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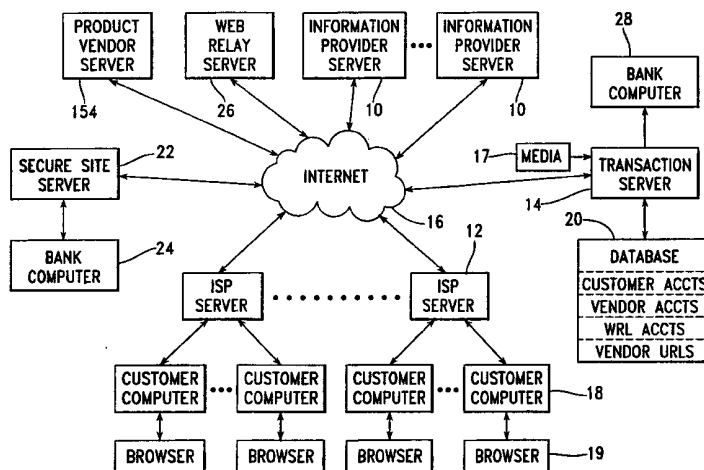
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(54) Title: METHOD FOR CONDUCTING FINANCIAL TRANSACTIONS OVER A WIDE AREA NETWORK



(57) Abstract: Information is purchased by a customer computer (18) using a browser (19) over a wide area network (16), such as the Internet, from a fee-based information page of an information provider server (10). The information is relayed between the fee-based information page and the customer computer (18) through a web relay server (26) without revealing the identity of the fee-based information page to the customer computer (18), and without revealing the identity of the customer computer (18) to the information provider server (10). Before the transaction can be completed, the customer computer (18), the information provider server (10), and the web relay server (26) must register with the transaction server (14), establishing accounts represented by data stored in a database (20) of the transaction server (14). An electronic funds transaction is accomplished by modifying this data. Alternately, a product may be purchased from a vendor server (10, 154) without using the web relay server (26).



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DESCRIPTION**METHOD FOR CONDUCTING FINANCIAL TRANSACTIONS
OVER A WIDE AREA NETWORK**

5 This application claims benefit of a copending U.S. Application, Number
09/374,840, filed August 14, 1999.

Technical Field

10 This invention relates to purchasing information and products over a wide
area telephone network, and, more particularly, to providing a way for purchasing
such information and products over the Internet without a need to use a credit
card.

Background Art

15 Most to the retail commerce presently occurring over the Internet is based
on the use of credit cards, which are particularly popular because they can be
used without a need for a signature and because the use of a card is, at least
partly, guaranteed against fraud by the bank which issued the card. However,
20 since the retail system using credit cards was developed before the Internet, with
customers typically buying physical goods and services for more than \$10.00 per
transaction, credit card companies conventionally charge \$.20 to \$.50 per
transaction.

25 However, most of the time individual users are connected to the Internet,
they are not purchasing commodities, they are seeking information. The
continuous availability of information has become an indispensable feature of the
Internet, the flow of which is generally subsidized by companies selling physical
goods or full software packages. For example, the Encyclopedia Britannica
30 transfers proceeds of sales to develop web-sites disseminating some of its
information for free.

Companies presently seeking payment for information generally rely on intrusive advertisements and banners, the effectiveness of which is limited because, unlike television advertisements which interrupt a program, the advertisements on the Internet form, for example, footnotes, which are easily overlooked.

One solution to this problem of receiving payment for providing information is to charge subscription fees. For example, customers at web-sites of the *New York Times* and the *Wall Street Journal* must pay about \$6.00 per month to view information provided by these publications. However, from the point of view of the information provider, this method is practical only if the customers need for viewing and downloading information is fairly modest. If it is not, the cost of providing the information and running the web-site can easily exceed the revenues gained. On the other hand, from the point of view of the customer, when too many web-sites adopt this method, the total cost of subscriptions to view information from a number of sources will be too great. Furthermore, the customer cannot browse the information and pay for only what he wants; he has to take everything or nothing offered by the web-site.

Another solution for the problem of efficiently charging small fees, of the magnitude which might be charged for various types of information, such as a single news article or a search of an encyclopedia data base, is found in the technology of micropayments, or digital cash. With this technology, money is replaced with tokens good for small purchases, such as those costing 10 or 25 cents. The currency of such a system is reduced to a string of digits, called tokens. For example, a bank issues a string of digits for a customer, debiting his account with a withdrawal amount equal to the value of the issued tokens. The bank validates each token with its digital stamp and then relays the tokens to the customer's computer. To spend tokens over the Internet, the customer transmits the proper number of tokens to a merchant, who then relays the tokens to the bank for verification and redemption. To ensure that each token is used only once, the bank records its serial number in a database as it is validated. If the serial number is already in the database before validation, the bank notifies the merchant that the token is worthless.

In another form of token payments, called "blind signatures," the anonymity of the customer is preserved as he receives tokens having validation codes from the bank without the bank being able to correlate his name with the tokens it issues. When the bank receives a token from a merchant, it honors the token based on the validation code.

Alternately, tokens may be issued by merchants or by other intermediaries. However, conventional token systems use different proprietary forms of digital money, with no overall system allowing the systems to work together. Also, these token systems require a new investment in software for the merchant, or content-producer in the context of selling information, to accept and verify tokens. Furthermore, these systems require the customer who wants to use tokens to install special payment software. In some cases, digital money is stored in the customer's computer in a manner preventing him from taking this asset with him to another computer. Digital cash being stored in this way may be lost if the computer in which it is stored crashes. For all of these reasons, the technology of tokens, or digital cash, has not gained widespread acceptance.

SUMMARY OF THE INVENTION

Thus, it is a first objective of the present invention to provide a means for an information provider to provide information over the Internet on a fee-basis, and to be paid for such information without the need for a credit card transaction each time a fee is to be charged.

It is a second objective of the present invention to provide a means for a customer to purchase information and products over the Internet, with a single credit card transaction being used to provide funds for a number of smaller transactions.

It is a third objective of the present invention to provide a means for purchasing information and products over the Internet without a need to download additional subroutines to the customer's computer or web browser.

It is a fourth objective of the present invention to provide a means for transferring the web browser of a customer to a web site at which information is provided without revealing the URL (address) of the web site.

It is a fifth objective of the present invention to provide a means for transferring information from a web site to a customer's computer without revealing the identity of the customer.

To achieve these and other objectives, a system is formed to include a customer's computer executing a web browser, an information provider server
5 having at least one fee-based web site from which information is sold, a web relay server making connections between the web browser and the fee-based web site, and a transaction server supervising the process. These elements are selectively connectable over the Internet or other wide area telephone network.

10 Before the transaction process can be completed, the customer must establish an account within a database accessed by the transaction server. The customer can establish such an account by transferring funds to a bank account of the organization using a credit card. This process is started when the customer's browser contacts the transaction server and is transferred to a secure
15 site server through which credit card information is processed. The customer account within the database is identified for later transactions using an account number and a personal identification number (PIN).

Before the transaction process, the information provider server must also establish an account within the database accessed by the transaction server.
20 This process is begun when the information provider server connects to the transaction server, transmitting an account number and one or more fee-based links to information being offered for a fee. The transaction server establishes an account stored within its database and transmits URLs leading to its site to the information provider server, which stores these URLs in its web pages so that
25 a customer subsequently choosing a fee-based link will be automatically transferred to the transaction server for a payment process.

Also before the transaction process, at least one web relay server must register with the transaction server. This process begins when a web relay server contacts the transaction server, causing the transaction server automatically to
30 transmit software which is downloaded by the web relay server. This software makes the relay server ready to relay messages between a customer computer and an information provider server, so that the information being purchased is transmitted to the customer computer without the customer computer or browser

determining the URL of the information, and without the information provider server determining the identity of the customer.

5 A transaction purchasing information begins when a customer, through his web browser, contacts a fee-based link to a web site of an information provider. This link causes his browser to be transferred to the transaction server, so that a menu is displayed asking him if he has an account. If he does not have an account, or if the monetary value of his account is not sufficient to purchase the information, he is given an opportunity to purchase an account or to add to his existing account as needed. If he does this, or if he already has an account with
10 a sufficient monetary value, the process continues with the transaction server choosing a web relay server to relay information between the customer's web browser and the information provider server. This choice is generally made among a number of web relay servers registered with the transaction server.

15 After the web relay server is chosen, the transaction server performs accounting operations in the accounts stored in its database, debiting the customer account and crediting the information provider account, the web relay server account, and the transaction account of the organization operating the transaction server. Next, the transaction server generates a transaction number, finds a link to the information being sought in its database, connects to the web
20 relay server, and transmits this information, which is needed to connect to the web page including the information being sought at the information provider server, to the web relay server. Then the transaction server connects to the customer computer and transmits the transaction number, together with a unique URL needed to connect to the web relay server. Then, the customer's web browser
25 connects to the web relay server, giving the transaction number.

A time-out value is associated with each fee-based link stored in the database, indicating the length of time during which a transaction is valid. This value is transmitted to the web relay server along with the other information needed to connect to the link. When the transaction has timed out, a new
30 connection cannot be made, and a transaction in progress is terminated. Thus, when the customer's web browser supplies the transaction number, the web relay server first determines if the transaction has timed out. If it has, the web relay server connects the web browser to the transaction server, which transmits an

error message; otherwise the web relay server connects to the fee-based web site of the information provider and begins relaying information between this site and the customer's computer. This process is ended either by the customer signing off, so that his connection is terminated, or by the transaction timing out. If timing
5 out occurs before signing off, the web relay server connects the customer's web browser to the transaction server, which transmits an error message. Whenever the transaction times out, the web relay server transmits data describing the transaction to the transaction server.

