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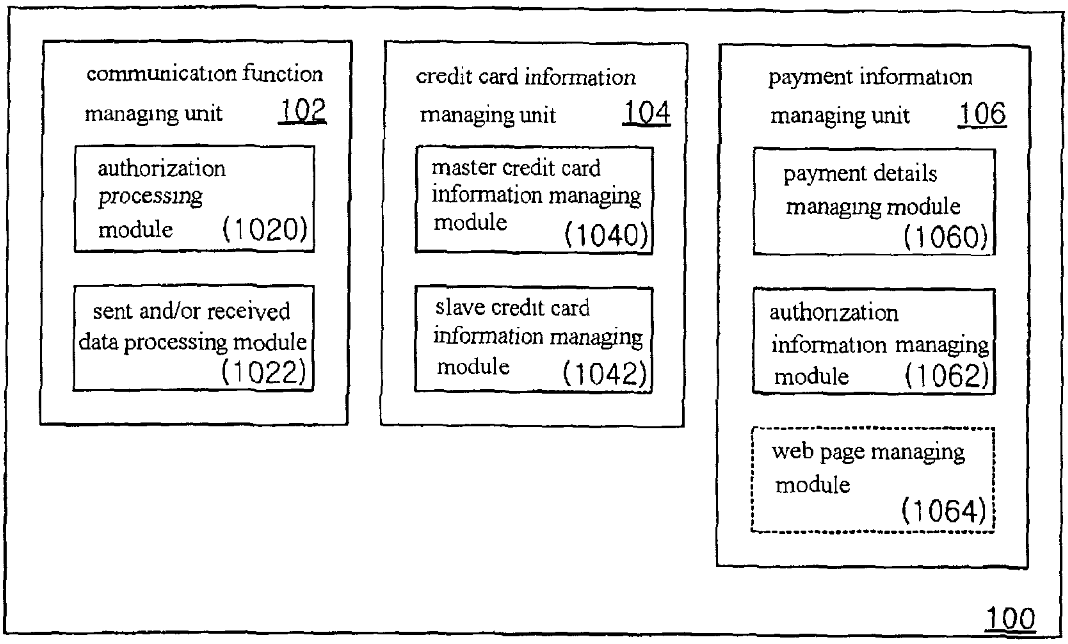
(54) **Title:** A PAYMENT MANAGEMENT SYSTEM OF A MASTER-SLAVE COMBINATION FINANCIAL CARD AND A METHOD THEREOF



(57) **Abstract:** The present invention provides a payment management system of a master-slave combination financial card and a method thereof, wherein the slave financial card has a usage limit determined to be a value within a usage limit of the master financial card.

WO 2004/023367 A1

【DESCRIPTION】

【TITLE】

A Payment Management System of a Master-Slave Combination Financial Card and a Method Thereof

【TECHNICAL FILED】

The present invention relates to a payment management system of a master-slave combination financial card including a master financial card and a slave financial card and a method thereof, and more particularly to a payment management system of a master-slave combination financial card including a master financial card and a slave financial card having a credit limit within a credit limit of the master financial card and a method thereof.

The financial card in the present invention includes the credit card, the debit card, the prepaid card, widely known, and the like, and includes all kinds of payment means used for an alternative to cash in various transactions, wherein the means includes a recording medium of a magnetic, optic, electronic semiconductor type or the like, to store the financial information therein. Hereinafter, the present invention will be first described in terms of the credit card, and later be described in terms of the debit card and the prepaid card.

【BACKGROUND ART】

Recently, the payment for the credit sales by the credit card currently used as a payment means instead of cash is done in a way shown in Fig. 1. A consumer (i.e., a credit card user) is provided with goods or services by a credit card affiliated store (hereinafter, referred to as "affiliated store") (S1), and shows his or her credit card to pay for the bill (S2). The affiliated store sends information in order to request a credit information processing center, such as VAN already having a agreement relation, to authorize the transaction using a terminal for the credit transaction (hereinafter, referred to as "terminal") (S3), and the credit information processing center sends the information sent to the credit card company again to request the authorization for the transaction (S4).

The credit card company judges whether or not the transaction is authorized in accordance with the information sent, and if positive, authorizes the transaction and sends the transaction authorization information such as the authorization number to the credit information processing center (S5). The credit information processing center sends the transaction authorization information sent from the credit card company to the terminal of the affiliated store again (S6). The terminal of the affiliated store issues the sales slip for the transaction as receiving the transaction authorization information.

Hereafter, in the same way above, the affiliated store has a right (hereinafter, referred to as "credit sales receivables") to request the credit card company to make a payment for the transaction based on the sales slip issued to the consumer, and the credit card company makes the payment for the transaction resulting from the credit sales receivables to the affiliated store on the appointed due date (S7). Meanwhile, the credit card company charges the consumer the amount of the transaction based on the sales slip of the credit transaction on a predetermined due date (S8).

In accordance with the payment method of the general credit transaction, the credit card user uses his or her credit card as a payment means within a credit limit determined by the credit card company, so that he or she cannot set or change the credit limit by oneself. The general credit card is supposed to be used only by the nominal person, to whom the card is issued, in principle, and it is inhibited from being leased or transferred to any other person. Accordingly, since the credit card should be issued for each person individually even though he or she has the special relation such as a family or a member of an organization, there is a problem that the credit limit is set too high in terms of the overall family or organization.

Meanwhile, in the credit card system of, what is called, the facility card or the artificial person card, each person may use a plurality of cards within a unified credit limit for people. Therefore, each user possesses credit cards for oneself, and can use them as a payment means within the credit limit of the facility card or the artificial person card. However, in this case, since anyone of the users can use the total amount of the credit limit set for the facility card or the artificial person card, there is a problem that it cannot be estimated when the amount exceeds the credit limit as far as the use of the facility card or the artificial person card is not controlled intentionally.

However, it is indeed impossible to know when or where other user of the family or organization uses the facility card or the artificial person card, and besides, even if so, there is no method suitable for controlling the use of the cards in reality, and thus those problems above cannot be solved by the conventional payment system of the facility card or the artificial person card.

【DISCLOSURE OF INVENTION】

To solve the problems above, it is an object of the present invention to provide a payment management system of a master-slave combination financial card including a master financial card having a credit limit and a slave financial card having a credit limit within the credit limit of the master financial card and a method thereof.

It is another object of the present invention to provide a payment management system and method of a master-slave combination financial card, wherein a user of the master credit card is notified at the time of a payment that a user of the slave credit card tries to make the payment by the slave credit card.

It is further another object of the present invention to provide a payment management system and method of a master-slave combination financial card, wherein the user of the slave credit card has to obtain the authorization of the master credit card user for the payment.

To achieve the objects above, a system for managing a payment of a master-slave combination credit card, which includes a master credit card having a credit limit of an amount of money and a slave credit card having a credit limit of an amount of money within the credit limit of the master credit card, includes a communication function managing unit for performing a connection authorization for a connection to and/or from an external system, sending and/or receiving data by performing a communication function with the external system and processing the data according to a predetermined routine in order to utilize the data sent and/or received as recognizable information, a credit card information managing unit for storing and managing information about the master credit card and the slave credit card and information about a master-slave relation between the master credit card and the slave credit card in support of the communication function of the communication function managing unit and a payment information managing unit for collecting, storing and managing payment information about a credit transaction caused by a use of the slave credit card, referring to the information about the master credit card and the slave credit card managed by the credit card information managing unit, in support of the communication function of the communication function managing unit.

【BRIEF DESCRIPTION OF DRAWINGS】

Fig. 1 shows a conventional payment method for a credit card transaction schematically.

Fig. 2 shows a payment method of a master-slave combination credit card schematically according to one exemplary embodiment of the present invention.

