

IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF OKLAHOMA

FILED

AUG 3 2012

Phil Lombardi, Clerk
U.S. DISTRICT COURT

[1] EXCENTUS CORPORATION,

Plaintiff,

v.

[1] QUIKTRIP CORPORATION,

[2] REASOR'S, INC., and

[3] REASOR'S LLC,

Defendants.

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Case No. **12 CV - 443 GKF TLW**

JURY TRIAL DEMANDED

ORIGINAL COMPLAINT

Plaintiff Excentus Corporation ("Excentus"), for its Original Complaint against Defendants QuikTrip Corporation ("QuikTrip"), Reasor's, Inc., and Reasor's LLC (collectively, "Defendants"), alleges as follows:

PARTIES

1. Excentus Corporation is a Texas corporation, having a principal place of business at 14241 Dallas Parkway, Suite 1200, Dallas, Texas 75254.

2. Upon information and belief, Defendant QuikTrip is an Oklahoma corporation, having a principal place of business at 4705 S. 129th East Avenue, Tulsa, OK 74134. QuikTrip has an agent for service of process: Stuart C. Sullivan, 4705 S. 129th East Avenue, Tulsa, OK 74134.

3. Upon information and belief, Defendant Reasor's, Inc. is an Oklahoma corporation, having a principal place of business at 200 W. Choctaw St., Tahlequah, OK 74464. Reasor's, Inc. has an agent for service of process: Janet E. Reasor, 202 W. Choctaw St., Tahlequah, OK 74464.

4. Upon information and belief, Defendant Reasor's LLC is an Oklahoma limited liability company, having a principal place of business at 200 W. Choctaw St, Tahlequah, OK 74464. Reasor's LLC has an agent for service of process: Stephen P. Martin, 200 W. Choctaw St., Tahlequah, OK 74464.

JURISDICTION

5. This Court has original subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a) because this action arises under the patent laws of the United States. This Court has original subject matter jurisdiction over the common law unfair competition claims pursuant to 28 U.S.C. § 1338(b) because the claims are joined with substantial and related claims under the patent laws of the United States, or alternatively, this Court has supplemental subject matter jurisdiction over the common law claims pursuant to 28 U.S.C. § 1367 because the claims are so related to the patent claims that they form the same case or controversy under Article III of the United States Constitution. In the alternative, this Court has subject matter jurisdiction over this entire action pursuant to 28 U.S.C. § 1332 because this action is between citizens of different states and the matter in controversy exceeds \$75,000.00.

6. The Court has personal jurisdiction over the Defendants because the Defendants do business in the State of Oklahoma and this District and have established minimum contacts with the forum by purposefully directing their activities at Oklahoma residents such that the exercise of jurisdiction over the Defendants would not offend traditional notions of fair play and substantial justice. The Defendants are also continuously and systematically present in the State of Oklahoma. Further, the Defendants have consented to this Court's jurisdiction by appointing registered agents for service of process in the State of Oklahoma.

VENUE

7. The Defendants do business in and reside in this District. Venue is proper in this District pursuant to 28 U.S.C. § 1391 (b)-(d).

FACTS

8. Randy Nicholson (“Nicholson”) conceived of many of the inventions claimed in the patents-in-suit, reduced them to practice, and sought patents for them (“Nicholson Patents”). Nicholson is recognized as a thought-leader and pioneer of many aspects of the innovative technology that has been implemented in the fuel industry in recent years, including such innovations as unattended fuel sites for commercial fleets, pay-at-the-pump technology (for which he was recognized by USA Today), and customer loyalty programs relating to fuel discounts. In late 1986, Nicholson founded Auto-Gas Systems, Inc. (“Auto-Gas”) and over the years conceived of and successfully implemented many of these inventions through Auto-Gas and an acquired subsidiary, Centego, and further commercialized the patents-in-suit by way of licensing them to third parties that paid significant license fees to utilize the proprietary technology.

9. Excentus, also a pioneer of technology and innovations in the fuel industry, was founded in 1996 for the purpose of developing fuel marketing technology and services for commercial and retail fuel operations.

10. In September 2008, Excentus acquired Centego from Auto-Gas, which included, among other things, the Nicholson Patents, which have been assigned to Excentus. As part of this transaction, Auto-Gas became a major shareholder of Excentus and Nicholson became a member of Excentus’ Board of Directors, a position that he holds to this day.

11. Both Excentus and Auto-Gas created successful fuel discount products and programs through extensive time, labor, skill, and money. Excentus now owns the Auto-Gas fuel discounts products, programs, proprietary technology, and confidential information.

12. The acquisition by Excentus of the Nicholson Patents has aligned the critical patents for customer loyalty programs relating to fuel with the market leader in the industry. Today, Excentus is the market leader and provides its patented technology and services to numerous retailers in the United States.

13. Reasor's, Inc. and Reasor's LLC (collectively, "Reasor's") operate grocery stores that participate in the Reasor's fuel discount program ("Reasor's Rewards Program").

14. QuikTrip owns and/or operates fuel stations that participate in the Reasor's Rewards Program.

15. Reasor's owns and/or operates Lil' Reasor's fuel stations that participate in the Reasor's Rewards Program.

INFRINGEMENT OF U.S. PATENT NO. 6,321,984

16. Excentus incorporates by reference paragraphs 1-15 as if fully set forth herein.

17. On November 27, 2001, U.S. Patent No. 6,321,984 ("the '984 Patent") was duly and legally issued for an invention entitled "Adjustable Price Fuel Dispensing System." A copy of the '984 Patent is attached as Exhibit A.

18. The '984 Patent was assigned to Excentus, which holds all rights and interests in the '984 Patent.

19. The Defendants have engaged and are engaging in unauthorized conduct and activities that violate 35 U.S.C. § 271 et seq., constituting direct infringement, either literally or under the doctrine of equivalents, of one or more claims of the '984 Patent, including but not

limited to the Reasor's Rewards Program infringing at least claims 1, 8, 14, and 15 of the '984 Patent.

20. Upon information and belief, QuikTrip controls or directs Reasor's, by virtue of one or more agency relationships or other contractual obligations, to infringe the '984 Patent, which is necessary in order for the Reasor's Rewards Program to function, and therefore, QuikTrip indirectly infringes the '984 Patent by inducing Reasor's to infringe the '984 Patent or by contributing to the infringement of the '984 Patent.

21. The acts of infringement by the Defendants have caused damage to Excentus, and Excentus is entitled to recover from the Defendants the damages sustained by Excentus as a result of its wrongful acts in an amount subject to proof at trial. The infringement of the '984 Patent will continue to damage Excentus' business, causing irreparable harm (including loss of market share), for which there is no adequate remedy at law, unless it is enjoined by this Court.

22. Furthermore, the infringements of the '984 Patent by the Defendants are willful and deliberate, entitling Excentus to increased damages under 35 U.S.C. § 284 and to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

INFRINGEMENT OF U.S. PATENT NO. 6,332,128

23. Excentus incorporates by reference paragraphs 1-22 as if fully set forth herein.

24. On December 18, 2001, U.S. Patent No. 6,332,128 ("the '128 Patent") was duly and legally issued for an invention entitled "System and Method of Providing Multiple Level Discounts on Cross-Marketed Products and Discounting a Price-Per-Unit-Volume of Gasoline." A copy of the '128 Patent is attached as Exhibit B.

25. The '128 Patent was assigned to Excentus, which holds all rights and interests in the '128 Patent.

26. The Defendants have engaged and are engaging in unauthorized conduct and activities that violate 35 U.S.C. § 271 et seq., constituting direct infringement, either literally or under the doctrine of equivalents, of one or more claims of the '128 Patent, including but not limited to the Reasor's Rewards Program infringing at least claims 1-5 and 20-25 of the '128 Patent.

27. Upon information and belief, QuikTrip controls or directs Reasor's, by virtue of one or more agency relationships or other contractual obligations, to infringe the '128 Patent, which is necessary in order for the Reasor's Rewards Program to function, and therefore, QuikTrip indirectly infringes the '128 Patent by inducing Reasor's to infringe the '128 Patent or by contributing to the infringement of the '128 Patent.

28. The acts of infringement by the Defendants have caused damage to Excentus, and Excentus is entitled to recover from the Defendants the damages sustained by Excentus as a result of their wrongful acts in an amount subject to proof at trial. The infringement of the '128 Patent will continue to damage Excentus' business, causing irreparable harm (including loss of market share), for which there is no adequate remedy at law, unless it is enjoined by this Court.

29. Furthermore, the infringements of the '128 Patent by the Defendants are willful and deliberate, entitling Excentus to increased damages under 35 U.S.C. § 284 and to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

INFRINGEMENT OF U.S. PATENT NO. 6,732,081

30. Excentus incorporates by reference paragraphs 1-29 as if fully set forth herein.

31. On May 4, 2004, U.S. Patent No. 6,732,081 ("the '081 Patent") was duly and legally issued for an invention entitled "Method for Providing Price-Per-Unit Discounts for Fuel to a Customer." A copy of the '081 Patent is attached as Exhibit C.

32. The '081 Patent was assigned to Excentus, which holds all rights and interests in the '081 Patent.

33. The Defendants have engaged and are engaging in unauthorized conduct and activities that violate 35 U.S.C. § 271 et seq., constituting direct infringement, either literally or under the doctrine of equivalents, of one or more claims of the '081 Patent, including but not limited to the Reasor's Rewards Program infringing at least claim 11 of the '081 Patent.