An alternate version of the present invention is used to provide a means
10 for paying for products instead of for information. Like the information provider server, a product vendor server must first register with the transaction server, exchanging links to web sites and establishing an account within the database of the transaction server. After the customer uses his web browser to connect first to a web site of the product vendor server and then to a web site indicating the
15 particular product he wishes to purchase, his web browser is connected to the transaction server. When it is determined that he has an account with sufficient monetary value stored within the database, the transaction server contacts the product vendor server, verifying that the transaction has taken place. Then, the transaction server debits the customer's account and credits the accounts of the
20 organizations operating the product vendor server and the transaction server.

Brief Description of the Drawings

FIG. 1 is a schematic block diagram of a system for carrying out a retail
25 method in accordance with the present invention;

FIG. 2 is a flow chart of a process occurring in the system of FIG. 1 for establishing a new customer account within a database therein or for adding value to an existing account;

FIG. 3 is a flow chart of processes occurring within the system of FIG. 1
30 when an information provider server therein registers with a transaction server therein;

FIG. 4 is a flow chart of processes occurring within the system of FIG. 1 when a web relay server therein registers with the transaction server;

FIG. 5 is a flow chart of processes occurring within the system of FIG. 1 to relay information to a customer computer system therein from the information provider. FIGS. 5A and 5B are upper and lower portions, respectively, of FIG. 5; and

5 FIG. 6 is a flow chart of processes occurring within the system of FIG. 1 during a transaction to purchase a product from the product vendor server therein.

Modes for Carrying Out the Invention

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FIG. 1 is a schematic block diagram of a system for carrying out a retail method in accordance with the present invention. This system includes one or more information provider servers 10, having access to information which is to be sold, a number of Internet service provider (ISP) servers 12, and a transaction server 14, all of which are connected through the Internet 16. The transaction server 14 is a computing system capable of reading computer-readable media 17 and of executing programs introduced through such media. Each ISP is an organization such as AOL, Mindspring, AT&T, Netcom, or Geocities. Each ISP server 12 is connected, generally through the public switched telephone network, 20 to a number of customer computers 18. Each customer computer 18 has, executing therein, a conventional web browser 19, which accesses information available on the Internet 16 through the use of a URL (Uniform Resource Locator) providing an address for a web site at which the information is located. Operation of the system in accordance with the present invention provides a way for any of 25 the customers operating a customer computer 18 to receive information provided by the information provider servers 10 and for the organizations operating the information provider servers 10 to receive payment for the information provided. Such information is treated as a metered resource, like telephone service, with the units of the metered resource being "clicks" made with a pointing device. Any link that can be clicked in a web browser 19 can have a price attached. The 30 accounts of various customers having computers 18 are stored in a database 20 which is accessed by the transaction server 14.

A secure site server 22 is preferably also connected to the Internet 16, providing a secure web site through which credit card transactions are made. This secure site server 22 accesses a bank computer 24 through which authorizations are provided for the transfer of funds from the account of a customer operating a customer computer 18 to an account of the organization operating the transaction server 14.

Also connected to the Internet 16, a web relay server 26 provides the function of connecting the web browser 19 of a customer computer 18 through which information has been purchased with the information provider server 10 through which the purchased information is being provided. This connection is made in response to a transaction number which is transmitted directly from transaction server 14 and indirectly from the web browser 19, which has also received the transaction number from the transaction server 14.

The database 20 stores a number of customer accounts, started, for example, through the use of credit cards for the use of individuals operating the customer computers 18, a number of vendor accounts, established individually for information providers operating the information provider servers 10, a number of WRS accounts, established individually for organizations operating the web relay servers 26, and a number of vendor URLs, (Uniform Resource Locators) locating the various sites provided through the individual information provider servers 10. Preferably, the various sites for which vendor URLs are stored are associated with various levels of fees to be charged for access, so that these fees are stored in the database 20 along with the associated URLs. Preferably, these sites are also associated with time-out values for limiting the time during which a connection to the URLs may be established, with these time-out values being stored in the database 20 along with the associated URLs. For example, if the information is a weather report which is periodically updated, the time-out value can be used to prevent the customer from receiving more than one or two different reports. On the other hand, the time-out values are preferably chosen to be long enough to allow the connection to be established, even if some sort of trouble or overload makes it necessary to make an additional attempt to establish the connection.

The transaction server 14 is preferably also connected to a bank computer 28, through which funds are transferred from the bank account of the

organization operating the transaction server 14 to the bank account of the information provider to settle the vendor accounts stored within the database 20, and through which funds are transferred from the bank account of the organization operating the transaction server 14 to the bank account of the web relay server 26 to satisfy the WRS accounts stored within the database 20.

FIG. 2 is a flow chart of a process operating in the system of FIG. 1 for establishing a new customer account within the database 20 or for adding value to an existing account therein.

Referring to FIGS. 1 and 2, in order to use the system of the present invention, the user, or customer, must establish an account within the database 20. Such an account may be established through the use of the process shown in the flow chart of FIG. 2, which begins at A, in step 30, after the customer, in step 32, selects the web site of the transaction server 14. Then, in step 34, an account menu is transmitted to the web browser 19 of the customer computer 18. The account menu includes selection boxes to indicate if the customer wants to establish a new account or add value to an existing account. If the customer selects to establish a new account, as indicated in step 36, he is asked in step 38 the amount of money he wishes to place in the account. If the customer does not select to establish a new account, as indicated in step 36, but if he instead selects to add to an existing account in step 40, he is also asked the amount of money to be added in step 40. If sufficient time elapses without making a selection, a time out feature, making a determination in step 42, causes the routine to end in step 44. In step 38, the amount of money to be provided is established by selecting from a list of amounts in a menu or by typing in an amount desired. Again, if sufficient time elapses before providing such a determination, the time out feature, making a determination in step 42, causes the routine to end in step 44.

After an amount is provided by the customer in step 38, the customer's web browser 19 is transferred to a secure web site of the secure site server 22 in step 46. The transmission of information from this point between the customer's web browser 19 and the secure web site preferably occur in a customary manner well known to those skilled in the art of electronic commerce, with the web browser 19 and the secure web site supporting an encryption protocol, such as SECURE SOCKETS LAYER (SSL) or SECURE HTTP (S-HTTP). Such an encryption

protocol, which prevents the viewing or modification by additional parties of the information being transmitted, is used when the customer transmits his credit card number to the secure web site in step 48. Next, in step 50, the secure site server 22 contacts an associated bank computer 24, authorizing a payment to be made to be made from the customer's account to that of the transaction company operating the transaction server 14. If this transaction does not proceed properly, because, for example, an incorrect credit card has been used or because there are insufficient funds associated with the credit card, as indicated in step 52, the reason for this failure is communicated to the customer's web browser 19 in step 54. From this point, the customer may be asked by the secure site server 22, by means of conventional subroutines of the secure site server 22, to make corrections, such as re-entering his credit card number or choosing another account. If such changes are made, as indicated in step 56, the new information is processed through steps 48, 50, and 52. If changes are not made, as indicated in step 56, the processes of the flow chart of FIG. 2, are ended in step 44.

On the other hand, if step 52 indicates that the transaction is successful, the secure site server 22 returns order data to the transaction server 14 in step 58 and transfers the web browser 19 to the transaction server 14 in step 60. Next, in step 62, the transaction server generates a personal identification number (PIN) for the account being formed and writes the order data, including a serial number identifying the account, the PIN, and the amount of money in the account, to the database 20. Then, in step 64, this data is transmitted to the customer's web browser 19. At this point, the customer account number and PIN are preferably displayed to the customer on his display screen, so that he can write them down or print the out. The customer order number may additionally be stored within the storage of his computer 18 as a "cookie" so that he will not have a need to find a hard copy of the number. In this context, a "cookie" is a text file which is stored in the storage of a computer to be accessed only by the web site (in this case, by the transaction server 14) that stored it. The methods for causing cookies to be stored is well known to those skilled in the art of providing web sites. The PIN is preferably not stored as a cookie, since doing so would allow someone else using the computer to have access to the account which has been created. The system routine, being now finished at B point 66, is ended at step 44.

Alternately, after step 60, the customer may be asked to provide his own PIN number, which he can easily remember, and which is stored along with the customer account number in the database 20.

5 Instead of using a credit card in the manner discussed above to establish an account in the database 20, the customer may alternatively or additionally be permitted to purchase an account having a predetermined value at a retail store, with such an account being represented by a serial number and a PIN, with the serial number being printed on a card, and with the PIN being printed on a disposable slip. The organization operating the transaction server 14 is reim-
10 bursed by the store selling the card, and the customer accesses his account by providing its serial number and PIN.

FIG. 3 is a flow chart of processes occurring within the system of FIG. 1 when an information provider registers with the transaction server 14, so that the transaction server 14 can aid in the distribution of fee-based information and in the
15 recovery of fees for such information. Each information provider server 10 stores one or more fee-based links, or URLs, each locating information for which a fee is to be charged.

Referring to FIGS. 1 and 3, this process begins in step 70, when an information provider server 10 connects to the transaction server 14 over the
20 Internet 16. Next, in step 72, the information provider server 10 transmits a vendor account number to be used for future financial transactions, together with the fee-based links used for locating fee-based information accessible through the information provider server 10. The fee-based link information transmitted includes, for example, the URL needed to find each item of fee-based information, a price for each item of fee-based information, and a time-out value associated
25 with each item of fee-based information. As described above in reference to FIG. 1, the time-out value limits the time in which a connection can be made for an individual transaction. Next, in step 74, the transaction server 14 writes the account number and the fee-based link information to the database 20. In step 76,
30 the transaction server 14 generates a personal identification number (PIN) to be used to access the vendor account being created within the database 20. Then, in step 78, the transaction server 14 transmits the PIN which has been generated, along with links to the transaction server. Next, in step 80, the transaction server

14 stores the PIN and inserts these links in its web pages, so that a customer's web browser 19 will subsequently be sent to the transaction server when the customer selects to view one of the pieces of fee-based information. Finally, in step 82, this process is ended, with the data of the information provider server 10 and of the database 20 having been updated to allow the particular information provider server 10 and the transaction server 14 to work together in accordance with the present invention.

