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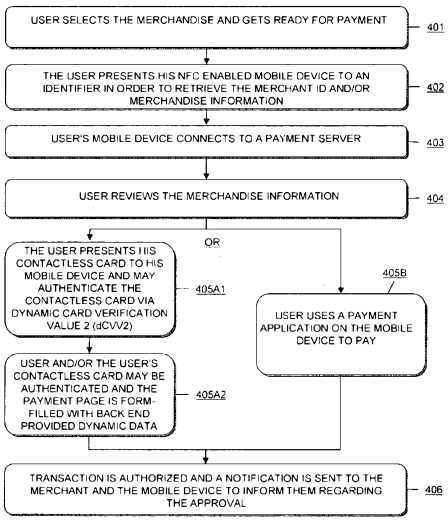

FIG. 4

(57) **Abstract**: Systems and methods for performing a payment transaction are disclosed. In the embodiments of the invention, a mobile device is used by a user to receive an identifier associated with a piece of merchandise or a service from a merchant. The user then initiates a payment transaction with a remote payment server computer hosted by a third party processor. Upon completion of the payment transaction, the remote payment server computer notifies the user and the merchant that a payment has been made. The merchant then provide the merchandise or the service to the user. In the embodiments of the invention, a payment transaction is performed without exposing or disclosing financial account information of the user to the merchant.

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SYSTEMS AND METHODS USING MOBILE DEVICE IN PAYMENT TRANSACTION

CROSS-REFERENCES TO RELATED APPLICATIONS

[0001] The present application claims benefit under 35 U.S.C. § 119(e) of U.S. Provisional Patent Application No. 61/310,213, entitled "System Using Dynamic Verification Value and Payment Host Site", filed March 3, 2010, the entire disclosure of which is incorporated herein by reference in its entirety for all purposes.

BACKGROUND

[0002] For merchants, accepting credit and debit card based payments can provide flexibility and more revenue. Merchants that accept credit and debit cards typically establish a business relationship with an acquirer. They must also purchase and install a POS (point of service) device so that they can accept credit and debit cards. In the case of small, mobile, and seasonal merchants (e.g., food trucks and flea market vendors), it may be too expensive or inconvenient for such merchants to acquire traditional POS terminals.

[0003] An additional problem to be addressed is the problem of trust between the merchant and the consumer. Even assuming for the moment that small, mobile, or seasonal merchants are able to acquire POS terminals, consumers may not trust them and may be afraid of exposing their financial information to them. Typically, with small merchants there is no pre-existing relationship with the consumers, and as a result, the level of trust is not as high as the established larger merchants. For example, a consumer will typically have a greater degree of trust in an established merchant such as McDonald's®, rather than a flea market vendor that the consumer does not know.

[0004] Therefore, there is a need for systems and methods that would allow consumers to use their credit and debit cards with small merchants without having to disclose their financial information directly to the merchants. Also, there is a need for systems and methods that would allow small and in some cases large merchants accept credit and debit cards without having to acquire and install traditional POS terminals.

[0005] A need exists to address these and other problems.

BRIEF SUMMARY

[0005a] It is an object of the present disclosure to substantially overcome, or at least ameliorate, at least one disadvantage of present arrangements.

[0006] Aspects disclosed herein include systems and methods for making electronic payments to a merchant or a service provider through a remote payment server computer operated by a third party entity, without disclosing any financial information and account data to the merchant or the service provider.

[0007] One aspect of the present disclosure is directed to a method comprising receiving an identifier at a mobile device of a user at a first location, communicating with a remote payment server computer at a second location using the mobile device, and providing the identifier to the remote payment server computer. The identifier may be associated with merchandise or a service offered by a merchant.

[0007A] Another aspect of the present disclosure is a mobile device associated with a user, the mobile device comprising: a processor; a computer readable medium coupled to the processor, wherein the processor is configured to execute program code stored on the computer readable medium to implement a method comprising:
receiving an identifier at the mobile device at a first location in a purchase transaction conducted with a merchant, wherein the identifier identifies goods or services desired to be purchased at the location of the merchant; communicating with a remote payment server computer at a second location using the mobile device of the user; providing the identifier to the remote payment server computer; and initiating a payment transaction by the server computer for the goods or services without interacting with a payment terminal at the merchant's location and without disclosing any account information of the user to the payment terminal or the merchant.

[0007b] A further aspect of the present disclosure provides a method comprising: receiving, by a payment server computer, an identifier from a mobile device of a user, wherein the identifier was provided by a merchant to the user, wherein the identifier is in the form of computer-readable data in a merchandise identifier element proximate to merchandise that is also proximate to a sensor, wherein the payment server computer is remotely located with respect to the merchandise and the sensor; identifying, by the payment server computer, a recipient of a payment using the identifier; performing, by the payment server computer, a payment transaction on behalf of the merchant; and notifying the merchant that a payment has been made; and sending, by the payment server computer, a communication to the sensor to disarm the sensor, thereby allowing the user to remove the merchandise.

[0007c] A yet further aspect of the present disclosure provides a payment server computer comprising: a processor; and a non-transitory computer readable medium coupled to the processor, the computer readable medium comprising instructions for performing a method comprising receiving, by a processor in the payment server computer, an identifier from a mobile device of a user, wherein the identifier was provided by a merchant to the user, wherein the identifier is in the form of computer-readable data in a merchandise identifier element proximate to merchandise that is also proximate a sensor, wherein the payment server computer is remotely located with respect to the merchandise and the sensor, identifying, by the processor, the merchant using the identifier,
performing a payment transaction, by the processor, on behalf of the merchant, notifying the merchant that a payment has been made, and sending, by the processor, a communication to the sensor to disarm the sensor, thereby allowing the user to remove the merchandise.

[0008] Another aspect of the disclosure is directed to an identifier which is in the form of computer-readable data stored in a near-field merchandise identifier element which may be attached to merchandise. The user can use a near-field enabled mobile device to retrieve the identifier (computer-readable data) from the merchandise identifier element. The identifier may include a merchant ID and a merchandise ID. The merchant ID may be used to identify a particular piece of merchandise and the merchant ID may be used to identify a particular merchant.

[0009] Another aspect of the disclosure is directed to an identifier which can be in the form of an image shown on a television display or the like.

[0010] Another aspect of the disclosure is directed to an identifier which can be in the form of human-readable data displayed on a merchandise identifier element attached to merchandise. The identifier may include a merchant ID and a merchandise ID.

[0011] Another aspect of the disclosure is directed to a mobile device being capable of accessing a catalog, using the identifier, including a virtual equivalent of merchandise associated with a merchant.

[0012] Another embodiment of the invention is directed to receiving an identifier from a mobile device of a user, identifying a recipient of a payment using the identifier, performing a payment transaction on behalf of the recipient of the

payment and notifying the recipient of the payment that a payment has been made. The identifier is provided by a merchant to the user, and the merchant is the recipient of the payment.

[0013] Another aspect of an embodiment of the invention is directed to a method comprising generating an authorization request message for a payment associated with an account of the user, sending the authorization request message to an acquirer, and receiving authorization response message from the acquirer.

[0014] Another aspect of an embodiment of the invention is directed to a method comprising proving an identifier to a user, receiving a notification from a remote payment server computer that a payment has been made by the user for a good or a service associated with the identifier, and presenting a good or a service for which the payment was made to the user.

[0015] Another aspect of an embodiment of the invention is directed to a payment transaction where the user does not provide any financial data associated with the account data of the user to a merchant.

[0016] These and other embodiments of the invention are described in further detail below.

BRIEF DESCRIPTION OF THE DRAWINGS

[0017] FIG. 1 shows a block diagram of a system, according to an embodiment of the invention.

[0018] FIG. 2 shows a block diagram of a payment server computer system, according to an embodiment of the invention.

[0019] FIG. 3 illustrates a flowchart describing the steps involved in establishing communication between a merchant and a payment server computer, according to an embodiment of the invention.

[0020] FIG. 4 illustrates a flowchart describing methods according to embodiments of the invention.

[0021] FIGS. 5-10 show steps involved in the process of purchasing merchandise from the viewpoint of a user, according to embodiments of the invention.

[0022] FIG. 11 illustrates a flowchart describing methods according to embodiments of the invention.

[0023] FIGS. 12 -18 show steps involved in the process of purchasing merchandise from the viewpoint of a user, according to embodiments of the invention.

[0024] FIG. 19 shows a block diagram of a computer apparatus according to an embodiment of the invention.

DETAILED DESCRIPTION

[0025] Embodiments of the invention disclosed herein include systems and methods for performing an electronic transaction (e.g., a payment transaction), by allowing a user to send his account information (e.g., payment account data such as an account number, expiration date, etc.) to a third party processor via a payment host site (e.g., a payment website), and without requiring the use of a merchant's POS terminal to initiate a payment transaction. Embodiments of the invention allow a merchant to accept credit and debit cards from users without the need to acquire a POS terminal.

[0026] Before describing specific embodiments of the invention, some descriptions of terms are provided below.

[0027] As used herein, an "authorization request message" may be a message that includes an issuer account identifier. The issuer account identifier may be the card data associated with a payment card. The authorization request message may request that an issuer of the payment card authorize a transaction. An authorization request message according to an embodiment of the invention may comply with ISO 8583, which is a standard for systems that exchange electronic transactions made by cardholders using payment cards. In embodiments of the invention, an authorization request message may include, among other data, a Primary Account Number (PAN) and expiration date associated with the portable consumer device (e.g. credit/debit card) of the user, amount of the transaction (which may be any type and form of a medium of exchange such a money or points), and identification of a merchant (e.g. merchant ID). Typically, an authorization request message is generated by a server computer (if the transaction is an e-commerce transaction) or a Point of Sale (POS) device (if the transaction is a brick and mortar

type transaction) and is sent to an issuer via a payment processing network and an acquirer.

[0028] As used herein, "account information" may include a numerical or alpha-numerical values associated with an account of a user (consumer) issued by an issuer. Account information may also refer to a numerical or alpha-numerical value associated with a portable consumer device (e.g. debit /credit card) of the user. Account information may be used to locate a financial account of a user, generate a request to withdraw funds, purchase goods or services and perform any type of financial transaction. If a payment card is associated with an account, the account information may include "card data" such as an account number associated with the card, an expiration date associated with the card, verification values associated with the card, etc.

[0029] As used herein, an "identifier" may include computer-readable data that can identify something (e.g., an object, merchant, organization, service, etc.). An identifier may include information such as a merchant ID and/or the merchandise ID. In some embodiments, an identifier may be used to identify recipient of a payment. An identifier may also be associated with a service, provided by a service provider or a merchant, in exchange for a fee.

[0030] As used herein, "merchandise identifier element" may include a physical device coupled with a piece of merchandise. If it is in the form of a physical device, it can store computer-readable data associated with the merchandise such as merchandise ID, merchant ID, price of the merchandise, etc. A "merchant sticker" with a code may be an example of a merchandise identifier. A merchandise identifier element may also refer to a human-readable tag attached to merchandise. It can display identifying information about the merchandise (i.e. merchandise ID) and/or the merchant (i.e. merchant ID).

[0031] As used herein "dynamic verification value" (e.g., a dynamic device verification value, a dynamic card verification value, and a dCVV2 value) can refer to a value that can be used to verify that a transaction (and in some cases a portable consumer device used to conduct a transaction) is authentic. It may be a numeric or alpha-numeric value that is generated by an algorithm (e.g. encryption algorithm).

[0032] As used herein a "computer readable medium" or "computer readable storage medium" is typically a storage medium such a hard disk or any suitable type of data storage medium capable of storing data such as program codes. A computer readable medium may be embodied by one or more data storage devices.

[0033] As used herein, 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.

[0034] As used herein, a "near-field communication device" can be any suitable device that can allow for communication between devices. Such communication may use any suitable optical and/or electrical communication protocol. RF and IR transmissions may be examples of near field communication mechanisms. Typically, near field communications devices communicate within a range of less than 5, 2, 1, 1/2 and 1/4 feet, but cannot communicate outside of such ranges.

[0035] In the embodiments of the invention, a user receives an identifier at his mobile device from a merchant at a first location. The first location may be the merchant's store or a location from which the merchant engages in commercial activity. In one embodiment, the identifier is in the form of computer-readable data stored in a near-field enabled merchandise identifier element.

[0036] In some embodiments, the merchandise identifier element may be a device (e.g., a tag) attached to merchandise. The merchandise identifier element may include a memory, antenna and processor. The identifier is stored in the memory and can be wirelessly transmitted to a mobile device (e.g. a mobile phone) used by the user. The identifier may be a string of numeric and/or alpha-numeric data and may include a merchant ID associated with the merchant and a merchandise ID associated with merchandise. Stated differently, the merchandise identifier element, can include a merchant ID and a merchandise ID, and such IDs can be in the form of a data string.

[0037] In one example, the user may go to a merchant store to buy a piece of merchandise such as a laptop computer. The merchandise may have a merchandise identifier element such as a near-field enabled tag attached to it. The user uses his near-field enabled mobile device to receive an identifier stored in the

tag. This is performed via a near-field communication device that may be attached to or embedded in the mobile device. In an exemplary operation, the user presents his mobile device to the tag and waits for the identifier to be transmitted to his mobile device.

[0038] When the user receives the identifier from the tag attached to the merchandise, using his mobile device, he then communicates with a remote payment server computer at a second location by initiating a connection with a remote payment server computer. The mobile device may communicate with the payment server computer using a web browser or a mobile application on the mobile device. The mobile device of the user then provides the identifier that is provided by the merchant to the user (i.e. provided via the tag attached to the merchandise) to the remote payment server computer. The payment server computer then displays via the web browser, for example, various information (e.g., a picture, the price, a description, warranty information, reviews, etc.) about the merchandise.

[0039] The identifier may be associated with a piece particular merchandise and/or a particular merchant. Using the identifier, the remote payment server computer accesses a database that stores the above information associated with the merchandise at the merchant location. The remote payment server computer also identifies, using the identifier, a recipient of a payment from the user which may be the merchant or another entity.

[0040] When the user reviews the merchandise information on his mobile device, he can then pay for the merchandise transaction. In one embodiment, the user can send his account information (e.g. debit/credit card data) from his mobile device to the remote payment server in any suitable manner. In one embodiment, the user can hold a payment card such as a contactless credit/debit card close to his mobile device. Card data from the payment card can then be wirelessly transmitted via a contactless element in the payment card to the near-field communication device of the mobile device. In another embodiment, the user can manually type his card data into a payment page hosted by the remote payment server computer. In yet another embodiment, the user can use a payment application on his mobile device (which stores the card data of a payment card used by the user) to send the card data to the remote payment server computer. In yet another embodiment, the user can use a server side wallet that contains the account information of the user. The user can communicate with another entity to provide the

account information to the payment server computer or can direct the payment server computer to retrieve the account information from another entity which is in possession of the account information of the user.

[0041] The remote payment server computer can then generate an authorization request message for a payment associated with an account of the user using the card data, the data from the identifier, etc., and the authorization request message may then be forwarded to an acquirer. The acquirer may then send the authorization request message to a payment processing network which in turn sends it to an issuer associated with an account of the user. The issuer generates an authorization response message which indicates whether the payment transaction is approved or not. The authorization response message will be then sent back to the remote payment server computer.

[0042] When the remote payment server computer receives the authorization response message, it can then send a notification to the recipient of the payment (which may be the merchant) that a payment has been made. A notification may also be sent to the mobile device of the user. The notification is received in the mobile device upon completion of the payment transaction and may include a reference number, as a proof of payment, to be presented to the merchant.

[0043] When the merchant receives the notification from the payment server computer, the user will be presented with the merchandise that he purchased. In this payment transaction, the user does not provide any account information (e.g. Primary Account Number (PAN) and expiration date of a payment card) to the merchant. Also, no account information associated with the user is received from the remote payment server computer by the merchant.

[0044] In some embodiments of the invention, the identifier may be in the form of a human-readable data displayed on a merchandise identifier element attached to merchandise. The identifier may be one or more numeric or alpha-numeric strings used to identify a particular piece of merchandise associated with a particular merchant.

[0045] For example, the identifier may be the form of a printed number on a tag. The printed number may be a merchandise ID and/or a merchant ID. When the user communicates with the remote payment server computer, he can enter the

merchant ID and/or the merchandise ID in a payment page hosted by the remote payment server computer.

[0046] Similar to the process described above, the remote payment server computer may use the merchant ID and/or the merchandise ID to display the information associated with the merchandise on the mobile device of the user. The user may then follow the same process to pay for the merchandise.

[0047] In some embodiments, the identifier may be in the form of an address (e.g., a URL address of a web site) that the user can use to access. The site associated with the address may provide for a catalog including virtual equivalents of merchandise in the merchant's store. For example, the user may receive a website address from the merchant and log into the website using his mobile device. The user can then browse through the virtual equivalent of the merchandise sold by the merchant. The user can select a piece of merchandise and pay for it using the above-described process.

