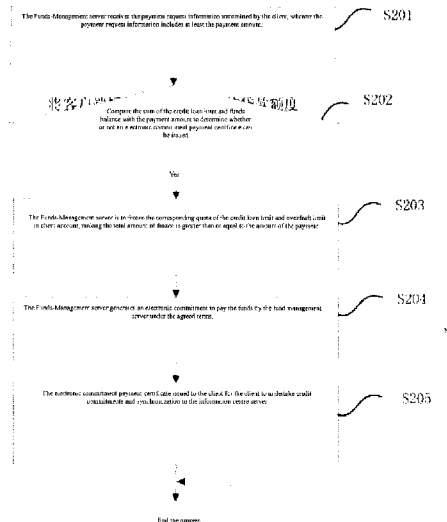




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(54) **Titre : SYSTEME DE PAIEMENT BASE SUR UN SERVEUR DE GESTION DE FONDS PARTAGES, ET PROCEDE, DISPOSITIF ET SERVEUR ASSOCIE**  
 (54) **Title: PAYMENT SYSTEM BASED ON SHARED FUNDS-MANAGEMENT SERVER, AND METHOD, DEVICE AND SERVER THEREFOR**



(57) **Abrégé/Abstract:**

Disclosed are a payment system based on a shared funds-management server, and a method, device and server therefor, belonging to the field of e-commerce. The method comprises: a funds-management server (30) receiving payment request information sent by a client end (10) (S201); comparing the sum of a credit overdraft limit and a credit loan limit of the client end (10) with a payment amount to determine whether an electronic commitment payment certificate can be created (S202); if yes, the funds-management server (30) respectively freezing the credit overdraft limit and the credit loan limit within a client end (10) account, the credit overdraft limit and the credit loan limit corresponding to the payment amount (S203); generating the electronic commitment payment certificate for the funds-management server (30) to commit to pay funds according to an agreed condition (S204); and sending the electronic commitment payment certificate to a merchant end (20) to make a credit commitment payment on behalf of the client end (10), and synchronising to an information centre server (40) (S205). The method supervises both parties in a transaction, reduces financial risk, and ensures the interests of both parties in the transaction.

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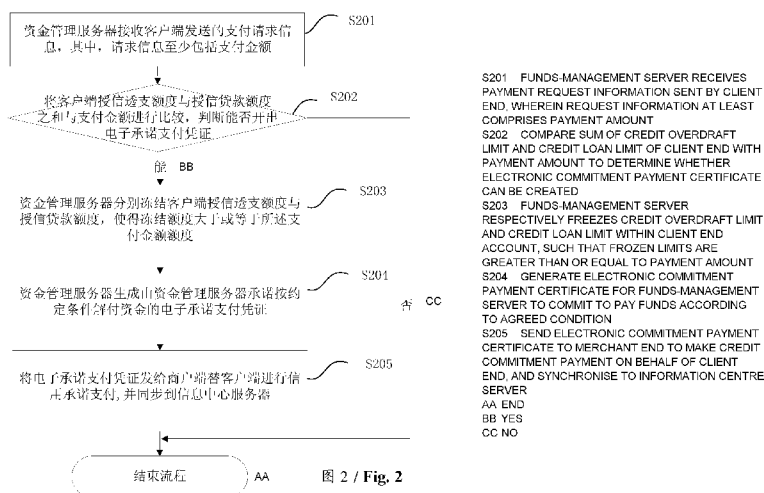
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[见续页]

(54) Title: PAYMENT SYSTEM BASED ON SHARED FUNDS-MANAGEMENT SERVER, AND METHOD, DEVICE AND SERVER THEREFOR

(54) 发明名称: 基于同一资金管理服务器的支付系统及方法、装置、服务器



(57) Abstract: Disclosed are a payment system based on a shared funds-management server, and a method, device and server therefor, belonging to the field of e-commerce. The method comprises: a funds-management server (30) receiving payment request information sent by a client end (10) (S201); comparing the sum of a credit overdraft limit and a credit loan limit of the client end (10) with a payment amount to determine whether an electronic commitment payment certificate can be created (S202); if yes, the funds-management server (30) respectively freezing the credit overdraft limit and the credit loan limit within a client end (10) account, the credit overdraft limit and the credit loan limit corresponding to the payment amount (S203); generating the electronic commitment payment certificate for the funds-management server (30) to commit to pay funds according to an agreed condition (S204); and sending the electronic commitment payment certificate to a merchant end (20) to make a credit commitment payment on behalf of the client end (10), and synchronising to an information centre server (40) (S205). The method supervises both parties in a transaction, reduces financial risk, and ensures the interests of both parties in the transaction.

(57) 摘要:

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CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG)。

**本国际公布:**  
— 包括国际检索报告(条约第 21 条(3))。

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一种基于同一资金管理服务器的支付系统及方法、装置、服务器，属于电子商务领域。其中，该方法包括：资金管理服务器（30）接收客户端（10）发送的支付请求信息（S201）；将客户端（10）的授信透支额度与授信贷款额度之和与支付金额进行比较，判断能否开出电子承诺支付凭证（S202）；若能，资金管理服务器（30）分别冻结客户端（10）账户内与支付金额对应的授信透支额度和授信贷款额度（S203）；资金管理服务器（30）生成由其承诺按约定条件解付资金的电子承诺支付凭证（S204）；将该电子承诺支付凭证发送给商户端（20）替所述客户端（10）进行信用承诺支付，并同步到信息中心服务器（40）（S205）。该方法使得交易双方予以监管，能降低资金风险，保障交易双方的利益。

PAYMENT SYSTEM BASED ON SHARED FUNDS-MANAGEMENT SERVER, AND  
METHOD, DEVICE AND SERVER THEREFOR

- [1] [Technical Field]
- [2] This invention refers to e-commerce field, especially, it is a cross Funds-Management server payment system and its payment method, device and server.
- [3] [Background Technology]
- [4] E-commerce has become increasingly widely used in a variety of commercial trade activities, the so-called e-commerce is a business operation model that based on the browser and server applications helps consumer realize online shopping, online transactions between merchants and online electronic payments, as well as a variety of business activities, trading activities, financial activities and related integrated service activities in the commercial trade, and in the Internet open network environment.
- [5] At present, many banks or enterprises have provided a network of payment services, allowing customers to operate computers, mobile phones and other terminal equipment to achieve network payment, the way of the network payment provides customers with a great convenience. But in the process of network payment, the payment is conducted by directly using the existing funds in the debit cards or credit card, or allocating the credit limit of the existing funds or credit card to the third party as a guarantee for the transaction, once the merchant does not provide goods or service, or disputes occur, the financial security is difficult to be guaranteed. Thus, new payment systems, methods, devices and servers at this stage is needed to reduce the risk of user funds and to protect the interests of buyers and sellers.
- [6] [Summary of the invention]
- [7] In view of the above, the technical problem to be solved by the present invention is to provide a payment system, and its payment method, device and server based on the same Funds-Management server to reduce the risk of user funds, and to protect the interests of buyers and sellers.
- [8] The technical solution of the present invention to solve the above-mentioned technical problems is as follows:
- [9] A payment system based on the same Funds-Management server, comprising at least one client, at least one merchant, an information centre server and a Funds-Management server, connected with the client, the merchant and the information centre server connection

respectively, where:

- [10] The above-mentioned client is to send payment request information including at least a payment amount to the Funds-Management server;
- [11] The merchant is used for receiving an electronic commitment payment certificate sent by the Funds-Management server;
- [12] The Funds-Management server is used for receiving payment request information sent from client; comparing the sum of the credit loan limit and overdraft limit with the payment amount to determine whether an electronic commitment payment certificate can be created ; if yes, the Funds-Management server will freeze the credit loan limit and credit overdraft limit within the client account, making the frozen funds sum exceeds or equals to the payment amount ; generating the electronic commitment payment certificate of the Funds-Management server according to the agreed condition, and sending the electronic commitment payment certificate to the merchant to make a credit commitment payment on behalf of the client and synchronizing the electronic commitment payment certificate information to the information centre server.
- [13] The information centre server for storing and supervising the electronic commitment payment certificate information.
- [14] According to another aspect of this invention, there is a network payment method based on the same fund servers, and the method is comprised by following steps:
- [15] The Funds-Management server receives the payment request information sent by the client, wherein the payment request information includes at least the payment amount;
- [16] By comparing the client loan limit and credit overdraft limit with the payment amount to determine whether or not an electronic commitment payment certificate is to be paid;
- [17] if yes, the Funds-Management server will freeze the credit loan limit and credit overdraft limit respectively within the client account, making the frozen funds sum exceeds or equals to the payment amount ; generating the electronic commitment payment certificate of the Funds-Management server according to the agreed condition, and sending the electronic commitment payment certificate to the merchant to make a credit commitment payment on behalf of the client and synchronizing the electronic commitment payment certificate information to the information centre server.
- [18] According to another aspect of the present invention, there is provided a payment device based on the same Funds-Management server, the device comprises a receiving module, a judging module and a processing module.
- [19] The receiving module is configured to receive payment request information transmitted by the client, and the payment request information includes the payment amount;