Fig. 3 shows a payment method of a master-slave combination credit card schematically according to another exemplary embodiment of the present invention.

Fig. 4 is a schematic block diagram of a payment management system of a master-slave combination credit card according to one exemplary embodiment of the present invention.

Fig. 5 is a schematic flow chart that shows main operations of a payment management method of a master-slave combination credit card according to one exemplary embodiment of the present invention.

Fig. 6 is a schematic flow chart that shows main operations of a payment management method of a master-slave combination credit card according to another exemplary embodiment of the present invention.

【BEST MODE FOR CARRYING OUT THE INVENTION】

Hereinafter, exemplary embodiments of the present invention will now be described referring to attached drawings.

According to the present invention a master credit card user is issued with a master credit card and a slave credit card by a credit card company that the user wants. The master credit card is the same credit card as the general credit card. In other words, the credit card company issues the master credit card to the user to enable the user to perform a credit transaction as setting a credit limit based on the credit evaluation result of the user.

Meanwhile, the credit card company issues several slave credit cards in accordance with the demand of the master credit card user. The slave credit card has a credit limit within a credit limit of the master credit card according to the selection of the master credit card. Accordingly, the user of the master credit card determines the credit limit of each of the slave credit cards corresponding to the anticipated number of the users of the slave credit card, and can set the total credit limit of the overall slave credit cards to be the desired amount. The credit limit of the slave credit cards can be set by the credit card company in accordance with the intention of the master credit card user. Alternatively, the slave credit card includes a memory therein such as, what is called, a smart card that is recordable by a user, so that the master credit card user can set the limit by using a recording apparatus (e.g., a smart card recorder).

In the slave credit card above, it is preferable that if the user wants to make a payment using the slave credit card, the authorization is requested for overall payment details that have been added by the credit card company on a monthly basis. Meanwhile, in one embodiment of the present invention, the authorization for the payment details may be requested to the credit card company whenever the user of the slave credit card uses the card.

Alternatively, if the slave credit card is used, the authorization in regard to the payment amount more than a predetermined criterion amount may be requested each time of the payment, and the authorization in regard to the payment amount less than a predetermined criterion amount may be requested on a predetermined date on a monthly added basis.

Further, if the payment amount of the slave credit card is added on a period basis, the payment may not be approved in case the totally added amount is more than a predetermined criterion. Moreover, one embodiment may be configured that if the payment is done by using the slave credit card, the authorization of the master credit card user should be necessary.

The various methods of using the slave credit card are to be regarded in an illustrative manner rather than a restrictive one, and all of such modifications are intended to be included within the scope of the present invention. The exemplary embodiments of the present invention will be described in detail below referring to Fig. 2 and Fig. 3.

Fig. 2 shows a payment method of a master-slave combination credit card schematically according to one exemplary embodiment of the present invention. In the present embodiment, a master credit card user first transfers a slave credit card, wherein predetermined use conditions have been set, to a slave credit card user. The use conditions of the slave credit card are various conditions established in regard to use of the slave credit card. As the use conditions, there may be, for example, a refill period for refilling the credit limit set, a usual use amount with which the payment can be done freely in usual cases, an emergency use amount for the payment of a large amount needed in an emergency case and/or the like. Further, if the user of the slave credit card tries to make the payment for a large amount more than the emergency use amount, the use conditions may include things about whether or not to notify the master credit card user of this.

The use condition of the slave credit card may be set while the credit card company issues the slave credit card as described above, or may be set before the user of the master credit card hands over the slave credit card to the user of the slave credit card. If the credit card company sets the use condition of the slave credit card, the master-slave combination credit card the payment management system 100 (hereinafter, referred to as "payment management system 100" in simple) of the present invention may receive the use condition of the slave credit card from the credit card company. Needless to say, in any cases, the use condition of the slave credit card may be retrieved by the terminal of the affiliated store at the time of using the slave credit card, and be sent to the payment management system 100.

Next, the user of the slave credit card, in which the use condition has been set, purchases goods and/or services (S2.1), and presents the slave credit card in order to make the payment of the amount for this purchase (S2.2), and then the affiliated store notifies the payment management system 100 of the payment details about the credit transaction by using the terminal (S2.3). The payment details about the credit transaction may include the card number of the slave credit card, the use condition set in the slave credit card, the amount of the transaction, the affiliated store information and/or the like.

The payment management system 100 receives the payment details about the credit transaction from the affiliated store, and then replies whether to approve or deny the payment for the transaction based on the use condition set in the slave credit card (S2.4). At this time, in one embodiment, about whether to approve or deny the payment for the transaction, the payment management system 100 may notify the user of the master credit card of the transaction details received based on the use condition of the slave credit card by using a predetermined method. For example, the payment management system 100 may sends text massages containing the transaction details to the mobile phone of the master credit card user.

The affiliated store receives the notification of whether to approve or deny the payment for the transaction from the payment management system 100, and completes the transaction in case of approving the payment or cancels the transaction in case of denying the payment.

Next, the user of the master credit card can confirm the payment details of the slave credit card user from the payment management system 100 at any time he or she wants. For example, the payment management system 100 may make and manage a web page containing the payment details of the slave credit card user, and if so the master credit card user can easily confirm the payment details of the slave credit card user through the Internet.

Next, the payment management system 100 sends the transaction details, in which the payment has been approved, to the credit card company and requests the authorization for the credit transaction (S4.1). At this time, the payment management system 100 may perform the authorization request of the transaction whenever the transaction is completed, or may add a plurality of transaction details during a predetermined period described above, and request single or plural transaction authorizations on a predetermined date for a plurality of added transaction details. Particularly, when the payment management system 100 requests the credit card company to authorize the transaction details of the slave credit card, the authorization procedure may be, like the conventional family card or artificial person card, performed so as to use the payment account of the user of the master credit card.

Generally, the authorization request for the transaction of the credit card passes the credit information processing center, and these procedures are shown in Fig. 2 (c.f. S3.1, S3.2, S3.3 and S3.4).

Next, the credit card company judges whether or not to authorize the credit transaction by examining the transaction details sent based on a predetermined criterion, and, if possible, sends the credit transaction authorization information such as the authorization number for notifying the authorization of the transaction to the credit information processing center (S3.3).

The credit information processing center sends the credit transaction authorization information sent from the credit card company to the payment management system 100 again (S3.4), and the payment management system 100 sends the information to the terminal of the affiliated store in order to allow it to issue the sales slip for the credit transaction.

Then, the credit card company makes the payment for the transaction amount resulting from the credit sales to the affiliated store on an appointed due date (S5), and charges the master credit card user the amount of the transaction based on the sales slip of the credit transaction on the due date (S6).

Next, another exemplary embodiment of the present invention will be described in detail referring to Fig. 3. Fig. 3 shows a payment method of a master-slave combination credit card schematically according to another exemplary embodiment of the present invention. The present embodiment is substantially similar to the payment method described above in relation to Fig. 2, however, it is different largely in that the payment management system 100 asks the master credit card user whether or not to authorize the transaction of the slave credit card user. Hereinafter, the difference between the two embodiments will be described in detail mainly.

The master credit card user sends first the slave credit card, in which the use condition described above has been set, to the slave credit card user. Then, the user of the slave credit card, in which the use condition has been set, purchases goods and/or services (S2.1), and presents the slave credit card in order to make the payment of the amount for this purchase (S2.2), and then the affiliated store notifies the payment management system 100 of the payment details about the credit transaction by using the terminal (S2.3).

The payment management system 100 receives the payment details about the credit transaction from the affiliated store, and then asks the user of the master credit card whether or not to authorize the transaction, in which the payment details have been received (S2.4). The inquiry about the transaction authorization may be accomplished by that, for example, text massages containing the payment details and a reply phone number for the response are sent to the mobile phone of the master credit card user, and if the user authorizes the transaction then he or she calls the reply phone number to notify the authorization of the transaction. The reply of the transaction authorization may be performed automatically by an automatic reply system as well. Further, the inquiry about the transaction authorization may be optionally performed in accordance with the use condition of the slave credit card.

