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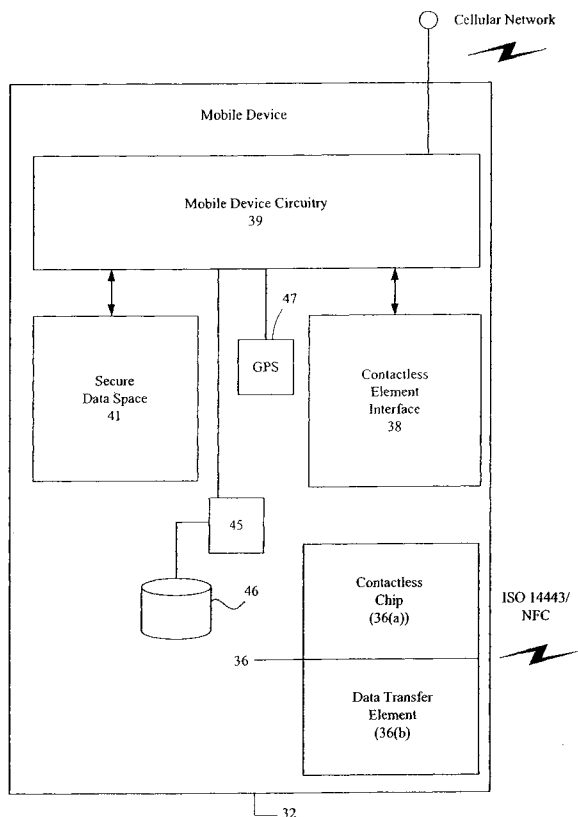
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(54) Title: MOBILE COUPON METHOD AND SYSTEM



(57) Abstract: A system and a method for using a portable consumer device such as a mobile phone are disclosed. In one embodiment, a method according to the present invention comprises referencing data regarding an individual consumer stored as part of a payment processing network to generate an electronic coupon targeted to the individual consumer. The electronic coupon is transmitted to a mobile device of the individual consumer over a communications network, and purchase transaction utilizing the electronic coupon is processed over the payment processing network. In certain embodiments, the electronic coupon may be generated based upon temporal and/or geographic information of a prior purchase transaction conducted using the payment processing network.

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## MOBILE COUPON METHOD AND SYSTEM

### CROSS-REFERENCE TO RELATED APPLICATION

[0001] The instant nonprovisional patent application claims priority to U.S.  
5 Provisional Patent Application No. 60/871,898, filed December 26, 2006 and  
incorporated by reference in its entirety herein for all purposes.

### BACKGROUND

[0002] Coupons are a useful marketing tool to enhance brand loyalty and introduce  
new products. By allowing customization of the effective duration and value of an  
10 offer, a coupon provides a flexible incentive for a consumer to purchase a particular  
product or line of products.

[0003] Conventionally, coupons have been available in printed form from sources  
such as newspapers. Increased adoption of electronic sources of information such  
as the world-wide-web, however, has led to the increase in popularity of electronic  
15 coupons.

[0004] In addition, most consumers now own and operate a cell phone or other  
portable electronic device. This renders such consumers accessible to the  
distribution of electronic coupons as they do their shopping, and moreover allows  
such distributed electronic coupons to be redeemed directly at the store location.

20 [0005] Accordingly, there is a need in the art for methods and systems allowing for  
the distribution and use of electronic coupons by mobile electronic devices.

### BRIEF SUMMARY

[0006] A system and a method for using a portable consumer device such as a  
mobile phone are disclosed. In one embodiment, a method according to the present  
25 invention comprises referencing data regarding an individual consumer stored as  
part of a payment processing network to generate an electronic coupon targeted to  
the individual consumer. The electronic coupon is transmitted to a mobile device of  
the individual consumer over a communications network, and purchase transaction  
utilizing the electronic coupon is processed over the payment processing network. In

certain embodiments, the electronic coupon may be generated based upon temporal and/or geographic information of a prior purchase transaction conducted using the payment processing network.

5 [0007] These and other embodiments of the invention are described in further detail below.

#### BRIEF DESCRIPTION OF THE DRAWINGS

[0008] FIG. 1 shows a simplified block diagram of a payment processing system.

[0009] FIG. 1A shows a block diagram of a portable consumer device for use with the payment processing system of FIG. 1.

10 [0010] FIG. 2 shows a simplified block diagram of an embodiment of a system for implementing a mobile coupon program in accordance with an embodiment of the present invention.

[0011] FIG. 3 shows a simplified flow diagram of a process for enrolling in a mobile coupon program according to an embodiment of the present invention.

15 [0012] FIG. 4 shows a screen from a POS terminal.

[0013] FIGS. 5(a)-5(c) show different screenshots on a phone. The screenshots include coupons.

[0014] Figure 6 is a schematic illustration of a computer system for use in accordance with embodiments of the present invention.

20 [0015] Figure 6A is an illustration of basic subsystems the computer system of Figure 6.

[0016] Figure 7 shows a simplified flow of a process of utilizing an embodiment of an electronic coupon according to the present invention.

#### DETAILED DESCRIPTION

25 [0017] **I. Payment Processing Systems**

[0018] Embodiments of the invention are directed to the use of portable consumer devices, and methods and systems employing them. Preferred portable consumer devices are mobile phones. The mobile phones can be used in payment processing systems like those shown in FIG. 1.

[0019] FIG. 1 shows a system 20 that can be used in an embodiment of the invention. The system 20 includes a merchant 22 and an acquirer 24 associated with the merchant 22. In a typical payment transaction, a consumer 30 may purchase goods or services at the merchant 22 using a portable consumer device 32. The acquirer 24 can communicate with an issuer 28 via a payment processing system 26.

[0020] The acquirer 24 is typically a bank that has a merchant account. The issuer 28 may also be a bank, but could also be business entity such as a retail store. Some entities are both acquirers and issuers, and embodiments of the invention include such entities. The issuer 28 may operate a server computer 21, which may have a computer readable medium comprising code for performing the functions that the issuer 28 performs. A database 23 comprising account number information and other information may be operatively coupled to the server computer 21.

[0021] The consumer 30 may be an individual, or an organization such as a business that is capable of purchasing goods or services.

[0022] The portable consumer device 32 may be in any suitable form. For example, suitable portable consumer devices can be hand-held and compact so that they can fit into a consumer's wallet and/or pocket (e.g., pocket-sized). They may include smart cards, ordinary credit or debit cards (with a magnetic strip and without a microprocessor), keychain devices (such as the Speedpass™ commercially available from Exxon-Mobil Corp.), etc. Other examples of portable consumer devices include cellular phones, personal digital assistants (PDAs), pagers, payment cards, security cards, access cards, smart media, transponders, and the like. The portable consumer devices can also be debit devices (e.g., a debit card), credit devices (e.g., a credit card), or stored value devices (e.g., a stored value card).

[0023] The portable consumer device 32 may comprise a computer readable medium 32(a) and a body 32(b). The computer readable medium 32(a) may be on the body 32(b). The body 32(b) may in the form a plastic substrate, housing, or other structure. The computer readable medium 32(a) may be a memory that stores data and may be in any suitable form. Exemplary computer readable media 32(a) may be in any suitable form including a magnetic stripe, a memory chip, etc. If the

portable consumer device 32 is in the form of a card, it may have an embossed region 32(a) which is embossed with a PAN (primary account number).

**[0024]** Figure 1A shows an enlarged view of the portable (mobile) device. Device 32 further includes a contactless element 36, typically implemented in the form of a semiconductor chip 36(a) (or other data storage element) with an associated wireless data transfer (e.g., data transmission) element 36(b), such as an antenna. Contactless element 36 is associated with (e.g., embedded within) mobile device 32 and data such as a coupon or control instructions transmitted via cellular network may be applied to contactless element 36 by means of contactless element interface 38. Contactless element interface 38 functions to permit the exchange of data and/or control instructions between the mobile device circuitry 39 (and hence the cellular network) and contactless element 36.

**[0025]** Mobile device 32 may also include a secure data space 41, which may be used by the device to store operating parameters and/or other data utilized in operation of the device. The secure data space 41 may be in the form of a chip that is separate and apart from the chip in the contactless element 36, or alternatively, could be a section of memory in the chip that forms part of the contactless element 36. Note that the chip in the contactless element 36 may include data storage capability in the form of a memory that may be accessed via interface 38 to permit the implementation of read, write, and erase functions, for example.

**[0026]** In accordance with still other embodiments, the mobile device may further include a processor 45 and computer readable storage medium 46 for storing code and configured to direct the processor to perform various tasks. For example, the computer readable storage medium may comprise a magnetic disk drive or a flash memory chip.

**[0027]** As discussed below, the computer readable storage medium may contain code that is configured to cause a processor of the portable consumer device to receive and recognize a message including a coupon and code that is delivered to the mobile device. The computer readable storage medium may also include code that is configured to decrypt an encrypted message including the code that is received by the mobile device.

[0028] Contactless element 36 is capable of transferring and receiving data using a near field communications capability (or near field communications medium) typically in accordance with a standardized protocol or data transfer mechanism (identified as ISO 14443/NFC in the figure). Near field communications capability is a short-range communications capability, such as RFID, Bluetooth™, infra-red, or other data transfer capability that can be used to exchange data between the mobile device 32 and a local apparatus, for example located a point-of-sale of a merchant or another location at which coupons are expected to be redeemed. Thus, mobile device 32 is capable of communicating and transferring data and/or control instructions via both cellular network and near field communications capability.