- [20] The judgement module is configured to determine whether or not to allow payment based on the credit loan limit and overdraft limit and the payment amount;
- [21] The processing module is configured to freeze the credit loan limit and overdraft limit in the client account respectively when the payment is allowed, and the total amount of the freezing are greater than or equal to the payment amount; generate the electronic commitment payment certificate, send the electronic commitment payment certificate message to the merchant, and synchronize to the information centre server.
- [22] A server based on the same Funds-Management server, the said server comprises any of the payment device described in above claim.
- [23] The present invention provides a payment system based on the same Funds-Management server and its method, device and server, supervises the information of the buyers and sellers through the Funds-Management server and the information centre server, and the regulatory function is merged into the bank or other institutions with payment ability; meanwhile, freezes the client account credit overdraft limit and credit loan limit, generates electronic payment certificates and synchronize the information centre server for real-time monitoring, reduces the risk of funds to protect the interests of the buyers and the sellers; this program makes full use of the risk control centre function of the credit centre of the Funds-Management server and the information centre server, facilitates the security of on-line transactions and guarantees transaction funds with a more optimized credit mechanism, provides credit media for both parties to the transaction, and reduces the risk of funds through the supervision of funds to protect the interests of both parties. In addition, it brings convenience to the customer by adding loan functions, which also enriches businesses of banks or other institutions with credit payment ability.
- [24] [Brief Description]
- [25] Figure 1 is a schematic diagram of the payment system based on the same Funds-Management server provided by Example one of the present invention;
- [26] Figure 2 is a flow chart of the payment method based on the same Funds-Management server provided by Example two of the present invention;
- [27] Figure 3 is a flow chart of the payment method based on the same Funds-Management server provided by Example three of the present invention;
- [28] Figure 4 is a flow chart of the payment method based on the same Funds-Management server provided by Example four of the present invention;
- [29] Figure 5 is a block diagram of a payment device based on the same Funds-Management server provided by Example 5 of the present invention;
- [30] Figure 6 is a block diagram of a payment system based on the same Funds-Management

server provided in the Example 6 of the present invention.

[31] [Description of the Preferred Examples]

[32] The present invention will be described in further detail with reference to the accompanying drawings and the accompanying example, in which the technical problems, technical solutions and advantages to be solved by the present invention will become more apparent. It is to be understood that the specific examples described herein are merely illustrative of the invention and are not intended to limit the invention.

[33] Example 1

[34] As shown in Figure 1, an example of the present invention provides a payment system based on the same Funds-Management server, which includes at least one client 10, at least one merchant 20, an information centre server 40, and a Funds-Management server 30, the Funds-Management server 30 is connected to the client 10, the merchant 20 and the information centre server 40, respectively,

[35] The client 10, connected with the fund management server 30, is configured to transmit the payment request information to the Funds-Management server 30, wherein the payment request information includes the payment amount.

[36] Specifically, the client 10 is suitable for the payer (buyer), including the account information of mobile phone, personal computer, PAD, and other intelligent devices, the account information of the client 10 is filled in when the customer registers and stored in the database of the Funds-Management service and (or) the information centre server, the account information of the client 10 includes customer ID, an account opening bank, account name, a bank account number, and a credit balance, and may also include the customer's shipping address. The payment request information is information such as the written and confirmed price (payment amount), the receipt address and the like after the customer purchases the specific goods / services. According to the pre-set rules, price of the goods/services, and commercial tenants of the goods/services, the merchant 10 generates data package; the packet will be transmitted to the Funds-Management server 30. The payment request information includes at least the payment amount, and may include the merchant information and the merchandise information. Among them, the merchant information can be directly merchants' receiving account number, you can also uniquely identify the merchant information (such as merchant ID), and find the corresponding bank account information by Funds-Management server 30 based on the unique identification of the merchant from the database. In the specific application, the account information of the merchant 20 should be kept confidential with respect to the client 10, so the merchant information is preferably the merchant ID, and the Funds-Management server 30 inquires

the merchant's receiving account by using the correspondence relationship between the merchant ID and its receiving account. In other words, the merchant 10 only needs to inform the Funds-Management server 30 which merchant's which goods need to be paid how much money, then the Funds-Management server 30 will be able to call out the merchant account to implement the appropriate payment operation.

- [37] The merchant 20 is connected to the Funds-Management server 30 for receiving the electronic commitment payment certificate sent by the Funds-Management server 30.
- [38] Specifically, the merchant 20 is applied to the receiving party (seller), and the merchant includes but not limited to devices such as servers, POS machines and other devices. Merchants include but not limited to manufacturers, agents, logistics companies, etc. The merchant information is also registered in the database of the Funds-Management server and (or) the information centre server, and the merchant information includes, but not limited to merchant ID, merchant name, merchant opening bank, merchant account name, and merchant bank account number. The Merchant 20 receives the electronic commitment payment voucher transmitted from the second Funds-Management server 30, and extracts the merchandise information and the goods receipt information in the electronic commitment payment voucher information to designate the merchandise transmission destination.
- [39] The Funds-Management server 30 is used for receiving payment request information sent by client 10; comparing the sum of the credit loan limit and overdraft limit of the client 10 with the payment amount to determine whether an electronic commitment payment certificate can be created; if yes, the Funds-Management server respectively freezes corresponding amount of the credit loan limit and overdraft limit within client account, generating the electronic commitment payment certificate for the Funds-Management server to commit the payment according to an agreed condition, and sending the electronic commitment payment certificate to a merchant 20, and synchronizes to the information centre server 40.
- [40] Specifically, the Funds-Management server 30 receives the packet of the payment request information and parses it according to the pre-set rule to obtain the relevant payment information including, but not limited to, the merchant information, the merchandise information, and the payment amount, and the like information, which merchant to which the goods to pay the amount of money. The Funds-Management server 30 inquires whether the sum of the credit loan limit and overdraft limit in the client account is sufficient for the current settlement, and if it is insufficient, the payment is terminated, if sufficient, the corresponding amount of the credit loan limit and overdraft limit is frozen, and the frozen

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sum is greater than or equal to the amount of the payment, until the merchant confirms the delivery or the customer confirms the receipt the transfer operation is carried out to complete the transaction.

- [41] It is understandable that freezing the corresponding amount of the credit loan limit and overdraft limit equal to the payment includes the following cases:
- [42] 1. Only freeze the amount of credit overdraft to make the total amount of frozen greater than or equal to the amount of the payment.
- [43] 2. Only the credit loan limit is frozen to make the total amount of the greater than or equal to the payment amount.
- [44] 3. Part of the credit loan limit and credit overdraft limit are frozen respectively, making the total amount of frozen greater than or equal to the amount of the payment.
- [45] The information centre server 40 is connected to the Funds-Management server 30 for storing the electronic commitment payment certificate information of the client 10 and the merchant 20.
- [46] Specifically, both the client 10 and the merchant 20 can obtain the electronic commitment payment certificate information to the information centre server 40 via the Internet for subsequent processing, such as the correctness of the dual channel authentication information using the data. The Funds-Management server 30 may further determine whether or not the payment operation is made in accordance with the state of the electronic commitment payment certificate information, that is, payment request is only freezing the credit overdraft and loan limit, and transferring and deducting credit loan limit are done after confirming delivery.
- [47] In the present example, the same Funds-Management server 30 may be connected to the plurality of client 10 and the plurality of merchant 20 through the Internet at the same time. That is, the server where the merchant 20 account is located and the server where the merchant 10 resides are the same Funds-Management server 30. The Funds-Management server 30 can be a single or multiple servers in a physical sense, e.g., they can work in parallel, and the resources of the server are automatically allocated to realize the fund management according to the different traffic. The Funds-Management server includes but not limited to servers in organizations such as banks, businesses, and so on. In the practical applications, it can be understood as the same bank's cluster Funds-Management server, but not limited to banks, but also the Internet to support the flow of funds in other institutions. Through the Funds-Management server and information centre server, the seller and seller of information are regulated, and the regulatory functions are merged into the bank or other institutions with credit ability to pay.