After whether to authorize the payment details is replied (S2.5), the payment management system 100 notifies the affiliated store of whether to approve or deny the payment for the transaction based on whether to authorize the payment details replied (S2.6).

The affiliated store receives the notification of whether to approve or deny the payment for the transaction from the payment management system 100, and completes the transaction in case of approving the payment or cancels the transaction in case of denying the payment.

The following operations will not be described because they are the same those described in relation to Fig. 2.

Next, the configuration of a payment management system 100 according to one exemplary embodiment of the present invention in order to achieve the payment method described above referring to Fig. 4. Fig. 4 is a schematic block diagram of a payment management system 100 of a master-slave combination credit card according to one exemplary embodiment of the present invention.

As shown in Fig. 4, the payment management system 100 according to the present embodiment includes a communication function managing unit 102 for performing the communication function with an external system, a credit card information managing unit 104 for storing and managing the information about the master credit card and the slave credit card and a payment information managing unit 106 for storing and managing the payment information about the credit transaction resulting from using the slave credit card. Hereinafter, the configurations and operations of the units 102, 104 and 106 will now be described in detail below.

[The communication function managing unit]

The communication function managing unit 102 performs the functions required by the payment management system 100 of the present invention in order to communicate with the affiliated store, the credit card company or the master credit card user and send and/or receive the information. In other words, if the payment management system 100 communicates with the affiliated store, the credit card company or the master credit card user through the on-line and/or off-line communication network, the communication function managing unit 102 provides various communication protocols and communication resources required for the on-line and/or off-line communication.

On the basis of the support of these communication functions, the communication function managing unit 102, for example, receives the credit transaction authorization information from the credit information processing center, receives the payment details from the affiliated store and/or sends the payment details to the master credit card user. If communicating with the external systems while sending and/or receiving information, the communication function managing unit 102 performs the connection authorization for the connection to and/or from the external systems, and if successively connected with the external systems then sends and/or receives data in accordance with a predetermined communication protocol and processes the data according to a predetermined routine. In addition, in order to utilize the received data as the distinguishable information, it may perform internal processes on the sent and/or received data such as converting the data format or checking the errors.

According to one exemplary embodiment of the present invention, the communication function managing unit 102 may be configured to include an authorization processing module 1020 for issuing and storing the authorization information such as an user identification number and/or a password for performing the connection to and/or from the external systems and for judging whether or not to connect based on the authorization information inputted when needed, and a sent and/or received data processing module 1022 for sending and/or receiving data with the external system, in which the connection is approved normally, in accordance with a predetermined communication protocol and/or for processing the data sent and/or received.

[The credit card information managing unit]

Next, the credit card information managing unit 104 manages the information about where to make contact such as the mobile phone number or the e-mail of the user of the master credit card as the information the master credit card. Needless to say, the credit card information managing unit 104 may manage the additional information in relation to the master credit card such as the credit limit of the master credit card. In addition, the credit card information managing unit 104 manages the information about the use condition of the slave credit card, that is, the credit limit, whether to need the notification or authorization of the payment details of the transaction, the time and method of the authorization request for the payment details and/or the like as the information about the slave credit card. As a matter of course, the credit card information managing unit 104 should manage the information about the master-slave relation between the master credit card and the slave credit card.

According to one exemplary embodiment of the present invention, the credit card information managing unit 104 may be configured to include a master credit card information managing module 1040 for managing the information about the master credit card and a slave credit card information managing module 1042 for the information about the slave credit card and the information about the master-slave relation between the master credit card and the slave credit card. Needless to say, in this case, the information about the master-slave relation between the master credit card and the slave credit card may be managed by the master credit card information managing module 1040.

[The payment information managing unit]

Next, the payment information managing unit 106 stores and manages the payment details of the credit transaction by the user of the slave credit card, whether to approve the transaction about them, the authorization details about the payment for the transaction details approved and/or the like. Particularly, the payment information managing unit 106 may generate and manage a Web page containing the information. In this case, the user of the master credit card can refer to the payment details of the slave credit card easily through the Internet.

The payment details of the credit transaction by the slave credit card user may include the information such as the payment date, the payment amount, the affiliated store of the payment and/or the like. In addition, it may include the information about whether the master credit card user has approved the transaction, i.e., the payment, and further the information about whether the master credit card user has been notified of the payment details about the transaction. Moreover, the authorization details about the payment details may include the information such as the date when the authorization is requested, the affiliated store information, the authorization number, the transaction amount and/or the like.

According to one exemplary embodiment of the present invention, the payment information managing unit 106 is configured to include a payment details managing module 1060 for managing the information such as the payment details of the credit transaction by the user of the slave credit card and/or whether to approve the transaction in regard to this, and an authorization information managing module 1062 for managing the authorization details about the payment for the transaction details approved. Further, it may be configured to further include a Web page managing module 1064 for generating and managing a Web page containing the information.

It is preferable that the payment management system 100 of the present invention is accomplished by programming a general purpose computer system. However, the payment management system 100 of the present invention may also be accomplished through a dedicated hardware for it.

In any case, each of the units 102, 104 and 106 included in the payment management system 100 of the present invention configured as above may perform the data communication through buses provided therebetween (not shown), and may perform the known functions required to accomplish the present invention by using software such as an operating system or a communication protocol widely known (not shown) or hardware such as a CPU or a memory. The widely known configurations and functions described above are obvious to those skilled in the art related to the present invention, and thus the description of those will be omitted.

Further, the payment management system 100 of the present invention may be accomplished through a server, independent hardware, implementing a part or all of one or any combination of the units 102, 104 and 106. It will be readily apparent to those skilled in the art that various other permutations of the hardware implementation may also be employed and the same shall be properly regarded as within the scope of the present invention.

Next, exemplary embodiments of a payment management method of the master-slave combination credit card according to the present invention will be described in detail referring to Fig. 5 and Fig. 6. These embodiments may be examples of the operations performed by the payment management system 100 described above in relation to Fig. 4.

Referring to 5 first, Fig. 5 is a schematic flow chart that shows main operations of a payment management method of a master-slave combination credit card (hereinafter, simply referred to as "the payment management method") according to one exemplary embodiment of the present invention. First, when the payment management system 100 of the present invention begins its operations in the step 500, it activates various programs or resources for performing the general functions as a system so that it can prepare to accomplish the unique operations of the present invention. Further, the payment management system 100 may be designed to collect the information about the use condition of the slave credit card from the credit card company during the ignition and preparation operations.

These ignition and preparation operations may be conduced only when the power of the payment management system 100 of the present invention is turned on again from turn-off or when the system is reactivated after deactivated for checking the system, so that the efficiency of the overall system can be increased.

Meanwhile, the master credit card user may refer to the desired information such as the payment details of the slave credit card by connecting with the payment management system 100 through, for example, the Internet any time while the payment management system 100 is functioning, and may further input the information such as changed items about the use condition of the slave credit card in relation to oneself.

These operations is preferably performed independently to the use of the slave credit card, and performed regularly or occasionally while the payment management system 100 is being activated. It should be noted that the operations of the payment management system 100 independent of the use of the slave credit card described above are not illustrated in Fig. 5 and Fig. 6. Hereinafter, operations in relation to the use of the slave credit card will be described below. It should be noted that only representative two of various exemplary embodiments of the payment management method of the present invention will be described in terms of the operations thereof shown in Fig. 5 and Fig. 6.