[0048] In some embodiments, the identifier may be shown on a television display, and the user may take a picture of the identifier with his mobile device. The identifier may be part of a digital image captured by the mobile device. The digital image may then be sent to the remote payment server computer which analyzes the image to identify the merchandise and/or the merchant. The remote payment server compute then displays the information related to the merchandise on the mobile device of the user, and the user may follow the above-described process to make a payment and purchase the merchandise.

[0049] In some embodiments of the invention, the mobile device communicates with the remote payment server computer using a text message. The user can send a text message including an identifier to the remote payment server computer. The user may have previously enrolled his payment card with the remote payment server computer. Upon receipt of the text message, the remote payment server computer can locate the user's account information. The remote payment server computer can then send a text message with some information associated with the merchandise that the user is interested in purchasing. The user can then send a reply confirming the payment.

[0050] In the embodiments of the invention, the mobile device may communicate with the remote payment server computer via a mobile application, and

the payment transaction can be initiated by a payment application on the mobile device of the user.

[0051] In the embodiments of the invention, the system and methods used to perform the above-described processes, may also be used for the purchase of service provided by a service provide or a merchant. For example, an identifier may be associated with a service, and the user can make a payment for the service via the above methods.

[0052] I. **SYSTEMS**

[0053] FIG. 1 shows a block diagram illustrating the components of a system according to one embodiment. FIG. 1 includes user **110** and a portable consumer device **112** that the user **110** may use to conduct a payment or other type of transaction. The user **110** may also use a mobile device **120** which is coupled to a near-field communications device **122** to interact with the merchant **130** and merchandise identifier element **133**, which is coupled with the merchandise **134**. In other embodiments, the near field communications device **122** may be present in the mobile device **120**. The near-field communications device **122** can also communicates with the contactless element **114** of the portable consumer device **112**. The user **110** may also use the mobile device **120** to communicate with the payment server computer **131**. Payment server computer **131** includes the payment host site **132A** and payment host application **132B**. The mobile device **120** communicates with the payment host site **132A** via the web browser **123**, and communicates with the mobile host application **132B** via the mobile application **122**.

[0054] Payment host site **132A** can be a web site that is accessible via a web browser (e.g. web browser **123**) and the payment host application **132B** is a server side application that communicates with the client side mobile applications (e.g. mobile application **122**). Both the payment host site **132A** and payment host application **132B** also communicate with the merchant computer **135** and the acquirer **140**. Merchant **130** communicates with the payment processing network **150** through the acquirer **140**. Payment processing network **150** is in communication with the issuer **160**.

[0055] Further elements of the system may include the IP Gateway **152** which may include an IP Gateway server computer **153**, a processor **155** and a computer readable medium **154** that has a generation module **154-1** for generating dynamic

verification values (dCVV2). The payment processing network **150** also may include a payment processing network server computer **155** which includes a processor **156** and a computer readable medium **157** that stores a verification module **157-1** for verification of incoming authorization request messages and dynamic verification values. The server computer **155** communicates with the database **159**. The IP Gateway **152** is in communication with the mobile device **120**, and payment processing network **150**.

[0056] User **110** can interact with merchant **130** using the mobile device **120**. This process will be described in detail later. Mobile device **120** is capable of communicating with the payment server computer **131** which is also accessible by the merchant **130** and/or acquirer **140**. Mobile device **120** is also capable of communicating with the IP Gateway **152** for authentication of the portable consumer device **112**.

[0057] In some embodiments, acquirer **140** may not be participating in the transaction processing as shown in FIG. 1. In such embodiments, the merchant **130** and the payment server computer **131** may directly communicate with the payment processing network **150** or the issuer **160**.

[0058] User **110** refers to an individual or organization such as a business that is capable of purchasing goods or services or making any suitable payment transaction with merchant **130**.

[0059] Portable consumer device **112** refers to any suitable device that allows the payment transaction to be conducted with merchant **130**. Portable consumer device **112** may be in any suitable form. For example, suitable portable consumer devices **112** 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, magnetic stripe cards, keychain devices (such as the Speedpass™ commercially available from Exxon-Mobil Corp.), etc. Other examples of portable consumer devices **112** include cellular phones, personal digital assistants (PDAs), pagers, payment cards, security cards, access cards, smart media, transponders, and the like. In some cases, portable consumer device **112** may be associated with an account of user **110** such as a bank account.

[0060] Portable consumer device **112** may include a contactless element **114** that includes one or more processors (not shown), antenna (not shown), one or more

computer readable mediums (not shown), and one or more applications stored on the computer readable mediums that operate in concert to allow the portable consumer device **112** to wirelessly send and receive data. The contactless element **114** provides Near-field communication capability for the portable consumer device **112** such that when the portable consumer device **112** is in close proximity of a wireless reader (such as the near-field communication device **122**), the wireless reader powers the contactless element **114** and collects the card data.

[0061] Mobile device **120** may be in any suitable form. For example, suitable mobile device **120** can be hand-held and compact so that they can fit into a consumer's wallet and/or pocket (e.g., pocket-sized). Some examples of mobile device **120** include desktop or laptop computers, cellular phones, personal digital assistants (PDAs), pagers, payment cards, security cards, access cards, smart media, transponders, and the like. In some embodiments, mobile device **120** and portable consumer device **112** are embodied in the same device.

[0062] Mobile application **122** and payment application **124** may be software applications stored on a computer readable medium in a mobile device (e.g. mobile device **120**) and run by a processor. The mobile application **122** and payment application **124** are capable of communicating with a server computer (e.g. payment server computer **131**). Mobile application **122** may be used to communicate with the payment host application **132B** to view the merchandise and/or services that the user **110** wishes to purchase. Payment application **124** may store the credit/debit card data associated with the portable consumer device **112** of the user **110** and submit such data to the payment server computer **131**.

[0063] Web browser **123** may be a software application for retrieving, presenting, and traversing information on server computers. Web browser **123** may use any appropriate protocol such as the Hypertext Transfer Protocol (HTTP) to communicate with the payment server computer **131**. Web browser **123** may be specifically designed to run on a mobile device (e.g. mobile device **120**) or a general-purpose computer. Web browser **123** is used to communicate with the payment host site **132A** to view the merchandise and/or services that the user **110** wishes to purchase.

[0064] Near-field communication device **122** can be an electronic device that is capable of sending data and receiving data wirelessly. Near-field communication

device **122** may be coupled to the mobile device **120** (externally or internally) to allow the mobile device **120** send and receive data wirelessly from sources in close proximity of the mobile device **120**. In some embodiments, a "hot key" on the mobile device **120** may be used to enable a "reader emulation mode" in the near-field communication device **122**. In some other embodiments, the near-field communication device **122** coupled to the mobile device **120** may automatically receive data when in proximity of a contactless portable consumer device **112**. Near-field communication device **122** includes one or more processors (not shown), antenna (not shown), one or more computer readable media (not shown), and one or more applications stored on the computer readable media that operate in concert to allow the near-field communication device **122** wirelessly send and receive data. When the near field Communication (NFC) device **122** is in close proximity of the identifier **133A** and contactless element **114**, it will power the processors (not shown) of these devices. Identifier **133A** and contactless element **114** then wirelessly transmit data stored in their memory (not shown) via their antenna (not shown) to the near-field communication device **122**.

[0065] Merchant **130** refers to any suitable entity or entities that make a payment transaction with user **110**. Merchant **130** may use any suitable method to make the payment transaction. For example, merchant **130** may use an e-commerce business to allow the payment transaction to be conducted by merchant **130** and user **110** through the Internet. Other examples of merchant **130** include a department store, a gas station, a drug store, a grocery store, or other suitable business.

[0066] Payment host site **132A** may be in the form of a website hosted by one or more server computers (e.g. payment server computer **131**). User **110** is capable of communicating with the payment host site **132A** using the mobile device **120** and/or any form of electronic device capable of communicating with a server computer via the Hypertext Transfer Protocol (HTTP) or any other suitable protocols such as HTTPS. In some embodiments, payment host site **132A** may be a mobile website designed for mobile devices. In other embodiments, the payment host site **132A** may be a regular website also accessible by mobile devices. Payment host site **132A** may be hosted by a third party processor which communicates with the users, merchants, acquirers, and payment processing networks.

[0067] Payment host application **132B** may be in the form of a server side application capable of communication with mobile applications (e.g. mobile application **122**). User **110** is capable of communicating with the payment host application **132B** using the mobile device **120**. Payment host application **132B** may be hosted by a third party processor which communicates with the users, merchants, acquirers, and payment processing networks.

[0068] Acquirer **140** refers to any suitable entity that has an account with merchant **130**. In some embodiments, issuer **160** may also be acquirer **140**.

[0069] Payment processing network (PPN) **150** refers to a network of suitable entities that have information related to an account associated with portable consumer device **112**. This information includes data associated with the account on portable consumer device **112** such as profile information, data, and other suitable information.

[0070] Payment processing network **150** may have or operate a server computer and may include a database. The database may include any hardware, software, firmware, or combination of the preceding for storing and facilitating retrieval of information. Also, the database may use any of a variety of data structures, arrangements, and compilations to store and facilitate retrieval of information. The server computer may be coupled to the database and may include any hardware, software, other logic, or combination of the preceding for servicing the requests from one or more client computers. Server computer may comprises one or more computational apparatuses and may use any of a variety of computing structures, arrangements, and compilations for servicing the requests from one or more client computers.

[0071] Payment processing network **150** 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 **150** may include VisaNet™. Networks that include VisaNet™ are able to process credit card transactions, debit card transactions, and other types of commercial transactions. VisaNet™, in particular, includes a integrated payments system (Integrated Payments system) which processes authorization requests and a Base II system which performs clearing and

settlement services. Payment processing network **150** may use any suitable wired or wireless network, including the Internet.

[0072] IP Gateway **152** refers to an entity that includes one or more servers and databases, and have access to various issuer data, transaction data and user data used to authenticate the portable consumer devices. IP Gateway **152** also generates and delivers notifications and alert messages to various delivery channels. IP Gateway **152** may be part of the payment processing network **150** or may be a separate entity in communication with payment processing network **150**.

[0073] Issuer **160** refers to any suitable entity that may open and maintain an account associated with portable consumer device **112** for user **110**. Some examples of issuers may be a bank, a business entity such as a retail store, or a governmental entity. In many cases, issuer **160** may also issue portable consumer device **112** associated with the account to user **110**.

[0074] The databases **159** and **131D** (shown in FIG. 2) may be server computers that are capable of storing data and responding to queries from client computers. The databases **159** and **131D** may also be in the form of stand-alone hard drives connected to one or more server computers that retrieve the data from the databases **159** and **131D** as result of queries from client computers.

[0075] FIG. 2 illustrates some components of the payment server computer **131** that is shown in FIG. 1 as well as the database **131D** (not shown in FIG. 1) that communicates with the payment server computer **131**. The payment server computer **131** includes a computer readable medium **131A** coupled to a processor **131B**, and a communication module **131C** coupled to the processor **131B**.

[0076] Communication module **131C** may be a device such as a modem that connects the payment server computer **131** to a communication network (e.g. the Internet) and the facilitates the incoming and outgoing communications to and from the payment server computer **131** with other servers, computers, mobile devices, etc.

[0077] The computer readable medium **131A** stores the payment host site **132A**, the payment host application **132B**, an image processing module **132C**, and a SMS module **132D**. Each of the payment host site **132A** and payment host application **132B** include modules that facilitate and perform various operations in

the embodiments of the invention. Each of these modules and their functions will now be described.

[0078] Display modules **132A-1** and **132B-1** communicate with the database **131D** and display a particular merchandise or service and its associated information such as price, description, reviews, warranty information, etc. that may be available. Such data are stored in the merchant data **131D-1**, **131D-2**, **131D-3** each of which is associated with a particular merchant. Display module **132A-1** is configured to display the merchandise and/or service information provided by a merchant in a web browser (e.g. web browser **123**) and display module **132B-1** is configured to display the merchandise and/or service information provided by a merchant in a mobile application (e.g. mobile application **122**).

[0079] Authorization message modules **132A-2** and **132B-2** generate authorization request messages from the data received from the mobile device **120** of the user **110**. Such data may include, among other types of data, data and information included in the identifier **133A** (which may include price, merchant ID, and merchandise ID or service ID), account information (e.g. credit/debit card number, expiration date, etc.) associated with the portable consumer device **112**.

[0080] Payment notification modules **132A-3** and **132B-3** generate notification messages after completion of the payment transaction. Notifications are sent from the payment server computer **131** to the merchant computer **135** or any other suitable electronic device such as Point of Sale (POS) device used by merchant **130** to receive such notification. Notifications may include any appropriate types of data and information such as a reference/verification number, amount of the payment, date and time of the payment, etc. that allows the merchant to associate a payment with a merchandise and/or service, and a user who has made the payment.

[0081] Payment notification modules **132A-3** and **132B-3** may also generate a notification that is sent to the mobile device **120**. Such notification may be in the form of a receipt, reference number, confirmation number, etc. that may include any appropriate type of data and information such as the amount of the payment, date and time of the payment, and recipient of the payment that allows the user **110** to provide such information as a proof of payment for goods and services.

[0082] Payment application modules **132A-4** and **132B-4** communicate with the databases (e.g. database **131D**, database **159** in the payment processing

network **150**, or other databases operated by the issuer **160** or IP Gateway **152**) that contain user enrollment data. User **110** may enroll the account information associated with the portable consumer device **112** and then use the payment application **124** to submit a payment. Payment application modules **132A-4** and **132B-4** facilitate the communication between the payment application **124** with the enrolled user data, and associate a payment made through the payment application **124** with a particular merchant and a particular merchandise and/or service.

[0083] Image processing module **132C** is used in the embodiments where the identifier **133A** is sent from the mobile device **120** in the form of a digital image. As will be described in detail, user **110** may take a picture of the merchandise identifier element **133** which may be attached to the merchandise or shown on a television display. Image processing module **132C** analyzes the image and generates the information included in the identifier **133A** from the digital data associated with the image.

[0084] SMS module **132D** is used in the embodiments where the user **110** initiates a connection with the payment server computer **131** via text message. In such embodiments which will be described later, the user **110** sends a text message containing the information associated with the identifier **133A**. The SMS module **132D** then accesses the user account information provided during an enrollment process and then performs the payment transaction by communicating with other appropriate modules.

[0085] **II. Methods**

[0086] In the embodiments of the invention, the merchant **130** works with the payment server computer **131** which may be operated by a third party processor to enable the user **110** to purchase goods and services from the merchant **130** without submitting his or her payment card information directly to the merchant **130**. In order for merchant **130** to provide this capability to the user **110**, the merchant **130** works with the third party processor to establish an account and to provide its merchandise and/or service information to the payment server computer **131**. The payment server computer **131** can operate a payment host site **132A** that is accessible via web browser and/or a payment host application **132B** accessible via a mobile application on a mobile device. User **110** can communicate with the payment host site **132A** and/or payment host application **132B** via his mobile device **120** and

submit his or her credit/debit card number to the payment host site **132A** and/or payment host application **132B** instead of the merchant **130**. Once a payment is made, the merchant **130** is notified and the user **110** receives the goods or services from the merchant **130**.

[0087] The third party processor may be the acquirer **140**, the payment processing network **150**, the issuer **160** or any other third party that receives the payment from the user **110** on behalf of the merchant **130** via the payment host site **132A** and/or payment host application **132B** hosted on the payment server computer **131**.

[0088] FIG. 3 illustrates the process in which merchant **130** establishes the payment host site **132A** and/or payment host application **132B**. In step **301** the merchant establishes the account with a third party processor that operates the payment server computer **131**. In step **302**, the third party processor creates a payment host site **132A** and/or payment host application **132B** for the merchant **130** and provides a merchant ID to the merchant **130** (step **303**).

[0089] The merchant **130** may then access the payment host site **132A** and/or payment host application **132B** and can create a catalog of the merchandise sold and/or services provided by the merchant **130**. The merchant **130** may include any suitable types of information about the merchandise or services including pictures, video, price, merchandise/service description, warranty information, reviews, etc.

[0090] The merchant **130** may also tag the merchandise with a merchandise identifier element **133**. The merchant **130** or the third party processor may associate each type of merchandise with one or more identifiers such as a merchant ID and the merchandise ID. Such identifiers may then be included as the identifier **133A** in the merchandise identifier element **133**. As will be described in detail later, the merchandise identifier element **133** may be capable of near-field communication or may be a sticker that shows the information (e.g. merchant ID and the merchandise ID, URL address of the payment host site **132A**, etc.) needed by the user **110** to communicate with the payment server computer **131** and make a payment. This step may be optional since the merchant **130** may only sell one type of merchandise, or the merchant **130** may provide the information needed for user **110** to make a payment without specifying a particular piece merchandise (this process will be described in detail later).

