

**Process, System and Computer Readable Medium for Providing a Prepaid Fuel Card
and Using a Personal Identification as a Prepaid Fuel Card**

CROSS REFERENCES TO RELATED APPLICATIONS

The present invention is related to commonly owned U.S. Patent Numbers 4,723,212, 4,910,672, 5,173,851, 5,612,868; 5,892,827; and 5,915,007, all of which are incorporated herein by reference.

BACKGROUND OF THE INVENTION

Field of the Invention:

This invention relates generally to frequent shopper, fuel, and credit cards, etc., and more specifically, to a system and process for providing prepaid fuel cards and for using frequent shopper cards as prepaid fuel cards.

Discussion of Background:

In recent years, various methods and systems have been developed for the distribution and use of frequent shopper cards, fuel and credit cards. A frequent shopper card may be in the form of an account encoded on a plastic card which triggers coupons/discounts to a card holder when presented at a point-of-sale (POS) terminal of a retail store. Similarly, a fuel card or credit card may be in the form of a plastic card with an account encoded therein and which allows purchase of fuel at a fuel station when presented by a card holder.

However, although the above-described systems are advantageous for providing coupons/discounts and fuel purchases, the above systems do not allow a consumer to purchase prepaid fuel.

SUMMARY OF THE INVENTION

Accordingly, one object of this invention is to provide a novel process, system and computer readable medium for allowing a consumer to purchase prepaid fuel.

Another object of the present invention is to provide a novel process, system and computer readable medium for using a customer's identification, such as a frequent shopper card, as a prepaid fuel card.

Another object of the present invention is to provide a novel process and system for

converting a customer's identification, such as a frequent shopper card, into a prepaid fuel card with minimal modification to existing customer identification systems.

Another object of the present invention is to improve the security of using a customer's identification, such as a frequent shopper card, as a prepaid fuel card.

The above and other objects are achieved according to the present invention by providing a new and improved process, system and computer readable medium for using a customer's identification, such as a frequent shopper card, as a prepaid fuel card in conjunction with a transfer certificate containing a transfer certificate identification. The present invention allows a customer to receive credit for pre-paid fuel by having the customer present their identification and the transfer certificate identification at the fuel pump when purchasing fuel. The invention maintains an account for the fuel credit associated with the customer's identification and transfer certificate identification.

Embodiments of the present invention allow a customer to obtain a transfer certificate when presenting their identification when purchasing goods, such as groceries, non fuel merchandise, or even fuel. The point of sale system associated with such a purchase records the customer's identification, conducts the purchase transaction, and may issue a transfer certificate. The issuance of the transfer certificate may depend upon any information available to the point of sale system, such as dollar value of the present purchase transaction, prior purchase history for the customer, the customer's family members, total dollar amount of the store purchases in a prior time period (e.g., one or more days, weeks, or months), for the day, total dollar amount or number of transfer certificates issued in a prior time period (e.g., one or more days, weeks, or months).

Fuel pumps where the customer will purchase the fuel are configured either to read a customer's identification media (such as a frequent shopper card) and transfer certificate identifications on transfer certificates or to allow the customer to enter into a keypad or terminal identifications (numbers, letters, combinations of numbers and letters or other characters) associated with either the frequent shopper card and/or the transfer certificates.

In one embodiment, a customer's account is credited for fuel as a result of the customer's payment for the fuel.

In another embodiment, the customer's account is credited for fuel as part of a

promotional program. Depending upon the legal terms associated with the transfer certificate, the customer may not be required to pay any money for a fuel purchase. Depending upon the legal terms associated with the transfer certificate, the customer may be required to pay some amount for a fuel purchase even if the dollar value associated with the fuel purchase equals or exceeds the dollar value of the fuel purchase. Depending upon the legal terms associated with the transfer certificate, the sponsor of the promotional activity may pay for a certain portion of the amount credited to the customer presenting a transfer certificate during a fuel purchase.

The transfer certificates may be distributed to the customer at a point-of-sale (POS) terminal during a customer's purchase. Alternatively, the transfer certificates may be provided to the customer at some other location, such as the customer's home address (via postal mail), via electronic mail addressed to the customer's email address, via a World Wide Web ("WWW") page that the customer downloads, or through other distribution means, as will be appreciated to those skilled in the relevant art.

Other aspects and advantages of the invention will become apparent from the more detailed description that follows, taken in conjunction with the drawings, which are briefly described below.