[0029] In accordance with certain embodiments, the mobile device further includes a Global Positioning System (GPS) element 47. GPS element 47 is configured to allow determination of the location of the user at any time. In particular, GPS element 47 relies upon signals from a plurality of orbiting satellites in order to allow the user's location to be determined. Location information obtained from the GPS element 47 may in turn be communicated through the antenna to allow monitoring of the user's position.

[0030] Returning to Figure 1, the payment processing network 26 may include data processing subsystems, networks, and operations used to support and deliver authorization services, exception file services, and clearing and settlement services. An exemplary payment processing network may include VisaNet™. Payment processing networks such as VisaNet™ are able to process credit card transactions, debit card transactions, and other types of commercial transactions. VisaNet™, in particular, includes a VIP system (Visa Integrated Payments system) which processes authorization requests and a Base II system which performs clearing and settlement services.

[0031] The payment processing network 26 may include a server computer. A server computer is typically a powerful computer or cluster of computers. For example, the server computer can be a large mainframe, a minicomputer cluster, or a group of servers functioning as a unit. In one example, the server computer may be a database server coupled to a Web server. The payment processing network 26 may use any suitable wired or wireless network, including the Internet.

[0032] The merchant 22 may also have, or may receive communications from, an access device 34 that can interact with the portable consumer device 32. In embodiment of a system of FIG. 1, the access device 34 is located at the merchant 22. However, it could be located at any other suitable location in other embodiments  
5 of the invention.

[0033] The access devices according to embodiments of the invention can be in any suitable form. Examples of access devices include point of sale (POS) devices, cellular phones, PDAs, personal computers (PCs), tablet PCs, handheld specialized readers, set-top boxes, electronic cash registers (ECRs), automated teller machines  
10 (ATMs), virtual cash registers (VCRs), kiosks, security systems, access systems, and the like.

[0034] If the access device 34 is a point of sale terminal, any suitable point of sale terminal may include a reader 34(a), a processor 34(b) and a computer readable medium 34(c). The reader 34(b) may include any suitable contact or contactless  
15 mode of operation. For example, exemplary card readers can include RF (radio frequency) antennas, magnetic stripe readers, etc. to interact with the portable consumer device 32.

[0035] In a typical purchase transaction, the consumer 30 purchases a good or service at the merchant 22 using a portable consumer device 32 such as a credit  
20 card. The consumer's portable consumer device 32 can interact with an access device 34 such as a POS (point of sale) terminal at the merchant 22. For example, the consumer 30 may take a credit card and may swipe it through an appropriate slot in the POS terminal.

[0036] Alternatively, the POS terminal may be a contactless reader, and the  
25 portable consumer device 32 may be a contactless device such as a contactless card. In certain embodiments, the portable consumer device may be a mobile device such as shown in FIG. 1A above. As described in detail below, the antenna of the mobile device may be utilized to communicate not only payment information to the POS, but also may also communicate information (such as a code) from a mobile  
30 coupon to a POS device.

[0037] An authorization request message is then forwarded to the acquirer 24. After receiving the authorization request message, the authorization request



message is then sent to the payment processing network 26. The payment processing network 26 then forwards the authorization request message to the issuer 28 of the portable consumer device 32.

5 [0038] After the issuer 28 receives the authorization request message, the issuer 28 sends an authorization response message back to the payment processing network 26 to indicate whether or not the current transaction is authorized (or not authorized). The transaction processing network 26 then forwards the authorization response message back to the acquirer 24. The acquirer 24 then sends the response message back to the merchant 22.

10 [0039] After the merchant 22 receives the authorization response message, the access device 34 at the merchant 22 may then provide the authorization response message for the consumer 30. The response message may be displayed by the access device 34, or may be printed out on a receipt.

15 [0040] At the end of the day, a normal clearing and settlement process can be conducted by the transaction processing network 26. A clearing process is a process of exchanging financial details between an acquirer and an issuer to facilitate posting to a consumer's account and reconciliation of the consumer's settlement position.

20 [0041] Some of the embodiments described below may use a payment processing system like the one described above, or any suitable combination of components in the payment processing system.

## [0042] II. Mobile Coupon Method and System

25 [0043] Particular embodiments in accordance with the present invention relate to methods and apparatuses which allow distribution and/or redemption of electronic coupons at a mobile personal device. Various embodiments of such a system are described in the following figures.

30 [0044] Figure 2 shows an overall view of an embodiment of a system in accordance with the present invention for administering a mobile coupon program. A first entity 200 (i.e. Visa) is responsible for operating a payment processing network. Under the control of entity 200 are a number of different operational elements.

[0045] For example, mobile campaign server 202 functions as the interface between entity 200 and the outside world, here represented by the internet "cloud" 204. Mobile campaign server 202 can include at least three components.

[0046] Specifically, mobile enrollment server 206 provides a browser interface for potential users to enroll in the mobile coupon program using an enrollment webpage 208. Mobile enrollment server 206 is configured to receive from potential users certain pieces of information allowing their participation in the program. For example, in an enrollment form supplied electronically to server 206, the prospective participant can provide information such as the telephone number of their portable device, a security password, and preferences regarding the types of mobile coupons that they wish to receive.

[0047] Figure 3 provides a simplified flow chart of the steps for enrolling in a mobile coupon program. In step 302 of enrollment flow 300, a consumer navigates to the website of the enrollment server utilizing his or her browser.

[0048] In the next step 304, the consumer creates a mobile coupon account by inputting identification and validation information. Examples of such identification information include the user's name, the telephone number of the user's mobile electronic device, financial account numbers, and optional aliases. At this stage, the consumer also verifies that they have read appropriate disclaimers and affirmatively indicate that they seek to opt-into the mobile coupon program.

[0049] In step 306 of enrollment flow 300, information entered by the consumer is verified. Examples of such verification include confirming that the consumer identified is actually in possession of the portable device, that the portable device belongs to the consumer, and that any identified account belongs to the consumer.

[0050] Returning to FIG. 2, mobile enrollment server 206 is in turn in electronic communication with user database 210. Database 210 includes data relating to the user of the mobile coupon system, including the specific information provided during enrollment. Access to the contents of database 210 is shared with gateway server 212.

[0051] Gateway server 212 serves as the interface with outside entities responsible for implementing the mobile coupon program. For example, telecommunications

companies ("telecoms") 214 provide the infrastructure necessary to communicate the coupon to the user's mobile device wherever they happen to be. The telecom entities must provide sufficient capacity to handle a sufficiently high volume of coupon messages outgoing to recipients.

5 **[0052]** Where such volume of messages is expected to be small (for example at the inception of the mobile coupon program), another type of company called an aggregator will secure sufficient bandwidth for all of the expected messages from the telecom, and then aggregate the messages from different sources.

**[0053]** In an exemplary embodiment, a coupon is sent to a user's phone or other  
10 portable device. The coupon may be sent in any one of a number of different forms, including but not limited to an short messaging service (SMS) message, a SMS link, a multimedia messaging service (MMS) message, or e-mail message.

**[0054]** The coupon may be communicated utilizing any one of several types of communications systems. For example, the coupon may be communicated to the  
15 cell phone utilizing SMS. Such an embodiment offers a number of possible advantages, including broad access as SMS is available on almost every cell phone. Possible disadvantages to mobile coupon distribution utilizing SMS is a weak mechanism for confirming receipt of the coupon by the designated recipient, and also a high transaction cost as charges are typically incurred for each SMS message  
20 transmitted.

**[0055]** In accordance with alternative embodiments, the mobile coupon could be distributed by a Global System for Mobile Communications (GSM) system. Such GSM communication are cheap and secure, and would support confirmation of receipt of the coupon by a designated user.

25 **[0056]** Further alternatively, the coupons could be distributed utilizing a Near Field Communications (NFC) system. Such an embodiment would require the portable consumer device to be equipped with an NFC chip and programmed with a software application. The source of the near field signal providing the electronic coupon could be local kiosks, for example as present in a shopping mall. An alternative source of  
30 electronic coupons available utilizing such near field communication is the point of sale itself. Other sources are possible.

[0057] The coupon may be communicated to the portable consumer device in encrypted form. Such encryption would prevent interception and unauthorized use of a coupon by other than the intended recipient. A processor present in the portable consumer device could in turn decrypt the message upon its receipt.

5 [0058] FIG. 4 shows a screen 400 from a POS terminal. The screen 400 shows buttons 402 that a cashier might select in order to initiate a pre-arranged discount utilizing an electronic coupon. For example, button 402a allows the cashier to implement a 30% discount for employees etc. Button 402b allows the cashier to manually enter a number for numeric look-up (NLU) from an electronic coupon  
10 displayed on a user's portable electronic device.

[0059] FIGS. 5A-5C are examples of three screenshots showing graphical coupons in different forms. These screenshots are configured to be able to be displayed on the small screen of a mobile phone, personal digital assistant (PDA), or other mobile device.

15 [0060] FIG. 5A shows a screenshot 500 which includes both a bar code 502 (which is an example of a machine readable code) and a seven digit number 504. The bar code 502 can be scanned with a scanner. One type of scanner which may be used to read a bar code on the screen of a cell phone is a charge coupled device (CCD) scanner. However, a laser-type scanner may not be able to read the bar code  
20 displayed due to reflection from the screen.

[0061] In order to process the electronic coupon shown in FIG. 5A, the user accesses and displays the coupon on the screen of his or her portable device. The cashier then accesses the discount screen shown in FIG. 4, and either scans the bar code in directly or enters the seven-digit number utilizing a numeric key pad.