FIG. 4 is a flow chart of processes occurring within the system of FIG. 1 when an organization operating a web relay server 26 registers with the transaction server 14 so that the web relay server 26 can subsequently be used to distribute fee-based information to customer computers 18 connected to the web relay server 26 in accordance with the present invention.

Referring to FIGS. 1 and 4, this process begins in step 90, when a web relay server 26 connects to the transaction server 14 over the Internet 16. Next, in step 92, the transaction server 14 transmits software to be downloaded by the web relay server 26, being needed to relay information through the web relay server 26. In particular, this software makes it possible for the web relay server 26 subsequently to use a transaction number provided by both the transaction server 14 and the customer's web browser 19 to connect the customer's computer to a web site having a URL supplied by the transaction server 14 without making the URL of the web site available to the customer. In step 93, the transaction server 14 also establishes an account for the web relay server 26 in the database 20 and transmits an account number and PIN for this account to the web relay server 26. In step 94, when this information has been received and stored, the web relay server 26 acknowledges that it is ready to work with the transaction server 14 to relay information in accordance with the present invention. This process then ends in step 96.

FIG. 5 is a flow chart of processes occurring within the system of FIG. 1 in response to an indication by a customer using one of the customer computer systems 18, having a desire to obtain information from one of the information provider servers 10. FIGS. 5A and 5B are upper and lower portions, respectively, of FIG. 5.

Referring to FIGS. 1 and 5, the web page of each of the information provider servers 10 includes one or more fee-based links, through which information is sold in accordance with the present invention. As described above, in reference to FIG. 3, these fee-based links are links to the transaction server 14, which have been placed in the web pages accessed through the information provider server 10 during the process of registering the information provider server 10 with the transaction server 14. Thus, after the customer selects, in step 100, through his web browser 19, a web site of one of these information provider servers 10, and, in step 102, a fee-based link, his web browser 19 is sent, in step 104 to the transaction server 14. Next, the customer is presented with a menu used to determine if he has an account stored in the database 20 and, if he has such an account, whether the monetary value stored in his account is sufficient to cover the proposed purchase of information. The customer may supply his account number by typing it on his keyboard, or it may be automatically inserted using a "cookie" previously stored in the customer computer 18 in the manner described above in reference to FIG. 2.

Thus, if a determination is made in step 106 that the customer has an account stored as data in the database 20, and if it is also determined in step 108 that the monetary value stored in this account is sufficient to purchase the information being sought, in step 110, the transaction server 14 determines which web relay server 26 is to be used. In general, there are a number of web relay servers 26 which have registered with the transaction server 20 in the manner described above in reference to FIG. 4. When possible, the transaction server 14 preferably chooses the web relay server 26 which is closest to the information provider server 10 from which fee-based information is sought.

On the other hand, if the transaction server 14 determines in step 106 that the customer requesting fee-based information does not have an account in the database 20, or if the transaction server 14 determines in step 108 that the monetary value stored in such an account is insufficient to pay for the fee-based information, the transaction server 14 moves to point A of the subroutine described above in reference to FIG. 2, with the next step being to transmit the new account menu in step 34. The customer can then proceed to open a new account with the transaction server 14 or to add monetary value to an existing account. If such

action is not taken, the process is ended in step 44 (of FIG. 2). Otherwise, the process continues through point B in both FIGS. 2 and 5A, to step 110, which is performed as described above.

5 After step 110 is completed, in step 112, the transaction server 14 performs accounting operations on the data stored within database 20, debiting the customer account and crediting the vendor account of the information service provider and the web relay server account. The vendor account is credited for providing the information being sold, and the web relay server account is credited for providing the bandwidth necessary to transfer this information. The total
10 amount credited to the vendor account and the web relay server account is less than the amount debited from the customer account, with the difference being retained by the organization operating the transaction server for their part in facilitating the transaction. For example, a first predetermined percentage of the amount debited from the customer account is credited to the vendor account, while
15 a second predetermined percentage of the amount debited from the customer account is credited to the web relay server account. Then, in step 114, the transaction server 14 generates a transaction number, which will be used to allow the web relay server 26 to connect the web browser 19 of the customer computer 18 to the web site providing the information being sought through the information server 10 without knowing the identity of the customer computer 18 and without divulging the identity of the web site providing this information to the customer. Also in step 114, the transaction server 14 looks up, in the database 20, the URL of the information being sought and associated data, which includes, for example, the price of the information
20

25 Next, in step 116, the transaction server 14 connects to the web relay server 26 which was chosen in step 110. The transaction server 14 then transmits, in step 118, the information necessary for the web relay server 26 to complete the connection for the customer. This information includes the transaction number generated in step 114, the URL of the information being sought on the information provider server 10, and the time-out value associated with the information being sought, which has been stored in the database 20 as described above in reference to FIGS. 1 and 3.
30

Next, in step 120, the transaction server 14 connects to the customer computer 12. In step 122, the transaction server 14 transmits, to the customer computer 12, the transaction number generated in step 114, and a unique URL, which locates the web relay server 26 previously chosen in step 110.

5 Then, in step 124, the web browser 19 within the customer computer 18 connects to the web relay server 26, using the unique URL as a web site address. In step 126, the web browser 19 requests the information being sought, using the transaction number. Next, in step 128, a determination is made of whether the transaction has timed out by exceeding a time calculated using the time-out value
10 transferred to the web relay server 26 in step 118. If the transaction has timed out, a connection to access the information will not be made, so, in step 130, the web relay server connects the web browser 19 to the transaction server 14, which, in step 132, transmits an error message indicating that the time in which the transaction can be made has elapsed. Then, this routine ends in step 134.

15 On the other hand, if the determination made in step 128 indicates that the transaction has not timed out, the web relay server 26 connects, in step 136, to the fee-based web site, where the information being sought is found, of the information provider server 10. Next, during step 138, the web relay server 26 receives and relays information between the web browser 19 and the fee based web site of the
20 information provider server 10. During the process of step 136, the web relay server 2.06 modifies the HTML packets it receives from the web browser 19, transmitting them in a form in which they are recognized by the information provider server 10, which then transmits the information being sought. Because of this method of transmitting information to and from the web relay server 26, the
25 address of the information being sought on the information provider server 10 is not made visible to the web browser 19 or to the customer computer 18. Therefore, the customer cannot find this address and use it after the transaction has timed out or give it to others to use. The HTML packets transmitted by the customer also include the referring, or preceding page, which identifies the
30 transaction server 14. This identification can be used to ensure that payment for the transaction has been received. The web relay server 26 transmits this identification of the transaction server 14 to the information provider server 10 without identifying the customer computer 18. Thus, the information provider

server 10 does not learn the identity of the customer, or other information concerning his method of payment, such as a credit card number. The information provided server 10 only knows that a transaction has occurred.

5 This process of relaying information is terminated when the web browser 19 signs off or when the transaction times out. The web relay server 26 periodically checks to determine whether the transaction has timed out. The web relay server continues receiving and relaying information in step 138 if the web browser 19 has not signed off, as indicated in step 140, and if a determination is further made in step 142 that the transaction has not timed out.

10 On the other hand, if the customer has signed off, as indicated in step 140, apparently because he is finished receiving the information he sought, a determination is made in step 144 of whether the transaction has timed out, since a data transmission to the transaction server 14 must be made when the transaction has timed out. If the transaction has not timed out, a determination is
15 periodically repeated in step 144 until time-out occurs. When time-out has occurred, as indicated in step 144, the web relay server 26 disconnects from the information provider server 10 in step 145, connects to the transaction server 14 in step 146, and transmits transaction data to the transaction server 14 in step 148. This transaction data indicates that the transaction has timed out and describes the
20 amount of data that has been relayed from the information provider server 10 to the customer computer 18. This message verifies whether the customer received the information he purchased. The routine then ends in step 150.

If it is determined in step 140 that the customer has not signed off and in step 142 that the transaction has timed out, in step 152, the web relay server 26
25 disconnects from the information provider server 10. Next, in step 154, the web relay server 26 connects the web browser 19 to the transaction server 14, which, in step 156, transmits an error message indicating that the transaction is timed out. The web relay server 26 also connects itself to the transaction server 10 in step 146 to provide, in step 148, the transaction data indicating that the transaction has
30 timed out and to describe the amount of data that has been transferred during the transaction. Then, the routine ends in step 150.

If the transaction has not timed out, the transaction can be repeated after the customer has signed off. The customer uses his web browser 19 to re-enter

the process at step 124, supplying the unique URL of the web relay server 26, and the transaction number, both of which have been transmitted to his browser previously in step 122. The customer should be able to retrieve this information by making one or more "previous page" selections on the display provided by his web browser 19, or he may otherwise keep track of these numbers as they are used. This feature of the present invention also allows the customer to use another computer, in another location, having access to the Internet, to repeat the acquisition of the purchased material using the same unique URL and the same transaction number, until the transaction has timed out.

10 The process and apparatus of the present invention can also be used for purchasing products, instead of information. Referring again to FIG. 1, for the sale of products, the system includes at least one computer system operating as a product vendor server 154 connected to the Internet 26.

15 Before the process of purchasing a product can begin, the product vendor server 154 must register with the transaction server 14 in a manner similar to the registration process described above in reference to FIG. 3, with the product vendor server 154 operating as the information provider server 10. In this case, the product vendor server 154 has one or more fee-based links, each of which specifies a product which can be purchased, together with its price.