BRIEF DESCRIPTION OF THE DRAWINGS

A more complete appreciation of the invention and many of the attendant advantages thereof will be readily obtained as the same becomes better understood by reference to the following detailed description when considered in connection with the accompanying drawings, wherein:

Figure 1a is a top level block diagram of a system for allowing a customer to receive pre-paid fuel according to the present invention;

Figure 1b is a top level block diagram of a system for using a transfer fuel-credit certificate and a frequent shopper card as a prepaid fuel card according to the present invention;

Figures 2a-2d are top level flowcharts of a process of transferring fuel credit from a transfer fuel-credit certificate to a frequent shopper card according to the present invention;

Figures 3a-3b are top level block diagrams of a system for transferring fuel credit from a transfer fuel-credit certificate to a frequent shopper card according to the present invention;

Figures 4a and 4b are respective images of a frequent shopper card and a transfer fuel-credit certificate used in the process and system according to the present invention;

Figure 5 is a detailed schematic diagram of a general purpose computer used in a point-of-sale terminal, and a frequent shopper card server or a transfer fuel-credit certificate server of Figures 3a and 3b according to the present invention; and

Figures 6 and 7 illustrate detailed flowcharts of the methods of Figures 2a-2d according to the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring now to the drawings, wherein like reference numerals designate identical or corresponding parts throughout the several views, and more particularly to Figure 1a thereof, which illustrates an embodiment of a system using a transfer fuel-credit certificate and a customer identification, such as a frequent shopper card (FSC), to allow a customer to receive pre-paid fuel according to the present invention.

Figure 1a illustrates the two facilities involved in the operation of this embodiment of the present invention, the payment station 54 and the fuel station 240. The payment station 54 can be collocated with the fuel station 240, or these two locations can be separate. Collocated in this context means that the payment station is on the same premises as the fuel station, typically within 100 feet of the fuel station, and always within 100 yards of the fuel station.

The payment station 54 contains a certificate processor 42, which is connected to a customer ID reader 44 and a certificate generator 46, such as a printer. The customer ID reader 44 and certificate printer 46 should typically be located in proximity to each other, and can share a communications link to the certificate processor 42 if the certificate processor 42 is located remotely.

In embodiments which require payment by the customer for the pre-paid fuel credit, the certificate processor 42 may be a point-of-sale (POS) system located at a retail sales payment station in a retail store or similar environment.

In embodiments where the pre-paid fuel is credited to the customer's account without the customer explicitly paying for the fuel (i.e., where the fuel is provided as a promotional program), the certificate processor can be a dedicated controller or computer not physically located near the customer ID reader 44 or certificate generator 46.

The customer ID reader 44 is a device designed to read an identification, such as an identification number or code associated with a FSC or an identification number or code associated with a credit card or a check, or a personal biometric indicia, such as a fingerprint pattern or retinal scan pattern. The reader 44 transmits the identification to the certificate processor 42. Examples of customer ID readers 44 include, but are not limited to, devices which optically read printed bar codes on a FSC, magnetic stripe readers which read a magnetic stripe contained on the FSC, credit cards or other customer identification cards and which are encoded with the respective identifications, a Radio Frequency Identification (RF Identification) device reader to read RF Identification devices, a key pad which allows the customer to manually enter the identifications printed on the FSC, or other means.

Embodiments of the present invention may use customer ID readers which read a "smartcard" (i.e., a small card similar to a credit card which contains electronic memory and is able to store encrypted information identifying the person carrying the card and other data related to the carrier), or customer ID readers which measure biometrics associated with the customer, such as finger prints, iris patterns and other biometrics, etc., as will be appreciated to those skilled in the relevant art(s).

Embodiments of the invention may include more than one of the foregoing types of reader 44.

Certificate generator 46 produces the transfer certificates. The design of the certificate generator 46 is determined by the type of transfer certificate used by the particular embodiment of the invention. Examples of transfer certificates which different embodiments of the present invention might use include, but are not limited to, printed certificates with printed identification numbers, printed certificates with bar coded identification numbers, and plastic cards with an attached magnetic stripe containing an encoded identification number. Printed certificates may be generated on the certificate generator 46 consisting of a printer or graphics printer. A magnetic stripe encoder may be used in conjunction with magnetic stripe

encoded identification numbers.

