the computer side (e.g., a copy command) that is entered from the computer side to said automated vending machine. Also in this event, it is as previously described that the decryption part 32 eliminates the protection (or decrypts and eliminates the superimposed encryption signal) of the transmitted software concerned, based on the information indicative of the encryption pattern stored in the data memory 52 at that moment.

(15) Concurrently therewith, the main control part 4 consistently monitors the contract time by referencing the above-mentioned contract timer (step S132 shown in Figure 3(b)) while monitoring computer operations for ending the execution of the contract software concerned (an application program), such as the pressing of the "End" key by the user for example, through

the above-mentioned computer interface 31 (step S133 shown in Figure 3(b)). Then, if an end operation by the user is executed prior to the expiration of the contract time, [then the main control part 4] asks the user for the confirmation thereof on the display of the target computer or the display 12 attached to the automated vending machine concerned (step S134 shown in Figure 3(b)). Furthermore, if the "Y" key is pressed on the target computer or said automated vending machine (step S135 shown in Figure 3(b)), then the above-mentioned contract timer in the main control part 4 will stop temporarily (step S136 shown in Figure 3(b)). Additionally, if it is determined that the contract time has been reached during the above-mentioned monitoring of the contract time (step S132 shown in Figure 3(b)), this contract timer will also be stopped temporarily (step S137 shown in Figure 3(b)). It should be further understood that, as to the monitoring of the contract time, the processing may be configured into an aspect whereby the user is notified of the expiration before a certain period of time (e.g., five minutes).

(16) After the contract timer is stopped in this way, [the main control part 4] displays a message (e.g., "Data is saved. Please insert a data disk into the floppy disk drive unit and press the Enter key when ready") on one or both of the above-mentioned displays and then enters the standby state (steps S138 and S139 shown in Figure 3(c)).

(17) Subsequently, if the Enter key is pressed by the user (such an operation may be performed on the computer side or the

automated vending machine side), then [the main control part 4] saves the previously created data to the hard disk drive unit 8 and the data disk (at either the computer side or the automated vending machine side) (step S140 shown in Figure 3(c)), thus automatically calling the host station as described above (step S141 shown in Figure 3(c)), and then waits for the line connection (step S142 shown in Figure 3(c)).

(18) Herein, [the main control part 4] waits up to three calls for the line connection (step S143 shown in Figure 3(c)). If the line connection is not still established after three calls, then [the main control part 4] will execute the above-mentioned automated host-station call again.

(19) Once the line connection with the host station is confirmed, said main control part 4 displays an end-mode selection screen (e.g., "A. Do you want to end? B. Do you want to extend the time?") on the display (at either the computer side or the automated vending machine side) (step S144 shown in Figure 3(c)) and waits for the user's selection.

(20) If the user herein selects "End," (step S145 shown in Figure 3(c)), then said main control part 4 switches the above-mentioned display screen to, for example, the screen shown in Figure 5(f) as a settlement screen (step S146 shown in Figure 3(c)) and settles the account payable based on the actual execution time of the contract software. (In the case of the end due to the maturation of the contract time, the execution time is the contract time; in the case of the end halfway through the contract time,

the execution time is a time from the startup of the above-mentioned contract timer to the discontinuation thereof by the above-mentioned processing (15).) Then, the content of said settlement is transmitted to the host station (step S147 shown in Figure 3(c)) and written to a predetermined record-data storage area of the hard disk drive unit 8 (step S148 shown in Figure 3(c)), thereby disconnecting the logical line connection state at that point in time (step S149 shown in Figure 3(c)). Furthermore, [the main control part 4] automatically deletes the contract software concerned, which is stored in the hard disk drive unit 8 (step S150 shown in Figure 3(c)), thereby ending all processing associated with "Rental Mode" as said automated software vending machine.

(2I) Meanwhile, if the user selects "Extend Time" (step S151 shown in Figure 3(c)), then said main control part 4 switches the above-mentioned screen on the display back to the order screen (which is equivalent to the previously described screen shown in Figure 5(d)) (step S152 shown in Figure 3(c)), accepts the re-order input associated with said "Extend Time" (step S153 shown in Figure 3(c)), subsequently displays a confirmation screen again (step S155 in Figure 3(c)) when the user presses the Enter key (step S154 shown in Figure 3(c)), and then updates the contractual contents (or the contract time) registered in the aforementioned data memory 52 (step S157 shown in Figure 3(c)) if the user presses the Enter key again (step S156 shown in Figure 3(c)), thereby disconnecting the line (step S158 shown in Figure 3(c)). Then,

the contract timer, which was stopped once, is resumed (step S159 shown in Figure 3(c)), whereupon [the control action] returns to the processing of step S129 shown in Figure 3(b), whereby the previous software usage information is displayed (see Figure 5(e)).

As described above, in this "Rental Mode," because the software stored and managed in the host station and the usage time thereof can be freely selected and set by the user, the software can be used in an easy, simple, convenient manner regardless of the type of software.

Next, in the above-mentioned mode selection screen (see step S8 of Figure 2 and Figure 5(a)), if

2. Software Purchase Mode

is selected by the user (step S10 shown in Figure 2), then the main control part 4 will resume and execute the predetermined processing in the following aspects based on the procedures shown in the figures 4(a) and 4(b):

(1) Through the display 12, the user is asked whether to select between the display of a software menu or the display of the past usage record (e.g., monthly) of said automated vending machine by the user concerned (step S200 shown in Figure 4(a)).

(2) Here, if "R" key is pressed, thus leading to the determination that [the user] specifies the display of the usage record (step S201 shown in Figure 4(a)), an accumulated software usage record, an accumulated contract record and the like stored in the hard disk drive unit 8 at that moment will be displayed

on the display 12 in a predetermined format (step S202 shown in Figure 4(a)). Subsequently, when the Enter key 11c is pressed by the user (step S203 shown in Figure 4(a)), [the control action] returns to the above-mentioned processing (1) (step S200 shown in Figure 4(a)).