[0091] The process of payment transaction, according to one embodiment of the invention, can now be described with reference to the flowchart shown in FIG. 4 and FIGs. 5-9 which show each step from the view of the user **110**. In a typical transaction process, the user selects a merchandise at a merchant location and gets ready for making payment (step **401**). The user **110** may use his mobile device **120** to interact with the merchandise **134** in which he is interested in purchasing. In some embodiments, the merchandise **134** may have a merchandise identifier element **133** which is capable of wirelessly communicating with near-field enabled communication devices such as near-field communication device **122**. The merchandise identifier element may be an RFID tag or any suitable device that can store data and when in close proximity of a near-field reader (e.g. Near-field communication device **122**) transmit its data.

[0092] Mobile device **120** of the user **110** may be coupled to a near-field communication device **122** as shown in FIG. 1, or the near-field communication device may be embedded in the mobile device **120**. In step **402**, the user **110** presents his near-field enabled mobile device **120** to the merchandise identifier element **133**. The mobile device **120** then receives the identifier **133A** (which is the form of computer-readable data) from the merchandise identifier element **133**. Next, in step **403**, the user's mobile device **120** connects to the payment server computer **131**. FIG. 5 illustrates an exemplary mobile device **120** being used in the process of purchasing merchandise **134**.

[0093] In some embodiments, upon receiving the identifier **133A** from the merchandise identifier element **133**, the mobile device **120** may automatically initiate a connection to the payment sever computer **131** which hosts the payment host site **132A** and/or payment host application **132B**. Mobile device **120** may communicate with the payment server computer **131** via the mobile application **122** or the web browser **123**. In some embodiments, user **110** may initiate a connection with the payment server computer **131** prior to presenting his near-field enabled mobile device **120** to the merchandise identifier element **133**.

[0094] For example, user **110** may type a URL (Uniform Resource Locator) (e.g. http://www.Visa_direct_payment.com/merchant123) into the web browser **123** and connect to the payment host site **132A**. Thereafter, the user **110** may present his near-field enabled mobile device **120** to the merchandise identifier element **133**. The mobile device **120** may then retrieve the identifier **133A** stored in the

merchandise identifier element **133** and send the identifier **133A** using the web browser **123** to the payment host site **132A**.

[0095] In some embodiments, the mobile device **120** may include a security module (not shown) that allows the user **110** to use the near-field capability of the mobile device **120** or initiate a payment transaction via the mobile application **122**, web browser **123** and payment application **124** upon providing a password or a PIN by the user **110**.

[0096] As shown in FIG. 5, when the merchandise information are received by the payment host site **132A**, the merchandise is identified and displayed on the payment host site **132A** which is accessed by user **110** via the web browser **123**. As shown in FIG. 5, user **110** may be able to see the merchandise **134**, the price of the merchandise and description of the merchandise including warranty information and reviews (step **404** in FIG. 5).

[0097] In the exemplary purchase process shown in FIG. 5, when user **110** is ready to make payment, he or she can press "Buy Now" to start the payment process. As shown in FIG. 6, user **110** may then be presented with multiple payment options. The flowchart of FIG. 4, illustrates the two payment options that are presented to the user **110** which are shown in FIG. 6. As a first option, the user **110** may choose to use his portable consumer device **112** to pay for the merchandise **134**.

[0098] When the user **110** chooses the option to pay via his portable consumer device **112**, in some embodiments, and in the interest of more security, a dynamic verification value may be used to authenticate the user **110** and/or the portable consumer device **112**. In such embodiments, as shown in FIG. 7, user **110** presents his portable consumer device **112** to mobile device **120**. The near-field communication device **122** communicates with the contactless element **114** of the portable consumer device **112** and receives the card data associated with the portable consumer device **112**. Such card data may be the Primary Account Number (PAN) associated with the portable consumer device **112**, name of the user **110**, expiration date, etc. When such card data are received from the portable consumer device **112**, mobile device **120** may communicate with the IP Gateway **152** to request for a dynamic verification value (step **405A1** in FIG. 4). Mobile device **120** may communicate with the IP Gateway server computer **153** via an application

on the computer readable medium **121** which is run by the processor **125**. In some embodiments, the connection between the mobile device **120** and the IP Gateway **152** may be a secure SSL (Secure Sockets Layer) connection.

[0099] Further detail about the process involved in requesting, generating, and using a dynamic verification value in payment transactions may be found in U.S. Patent Application No. 12/712,148, filed on February 24, 2010, and U.S. Patent Application No. 12/939,963 filed on November 4, 2010, which are herein incorporated by reference in their entirety for all purposes.

[0100] Upon receiving a request for a dynamic verification value and after a verification process, the generation module **154-1** of the IP Gateway **152** generates a dynamic verification value which is sent to the mobile device **120**. At step **405A2** shown in FIG. 4, the payment page of the payment host site **132A** is form-filled with the information needed by the payment host site **132A** to generate an authorization request message. An example is shown in FIG. 8 in which the name, address, account number, expiration date, card verification value (CVV) of the credit/debit card, and the dynamic verification value (dCVV2) are form-filled into a payment page of the payment host site **132A**. In some embodiments, user **110** may manually type such information into the payment page shown in FIG. 8 and may not use a dynamic verification value, or may receive the dynamic verification value by using other means (e.g. text message) and manually enter the dynamic verification value into the payment page.

[0101] At this point, user **110** submits the payment and the payment host site **132A** generates an authorization request message. In some embodiments, the authorization request message is send to the acquirer **140** which then forwards it to the payment processing network **150**. Payment processing network **150** validates the authorization request message using the validation module **157-1** and forwards it to the issuer **160**. In some embodiments, the validation module **157-1** receives a copy of the dynamic verification value from the IP Gateway **152** and compares it with the one included in the authorization request message. If they match, the validation module **157-1** validates the authorization request message.

[0102] When the issuer **160** receives the authorization request message, it will generate an authorization response message which indicates whether the transaction had been approved or not. The authorization response message is sent

to the payment processing network **150** which forwards it to the acquirer **140**. Acquirer **140** then notifies the merchant **130** and the payment server computer **131**.

[0103] Once the payment transaction is approved (i.e. authorization response message is received) the user **110** will be notified as shown in FIG. 9. Also, as mentioned above the merchant **130** will be notified (step **406** in FIG. 4). The merchant **130** may receive a notification via the merchant computer **135**, a Point of Sale (POS) device (not shown) or any device than can be used to receive an electronic notification from the payment server computer **131**. The merchant computer **135** has a processor (not shown) and a computer readable medium (not shown) that stores one or more software application that allows the merchant computer **135** to communicate with the payment server computer **131** and receive the notification.

[0104] Optionally, in addition or instead of the notification that that merchant **130** receives from the payment server computer **131**, the acquirer **140** or the issuer **160** may send a notification. The notification from the payment server computer **131** may include detail about the merchandise that user **110** purchased. For example, payment server computer **131** may communicate with the merchant computer **135** and confirm that the merchandise **134** was purchased by user **110** and a payment was received. The notification may include the information such as Stock Keeping Unit (SKU) and/or any type of information that is provided by the merchandise identifier element **133**. In addition, the notification may include information that allows the merchant **130** determine that the payment was received from the user **110**. Such information may include date and time of payment, and a reference number sent to both the merchant **130** and the mobile device **120** of the user.

[0105] In the above exemplary transaction, various modules of the payment host site **132A** shown in FIG. 2 may operate in concert to perform the above operation. For example, display module **132A-1** may display the picture of the merchandise **134**, its price and item description shown in FIG. 5. Authorization message module **132A-2** may generate the authorization request message when the user **110** submits a payment as shown in FIG. 8. Furthermore, the payment notification module **132A-3** may generate a notification shown in FIG. 9, and in addition, notify the merchant **130**.

[0106] Referring back to the flowchart of FIG. 4, instead of payment via a portable consumer device **112**, user **110** may choose to make a payment via a payment application (e.g. payment application **124**) on his mobile device **120** (step **405B**). FIG. 6 shows that user **110** can choose a payment application on mobile device **120**. When the user **110** selected the "pay with your payment application" option shown in FIG. 6, the payment application **124** will be loaded. FIG. 10 shows an exemplary payment application that includes two credit/debit accounts of user **110** from which user **110** can choose one of the accounts for payment. The exemplary accounts shown in FIG. 10 may be previously enrolled and registered with the payment server computer **131**, issuer **160** or any entity that provides the payment application **124**.

[0107] In the example of FIG. 10, the payment host site **132A** opens the payment application **124**. At this point, the payment application **124** may submit the account information associated with the user **110** to the payment host site **132A**, and an authorization request message can be generated by the payment host site **132A**. Alternatively, in some embodiments, the payment application **124** may generate an authorization request message. In such embodiments, the payment host site **132A** sends the payment information such as price of the merchandise, merchant ID, etc. to the payment application **124**. Payment application **124** can generate an authorization request message and forward it to the acquirer **140**, issuer **160** or the payment processing network **150**.

[0108] As described before, when the payment server computer **131** receives an authorization response message, it sends a notification to the merchant **130** and the user **110**.

[0109] In the above example, the payment host application **132B** may have been used instead of the payment host site **132A**. In this case, the user **110** would use the mobile application **122** to communicate with the payment server computer **131** and perform the above steps to make a payment.

[0110] FIG. 11 illustrates a flowchart that shows other alternative methods of performing a payment transaction according to the embodiments of the inventions. The steps shown in FIG. 11 are similar to steps shown in FIG. 4 except for steps **1102A** and **1102B**.

[0111] In step **1102A**, user **110** types the merchant ID and the merchandise ID into a payment page of the payment host site **132A**. An example is shown in FIG. 12 where the user **110** can enter the merchant and merchandise ID to locate and purchase the merchandise **134**. The merchandise identifier element **133** shown in FIG. 12 may not be capable of near-field communication and instead may be in the form of a human-readable sticker showing the merchant ID and a merchandise ID. User **110** may then see the merchandise **134** and its price and description (similar to FIG. 5). Thereafter, similar to the steps shown in FIG. 4, user **110** pay for the merchandise.

[0112] Referring back to the flowchart of FIG. 11, alternatively, in step **1102B**, user **110** can use the web browser **123** to communicate with payment host site **132A** and browse through the virtual equivalents of the merchandise being sold by the merchant **130**. FIG. 13 shows an exemplary embodiment, where user **110** can view a catalog of the merchandise sold by the merchant **130**. User **110** may then select the virtual equivalent of the merchandise and pay for the item by following the steps of FIG. 4.

[0113] In some embodiments, the merchant **130** may be a type of merchant that sells a limited types of merchandise or services. For example, the merchant **130** may be a merchant that only sells hot dog and beer at a concert or a sport stadium. In such cases, due to the limited types of merchandise, the merchant may not use a merchandise identifier element. FIG. 14 shows an exemplary embodiment, where user **110** can pay the merchant **130** by typing a payee identifier or payee ID and the amount of the payment in the payment host site **132A**. The payee identifier may be unique to the merchant, and the payment host site **132A** can identify the recipient of the payment from the payee identifier. In some embodiments, the payee identifier may be associated with a sales person or a sales station in the merchant's location. Therefore, when two users make a payment at the same time, payment host site **132A** can distinguish the sales persons or the sales stations using the payee identifier.

[0114] In one example, user **110** may go a store and purchase a merchandise from a sales person. The sales person then provides the user **110** with a payee identifier (e.g. P654321 as shown in FIG. 14), a URL for the payment host site **132A** and the total amount of the merchandise(s) or service(s) that the user whishes to purchase. User **110** may then use the mobile device **120** and communicate with the

payment host site **132A** via the web browser **123**. Thereafter, as shown in FIG. 14, user **110** types the payee identifier and the amount of payment in the payment page of the payment host site **132A**. Similar to the steps of the flowchart show in FIG. 4, user **110** can use his portable consumer device **112** or the payment application **124** to make the payment.

[0115] When the user **110** submits the payment and the payment transaction is complete, the payment host site **132A** sends a notification to the merchant **130** or the POS terminal at the merchant location. In some embodiments, the payment host site **132A** may provide a reference number to both the user **110** via his mobile device **120** and to the merchant **130** via the merchant computer **135** so that the merchant **130** can associate a payment with the user **110**.

[0116] In the embodiments of the invention, other alternative methods may be used by the user **110** to receive the merchandise or service information needed to communicate with the payment server computer **131** and pay for goods and services. In some embodiments, the user **110** may user his mobile device **120** to take a picture of the merchandise identifier element **133** (shown in FIG. 12) associated with merchandise (e.g. merchandise **134**). A mobile application (e.g. mobile application **122**) may send the picture to the payment server computer **131** where the image processing module **132C** analyzes the picture and provides the information of the merchandise to the payment host site **132A**. Similar to the process described with reference to the flowchart shown in FIG. 4, the payment host site **132A** may then show the merchandise, its price and any associated information for user **110** for review. User **110** may then follow the similar steps shown in FIG. 4 to submit a payment using his mobile device **120**.

[0117] Similarly, when the user **110** wishes to pay for a service, the user **110** may take a picture of an identifier associated with that particular service. For example, a service provider may provide a menu containing various types of services provided. The menu may be in the form of a paper that lists the services along with their price and a code, image, barcode or any appropriate identifying means that can be captured by an image. Thereafter, the user **110** can take a picture of a particular item in the menu and pay for it via the process described above.

[0118] In some embodiments, the user **110** may use his mobile device **110** to interact with the merchandise and perform a payment transaction by tapping or "bumping" the mobile device **120** to the merchandise **134** or the merchandise identifier element **133**. FIG. 15A shows an exemplary system where the merchandise identifier element is embodied as a sensor **200** which communicates with the payment server computer **131**. FIG. 15B illustrates an exemplary embodiment, where the user **110** "bumps" his mobile device **120** to the sensor **200**. In such embodiments, the mobile device **120** and the sensor **200** may have accelerometers or alternatively, pressure sensors. As a result of the movement of the mobile device **120** toward the sensor **200**, the accelerometer or pressure sensor data may then be sent to the payment server computer **131**. Thereafter, the information related to the merchandise **134** are displayed on the mobile device **120** through the web browser **123** or the mobile application **122**. User **110** can then make a payment for the merchandise **134** via the process described above with reference to the flowchart of FIG. 4.

[0119] The payment server computer **131** can determine when the mobile device **120** moves towards the sensor **200** in any suitable manner. In one embodiment, the payment server computer **131** uses accelerometer data, time and location data from the mobile device **120** and the sensor **200** to associate the mobile device **120** with a particular piece of merchandise. Further detail about this process can be found in the U.S. Patent Application No.12/952,811 filed on November 23, 2010; U.S. Patent Application No. 12/953,368 filed on November 23, 2010; and U.S. Patent Application No. 12/953,371 filed on November 23, 2010, the entire disclosures of which are incorporated herein by reference in their entirety for all purposes.

[0120] In some embodiments, the merchandise identifier element **133** may be embodied as the sensor **200** shown in FIG. 16 where it senses the removal of the merchandise. Sensor **200** may communicate wirelessly via a near-field communication protocol (e.g. via RFID or bluetooth) with the mobile device **120** and transmit the identifier data related to the merchandise **134** to the mobile device **120**. In one example, the user **110** approaches the merchandise **134** shown in FIG. 16. The sensor **200** detects the presence of the mobile device **120** and sends the related information (identifier data) such as merchant ID and/or merchandise ID to the mobile device **120**. The mobile device **120** then communicates with the payment

server computer **131** as described before, and information associated with the merchandise such as description, price, warranty information, reviews, etc. may be displayed via the mobile application **122** or the web browser **123**. User **110** may then purchase the merchandise **134** via the process described above.

[0121] In one embodiment, if the user **110** were to remove the merchandise **134** before successfully making a payment, an alarm would sound indicating unauthorized removal of a merchandise. Upon successful payment by the user **110**, payment server computer **131** may disarm the sensor **200** so that user **110** can remove the merchandise **134**. Sensor **200** may communicate with the payment server computer **131** via any suitable communication protocol or via a suitable intermediary device (e.g. merchant computer **135**).

[0122] In some embodiments, when the sensor **200** is used in a store along with many other merchandise, the location information (e.g. GPS location) of the mobile device **120** along with the location information related to the sensor **200** may be sent to the payment server computer **131**. Using the location information, the payment server computer **131** may determine which mobile device in the store is interacting with which sensor.