When the user of the slave credit card uses the slave credit card in order to make the payment for purchasing goods and/or services at an affiliated store, the payment management system 100 receives the payment details about the transaction from the terminal of the affiliated store (step 502). The reception of the payment details is supported by the communication function managing unit 102, and the payment details successively received and processed are managed by the payment information managing unit 106.

Next, the payment management system 100 judges whether or not to approve the payment for the credit transaction by using the information managed by the credit card information managing unit 104 (step 504). It is preferable that the judgment in the Step 504 is performed by the payment information managing unit 106. Alternatively, the judgment may also be accomplished by notifying the master credit card user of the payment details and asking whether or not to approve it, instead of the payment management system 100. This embodiment will be described later in reference to Fig. 6.

Then, as the result of the judgment in Fig. 504, if it is judged that the payment for the transaction cannot be approved, the affiliated store is notified of denial of the payment (step 506). On the other hand, if it is judged that the payment for the transaction is approved, the affiliated store is notified of approval of the payment (step 508), and the master credit card user is notified of the payment details (step 510).

Accordingly, the transaction is completed in case of the approval of the payment, while the transaction is cancelled in case of the denial of the payment.

Next, the payment management system 100 judges whether or not the time to request the credit card company to authorize has come in regard to the payment details about the present transaction or the transactions added for a predetermined period (step 512). If the time to request the authorization has not come yet, the payment management system 100 returns to the initial condition to be ready for the following operations. On the other hand, if the time to request the authorization has come, the payment management system 100 requests the authorization to the credit card company for the payment details of the transaction (step 514), and performs the general authorization procedures (step 516).

Hereafter, the payment management system 100 returns to the initial condition (step 518).

These operations are not necessarily performed in a time sequence according to the described order. For example, the steps 502 and 512 may be performed in parallel, and it is rather general that a few steps are performed in parallel.

Next, another exemplary embodiment of the payment management method of the present invention will be described referring to Fig. 6. Fig. 6 is a schematic flow chart that shows main operations of the payment management method of the master-slave combination credit card according to another exemplary embodiment of the present invention. Also in the present embodiment, the activation procedure is completed by performing the ignition and preparation operations described above referring to Fig. 5 (step 600).

Then, when the user of the slave credit card uses the slave credit card in order to make the payment for purchasing goods and/or services at an affiliated store, the payment management system 100 receives the payment details about the transaction from the terminal of the affiliated store (step 602).

Next, the payment management system 100 notifies the master credit card user of the payment details and asks whether or not to authorize it (step 604), and judges whether or not the transaction is authorized by the master credit card user (step 606). By the steps 604 and 606, for example, it possible to inhibit the use of the slave credit card void of the authorization of the master credit card user, in case the payment amount for the transaction is more than a criterion amount set in the use condition of the slave credit card or in case of being included in a range of the emergency use amount.

Next, as the result of the judgment in Fig. 606, if it is judged that the transaction is not authorized, the affiliated store is notified of denial of the payment (step 608). On the other hand, if it is judged that the payment for the transaction is authorized, the affiliated store is notified of approval of the payment (step 610).

Accordingly, the transaction is completed in case of the approval of the payment, while the transaction is cancelled in case of the denial of the payment.

Next, the payment management system 100 judges whether or not the time to request the credit card company to authorize has come in regard to the payment details about the present transaction or the transactions added for a predetermined period (step 612). If the time to request the authorization has not come yet, the payment management system 100 returns to the initial condition to be ready for the following operations. On the other hand, if the time to request the authorization has come, the payment management system 100 requests the authorization to the credit card company for the payment details of the transaction (step 614), and performs the general authorization procedures (step 616).

These operations are not necessarily performed in a time sequence according to the described order. For example, the steps 604 and 614 may be performed in parallel, and it is rather general that a few steps are performed in parallel.

It should be appreciated that the exemplary embodiments of the present invention shown and described herein are illustrative of the invention and the inventor's conception of the best mode and are not intended to otherwise limit the scope of the present invention in any way. For example, the present invention in relation to the master-slave combination credit card may be expanded to a payment management system in regard to other kind of a master-slave combination financial card not allowing the credit card company to be intervened and a method thereof.

In other words, for example, in a debit card system where the payment is done immediately at the time of the transaction by withdrawal from an account, the present invention may be applied to a payment management system and method of a master debit card wherein the transaction amount is withdrawn from an account immediately at the time of the transaction and a slave debit card wherein the transaction amount is withdrawn from an account of the master debit card immediately at the time of the transaction only within a predetermined range of amount.

Accordingly, by altering the things about the credit card described above into those of the debit card, the present invention can be applied to the master-slave combination debit card. Meanwhile, the things in relation to the credit information processing center and/or the credit card company may be unnecessary in some embodiments.

Further, the present invention may be applied to a prepaid card system wherein a predetermined amount of money is paid in advance and an amount of money for a transaction is deducted from that paid money at the time of the transaction. In other words, the present invention may be applied to a payment management system and method of a master prepaid card wherein a predetermined amount of money is paid in advance to the counterpart of the transaction and its use limit is decreased as much as the transaction amount for each transaction within the paid amount and a slave prepaid card wherein the use limit of the master prepaid card is decreased as much as the transaction amount for each transaction within the use limit of the master prepaid card. Accordingly, by altering the things in relation to the credit card described above into those of the prepaid card, the present invention can be applied to the master-slave combination prepaid card. Meanwhile, the things in relation to the credit information processing center and/or the credit card company may be unnecessary in some embodiments.

In the foregoing specification, the invention has been described with reference to specific embodiments. However, it will be appreciated that various modifications and changes can be made without departing from the scope of the present invention as set forth in the claims below.

【INDUSTRIAL APPLICABILITY】

According to the present invention, the master credit card user can check the payment details of the slave credit card easily in the master-slave combination credit card system including the slave credit card having the credit limit of an amount of money within the credit limit of the master credit card.

In addition, according to the present invention, the master credit card user can control the use of the slave credit card with various stages.

In addition, according to the present invention, the master credit card user can avoid an unexpected financial difficulty caused by the use of the slave credit card by managing the total amount of the credit limit of one slave credit card or a plurality of slave credit cards.

In addition, according to the present invention, the master credit card user can educate the slave credit card user about a wise method for managing cash.

In addition, according to the present invention, the master credit card user and/or the slave credit card user can check the payment details by the use of the credit card easily, and thus it is unnecessary to keep a cashbook, housekeeping book and/or the like additionally.

【CLAIMS】

1. A system for managing a payment of a master-slave combination credit card, which comprises a master credit card having a credit limit of an amount of money and a slave credit card having a credit limit of an amount of money within said credit limit of said master credit card, comprising:

a communication function managing unit for performing a connection authorization for a connection to and/or from an external system, sending and/or receiving data by performing a communication function with said external system and processing said data according to a predetermined routine in order to utilize said data sent and/or received as recognizable information;

a credit card information managing unit for storing and managing information about said master credit card and said slave credit card and information about a master-slave relation between said master credit card and said slave credit card in support of said communication function of said communication function managing unit; and

a payment information managing unit for collecting, storing and managing payment information about a credit transaction caused by using said slave credit card, referring to said information about said master credit card and said slave credit card managed by said credit card information managing unit, in support of said communication function of said communication function managing unit.

2. A system for managing a payment of a master-slave combination credit card as claimed in claim 1, wherein said communication function managing unit comprises:

an authorization processing module for issuing and storing authorization information for performing a connection to and/or from said external system and judging whether or not to connect, when needed, based on said authorization information inputted, and

a sent and/or received data processing module for sending and/or receiving data to and/or from said external system, in which a connection is approved normally, in accordance with a predetermined communication protocol and processing data sent and/or received to be recognizable.

3. A system for managing a payment of a master-slave combination credit card as claimed in claim 1, wherein said credit card information managing unit manages information about where to make contact to a user of said master credit card as information about said master credit card, and optionally manages information such as said credit limit of said master credit card.