34. Upon information and belief, QuikTrip controls or directs Reasor's, by virtue of one or more agency relationships or other contractual obligations, to infringe the '081 Patent, which is necessary in order for the Reasor's Rewards Program to function, and therefore, QuikTrip indirectly infringes the '081 Patent by inducing Reasor's to infringe the '081 Patent or by contributing to the infringement of the '081 Patent.

35. The acts of infringement by the Defendants have caused damage to Excentus, and Excentus is entitled to recover from the Defendants the damages sustained by Excentus as a result of their wrongful acts in an amount subject to proof at trial. The infringement of the '081 Patent will continue to damage Excentus' business, causing irreparable harm (including loss of market share), for which there is no adequate remedy at law, unless it is enjoined by this Court.

36. Furthermore, the infringements of the '081 Patent by the Defendants are willful and deliberate, entitling Excentus to increased damages under 35 U.S.C. § 284 and to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

INFRINGEMENT OF U.S. PATENT NO. 7,383,204

37. Excentus incorporates by reference paragraphs 1-36 as if fully set forth herein.

38. On June 3, 2008, U.S. Patent No. 7,383,204 (“the ‘204 Patent”) was duly and legally issued for an invention entitled “System and Method to Provide Customer Incentive to Provide Non-Fuel Products and Services.” A copy of the ‘204 Patent is attached as Exhibit D.

39. The ‘204 Patent was assigned to Excentus, which holds all rights and interests in the ‘204 Patent.

40. The Defendants have engaged and are engaging in unauthorized conduct and activities that violate 35 U.S.C. § 271 et seq., constituting direct infringement, either literally or under the doctrine of equivalents, of one or more claims of the ‘204 Patent, including but not limited to the Reasor’s Rewards Program infringing at least claims 1, 2, 3, 5, 7, 8, 9, 12, 14, 16, 17, and 18 of the ‘204 Patent.

41. Upon information and belief, QuikTrip controls or directs Reasor’s, by virtue of one or more agency relationships or other contractual obligations, to infringe the ‘204 Patent, which is necessary in order for the Reasor’s Rewards Program to function, and therefore, QuikTrip indirectly infringes the ‘204 Patent by inducing Reasor’s to infringe the ‘204 Patent or by contributing to the infringement of the ‘204 Patent.

42. The acts of infringement by the Defendants have caused damage to Excentus, and Excentus is entitled to recover from the Defendants the damages sustained by Excentus as a result of its wrongful acts in an amount subject to proof at trial. The infringement of the ‘204 Patent will continue to damage Excentus’ business, causing irreparable harm (including loss of market share), for which there is no adequate remedy at law, unless it is enjoined by this Court.

43. Furthermore, the infringements of the ‘204 Patent by the Defendants are willful and deliberate, entitling Excentus to increased damages under 35 U.S.C. § 284 and to attorneys’ fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

COMMON LAW MISAPPROPRIATION

44. Excentus incorporates by reference paragraphs 1-43 as if fully set forth herein.

45. Both Excentus and Auto-Gas created successful fuel discount products and programs through extensive time, labor, skill, and money. Excentus now owns the Auto-Gas fuel discounts products and programs, proprietary technology, and confidential information.

46. The Defendants have used Excentus' products and programs (including those Excentus acquired from Auto-Gas) in competition with Excentus, thereby gaining a special advantage or free ride because the Defendants have not borne any of the expense incurred by Excentus and Auto-Gas to create and develop these fuel discount products and programs. This conduct by the Defendants constitutes common law misappropriation, has caused damage to Excentus, and has resulted in improper profits to the Defendants.

47. Excentus sues for its actual and exemplary damages as a result of this common law misappropriation by the Defendants. In addition, Excentus is entitled to injunctive relief preventing the Defendants from using Excentus' fuel discount products and programs.

UNFAIR COMPETITION

48. Excentus incorporates by reference paragraphs 1-47 as if fully set forth herein.

49. The Defendants' actions described herein constitute business conduct that is contrary to honest practice in industrial or commercial matters.

50. The Defendants gained an unfair advantage in the market by capitalizing on Excentus' intellectual property by (1) infringing the patents-in-suit, (2) misappropriating Excentus' fuel discount products and programs, and (3) implementing the knockoff Reasor's Rewards Program in the marketplace, which are acts that interfered with Excentus' ability to

conduct its business and that constitute unfair competition under common law. Further, the Reasor's Rewards Program was designed to cause confusion among potential customers.

51. The Defendants' acts were willful and in bad faith and the Defendants have continued to operate their Reasor's Rewards Program in direct competition with Excentus (e.g., Excentus' "Fuel Rewards Network") and will continue to do so, gaining an unfair advantage in the market by these acts of unfair competition.

52. Excentus has suffered damage and is entitled to an award of actual and punitive damages as a result of the Defendants' acts of unfair competition.

PRAYER

WHEREFORE, Excentus respectfully prays that upon final trial a judgment be entered and that the following relief be granted:

(1) For judgment that the patents-in-suit have been and will continue to be infringed by the Defendants;

(2) For judgment that the Defendants have engaged in misappropriation under the common law;

(3) For judgment that the Defendants have engaged in unfair competition under the common law;

(4) For an accounting of all damages sustained by Excentus as a result of the acts of patent infringement, common law misappropriation, and unfair competition by the Defendants;

(5) For preliminary and permanent injunctions enjoining the aforesaid acts of patent infringement and common law misappropriation by the Defendants, their officers, agents, servants, employees, subsidiaries and attorneys, and those persons acting in concert with them, including related individuals and entities, customers, representatives, dealers, and distributors;

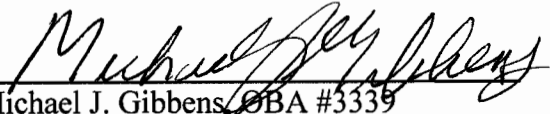
- (6) For actual damages together with prejudgment interest against the Defendants as a result of their acts of patent infringement;
- (7) For enhanced damages pursuant to 35 U.S.C. § 284 against the Defendants;
- (8) For awards of attorneys' fees pursuant to 35 U.S.C. § 285 or as otherwise permitted by law;
- (9) For all actual and punitive/exemplary damages, lost profits, and attorneys' fees against the Defendants;
- (10) For all costs of suit, prejudgment interest, and post-judgment interest as allowed by law; and
- (11) For such other and further relief as the Court may deem just and proper.

JURY DEMAND

Pursuant to Federal Rule of Civil Procedure 38, Excentus demands a trial by jury.

DATED August 3, 2012

Respectfully submitted,


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ATTORNEYS FOR PLAINTIFF
EXCENTUS CORPORATION

Exhibit A

To Original Complaint

Excentus Corp. v. QuikTrip Corp. et al.



US006321984B1

(12) **United States Patent**
McCall et al.

(10) **Patent No.:** US 6,321,984 B1
 (45) **Date of Patent:** *Nov. 27, 2001

(54) **ADJUSTABLE PRICE FUEL DISPENSING SYSTEM**

(75) **Inventors:** Don C. McCall, Cedar Park; Dave Embertson; Mike Zahajko, both of Austin, all of TX (US)

(73) **Assignee:** Dresser Equipment Group, Inc., Carrollton, TX (US)

(*) **Notice:** This patent issued on a continued prosecution application filed under 37 CFR 1.53(d), and is subject to the twenty year patent term provisions of 35 U.S.C. 154(a)(2).

Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) **Appl. No.:** 09/255,472

(22) **Filed:** Feb. 23, 1999

Related U.S. Application Data

(63) Continuation-in-part of application No. 09/026,634, filed on Feb. 20, 1998, now Pat. No. 6,112,981.

(60) Provisional application No. 60/039,007, filed on Feb. 25, 1997.

(51) **Int. Cl.⁷** G06K 5/00
 (52) **U.S. Cl.** 235/381; 235/380
 (58) **Field of Search** 235/381, 375, 235/470, 493, 383, 382, 382.05, 380

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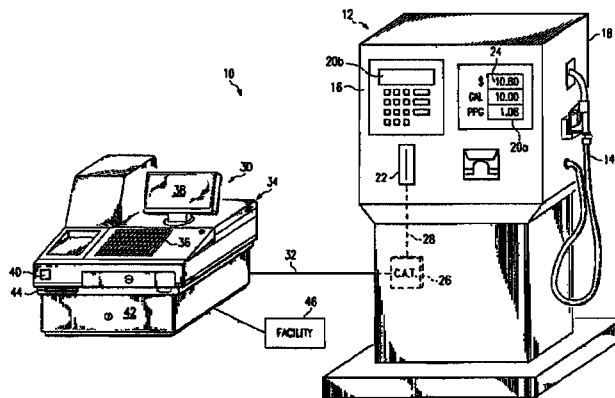
Primary Examiner—Thien M. Le

(74) *Attorney, Agent, or Firm*—Haynes & Boone, L.L.P.

(57) **ABSTRACT**

An integrated customer reward processing system and fuel dispensing apparatus to allow a retailer to authorize fuel to be dispensed at a discounted unit price in accordance with a customer's achievement of predefined purchasing criteria. More particularly, a data processing system is provided that implements customer rewards and includes a database that creates and maintains records associated with customers that make purchases at an associated store. The reward system will track the customer purchases and compare them with a predefined criteria to determine when a fuel discount is to be provided. When a customer meets one of the predefined criteria, the reward system will authorize a fuel discount and provide the customer with a mechanism to obtain the fuel at a discounted unit price.