[0123] In the embodiments of the invention, the payment server computer **131** may be used for remote transactions. FIG. 17 shows an exemplary remote transaction where the user **110** buys a piece of merchandise that is being offered in a television commercial. In the exemplary embodiments shown in FIG. 17, the television commercial shown in television **202** shows a merchandise **134** which is a digital camera. An identifier **204** which is in the form of a two-dimensional bar code is displayed on the television **202**. User **110** can take a picture of the identifier **204** via a mobile application (e.g. mobile application **122**) on his mobile device **120**. The mobile application **122** then communicates with the payment server computer **131**. The image processing module **132C** may then analyze the image and forward the data associated with the identifier **204** to the payment host site **132A** or the payment host application **132B**. The user **110** then receives the product information via the web browser **123** or the mobile application **122**. Thereafter, similar to the process described with respect to the flowchart of FIG. 4, the user **110** can make a payment for the merchandise **134**.

[0124] Merchant **130** will then be notified via the payment server computer **131** that merchandise **134** was purchased and will be provided with the shipping information of the user **110** to ship the merchandise.

[0125] In some embodiments, the user **110** may use his mobile device to purchase goods or services in face-to-face or remote transactions by communicating with the payment server computer **131** via text message (SMS). FIG. 18 shows an exemplary embodiment that shows the process of making a payment via text message.

[0126] User **110** may use his mobile device **110** to communicate with the payment server computer **131** by "texting" an identifier associated with a good or service being sold by a merchant, to a known connection number associated with the payment server computer **131**. The identifier may be in any suitable form. For example, the identifier may be in the form of one or more string of numeric and/or alpha-numeric values. The connection number may be a short code (e.g. 222-123) or an ordinary phone number (e.g. 415-123-4567) associated with the payment server computer **131**. In this embodiment, user **110** may have previously enrolled the account associated with his portable consumer device **112** with the payment server computer **131**.

[0127] As shown in the example of FIG. 18, user **110** can "text" the identifier which is shown in the form of a numerical string (merchandise ID **206**) and an alpha-numeric string (merchant ID **208**) to a number associated with the payment server computer **131**. In the example of FIG. 18, the identifiers are associated with the merchandise **134** shown in FIG. 17. In this example, user **110** makes a payment for the digital camera (merchandise **134**) shown in FIG. 17 by communicating with the payment server computer **131** via text message (SMS). The identifiers **206** and **208** may have been shown on the television **202** instead of the two-dimensional bar code.

[0128] When the user **110** "texts" the identifiers **206** and **208** to the payment server computer **131**, the SMS module **132D** identifies the mobile device **120** via the phone number associated with the incoming text message (SMS), and verifies that the mobile device **120** is associated with a valid account from which a payment may be made. Thereafter, the SMS module **132D** associates the identifier(s) received via the text message with a merchandise and/or a merchant. In the example shown in

FIG. 18, the SMS module **132D** determines the merchandise ID **206** and the merchant ID **208** are associated with a digital camera (shown in FIG. 17). The SMS module **132D** sends a reply message which may include the description of the merchandise and its price, and requests that the user **110** confirm the transaction. As shown in the example of FIG. 18, user **110** sends a confirmation, and the SMS module **132D** sends an approval along with a reference number.

[0129] Similar to the example shown in FIG. 17, the payment server computer **131** communicates with the merchant **130** and provide the shipping information of the user **110** for the shipping of the purchased merchandise.

[0130] It can be appreciated that the embodiments of the invention provide many advantages. Embodiments of the invention may be advantageously used to allow the users to securely purchase goods and services from the merchants without disclosing the user's account information associated with account data of the user to the merchants. Embodiments of the invention are particularly useful and advantageous for mobile and seasonal merchants that users may not be comfortable with to disclose their account information. Furthermore, the embodiments of the invention advantageously allow the merchants to accept credit/debit cards without having to lease or purchase Point of Sale (POS) devices. Further technical advantages include an increase in the speed of transactions as compared to conventional payment transactions.

[0131] The various participants and elements of the system shown in FIGs. 1 and 2 may operate one or more computer apparatuses to facilitate the functions described herein. Any of the elements in FIGs. 1 and 2 may use any suitable number of subsystems to facilitate the functions described herein. Examples of such subsystems or components are shown in FIG. 19. The subsystems shown in FIG. 19 are interconnected via a system bus **1975**. Additional subsystems such as a printer **1974**, keyboard **1978**, fixed disk **1979** (or other memory comprising computer readable media), monitor **1976**, which is coupled to display adapter **1982**, and others are shown. Peripherals and input/output (I/O) devices, which couple to I/O controller **1971**, can be connected to the computer system by any number of means known in the art, such as serial port **1977**. For example, serial port **1977** or external interface **1981** can be used to connect the computer apparatus to a wide area network such as the Internet, a mouse input device, or a scanner. The interconnection via system bus allows the central processor **1973** to communicate with each subsystem and to

control the execution of instructions from system memory **1972** or the fixed disk **1979**, as well as the exchange of information between subsystems. The system memory **1972** and/or the fixed disk **1979** may embody a computer readable medium.

[0132] The software components or functions described in this application may be implemented as software code to be executed by one or more processors 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 also reside on or within a single computational apparatus, and may be present on or within different computational apparatuses within a system or network.

[0133] Embodiments of the present invention can be implemented in the form of control logic in software or hardware or a combination of both. The control logic may be stored in an information storage medium as a plurality of instructions adapted to direct an information processing device to perform a set of steps disclosed in embodiments of the present invention. Based on the disclosure and teachings provided herein, a person of ordinary skill in the art will appreciate other ways and/or methods to implement the present invention.

[0134] In embodiments, any of the entities described herein may be embodied by a computer that performs any or all of the functions and steps disclosed.

[0135] Any recitation of "a", "an" or "the" is intended to mean "one or more" unless specifically indicated to the contrary.

[0136] 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 to the pending claims along with their full scope or equivalents.

2011223674 14 Jul 2014

CLAIMS:

1. A method comprising:

receiving, by a payment server computer, an identifier from a mobile device of a user, wherein the identifier was provided by a merchant to the user, wherein the identifier is in the form of computer-readable data in a merchandise identifier element proximate to merchandise that is also proximate to a sensor, wherein the payment server computer is remotely located with respect to the merchandise and the sensor;

identifying, by the payment server computer, a recipient of a payment using the identifier;

performing, by the payment server computer, a payment transaction on behalf of the merchant; and

notifying the merchant that a payment has been made; and

sending, by the payment server computer, a communication to the sensor to disarm the sensor, thereby allowing the user to remove the merchandise.

2. The method of claim 1, wherein the computer readable data is stored in the merchandise identifier element and wherein the merchandise identifier element is a near field enabled merchandise identifier element.

3. The method of claim 1, wherein identifier is one or more numeric or alpha-numeric strings.

4. The method of claim 1, wherein the identifier is part of a digital image received from the mobile device.

5. The method of claim 1, wherein performing the payment transaction further comprises:

generating an authorization request message comprising an account identifier associated with an account of the user;

sending the authorization request message to an acquirer associated with the merchant, wherein the authorization request message is then forwarded to a payment processing network and then to an issuer; and

receiving an authorization response message from the issuer via the acquirer, and the payment processing network.

6. The method of claim 5, further comprising:

disarming, by the sensor, an alarm in the sensor after receiving the communication to disarm the sensor.

7. The method of claim 1 wherein the merchandise identifier element is an RF ID tag.

8. The method of claim 1 wherein the identifier comprises a Web site address of the merchant.

9. The method of claim 8 further comprising:

after identifying, by the payment server computer, the merchant using the identifier,

providing to the mobile device of the user a display of the merchandise.

10. The method of claim 8 further comprising:

after identifying, by the payment server computer, the merchant using the identifier,

providing to the mobile device of the user a display of the merchandise, a description of the merchandise, and options to pay for the merchandise.

11. The method of claim 10 wherein the options to pay include paying with a physical credit or debit card, and paying using a payment application on the mobile device.

12. A payment server computer comprising:

a processor; and

a non-transitory computer readable medium coupled to the processor, the computer readable medium comprising instructions for performing a method comprising

receiving, by a processor in the payment server computer, an identifier from a mobile device of a user, wherein the identifier was provided by a merchant to the user, wherein the identifier is in the form of computer-readable data in a merchandise identifier element proximate to merchandise that is also proximate a sensor, wherein the payment server computer is remotely located with respect to the merchandise and the sensor,

identifying, by the processor, the merchant using the identifier,

performing a payment transaction, by the processor, on behalf of the merchant,

notifying the merchant that a payment has been made, and

sending, by the processor, a communication to the sensor to disarm the sensor, thereby allowing the user to remove the merchandise.

13. The payment server computer of claim 12, wherein the computer readable data is stored in the merchandise identifier element and wherein the merchandise identifier element is a near field enabled merchandise identifier element.

14. The payment server computer of claim 12, wherein identifier is one or more numeric or alpha-numeric strings.

15. The payment server computer of claim 12, wherein the identifier is part of a digital image received from the mobile device.

16. The payment server computer of claim 12, wherein performing the payment transaction further comprises:

generating an authorization request message comprising an account identifier associated with an account of the user;

sending the authorization request message to an acquirer associated with the merchant, wherein the authorization request message is forwarded to a payment processing network and then to an issuer; and

receiving an authorization response message from the issuer via the acquirer, and the payment processing network.

17. The payment server computer of claim 16 wherein the merchandise identifier element is an RF ID tag.

18. The payment server computer of claim 16 wherein the identifier comprises a Web site address of the merchant.

19. The payment server computer of claim 16 wherein the method further comprises:

after identifying, by the processor, the merchant using the identifier,

providing to the mobile device of the user a display of the merchandise.

20. The payment server computer of claim 16 wherein the method further comprises:

after identifying, by the processor, the merchant using the identifier,

providing to the mobile device of the user a display of the merchandise, a description of the merchandise, and options to pay for the merchandise.

21. The payment server computer of claim 20 wherein the options to pay include paying with a physical credit or debit card, and paying using a payment application on the mobile device.

22. A system comprising:

the payment server computer of claim 12;

the merchandise identifier element; and

the sensor, wherein the sensor is proximate to the merchandise identifier element and the payment server is remote with respect to the merchandise identifier element and the sensor.

Visa International Service Association
Patent Attorneys for the Applicant/Nominated Person
SPRUSON & FERGUSON

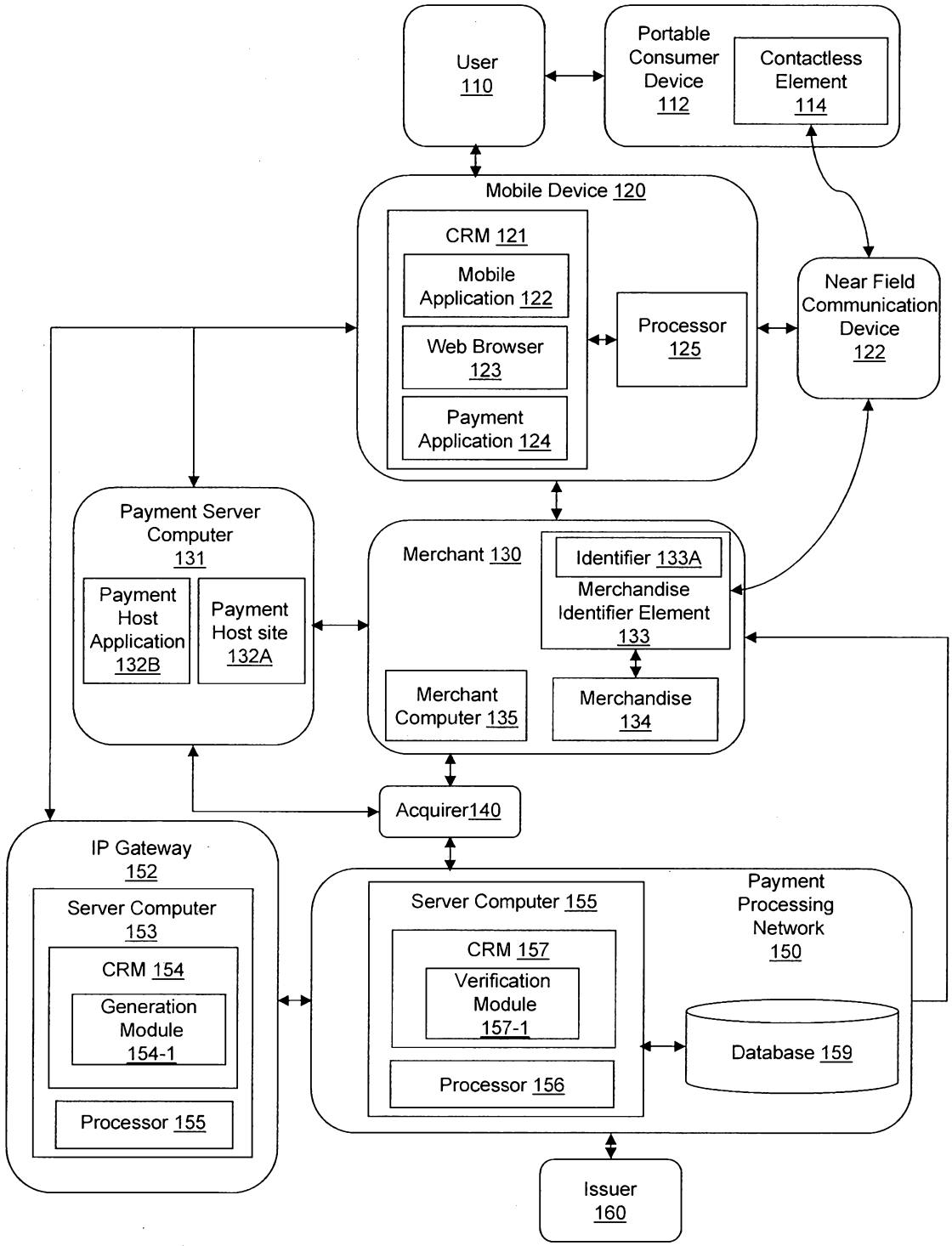
User
110
Portable
Consumer
Device
112
Contactless
Element
114
Mobile Device 120
CRM 121
Mobile
Application 122
Web Browser
123
Payment
Application 124
Processor
125
Near Field
Communication
Device
122
Payment Server
Computer
131
Payment
Host
Application
132B
Payment
Host site
132A
Merchant 130
Identifier 133A
Merchandise
Identifier Element
133
Merchant
Computer 135
Merchandise
134
Acquirer140
IP Gateway
152
Server Computer
153
CRM 154
Generation
Module
154-1
Processor 155
Server Computer 155
CRM 157
Verification
Module
157-1
Processor 156
Payment
Processing
Network
150
Database 159
Issuer
160