4. A system for managing a payment of a master-slave combination credit card as claimed in claim 1, wherein said credit card information managing unit manages information about a use condition of said slave credit card as

information about said slave credit card.

5. A system for managing a payment of a master-slave combination credit card as claimed in claim 4, wherein said information about said slave credit card includes at least one of said credit limit, whether or not to need a notification or authorization of payment details of each transaction and a time and/or method of an authorization request for said payment details.

6. A system for managing a payment of a master-slave combination credit card as claimed in claim 1, wherein said credit card information managing unit comprises:

a master credit card information managing module for managing said information about said master credit card; and

a slave credit card information managing module for managing said information about said slave credit card,

wherein said information about said master-slave relation between said master credit card and said slave credit card is managed by either said master credit card information managing module or said slave credit card information managing module.

7. A system for managing a payment of a master-slave combination credit card as claimed in claim 1, wherein said payment information managing unit

generates and manages a Web page containing said payment information in relation to a credit transaction caused by using said slave credit card.

8. A system for managing a payment of a master-slave combination credit card as claimed in claim 1, wherein said payment information managing unit comprises:

a payment details managing module for managing information such as said payment details of a credit transaction by a user of said slave credit card and/or whether or not to approve said transaction thereabout; and

an authorization information managing module for managing authorization details about payment details of an approved transaction.

9. A system for managing a payment of a master-slave combination credit card as claimed in claim 8, wherein said payment information managing unit further comprises a Web page managing module for generating and managing a Web page containing said payment information in relation to a credit transaction caused by using said slave credit card.

10. A method for managing a payment of a master-slave combination credit card, which comprises a master credit card having a credit limit of an amount of money and a slave credit card having a credit limit of an amount of money within said credit limit of said master credit card, comprising the steps of:

collecting information about said master credit card and said slave credit card and information about a master-slave relation between said master credit card and said slave credit card;

receiving payment details about a transaction from a terminal of an affiliated store when a user of said slave credit card uses said slave credit card in order to pay for purchasing goods and/or services at said affiliated store;

judging whether or not a payment for said transaction is possible by using said information about said master credit card and said slave credit card;

notifying said affiliated store that said payment is impossible, in case of judging said payment for said transaction impossible;

notifying said affiliated store that said payment is possible, in case of judging said payment for said transaction possible;

judging whether or not a time to request a credit card company to authorize payment details about a present transaction or transactions added for a predetermined period has come; and

requesting an authorization for said payment details of a transaction to said credit card company, in case of judging that said time to request an authorization has come.

11. A method for managing a payment of a master-slave combination credit card as claimed in claim 10, further comprising a step of notifying said master credit card user of said payment details, in case of judging said payment for said

transaction possible.

12. A method for managing a payment of a master-slave combination credit card as claimed in claim 10, wherein said information about said master credit card includes information about either where to make contact to a user of said master credit card or said credit limit of said master credit card.

13. A method for managing a payment of a master-slave combination credit card as claimed in claim 10, wherein said information about said slave credit card includes information about a use condition of said slave credit card.

14. A method for managing a payment of a master-slave combination credit card as claimed in claim 13, wherein said information about said use condition of said slave credit card includes at least one of said credit limit, whether or not to need a notification or authorization of payment details of each transaction and a time and/or method of an authorization request for said payment details.

15. A method for managing a payment of a master-slave combination credit card as claimed in claim 10, wherein said information about said master-slave relation between said master credit card and said slave credit card is managed by either said master credit card information managing module or said slave credit card information managing module.

16. A method for managing a payment of a master-slave combination credit card as claimed in claim 10, further comprising a step of generating and managing a Web page containing said payment information in relation to a credit transaction caused by using said slave credit card.

17. A method for managing a payment of a master-slave combination credit card, which comprises a master credit card having a credit limit of an amount of money and a slave credit card having a credit limit of an amount of money within said credit limit of said master credit card, comprising the steps of:

collecting information about said master credit card and said slave credit card and information about a master-slave relation between said master credit card and said slave credit card;

receiving payment details about a transaction from a terminal of an affiliated store when a user of said slave credit card uses said slave credit card in order to pay for purchasing goods and/or services at said affiliated store;

notifying a user of said master credit card of payment details and asking whether or not to authorize said payment;

judging whether or not a payment for said transaction is authorized by said user of said master credit card;

notifying said affiliated store that said payment is impossible, in case of judging said payment for said transaction unauthorized;

notifying said affiliated store that said payment is possible, in case of judging said payment for said transaction authorized;

judging whether or not a time to request a credit card company to authorize payment details about a present transaction or transactions added for a predetermined period has come; and

requesting an authorization for said payment details of a transaction to said credit card company, in case of judging that said time to request an authorization has come.

18. A method for managing a payment of a master-slave combination credit card as claimed in claim 17, further comprising a step of notifying said master credit card user of said payment details, in case of judging said payment for said transaction possible.

19. A method for managing a payment of a master-slave combination credit card as claimed in claim 17, wherein said information about said master credit card includes information about either where to make contact to a user of said master credit card or said credit limit of said master credit card.

20. A method for managing a payment of a master-slave combination credit card as claimed in claim 17, wherein said information about said slave credit card includes information about a use condition of said slave credit card.

21. A method for managing a payment of a master-slave combination credit card as claimed in claim 20, wherein said information about said use condition of said slave credit card includes at least one of said credit limit, whether or not to need a notification or authorization of payment details of each transaction and a time and/or method of an authorization request for said payment details.

22. A method for managing a payment of a master-slave combination credit card as claimed in claim 17, wherein said information about said master-slave relation between said master credit card and said slave credit card is managed by either said master credit card information managing module or said slave credit card information managing module.

23. A method for managing a payment of a master-slave combination credit card as claimed in claim 17, further comprising a step of generating and managing a Web page containing said payment information in relation to a credit transaction caused by using said slave credit card.

24. A system for managing a payment of a master-slave combination financial card, which comprises a master financial card having a credit limit of an amount of money and a slave financial card used subordinate to said master credit card, comprising:

a communication function managing unit for performing a connection authorization for a connection to and/or from an external system, sending and/or receiving data by performing a communication function with said external system and processing said data according to a predetermined routine in order to utilize said data sent and/or received as recognizable information;

a financial card information managing unit for storing and managing information about said master financial card and said slave financial card and information about a master-slave relation between said master financial card and said slave financial card in support of said communication function of said communication function managing unit; and

a payment information managing unit for collecting, storing and managing payment information about a credit transaction caused by using said slave financial card, referring to said information about said master financial card and said slave financial card managed by said financial card information managing unit, in support of said communication function of said communication function managing unit.