15 Claims, 7 Drawing Sheets



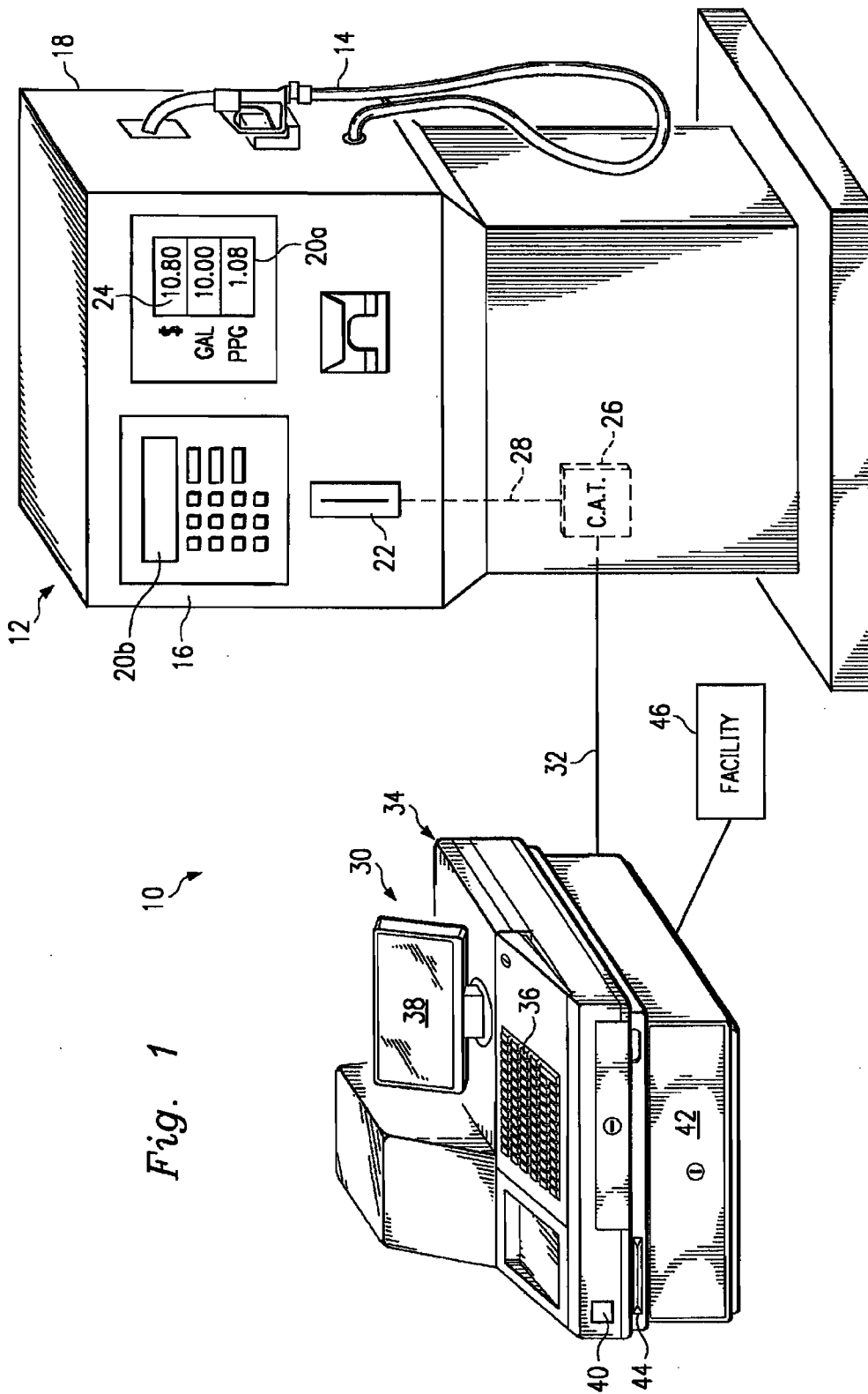
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U.S. Patent

Nov. 27, 2001

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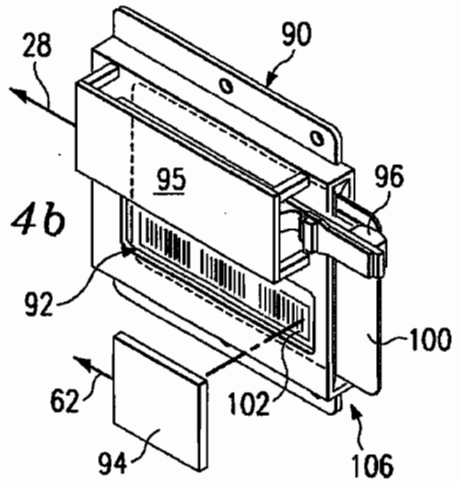
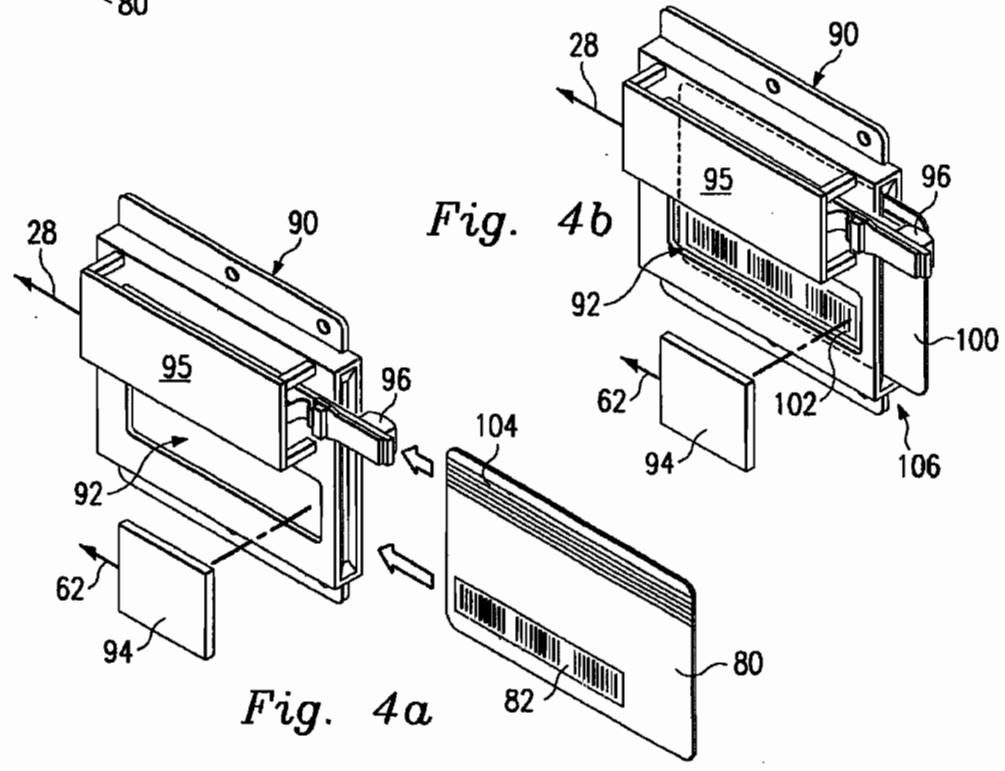
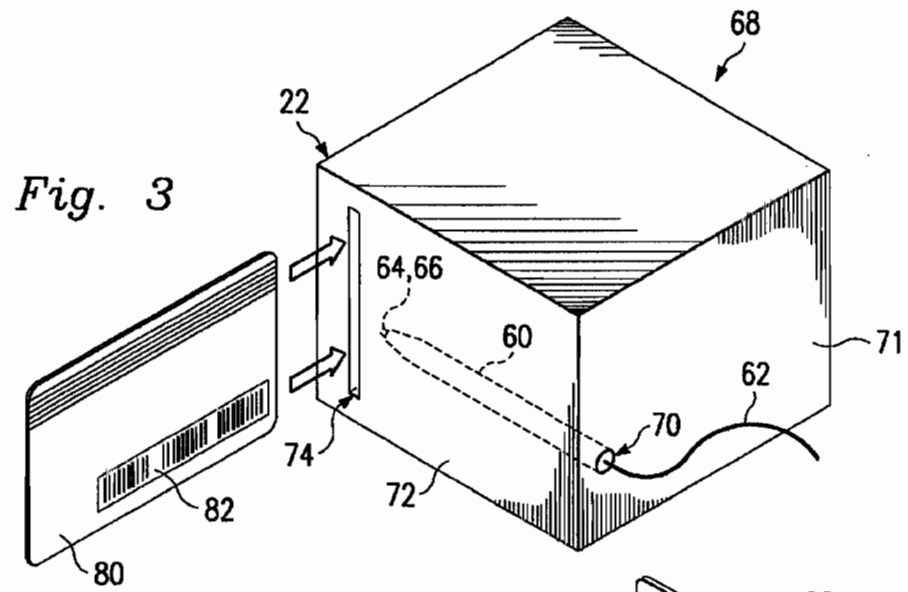
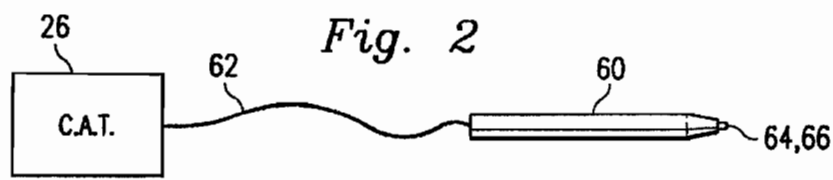