[48] Example 2

[49] As shown in Figure 2, an example of the present invention provides a payment method based on the same Funds-Management server for use in the Funds-Management server, which method comprises the steps of:

[50] S201, the Funds-Management server receives the payment request information sent by the client, wherein the payment request information includes at least the payment amount;

[51] Specifically, the payment request information received by the Funds-Management server includes merchant information, product information and payment amount, and may include merchant information (e.g., client ID). Among them, the merchant information can be directly merchants receiving account number, you can also uniquely identify the merchant information (such as business ID), and find the corresponding bank account information by Funds-Management server based on the unique identification of the merchant from the database. In the specific application, the account information of the merchant should be kept confidential with respect to the merchant, so the merchant information is preferably the merchant ID, and the Funds-Management server inquires the merchant's receiving account by using the correspondence relationship between the merchant ID and its receiving account. In other words, the client only need to inform the Funds-Management server to which merchant and which goods to pay the amount of funds, the Funds-Management server will be able to call out the account of the implementation of the corresponding payment operation.

[52] S202, compares the sum of the credit loan limit and overdraft limit with the payment amount to determine whether to generate electronic commitment payment certificate to allow payment, if allowed, then enter the payment process, or else terminate the payment. It is understandable that in this embodiment, the credit overdraft quota is typically stored in a credit card, and matches the credit.

[53] This step further includes: the Funds-Management server queries the credit loan limit and overdraft limit of the client account from the database; determines whether the sum of the credit loan limit and overdraft limit is greater than or equal to the amount of payment, if so, then allow the payment; otherwise terminate the payment. Wherein the bank and credit card accounts of the client can be informed to the Funds-Management server by the client in the payment request, or can be queried from the database according to the client ID by the Funds-Management server. Only the sum of the credit overdraft limit and the credit loan limit in the client account is more than or equal t the payment amount, the client has the ability to pay, and this time the payment behaviour is allowed to conduct. So, you can save the payment period, protect the interests of merchants.

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- [54] S203, the Funds-Management server freezes the corresponding quota of the credit loan limit and overdraft limit in client account, making the total amount of frozen are greater than or equal to the amount of the payment;
- [55] This step only freezes the corresponding quota of the credit loan limit and overdraft limit to ensure that there is sufficient funds to complete the transaction, but not directly transfer to the merchant account, so to ensure the interests of the buyers and the sellers, and is followed by the client, the merchant or logistics company sending the payment information to confirm the delivery is completed. After Funds-Management server receiving the payment information, it deducts the credit loan limit and overdraft limit, and the unblocked funds will be allocated to the merchant account.
- [56] S204, the Funds-Management server generates an electronic commitment payment the certificate;
- [57] Specifically, since the payment request information is sent by the buyer to the Funds-Management server through the merchant operation, the payment information is objectively confirmed by the customer and authorized by the bank. The Funds-Management server respectively freezes the corresponding quota of the credit loan limit and overdraft limit, and generates an electronic commitment payment certificate based on the payment information. The electronic commitment payment certificate information includes but is not limited to commodity information, payment amount (frozen funds or credit overdraft limit or credit loan limit), delivery address and validity period, and the form is not limited to text, pictures, graphics and so on. The electronic certificate is the certificate of the receiving end of the merchant, and the merchant provides the corresponding goods / service according to the electronic commitment payment certificate.
- [58] S205, sends the electronic commitment payment certificate to the merchant and carry out for the client, and synchronizes to the information centre server.
- [59] Specifically, this Step sends the generated electronic certificate information to the information centre server so that the information centre server performs subsequent tracking.
- [60] The payment method illustrated by the example of the present invention can reduce the risk of funds and protect the interests of the buyers and the sellers through the Funds-Management server receiving the payment request information of the client, determining whether or not the payment is permitted based on the credit overdraft limit, funds amount, or credit loan limit in the client account, then at the same time freezing the payment account in the client, and generating electronic commitment payment certificate.
- [61] Example 3

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- [62] As shown in Figure 3, an example of the present invention provides a payment method of credit overdraft limit and credit loan limit, which applied in the payment system of the same Funds-Management server in Figure 1, and the method comprises the following steps:
- [63] S301, the client sends the payment request information to the Funds-Management server, the payment request information includes the payment amount, and the Funds-Management server receives the payment request information sent by the client.
- [64] And the payment request information is composed of a plurality of data packets, including at least the Merchant information, the product information and the payment amount. You can also include client information (such as client ID). Among them, the merchant information can be directly merchants receiving account number, you can also uniquely identify the merchant information (such as business ID), and find the corresponding bank account information by Funds-Management server based on the unique identification of the merchant from the database. In the specific application, the account information of the merchant should be kept confidential with respect to the merchant, so the merchant information is preferably the merchant ID, and the Funds-Management server inquires the merchant's receiving account by using the correspondence relationship between the merchant ID and its receiving account. In other words, the client only need to inform the Funds-Management server to which merchant and which goods to pay the amount of funds, the Funds-Management server will be able to call out the account of the implementation of the corresponding payment operation.
- [65] The way the client sends payment request information to the Funds-Management server can be done in the existing way, such as using a digital signature or a digital envelope. A digital signature is a data that the user encrypts a hash of the original data with his own private key. The information recipient obtains the hash digest by decrypting the digital signature attached to the original information using the public key of the sender of the information and confirms whether the original information is made by comparing with the hash digest generated by the original data received by the information recipient Tampered with. This ensures that the data transmission is undeniable. Digital envelopes use password technology to ensure that only the recipient of the specified information can read the contents of the information. Digital envelopes used in a single-key password system and public key password system. The information sender first encrypts the information with the randomly generated symmetric password, and then encrypts the symmetric password with the public key of the receiver. The symmetric password encrypted by the public key is called the digital envelope. In the transmission of information, the information receiver

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- shall decrypt the information, you must first use their own private key to decrypt the digital envelope, get a symmetric password, in order to use the symmetric password to decrypt the information obtained. This ensures the authenticity and integrity of the data transmission.
- [66] S302, inquiring the sum of the credit loan limit and overdraft limit, comparing the sum with the payment amount, if the sum is greater than or equal to the amount, it is sufficient; if the sum is less than the amount, it is insufficient. When the credit loan limit and overdraft limit is sufficient, execute the Step S204, otherwise terminate, not to pay;
- [67] S303, the Funds-Management server freezes the corresponding quota of the credit loan limit and overdraft limit equal to the payment; it is understandable that freezing the corresponding quota of the credit loan limit and overdraft limit equal to the payment includes the following circumstances:
- [68] 1. Only to freeze the amount of credit overdraft, so that the total frozen amount is greater than or equal to the amount of the payment.
- [69] 2. Only the credit loan limit is frozen so that the total amount of the greater than or equal to the payment amount.
- [70] 3. Respectively freeze part of the credit loan limit and credit overdraft limit of the client account, making the total frozen amount is greater than or equal to the amount of the payment.
- [71] S304, the Funds-Management server generates an electronic commitment payment the certificate;
- [72] S305, sending the electronic commitment payment certificate information to the merchant and the information centre server;
- [73] S306, the merchant sends the receiving and receiving information to the Funds-Management server;
- [74] It is to be noted that in Step S210, the merchant sends and receives the payment information to the Funds-Management server as an example. In practice, it is also possible for the client, the logistics server, or other entity that can know the delivery status to send the payment information to the Funds-Management server.
- [75] S307, the Funds-Management server synchronizes the payment information to the information centre server.
- [76] Specifically, the Funds-Management server synchronizes the updated electronic commitment payment certificate information to the information centre server, from the updated electronic commitment payment certificate information to immediately inform the merchandise of the circulation state, when the goods / service delivery is completed, Of the funds to the merchant account.