Figure 1a shows a fuel database 56 which contains records of purchased fuel. The fuel database 56 maintains records of the transactions. The fuel database 56 may be located at either the payment station 54 or the fuel station 240, or elsewhere.

Figure 1a shows a fuel pump processor 52 which is typically an embedded control computer or equivalent device, and is typically contained in a fuel pump at the fueling station 240. The fuel pump processor 52 is connected to a fuel pump customer ID reader 48 and certificate reader 50. The customer ID reader 48 at the fuel pump performs essentially the same functions as the customer ID reader 44 at the payment station, i.e., capture of the FSC customer identification number, but is physically located at the fuel pump.

The certificate reader 50 contains means to read the transfer certificate identification from the transfer certificate, or a keypad allowing the customer to enter the transfer certificate identification, or the like

The fuel pump reader 48 and the certificate reader 50 are designed to be compatible with the encoding of the respective customer's identification on the FSC and the encoding of the transfer certificate identification on the transfer certificate. Examples of reader 48 and reader 50 include, but are not limited to, devices which optically read printed bar codes on the card or certificate, magnetic stripe readers which read a magnetic stripe contained on the card or certificate and encoded with the respective identifications, or a key pad which allows the customer to manually enter the personal identification printed on the card or certificate.

The operation of the embodiment of the present invention illustrated in Figure 1a is now described. A customer's identification is read by, keyed into, or determined by the customer ID reader 44.

If the customer is required to pay for the pre-paid fuel, the certificate processor 42 will also contain the functionality necessary to process the transaction (i.e., to receive input of relevant information, to record the customer's payment, and to determine what terms of credit to provide to the customer). A certificate processor 42 in the latter case may include or be part of a POS system that is used to collect payment for purchases of items (such as goods and other services) besides a transfer certificate at the payment station 54.

The certificate processor 42 determines how much fuel to credit to the customer's

account. Examples of promotional programs which would sponsor discounted fuel include, but are not limited to, rewarding larger pre-paid purchases of fuel, rewarding high volume purchasers of a sponsoring company, providing an incentive to purchase a specified product and randomly providing discounts to customers as part of a purchasing sweepstakes.

The certificate processor 42 generates an identification which will be associated with the transfer certificate to be provided to the customer. The identifications generated for different certificates differ from one another. The certificate processor 42 sends the transfer certificate identification number associated with the transfer certificate, the identification associated with the customer, and the terms of the fuel credit for the transfer certificate to the fuel database 56. The fuel database 56 stores the data transmitted to it from the certificate processor 42.

The certificate processor 42 will also command the certificate generator 46 to generate the appropriate transfer certificate.

Once the above information is stored in the fuel database 56, the customer is then able to receive the pre-paid fuel at a fueling station 240.

The customer may receive the fuel credit associated with a transfer certificate when obtaining fuel at the fuel station 240. At the fuel station and during the course of conducting the transaction in which the customer obtains fuel from the fuel station, the fuel pump customer ID reader 48 obtains the customer's identification. Merely presenting the customer's identification may be sufficient information for the fuel station to credit the customer's fuel transaction based upon fuel credit information stored in the fuel database.

The present invention may provide an additional level of security by conditioning receipt of fuel credit upon receipt of both the customer identification and transfer certificate identification. In this embodiment, fuel pump processor compares the transfer certificate identification to the fuel credit account for that customer identification stored in the fuel database, and only provides a fuel credit if the transfer certificate identification received as the fuel station matches a transfer certificate identification for the customer stored in the fuel database. The requirement to present both of the identifications, which are contained on different physical objects, prevents an unauthorized person from receiving the pre-paid fuel by obtaining only the customer's identification or the transfer certificate.

Once the customer has presented both the customer's identification and the transfer certificate identification, the fuel pump processor will retrieve the data stored in the fuel database 56 associated with the customer's identification. The data stored in the fuel database 56 includes customer identification associated with identifications of valid transfer certificates credited to the customer's account as well as the amount of fuel credited in association with each transfer certificate. The fuel pump processor 52 then determines if the transfer identification number determined by the certificate reader 50 matches a valid pre-paid fuel credit, indicating a valid transfer certificate. If the transfer certificate is valid and associated with the customer's identification, the fuel pump processor 52 then determines the amount of pre-paid fuel available, based upon information stored in the fuel database 56. The fuel pump processor instructs the pump controller 58 to dispense at least the amount of credited fuel.