Fig. 5

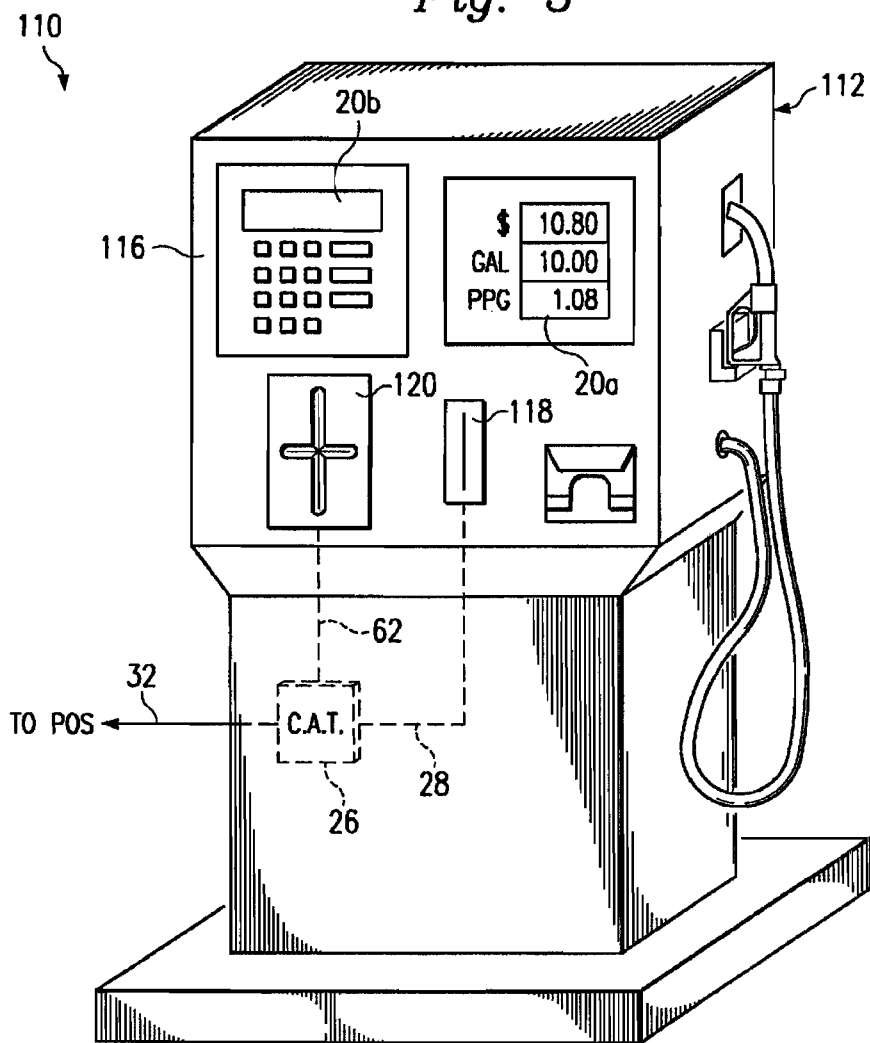
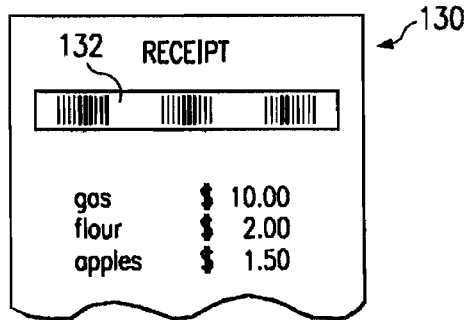
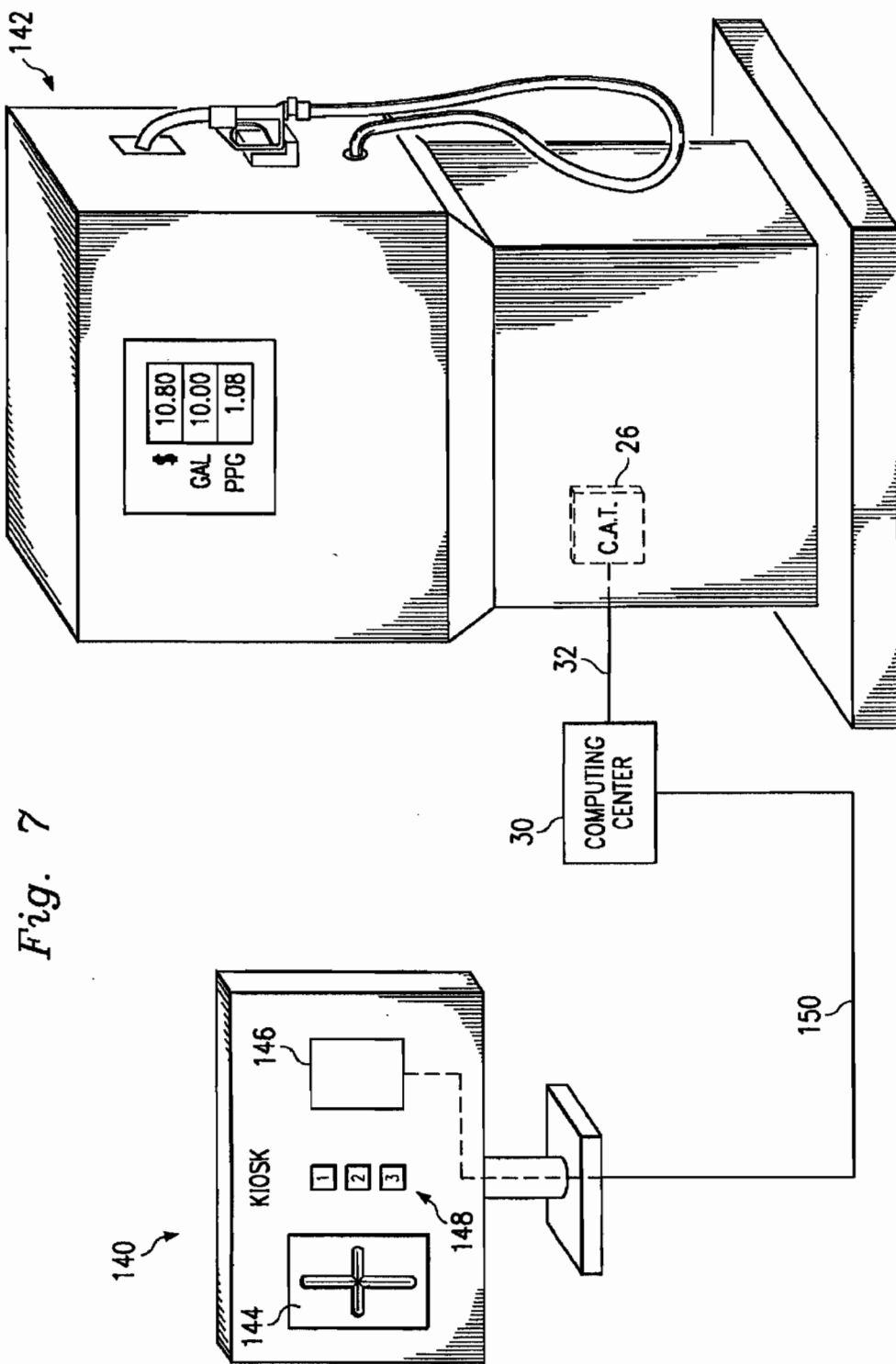