25. A system for managing a payment of a master-slave combination financial card as claimed in claim 24, wherein said master financial card is a master debit card, in which an amount of money of a transaction is withdrawn from a predetermined account immediately at said transaction, and

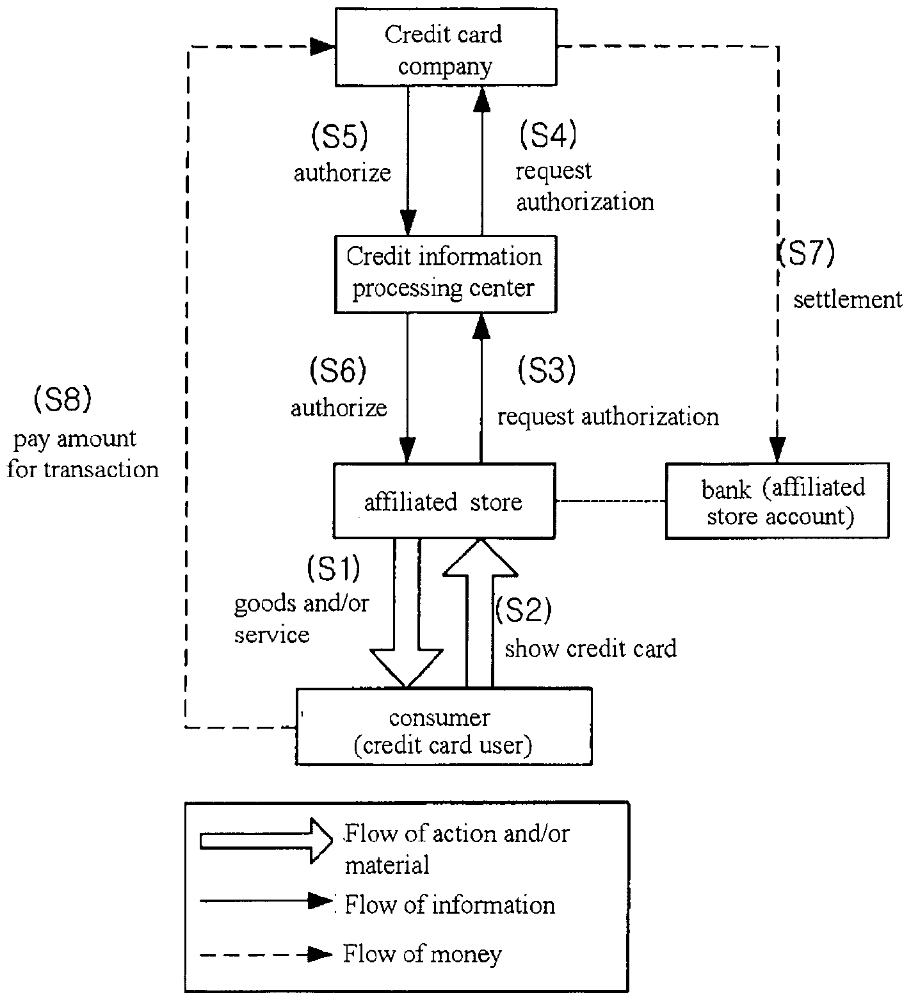
said slave financial card is a slave debit card, in which an amount of money of a transaction is withdrawn from an account of said master financial card immediately at said transaction within a predetermined range of amount.

26. A system for managing a payment of a master-slave combination financial card as claimed in claim 24, wherein said master financial card is a master prepaid card, in which an amount of money is paid to a counterpart of a transaction in advance and a credit limit is decreased as much as an amount of money of said transaction for each transaction within said paid amount of money, and

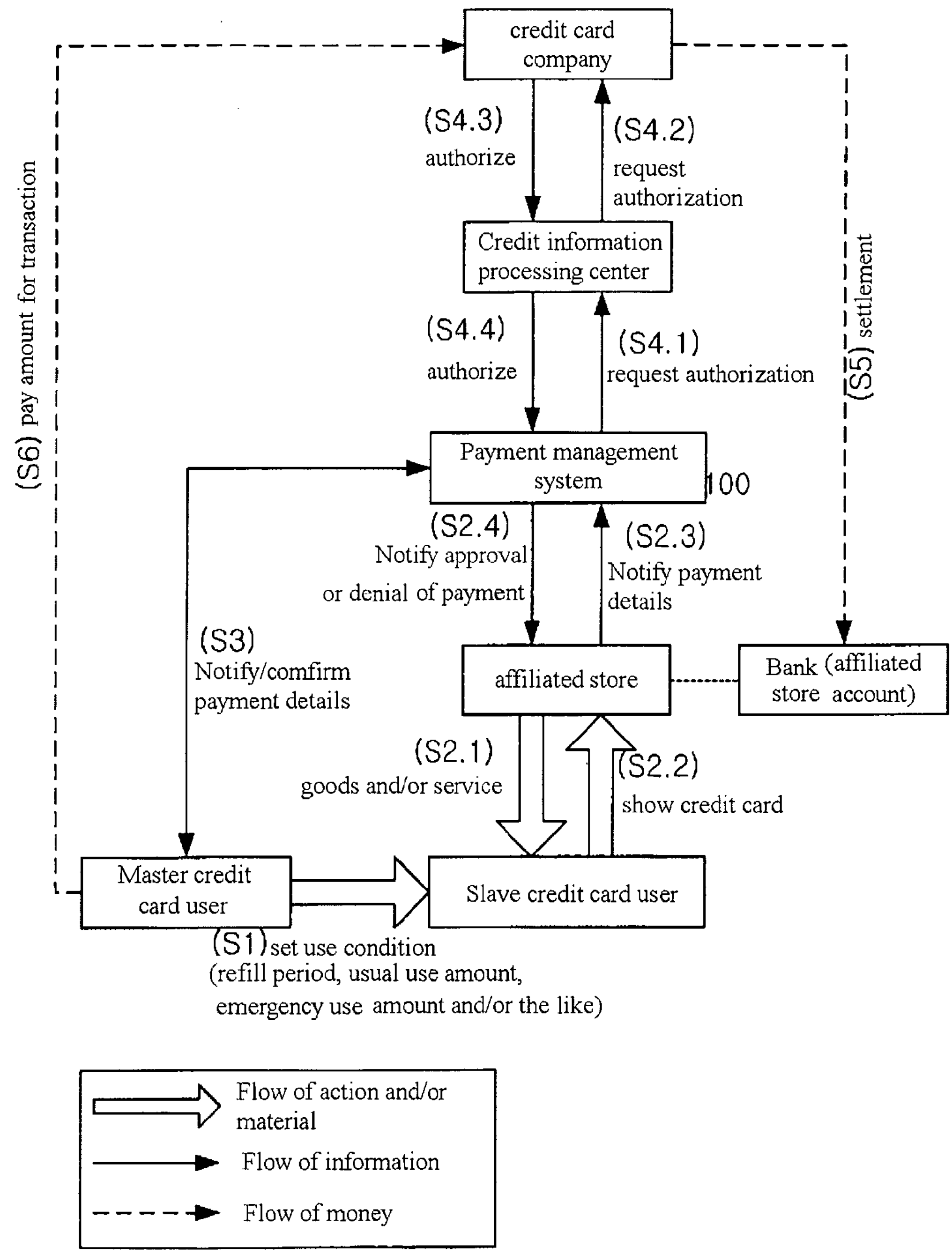
said slave financial card is a slave prepaid card, in which said credit limit of said master prepaid card is decreased as much as said amount of money of said transaction for each transaction within said credit limit of said master prepaid card.