20 FIG. 6 is a flow chart describing processes occurring during a transaction to purchase a product from the product vendor server 154. Referring to FIGS. 1 and 6, such a transaction begins in step 160, when the customer, using his web browser 19, selects to view a web page of the product vendor server 154. Next, in step 162, the customer selects a fee-based link based on a description of a product he wants to purchase. Because the product vendor server 154 is registered with the transaction server 14, the fee-based link transfers the browser 19 to the transaction server 14 in step 164. A menu is next presented, asking the user if he has an account within the database 20. If he has no such account, as determined in step 166, or if the monetary value of his account is insufficient to purchase the desired product, as shown in step 168, the process goes to point A of the subroutine previously described in reference to FIG. 2. Within this subroutine, the customer is given an opportunity to use his credit card to add value

to an existing account or to establish an existing account. If he is not successful at this, the routine ends as described in reference to FIG. 2.

On the other hand, if the customer is successful in establishing a new account or in adding monetary value to an existing account, or if he has a valid
5 account, as determined in step 166 with a sufficient monetary value, as determined in step 168, the process continues in step 170, with the transaction server 14 connecting to the product vendor server 154. The transaction server 14 generates a transaction number and transmits this transaction number as a verification of the transaction to the product vendor server 154 in step 172. Next, in step 174, the
10 transaction server performs accounting functions to data stored within the database 20, debiting the customer account and crediting the account of the product vendor, operating the product vendor server 154, with a portion of the monetary value debited from the customer account. The amounts credited are, for example, predetermined percentages of the amount debited. The remaining
15 portion of the monetary value debited from the customer account is retained by the transaction server 14 for performing the transaction services. Next, in step 176, the transaction server 14 connects the web browser 19 to a web site of the product vendor server 154. At this web site, the customer may supply the address to which the purchased product should be sent, or he may verify that an address previously
20 supplied by the transaction server 14 is correct. Since the actual shipment of the product has been triggered by the transmission of the verification of the transaction in step 172, repeated connections to the web site of the product vendor server without the other process described in reference to FIG. 6 does not cause repeated shipments of products. The routine ends in step 178.

Referring to FIGS. 1, 3, and 4, the processes for registering an information
25 provider server 10, a web relay server 26, and a product vendor server 154 with the transaction server 14 establishes a separate account within the database 20 for each of these servers 10, 26, and 154. To receive payment for the organizations operating each of these servers 10, 26, 154, the server contacts the
30 transaction server 24, providing the appropriate account number and PIN and asking for payment. The transaction server 14 then contacts the bank computer 28 with which it communicates and arranges for payment of funds up to the monetary amount represented by variables stored in the database 20.

Since the customer account information is stored within the database 20, instead of in the customer's system, the method of the present invention has an advantage over conventional methods for making payments in that the customer can access and use his account from various other computers connected to the Internet, providing only his account number and PIN. Furthermore, a system or hardfile crash in the customer's system cannot cause this information to be lost, and the loss of information resulting from such a mishap at the transaction server can be avoided through well-known techniques for redundant storage of large files.

While the system has been described as operating through connections made over the Internet, it is understood that the present invention can readily be implemented through the use of connections made over another form of a wide area network. In this more generalized version of a network, pages accessed by servers connected through the network are considered to operate as web sites on the Internet. While the system has been described in its preferred forms with some degree of particularity, it is understood that this description has been given only by way of example, and that numerous changes, including rearrangement of process steps, may be made without departing from the scope and spirit of the invention.

CLAIMS

What is claimed is:

- 1 1. A method providing for a transfer of funds from a customer to a vendor for
2 a purchase, wherein said customer communicates with a vendor server (10, 154)
3 of said vendor over a wide area network (16) by means of a customer computer
4 (18) executing a browser (19) transferrable among pages available over said wide
5 area network (16), and wherein said method comprises steps of:
- 6 (a) connecting (102, 162) said browser (19) with a first page of data
7 available from a vendor server (10, 154) over said wide area
8 network (16);
- 9 (b) transferring (104, 164) said browser (19) from said first page of data
10 to a menu page accessed through a transaction server (14)
11 attached to said wide area network (16);
- 12 (c) deducting (112, 174) a first monetary amount from customer
13 account information stored within a database (20) accessed by said
14 transaction server (14); and
- 15 (d) crediting (112, 174) a first portion of said first monetary amount to
16 vendor account information stored within said database (20).
- 1 2. The method of claim 1, wherein step (d) (112, 174) is followed by a step of
2 transferring (138, 176) said browser (19) from said menu page to a page displaying
3 information from said vendor server (10, 154).
- 1 3. The method of claim 1, wherein step (c) (112, 174) occurs in response to
2 selections made in response to said menu page to describe a location of said
3 customer account information.
- 1 4. The method of claim 3, wherein step (c) (112, 174) additionally occurs in
2 response to a process including steps of:
- 3 (e) transferring (46) said browser (19) from said menu page to a secure
4 site page;

- 5 (f) deducting (50) a second monetary amount from an account
6 accessed by a credit card specified by said customer; and
7 (g) crediting (62) a portion of said second monetary amount to said
8 customer account information.

1 5. The method of claim 1, wherein step (d) (112) is followed by:

- 2 (h) transferring (124) said browser (19) from said menu page to a
3 unique page of a web relay server (26) over said wide area network
4 (16);
5 (i) relaying (138) information between said customer computer (18)
6 and said vendor server (10) through said web relay server (26) over
7 said wide area network (16).

1 6. The method of claim 5, wherein, during step (i) (138) an identity of said
2 customer computer (18) is hidden from said vendor server (10) and an identity of
3 a page, from which information is relayed, on said vendor server (10) is hidden
4 from said customer computer (18).

1 7. The method of claim 1, additionally comprising steps of:

- 2 (j) generating (114) a transaction number within said transaction server
3 (14);
4 (k) transmitting (118) said transaction number and, in association with
5 said transaction number, an address of a fee-based information
6 page, on which information to be transmitted is found, from said
7 transaction server (14) to a web relay server (26) capable of
8 relaying data over said wide area network (16);
9 (l) transmitting (122) said transaction number and an address of a
10 unique page of said web relay server (26) from said transaction
11 server (14) to said browser (19) over said wide area network (16),
12 (m) transferring (124) said browser (19) from said menu page to said
13 unique page of a web relay server (26), as identified by said
14 address of a unique page, over said wide area network (16);

- 15 (n) transmitting (126) said transaction number from said browser (19)
16 to said web relay server (26) over said wide area network (16);
17 (o) comparing said transaction number transmitted to said web relay
18 server (26) from said transaction server (14) with said transaction
19 number transmitted to said web relay server (26) from said browser
20 (19); and
21 (p) if a match is found between said transaction numbers in step (n),
22 connecting (136) said web relay server (26) with said fee-based
23 information page through said address associated with said
24 transmission number, as transmitted in step (k) (118).

1 8. The method of claim 7, additionally comprising a step, following step (p)
2 (136), of relaying (138) information between said customer computer (18) and said
3 fee-based information page through said web relay server (26) over said wide area
4 network (16), wherein an identity of said customer computer (18) is hidden from
5 said vendor server (10), and wherein an identity of said fee-based information page
6 is hidden from said customer computer (18).

- 1 9. The method of claim 7, wherein
2 a time-out value, limiting a time in which information is transmitted from
3 said fee-based information page, is additionally transmitted from said transaction
4 server (14) to said web relay server (26) in step (k) (118),
5 said time-out value is associated with said transaction number transmitted
6 with said time-out value, and
7 said method additionally comprises, following step (p) (136), steps of:
8 (q) determining (142) if a transaction time determined from said
9 time out value associated with said transaction number has
10 expired;
11 (r) if said transaction time has expired, as determined in step (q)
12 (142), transferring (154) said browser (19) to said transaction
13 server (14);
14 (s) if said transaction time has not expired, as determined in step
15 (q) (142), relaying (138) information between said customer

16 computer (18) and said fee-based information page through
17 said web relay server (26) over said wide area network (16),
18 wherein an identity of said customer computer (18) is hidden
19 from said vendor server (10), and wherein an identity of said
20 fee-based information page is hidden from said customer
21 computer (18) until said transaction time has expired; and
22 (t) when said transaction time has expired, as determined in step
23 (q) (142), transferring (154) said browser (19) to said transac-
24 tion server (14).

1 10. The method of claim 9, wherein, after said browser (19) is transferred to
2 said transaction server (14) in step (r) (154) or in step (t) (154), transmitting (156)
3 an error message from said transaction server (14) to said customer computer
4 (18).

1 11. The method of claim 7, additionally comprising a step of crediting (112) a
2 second portion of said first monetary amount to web relay account information
3 stored within said database (20).

1 12. The method of claim 11, wherein step (a) is preceded by steps of:
2 (u) connecting (90) said web relay server (26) with said transaction
3 server (14) over said wide area network (16);
4 (v) generating (92) a web relay account number to be associated with
5 said web relay server (26); and
6 (w) establishing (93) a web relay account represented by said web relay
7 account information stored within said database (20) and accessed
8 with said web relay account number.

1 13. The method of claim 12, additionally comprising steps of:
2 (x) connecting (146) said web relay server (26) with said transaction
3 server (14) over said wide area network (16);
4 (y) transmitting (148) said web relay account number from said web
5 relay server (26) to said transaction server (14);

- 6 (z) deducting a third monetary amount from said web relay account
7 information; and
- 8 (aa) instructing a bank computer (28) electronically connected to said
9 transaction server (14) to transfer an amount corresponding to said
10 third monetary amount from an account associated with said
11 transaction server (14) to an account associated with said web relay
12 server (26).