25 [0062] FIG. 5B illustrates a screenshot 520 showing a different embodiment of a mobile electronic coupon in accordance with the present invention, which includes a visual display 522 and a personalized message 523. This visual display may be related to the nature of the coupon, representing for example the purchase of flowers. Alternatively, the display may simply illustrate the nature of the coupon, for  
30 example the display of flowers generically representing a gift.

**[0063]** Instead of a barcode, a six digit number "024248" is shown by the electronic coupon 520. In processing of coupon 520 by a cashier, this six digit number can be entered into a POS terminal to give the consumer a discount on a purchase. In accordance with one embodiment, the number can be entered by having the cashier type in the individual digits of the code on a numeric keypad. In accordance with an alternative embodiment, the number can be entered by having the cashier activate a predetermined key, or combination thereof, which allows recognition of the coupon and the discount.

**[0064]** The embodiment of Figure 5B may offer certain advantages over a coupon employing a bar code as shown in Figure 5A. One advantage is ease of operation, as there is no requirement for optical recognition/reading of a code from the screen of the phone. Another possible advantage is reduced cost of implementation, as a bar code scanner device is not required to be purchased or rented by the merchant. In addition, software and hardware upgrades relating to electronic scanning would not be required by this alternative embodiment.

**[0065]** Lastly, FIG. 5C shows a screenshot 550 showing a "30% off" coupon. This electronic coupon includes a visual display 552 but lacks either a bar code or an identifying number.

**[0066]** To use this coupon, the user shows the display to the cashier and the cashier selects a button on a POS terminal display (see FIG. 4) to provide the discount to the consumer. According to still further embodiments of the present invention, coupon information such as a code may be communicated to a portable device in a proprietary format.

**[0067]** Figure 7 shows a simplified flow of a process of utilizing a mobile coupon according to an embodiment of the present invention. In a first step 702 of process flow 700, a purchaser presents items to a cashier. In step 704, the cashier hits the purchase key and enters the items. In step 706, the coupon asks the purchaser whether or not she intends to use coupons. In step 708, the purchaser responds that she intends to use a coupon.

**[0068]** In step 710 of process flow 700, the cashier hits the coupons key to alert the register to the use of coupons. In step 712, the cashier hits the accept coupon button on the back of the VISA terminal.

[0069] In step 714, the VISA terminal displays a message requesting the purchaser to wave the phone to enter a coupon. In step 716, the purchaser waves the phone and the terminal receives the scanned code. In step 718 the processor in communication with the terminal looks up the scanned code. In step 720, the processor returns to the terminal, customer and branding information. In step 722, the terminal displays a branding message customized to the particular purchaser. Finally, in step 724, the terminal sends to the register a numeric look up representing the bar code.

[0070] A variation according to embodiments of the present invention may utilize near field communication of the coupon or a code therein, to the cashier. In this variation, a multi-digit numerical code (i.e. six digits) can be transmitted to the POS terminal via a reader using a contactless device such as the mobile device of FIG. 1A including an antenna. The coupon may be communicated in such a contactless manner using a short range communication method, such as a near field communications (NFC) capability. Examples of such NFC technologies include ISO standard 14443, RFID, Bluetooth™ and Infra-red communications methods. In accordance with such embodiments, the six digit code may or may not be shown on the display of the phone. Embodiments in accordance with the present invention are not limited to communicating coupon code information. In accordance with alternative embodiments, coupon information communicated from a mobile device to a POS terminal may include other information, for example a product code limiting applicability of the mobile coupon to a particular product, or an expiration date/time of the mobile coupon.

[0071] In certain embodiments, payment information (such as a credit card number, debit card number, home zip code of the card holder, or a three digit card verification value code) may be communicated from a mobile device in a contactless manner to the POS terminal. In such embodiments, the coupon information from the mobile device may also be communicated to the POS terminal in a contactless manner. In some embodiments, such communication of mobile coupon information may take place as part of the same message communicating payment information to the POS terminal. Alternatively, the coupon information may be communicated prior to, or following, contactless communication of the payment information to the POS terminal.

[0072] The consumer may receive a text message, a phone call, or e-mail indicating that the consumer has received a coupon. The consumer may then use his or her phone to transmit a code corresponding to the coupon, to a contactless reader coupled to a POS terminal. The near field communication can utilize, for example, infrared or an RF communication mode such as Bluetooth. The system shown in FIG. 1 can be used in conjunction with such an embodiment.

[0073] Returning to Figure 2, apart from the mobile campaign server, a number of other elements are also under the control of entity 200. Notification module 250 is responsible for notifying participants in the program of particular events, for example limited time promotions or even the possibility of fraudulent transactions.

[0074] Mobile targeting module 260 is responsible for generating coupons targeted to a user. According to certain embodiments, the coupons can be targeted based upon a location based services (LBS) approach, utilizing prior purchasing activity by a consumer as detected over a payment processing network.

[0075] Specifically, where a payment transaction is conducted over a payment processing network, certain information is communicated that can be used for targeting of a mobile coupon. One piece of information that is potentially useful for targeting is the timing of the prior payment transaction.

[0076] In particular, the very existence of the prior purchase transaction reveals the consumer to be actively engaged in shopping rather than other activities (i.e. sleeping or working). Based upon this timing information, the consumer is known to likely be receptive to a mobile coupon for a subsequent transaction. Accordingly, embodiments of the present invention may thus generate and disseminate a mobile coupon to the consumer within a predetermined, limited time period from receiving an indication from the payment processing network that a prior payment transaction has occurred. Examples of time periods for dissemination of mobile coupons include, but are not limited to, one minute or less, five minutes, ten minutes, fifteen minutes, one-half hour, forty-five minutes, one hour, one and one half hours, two hours, three hours, four hours, and five hours or longer from the time that a prior purchasing activity is detected from the payment processing network. Such an approach allows for dissemination of a timely, non-intrusive mobile coupons to the consumer.

[0077] In certain embodiments, the duration of effectiveness of such a mobile coupon can also be limited by time. Such an embodiment would provide an incentive for the recipient to monitor his or her portable device for receipt of a mobile coupon, and use that coupon within the limited period that it is effective. Moreover, in certain embodiments, upon expiration the mobile coupon could be configured to automatically disappear from the consumer's portable device. This would reduce intrusiveness of the mobile coupon, as the consumer is not obligated to delete a backlog of expired coupons from his or her portable device.

[0078] Embodiments of the present invention are not limited to generating and promulgating mobile coupons based upon temporal information gleaned from a prior purchase transaction over a payment processing network. In accordance with alternative embodiments, the mobile coupons can be targeted based upon a geographic location of the user as determined from the payment processing network.

[0079] According to one embodiment, the location of the consumer can be determined from purchasing activity of the user based upon a Location Based Services (LBS) approach. For example, when the user swipes a card at a POS, an authorization message is returned from the payment network which includes a Merchant Identification Number (MID). The user's location at that time of sale can be determined from the MID number.

[0080] According to other embodiments, information regarding the nature of the prior purchase conducted over the payment processing network can be referenced to generate the coupon. Thus, a prior purchase of one product (for example a vacuum cleaner), could lead to generation of a second product (bags for the vacuum cleaner). This coupon generation could be irrespective of the time or physical location of a prior purchasing transaction. Still further alternatively, an LBS approach could be based upon the seller of the second product having an affinity agreement with the seller of the previous product purchased.

[0081] Moreover, a mobile coupon may be generated based upon more than one piece of information gleaned from a prior purchasing transaction conducted over a payment processing network. Specifically, the time, geographic location, and/or nature of the prior purchase transaction could be combined to generate the targeted coupon.



[0082] According to still other embodiments, information from a prior purchase transaction available from a payment processing network, may be combined with other information to generate a targeted coupon. For example, information regarding the location of the consumer can be determined from sources other than the payment processing network.

[0083] According to one approach, the location of a consumer can be determined by analyzing the location of the current base station through which the portable user device is transmitting and receiving information. Such current base station information is available from the telecommunications provider with which the consumer is affiliated, and in other applications is utilized to allow the user to contact the closest medical services provider in the case of a medical emergency. Thus, in certain embodiments, geographic information from this source could be combined with information (time, nature of prior purchases) available from the payment processing network, to generate a targeted coupon.

[0084] According to another approach, the location of a consumer can be determined by the use of Global Positioning System (GPS) technology. In this approach, the location of the portable device of the consumer is monitored utilizing a plurality of orbiting satellites. Thus, in other embodiments, geographic information from this source could be combined with information (time, nature of prior purchase) available from the payment processing network, to generate a targeted coupon.

[0085] Utilizing any of these approaches, or others, alone or in combination, the mobile targeting module 260 may send out a targeted mobile coupon to a consumer. For example, the mobile electronic coupon can be targeted in whole or in part based upon the recipient belonging to a particular group, such as an employee of a business or a member of a club.

[0086] Reward module 270 (such as "Visa Extras") is responsible for coordinating and administering an incentive or reward program that is tied to use of the payment network. Thus a targeted mobile coupon may be generated and then electronically distributed to a portable consumer device as part of an incentive program. For example, the accrual of a certain volume of purchases utilizing a Visa card, may render the program participant eligible for a particularly valuable type of electronic coupon not typically available to other participants in the mobile coupon program.

This targeted electronic coupon is then communicated to the consumer's mobile device for redemption.

[0087] Other elements indicated under the control of entity 200 in FIG. 2, may relate to the function of the payment network to execute purchase and payment transactions. Partners and banks 280 are outside of the control of entity 200 but interact therewith as part of the processing of payment transactions.

[0088] It should be understood that the present invention as described above can be implemented in the form of control logic using computer software in a modular or integrated manner. Based on the disclosure and teachings provided herein, a person of ordinary skill in the art will know and appreciate other ways and/or methods to implement the present invention using hardware and a combination of hardware and software.