(3) Additionally, if the "M" key is pressed, thus leading to the determination that [the user] specifies the display of the software menu (step S201 shown in Figure 4(a)), [then the main control part 4] will display a genre list with contents such as those shown in Figure 5(b), for example, on the display 12 (step S204 shown in Figure 4(a)), and will then enter the standby state.

(4) If the user inputs a desired classification number (e.g., "01" corresponding to "Word processor") for the displayed genre list through the numeric keys (step S205 shown in Figure 4(a)), then the main control part 4 will further display a software list with contents as shown in Figure 6(a), for example, on the display 12 as a lower menu screen (step S206 shown in Figure 4(a)), and will then return to the standby state.

(5) If the user inputs a desired software number (e.g., "0123" corresponding to "ABC Word") from the software list, likewise through the numeric keys (step S207 shown in Figure 4(a)), then this time [the main control part 4] will display only the specified product (software) on the display 12 and thereby request that the user, through said display 12, indicate whether he or she would like to order said specified product (step S208 shown in Figure 4(a)). Here, if the user presses the "Y" key (step S209

shown in Figure 4(a)), then a new screen with contents shown in Figure 6(b), for example, is displayed as an order screen on said display 12 (step S210 shown in Figure 4(a)).

(6) [The main control part 4] accepts the password from the user in the state where the order screen is displayed (step S211 shown in Figure 4(a)), and then, once the user indicates the completion of the password entry by subsequently pressing the Enter key (step S212 shown in Figure 4(a)), the confirmation will again be shown on the display screen based on the relevant contractual contents on the display 12 (step S213 shown in Figure 4(a)) and the user will be prompted to execute a host-station call operation based on the completion of subscription to the contract through said display 12. This operation is performed by pressing the above-mentioned "C" key and the Enter key at the same time, as previously described (step S214 shown in Figure 4(a)).

(7) Here, if the user presses the "N" key to thereby cancel the contract (step S215 shown in Figure 4(a)), or if a predetermined waiting time (e.g., three minutes) has passed (step S216 shown in Figure 4(a)), then [the control action] will return to the processing of (1) described above (step S200 shown in Figure 4(a)); otherwise, [the main control part 4] will wait for the above-mentioned host-station call operation by the user in the state where the above-mentioned confirmation screen is displayed on the display 12.

(8) When the above-mentioned host-station call operation is executed by the user (step S214 shown in Figure 4(a)), [the

main control part 4] registers and stores the above-mentioned contractual contents into the aforementioned data memory 52 (step S217 shown in Figure 4(a)), automatically calls the host station (step S218 shown in Figure 4(a)) and then waits for the connection of line (step S219 shown in Figure 4(a)).

(9) In this case as well, [the main control part 4] holds processing, waiting up to three calls for a line connection (step S220 shown in Figure 4(a)). However, if the line connection is not established even after three calls, [then the main control part 4] will show a busy indication on the display 12 (step S221 shown in Figure 4(a)) and again wait for a host-station call operation by the user.

(10) Once the line connection with the host station is confirmed through the above-mentioned call operation, said main control part 4 transmits, to the host station, the equipment number of the automated vending machine concerned and the contractual contents registered in the data memory 52 (step S222 shown in Figure 4(b)) and then waits for the host station to validate the user's qualification (step S223 shown in Figure 4(b)).

(11) If the result of the validation process deems the user qualification to be invalid, an alert message (such as "Wrong password") is displayed on the display 12 (step S224 shown in Figure 4(b)), whereupon the display returns to the previous order screen (step S210 shown in Figure 4(a)).

(12) If said user qualification is deemed to be valid in the determination of the user qualification, the above-mentioned

contract software is transmitted from the host station in the previously described protected state (superimposed with an encryption signal) (step S225 shown in Figure 4 (b)). Accordingly, said automated vending machine (the main control part 4) stores said transmitted software in the above-mentioned hard disk drive unit 8 while maintaining the protected state (step S226 shown in Figure 4(b)) while storing the information (added to said transmitted software) indicative of the encryption pattern of the encryption signal superimposed on the software concerned into the data memory 52, and disconnects the above-mentioned logically connected line upon the completion of the transmittal (step S227 shown in Figure 4(b)).

(13) Next, the main control part 4 displays a message (such as, "The software you subscribed to a contract will be copied to your computer. Please click the Enter key when your computer and a copy-destination disk are ready") and waits in the standby state (steps S228 and S229 shown in Figure 4(b)).

(14) If the Enter key is pressed by the user, then the decryption part 32 will enter the activated status and the purchased contract software stored in the hard disk drive unit 8 will be copied to the user-specified copy destination disk loaded on the computer side, doing so via the aforementioned computer interface 31 (step S230 shown in Figure 4(b)). It should be noted that the aforementioned decryption part 32, in this event as well, eliminates the protection of the copied software concerned (decrypts and eliminates the superimposed encryption signal)

based on the information indicative of the encryption pattern stored in the data memory 52 at that moment.

(15) Once it is confirmed that the copying of the software has been completed as described above (step S231 shown in Figure 4(b)), the main control part 4 lastly displays an end screen (e.g., the screen shown in Figure 6(c)) on the display 12 (step S232 shown in Figure 4(b)), writes the contents of the purchase contract concerned (the contents of the settlement of the account payable), which are stored in the data memory 52 at that moment, to the aforesaid given record-data storage area of the hard disk drive unit 8 (step S233 shown in Figure 4(b)), and then automatically deletes the contract software from the hard disk drive unit 8 (step S234 shown in Figure 4(b)). Subsequently, the main control part 4 ends all processing associated with the "Purchase Mode" as said automated software vending machine.

As described above, in said "Purchase Mode" the software stored and managed in the host station can be freely selected and purchased online by a contract user, thus making it possible to achieve the use (i.e., the purchase) of such stored software in an easy, simple, convenient manner.