Figure 1b illustrates a top level block diagram of another embodiments of the present invention which more independently use a transfer fuel certificate (TFC) and a FSC as a prepaid fuel card according to the present invention to allow a customer to receive credit for pre-paid fuel.

In Figure 1b, a point-of-sale (POS) terminal 200 of a retail store issues a TFC 230 to a customer based on a fuel credit amount requested. The TFC 230 may be used directly at a fuel station 240 as a prepaid fuel card or the user may transfer her fuel credit from the TFC 230 to an account for her FSC 100, and the FSC may then be used as a prepaid fuel card at the fuel station 240. The fuel station 240 may be further configured to communicate with a transfer fuel-credit certificate server (TFCS) 400 or frequent shopper card server (FSCS) 450 to maintain transaction information as will be later described.

Alternative embodiments of the present invention may deliver transfer certificates to customers through various facilities. In addition to printing at a POS terminal for delivery to the customer as shown in Figure 1b, transfer certificates may be pre-printed and delivered to the customer through various methods, such as through conventional mail, electronic mail, in conjunction with a visit to a web site or through other distribution means, as will be appreciated to those skilled in the relevant art(s).

The operation of embodiments of the present inventions illustrated in Figure 1b is as

described below. The present invention allows the generation of a secure transfer fuel credit certificate 230 enabling a retailer to provide prepaid fuel to a shopper. The TFC 230 contains a customer identification number (PIN). The present invention can use any technique to determine a PIN to associate with the transfer fuel-credit certificate, including but not limited to a pre-stored set of PIN or more secure techniques, such as is taught in U.S. Patent Number 5,892,827 directed to purchasing prepaid phone time. The TFC 230 is generated at the POS terminal 200 in real time in the form of a printed slip bearing a customer identification number (PIN) and instructions. Generating a PIN using the more secure method, for example, as described in U. S. Patent Number 5,892,827 allows the generation of the PIN to be accomplished in real time, advantageously, deterring fraud, theft, and misuse, etc., of the phone calling certificates.

In Figure 2a, at step S100, a purchaser requests a TFC 230 with a predetermined fuel credit amount (e.g., 5, 10, 15, or 20 dollars, etc.) At step S200, a point-of-sale (POS) terminal 200 generates the transfer fuel-credit certificate 230 with a first PIN (PIN #1) based on the fuel credit amount requested by the purchaser. The PIN number on the TFC 230 may be generated, for example, as taught in U.S. Patent No. 5,892,827. The POS terminal 200 then communicates the fuel credit amount to the TFCS 400, which in turn stores the amount purchased in association with PIN #1.

In Figure 2b, at step S300, the user calls, for example, a 1-800 number imprinted on the TFC 230 and when prompted follows menu options which require the PIN #1 from the transfer certificate and/or the PIN #2 from the FSC 100. At step S400, a TFCS presents menu options to the user after prompting the user for the PIN #1. These menu options, for example, include: (1) adding fuel credit to the FSC 100 using PIN #2 from the FSC 100; (2) providing information for obtaining a FSC or a transfer fuel-credit certificate; and (3) allowing the customer to speak with a customer service representative (CSR). It is noted the user could call a 1-800 number imprinted on the FSC100, in which case steps S700 and S800 of Figure 2d, as will be later described, would take place.

The above-described method shown in Figures 2a and 2b is referred to as a "prepaid" environment since the user prepays for the transfer fuel-credit certificate 230 at the point-of-sale (POS) terminal 200. In a typical "prepaid" transaction, the customer tells the cashier a

fuel credit amount they would like (e.g., 5, 10, 15, 20 dollars, etc.), the cashier keys corresponding price look-up (PLU) code or scans a 5, 10, 15, 20 dollars, etc., scan card, and the point-of-sale terminal prints a transfer fuel-credit certificate 230 for the requested amount. The cashier hands the customer the TFC 230 and the fuel credit can be transferred to the FSC 100 or used immediately at the fuel station 240 since TFC 230 are activated as they are printed (see, e.g., U.S. Patent No. 5, 892,827). The purchase information is then transferred to the TFCS 400 and stored therein in association with the PIN identifying the TFC. It is further noted that although the above description describes the purchase of the TFC, the purchase price of this certificate may be discounted or reduced to zero as part of a promotional program.

The method of the present invention operating in one embodiment in a "promotional" environment will now be described with reference to Figures 2c and 2d.