FIG. 1

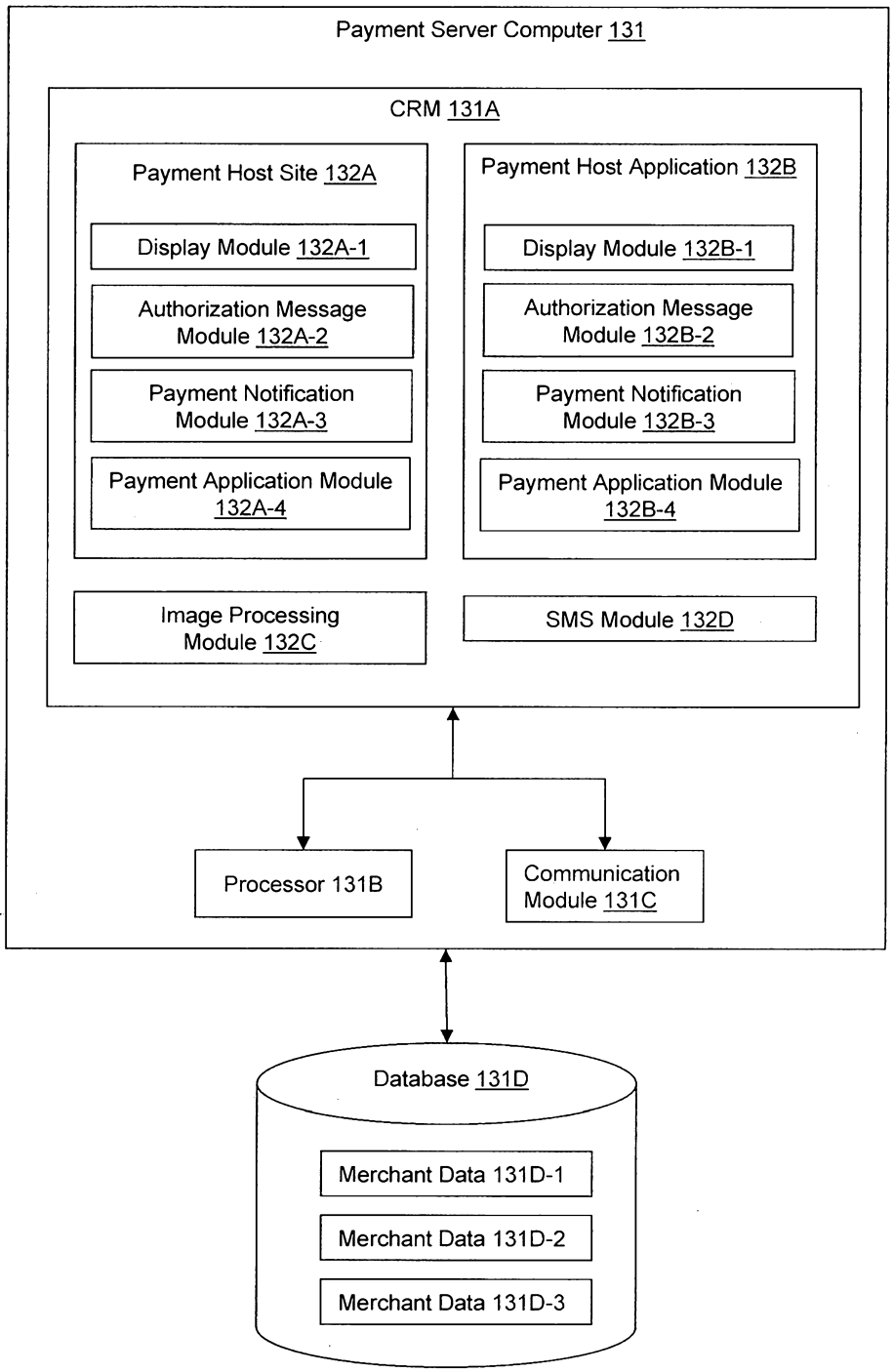
Payment Server Computer 131
CRM 131A
Payment Host Site 132A
Display Module 132A-1
Authorization Message Module 132A-2
Payment Notification Module 132A-3
Payment Application Module 132A-4
Payment Host Application 132B
Display Module 132B-1
Authorization Message Module 132B-2
Payment Notification Module 132B-3
Payment Application Module 132B-4
Image Processing Module 132C
SMS Module 132D
Processor 131B
Communication Module 131C
Database 131D
Merchant Data 131D-1
Merchant Data 131D-2
Merchant Data 131D-3

FIG. 2

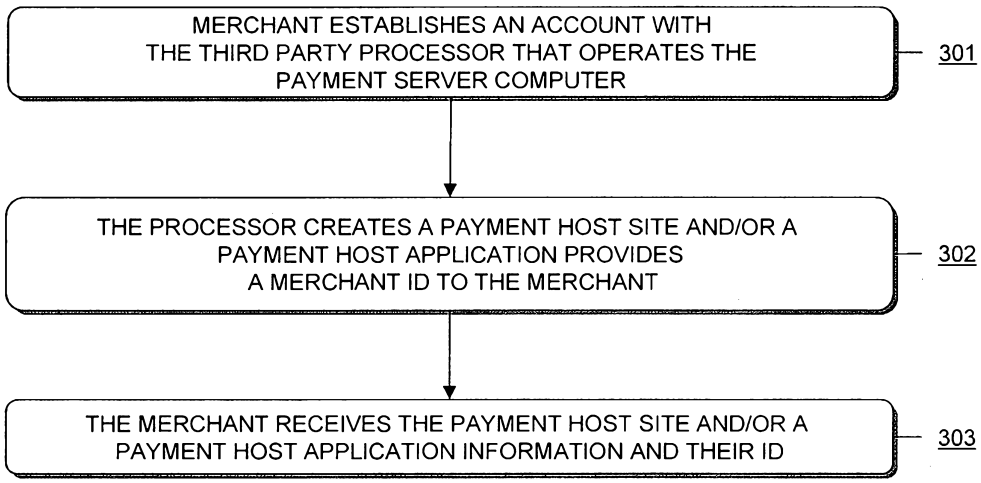
MERCHANT ESTABLISHES AN ACCOUNT WITH THE THIRD PARTY PROCESSOR THAT OPERATES THE PAYMENT SERVER COMPUTER
301
THE PROCESSOR CREATES A PAYMENT HOST SITE AND/OR A PAYMENT HOST APPLICATION PROVIDES A MERCHANT ID TO THE MERCHANT
302
THE MERCHANT RECEIVES THE PAYMENT HOST SITE AND/OR A PAYMENT HOST APPLICATION INFORMATION AND THEIR ID
303

FIG. 3

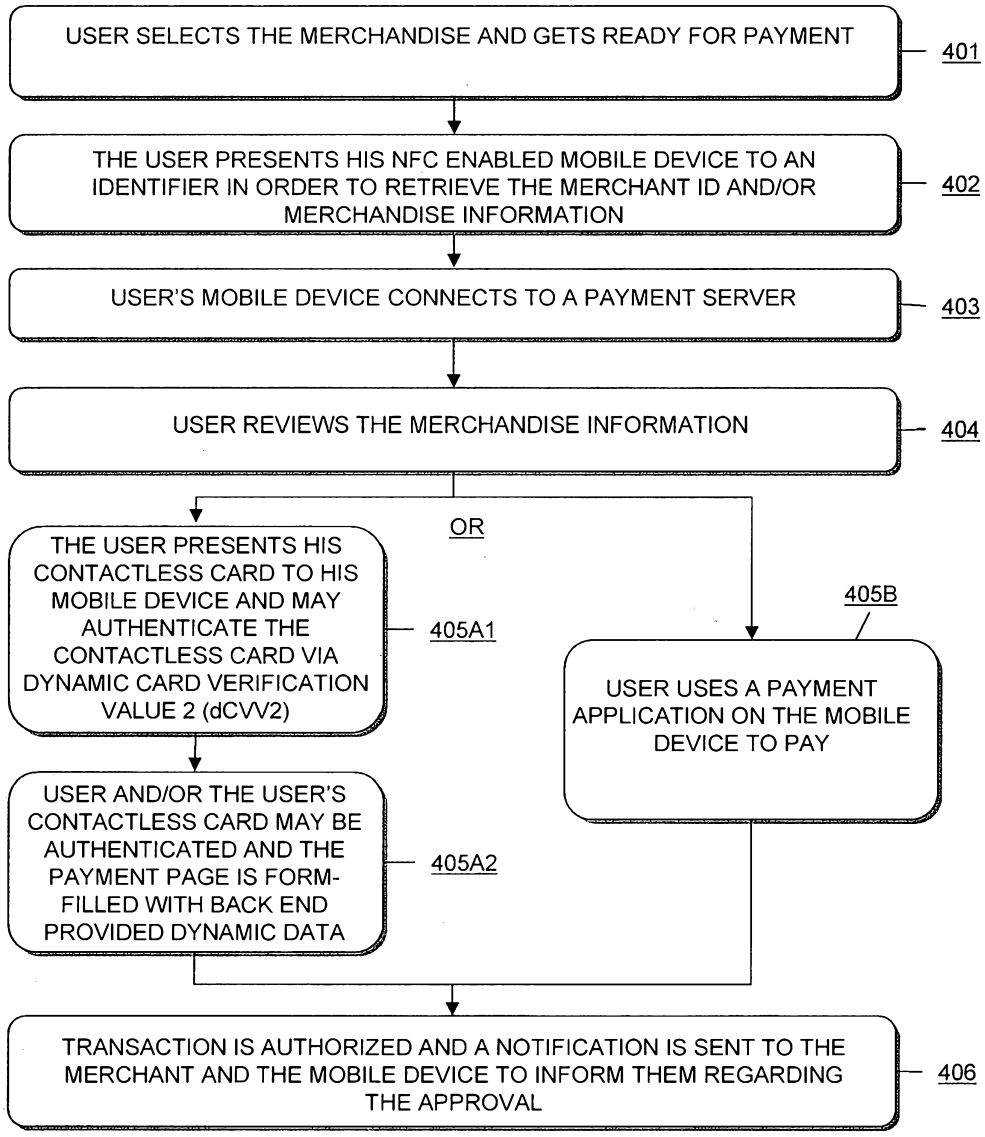
USER SELECTS THE MERCHANDISE AND GETS READY FOR PAYMENT
401
THE USER PRESENTS HIS NFC ENABLED MOBILE DEVICE TO AN IDENTIFIER IN ORDER TO RETRIEVE THE MERCHANT ID AND/OR MERCHANDISE INFORMATION
402
USER'S MOBILE DEVICE CONNECTS TO A PAYMENT SERVER
403
USER REVIEWS THE MERCHANDISE INFORMATION
404
OR
THE USER PRESENTS HIS CONTACTLESS CARD TO HIS MOBILE DEVICE AND MAY AUTHENTICATE THE CONTACTLESS CARD VIA DYNAMIC CARD VERIFICATION VALUE 2 (dCVV2)
405A1
USER AND/OR THE USER'S CONTACTLESS CARD MAY BE AUTHENTICATED AND THE PAYMENT PAGE IS FORM-FILLED WITH BACK END PROVIDED DYNAMIC DATA
405A2
405B
USER USES A PAYMENT APPLICATION ON THE MOBILE DEVICE TO PAY
TRANSACTION IS AUTHORIZED AND A NOTIFICATION IS SENT TO THE MERCHANT AND THE MOBILE DEVICE TO INFORM THEM REGARDING THE APPROVAL
406

FIG. 4

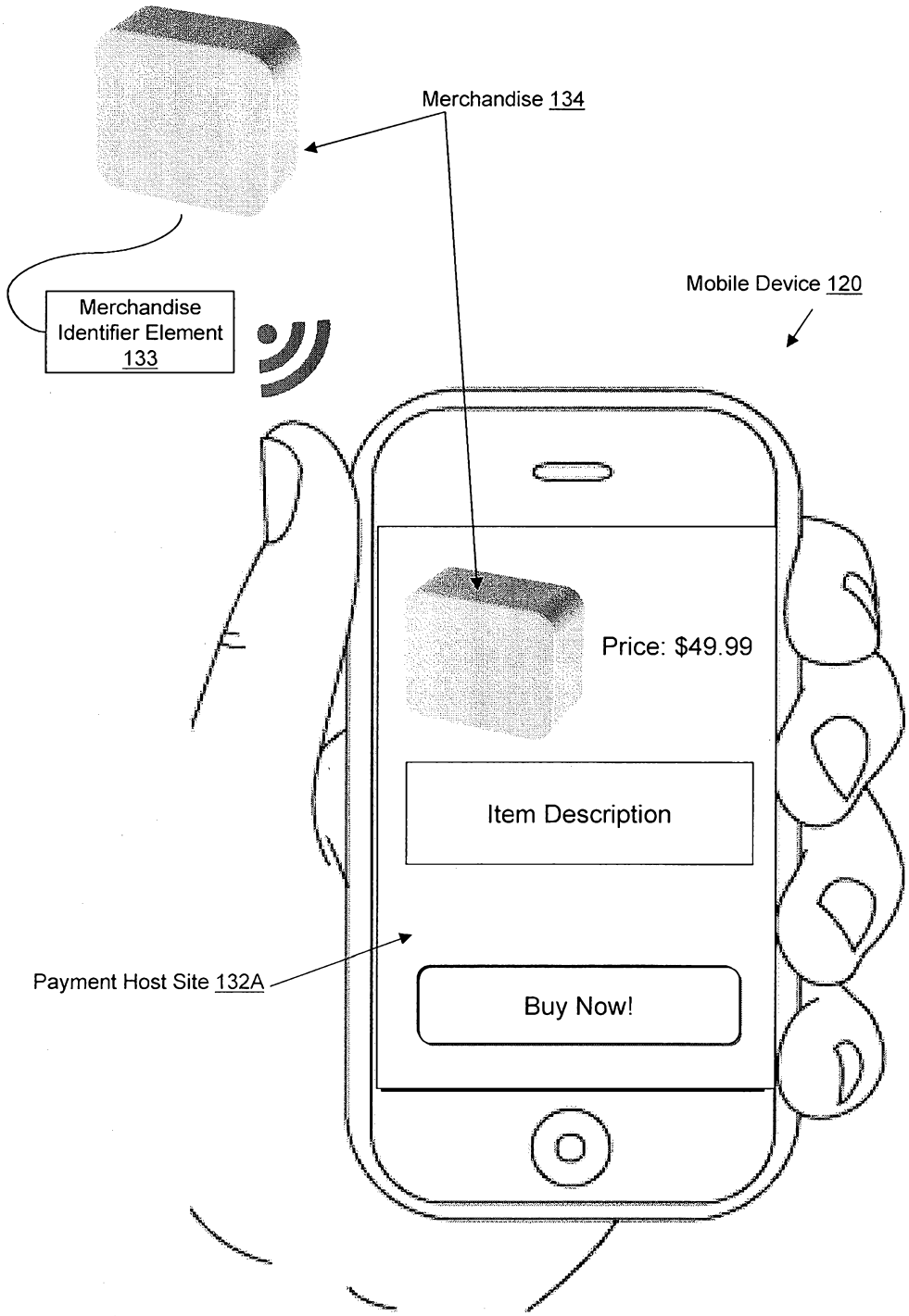
Merchandise 134
Merchandise Identifier Element 133
Mobile Device 120
Price: $49.99
Item Description
Payment Host Site 132A
Buy Now!

FIG. 5

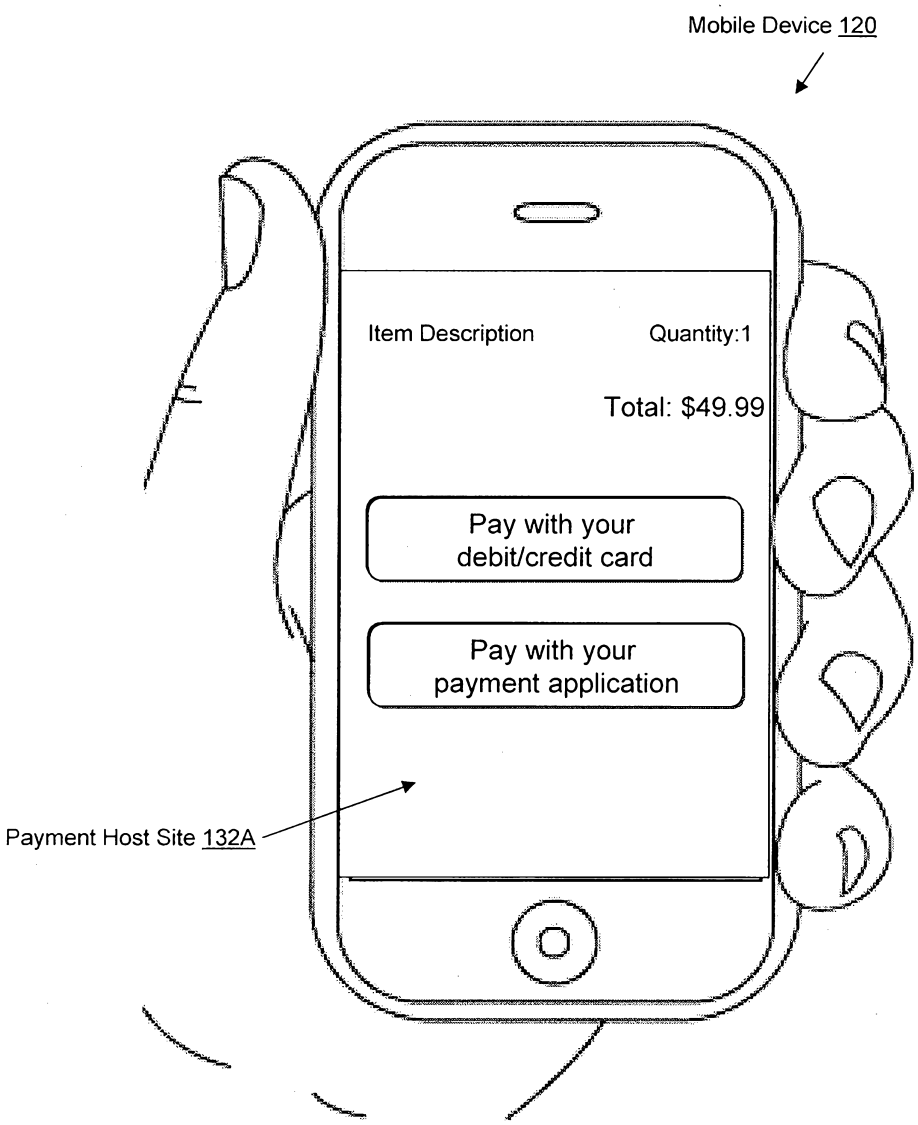
Mobile Device 120
Item Description
Quantity:1
Total: $49.99
Pay with your debit/credit card
Pay with your payment application
Payment Host Site 132A