Furthermore, regardless of whether [the user selects] the previously described "Rental Mode" or the "Purchase Mode," each contract software transmitted from the host station and stored in a hard disk drive unit 8 is immediately deleted after the expiration of the contract while being kept protected until it is supplied or copied to the computer intended for said supply

or copy, whereby the protection is cleared only when the software is supplied or copied to the computer. Accordingly, the operation of the software in the above-mentioned online environment is extremely secure, allowing orderliness in the operation to be maintained in good condition. Moreover, in providing the above-mentioned protection, because a plurality of encryption patterns is prepared for the decryption and elimination, the superimposition of an encryption signal and the decryption and elimination of said encryption signal are executed with different patterns each time these operations are executed, thereby reducing the risk of unauthorized decryption thereof by a third party.

It should be noted that the detail procedures of the following other modes than the "Rental Mode" and "Purchase Mode" are not particularly illustrated herein:

3. Data Management Mode
4. Data Dispatch Mode
5. Data Reception Mode

However, each of these modes is designed to provide the user with guidance for required operations each time such operations are executed, so that [the user] can respectively select an applicable mode on the previously described mode selection screen (step S8 shown in Figure 2 and Figure 5(a)) and thus automatically call a host station so as to execute each of the above-described services with said host station thus called. The modes of

transferring various kinds of data in these events are basically equivalent to those described above. It should be noted that, if the user of the first automated software vending machine sends and transmits a program or data created by him- or herself to the host station in the above-mentioned "4. Data Dispatch Mode" in order to provide the program or data to the user of the second automated software vending machine, and when the user of the second automated software vending machine receives the above-mentioned program or data thus created from the host station in the above-mentioned "5. Data Reception Mode" to thereby acquire the program or data, then a corresponding sales record is recorded into a recording part (one area in the hard disk drive unit 8) of the first automated software vending machine; a corresponding purchase record is recorded into the recording part (likewise, one area in the hard disk drive unit 8) of the second automated software vending machine; and the corresponding sale record and purchase record, i.e., a trading record, are recorded into the recording part H4 (see Figure 7) of the host station.

Now, while it is assumed, in the automated software vending machine according to the above-mentioned embodiment, that the automated vending machine itself comprises a keyboard 11, a display 12 and a floppy disk drive unit 7 as shown in Figure 8, the automated software vending machine may alternatively have an external appearance as illustrated in Figure 9, i.e., a type that does not comprise a keyboard, a display or a floppy disk drive unit being provided thereon but instead uses said elements

provided to a computer connected to the automated software vending machine, for example.

More specifically, this type of automated software vending machine is configured without the floppy disk control part 6, the floppy disk drive unit 7, the console control part 10, the keyboard 11 and the display 12 shown in Figure 1. As such, while all operations therein are executed through a computer, the basic functions and processing modes are the same as the type of automated software vending machine previously illustrated in Figure 8. It should be noted that, in Figure 9, the reference numeral 13 represents an indicator for respectively indicating, with lamps, "whether access is authorized or not," "whether the line is connected or not," and "whether the battery level is adequate or not," and the reference numeral 14 represents an accommodation part for accommodating a power cord, a computer connection cable and a telephone line connection cable.

Additionally, in the case of this type of the automated software vending machine, the previously mentioned menu disk is inserted and thus used in the floppy disk drive unit of the computer, or it is no longer required in the event the function thereof is doubled by the hard disk drive unit 8. (Obviously, the same applies to the previously described type of automated software vending machine shown in Figure 8.) Moreover, the shapes, specifications, etc., for the realization of such an automated software vending machine are not limited to these embodiments but may be configured arbitrarily. For example, an extension slot normally prepared on

a computer may be used to realize said automated software vending machine as a so-called extension board that is inserted and thus loaded into the extension slot.

Additionally, while the automated software vending machine is assumed to be provided with the aforementioned five modes (see Figure 5(a)) in the description of the above-mentioned embodiment, such a configuration may be set arbitrarily because the aforementioned purpose can be accomplished insofar as it is provided with at least the "Rental Mode" (or only the "Rental Mode") and the "Purchase Mode." Moreover, in this case it is not imperative to protect the software when this is transmitted from a host station, but the minimum level of orderliness can be maintained only by deleting the software concerned upon the expiration of the contractual contents.

[Effects of the Invention]

As described above, according to the present invention, only a simple procedure is required to automatically supply various kinds of software provided by software houses to the computer of a contract user through online means. Accordingly, the computer user can use the desired software in an easy, simple, convenient manner. Moreover, according to the present invention, the minimum level of orderly use of such software can be maintained in the preferable manner.

Additionally, owing to the environment in which the software is supplied in an orderly way through an easy, simple

and convenient manner, superior software will never be buried but will instead be made available for more use and active application while concurrently allowing the opinions of more users to be reflected, eventually leading to the further improvement of such software in a good sense.