Fig. 6





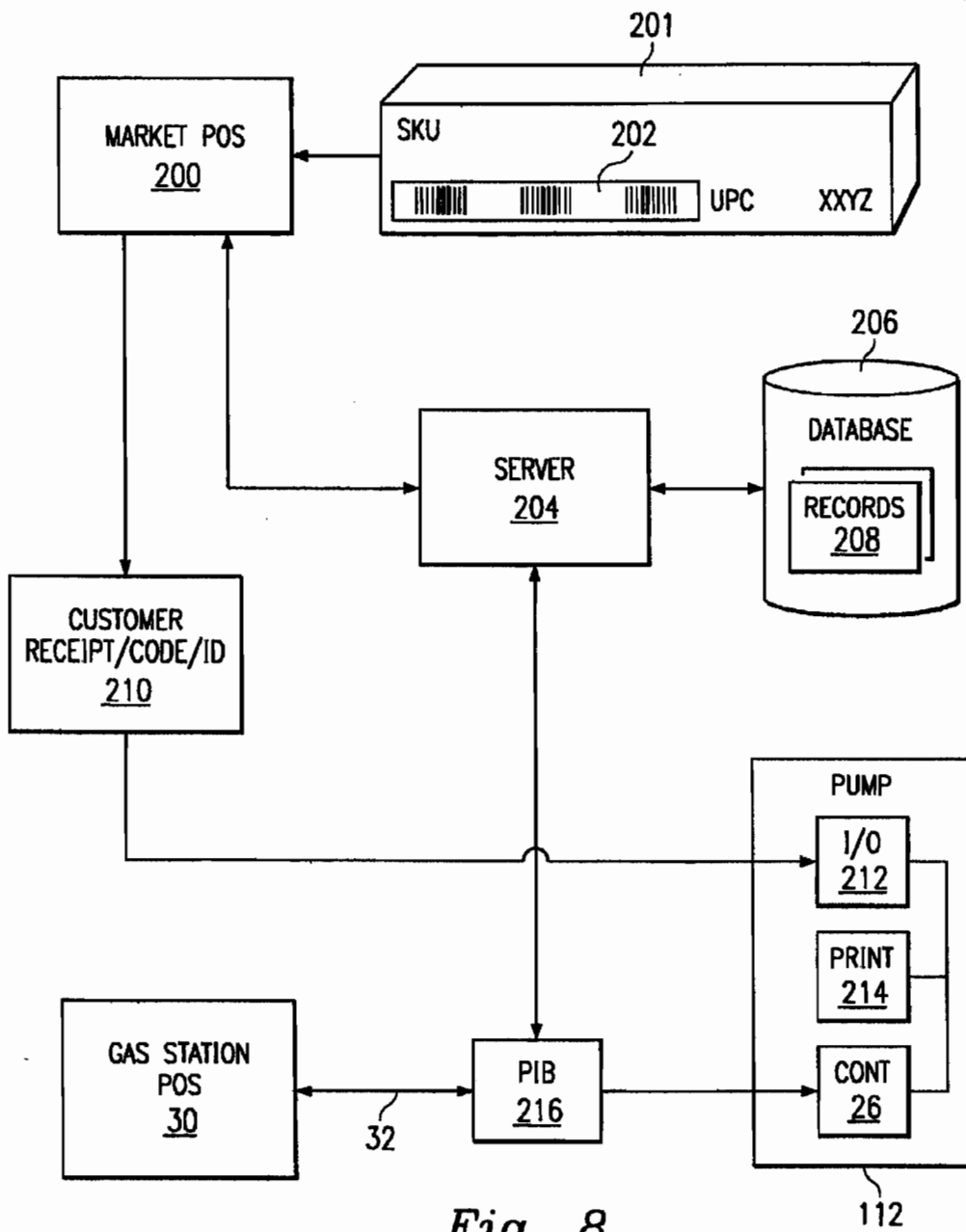


Fig. 8

Fig. 9

SMITH, A		ID NO.		1234ABC		
DATE	PURCHASES	QUANTITY OF DESIGNATED ITEMS (PROMO)	TOTAL QUANTITY (LOYALTY)	DISCOUNT	DISCOUNT USED	DISCOUNT AMOUNT
<u>302</u>	<u>304</u>	<u>306</u>	<u>308</u>	<u>310</u>	<u>312</u>	<u>314</u>
1/5/99	20\$	3	5	N		
1/17/99	15\$	5	10	Y (≥5 PROMO)	1/20/99	10¢/GAL
1/28/99	45\$	2	4	N		
2/4/99	25\$	1	3	Y (>20 LOY) Y (>100\$)		10¢/GAL } 25¢/GAL 15¢/GAL }
TOTAL	\$105	11	22			

300 { SMITH, A ID NO. 1234ABC

208 {

316 {

318 {

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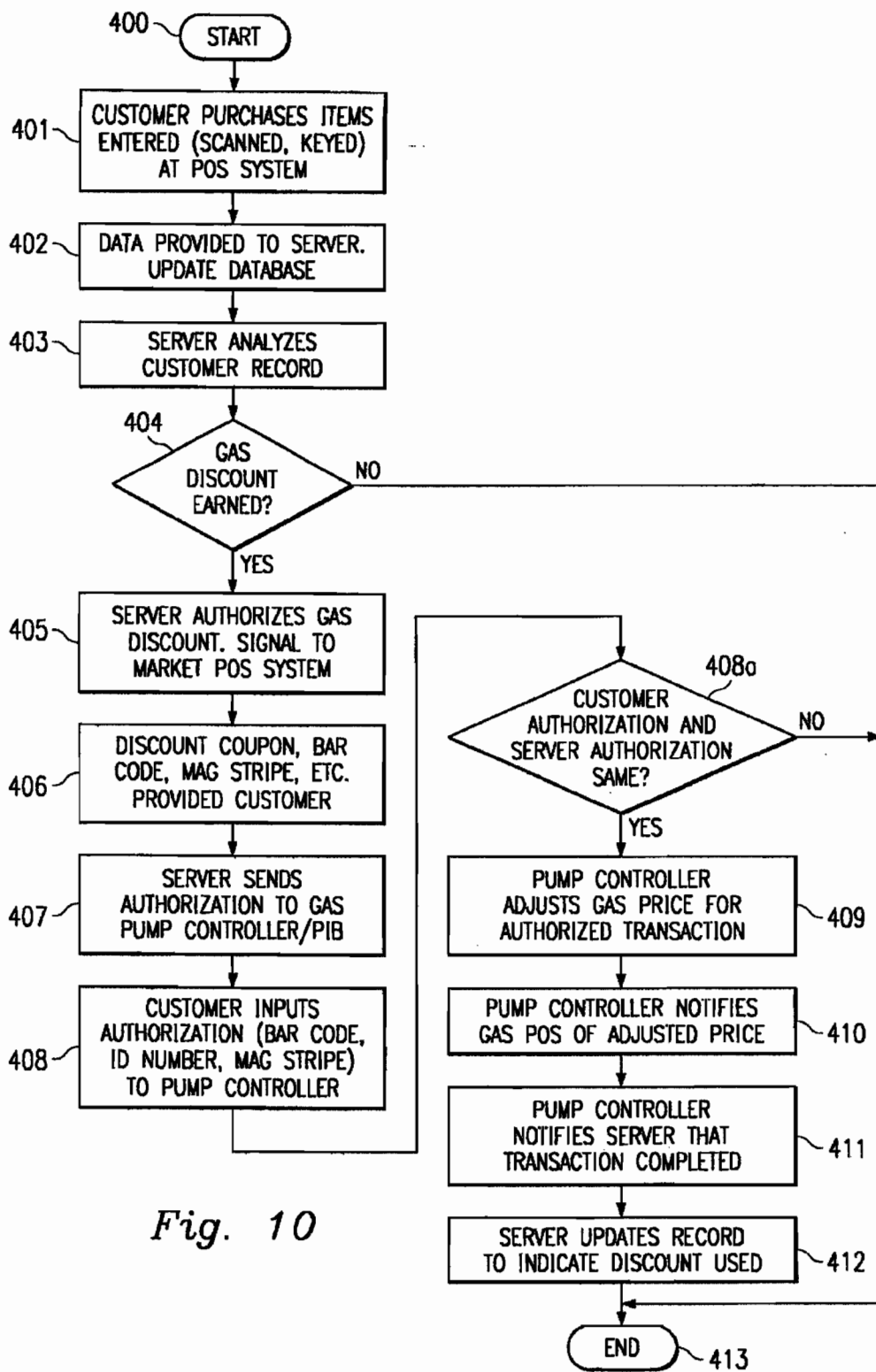


Fig. 10

US 6,321,984 B1

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ADJUSTABLE PRICE FUEL DISPENSING SYSTEM

BACKGROUND OF INVENTION

This invention is a Continuation-In-Part of U.S. patent application, Ser. No. 09/026/634, filed Feb. 20, 1998 now U.S. Pat. No. 6,112,981, which claims the benefit of U.S. Provisional Application Ser. No. 60/039,007, which was filed Feb. 25, 1997 now expired.

BACKGROUND OF THE INVENTION

This invention relates to retail fuel dispensers and more particularly, to a promotional system utilized in conjunction with a fuel dispenser that will allow promotional discounts and other marketing type offerings to be provided to a consumer based on the customer's purchasing habits.

For more than a decade, retail fuel dispensers have included magnetic strip card readers for reading magnetic strip debit/credit cards. The magnetic strip cards are typically small plastic cards that contain a strip of magnetic material (i.e., magnetic data) that includes information such as an account number and a credit or debit facility (e.g., a bank).

However, many retailers, such as those used by various wholesale food clubs or video stores, have an established customer base that uses bar coded cards. Bar coded cards are also typically small plastic cards, but instead of having a magnetic strip, they contain bar codes (i.e. optical data) that identify a certain account with the retailer. These bar coded cards allow the retailers to provide many benefits, such as providing customers with frequent shopper awards, preventing unauthorized use, providing certain purchase discounts, and identifying an internal payment account.

A problem arises when these retailers, with an established customer base with bar coded cards, wish to sell fuel using conventional fuel dispensers. Because conventional fuel dispensers cannot read bar coded cards, one solution is for the retailers to provide their customers with magnetic strip cards for purchasing fuel in addition to the bar coded card already in use. However, such a solution is not only expensive, it is undesirable for many customers to keep two cards for a single retailer.

Another solution is to require the customers to switch from the bar coded card to the magnetic strip card. This solution is impractical because so many bar coded cards are already in use and it would be very expensive to convert them. Also, many facilities of the retailers already include bar code readers that would require replacement.

Further, there is a growing trend for retailers to offer fuel dispensing facilities. For example, the popularity of "hyper-market" type retail stores or non-traditional retail petroleum marketers has increased dramatically over the past few years. Wal-Mart is a typical retailer that uses the hyper-market concept for providing a wide variety of goods and services at a single location. These goods and services have been expanded to now include on site fuel dispensing.

Conventional systems have been developed to identify and reward certain customer purchases by determining from predefined criteria when a customer has purchased certain items from a designated group and rewarding the customer based thereon. Further, rewards may be given based on customer loyalty, i.e. the number of purchases made at a particular store or the quantity of items purchased. One such type of conventional system is commercially available from Catalina Marketing International, Inc. of St. Petersburg, Fla.

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However, conventional customer rewards systems have not been expanded to include fuel dispensing systems. This is due, at least in part, to the fact that hyper-market operators have little control over the fuel dispensing apparatus installed at their facilities. More particularly, the fuel dispensing apparatus providers, such as the Wayne Division of Dresser Industries, Gilbarco and Tokheim control the interface into the pumping system and thus do not provide an externally available interface that will allow the fuel price to be dynamically adjusted in accordance with customer purchases.