- 1 14. The method of claim 12, wherein step (u) is additionally followed by steps
2 of:
- 3 (ab) transmitting (92) a relay subroutine from said transaction server (14)
4 to said web relay server (26), wherein said relay subroutine provides
5 a process for transmitting information between said customer
6 computer (18) and said fee-based information page while hiding an
7 identity of said customer computer (18) from said vendor server (10)
8 and while hiding an identity of said fee-based information page from
9 said customer computer (18); and
- 10 (ac) downloading said relay subroutine within said web relay server (26).

- 1 15. The method of claim 1, wherein step (a) is preceded by steps of:
- 2 (ad) connecting (70) said vendor server (10) with said transaction server
3 (14) over said wide area network (16);
- 4 (ae) generating (72) a vendor account number to be associated with said
5 vendor server (10); and
- 6 (af) establishing (74) a vendor account represented by vendor account
7 information stored within said database (20) and accessed with said
8 vendor account number.

- 1 16. The method of claim 15, wherein step (ad) is additionally followed by steps
2 of:
- 3 (ag) transmitting (74) an address of said fee-based information page
4 from said vendor server (10) to said transaction server (14); and

5 (ah) transmitting (78) an address of a page accessible by said transac-
6 tion server (14) from said transaction server (14) to said vendor
7 server (10).

1 17. The method of claim 15, additionally comprising steps of:

2 (ai) connecting said vendor server (10) with said transaction server (14)
3 over said wide area network (16);

4 (aj) transmitting said vendor account number from said vendor server
5 (10) to said transaction server (14);

6 (ak) deducting a third monetary amount from said vendor account
7 information; and

8 (al) instructing a bank computer (28) electronically connected to said
9 transaction server (14) to transfer an amount corresponding to said
10 third monetary amount from an account associated with said
11 transaction server (14) to an account associated with said vendor
12 server (10).

1 18. The method of claim 15, wherein step (a) (102) is additionally preceded by
2 steps of:

3 (am) connecting (32) said browser (19) to said menu page of said
4 transaction server (14);

5 (an) transferring (46) said browser (19) from said menu page to said
6 secure site page in response to an indication associated with said
7 menu page;

8 (ao) generating (62) a customer account number to be associated with
9 said browser (19);

10 (ap) establishing (62) a customer account represented by customer
11 account information stored within said database (20) and accessed
12 with said vendor account number;

13 (aq) deducting (50) a third monetary amount from an account accessed
14 by a credit card specified by said customer; and

15 (ar) crediting (62) a portion of said third monetary amount to said
16 customer account information.

1 19. The method of claim 1, wherein step (b) (164) is additionally followed by
2 steps of:

- 3 (as) connecting (170) said transaction server (14) with said vendor
4 server (10); and
5 (at) transmitting (172) a transaction code to said vendor server (10)
6 indicating that a transaction has occurred.

1 20. A method for supervising an electronic financial transaction, wherein said
2 method is controlled by a program executing within a transaction server (14)
3 accessing a database (20), and wherein said method comprises steps of:

- 4 (a) receiving (104, 164) connection of a browser (19) executing in a
5 customer computer (18) to a menu page of said transaction server
6 (14), wherein said menu page is associated with a fee to be paid;
7 (b) determining (106, 108, 166, 168) by responses to said menu page
8 if said browser (19) is associated with a customer account repre-
9 sented by customer account information stored within said database
10 (20), wherein said customer account is sufficient for deduction of
11 said fee;
12 (c) if it has been determined in step (b) (106, 108, 166, 168) that said
13 browser (19) is associated with a customer account represented by
14 said customer account information and that said customer account
15 is sufficient for deduction of said fee, deducting (112, 174) a first
16 monetary amount equivalent to said fee from said customer account
17 information and crediting (112, 174) a first portion of said first
18 monetary amount to vendor account information stored within said
19 database (20);
20 (d) if it has been determined in step (b) (106, 108, 166, 168) that said
21 browser (19) is not associated with a customer account represented
22 by said customer account information, wherein said customer
23 account is sufficient for deduction of said fee, transferring (46) said
24 browser (19) from said menu page to a secure site;
25 (e) after step (d), receiving (60) a connection from said secure site;

- 26 (f) after step (e), crediting (62) said customer account information with
27 a second monetary amount specified by said secure site.
- 28 (g) after step (f), deducting (112, 174) said first monetary amount
29 equivalent to said fee from said customer account information and
30 crediting a first portion of said first monetary amount to said vendor
31 account information.

- 1 21. The method of claim 20, additionally comprising steps of:
2 (h) reading (114) a first code, stored in said database (20), representing
3 a location of a fee-based information page of a vendor server (10);
4 (i) generating (114) a transaction number;
5 (j) connecting (116) with a web relay server (26);
6 (k) transmitting (118) said first code and said transaction number to
7 said web relay server (26); and
8 (l) transmitting (118) said transaction number and a second code
9 representing an address of a page of said web relay server (26) to
10 said browser (19).

- 1 22. The method of claim 21, wherein
2 step (k) (118) is additionally preceded by reading (114) a second code,
3 stored in said database (20), representing a time-out value associated with said
4 fee-based page of a vendor server (10), and
5 said second code is additionally transmitted to said web relay server (26)
6 in step (k) (118).

- 1 23. The method of claim 21, additionally comprising a step of crediting (112)
2 a second portion of said first monetary amount to web relay account information
3 associated with said web relay server (26) and stored within said database (20).

- 1 24. The method of claim 21, wherein step (a) (104) is preceded by steps of:
2 (m) connecting (90) with said web relay server (26);
3 (n) generating (92) a web relay account number to be associated with
4 said web relay server (26); and

5 (o) establishing (93) a web relay account represented by said web relay
6 account information stored within said database (20) and accessed
7 with said web relay account number.

1 25. The method of claim 24, additionally comprising steps of:

2 (p) receiving a connection from said web relay server (26);

3 (q) receiving transmission of said relay account number;

4 (s) deducting a third monetary amount from said web relay account
5 information; and

6 (t) instructing a bank computer electronically connected to said
7 transaction server (14) to transfer an amount corresponding to said
8 third monetary amount from an account associated with said
9 transaction server (14) to an account associated with said web relay
10 server (26).

1 26. The method of claim 24, wherein step (p) is additionally followed by a step
2 of transmitting (92) a relay subroutine from said transaction server (14) to said web
3 relay server (26), wherein said relay subroutine provides a process for transmitting
4 information between said customer computer (18) and said fee-based information
5 page while hiding an identity of said customer computer (18) from said vendor
6 server (10) and while hiding an identity of said fee-based information page from
7 said customer computer (18).

1 27. The method of claim 20, wherein step (a) (104) is preceded by steps of:

2 (u) receiving (70) connection of a vendor server (10);

3 (v) generating (72) a vendor account number to be associated with said
4 vendor server (10); and

5 (w) establishing (74) a vendor account represented by vendor account
6 information stored within said database (20) and accessed with said
7 vendor account number.

- 1 28. The method of claim 27, wherein step (u) (70) is additionally followed by
2 steps of:
- 3 (x) receiving (72) an address of said fee-based information page from
4 said vendor server (10); and
 - 5 (y) transmitting (74) an address of a page accessible by said transac-
6 tion server (14).
- 1 29. The method of claim 27, additionally comprising steps of:
- 2 (aa) receiving a connection with said vendor server (10);
 - 3 (ab) receiving said vendor account number;
 - 4 (ac) deducting a third monetary amount from said vendor account
5 information; and
 - 6 (ad) instructing a bank computer electronically connected to said
7 transaction server (14) to transfer an amount corresponding to said
8 third monetary amount from an account associated with said
9 transaction server (14) to an account associated with said vendor
10 server (10).
- 1 30. The method of claim 27, wherein step (a) is additionally preceded by steps
2 of:
- 3 (ae) receiving (32) a connection of said browser (19) to a menu page of
4 said transaction server (14);
 - 5 (af) transferring (46) said browser (19) from said menu page to said
6 secure site in response to an indication associated with said menu
7 page;
 - 8 (ag) generating (58) a customer account number to be associated with
9 said browser (19);
 - 10 (ah) establishing (62) a customer account represented by customer
11 account information stored within said database (20) and accessed
12 with said vendor account number;
 - 13 (ai) crediting (62) a monetary amount, transmitted from said secure site,
14 to said customer account information.

1 31. The method of claim 20, additionally comprising steps of:
2 (aj) if it has been determined in step (b) (166, 168) that said browser
3 (19) is associated with a customer account represented by said
4 customer account information and that said customer account is
5 sufficient for deduction of said fee, connecting (170) to a vendor
6 server (154) associated with said menu page; and
7 (ak) after connection to said vendor server (154) in step (aj) (170),
8 transmitting (172) a code indicating that a transaction has been
9 completed.

1 32. A method for transmitting information, purchased in an electronic financial
2 transaction, over a wide area network (16) between a customer computer (18) and
3 a vendor server (10) having a fee-based information page, wherein said method
4 is controlled by a program executing within a web relay server (26), and wherein
5 said method comprises steps of:
6 (a) receiving (118) a first transaction number and an address for a fee-
7 based information page associated with said first transaction
8 number, transmitted from a transaction server (14);
9 (b) receiving (124) connection of a browser (19) of said customer
10 computer (18) at a unique page of a web relay server (26);
11 (c) receiving a second transaction number from said browser (19);
12 (d) comparing said first and second transaction numbers; and
13 (e) if a match is found between said transaction numbers, connecting
14 (136) with said fee-based information page through said address for
15 a fee-based information page.