【Drawings】

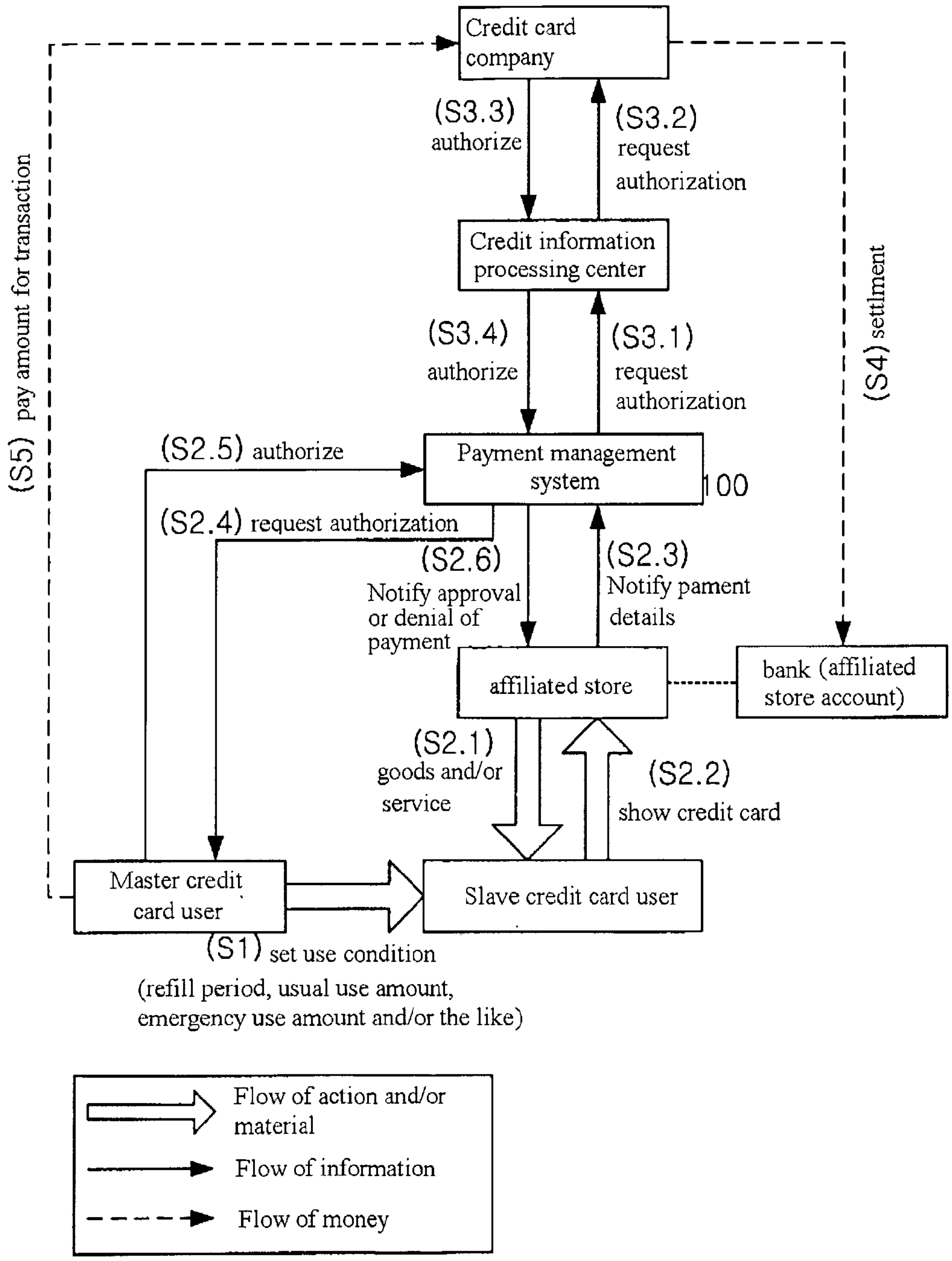
【Fig. 1】



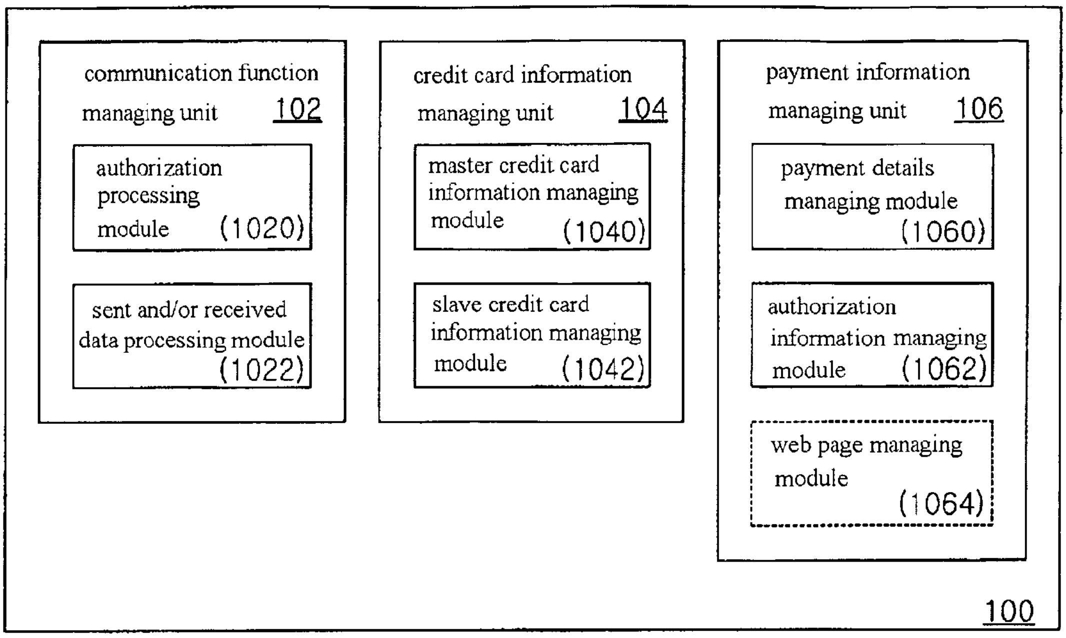
【Fig. 2】


credit card company
(S4.3) authorize
(S4.2) request authorization
Credit information processing center
(S4.4) authorize
(S4.1) request authorization
(S5) settlement
(S6) pay amount for transaction
Payment management system
100
(S2.4) Notify approval or denial of payment
(S2.3) Notify payment details
(S3) Notify/comfirm payment details
affiliated store
Bank (affiliated store account)
(S2.1) goods and/or service
(S2.2) show credit card
Master credit card user
Slave credit card user
(S1) set use condition (refill period, usual use amount, emergency use amount and/or the like)
Flow of action and/or material
Flow of information
Flow of money