In Figure 2c, at step S500, a user presents a FSC 100 having a PIN #2 encoded therein as either a printed number, a printed bar code, magnetically encoded data contained on a magnetic strip, or through any equivalent method.. At step S600, a POS terminal 200 generates a transfer fuel-credit certificate 230 with a fuel credit amount (e.g., 5, 10, 15, or 20 dollars, etc.) having a PIN #1 encoded therein and/or coupons/discounts based on in-store promotions. The PIN #1 may be generated, for example, as taught in U.S. Patent No. 5,892,827 to Beach.

In Figure 2d, at step S700, the user calls, for example, a 1-800 number imprinted on the FSC 100 and when prompted follows menu options which require the PIN #2 from the FSC and/or the PIN #1 from the transfer fuel-credit certificate 230. At step S800, a FSCS presents menu options to the user after prompting the user for the PIN #2. These menu options, for example, include: (1) adding fuel credit to the FSC 100 using PIN #1 from the TFC 230; and (2) allowing the customer to speak with a customer service representative (CSR). It is noted the user could call a 1-800 number imprinted on the transfer fuel-credit certificate in which case steps S300 and S400 of Figure 2b would take place.

Figure 3a illustrates the system of the present invention in the prepaid and promotional environments as previously discussed. In the prepaid environment the user requests the TFC 230 at the point-of-sale terminal 200. The point-of-sale terminal 200

includes the point-of-sale computer 210 coupled to a printing device 220 via a data path D2. The point-of-sale terminal 200 issues and prints the TFC 230 which is encoded with a first PIN (PIN #1) as previously discussed with reference to Figures 2a and 2b.

In the promotional environment, the FSC 100 having the second PIN (PIN #2) encoded thereon is transmitted to the point-of-sale terminal 200 via a data path D1. The data path D1 may include, for example, a magnetic card reader, an optical reading device, in-store scanner, etc., as is required by the encoding method used by the FSC. The point-of-sale terminal 200 issues and prints the TFC 230 with a fuel credit amount (e.g., 5, 10, 15, or 20 dollars, etc.) having the PIN #1 and/or coupons/discounts based on in-store promotions as previously discussed with reference to Figures 2c and 2d.

In Figure 3b, at a telephone 300, the user calls, for example, a 1-800 number printed on the FSC 100 or the TFC 230 and connects over phone connection D3 to a FSCS 450 or a TFCS 400 which provides the user with menu options after prompting the user for the PIN #1 and/or PIN #2 as discussed with reference to Figures 2b and 2d. It is noted that the FSCS 450 and the TFCS 400 may be implemented as two separate computer systems or as one computer system. In addition, the user may connect to the FSCS 450 and/or the TFCS 400 over a modem connection, Internet connection, network connection, through an automated kiosk (i.e., a device similar to a bank automated teller machine), etc., configured to allow a user to enter PINs associated with his or her identification and transfer certificate, at which time the user is presented with on-screen menu options after the user is prompted for the PIN #1 and/or PIN #2.

In Figure 4a, there is illustrated the FSC 100 including a PIN (PIN #2) and calling instructions 102 and a magnetic strip 104 for encoding the PIN, customer identification, etc. therein. In Figure 4b, there is illustrated a TFC 230 including a PIN (PIN #1) and calling instructions 232 and a magnetic strip 234 for encoding the PIN, customer identification, etc. therein. As previously discussed, the PIN #1 may be generated, for example, as taught in pending U.S. Patent No. 5,892,827.

Figure 5 shows, for example, a detailed schematic diagram of the computer 210 of the point-of-sale terminal 200 and of the computer for the FSCS 450 and/or the TFCS 400 shown in Figure 3b. The computer 210/400/450 may be a general purpose computer including a

display 2, such as a conventional display device or a touch screen monitor with a touch-screen interface; a keyboard and/or numeric keypad 4; a pointing device or bar code reader 6; a mouse pad or a in-store scanner 8; a hard disk 10; a floppy drive or card reader 12; CD ROM or tape drive 14 with media 16; and a mother board 18. The mother board 18 includes a microprocessor 20; a random access memory (RAM) 22; a read-only memory (ROM) 24; I/O ports 26 for coupling to another computer, etc.; a specific hardware interface circuit 28 for performing specialized hardware/software functions, such as modem interfacing, serial-to-parallel and parallel to serial conversion, printer conflict mediation, sound processing, image processing, etc.; a microphone 30; and a speaker or speakers 32.