- [77] S308, the frozen funds corresponding to the freezing amount are allocated to the account of the merchant. It can be understood that, according to the different method of freezing in S303, there will be a matching allocation plan, which will allocate the corresponding funds to the account of the merchant.
- [78] S309, end the process.
- [79] The payment method provided by the example of the present invention receives the payment request information of the client terminal through the Funds-Management server, determines whether or not the payment is permitted based on the credit overdraft limit and the credit loan limit, and by freezing the corresponding quota of the credit loan limit and overdraft limit in client account, making the total amount of frozen are greater than or equal to the amount of the payment, and generating electronic commitment payment certificate and synchronizing to the information centre server, it can reduce the risk of funds and protect the interests of the buyers and the sellers.
- [80] Example 4
- [81] As shown in Figure 4, an example of the present invention provides a payment method applied in the payment system based on the same Funds-Management server in Figure 1, this method comprises the following steps:
- [82] S401, the Funds-Management server receives the payment request information sent by the client.
- [83] And the payment request information is composed of a plurality of data packets, including at least the Merchant information, the product information and the payment amount. You can also include client information (such as client ID). Among them, the merchant information can be directly merchants receiving account number, you can also uniquely identify the merchant information (such as business ID), and find the corresponding bank account information by Funds-Management server based on the unique identification of the merchant from the database. In the specific application, the account information of the merchant should be kept confidential with respect to the merchant, so the merchant information is preferably the merchant ID, and the Funds-Management server inquires the merchant's receiving account by using the correspondence relationship between the merchant ID and its receiving account. In other words, the client only need to inform the Funds-Management server to which merchant and which goods to pay the amount of funds, the Funds-Management server will be able to call out the account of the implementation of the corresponding payment operation.
- [84] The way the client sends payment request information to the Funds-Management server can be done in the existing way, such as using a digital signature or a digital envelope. A

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digital signature is a data that the user encrypts a hash of the original data with his own private key. The information recipient obtains the hash digest by decrypting the digital signature attached to the original information using the public key of the sender of the information and confirms whether the original information is made by comparing with the hash digest generated by the original data received by the information recipient Tampered with. This ensures that the data transmission is undeniable. Digital envelopes use password technology to ensure that only the recipient of the specified information can read the contents of the information. Digital envelopes used in a single-key password system and public key password system. The information sender first encrypts the information with the randomly generated symmetric password, and then encrypts the symmetric password with the public key of the receiver. The symmetric password encrypted by the public key is called the digital envelope. In the transmission of information, the information receiver shall decrypt the information, you must first use their own private key to decrypt the digital envelope, get a symmetric password, in order to use the symmetric password to decrypt the information obtained. This ensures the authenticity and integrity of the data transmission.

- [85] S402, inquiries the sum of the credit loan limit and overdraft limit in client account, comparing the sum with the payment amount, if the sum is greater than or equal to the amount, it is sufficient; if the sum is less than the amount, it is insufficient. When the credit overdraft limit and the credit loan limit are sufficient, step S403 is executed, otherwise, step S404 is executed;
- [86] S403, the Funds-Management server freezes the corresponding quota of the credit loan limit and overdraft limit in client account, making the total frozen amount is greater than or equal to the amount of the payment, it can be specifically divided into the following forms:
- [87] 1. Only the balance of the funds in the client account is frozen so that the total amount of the frozen is greater than or equal to the payment amount.
- [88] 2. Only the credit loan limit is frozen so that the total amount of the greater than or equal to the payment amount.
- [89] 3. Only to freeze the amount of credit overdraft limit, so that the total amount of frozen are greater than or equal to the amount of the payment.
- [90] 4. Respectively, to freeze the balance of funds and credit overdraft limit of the client's account, making the total amount of frozen greater than or equal to the amount of the payment.
- [91] 5. Respectively, to freeze part of the balance of funds and credit loan limit of the client's account, making the total amount of frozen greater than or equal to the amount of the payment.

- [92] 6. Respectively, to freeze part of the credit loan limit and credit overdraft limit of the client's account, making the total amount of frozen greater than or equal to the amount of the payment.
- [93] 7. Respectively, to freeze part of the credit loan limit and credit overdraft limit of the client's account, as well as the funds balance, making the total amount of frozen greater than or equal to the amount of the payment.
- [94] S404, asking the client whether or not a fund balance is required; if the fund balance is to be used, step S405 is executed, otherwise proceed to step S411;
- [95] S405, judging whether the funds balance is sufficient; the sufficiency can includes several cases:
- [96] 1. If the sum of the original the sum of the credit loan limit and overdraft limit and part of funds balance is greater than or equal to the amount of the payment amount, the amount of funds balance is considered to be sufficient; and conversely, it is insufficient;
- [97] 2. When funds balance is greater than or equal to the amount of the payment amount, the amount of funds balance is considered to be sufficient and, conversely, insufficient.
- [98] Specifically, the funds balance can also be defaulted to the wanting amount in this payment. For example, when the price of a product selected by the customer is 1,500 Yuan (payment amount), if in the customer account the credit loan limit and overdraft limit is only 900 Yuan, you need to transfer 600 Yuan funds balance in order to meet the allowable payment criterion to carry out payment. Of course, the using of another way, such as the directly using credit loan limit of 1,500 Yuan to finish payment, is also feasible.
- [99] S406, the Funds-Management server freezes the credit loan limit and overdraft limit and funds balance in the client account, after making the total frozen amount is greater than or equal to the amount of the payment, it generates the electronic commitment payment certificate:
- [100] S407, sending the electronic commitment payment certificate information to the merchant and the information centre server;
- [101] S408, the merchant sends the receiving and receiving information to the Funds-Management server;
- [102] It is to be noted that in Step S408, the merchant sends and receives the payment information to the Funds-Management server as an example. In practice, it is also possible for the client, the logistics server, or other entity that can know the delivery status to send the payment information to the Funds-Management server.
- [103] S409, the Funds-Management server synchronizes the payment information to the information centre server.

- [104] Specifically, the Funds-Management server synchronizes the updated electronic commitment payment certificate information to the information centre server, from the updated electronic commitment payment certificate information to immediately inform the merchandise of the circulation state, when the goods / service delivery is completed, Of the funds to the merchant account.
- [105] S410, allocates the funds corresponding to the frozen amount to the account number of the merchant. It can be understood that, according to the different ways of freezing in S403, there will be a matching allocation plan, which will allocate the corresponding funds to the account of the merchant.
- [106] S411, end the process.
- [107] The example of the present invention, on the basis of the example 3, not only facilitates the buyer, but also greatly enriches the business of the bank or other institution with the credit payment ability by increasing the function of querying the funds balance; in addition, by tracking synchronously buyers and sellers' electronic commitment certificates, and effectively combing the flow of goods and the flow of funds trajectory, it can protect the interests of both buyers and sellers effectively.
- [108] Example 5
- [109] As shown in Figure 5, an example of the present invention provides a payment device comprising a receiving module 301, a judging module, and a processing module 303, wherein:
- [110] The receiving module 301 is configured to receive payment request information transmitted by the client, and the payment request information includes the payment amount.
- [111] Specifically, the payment request information received by the receiving module 301 includes Merchant information, product information and payment amount, and may include the client information (for an example, customer ID). Among them, the merchant information can be merchants receiving account, and the merchant information can also be uniquely identified (such as business ID). In the particular application, the account information of the merchant should be kept confidential from the client, so the merchant information should be the merchant ID, that is, the client simply informs which merchandise of which merchant is paid by how much, then the device call out of the merchant account number to implement the corresponding payment operation.
- [112] The judgement module 302 is configured to determine whether or not a payment is permitted based on the client credit loan and overdraft limit and the payment amount;
- [113] As a preferred scheme, the judgement module 502 is specifically configured to inquiry

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credit loan limit and overdraft limit in the client account; and determine whether credit loan limit and overdraft limit is greater than or equal to the payment amount, if yes, it is allowed to pay. In this way, first determine the payment ability of the sum of credit loan limit and overdraft limit and preferentially use the account' credit loan limit and overdraft limit, which can shorten the payment cycle to protect the interests of merchants. The bank account or the credit card account may be notified by the client to the device in the payment request information, or the device may inquire from the database based on the client information and obtain the funds corresponding to credit loan limit and overdraft limit. Only credit loan limit and overdraft limit in the client account are more than or equal to the payment amount, the client has the ability to pay, and then the payment behaviour is allowed to conduct.

- [114] As another preferred example, the judgement module 302 is also configured to ask the client whether credit loan limit is to be issued when the sum of credit loan limit and overdraft limit in the client account is less than the payment amount; if it needs credit loan limit, then the client account issues credit loan limit and allow the payment; if not, then terminate the payment. In addition, it not only to facilitate the buyer, but also greatly enrich the bank or other institutions with credit ability to pay the business. When using a Funds-Management server to obtain a bank account or credit card account based on the Funds-Management server, a customer may have multiple accounts, and a mixed payment method may also be used. For example, when the price of a commodity selected by the customer is 1,500 Yuan (the payment amount), the sum of credit loan limit and overdraft limit is only 900 Yuan, then the amount of money that the customer can use to pay is a total of 900 Yuan, which will not be able to pay; If the client account uses funds balance of 600 Yuan, then he has usage limit of 1,500 Yuan, and payment is implemented.
- [115] The processing module 303 is configured to freeze the credit loan limit and overdraft limit in the client account respectively making the total frozen amount greater than or equal to the payment amount; generating the electronic commitment payment certificate, send the electronic commitment payment certificate message to the merchant, and synchronizes to the information centre server.
- [116] Preferably, the processing module 303 further includes a freeze unit 3031, a certificate generation unit 3032, and a synchronization unit 3033, wherein:
- [117] The freezing unit 3031 is configured to freezes the credit loan limit and overdraft limit in the client account when the payment is allowed making the total frozen amount greater than or equal to the payment amount;
- [118] The credential generation unit 3032 is configured to generate an electronic commitment