1 33. The method of claim 32, additionally comprising a step, following step (e),
2 of relaying information between said customer computer (18) and said fee-based
3 information page over said wide area network (16), wherein an identity of said
4 customer computer (18) is hidden from said vendor server (10), and wherein an
5 identity of said fee-based information page is hidden from said customer computer
6 (18).

- 1 34. The method of claim 32, wherein
2 a time-out value, limiting a time in which information is transmitted from
3 said fee-based information page, is additionally received from said transaction
4 server (14) to in step (a) (118),
5 said time-out value is associated with said transaction number transmitted
6 with said time-out value, and
7 said method additionally comprises, following step (e), steps of:
8 (f) determining (142) if a transaction time determined from said
9 time out value associated with said transaction number has
10 expired;
11 (g) if said transaction time has expired, as determined in step (f),
12 (142) transferring said browser (19) to said transaction server
13 (14);
14 (h) if said transaction time has not expired, as determined in step
15 (f) (142), relaying (138) information between said customer
16 computer (18) and said fee-based information page over said
17 wide area network (16), wherein an identity of said customer
18 computer (18) is hidden from said vendor server (10), and
19 wherein an identity of said fee-based information page is
20 hidden from said customer computer (18) until said transaction
21 time has expired; and
22 (i) when said transaction time has expired, as determined in step
23 (f) (142), transferring (154) said browser (19) to said transaction
24 server (14).

- 1 35. A method for purchasing information from a fee-based information page of
2 an information provider server (10) by a customer computer (18) executing a
3 browser (19), wherein said information provider server (10), said customer
4 computer (18), a transaction server (14), and a web relay server (26) are
5 connected to a wide area network (16), and wherein said method comprises steps
6 of:
7 (a) registering said customer computer (18) with transaction server
8 (14), wherein registering said customer computer (18) establishes

- 9 an account, associated with said customer computer (18), repre-
10 sented by customer account data stored in a database (20)
11 accessible by said transaction server (14);
- 12 (b) registering said information provider server (10) with said transac-
13 tion server (14), wherein registering said information provider server
14 (10) establishes an account, associated with said information
15 provider server (10), represented by information provider account
16 data stored in said database (20);
- 17 (c) registering said web relay server (26) with said transaction server
18 (14), wherein registering said web relay server (26) establishes an
19 account, associated with said web relay server (26), represented by
20 web relay account data stored in said database (20);
- 21 (d) contacting (100, 102) an information-describing page of said
22 information provider server (10) with said browser (19);
- 23 (e) transferring (104) said browser (19) to a menu page of said
24 transaction server (14);
- 25 (f) deducting (112) a first amount from said customer account data;
- 26 (g) adding (112) a first portion of said first amount to said information
27 provider account data;
- 28 (h) adding (112) a second portion of said first amount to said web relay
29 account data;
- 30 (i) generating (114) a transaction number;
- 31 (j) transmitting (118) said transaction number and an address of said
32 fee-based information page from said transaction server (14) to said
33 web relay server (26);
- 34 (k) transmitting (122) said transaction number and a unique address of
35 said web relay server (26) from said transaction server (14) to said
36 browser (19);
- 37 (l) transferring (124) said browser (19) to said web relay server (26);
- 38 (m) transmitting (126) said transaction number from said browser (19)
39 to said web relay server (26);
- 40 (n) connecting (136) said web relay server (26) to fee-based informa-
41 tion page, accessed by said address transmitted in step (j) with said

42 transaction number matching said transaction number transmitted
43 from said browser (19) in step (m); and
44 (o) relaying information (138) between said customer computer (18)
45 and said fee-based information through said web relay server (26).

1 36. The method of claim 35, wherein
2 registering said information provider server (10) transfers an address to
3 access a menu page of said transaction server (14) to said information provider
4 server (10), and registering said information provider server (10) transfers an
5 address to access said fee based information page to said transaction server (14).

1 37. The method of claim 35, wherein
2 registering said web relay server (26) causes a relay routine to be
3 transmitted from said transaction server (14) to said web relay server (26), and
4 said relay routine, executing in said web relay server (26), causes said
5 web relay server (26) to relay information between said customer computer (18)
6 and said fee-based information page.

1 36. The method of claim 35, wherein
2 a time-out value is stored in said database (20), being associated with said
3 address of a fee-based information page,
4 said time-out value is additionally transmitted in step (j) (118) from said
5 transaction server (14) to said web relay server (26),
6 said web relay server (26), using said time-out value, calculates a
7 termination time at which a transaction associated with said transaction number
8 transmitted in step (j) is to be terminated, and
9 said web relay server (26) terminates relaying information in step (o) (138)
10 when said termination time has been exceeded.

1 37. The method of claim 38, wherein
2 said web relay server (26) hides an identity of said customer computer
3 (18) from said information provider server (10), and

4 said web relay server (26) hides an identity of said fee-based information
5 page from said customer computer (18).

1 40. A method for purchasing a product from a product-describing page of a
2 vendor server (154) by a customer computer (18) executing a browser (19),
3 wherein said vendor server (154), said customer computer (18), and a transaction
4 server (14), are connected to a wide area network (16), and wherein said method
5 comprises steps of:

- 6 (a) registering said customer computer (18) with transaction server
7 (14), wherein registering said customer computer (18) establishes
8 an account, associated with said customer computer (18), repre-
9 sented by customer account data stored in a database (20)
10 accessible by said transaction server (14);
- 11 (b) registering said vendor server (154) with said transaction server
12 (14), wherein registering said vendor server (154) establishes an
13 account, associated with said vendor server (154), represented by
14 vendor account data stored in said database (20);
- 15 (c) contacting (162) said product-describing page of said vendor server
16 (154) with said browser (19);
- 17 (d) transferring (164) said browser (19) to a menu page of said
18 transaction server (14);
- 19 (e) deducting (174) a first amount from said customer account data;
- 20 (f) adding a first portion of said first amount to said vendor account
21 data;
- 22 (g) adding (174) a second portion of said first amount to said web relay
23 account data;
- 24 (h) generating a transaction number; and
- 25 (i) transmitting (172) said transaction number verifying said transaction
26 from said transaction server (14) to said vendor server (154).