Therefore, it can be seen that a system and method that integrates a customer purchase reward system with a fuel dispensing apparatus would be highly desirable. In this manner, the retailer can reward and encourage customer loyalty, and the fuel provider may attract new customers that would not normally purchase their fuel without the incentive of a discounted price.

SUMMARY OF THE INVENTION

The present invention couples a customer reward data processing system with a fuel dispensing apparatus to allow a retailer to authorize discounted fuel or other marketing promotions in accordance with a customer's achievement of predefined purchasing criteria.

Broadly, a data processing system is provided that implements customer rewards and includes a database that creates and maintains records associated with customers that make purchases at an associated store. The reward system will track the customer purchases and compare them with a predefined criteria to determine when a fuel discount is to be provided. These predefined criteria may include whether the customer purchased items from a group of designated products (e.g. promotional items) exceeded a quantity threshold, a dollar value threshold, made purchases made on specific dates, or the like.

When a customer meets one of the predefined criteria, the reward system will authorize a fuel discount or reward and provide the customer with a mechanism to obtain the discounted fuel. This mechanism can include a bar coded receipt, data on a magnetic stripe card, an authorization identification number sequence, or the like. The reward system also notifies a controller in the fuel dispensing apparatus that a discount fuel sale is authorized for a specific authorization code, as well as the amount of the discount, e.g. \$0.10 dollars per gallon.

When purchasing fuel, the customer inputs the received authorization code at the pump by scanning in the bar code from the receipt, swiping a magnetic card, entering a code on a key pad, or the like. The pump controller then compares the customer entered authorization code with the code received from the reward system. The pump controller then adjusts the purchase price by subtracting the discount amount and allows the fuel to be dispensed at that rate for this transaction only. At this time a point of sale terminal associated with the fuel dispensing apparatus may also be notified of the adjusted fuel price.

Upon completion of the transaction, the controller notifies the reward system that the discount fuel has been purchased by the customer. The reward system then updates the record for this customer accordingly. This information is then available to the retailer that sets the purchasing criteria to use to develop new marketing strategies. That is, the retailer needs to know that a certain promotional activity is working in order to determine whether to continue with the existing purchase criteria or change the criteria to attract a larger number of customers.

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Therefore, in accordance with the previous summary, objects, features and advantages of the present invention will become apparent to one skilled in the art from the subsequent description and the appended claims taken in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a diagram of a fuel dispenser system embodying features of the present invention.

FIG. 2 is a diagram of a bar code wand used in the fuel dispenser system of FIG. 1.

FIG. 3 is a diagram of a card reader device used in the fuel dispenser system of FIG. 1.

FIGS. 4a and 4b are diagrams of another card reader device used in the fuel dispenser system of FIG. 1.

FIG. 5 is a diagram of another fuel dispenser system embodying features of the present invention.

FIG. 6 is an illustration of a receipt used in the fuel dispenser system of FIG. 5.

FIG. 7 is a diagram of a kiosk used with a conventional fuel dispenser system for implementing features of the present invention.

FIG. 8 is a block diagram of the components that can be utilized to implement the present invention which integrates a customer reward system with a fuel dispenser having a dynamically adjustable price.

FIG. 9 is an example of a record that could be used to track customer eligibility for fuel discount rewards in accordance with the present invention.

FIG. 10 is flowchart of the process implemented by the present invention to encourage customer loyalty by providing discounter fuel based on predefined purchase criteria.

DETAILED DESCRIPTION

In FIG. 1, the reference numeral 10 designates a fuel dispenser system embodying features of one embodiment of the present invention. The fuel dispenser system 10 includes a fuel dispenser 12, which contains many elements of a conventional fuel dispenser such as a fuel nozzle 14 connected to a fuel supply (not shown). The dispenser 12 has a front side 16 and a back side 18. In the following description, only the front side 16 will be discussed for ease of description. However, the features described herein may also be applied on the back side 18, thereby allowing the dispenser to be operated by two customers at the same time.

The front side 16 houses a conventional graphics displays 20 a, 20b and a reader device 22 embodying features of the present invention. The graphics displays 20 a, 20b each include a large, conventional, LCD panel for showing text and numerals, such as a price 24 that corresponds to an amount of fuel dispensed, or other customer-related messages. The reader device 22 includes magnetic strip reading circuitry connected to a controller 26 through a cable 28 such as an RS232 serial data bus. For the sake of example, the controller 26 controls the reader device 22 as well as other functions of the dispenser 12, such as a controller that includes a Customer Activated Terminal ("CAT") computer produced by the Wayne Division of Dresser Industries. Both the controller 26 and the cable 28 are conventional devices housed inside the dispenser 12. It is understood that the reader device 22 and controller 26 continue to provide conventional magnetic strip reading functions in addition to the functions and features herein described.

The controller 26 is also connected to a computing center 30 through a bus 32. In one embodiment, the computing

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center 30 is remotely located inside a store (not shown) or at an unattended site where it may be readily accessed. The computing center 30 includes a point-of-sale ("POS") controller 34. The POS controller 34 includes many features of a conventional electronic cash register, such as a keyboard 36, a display 38, a database 40, a cash drawer 42, and an internal card reader device 44, for use by an operator in charge of overseeing and maintaining the dispenser system 10. It is understood that the database 40 may be remote, and is shown with the POS 34 for ease of description. Also, the POS controller 34 may be in communication with other systems or devices, such as a carwash facility 46.

The database 40 contains a collection of records pertaining to its customers. For example, the store may be a member-oriented retail outlet, and a record for each customer indicates that the customer is a member and a "level" of benefits or privileges that the customer may receive. One level may indicate a first discount to the customer of the goods he purchases while another level may indicate a second discount. The POS controller 34 can thereby receive information from the controller 26, access the database 40, and return control codes which indicate, for example, membership status, level of benefits, or an "OK" signal to allow fuel dispensing.

Referring to FIG. 2, the controller 26 is also connected to one end of a bar code detector 60 with a second cable 62. The bar code detector 60 is a standard, decoded-type handheld stationary beam bar code reader such as the Welsh Allyn model Scanteam ST6180 reader. The bar code detector 60 also includes, at the end opposite the second cable 62, a photo detector 64 and a light source 66. The photo detector 64 may be a photo cell, photo diode or photo transistor, while the light source 66 may be a light emitting diode.

Referring to FIG. 3, the reader device 22 is surrounded by a housing 68 and a hole 70 is established on a side face 71 of the housing near a front face 72. The hole 70 extends to a slot 74 used for receiving cards such as debit/credit cards, but is separated from the slot by a small plastic or glass window (not shown). As a result, the hole 70 does not interfere with any pre-existing circuitry of the reader device 22. The hole 70 is also of sufficient size for viewing one bit of bar coded data at a time. The bar code detector 60 is inserted into the reader device 22 through the hole 70 so that the end with the cable 62 hangs out of the hole. In this way, the photo detector 64 is installed behind the small window and may access cards slid into and out-of the slot 74.

In operation, the reader device 22 receives a bar coded card 80. As the bar coded card 80 is slid into the slot 74, light from the light source 66 reflects off the bar coded card 80 so that the photo detector 64 can sequentially read bits of optical (bar coded) data 82 stored on the card. The bar code detector 60 interprets the bar coded data 82 and converts it into ASCII data, which it transmits to the controller 26 through the cable 62. Firmware in the controller 26 detects the presence of the ASCII data and processes it into electronic data, a method similar to that used to process magnetic strip cards. The controller 26, FIG. 1, then transmits the electronic data to the POS controller 34 through the bus 32. The POS controller 34 uses the electronic data in order to secure payment in accordance with the data, such as by forwarding the electronic data to a credit card processing network (not shown) for authorization and/or charging the sale to an account associated with the electronic data. The POS controller 34 then returns one or more control codes that direct the controller 26 to allow fuel to dispense and potentially, to indicate any discounts to be provided.

In another embodiment, FIGS. 1 and 2, the bar coded data 82 is processed by the POS controller 34 and a local billing

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file is established for billing the customer later. It is also possible for the POS controller 34 to have a local negative file of all invalid account numbers or a local positive file of all valid card numbers. In such cases the electronic data could be kept and billed locally, or forwarded in "batches" to another computer on-site or off-site for billing. The electronic data provided by the bar code detector 60 can also be differentiated from electronic data conventionally read from a magnetic strip card by the reader 22. This differentiation may, for example, be used for frequent shopper tracking and awards, or for providing a price discount, described in greater detail below.

Referring to FIGS. 4a and 4b, in another embodiment, a reader device 90 is used in place of the reader device 22 (FIG. 3). Instead of having the roundish hole 70 for the wand of the bar code detector 60, the reader device 90 includes a rectangular-shaped window 92 for simultaneously viewing all of the bar coded data. The window 92 allows a scanning bar code reader 94, such as Symbol model LS1220-1300A produced by Symbol Technologies, Inc., to read the bar coded data 82 on the card 80. The scanning bar code reader 94 has many of the same components as the bar code detector 60, but is advantageous because it moves its light source (not shown) in multiple directions, thereby increasing its ability to read bar coded data. Also, as is the case for the reader device 22 of FIG. 3, the reader device 90 includes conventional magnetic strip circuitry 95 and a magnetic strip reader 96 to read conventional magnetic strip data.