[0089] The various components of the mobile coupon system described above may be implemented with a computer system having various features. FIG. 6 shows an example of a generic computer system 610 including display device 620, display screen 630, cabinet 640, keyboard 650, and mouse 670. Mouse 670 and keyboard 650 are representative "user input devices." Mouse 670 includes buttons 680 for selection of buttons on a graphical user interface device. Other examples of user input devices are a touch screen, light pen, track ball, data glove, microphone, and so forth. FIG. 6 is representative of but one type of system for embodying the present invention. It will be readily apparent to one of ordinary skill in the art that many system types and configurations are suitable for use in conjunction with the present invention. In a preferred embodiment, computer system 610 includes a Pentium class based computer, running Windows NT operating system by Microsoft Corporation. However, the apparatus is easily adapted to other operating systems and architectures by those of ordinary skill in the art without departing from the scope of the present invention.

[0090] As noted, mouse 670 can have one or more buttons such as buttons 680. Cabinet 640 houses familiar computer components such as disk drives, a processor, storage device, etc. Storage devices include, but are not limited to, disk drives, magnetic tape, solid state memory, bubble memory, etc. Cabinet 640 can include additional hardware such as input/output (I/O) interface cards for connecting

computer system 610 to external devices external storage, other computers or additional peripherals, further described below.

**[0091]** FIG. 6A is an illustration of basic subsystems in computer system 610 of FIG. 6. This diagram is merely an illustration and should not limit the scope of the claims herein. One of ordinary skill in the art will recognize other variations, modifications, and alternatives. In certain embodiments, the subsystems are interconnected via a system bus 675. Additional subsystems such as a printer 674, keyboard 678, fixed disk 679, monitor 676, which is coupled to display adapter 682, and others are shown. Peripherals and input/output (I/O) devices, which couple to I/O controller 671, can be connected to the computer system by any number of means known in the art, such as serial port 677. For example, serial port 677 can be used to connect the computer system to a modem 681, which in turn connects to a wide area network such as the Internet, a mouse input device, or a scanner. The interconnection via system bus allows central processor 673 to communicate with each subsystem and to control the execution of instructions from system memory 672 or the fixed disk 679, as well as the exchange of information between subsystems. Other arrangements of subsystems and interconnections are readily achievable by those of ordinary skill in the art. System memory, and the fixed disk are examples of tangible media for storage of computer programs, other types of tangible media include floppy disks, removable hard disks, optical storage media such as CD-ROMS and bar codes, and semiconductor memories such as flash memory, read-only-memories (ROM), and battery backed memory.

**[0092]** Any of the software components or functions described in this application, may be implemented as software code to be executed by a processor using any suitable computer language such as, for example, Java, C++ or Perl using, for example, conventional or object-oriented techniques. The software code may be stored as a series of instructions, or commands on a computer readable medium, such as a random access memory (RAM), a read only memory (ROM), a magnetic medium such as a hard-drive or a floppy disk, or an optical medium such as a CD-ROM. Any such computer readable medium may reside on or within a single computational apparatus, and may be present on or within different computational apparatuses within a system or network.

[0093] The above description is illustrative and is not restrictive. Many variations of the invention will become apparent to those skilled in the art upon review of the disclosure. The scope of the invention should, therefore, be determined not with reference to the above description, but instead should be determined with reference  
5 to the pending claims along with their full scope or equivalents.

[0094] One or more features from any embodiment may be combined with one or more features of any other embodiment without departing from the scope of the invention.

[0095] A recitation of "a", "an" or "the" is intended to mean "one or more" unless  
10 specifically indicated to the contrary.

WHAT IS CLAIMED IS:

- 1                   1. A method comprising:  
2                   referencing data regarding an individual consumer stored as part of a  
3                   payment processing network to generate an electronic coupon targeted to the  
4                   individual consumer;  
5                   transmitting the electronic coupon to a mobile device of the individual  
6                   consumer over a communications network; and  
7                   processing a purchase transaction utilizing the electronic coupon over  
8                   the payment processing network.
- 1                   2. The method of claim 1 wherein the electronic coupon is generated  
2                   based upon a prior transaction conducted over the payment processing network.
- 1                   3. The method of claim 2 wherein the electronic coupon is generated  
2                   within a predetermined time from a time of the prior transaction.
- 1                   4. The method of claim 1 wherein the electronic coupon is targeted  
2                   based upon a geographic location of the individual consumer.
- 1                   5. The method of claim 4 wherein the geographic location of the  
2                   consumer is determined from a location based services (LBS) approach based upon  
3                   a prior transaction conducted over the payment processing network.
- 1                   6. The method of claim 5 wherein the geographic location is  
2                   determined from a merchant identification number in the prior transaction.
- 1                   7. The method of claim 4 wherein the geographic location of the  
2                   consumer is determined from a global positioning system (GPS) element in the  
3                   mobile device.
- 1                   8. The method of claim 4 wherein the geographic location of the  
2                   consumer is determined from the mobile device communicating through the  
3                   communications network.
- 1                   9. The method of claim 1 wherein the electronic coupon is  
2                   communicated in encrypted form.

1           10. The method of claim 1 wherein the electronic coupon is  
2           communicated including a code able to be electronically transmitted from the mobile  
3           device to a point of sale.

1           11. The method of claim 1 wherein the data regarding the individual  
2           consumer is obtained based upon an enrollment form submitted by the individual  
3           consumer.

1           12. The method of claim 1 wherein the data regarding the individual  
2           consumer is obtained based upon the individual consumer's use of the payment  
3           processing network.

1           13. A server for a mobile coupon program, the server comprising:  
2           a processor; and  
3           a computer readable storage medium in electronic communication with  
4           the processor, the computer readable storage medium having stored thereon, code  
5           instructing the processor to,  
6           reference data regarding an individual consumer stored as part of a  
7           payment processing network to generate an electronic coupon targeted to the  
8           individual consumer, and  
9           transmit the electronic coupon to a mobile device of the individual  
10          consumer over a communications network.

1           14. The server of claim 13 wherein the code instructs generation of the  
2           electronic coupon based upon a prior transaction conducted over the payment  
3           processing network.

1           15. The server of claim 14 wherein the code instructs generation of the  
2           electronic coupon within a predetermined time of a time of the prior transaction.

1           16. The server of claim 13 wherein code instructs generation of the  
2           electronic coupon based upon a geographic location of the individual consumer.

1           17. The server of claim 16 wherein the geographic location of the  
2           consumer is determined from a location based services (LBS) approach based upon  
3           a prior transaction conducted over the payment processing network.

1                   18. The server of claim 16 wherein the geographic location of the  
2 consumer is determined from a merchant identification number in the prior  
3 transaction.

1                   19. The server of claim 16 wherein the geographic location of the  
2 consumer is determined from a global positioning system (GPS) element in the  
3 mobile device.

1                   20. The server of claim 16 wherein the geographic location of the  
2 consumer is determined from the mobile device communicating through the  
3 communications network.

1                   21. A method comprising:

2                   a consumer conducting a first purchasing transaction over a payment  
3 processing network;

4                   generating an electronic coupon targeted to the consumer based upon  
5 the first purchasing transaction;

6                   transmitting the electronic coupon to a mobile device of the consumer;  
7 and

8                   processing a second purchasing transaction over the payment  
9 processing network, the second purchasing transaction involving use of the  
10 electronic coupon to obtain a discount.

1                   22. The method of claim 21 wherein the coupon is generated within a  
2 predetermined time of a time of the first purchasing transaction.

1                   23. The method of claim 21 wherein the coupon is generated based  
2 upon a geographic location of the first purchasing transaction.

1                   24. The method of claim 21 wherein the first purchasing transaction or  
2 the second purchasing transaction allow the consumer to receive an award.