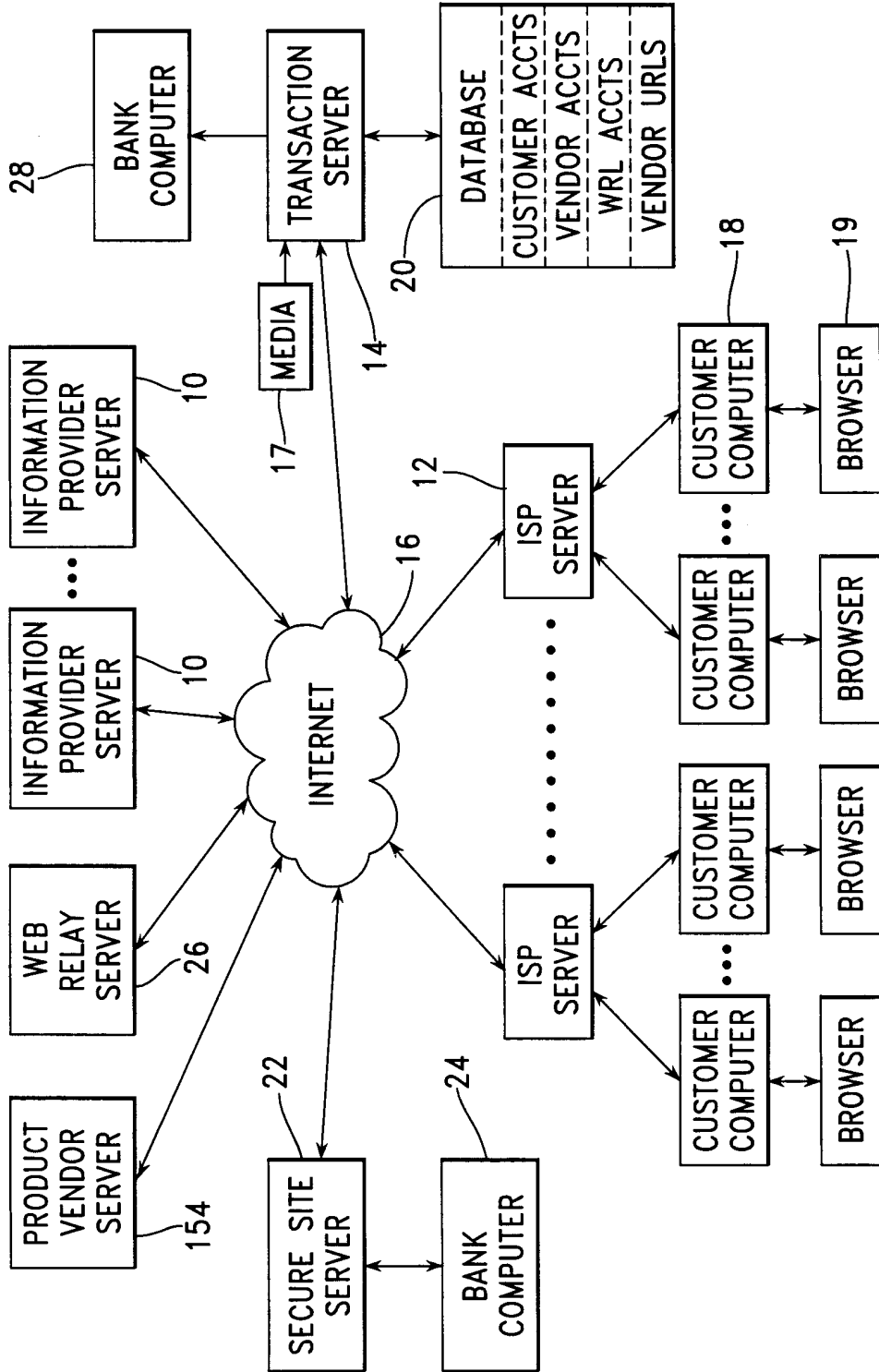


FIG. 1

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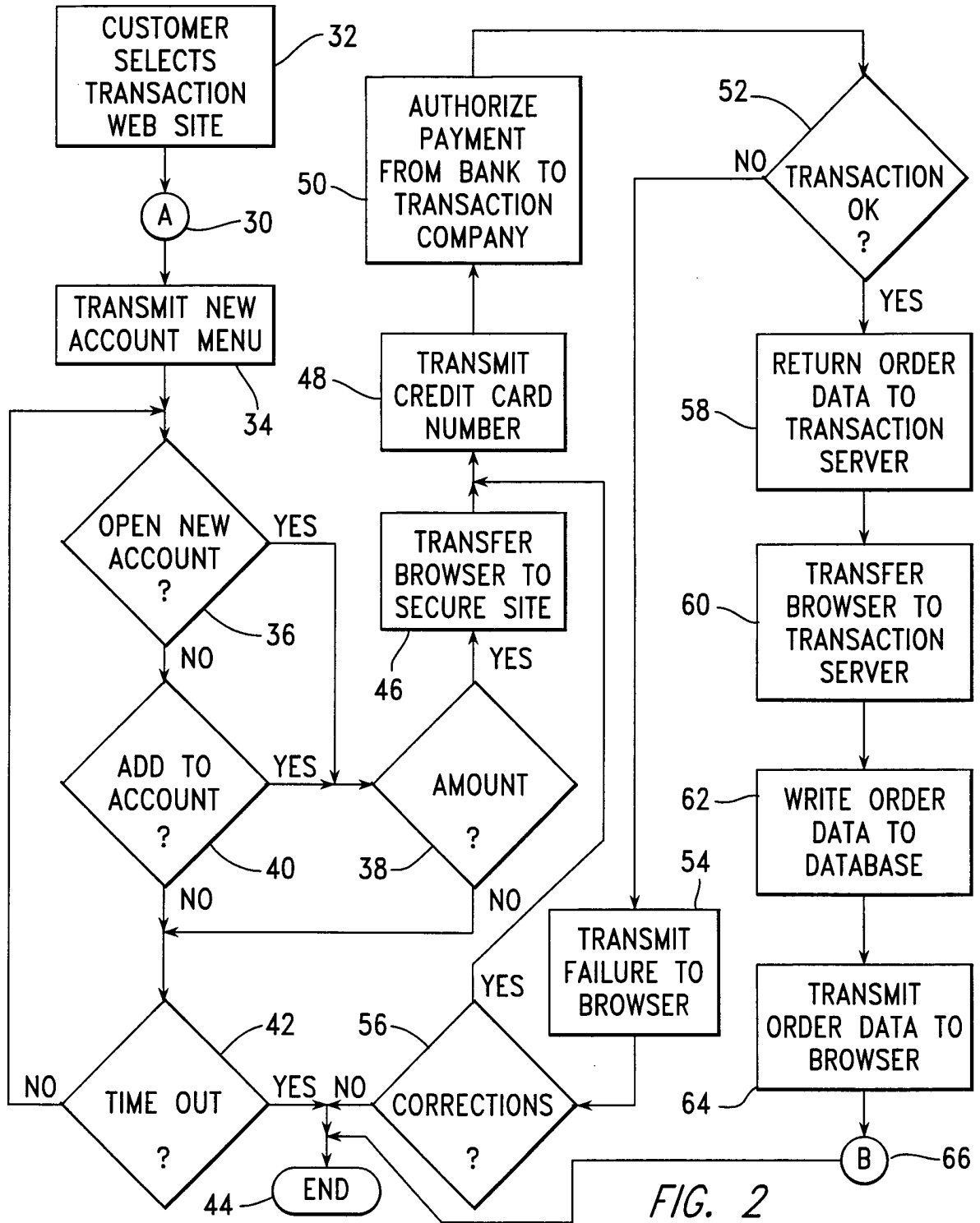


FIG. 2

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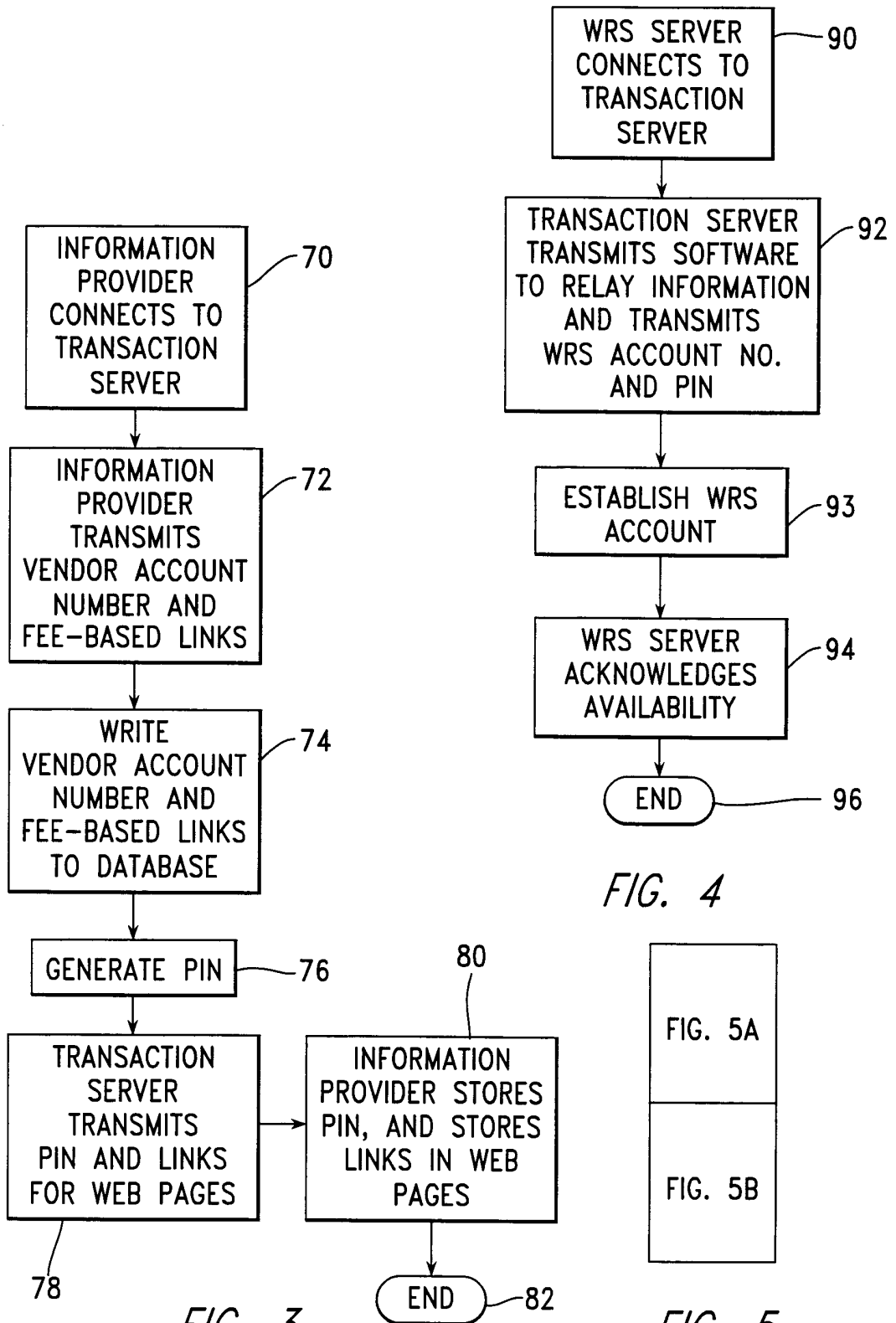