In operation, the reader device 90 receives the card 80. The card 80 has the bar coded data 82 and may also include magnetic strip data 104 stored thereon. The reader device 90 reads the magnetic strip data 104 in a conventional manner with the magnetic strip reader 96 and reports it to the controller 26 through the cable 28, as is done in the device 22 (FIG. 3). To read the bar coded data 82, the card 80 is slid into a slot 106 of the device 90 until the bar coded data 82 is fully exposed in the window 92. Light from the light source of the scanning bar code reader 94 reflects off the bar coded data 82, thereby allowing the reader to read the data. The scanning bar code reader 94 interprets the bar coded data 82 and converts it into ASCII data, which it then transmits to the controller 26 through the cable 62. Firmware in the controller 26 detects the presence of the ASCII data and processes it into electronic data, a method similar to that used to process magnetic strip cards and described with reference to FIG. 3, above. It is understood that different combinations of bar coded and magnetic strip data are expected, and the card 80 is meant to illustrate only some of the combinations. In typical operation, a successful product scan is acknowledged by an audiovisual signal by connection to the POS controller 26.

A benefit of the modified reader devices 22, 90 is that their modification can be done very easily, while maintaining full functionality of the remaining components. Also, the modification can be sold as a kit to simply replace the previous, conventional magnetic-strip-only reader devices with the improved devices 22, 90. Other modifications can easily be supported, such as using a single cable instead of two cables 28, 62, or sharing some or all of the circuitry 95 for use in bar coded and magnetic data interpretation.

Referring to FIG. 5, the reference numeral 110 refers to a fuel dispenser system embodying features of another embodiment of the present invention. The fuel dispenser system 110 contains a fuel dispenser 112 connected to the computing center 30 and many components similar to those in the fuel dispenser system 10 (FIG. 1), such components being similarly numbered.

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A front side 116 houses the conventional graphics displays 20a, 20b and (optionally) a conventional magnetic-strip-only reader device 118. The front side 116 also houses a scanning bar code reader 120. The magnetic strip reader device 118 and scanning bar code reader 120 are connected to the controller 26 through cables 28, 62 respectively. The scanning bar code reader 120 is similar to the reader 94 (FIGS. 4a, 4b) in that it moves its light source (not shown) in multiple directions, thereby increasing its ability to read bar coded data. By being placed directly on the front side 116, the scanning bar code reader 120 realizes several additional benefits discussed in greater detail, below.

In operation, the bar coded card 80, discussed above, may simply be placed or waved in front of the scanning bar code reader 120. At this time, light from the light source projected from the scanning bar code reader 120 reflects off the bar coded card 80 so that a photo detector (also not shown) can read the bar coded data 82. The scanning bar code reader 120 interprets the bar coded data 82 and converts it into ASCII data (or data in any other suitable format), which it transmits to the controller 26 through the cable 62. Firmware in the controller 26 detects the presence of the data and processes it into electronic data, a method similar to that used with the bar code reader 60 and described with reference to FIG. 3, above.

Referring to FIG. 6, another benefit provided by the scanning bar code reader 120 is that it can read bar coded data from items other than bar coded cards. The reference numeral 130 designates a paper receipt with bar coded data 132 printed thereon. The receipt 130 may also be placed or waved in front of the scanning bar code reader 120, as described above with reference to FIG. 5.

Referring to FIG. 7, in another embodiment, a separate system, such as a kiosk 140, may be provided to interface with one or more conventional fuel dispensers 142. The kiosk 140 includes a scanning bar code reader 144, a display screen 146, and a keypad 148. The kiosk 140 is in communication with the computing center 30, discussed above, which in turn is in communication with the controller 26 of the conventional dispenser 142. By using the kiosk 140, the features of the present invention may be achieved without physically modifying the fuel dispenser system 142.

Listed below are several examples of how the fuel dispenser systems described above may be used. It is understood that the functionality described below is interchangeable with the different systems, and is not meant to be an exhaustive list.

EXAMPLE A (FIGS. 5-6)

1. A customer enters a store and purchases, among other things, \$10 worth of gasoline.
2. The store gives the customer a receipt (similar to the receipt 130) which includes a description of the purchases and bar coded data (similar to bar coded data 132) indicating the prepaid \$10 amount.
3. The customer places the receipt in front of the scanning bar code reader 120 and then operates the fuel dispenser 110 to dispense \$10 worth of gas.

EXAMPLE B (FIGS. 5-6)

1. A customer enters a store and purchases several items.
2. The store, which has a reward program that gives free gasoline, gives the customer a receipt (similar to the receipt 130) having bar coded data (similar to bar coded data 132) indicating a free \$1 worth of gasoline.

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3. The customer collects four more receipts over several visits to the store, each indicating a free \$1 worth of gasoline.
4. The customer sequentially places the five receipts in front of the scanning bar code reader 120, and then operates the fuel dispenser 110 to dispense \$5 worth of gas.
5. The customer also inserts a magnetic strip credit card into the magnetic strip reader device 118 to allow an additional amount of gasoline to be dispensed. A charge for the additional amount is reported to a credit agency identified by the magnetic strip credit card.

EXAMPLE C (FIG. 7)

1. A customer obtains a bar coded card (similar to the card 80) indicating a "member" status (e.g., the customer is eligible for certain benefits).
2. The customer places the card near the scanning bar code reader 144 of the kiosk 140. The card identifies an account and an appropriate benefit (e.g., a 10¢ per gallon discount).
3. The customer enters on the keypad 148 a number identifying the fuel dispenser 142.
4. The customer operates the fuel dispenser 142 to dispense gasoline and the account is credited for the purchase (adjusted by the 10¢ per gallon discount).

EXAMPLE D (FIGS. 1-3)

1. A customer obtains a bar coded card (similar to the card 80) which identifies a first account for a store and a conventional magnetic strip credit card which identifies a second account with a bank.
2. The customer approaches the fuel dispenser 12 associated with the store and places the bar coded card into the reader 22.
3. The customer then places the magnetic strip credit card into the reader 22.
4. The customer operates the fuel dispenser 12 to dispense gasoline and the second account is credited for the purchase.
5. The store records a data record in the first account of the customer's fuel purchase.
6. Steps 2-5, above, are repeated four more times.
7. The fuel dispenser 12 displays on the screen 20b a message:

BECAUSE YOU HAVE PURCHASED FUEL HERE
FIVE TIMES IN THE LAST THIRTY DAYS, YOU
MAY HAVE A COMPLIMENTARY CAR WASH

- and provides the customer with a predetermined number.
8. The customer drives to the nearby carwash facility 46 and enters the predetermined number on an attached keypad (not shown).
 9. The carwash facility 46 interprets the predetermined number to identify that the customer has a complimentary carwash and performs the carwash service.

It should be noted that the carwash facility 46 described in Example D above may also have a bar code reader connected to the computing center 30. In this way, the carwash facility 46 may provide similar functions as those described above with the reader 22. Also, the carwash

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facility 46 and fuel dispenser 12 may be in communication so that instead of providing a predetermined number, a record associated with the bar coded card is stored indicating the complimentary carwash.

Referring to FIG. 8, a block diagram of the components included in a preferred embodiment are shown and will now be described. A market point of sale (POS) terminal 200 is shown that may be located in a retail store, or the like. For example a Wal-Mart store is one type of retail outlet that may include a POS 200 in accordance with the present invention. Reference numeral 201 represents an item to be purchased by a customer in the retail store including POS 200. It is the usual case that each item will include stock keeping unit (SKU) number, as well as a Universal Purchase Code (UPC) that is provided as an optically scannable bar code 202. When purchasing the item 201, a customer will present the item at POS 200 where it will be scanned in or otherwise entered.

A server data processing system 204 is shown and coupled with POS 200. Server 204 may be a commercially available workstation computer from one of the various computer manufacturers, such as Compaq Computer, IBM Corporation, Hewlett Packard, or the like. A database 206 is linked to server 204 and includes multiple records 208 that correspond to customers purchasing items through POS 200. It should be noted that many POS terminals 200 are contemplated as being connected to server 204 and may be distributed remotely across more than one store. Server 204 will include software that manages the transactions occurring on POS 200, as well as the records 208 in database 206. In a preferred embodiment, database 206 may be magnetic storage media, optical storage or the like.

Upon completion of a purchase transaction at POS 200, the customer (if eligible) will be provided with a mechanism 210 that will allow discounted fuel to be purchased at pump 112. That is a receipt, such as receipt 130, discussed above, having a bar code 132 thereon may be provided to the customer. Additionally, a card with a magnetic stripe may be updated by POS 200 with information authorizing a fuel discount. Further, an identification code may be provided to the customer which can then be entered on a keypad included in the pump input/output I/O device 212. It will be understood that I/O device 212 may also include a magnetic card reader 118, bar code reader 120, or the like. Pump 112 also includes controller 26 that is electrically coupled to server 204 and printer 214. Controller 26 includes a microcontroller that processes and controls the various activity at pump 112. Peripheral interface board (PIB) 216 or other device is included in a preferred embodiment to provide an interface between server 204 and controller 26. PIB 216 allows the control signal output by server 204 to be interpreted by controller 26. That is, PIB 216 receives the control signal from server 204 with the authorization code and the unit price discount offered to the customer. Interface board 216 will then issue an command to controller 26 to map the discount amount to each of the fueling point product select positions, i.e. regular, premium, etc. In one example, the discount value range may be encoded as an eight bit value to give 256 different discount amounts. In this manner, the server 204 will be able to authorize a price discount, PIB 216 will then issue a command compatible with controller 26 to cause pump 112 to dispense fuel at the discounted unit price.