The computer programs for implementing processes of Figures 2, 6 and 7 can be stored, for example, in hard disk 10 or may be loaded via floppy drive 12 of the general purpose computer 210/400/450. In addition, data structures for storing information such as PINs, a total fuel credit amount, user account information, etc., may be stored in RAM 22 and/or the hard disk 10 of the general purpose computer 210/400/450. It is noted that the PINs may be stored as PIN files in a non-sequential manner, for example, as taught in pending U.S. Patent No. 5,892,827.

The details of the operation of the method of Figure 2b according to the present invention will now be described with reference to Figure 6. In Figure 6, after the TFC 230 has been issued at the point-of-sale terminal 200 as described with reference to Figures 2a, 2b, 3a and 3b, at step S302, the user dials a number printed on the transfer fuel-credit certificate and the transfer fuel-credit certificate server 400 prompts the user for the PIN #1 printed on the transfer fuel-credit certificate at step S410. Once the user enters the PIN #1 from the transfer fuel-credit certificate, at step S420, the transfer fuel-credit certificate server presents the user with menu options, for example, including: (1) adding fuel credit to the FSC using PIN #2 from the FSC; (2) providing further information for obtaining a FSC or a TFC; and (3) allowing the customer to speak with a customer service representative. At step S310, the user selects any one of the options (1)-(3) provided by the transfer fuel-credit certificate sever at step S420.

If the user selects option (1) at step S316, the transfer fuel-credit certificate server prompts the user for the PIN #2 at step S440. At step S442, the transfer fuel-credit certificate

server adds fuel credit determined from the PIN #1 to a user account corresponding to the PIN #2 and the user's actions are completed. The TFCS may maintain a database of transfer certificates (i.e., PINs #1) that have been used by that customer (i.e., PINs #2) and not allow that customer or any other customer to further add credit using a PIN #1 that is already used. The transfer fuel-credit certificate server 400 may include a database stored on the hard disk 10 including information regarding the user account corresponding to PIN #2 and the current fuel credit amount for this account which is then incremented by the added fuel credit provided to the TFCS by the POS terminal 200 at the time of purchase. Tracking of the fuel credits used by the customers in purchasing fuel and to be debited from their accounts having a fuel credit amount is accomplished by having the fuel station 240 notify the TFCS of fuel purchases made in conjunction with the customer's account, and the TFCS will deduct the value of the notified fuel purchases from the customer's account.

If the user selects option (2) at step S318, the transfer fuel-credit certificate server provides the user information on obtaining a FSC and/or a transfer fuel-credit certificate at step S450 and this operation is completed.

If the user selects option (3) at step S320, the transfer fuel-credit certificate server connects the user to a customer service representative at step S460 and this operation is completed.

The details of the operation of the method of Figure 2d according to the present invention will now be described with reference to Figure 7. In Figure 7, after the TFC 230 has been issued at the point-of-sale terminal 200 as described with reference to Figures 2c, 2d, 3a and 3b, at step S702, the user dials a number printed on the FSC and the FSCS 400 prompts the user for the PIN #2 printed on the FSC at step S810. Once the user enters the PIN #2 from the FSC, at step S820, the FSCS presents the user with menu options, for example, including: (1) adding fuel credit to the FSC using PIN #1 from the transfer fuel-credit certificate; and (2) allowing the customer to speak with a customer service representative (CSR). At step S710, the user selects any one of the options (1)-(2) provided by the FSCS at step S820.

If the user selects option (1) at step S716, the FSCS prompts the user for the PIN #1 at step S840. At step S842, the FSCS adds fuel associated with PIN #1 to a user account

corresponding to the PIN #2 and this operation is completed. The server may further note the use of PIN #1 by the customer associated with PIN #2 and not allow the customer (i.e., a user who enters PIN #2) to reuse PIN #1 to obtain credit. Precluding multiple uses of PIN #1 is especially useful in embodiments of the present invention which operate in the promotional mode and issue multiple certificates with PIN #1 that are identical.

The FSCS 400 may include a database stored on the hard disk 10 including information regarding the user account corresponding to PIN #2 and the current fuel credit amount for this account which is then incremented by the added fuel credit. Tracking of the fuel credits used by the customers in purchasing fuel and to be debited from their accounts having a fuel credit amount is accomplished by having fuel station 240 notify the FSCS or TFCS of fuel purchases and deducting the value of the notified fuel purchase from the balance stored in association with the purchaser's account.