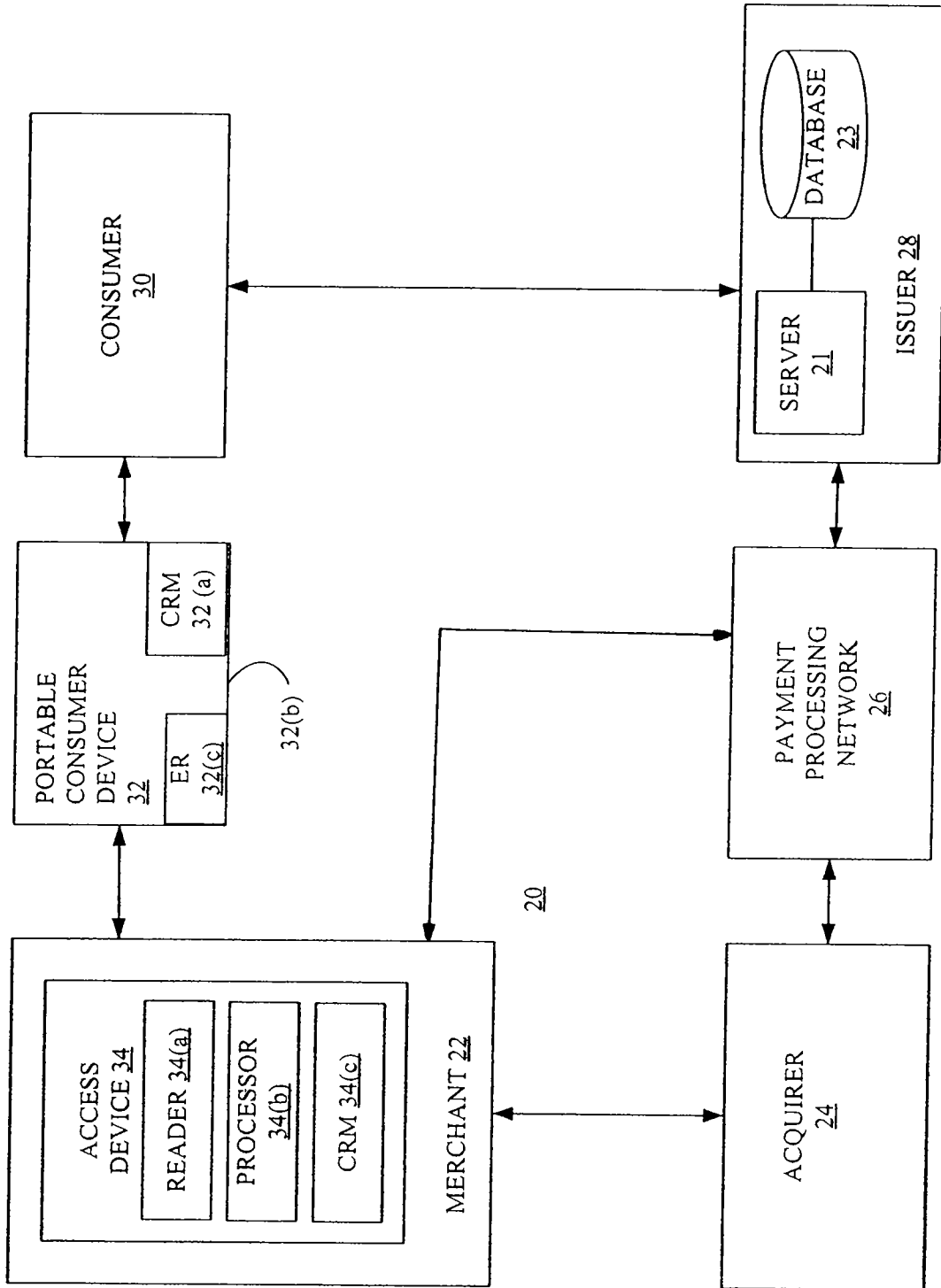


FIG. 1



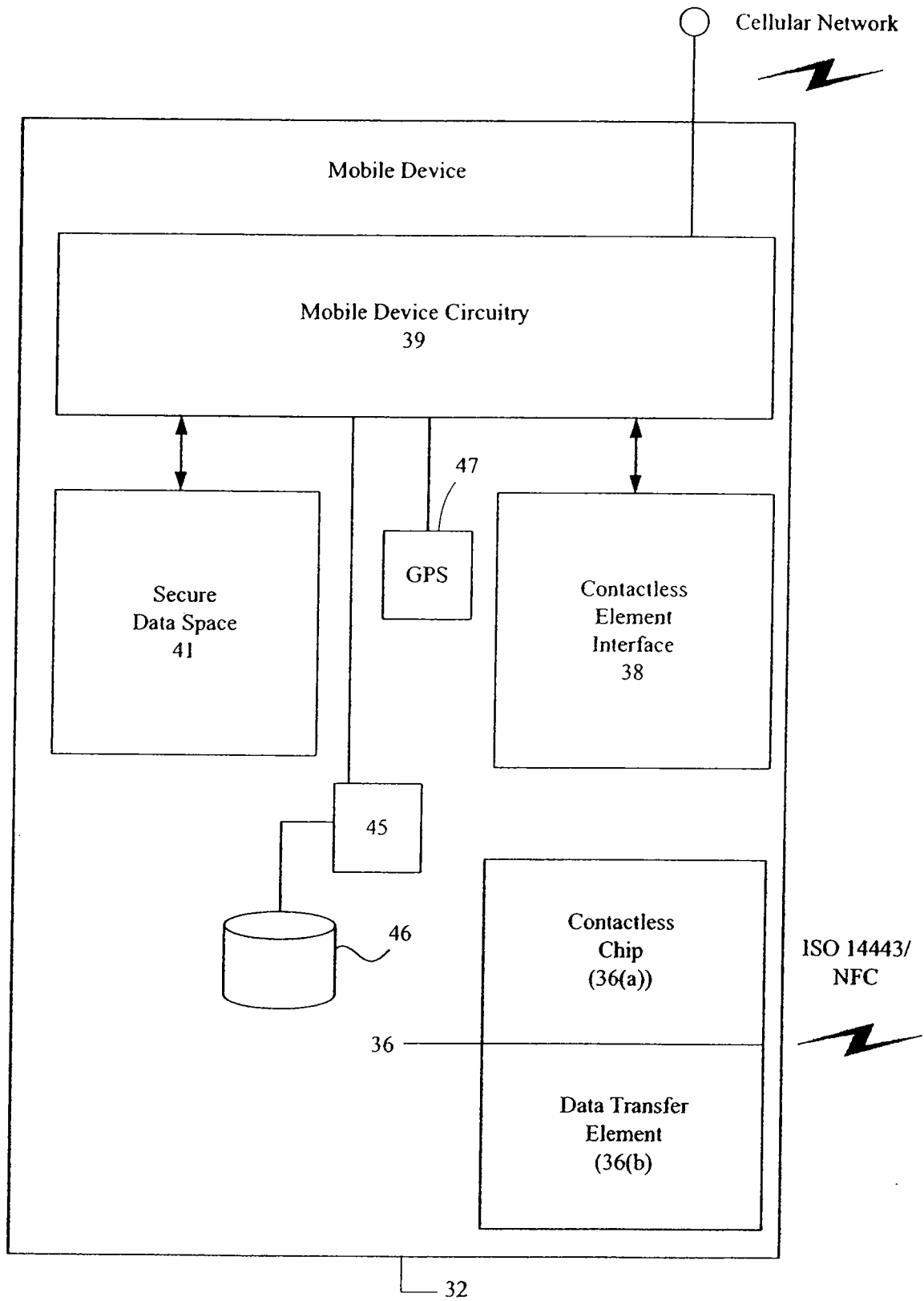


FIG. 1A

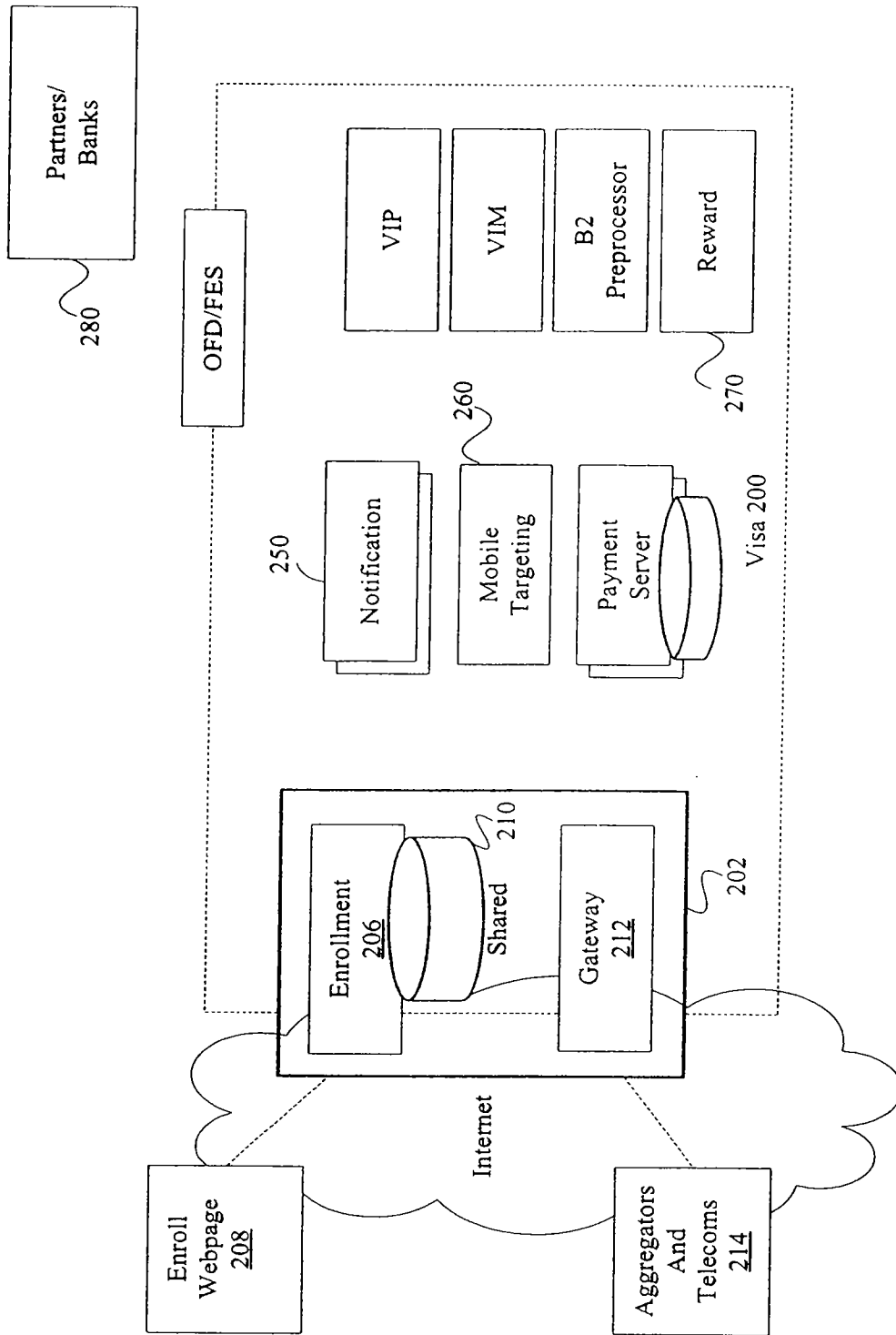
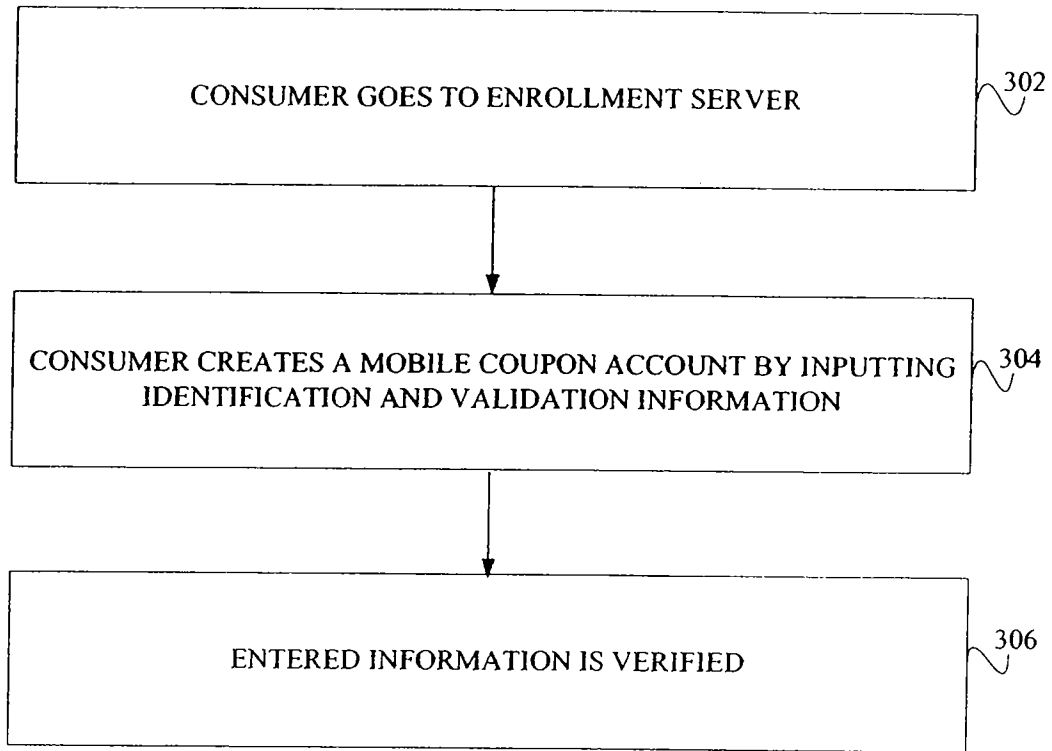