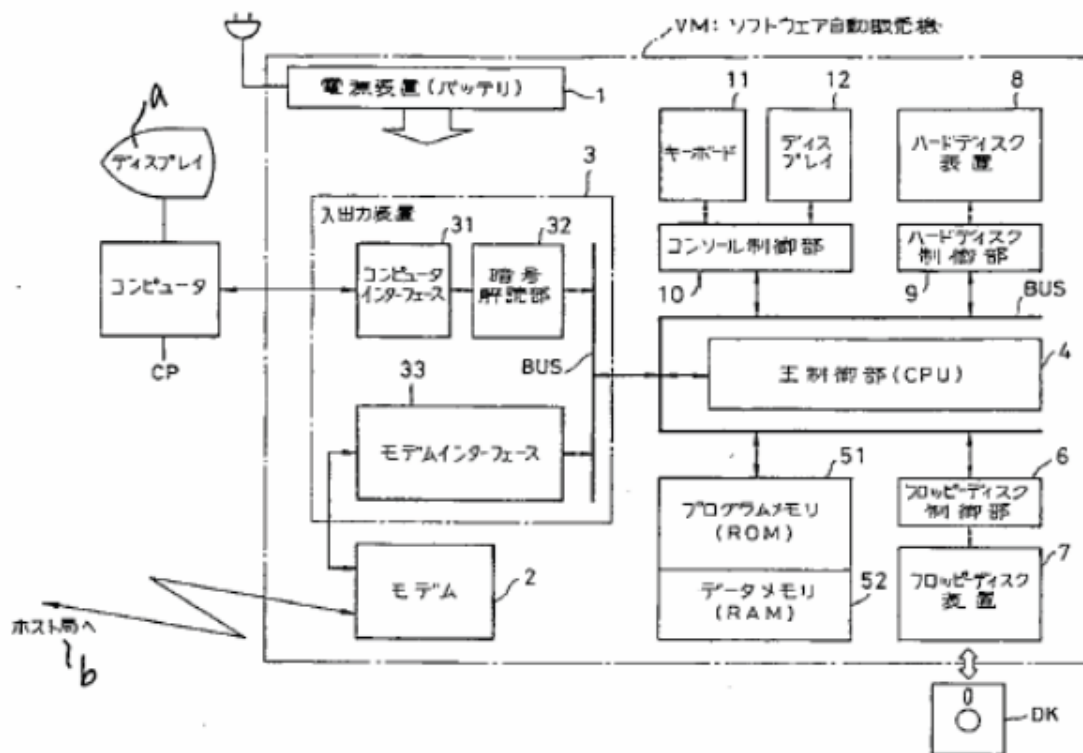
4. Brief Explanation of the Drawings

Figure 1 is a block diagram that illustrates an internal configuration of one embodiment of the automated software vending machine as claimed by the present invention. Figure 2 is a flowchart that shows a processing procedures and an operation example up to the selection of a processing mode according to the automated vending machine presented as an embodiment. Figure 3 is a flowchart that shows the processing procedure and an operation example in the "Rental Mode" according to said automated vending machine presented as an embodiment. Figure 4 is a flowchart that shows the processing procedure and an operation example in the "Purchase Mode" according to the automated software vending machine presented as an embodiment. Figure 5 shows the transition of display screens in the above-mentioned "Rental Mode." Figure 6 shows the transition of display screens in the above-mentioned "Purchase Mode." Figure 7 is a block diagram that illustrates a concept of an automated software vending environment that provides a premise of the invention. Figure 8 is a perspective view that illustrates an example of an external structure of the above-mentioned automated software vending machine presented as

an embodiment. Figure 9 is a perspective view that illustrates another example of said external structure.

H ... host station; VM ... automated software vending machine; CP ... computer; 1 ... power supply unit; 2 ... modem; 3 ... input/output unit; 31 ...computer interface; 32 ... decryption part; 33 ... modem interface; 4 ... main control part; 51 ... program memory; 52 ... data memory; 6 ... floppy disk control part; 7 ... floppy disk drive unit; 8 ... hard disk drive unit; 9... hard disk control part; 10 ... console control part; 11 ... keyboard; 12 ... display

Agent of the Applicant: Takahisa Kimura [personal seal]



第 1 図

FIG. 1

a: Display

b: To host station

VM: Automated software vending machine

CP: Computer

1: Power supply unit (battery)

2: Modem

3: Input/output unit

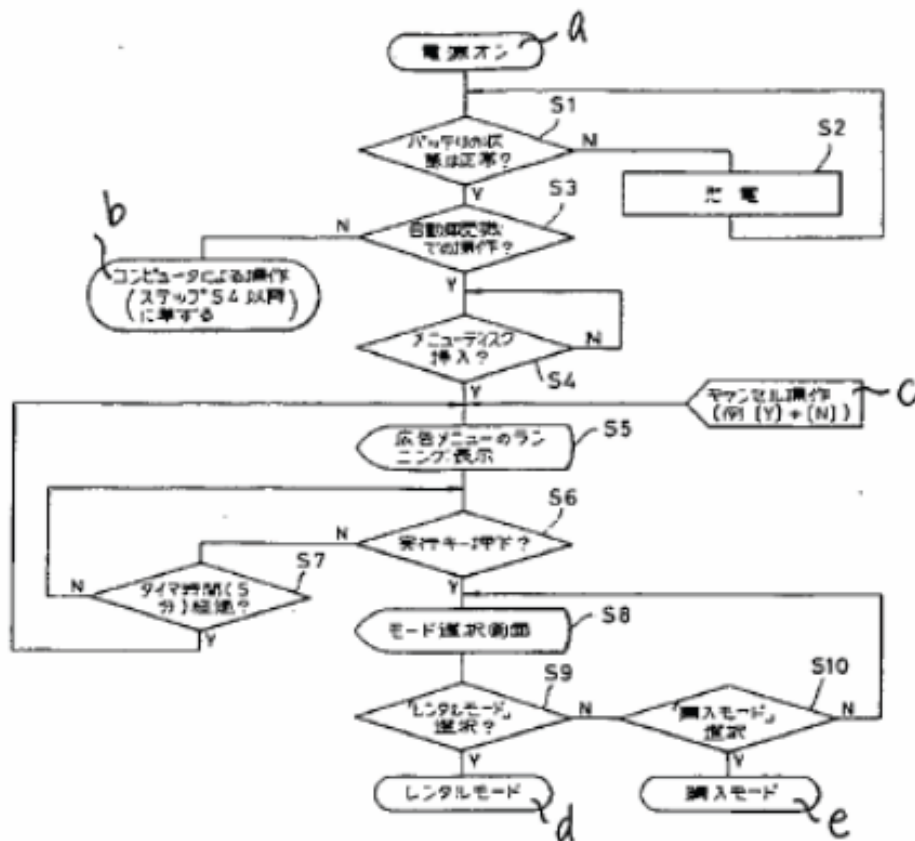
4: Main control part (CPU)

6: Floppy disk control part

7: Floppy disk drive unit

8: Hard disk drive unit

- 9: Hard disk control part
- 10: Console control part
- 11: Keyboard
- 12: Display
- 31: Computer interface
- 32: Decryption part
- 33: Modem interface
- 51: Program memory (ROM)
- 52: Data memory (RAM)



第2図

FIG. 2

a: Power on

b: Operation by computer (equivalent to step 4 and the subsequent steps)

c: Cancel operation (e.g., [Y] + [N])

d: Rental mode

e: Purchase mode

S1: Is the battery status normal?

S2: Charge

S3: Operation on automated vending machine?

S4: Has a menu disk been inserted?