If the user selects option (2) at step S718, the FSCS connects the user to a customer service representative at step S850 and this operation is completed.

According to the present invention, fuel is "prepaid" in-store at the point-of-sale terminal and a TFC 230 is issued that bears a unique PIN number associated with the certificate (PIN #1). At the fuel dispenser, the consumer inserts the TFC 230 or FSC 100 into the fuel/debit/credit card reader of the fuel pump. A prompt screen directs the consumer to enter their "Check-Out Fuel PIN Number" on the touch pad (i.e., PIN #1 or PIN #2). Using the unique PIN number issued on the TFC 230 or the FSC 100, the consumer enters the associated digits on the key pad. The fuel pump will communicate the entered PIN number to either the FSCS or TFCS and the servers will determine if the entered PIN is associated with un-delivered pre-paid fuel. If the entered PIN is valid and associated with pre-paid fuel, the fuel pump is then authorized to dispense up to the prepaid amount.

Tracking of the dollars used by the customers to be debited from their prepaid fuel credit amount is accomplished by having fuel station 240 notify the FSCS or TFCS of fuel purchases and deducting the value of the notified fuel purchase from the balance stored in association with the purchaser's account. Once all pre-paid fuel has been purchased, the respective server will no longer authorize purchasing of fuel using the associated PIN number.

The present invention applies to fuel and convenience stores and mass merchandise and "hyper-market" (i.e., a grocery store with fuel or mini-convenience store) store locations. Essentially, the present invention applies anywhere that fuel is sold. Prepaid fuel can be discounted by the retailer at various levels associated with different program objectives. Fuel discounts can be dependent on how much the consumer purchases in advance, or upon their store purchase history. Discounts and/or free fuel can also be funded by manufacturers seeking a cross-purchase tie to fuel (e.g., purchase of a product and swipe of store loyalty card, such as a FSC, generates a one-time discount on a next fuel purchase triggered by a PIN issued on the associated fuel-credit certificate). Instant win sweepstakes triggered by universal product codes (UPCs) or by loyalty/shopper card use can issue fuel-credit certificates with active PIN numbers for immediate fuel purchases. Additionally, fuel-credit certificates triggered by UPCs or cashier initiated transactions will encourage prepaid fuel or in-store product tie-ins. Transfer certificates may also be generally issued to customers to encourage the customer to patronize the retailer's fuel service and encourage use of the customer's identification, such as the customer's FSC or a particular brand of credit card.

The present invention thus (i) creates an opportunity to promote products and fuel jointly; (ii) establishes a value added element to traditional fuel cards that encourages loyalty and in-store traffic; (iii) ties the point-of sale marketing system to activity that takes place at the pump, hence, immediately extending reach into new channels (e.g., convenience, fuel, mass merchandise, hyper market, etc.) and (iv) creates new manufacturer client opportunities (e.g., automotive products, oil companies, automotive parts, service companies, etc.)

The mechanisms and processes set forth in the present description may be implemented using a conventional general purpose computers (e.g., the general purpose computers 210/400/450) programmed according to the teachings in the present specification (e.g., Figs. 2, 3, 6 and 7), as will be appreciated to those skilled in the relevant art(s). Appropriate software coding can readily be prepared by skilled programmers based on the teachings of the present disclosure, as will also be apparent to those skilled in the relevant art(s). However, as will be readily apparent to those skilled in the art, this invention may also be implemented by the preparation of application-specific integrated circuits or by interconnecting an appropriate network of conventional component circuits.

The present invention thus also includes a computer-based product which may be hosted on a storage medium and include instructions which can be used to program a microprocessor to perform processes in accordance with the present invention. This storage medium can include, but is not limited to, any type of disk including floppy disks, optical disks, CD-ROMs, magneto-optical disks, ROMs, RAMs, EPROMs, EEPROMs, flash memory, magnetic or optical cards, or any type of media suitable for storing electronic instructions.

Obviously, numerous modifications and variations of the present invention are possible in light of the above teachings. It is therefore to be understood that within the scope of the appended claims, the invention may be practiced otherwise than as specifically described herein.