- payment certificate;
- [119] The synchronization unit 3033 is configured to transmit the electronic commitment payment certificate information to the merchant.
- [120] In addition, the processing module 303 may include a transfer unit, configured to receive the payment information, synchronize the payment information to the information centre server, and allocate the frozen funds to the account of the merchant.
- [121] It is to be noted that the technical features of the above-described methods in examples 2 and 3 are applicable in the present apparatus and are not repeated here.
- [122] In addition, the present invention also provides a Funds-Management server including the payment device in the fourth embodiment, which is not repeated here.
- [123] The payment method provided by the example of the present invention receives the payment request information of the client through the Funds-Management server, the client account funds amount, the client account credit overdraft limit and the client account credit loan limit will be based to determine whether to allow payment, and by freezing funds and credit loan limit in the client account making the total frozen amount greater than or equal to the payment amount, and generating electronic commitment payment certificate and synchronizing to the information centre server for conducting real-time monitoring, it can reduce the risk of funds to protect the interests of the buyers and the sellers. In addition, by increasing the function of transferring funds balance, it can not only facilitate the buyer, but also greatly enrich the business of bank or other institutions with credit payment ability.
- [124] Example 6
- [125] As shown in Figure 6, a preferred example of the present invention provides a payment system based on the same Funds-Management server, which includes a client 10, a merchant 20, a Funds-Management server 30, and an information centre server, wherein:
- [126] The information centre server 50 is used to store and supervise the electronic commitment payment certificate information.
- [127] The merchant 10 includes a payment request module 101 configured to send payment request information to the Funds-Management server 30, wherein the payment request information includes merchant and merchandise information, and payment amount.
- [128] The merchant 20 includes a credential receiving module 201 and a credential updating module 202, wherein the certificate receiving module 201 is configured to receive the electronic commitment payment certificate sent by the fund managing server 30.
- [129] The Funds-Management server 30 includes a receiving module 301, a judgement module 302, and a processing module 303, wherein:
- [130] The receiving module 301 is configured to receive payment request information

- transmitted by the client;
- [131] The judgement module 302 is configured to compare the sum of the credit loan limit and overdraft limit with the payment amount to determine whether the electronic commitment payment certificate can be issued;
- [132] As a preferred example, the judgement module 302 is configured to determine whether the credit loan limit and overdraft limit in the client account is greater than or equal to the amount of the payment, and if so, the payment is allowed; or else further determine whether the loan balance is greater than or equal to the payment amount, if so, allow to pay.
- [133] The processing module 303 is configured to freeze the balance of the funds corresponding to the payment amount in the client account when the payment is allowed, and generate the electronic commitment payment certificate, transmit the electronic commitment payment certificate information to the merchant and synchronize to the information centre server.
- [134] As a preferred example, the receiving module 301 of the Funds-Management server 30 is also responsible for receiving the payment information; the processing module 303 also includes a transferring module, which is configured to transfer equal funds to the account of the merchant after receiving the payment information.
- [135] Specifically, since the payment request information is sent by the buyer to the Funds-Management server 30 through the client 10, the payment information is objectively obtained by the client 10 confirming and authorizing the bank to pay. The Funds-Management server 30 respectively freezes the corresponding funds balance and credit overdraft limit, and generates an electronic commitment payment certificate based on the payment information. The electronic commitment payment certificate information includes but not limited to commodity information, payment amount (frozen funds or credit overdraft limit or credit loan limit), delivery address and validity period, and the form is not limited to text, pictures, graphics and so on. The electronic certificate is the certificate of the receiving fund of the Merchant 20, and the Merchant 20 provides the corresponding merchandise/service based on the electronic commitment payment certificate.
- [136] The general technicians of this field can understand and implement all or parts of steps in the aforesaid examples that can complete the procedure by controlling relevant hardware, and the said procedure can be stored in a readable storage media of a computer such as ROM/RAM, disk and light disk.
- [137] The preferred examples of the present invention have been described above with reference to the accompanying drawings, which are not to limit the scope of the present invention. It

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will be apparent to those skilled in the field that various modifications, equivalents, and improvements may be made without departing from the scope and spirit of the invention.

Claims:

1. A payment system for protecting both a client and a merchant in e-commerce transactions, the system comprising:

at least one client device of the client;

at least one merchant device;

an information center server;

a funds-management server; and

wherein the at least one client device is communicatively connected to the funds-management server;

wherein the at least one merchant device is communicatively connected to the funds-management server;

wherein the information center server is communicatively connected to the funds-management server;

wherein the information center server is configured to:

receive an electronic commitment payment certificate transmitted by the funds-management server; and

store and supervise the electronic commitment payment certificate information;

wherein the at least one client device is configured to:

send payment request information from an e-commerce transaction including at least a payment amount of electronic funds to the funds-management server;

wherein the at least one merchant device is configured to:

receive the electronic commitment payment certificate sent by the funds-management server;

wherein the funds-management server is configured to:

receive the payment request information of the e-commerce transaction sent by a client device;

compare the sum of a credit overdraft limit of a client account and a credit loan limit of the client account with a payment amount of electronic funds to determine whether an electronic commitment payment certificate can be created; and

wherein if the sum of the credit overdraft limit of the client account and the credit loan limit of the client account is sufficient to complete the e-commerce transaction the electronic commitment payment certificate can be created, if the electronic commitment payment certificate can be created, the funds-management server is configured to:

freeze the credit overdraft limit and the credit loan limit corresponding to the payment amount of electronic funds, wherein a frozen amount is greater than or equal to the payment amount of electronic funds;

generate the electronic commitment payment certificate for the funds-management server to commit to pay the client funds according to an agreed condition; and

send the electronic commitment payment certificate to the at least one merchant device to make a credit commitment payment on behalf of the at least one client device;

synchronize the electronic commitment payment certificate information to the information center server;

wherein the funds-management server is further configured to:

receive payment information;

synchronize the payment information to the information center server; and

allocate a received payment amount of electronic funds to a merchant account in the at least one merchant device based on the electronic payment certificate information.

2. The system of claim 1, wherein when the sum of the credit overdraft limit and the credit loan limit is less than the payment amount of electronic funds, the system further comprises:

sending a client funds balance request by the funds management server, wherein if the client approves the client funds balance request and there are sufficient funds in a client funds balance of the client account the payment is allowed, and if the client denies the client funds balance request the payment is terminated.

3. The system of claim 2, wherein the frozen amount is frozen only within the client funds balance.
4. The system of any one of claims 1 to 2, wherein the frozen amount is frozen only within the credit overdraft limit.
5. The system of any one of claims 1 to 2, wherein the frozen amount is frozen only within the credit loan limit.
6. The system of claim 2, wherein the frozen amount is frozen within the client funds balance and the credit overdraft limit.
7. The system of claim 2, wherein the frozen amount is frozen within the client funds balance and the credit loan limit.
8. The system of any one of claims 1 to 2, wherein the frozen amount is frozen within the credit loan limit and the credit overdraft limit.
9. The system of claim 2, wherein the frozen amount is frozen within the client funds balance, the credit loan limit, and the credit overdraft limit.
10. The system of any one of claims 1 to 9, wherein the funds-management server is a single physical server.
11. The system of any one of claims 1 to 9, wherein the funds-management server is a cluster server of a bank.

12. The system of any one of claims 1 to 9, wherein the funds-management server is a single physical server of a credit-capable organization.
13. The system of any one of claims 1 to 9, wherein the funds-management server is a cluster server of a credit-capable organization.
14. The system of any one of claims 1 to 13, wherein the client device is a mobile phone.
15. The system of any one of claims 1 to 13, wherein the client device is a personal computer.
16. The system of any one of claims 1 to 13, wherein the client device is a tablet computer.
17. The system of any one of claims 1 to 16, wherein the merchant device is a Point-of-Sale System (POS) machine.
18. The system of any one of claims 1 to 16, wherein the merchant device is a server.
19. The system of any one of claims 1 to 18, wherein the client account is configured as a purchaser account.
20. The system of claim 19, wherein the purchaser account includes a bank account.
21. The system of any one of claims 19 to 20, wherein the purchaser account includes a credit overdraft limit.
22. The system of any one of claims 19 to 21, wherein the purchaser account includes a credit loan limit.
23. A funds-management server for protecting both a client and a merchant in e-commerce transactions, the server comprising:  
  
a memory for storing data; and

a computer processor configured to:

receive payment request information of an e-commerce transaction sent by a client device;

compare the sum of a credit overdraft limit of a client account and a credit loan limit of the client account with a payment amount of electronic funds to determine whether an electronic commitment payment certificate can be created; and

wherein if the sum of the credit overdraft limit of the client account and the credit loan limit of the client account is sufficient to complete the e-commerce transaction the electronic commitment payment certificate can be created, if the electronic commitment payment certificate can be created, the computer processor is configured to:

freeze the credit overdraft limit and the credit loan limit respectively within a client account corresponding to the payment amount of electronic funds, wherein a frozen amount is greater than or equal to the payment amount of electronic funds;

generate the electronic commitment payment certificate for the funds-management server to commit to pay the client funds according to an agreed condition; and

send the electronic commitment payment certificate to the at least one merchant device to make a credit commitment payment on behalf of the at least one client device;

synchronize the electronic commitment payment certificate information to an information center server;

wherein the computer processor is further configured to:

receive payment information;

synchronize the payment information to the information center server; and

allocate a received payment amount of electronic funds to a merchant account in the at least one merchant device based on the electronic payment certificate information.