FIG. 6

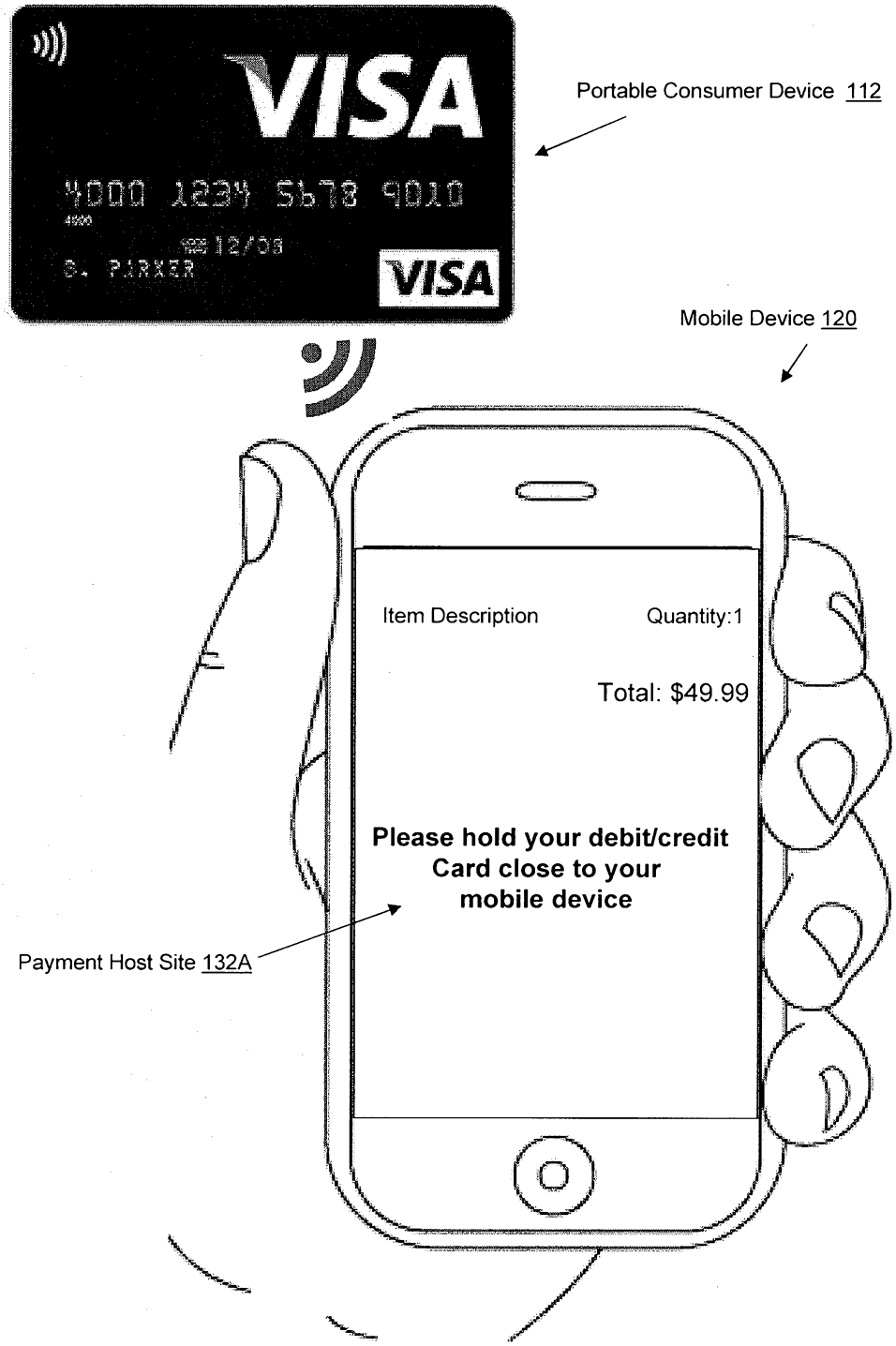
VISA
4000 1234 5678 9010
12/08
B. PARKER
VISA
Portable Consumer Device 112
Mobile Device 120
Item Description
Quantity:1
Total: $49.99
Please hold your debit/credit Card close to your mobile device
Payment Host Site 132A

FIG. 7

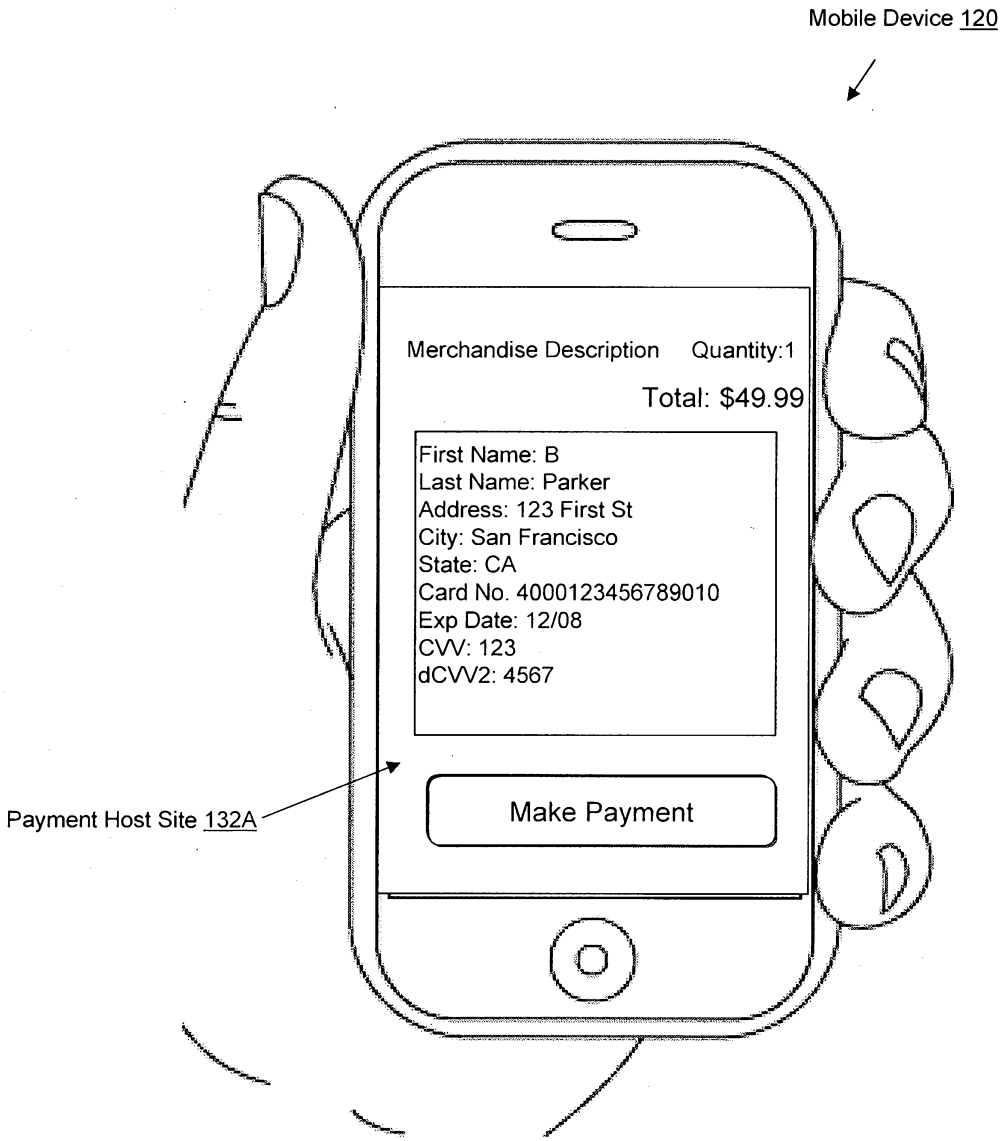
Mobile Device 120
Merchandise Description Quantity:1
Total: $49.99
First Name: B
Last Name: Parker
Address: 123 First St
City: San Francisco
State: CA
Card No. 4000123456789010
Exp Date: 12/08
CVV: 123
dCVV2: 4567
Make Payment
Payment Host Site 132A

FIG. 8

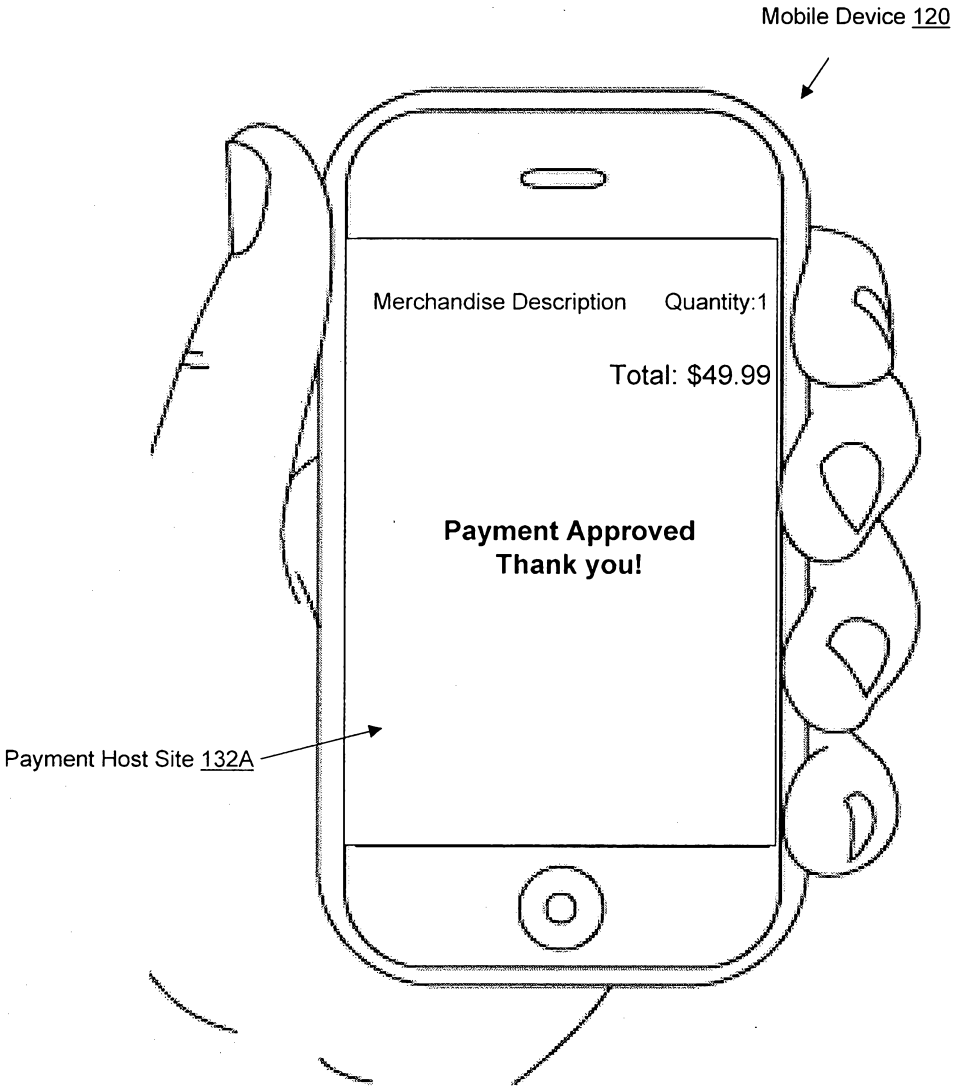
Mobile Device 120
Merchandise Description
Quantity:1
Total: $49.99
Payment Approved
Thank you!
Payment Host Site 132A

FIG. 9

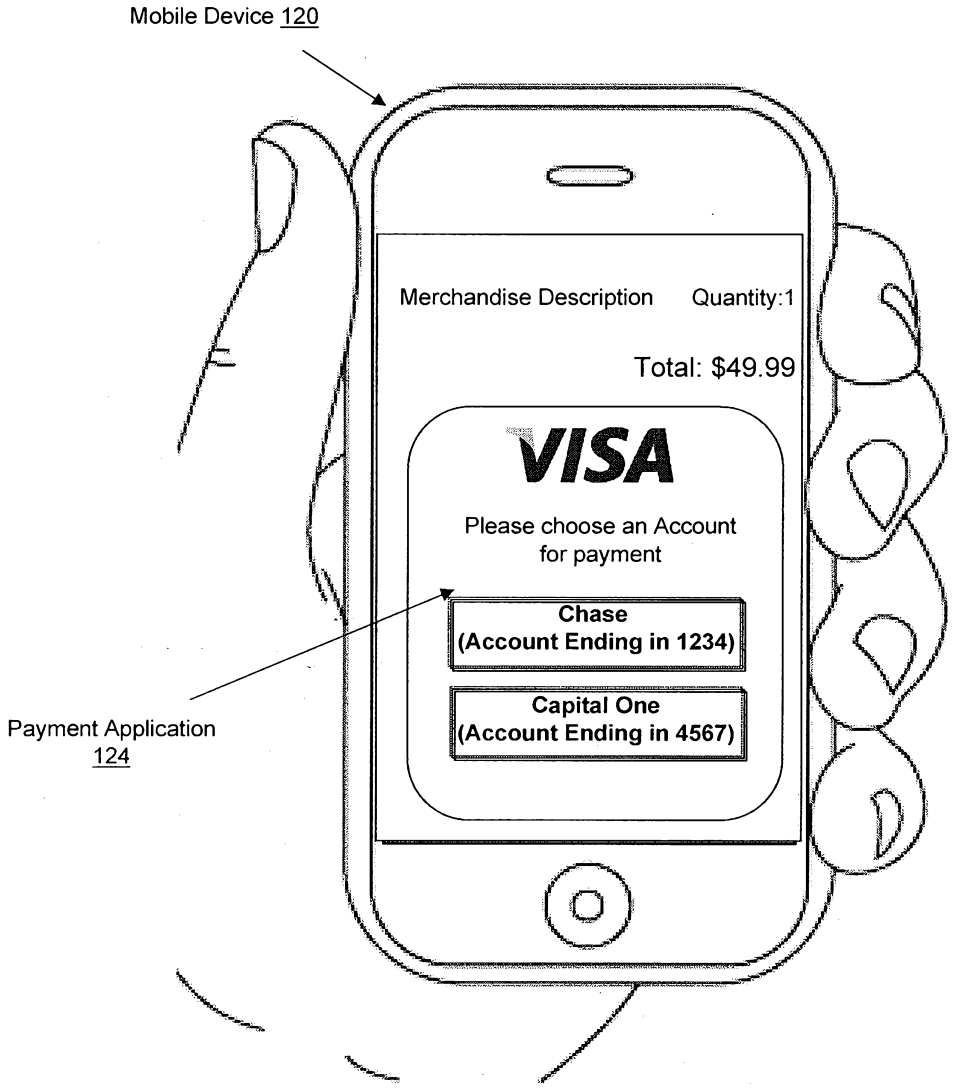
Mobile Device 120
Merchandise Description
Quantity:1
Total: $49.99
VISA
Please choose an Account for payment
Chase (Account Ending in 1234)
Capital One (Account Ending in 4567)
Payment Application 124