FIG. 3

FIG. 4

FIG. 5

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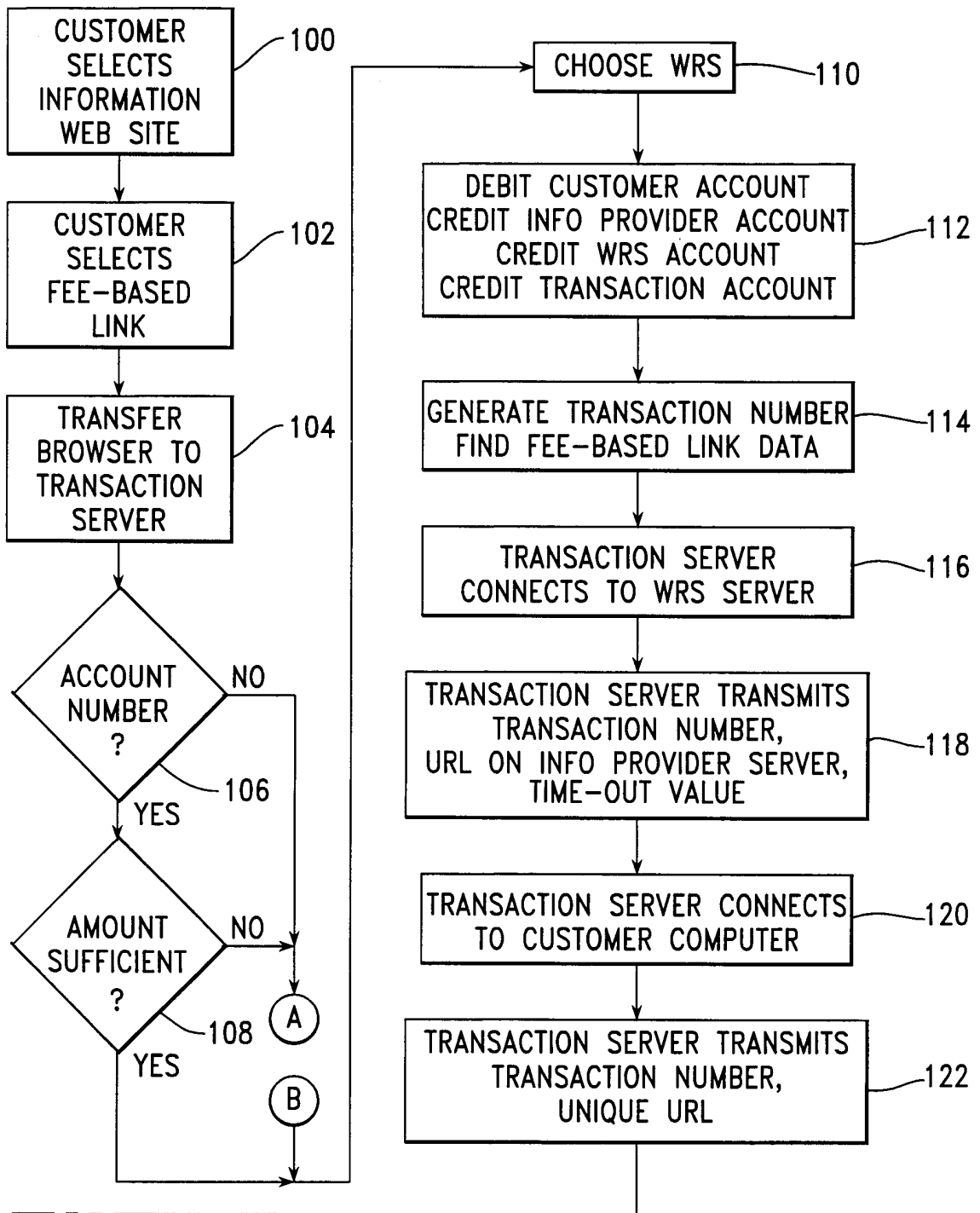


FIG. 5A

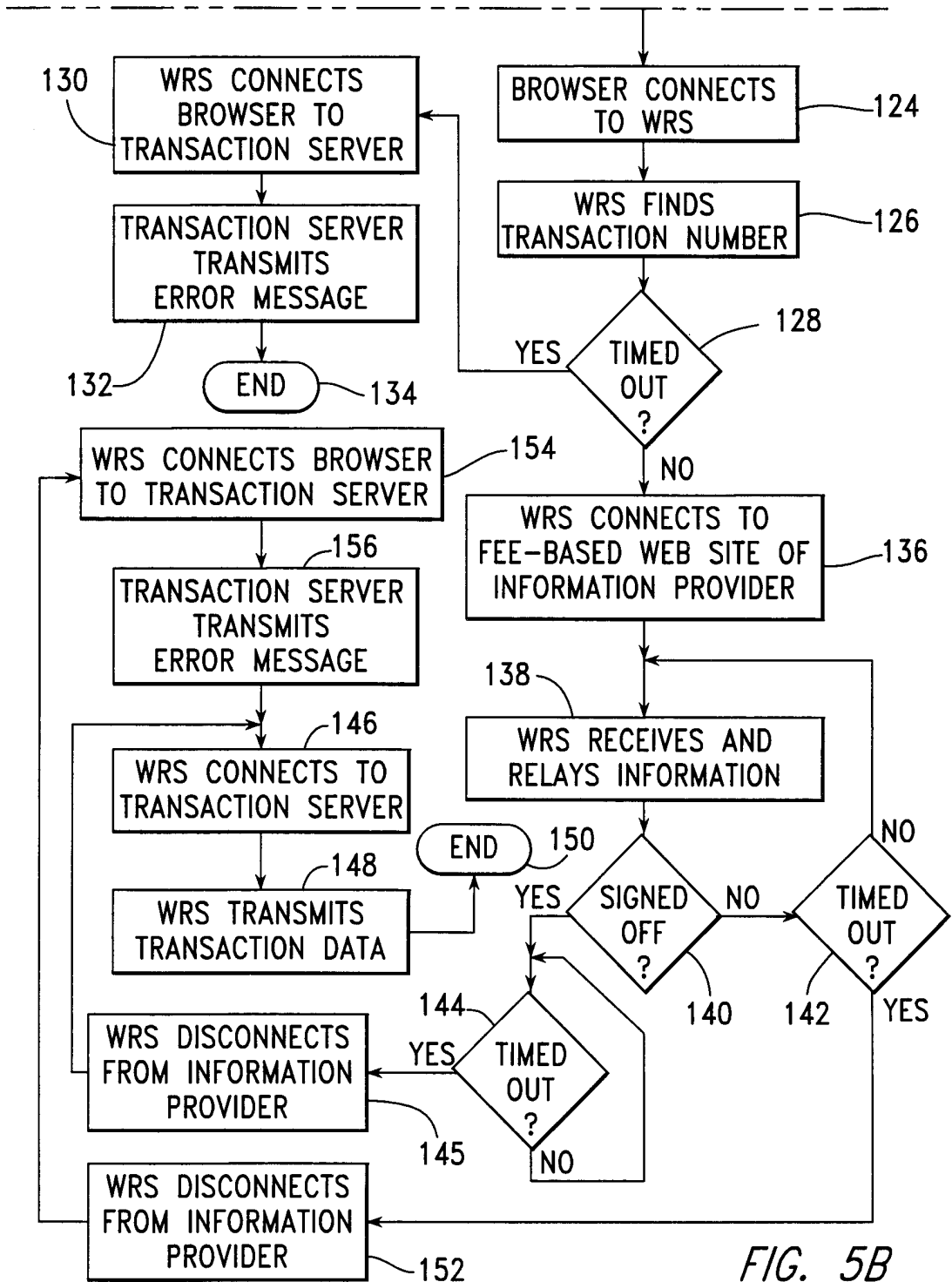


FIG. 5B

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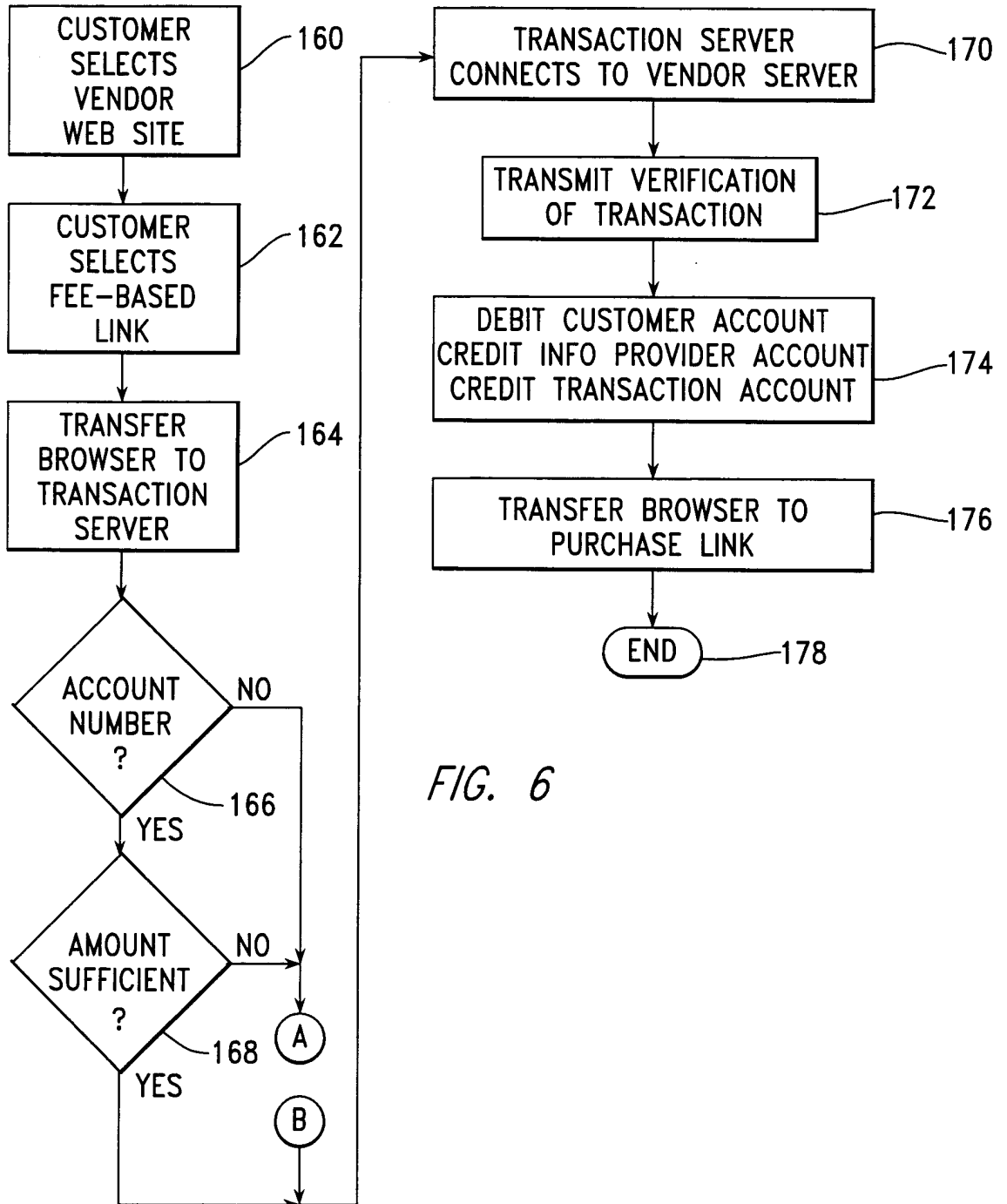


FIG. 6