24. The funds-management server of claim 23, wherein when the sum of credit overdraft limit and credit loan limit is less than the payment amount of electronic funds, the funds-management server is further configured to:

sending a client funds balance request by the funds management server, wherein if the client approves the client funds balance request and there are sufficient funds in a client funds balance of the client account the payment is allowed, and if the client denies the client funds balance request the payment is terminated.

25. The funds-management server of any one of claims 23 to 24, wherein the funds-management server is a single physical server.

26. The funds-management server of any one of claims 23 to 24, wherein the funds-management server is a cluster server of a bank.

27. The funds-management server of any one of claims 23 to 24, wherein the funds-management server is a single physical server of a credit-capable organization.

28. The funds-management server of any one of claims 23 to 24, wherein the funds-management server is a cluster server of a credit-capable organization.

29. The funds-management server of any one of claims 23 to 28, wherein the client device is a mobile phone.
30. The funds-management server of any one of claims 23 to 28, wherein the client device is a personal computer.
31. The funds-management server of any one of claims 23 to 30, wherein the client account is configured as a purchaser account.
32. The funds-management server of claims 31, wherein the purchaser account includes a bank account.
33. The funds-management server of any one of claims 31 to 32, wherein the purchaser account includes a credit overdraft limit.
34. The funds-management server of any one of claims 31 to 33, wherein the purchaser account includes a credit loan limit.
35. An information center server for protecting both a client and a merchant in e-commerce transactions, the server comprising:
  - a memory for storing an electronic commitment payment certificate; and
  - a computer processor, configured to:
    - receive the electronic commitment payment certificate transmitted by a funds-management server if the sum of a credit overdraft limit of a client account and a credit loan limit of the client account is sufficient to complete an e-commerce transaction; and
    - store and supervise the electronic commitment payment certificate information.

36. The server of claim 35, wherein an information center server is operatively connected to the funds-management server.
37. The server of any one of claims 35 to 36, wherein the funds-management server is a single physical server.
38. The server of any one of claims 35 to 36, wherein the funds-management server is a cluster server of a bank.
39. The server of any one of claims 35 to 36, wherein the funds-management server is a single physical server of a credit-capable organization.
40. The server of any one of claims 35 to 36, wherein the funds-management server is a cluster server of a credit-capable organization.
41. A network payment method for protecting both a client and a merchant in e-commerce transactions , the method comprising:

receiving payment request information of an e-commerce transaction transmitted by at least one client device, wherein the payment request information of the e-commerce transaction includes at least a payment amount of electronic funds;

comparing the sum of a credit overdraft limit of a client account and a credit loan limit of the client account with a payment amount of electronic funds to determine whether an electronic commitment payment certificate can be created; and

wherein if the sum of the credit overdraft limit of the client account and the credit loan limit of the client account is sufficient to complete the e-commerce transaction the electronic commitment payment certificate can be created, when the electronic commitment payment certificate can be created, freezing the credit overdraft limit and the

credit loan limit corresponding to the payment amount of electronic funds, wherein a frozen amount is greater than or equal to the payment amount of electronic funds;

generating the electronic commitment payment certificate for a funds-management server to commit to pay the client funds according to an agreed condition;

sending the electronic commitment payment certificate to at least one merchant device to make a credit commitment payment on behalf of the at least one client device;

synchronizing the electronic commitment payment certificate information to the information center server.

42. The method of claim 41, wherein when the sum of the credit overdraft limit and the credit loan limit is less than the payment amount of electronic funds, the method comprises:

    sending a client funds balance request by the funds management server, wherein if the client approves the client funds balance request and there are sufficient funds in a client funds balance of the client account the payment is allowed, and if the client denies the client funds balance request the payment is terminated.

43. The method of any one of claims 41 to 42, prior to the method further comprising transmitting payment request information to the funds-management server.

44. The method of any one of claims 41 to 43, wherein the payment request information includes customer information.

45. The method of any one of claims 41 to 44, wherein the payment request information includes merchant information.

46. The method of any one of claims 41 to 45, wherein the payment request information includes product information.
47. The method of any one of claims 41 to 46 further comprising:  
  
receiving payment information;  
  
synchronizing the payment information to the information center server; and  
  
allocating a received payment amount of electronic funds to a merchant account in the at least one merchant device based on the electronic payment certificate information.
48. The method of any one of claims 41 to 47, wherein the frozen amount is frozen only within the client funds balance.
49. The method of any one of claims 41 to 47, wherein the frozen amount is frozen only within the credit overdraft limit.
50. The method of any one of claims 41 to 47, wherein the frozen amount is frozen only within the credit loan limit.
51. The method of any one of claims 41 to 47, wherein the frozen amount is frozen within the client funds balance and the credit overdraft limit.
52. The method of any one of claims 41 to 47, wherein the frozen amount is frozen within the client funds balance and the credit loan limit.
53. The method of any one of claims 41 to 47, wherein the frozen amount is frozen within the credit loan limit and the credit overdraft limit.

54. The method of any one of claims 41 to 47, wherein the frozen amount is frozen within the client funds balance, the credit loan limit, and the credit overdraft limit.
55. The method of any one of claims 41 to 54, wherein the funds-management server is a single physical server.
56. The method of any one of claims 41 to 54, wherein the funds-management server is a cluster server of a bank.
57. The method of any one of claims 41 to 54, wherein the funds-management server is a single physical server of a credit-capable organization.
58. The method of any one of claims 41 to 54, wherein the funds-management server is a cluster server of a credit-capable organization.
59. The method of any one of claims 41 to 58, wherein the client device is a mobile phone.
60. The method of any one of claims 41 to 58, wherein the client device is a personal computer.
61. The method of any one of claims 41 to 60, wherein the merchant device is a Point-of-Sale System(POS) machine.
62. The method of any one of claims 41 to 60, wherein the merchant device is a server.
63. The method of any one of claims 41 to 62, wherein the client account is configured as a purchaser account.
64. The method of claims 63, wherein the purchaser account includes a bank account.
65. The method of any one of claims 63 to 64, wherein the purchaser account includes a credit overdraft limit.

66. The method of any one of claims 63 to 65, wherein the purchaser account includes a credit loan limit.

67. A payment device for protecting both a client and a merchant in e-commerce transactions, the device comprising:

a receiving module;

a judging module; and

a processing module;

wherein the receiving module is configured to receive payment request information of an e-commerce transaction sent by at least one client device; wherein the payment request information of the e-commerce transaction includes a payment amount of electronic funds;

wherein the judging module is configured to compare the sum of a credit overdraft limit of a client account and a credit loan limit of the client account with the payment amount of electronic funds to determine whether an electronic commitment payment certificate can be issued;

wherein if the sum of the credit overdraft limit of the client account and the credit loan limit of the client account is sufficient to complete the e-commerce transaction the electronic commitment payment certificate can be created, if the electronic commitment payment certificate can be created the processing module is configured to:

freeze the credit overdraft limit and the credit loan limit corresponding to the payment amount of electronic funds, wherein a frozen amount is greater than or equal to the payment amount of electronic funds;

generate the electronic commitment payment certificate for the funds-management server to commit to pay the client funds according to an agreed condition; and

send the electronic commitment payment certificate to the at least one merchant device to make a credit commitment payment on behalf of the at least one client device;

synchronize the electronic commitment payment certificate information to an information center server.

68. The payment device of claim 67, wherein the judging module is further configured to compare whether a client funds balance is greater than or equal to the payment amount when the sum of the credit overdraft limit and the credit loan limit is less than the payment amount of electronic funds, wherein, if yes, the payment is executed.

69. The payment device of any one of claims 67 to 68, wherein the processing module further comprising:

a freezing unit;

a certificate generation unit; and

a synchronization unit;

wherein the freezing unit is configured to:

freeze the client funds balance, the credit overdraft limit, the credit loan limit, wherein the frozen amount is greater than or equal to the payment amount of electronic funds when the payment is allowed;

wherein the certificate generation unit is configured to:

generate the electronic commitment payment certificate;

wherein the synchronization unit is configured to:

transmit the electronic commitment payment certificate information to a merchant device and the information center server.