FIG. 10

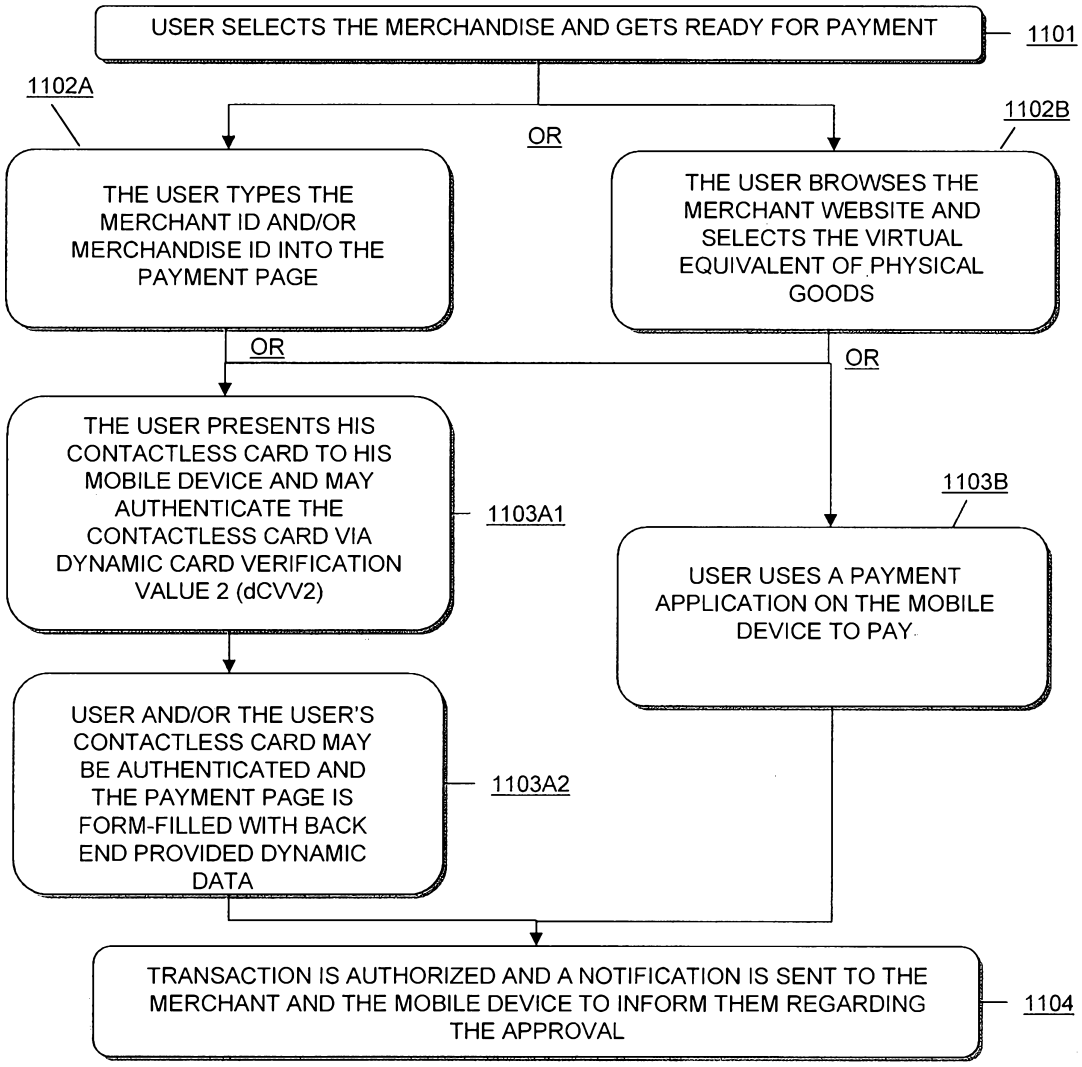
USER SELECTS THE MERCHANDISE AND GETS READY FOR PAYMENT
1101
1102A
OR
1102B
THE USER TYPES THE MERCHANT ID AND/OR MERCHANDISE ID INTO THE PAYMENT PAGE
THE USER BROWSES THE MERCHANT WEBSITE AND SELECTS THE VIRTUAL EQUIVALENT OF PHYSICAL GOODS
OR
OR
THE USER PRESENTS HIS CONTACTLESS CARD TO HIS MOBILE DEVICE AND MAY AUTHENTICATE THE CONTACTLESS CARD VIA DYNAMIC CARD VERIFICATION VALUE 2 (dCVV2)
1103A1
1103B
USER USES A PAYMENT APPLICATION ON THE MOBILE DEVICE TO PAY
USER AND/OR THE USER'S CONTACTLESS CARD MAY BE AUTHENTICATED AND THE PAYMENT PAGE IS FORM-FILLED WITH BACK END PROVIDED DYNAMIC DATA
1103A2
TRANSACTION IS AUTHORIZED AND A NOTIFICATION IS SENT TO THE MERCHANT AND THE MOBILE DEVICE TO INFORM THEM REGARDING THE APPROVAL
1104

FIG. 11

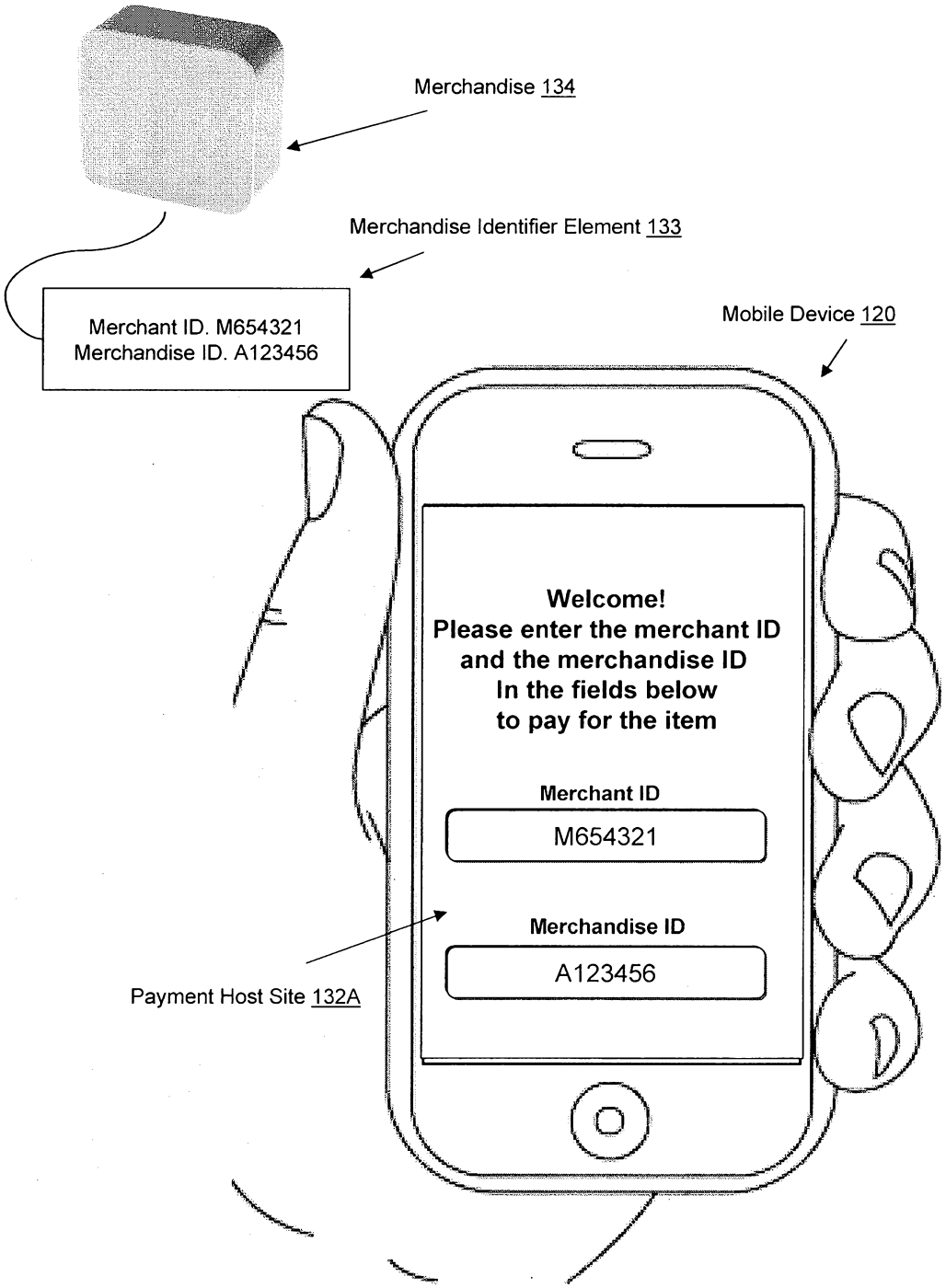
Merchandise 134
Merchandise Identifier Element 133
Merchant ID. M654321
Merchandise ID. A123456
Mobile Device 120
Welcome!
Please enter the merchant ID
and the merchandise ID
In the fields below
to pay for the item
Merchant ID
M654321
Merchandise ID
A123456
Payment Host Site 132A

FIG. 12

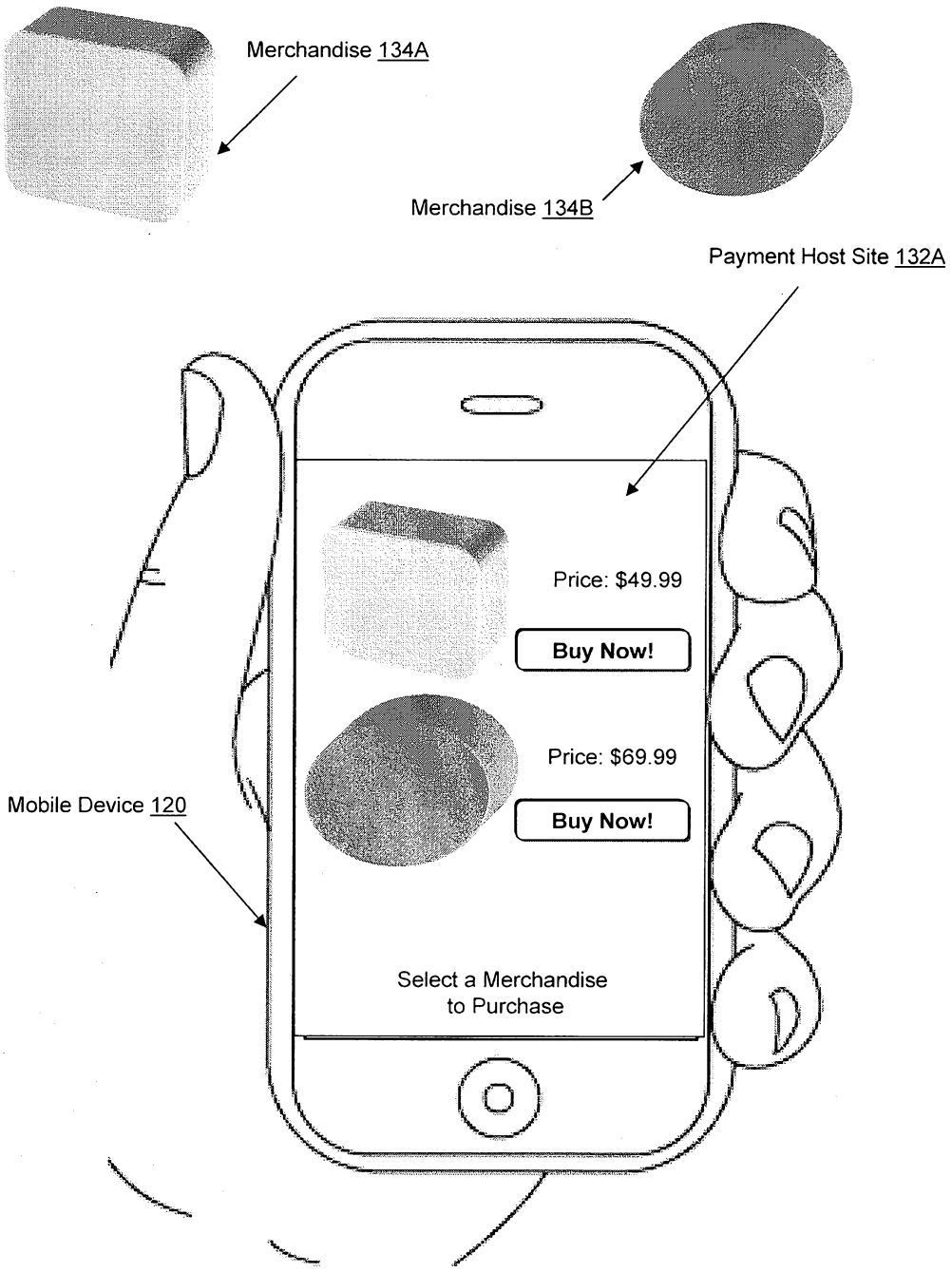
Merchandise 134A
Merchandise 134B
Payment Host Site 132A
Price: $49.99
Buy Now!
Price: $69.99
Buy Now!
Mobile Device 120
Select a Merchandise
to Purchase

FIG. 13

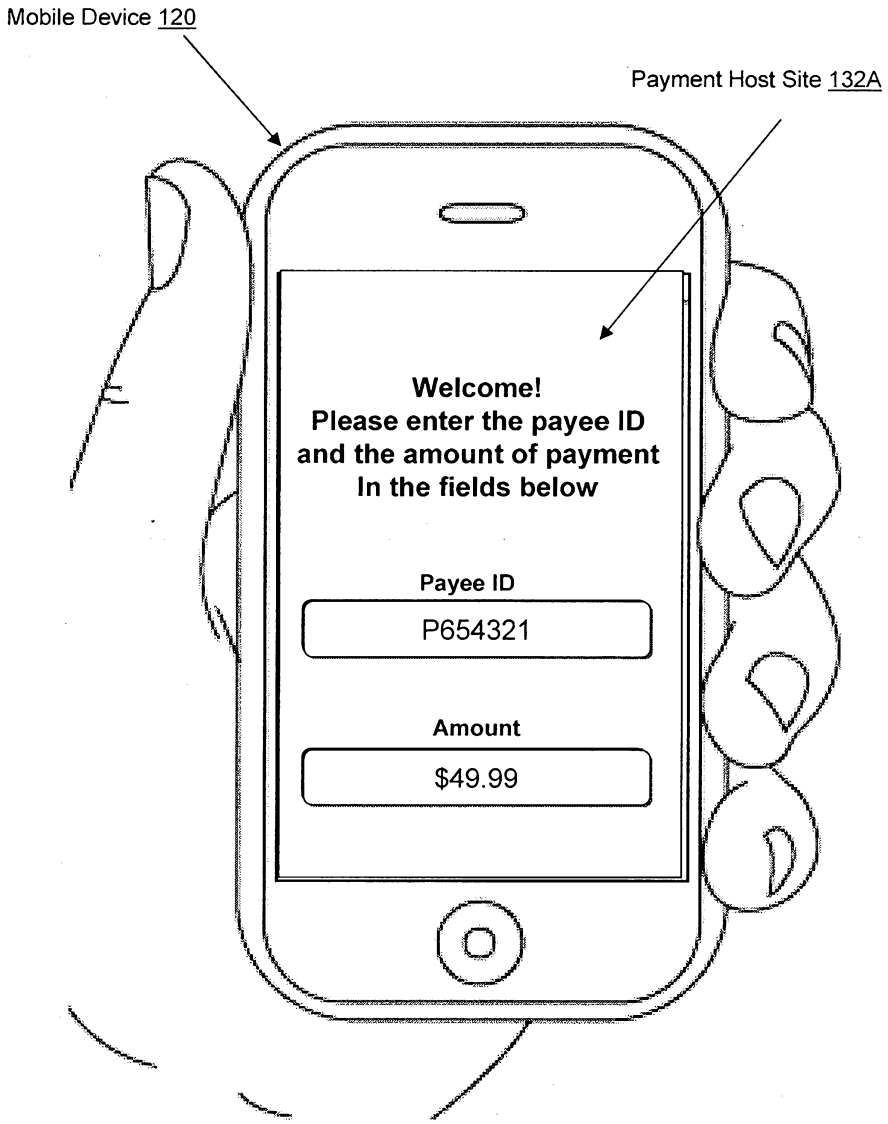
Mobile Device 120
Payment Host Site 132A
Welcome!
Please enter the payee ID
and the amount of payment
In the fields below
Payee ID
P654321
Amount
$49.99