FIG. 2

300



**FIG. 3**

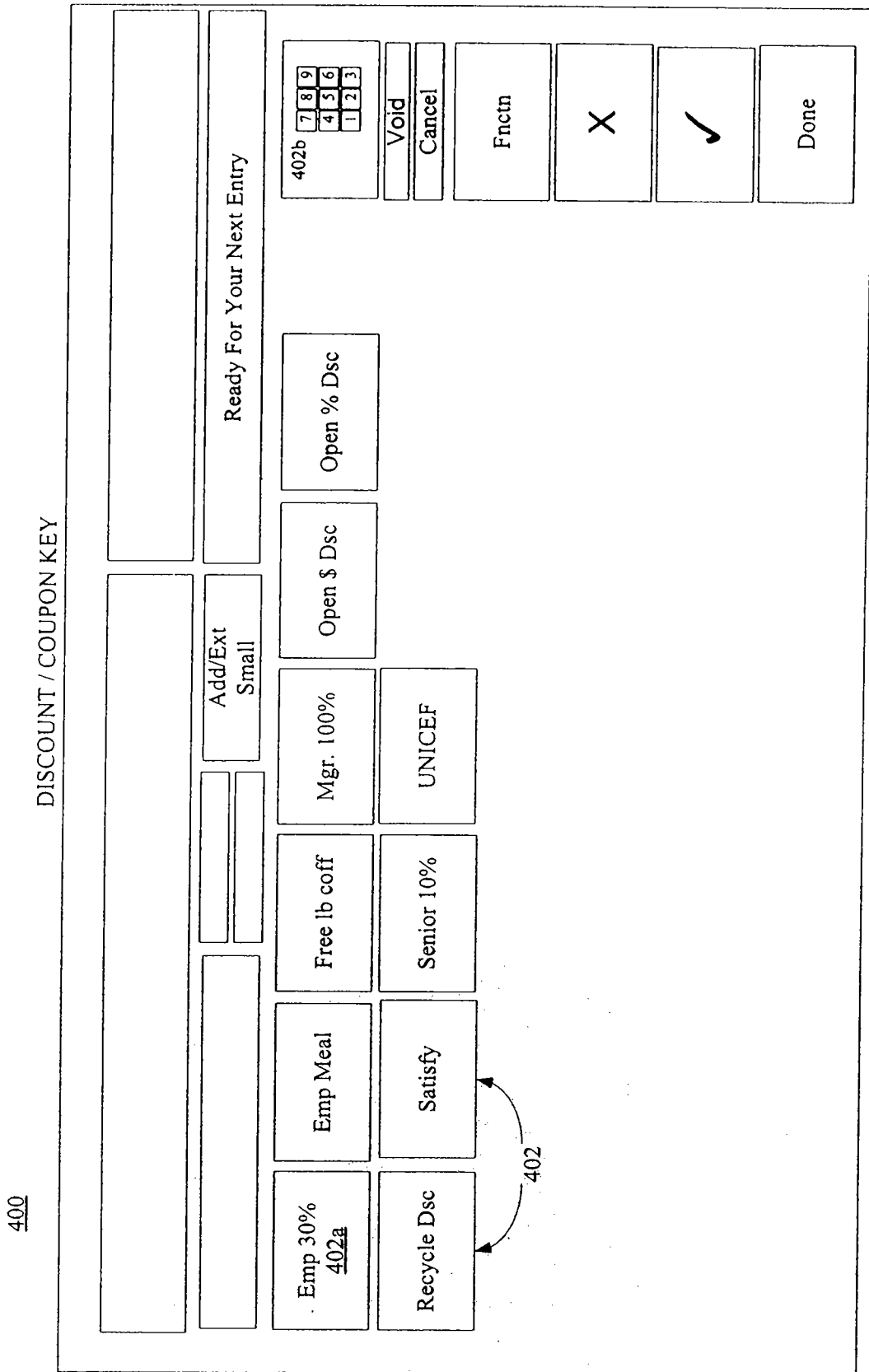


FIG. 4

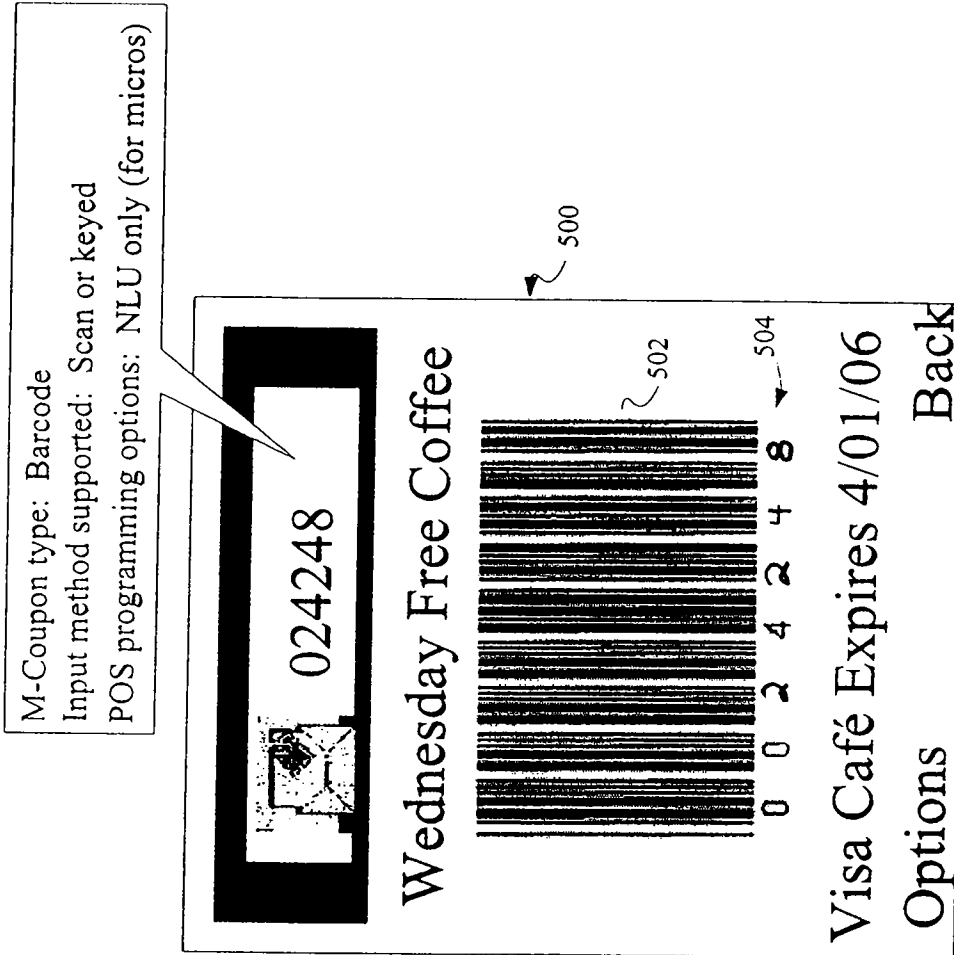


FIG. 5A

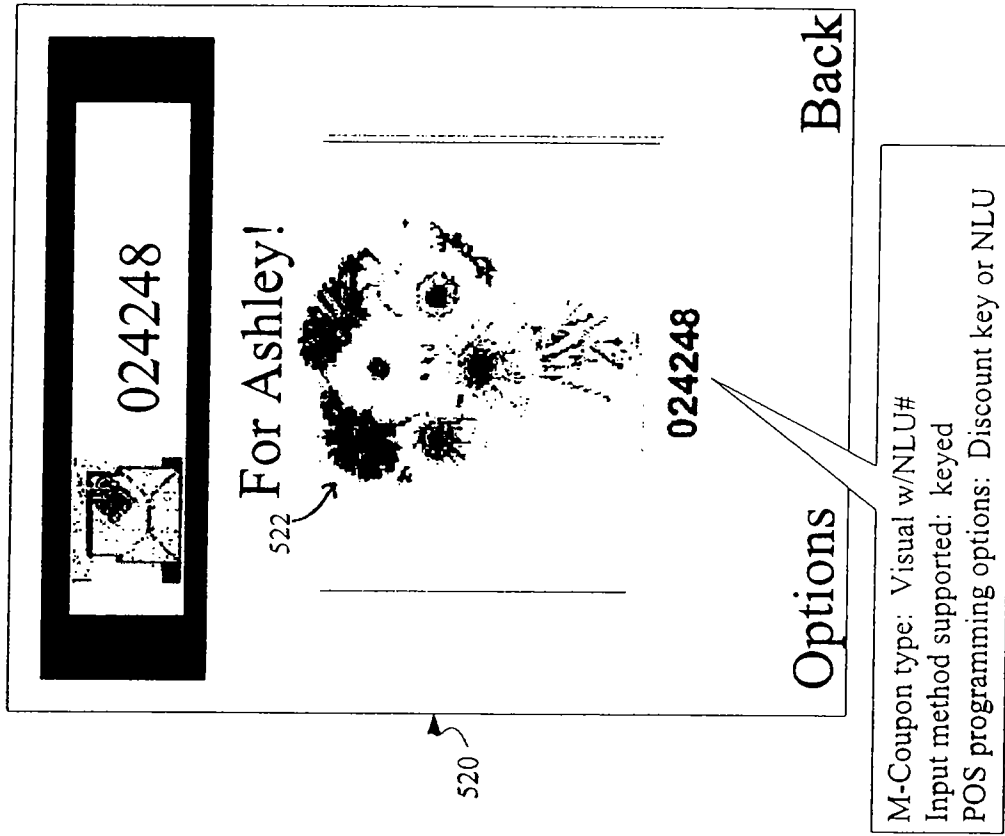


FIG. 5B

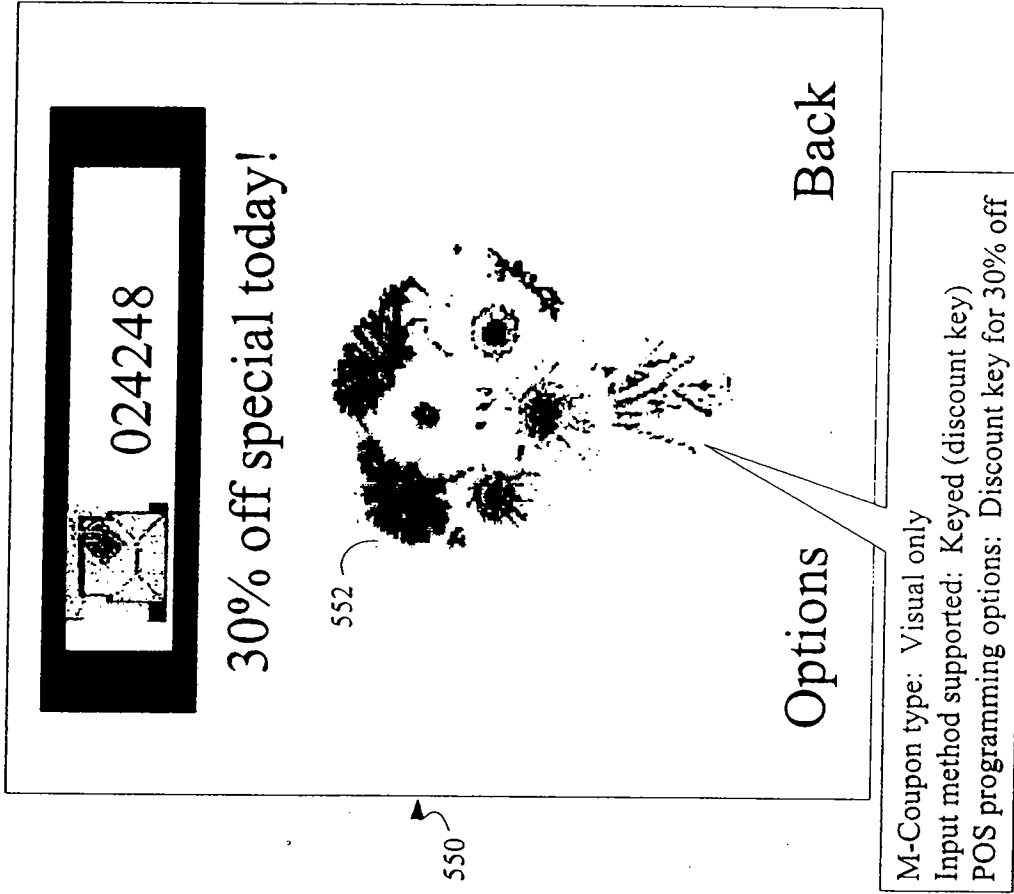


FIG. 5C

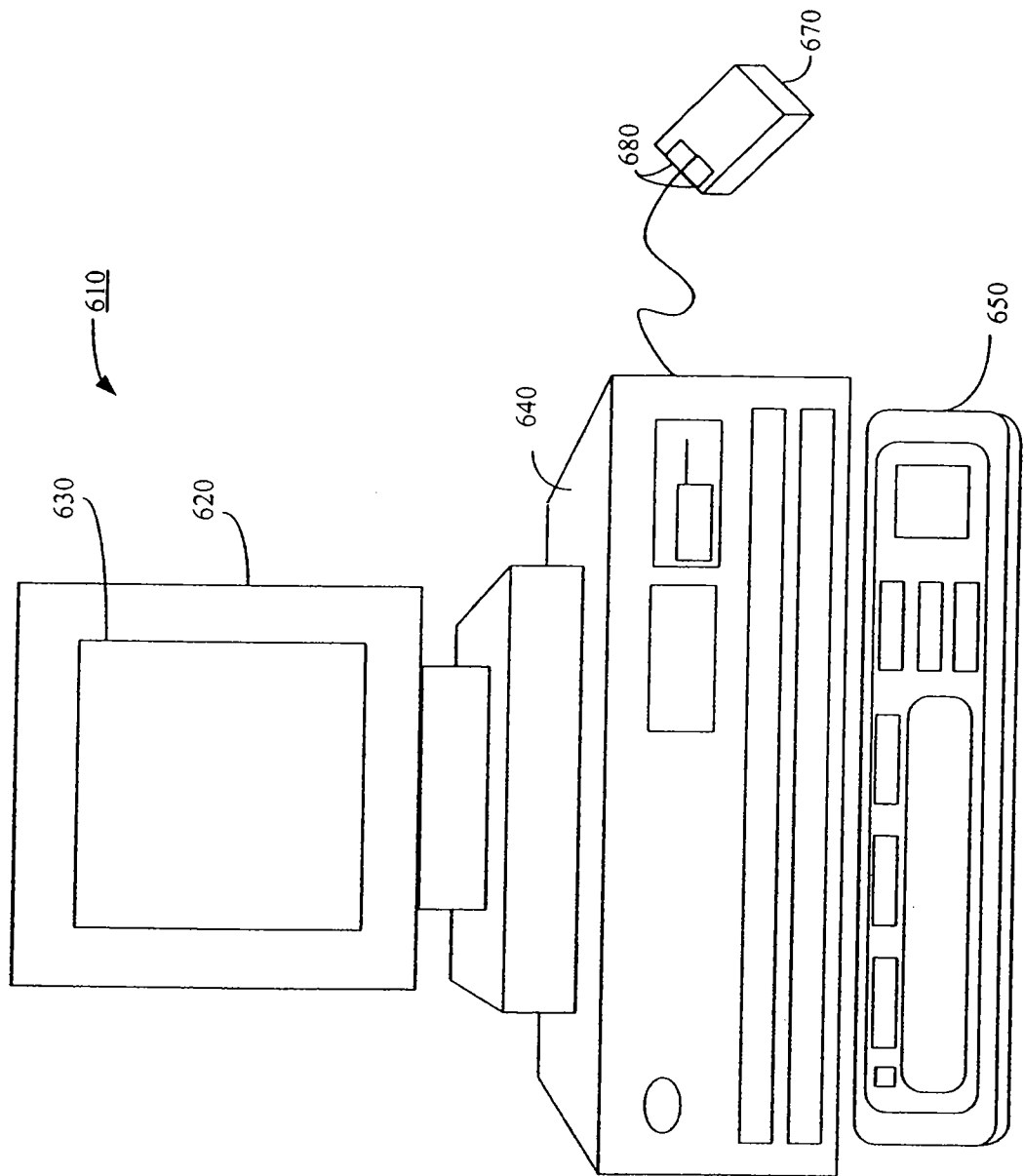


FIG. 6



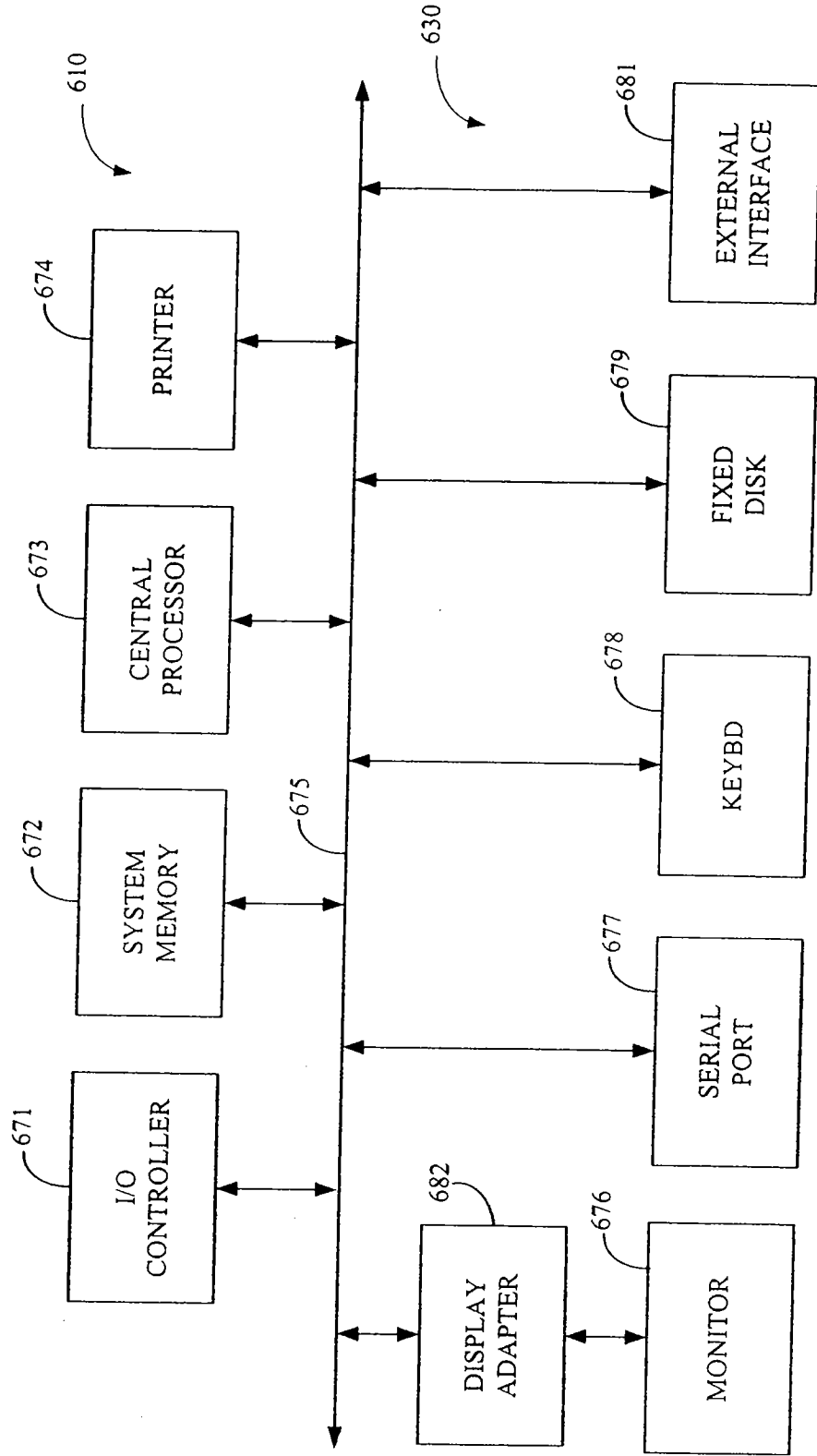


FIG. 6A

700

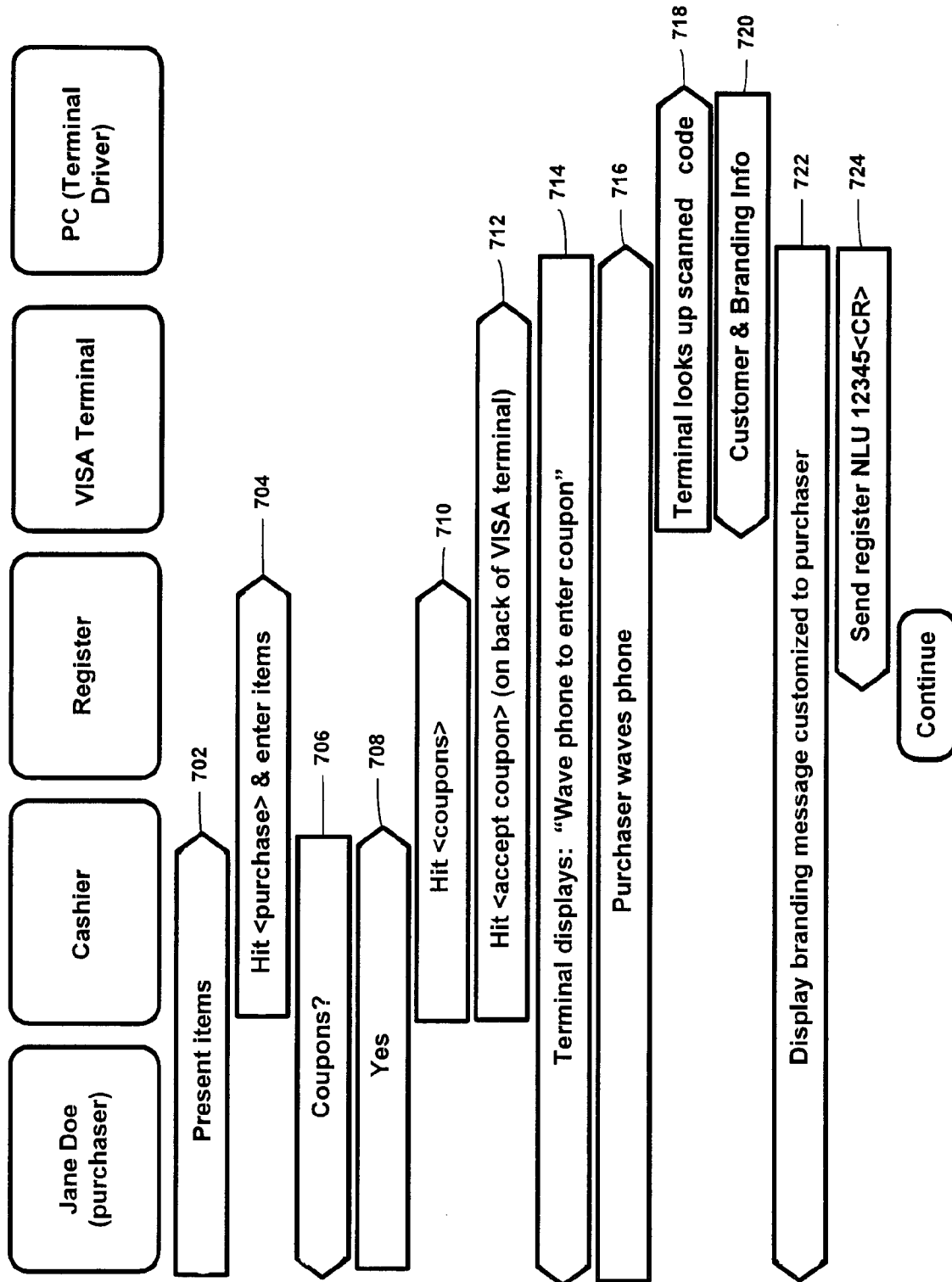


FIG. 7

**INTERNATIONAL SEARCH REPORT**

International application No. PCT/US 07/88687
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**A. CLASSIFICATION OF SUBJECT MATTER**  
 IPC(8) - G06Q 30/00 (2008.04)  
 USPC - 705/14  
 According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)  
 USPC - 705/14

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  
 USPC - 705/1; 705/37; 705/50; 707/104.1; 709/217

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
 WEST(USPAT, US PUB, EPO, JPO, DERWENT) DialogPRO(Engineering); Google Scholar - payment and processing and network and generate and electronic and coupon and targeted and individual and consumer

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2004/0030607 A1 (Gibson) 12 February 2004 (12.02.2004), para [0011],[0018],[0006].	1-24
Y	US 2003/0004808 A1 (Elhaoussine et al.) 02 January 2003 (02.01.2003), para [0021],[0022],[0035],[0099].	1-24
A	US 2006/0282382 A1 (Balasubramanian et al.) 14 December 2006 (14.12.2006), entire document.	1-24
A	US 2006/0253390 A1 (McCarthy et al.) 09 November 2006 (09.11.2006), entire document.	1-24
A	US 2006/0224449 A1 (Byerley et al.) 05 October 2006 (05.10.2006), entire document.	1-24
A	US 2006/0149529 A1 (Nguyen et al.) 06 July 2006 (06.07.2006), entire document.	1-24

Further documents are listed in the continuation of Box C.

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier application or patent but published on or after the international filing date	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&" document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search 29 March 2008 (29.03.2008)	Date of mailing of the international search report <b>12 MAY 2008</b>
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Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Authorized officer: Lee W. Young <i>[Signature]</i> PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774
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