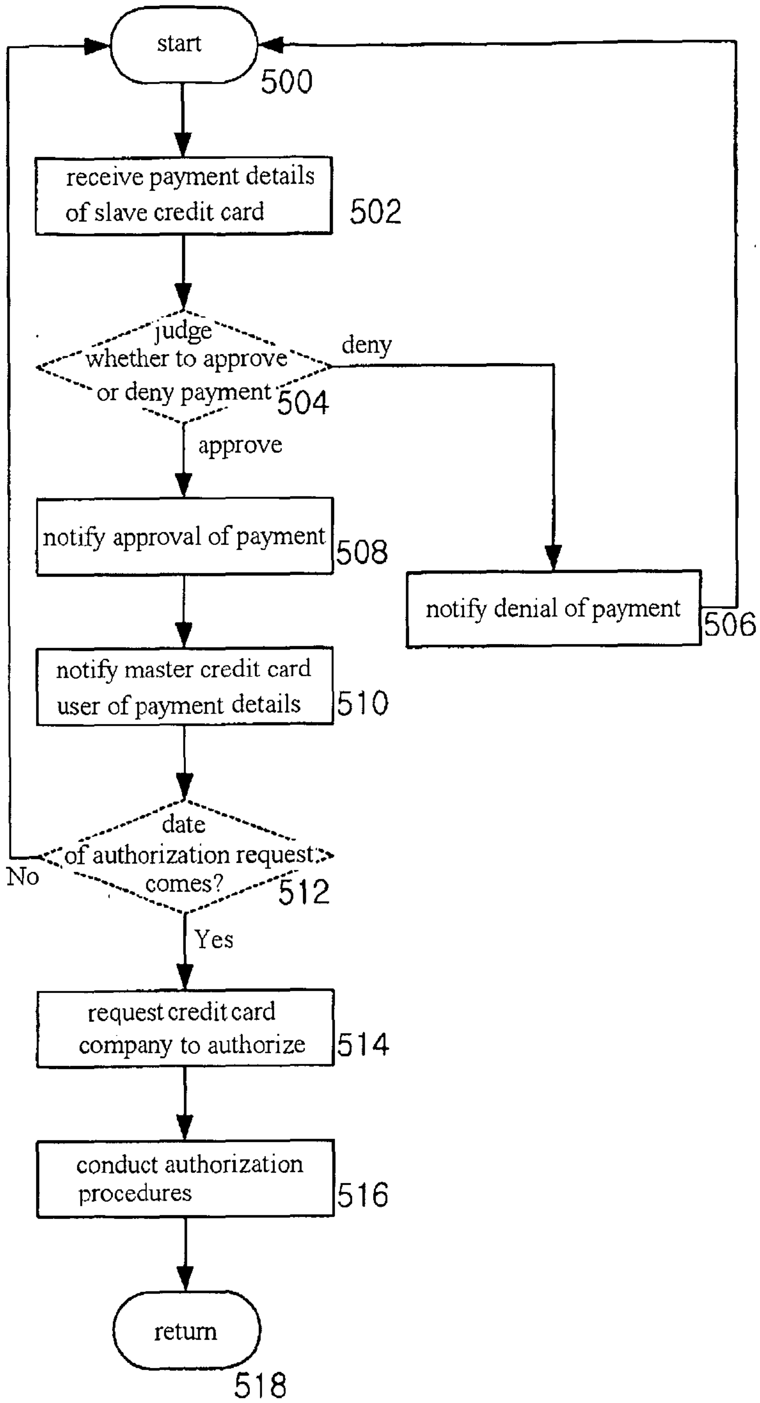
【Fig. 3】


Credit card company
(S3.3) authorize
(S3.2) request authorization
Credit information processing center
(S3.4) authorize
(S3.1) request authorization
(S5) pay amount for transaction
(S4) settlment
(S2.5) authorize
Payment management system
100
(S2.4) request authorization
(S2.6) Notify approval or denial of payment
(S2.3) Notify pament details
affiliated store
bank (affiliated store account)
(S2.1) goods and/or service
(S2.2) show credit card
Master credit card user
Slave credit card user
(S1) set use condition
(refill period, usual use amount, emergency use amount and/or the like)
Flow of action and/or material
Flow of information
Flow of money

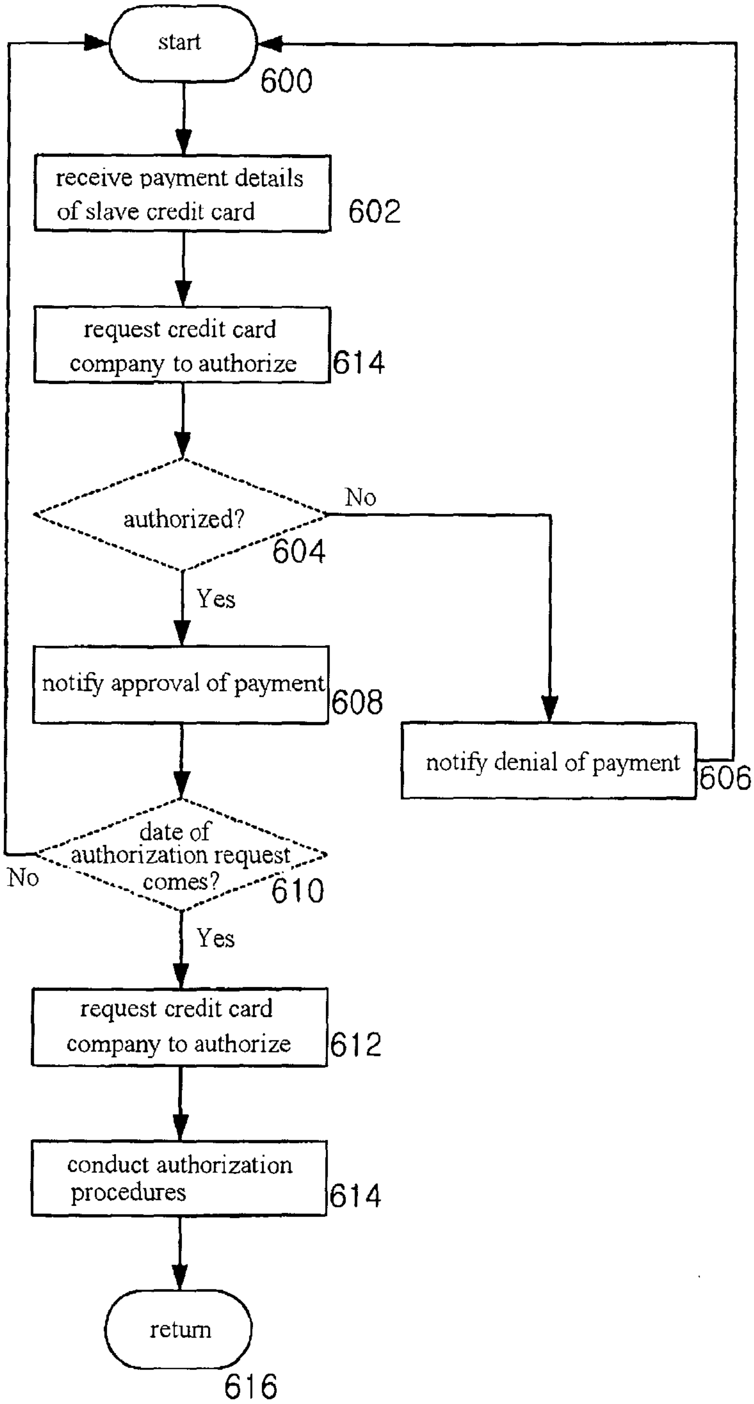
【Fig. 4】


communication function managing unit 102
authorization processing module (1020)
sent and/or received data processing module (1022)
credit card information managing unit 104
master credit card information managing module (1040)
slave credit card information managing module (1042)
payment information managing unit 106
payment details managing module (1060)
authorization information managing module (1062)
web page managing module (1064)
100

【Fig. 5】


start
500
receive payment details of slave credit card
502
judge whether to approve or deny payment
504
deny
approve
notify approval of payment
508
notify denial of payment
506
notify master credit card user of payment details
510
date of authorization request comes?
512
No
Yes
request credit card company to authorize
514
conduct authorization procedures
516
return
518

【Fig. 6】


start
600
receive payment details of slave credit card
602
request credit card company to authorize
614
authorized?
604
No
Yes
notify approval of payment
608
notify denial of payment
606
date of authorization request comes?
610
No
Yes
request credit card company to authorize
612
conduct authorization procedures
614
return
616

INTERNATIONAL SEARCH REPORT

[redacted]ternational application No.
PCT/KR03/01807

A. CLASSIFICATION OF SUBJECT MATTER

IPC7 G06F 17/60

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7 G06F, H01M

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean patents and applications for inventions since 1975

Electronic data base consulted during the intertnational search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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A	JP 60-235272 A (OMRON TATEISI ELECTRONICS CO) 21 November 1985 * See the whole document	1-26
A	KR 2002-35291 A (Sunseub, Kim) 11 May 2002 * abstract and claim 1	1-26
A	KR 2000-54780 A (Hyungnyun, Kim) 5 September 2000 * abstract	1-26
A	WO 2000/49586 A (ORBIS PATENT LIMITED) 24 August 2000 * See the whole document	1-26
A	JP 11-259560 A (OMRON CORP) 24 September 1999 * abstract	1-26
A	US 5 793 027 A (SAMSUNG ELECTRONICS CO LTD) 11 August 1998 * whole document	1-26

☐ Further documents are listed in the continuation of Box C. ☒ See patent family annex.

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"A" document defining the general state of the art which is not considered to be of particular relevance
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"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed
"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents,such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
27 NOVEMBER 2003 (27.11.2003)	28 NOVEMBER 2003 (28.11.2003)

Name and mailing address of the ISA/KR	Authorized officer
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Facsimile No. 82-42-472-7140	Telephone No. 82-42-481-5962

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/KR03/01807

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