FIG. 14

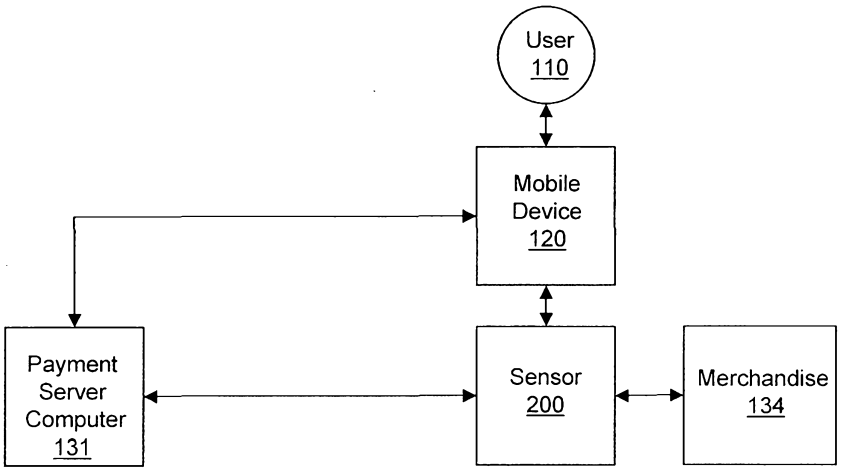

FIG. 15A

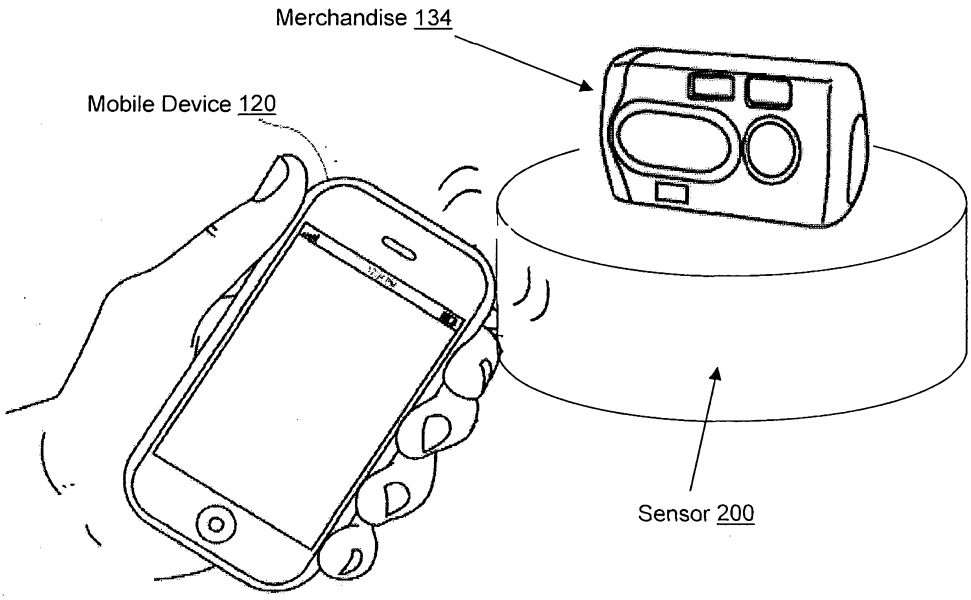

FIG. 15B

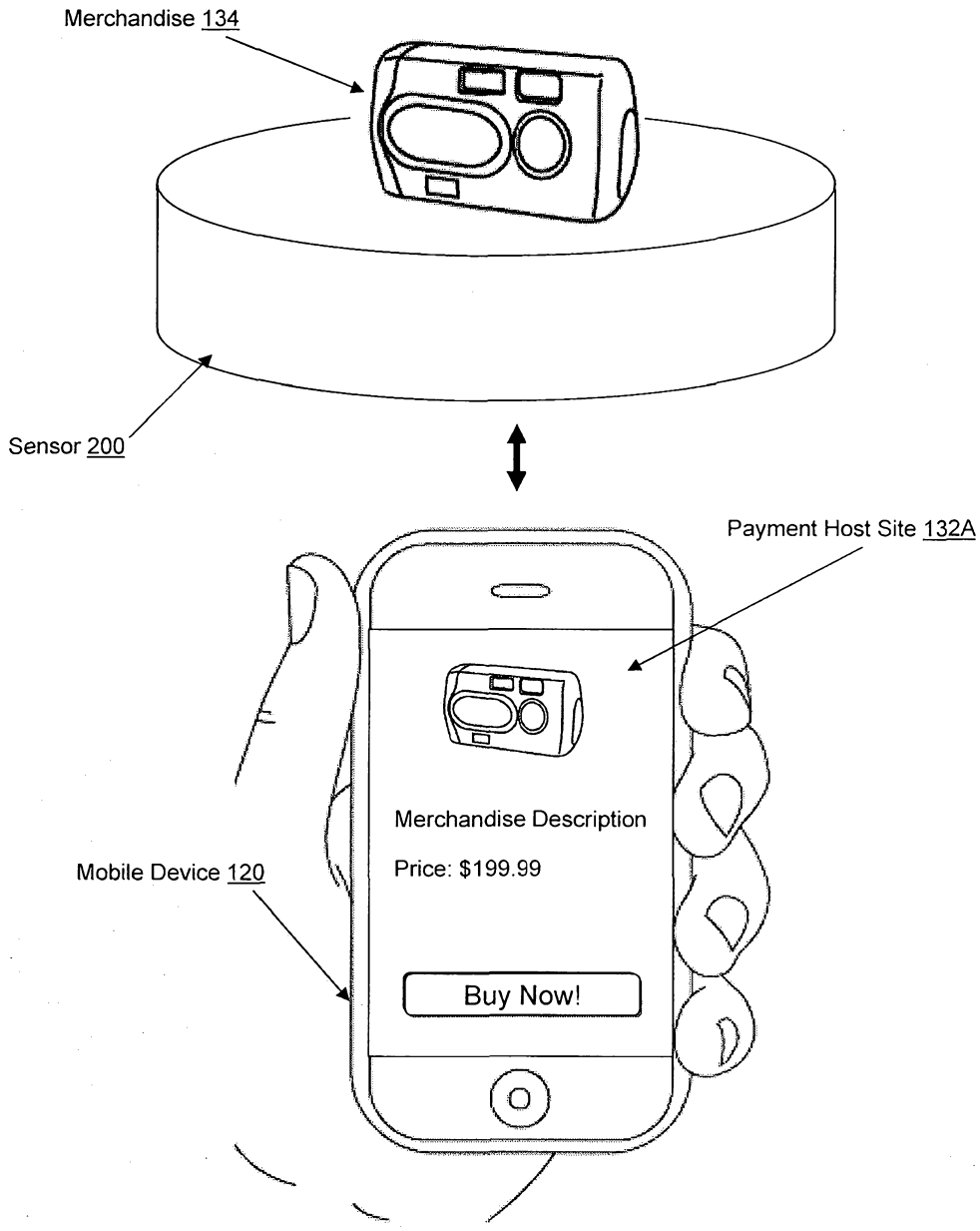
Merchandise 134
Sensor 200
Payment Host Site 132A
Merchandise Description
Price: $199.99
Buy Now!
Mobile Device 120

FIG. 16

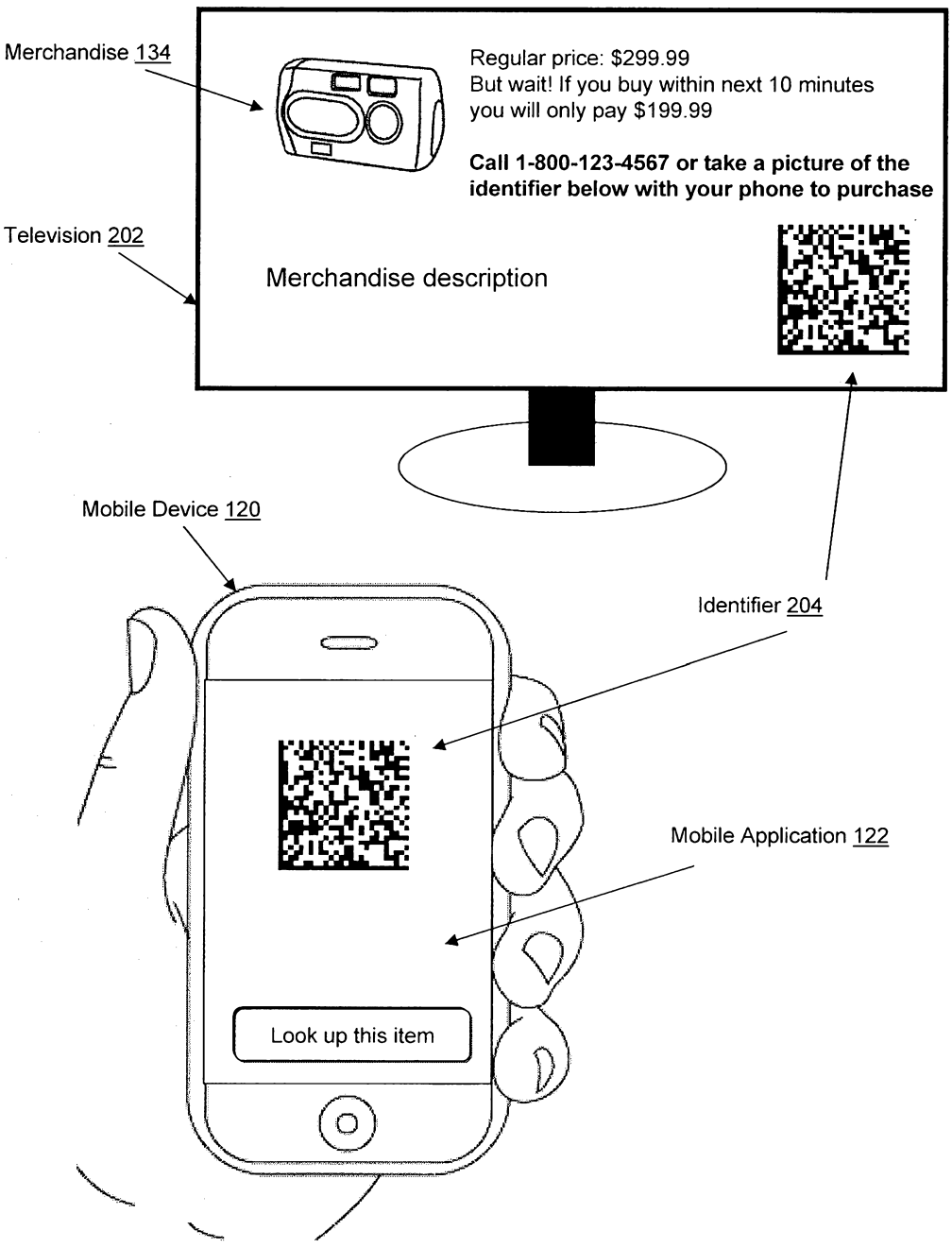
Merchandise 134
Regular price: $299.99
But wait! If you buy within next 10 minutes
you will only pay $199.99
Call 1-800-123-4567 or take a picture of the
identifier below with your phone to purchase
Television 202
Merchandise description
Mobile Device 120
Identifier 204
Mobile Application 122
Look up this item

FIG. 17

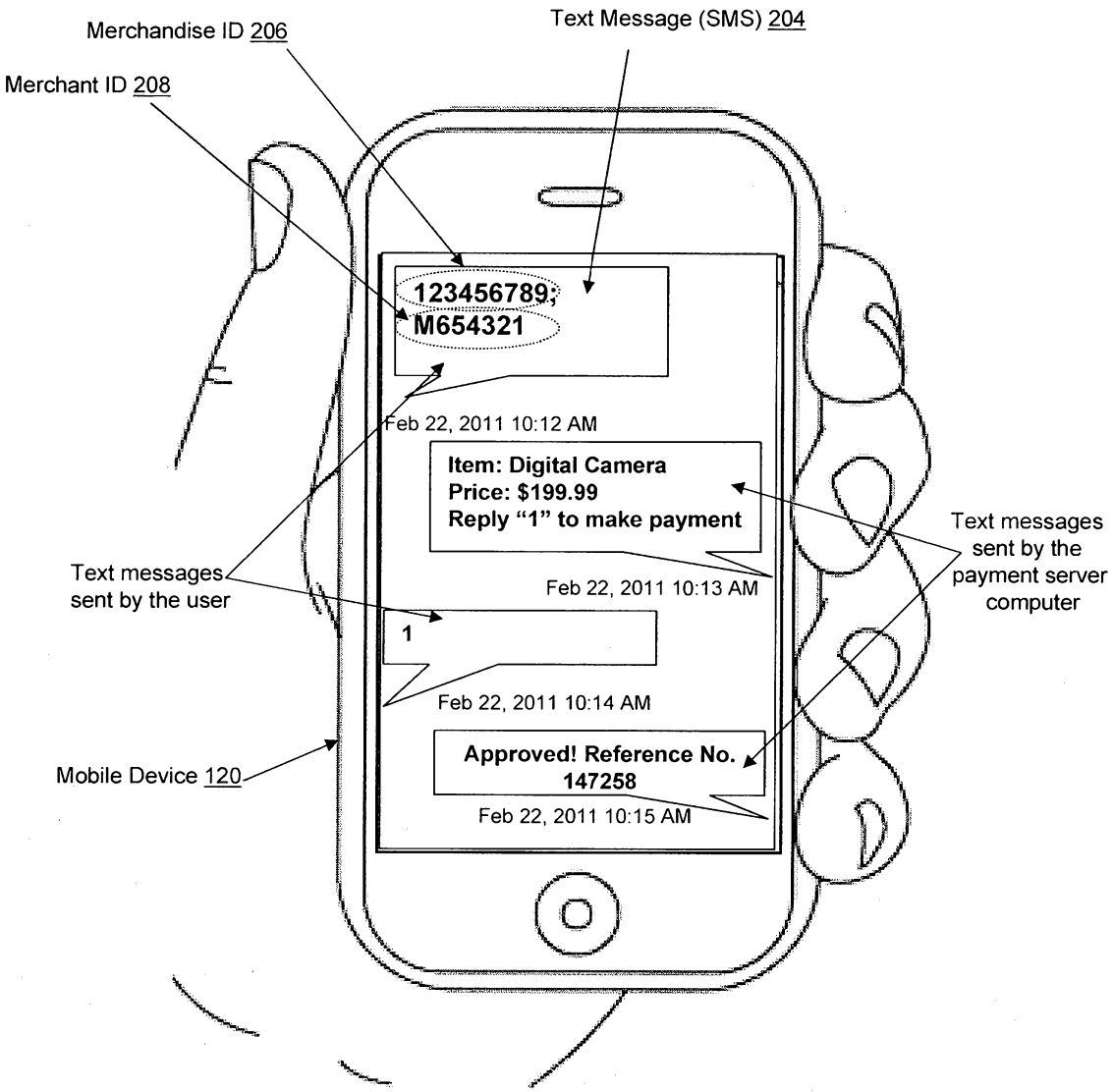
Merchandise ID 206
Text Message (SMS) 204
Merchant ID 208
123456789;
M654321
Feb 22, 2011 10:12 AM
Item: Digital Camera
Price: $199.99
Reply "1" to make payment
Text messages sent by the payment server computer
Feb 22, 2011 10:13 AM
Text messages sent by the user
1
Feb 22, 2011 10:14 AM
Approved! Reference No. 147258
Mobile Device 120
Feb 22, 2011 10:15 AM

FIG. 18

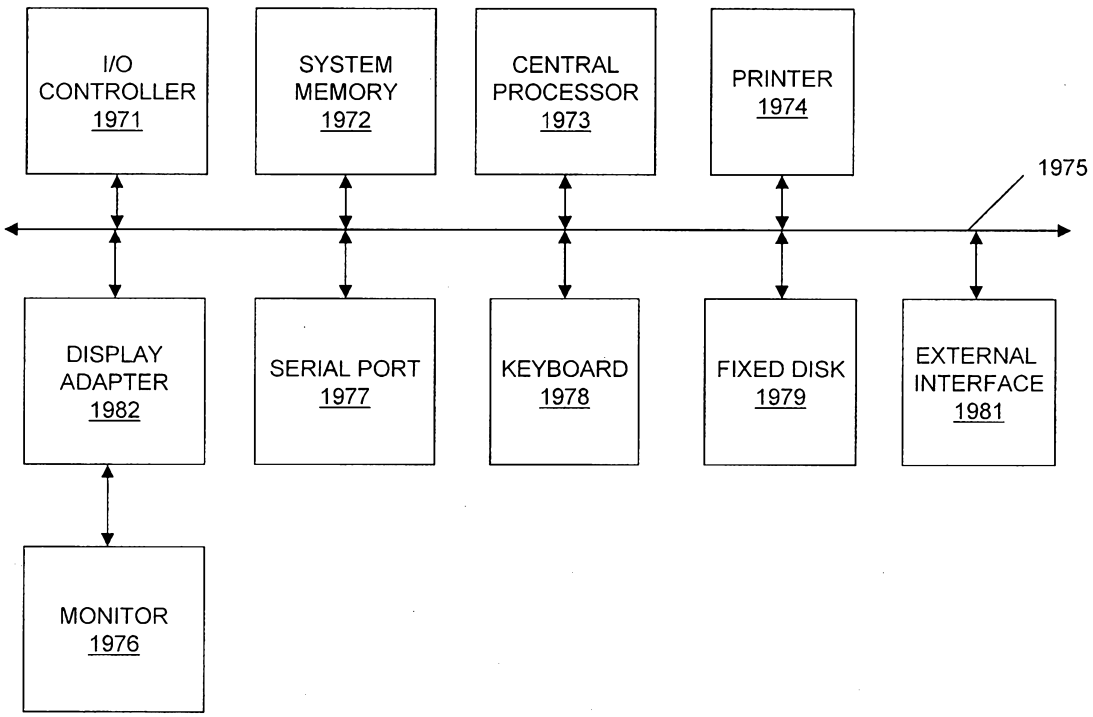
I/O CONTROLLER 1971
SYSTEM MEMORY 1972
CENTRAL PROCESSOR 1973
PRINTER 1974
1975
DISPLAY ADAPTER 1982
SERIAL PORT 1977
KEYBOARD 1978
FIXED DISK 1979
EXTERNAL INTERFACE 1981
MONITOR 1976

FIG. 19