S5: Running-display of advertisement menu

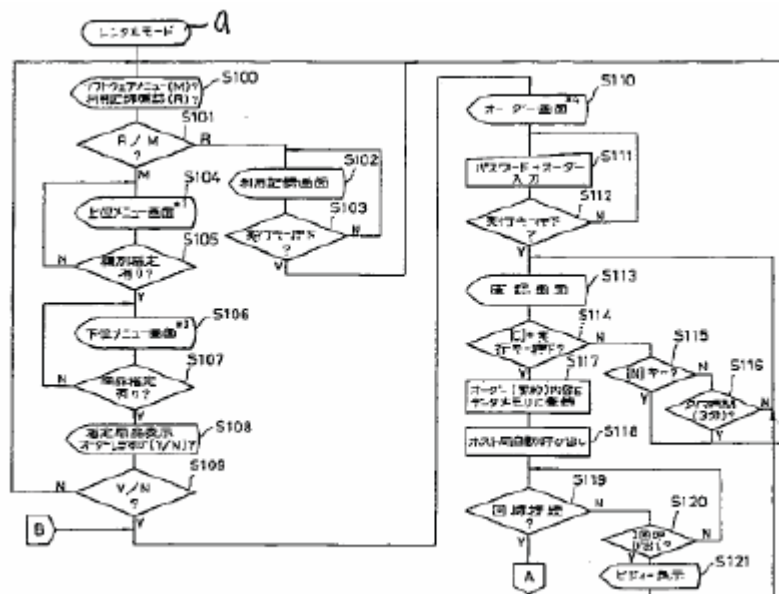
S6: Is the Enter key pressed?

S7: Has the timer time (five minutes) passed?

S8: Mode selection screen

S9: Is "Rental ode" selected?

S10: Is "Purchase mode" selected



第3図 (a)

FIG. 3(a)

a: Rental mode

S100: Software menu (M)? Use record confirmation (R)?

S102: Usage record menu

S103: Is the Enter key pressed?

S104: Upper-level menu screen^{*2}

S105: Has a classification been specified?

S106: Lower-level menu screen^{*3}

S107: Has a product been specified?

S108: Display specified product. Do you want to order (Y/N)?

S110: Order screen^{*4}

S111: Enter password and order

S112: Is the Enter key pressed?

S113: Confirmation screen

S114: [C] + enter keys pressed?

S115: [N] key?

S116: Timer time (three minutes)?

S117: Register order (contract) contents into data memory

S118: Automatically call host station

S119: Is line connected?

S120: Called three times?

S121: Busy indication

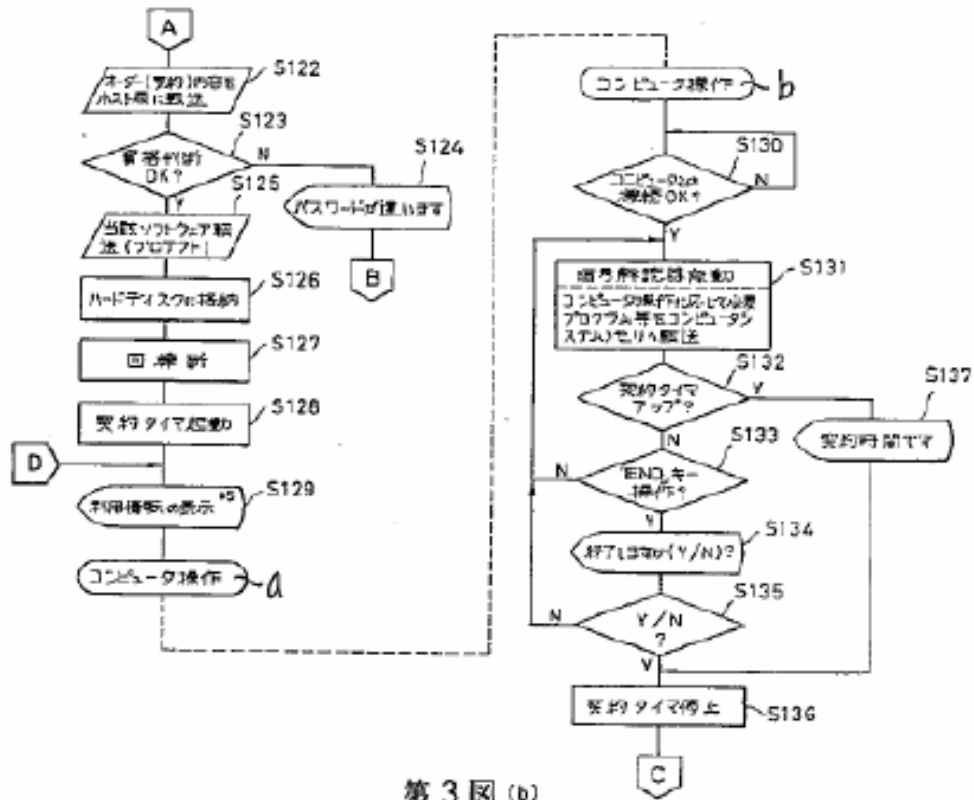


FIG. 3(b)

a: Computer operation

b: Computer operation

S122: Transmit order (contract) contents to host station

S123: Is the qualification deemed OK?

S124: Wrong password

S125: Transmit software concerned (protect)

S126: Store into hard disk

S127: Disconnect line

S128: Start contract timer

S129: Display usage information*5

S130: Is the connection with computer OK?