70. The payment device of any one of claims 67 to 69, wherein the frozen amount is frozen only within the client funds balance.
71. The payment device of any one of claims 67 to 69, wherein the frozen amount is frozen only within the credit overdraft limit.
72. The payment device of any one of claims 67 to 69, wherein the frozen amount is frozen only within the credit loan limit.
73. The payment device of any one of claims 67 to 69, wherein the frozen amount is frozen within the client funds balance and the credit overdraft limit.
74. The payment device of any one of claims 67 to 69, wherein the frozen amount is frozen within the client funds balance and the credit loan limit.
75. The payment device of any one of claims 67 to 69, wherein the frozen amount is frozen within the credit loan limit and the credit overdraft limit .
76. The payment device of any one of claims 67 to 69, wherein the frozen amount is frozen within the client account, the credit loan limit, and the credit overdraft limit .

77. The payment device of any one of claims 67 to 76, wherein the processing module further comprises a transfer unit.
78. The payment device of claim 77, wherein the transfer unit is configured to:  
  
allocate the frozen funds to the account of the merchant device.
79. The payment device of any one of claims 67 to 78, wherein the funds-management server is a single physical server.
80. The payment device of any one of claims 67 to 78, wherein the funds-management server is a cluster server of a bank.
81. The payment device of any one of claims 67 to 78, wherein the funds-management server is a single physical server of a credit-capable organization.
82. The payment device of any one of claims 67 to 78, wherein the funds-management server is a cluster server of a credit-capable organization.
83. The payment device of any one of claims 67 to 82, wherein the client device is a mobile phone.
84. The payment device of any one of claims 67 to 82, wherein the client device is a personal computer.
85. The payment device of any one of claims 67 to 82, wherein the client device is a tablet computer.
86. The payment device of any one of claims 67 to 85, wherein the merchant device is a Point-of-Sale System(POS) machine.
87. The payment device of any one of claims 67 to 85, wherein the merchant device is a server.

88. The payment device of any one of claims 67 to 87, wherein the payment device is configured to the funds-management server.