Claims:

1. A computer implemented process, comprising the steps of:
receiving a customer identification and a transfer certificate identification from a customer at a fuel pump during a fuel transaction;
determining if a transfer certificate identification is stored in association with said customer identification in a fuel database during said fuel transaction; and
applying credit terms stored in association with said transfer certificate to said fuel transaction, if said transfer certificate identification is stored in association with said customer identification in said fuel database.
2. The process of Claim 1, wherein said customer identification comprises a frequent shopper card.
3. The process of Claim 1, wherein said customer identification comprises a credit card.
4. The process of Claim 1, wherein said customer identification comprises an RF identification device.
5. The process of Claim 1, wherein said customer identification comprises a smart card.
6. The process of Claim 1, wherein said customer identification comprises measured customer biometrics.
7. A computer system configured to perform the steps recited in one of Claims 1-6.
8. A storage medium storing a program for performing the steps recited in one of Claims 1-6.
9. A computer implemented process, comprising the steps of:
receiving a customer identification during a transaction in which said customer is purchasing goods or services but not receiving fuel;
determining, based upon said customer identification and said goods or services being purchased by said customer, credit for fuel and conditions necessary for said customer to obtain said credit; and
recording in a fuel database said customer identification and in association with said



customer identification a transfer certificate identification and said terms.

10. The process of Claim 9, wherein said customer identification comprises a frequent shopper card.

11. The process of Claim 9, wherein said customer identification comprises a credit card.

12. The process of Claim 9, wherein said customer identification comprises an RF identification device.

13. The process of Claim 9, wherein said customer identification comprises a smart card.

14. The process of Claim 9, wherein said customer identification comprises measured customer biometrics.

15. A computer system configured to perform the steps recited in one of Claims 9-14.

16. A storage medium storing a program for performing the steps recited in one of Claims 9-14.

17. A computer implemented process for using a customer identification or a transfer certificate as a prepaid fuel card comprising the steps of:

issuing a transfer certificate with a predetermined fuel-credit and having a first personal identification number;

adding the predetermined fuel-credit to an account, associated with the customer identification having a second personal identification number, based on the first personal identification number; and

one of the following steps:

using the transfer certificate to purchase fuel at a fuel dispenser based on the predetermined fuel-credit and the first personal identification number, and

using the customer identification to purchase fuel at a fuel dispenser based on the account and the second personal identification number.

18. The process of Claim 17, wherein said step of adding the predetermined fuel-credit to the account further comprises the steps of:

recording said second personal identification number in association with said first identification number; and

prohibiting future adding of credit to said account using said first identification number.

19. The process of Claim 17, wherein the step of issuing a transfer certificate comprises one of the steps of:

issuing the transfer certificate based on a user request; and
issuing the transfer certificate based on promotional activities.

20. The process of Claim 17, wherein the step of adding the predetermined fuel-credit to the account comprises the steps of:

a user connecting to a server;
presenting menu options to the user at the server; and
the user responding to the menu options.



21. The process of Claim 17, wherein said customer identification comprises a frequent shopper card.

22. The process of Claim 17, wherein said customer identification comprises a credit card.

23. The process of Claim 17, wherein said customer identification comprises an RF identification device.

24. The process of Claim 17, wherein said customer identification comprises a smart card.

25. The process of Claim 17, wherein said customer identification comprises measured customer biometrics.

26. The process of Claim 17, wherein the step of adding the predetermined fuel-credit to the account comprises the steps of:

extracting the predetermined fuel-credit from the transfer certificate based on the first personal identification number;

determining existing fuel-credit in the account based on the second personal identification number; and

adding the predetermined fuel-credit to the existing fuel-credit.

27. The process of Claim 20, wherein the step of the user connecting to the server comprises the step of the user connecting to the server via a telephone, and the step of the

user responding to the menu options comprises the user responding to the menu options via keystrokes at a keypad of the telephone.

28. The process of Claim 27, wherein the step of the user connecting to the server comprises the step of the user connecting to the server via an Internet connection and the step of the user responding to the menu options comprises the user manipulating a user interface of a terminal connected to the Internet.

29. The process of Claim 27, wherein the step of the user connecting to the server comprises the step of the user operating a kiosk which is in communication with said server and the step of the user responding to the menu options comprises the user manipulating a user interface of said kiosk.

30. The process of Claim 29, wherein said kiosk is integral to said fuel dispenser.

31. A computer system configured to perform the steps recited in one of Claims 17-30.

32. A storage medium storing a program for performing the steps recited in one of Claims 17-30.