S131: Activate decryption device: In accordance with computer operation, transmit necessary program, etc., to computer system memory

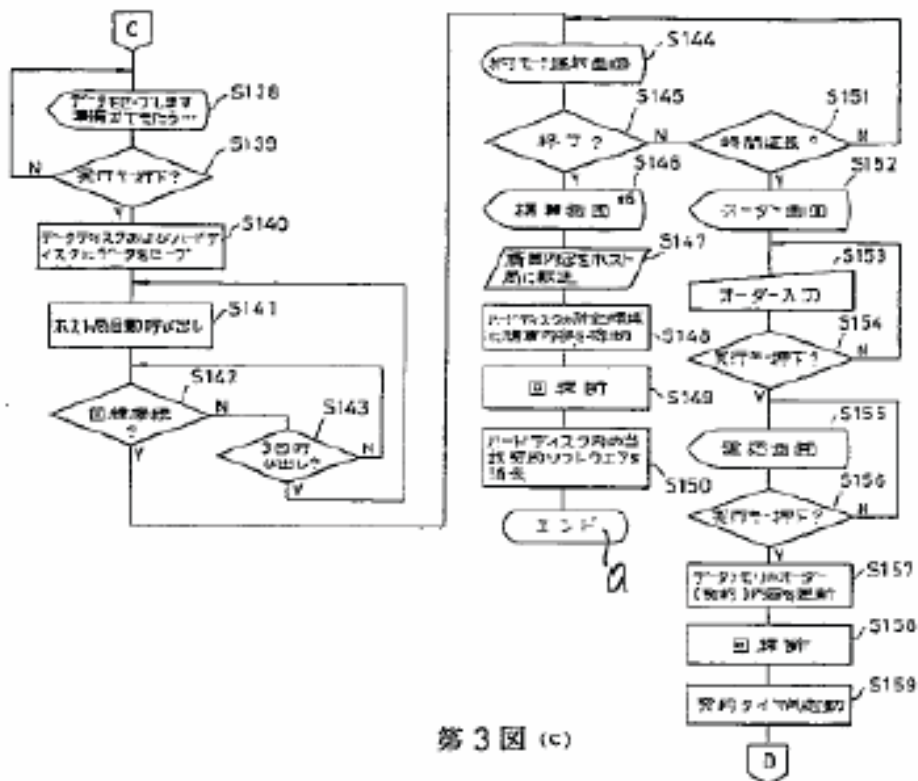
S132: Has contract timer been expired?

S133: Is the "End" key pressed?

S134: Do you want to end (Y/N)?

S136: Stop contract timer

S137: Has Contract time expired?



第3図(c)

FIG. 3(c)

a: End

S138: Data will be saved, when you are ready...

S139: Is the Enter key pressed?

S140: Save data to data disk and hard disk

S141: Automatically call host station

S142: Line connected?

S143: Called three times?

S144: End mode selection screen

S145: End?

S146: Settlement screen*⁶

S147: Transmit settlement result to host station

S148: Store settlement result to predetermined area of hard disk

S149: Disconnect line

S150: Delete contract software concerned from hard disk

S151: Extend time?

S152: Order screen

S153: Enter order

S154: Is the Enter key pressed?

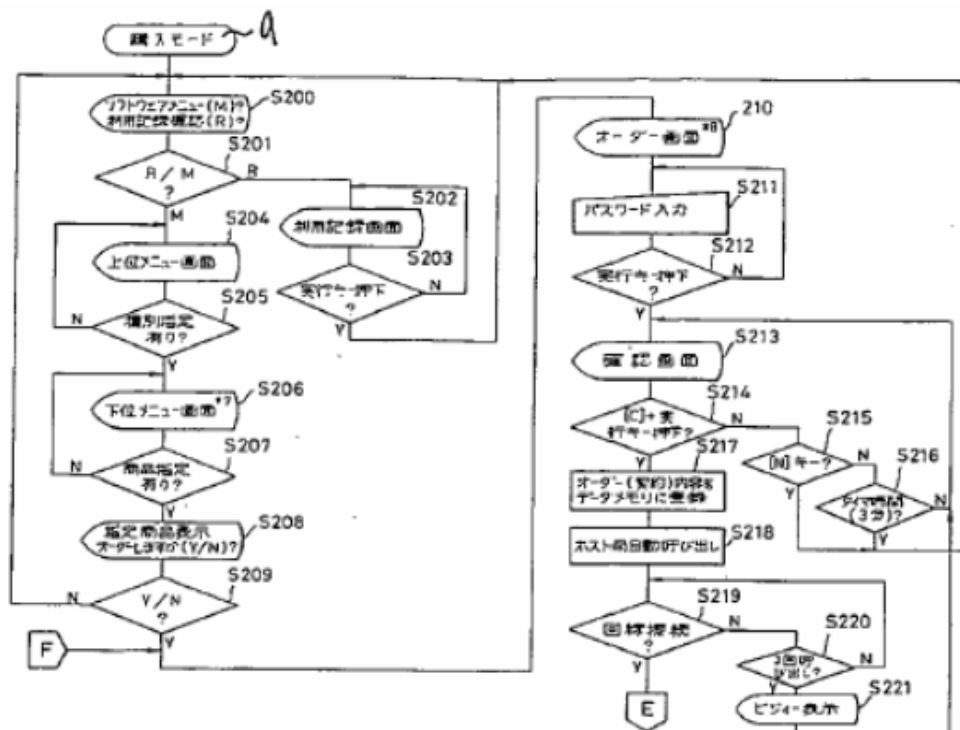
S155: Confirmation screen

S156: Is the Enter key pressed?

S157: Update order (contract) contents in data memory

S158: Disconnect line

S159: Restart contract timer



第4図(a)

FIG. 4(a)

a: Purchase mode

S200: Software menu (M)? Usage record confirmation (R)?

S202: Usage record screen

S203: Is the Enter key pressed?

S204: Upper-level menu screen

S205: Has a classification been specified?

S206: Lower-level menu screen^{*7}

S208: Display specified product. Do you want to order (Y/N)?

S210: Order screen^{*8}

S211: Enter password

S212: Is the Enter key pressed?

S213: Confirmation screen

S214: [C] + enter key pressed?

S215: [N] key?

S216: Has timer time (three minutes) passed?