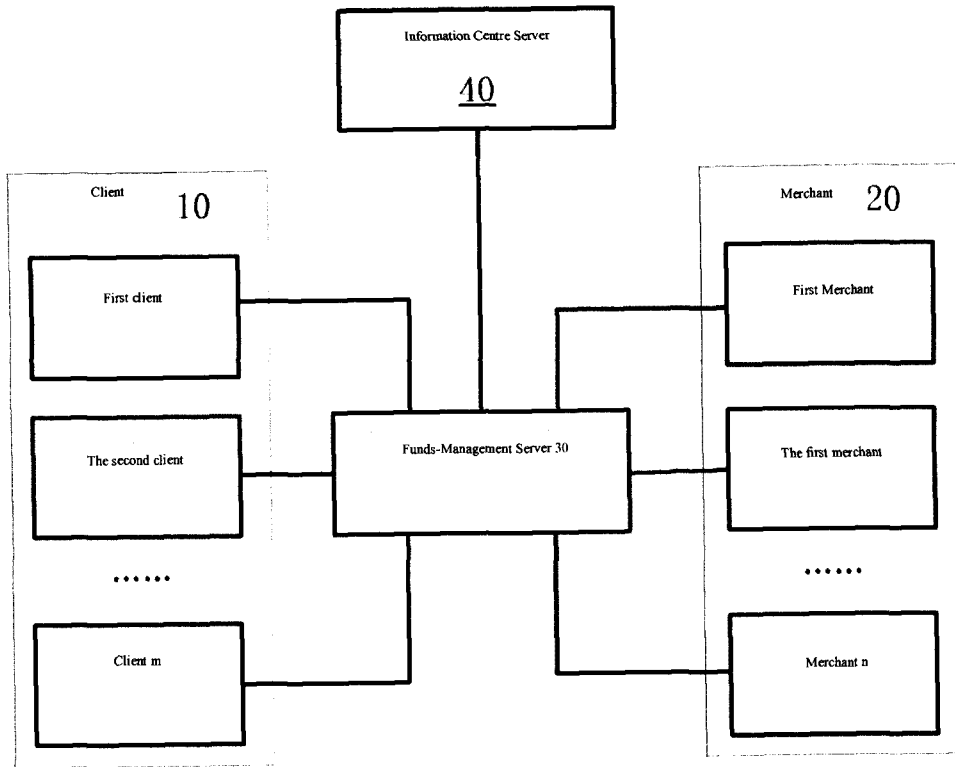


Figure1

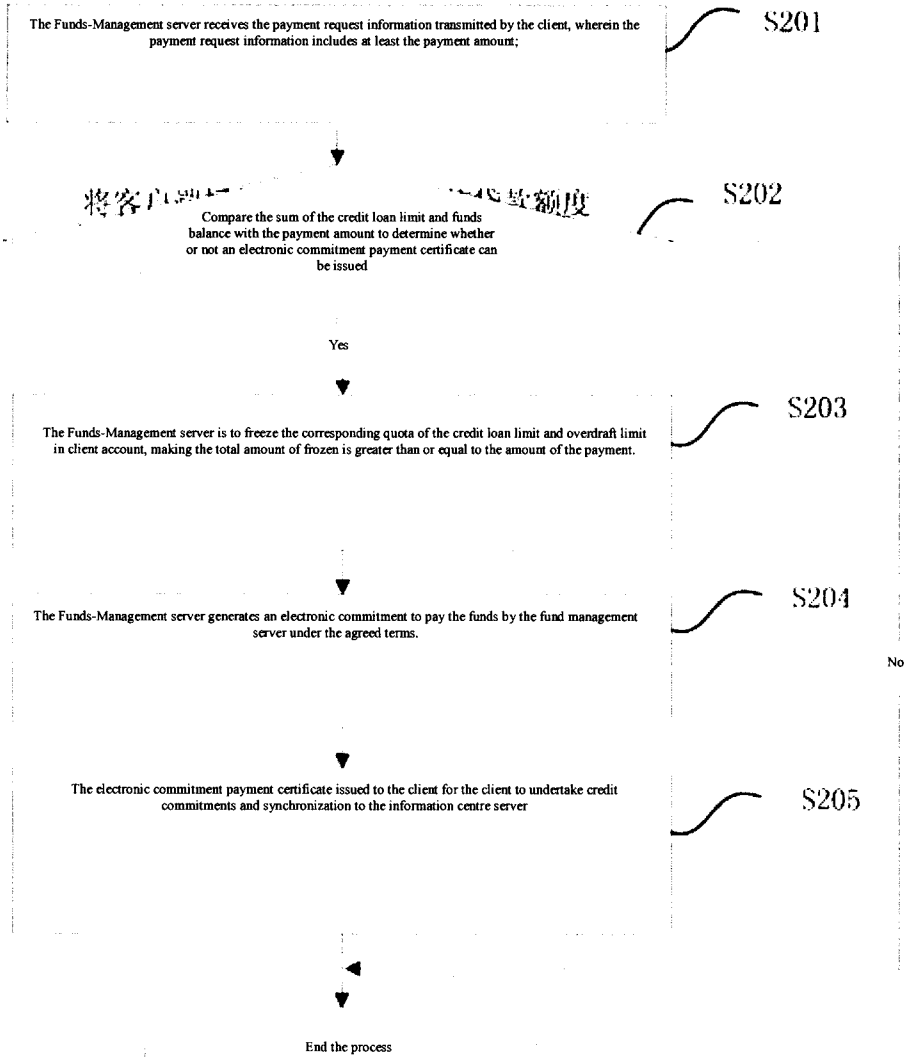


Figure 2

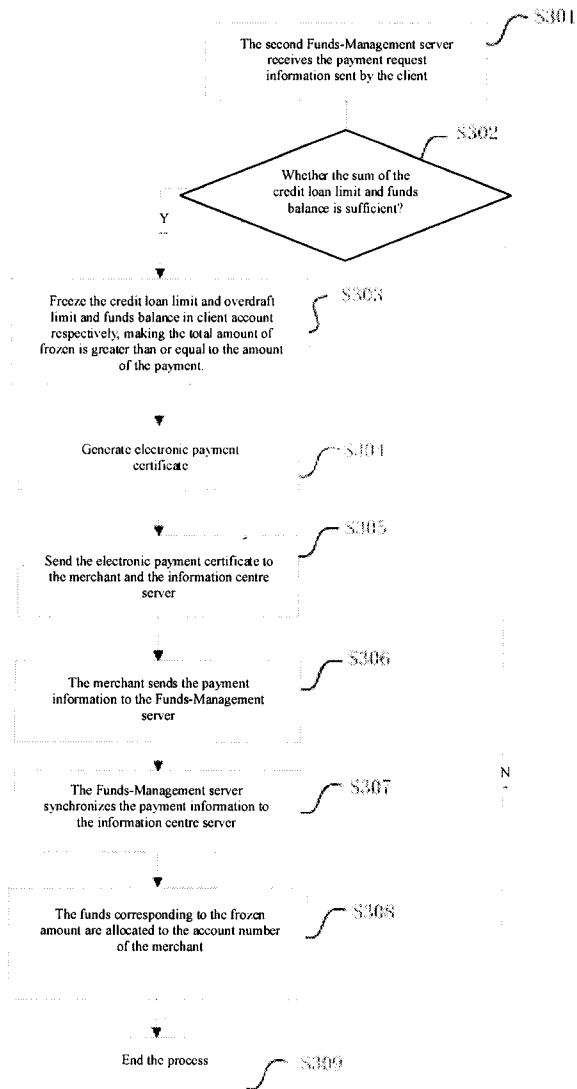


Figure 3

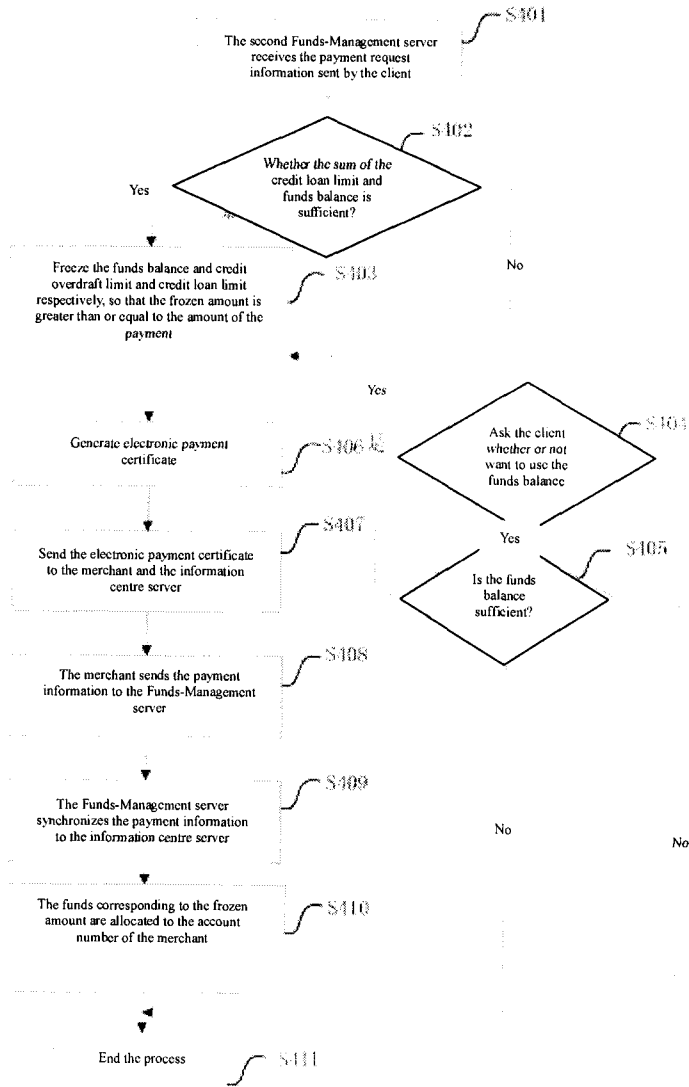


Figure 4

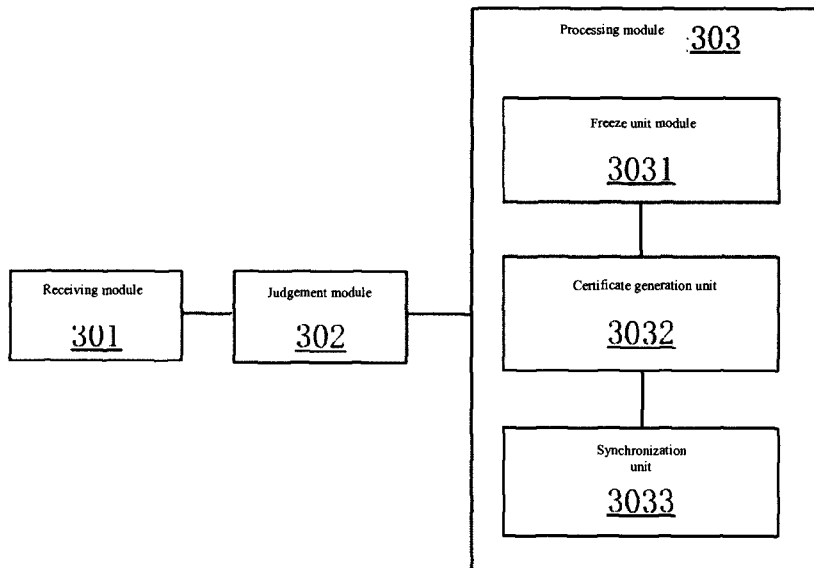


Figure 5

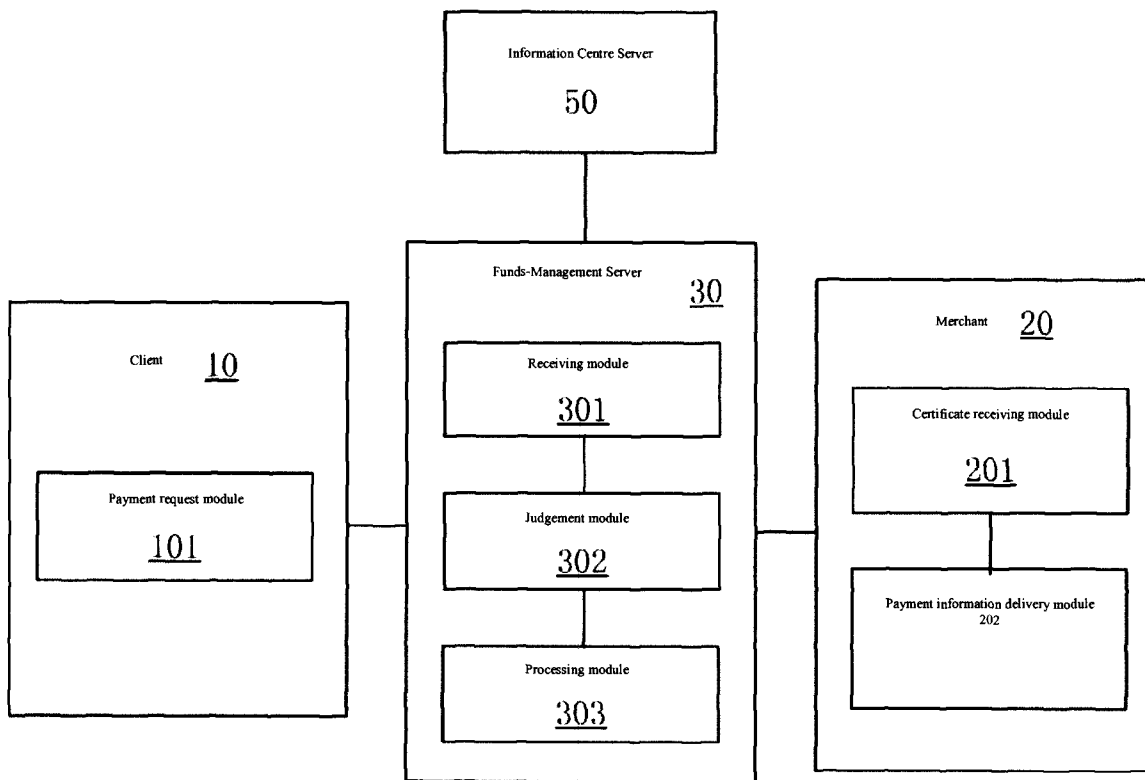


Figure 6

The Funds-Management server receives the payment request information transmitted by the client, wherein the payment request information includes at least the payment amount;

S201

将客户的信用额度与支付金额

Compare the sum of the credit loan limit and funds balance with the payment amount to determine whether or not an electronic commitment payment certificate can be issued

S202

Yes

The Funds-Management server is to freeze the corresponding quota of the credit loan limit and overtrail limit in client account, making the total amount of freeze is greater than or equal to the amount of the payment.

S203

The Funds-Management server generates an electronic commitment to pay the funds by the fund management server under the agreed terms.

S204

The electronic commitment payment certificate issued to the client for the client to undertake credit commitments and synchronization in the information centre server

S205

End the process