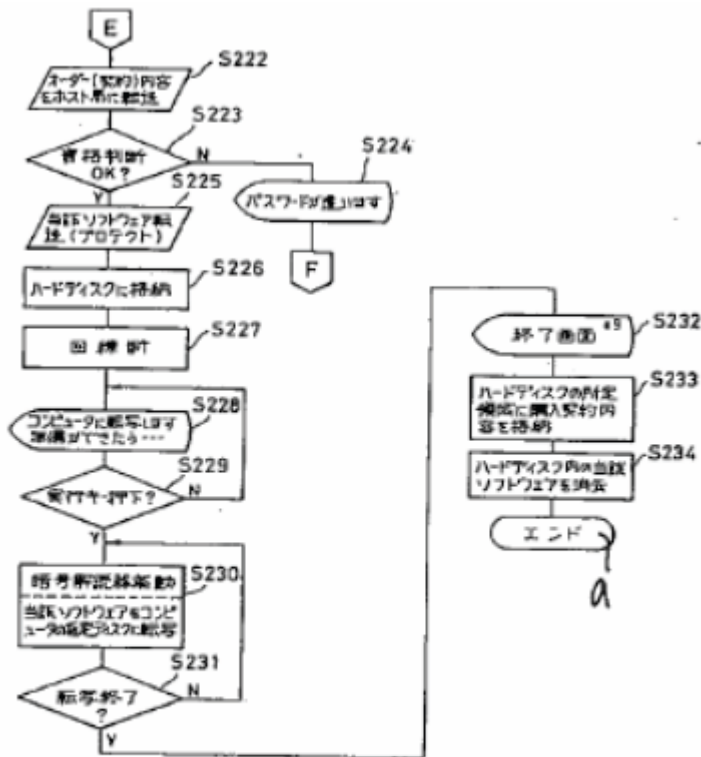
S217: Register order (contract) contents in data memory

S218: Automatically call host station

S219: Line connected?

S220: Called three times?

S221: Busy indication



第4図 (b)

FIG. 4(b)

S222: Send order (contract) contents to host station

S223: Is the qualification deemed OK?

S224: Wrong password

S225: Transmit software concerned (protect)

S226: Store in hard disk

S227: Disconnect line

S228: Copy to computer, when you are ready ...

S229: Is the Enter key pressed?

S230: Activate decryption device: Copy software concerned to specified disk of computer.

S231: Copy completed?

S232: End screen^{*9}

S233: Store purchase contract contents in predetermined
area of hard disk

S234: Delete software concerned from hard disk

a: End

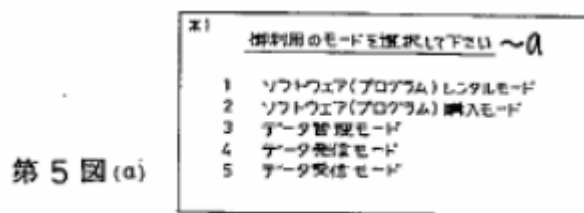


FIG. 5(a)

a: Please select a mode for your usage

1: Software (program) rental mode

2: Software (program) purchase mode

3: Data management mode

4: Data send mode

5: Data receive mode

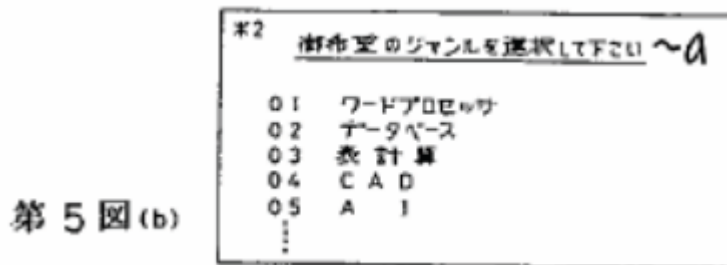


FIG. 5(b)

a: Please select a desired genre

- 01: Word processor
- 02: Database
- 03: Spreadsheet
- 04: CAD
- 05: AI

第 5 図 (c)

※3 御希望のソフトウェア名を選択して下さい～a			
01-0123	ABCワード	ABC(株)	¥100/Hr
01-0124	ワードQ	(株)Q	¥120/Hr
01-0125	BIGワード	(株)BIG	¥80/Hr
01-0126	ワード1-2-3	フラワー(株)	¥150/Hr
...			

FIG. 5(c)

a: Please select a desired software

01-0123:	ABC word	ABC corp.	¥100/Hr
01-0124:	Word Q	Q corp.	¥120/Hr
01-0125:	Big word	Big corp.	¥80/Hr
01-0126:	Word 1-2-3	Flower corp.	¥150/Hr

第 5 図 (d)

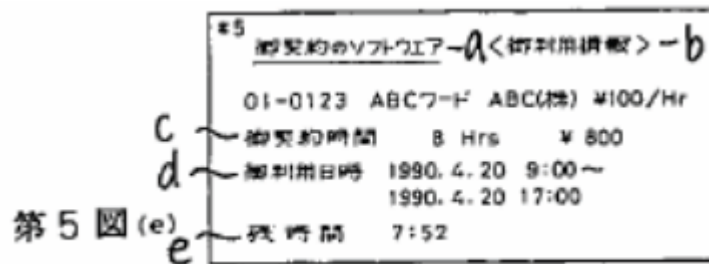
※4 御利用のソフトウェア		あなたのパスワードと 御希望の利用時間を 入力して下さい～b	
01-0123	ABCワード ABC(株) ¥100/Hr		
御契約のパスワード: <input type="password"/>			
御利用時間: 1990. 4. 20	9:00～	日付	時間～f
d			

FIG. 5(d)

a: Software used

b: Please enter your password and desired usage time

f: Total hours



e: Remaining time 7:52

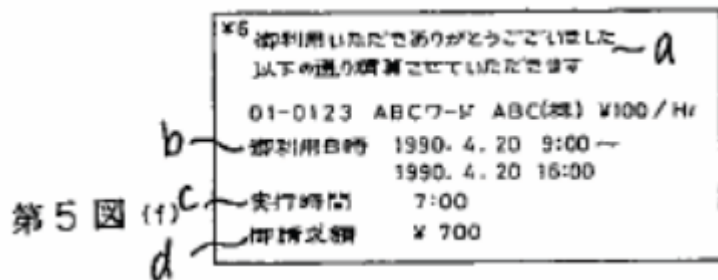


FIG. 5(f)

a: Thank you for using our service. Your balance is as follows:

01-0123: ABC word ABC corp. ¥100/Hr

b: Usage date and time 1990. 4. 20 9:00 ~
1990. 4. 20 16:00

c: Hours executed 7:00

d: Amount due ¥700

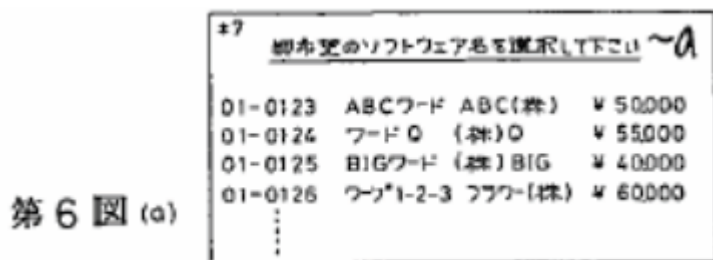


FIG. 6(a)

a: Please select a desired software

01-0123: ABC word ABC corp. ¥50,000

01-0124: Word Q Q corp. ¥55,000

01-0125: Big word Big corp. ¥40,000

01-0126: Word 1-2-3 Flower corp. ¥60,000

第 6 図 (b)

*8 御注文のソフトウェア		あなたのパスワードを 入力して下さい ~b
01-0123	ABCワード	ABC(株) ¥ 50,000
御契約者パスワード		
c		

FIG. 6(b)

a: Software you ordered

b: Please enter your password

01-0123: ABC word ABC corp. ¥50,000

c: Subscriber password

第 6 図 (c)

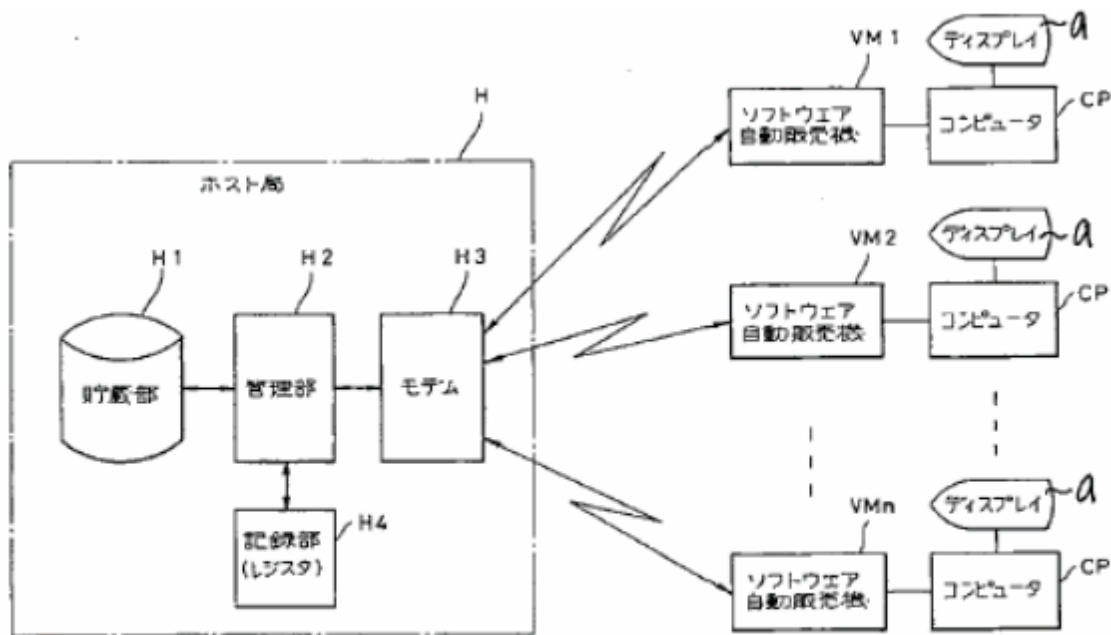
*9 御購入ありがとうございます ~a	
以下の通り清算させていただきます	
01-0123	ABCワード ABC(株)
御請求額	¥ 50,000
b	

FIG. 6(c)

a: Thank you for using our service. Your balance is as follows:

01-0123: ABC word ABC corp.

b: Amount due ¥50,000



第 7 図

FIG. 7

H: Host station

H1: Storage part

H2: Management part

H3: Modem

H4: Recording part (register)

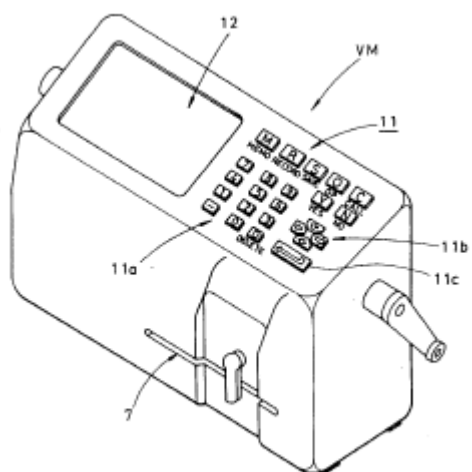
a: Display

CP: Computer

VM1: Automated software vending machine

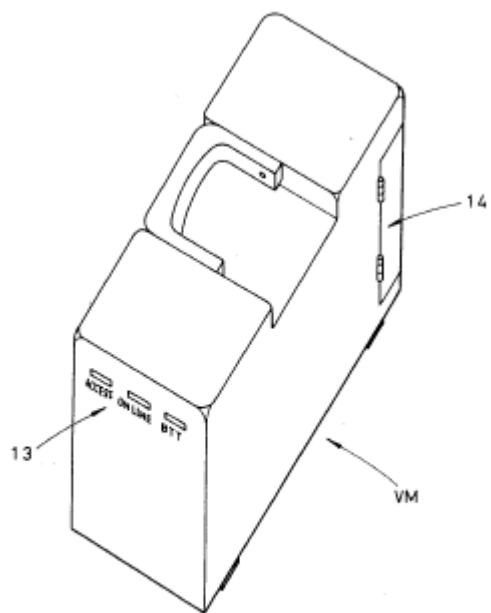
VM2: Automated software vending machine

VMn: Automated software vending machine



第 8 圖

FIG. 8



第 9 圖

FIG. 9