It should be noted that while a single retail store and corresponding fuel dispensing facility have been shown in FIG. 8 and described above, the present invention contemplates the situation where an entire chain of stores or related stores may be interconnected such that any one of their POS

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terminals can be connected to a server through a network. Further, numerous fuel stations can also be coupled to a server to allow discounted fuel in response to customer purchases at one of the associated stores. For example, Wal-Mart and Starbucks may form an alliance such that purchases from one or the other (or both) stores can cause fuel discounts to be made available. A POS terminal in either store can be coupled to a server that maintains customer records. Also, fuel companies can also form alliances such that Texaco and Mobil can have their pump controllers connected to the same server. In this manner a customer may be entitled to fuel at a reduced unit cost based on purchases made at any Wal-Mart or Starbucks store nationwide, and be able to redeem that discount at any Texaco or Mobil station independent of geographic location. Further, it can be seen that with the Internet it is possible to connect virtually any retailer wishing to offer discounted fuel based on predefined purchase criteria with virtually any fuel station without geographic boundary. Discounts may also be offered for purchase of items other than fuel, such as in the case of a POS 30, discussed above, located at a convenience store or other retailer.

FIG. 9 is a more detailed view of the fields that may be included in record 208 corresponding to a particular customer, e.g. A. Smith. As shown in field 300 of FIG. 9, the customer name is provided along with an identification number. For new customers, or when the system of the present invention is first installed, a record will be created when the first item is purchased at POS 200.

The date of purchase when at least one item was purchased at POS 200 of an associated retailer is provided in field 302. The dollar value of the purchases is listed in field 304. Retailers may often designate various items to trigger discounts related to competing or related items. The quantity of these designated, or trigger items, that were purchased on each date (if any) are provided in field 306. As an example of a trigger item, a certain brand of baby formula may be purchased which will cause a coupon to be generated for a competing baby formula. Also, complementary items may be used as trigger items. That is, the purchase of cereal may trigger a coupon for a discount on milk.

Field 308 is the total quantity of items purchased by a certain customer on a specific date. This field, along with field 304 can be used as a criteria for determining customer loyalty. Field 310 will include data representing the availability of a fuel discount. The record will be updated in field 312 when a discount is actually used by a customer and the discount amount is provided in field 314. Fields 316, 318 and 320 provide totals for the dollar value fields 304, designated items purchased 306 and total quantity 308, respectively.

As an example, when A. Smith purchases \$20 of merchandise on Jan. 5, 1999, record 208 is created by server 204 and stored in database 206. At that time three (3) designated items were purchased out of a total quantity of five (5) items. These purchases did not meet the established criteria that would cause a discount on fuel to be made available.

Then, on Jan. 17, 1999, A. Smith purchased five designated items, 10 total items for \$15.00. This purchase will cause the total designated item purchase by this customer to exceed five and cause a fuel discount to be offered. Thus, field 310 will indicate that a fuel discount was offered to A. Smith on Jan. 17, 1999. The discount amount is noted as \$0.10 per gallon in field 314. As noted above, the mechanism by which the discount is offered may be a receipt with a bar code, updated magnetic card, alphanumeric authorization code, or the like.

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Further, record 208 shows that this customer took advantage of the discount and used it to purchase fuel on Jan. 20, 1999. It will be understood that this data can then be analyzed to determine the success of the discount program. That is, the predefined purchase criteria can be adjusted as needed to provide the discount for different items, different quantities of the items or a different discount amount.

Returning to the current example, A. Smith returns to the associated store and purchases additional items on Jan. 28, 1999, totaling \$45.00. However, at this time A. Smith has not reached the next purchasing criteria threshold that will cause discounted fuel to be offered.

On Feb. 4, 1999, A. Smith once again purchases items from this, or another participating store. This purchase causes the total purchases to exceed \$100.00. Also, A. Smith purchased three total items that caused the total quantity of merchandise purchased at this store to be greater than 20 items. In this example, exceeding both of these criteria will trigger a fuel discount. That is, purchasing greater than 20 items within a month will cause a \$0.10 fuel discount to be offered and exceeding \$100.00 in total purchase price will cause a \$0.15 fuel discount. Those skilled in the art will understand that the fuel discount system of the present invention can be designed to offer the highest discount of the two, e.g. \$0.15 per gallon, the lowest discount \$0.10, an average of the two, or add the discounts and offer a \$0.25 per gallon discount to the customer. In any event, it can be seen that information provided in record 208 can be used to monitor a customer's status relative to being offered discounted fuel and to determine when such offer is to be made to the customer.

Of course, those skilled in the art will appreciate that many other types of data may be used in addition to, or instead of the various information discussed as an example with regard to FIG. 9. And, it should be understood that the scope of the present invention contemplates such additional information.

FIGS. 10A, 10B and 10C are flowcharts showing the process implemented by the present invention to cause fuel discounts to be made available to eligible customers.

Referring to FIG. 10A, at step 400 the process is started and the customer purchases items at step 401 where the identification code for the purchased items is entered at POS 200. The customer identity is also entered by using a member club card, personal identification number (PIN), or the like, such that an associated record can be created or updated. The data relating to the purchased items is then provided by POS 200 to server 204, at step 402. Server 204 then analyzes the customer record (step 403). That is, server 204 will create a record for a new customer or maintain an existing record by updating it with current purchases for customers already having a record.

At step 404 a determination is made as to whether the current purchases will cause a fuel discount to be offered. As noted above this step may include determining if the customer has purchased certain designated items that will trigger a discount, whether a total dollar value spent exceeds a predefined threshold and/or if a total quantity of items exceeds a threshold.

If at step 404 it is determined that the customer has not yet earned a fuel discount, then the method proceeds to step 413 and ends. However, if at step 404 it is determined that a fuel discount is available, then at step 405 the server authorizes the discount and sends a signal to the market POS termination 200. At step 406, a bar coded discount coupon, alphanumeric authorization code, updated magnetic card or other mechanism is provided to the customer. At step 407, server

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204 sends an authorization signal to PIB 216, which then provides corresponding commands to controller 26 in pump 112. The signal from server 204 will include an authorization code and a discount amount. The customer then inputs the fuel discount authorization code from POS 200 at pump 112 in step 408. More particularly, the customer may swipe a magnetic card, scan in a bar code from a receipt of key in an alphanumeric code at I/O 212 of pump 112. After the customer authorization code is entered the process then compares (step 408a) the authorization code from server 204 with the code from the customer and if a match exists then proceeds to step 409 and adjusts the price of the fuel to be dispensed for this transaction. However, if a match does not occur at step 408a, then an error has occurred or an unauthorized customer is attempting to obtain discounted fuel. When no match occurs the process continues to step 413 and ends without allowing discounted fuel to be dispensed. Of course, those skilled in the art will understand that it is possible to send a notification signal to server 204, gas station POS 34 or another terminal when a match does not occur to indicate a potentially fraudulent user may be attempting to obtain discounted fuel.

At step 410, pump controller 26 notifies gas station POS 34 of the adjusted fuel price such that the fuel sales records will be in order and to ensure that the customer is correctly charged the discounted fuel price. Next, at step 411 pump controller 26 notifies server 204 of completion of the transaction for discounted fuel and readjusts the fuel price to its normal level by mapping the discount amount to zero. Server 204 then updates the customer record 208 in database 206 to reflect that the discount was used. Subsequent to step 412, the process of the present invention continues to step 413 and ends.

Of course, many other configurations are contemplated by the present invention. For example, gas station POS 34 can also be a source of discounted gas. That is, POS 34 may be in a convenience store that also desires to develop customer loyalty by providing fuel discounts. In this scenario, a customer may purchase a certain volume of gas or other items such as candy bars and coffee which triggers a discount in the price of fuel. Authorization can then be provided directly to PIB 216 from POS 34 to adjust the unit price of fuel dispensed from pump 112. Additionally, the authorization could be sent to server 204 to update or create customer record 208.

Further, the purchase of fuel at full price could also be used to trigger discounts on items in the retail store having POS 200. For example, when a customer purchases fuel a signal can be sent from controller 26 to PIB 216 to server 204 which then updates and analyzes the customer's record (or creates a record if none exists). If the customer has purchased fuel in excess of a predetermined value (dollar) or quantity (gallons) threshold, then a signal can be sent from server 204 back to controller 26 via PIB 216, to authorize a discount for this customer on merchandise to be purchased at a participating store. More particularly, a bar coded receipt can be printed by printer 214 that the customer can then take to the participating store and redeem for a discount on one or more items purchased as POS 200. When purchased, a signal will be sent to server 204 and the customer record will be updated accordingly.

Other arrangements are also contemplated to implement discounts at the fuel dispensing system or associated store.

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For example, the mechanism 210 may not be needed if other means are provided to identify the customer at either the market POS 200 or the POS 30. In one example, a customer card or number used at the market POS 200 may similarly be used at the gas station POS 30 such that the customer's discount can be automatically applied at the POS 30. Identification may also be accomplished by an initial registration procedure whereby a customer card/number may be matched with the credit or debit account of the customer that the customer utilizes to make purchases at the POS 30. In one example, transponder technology may be utilized at one or both of the market POS 200 or gas station POS 30 to properly identify the customer. Furthermore, the barcode may have some form of embedded security identification information for authenticating the purchase. In other configurations, the peripheral interface board may not be required. Pertaining to the discounts, a variety of arrangements are contemplated. Some examples entail the funding of the discount or reward by third parties other than the supplier of petroleum. Other discounts are offered in the form of a club discount or volume discount. The controller utilized may be any type of hardware device with software programming to implement the intended functions. Although certain preferred embodiments have been shown and described it should be understood that many changes and modifications may be made therein without departing from the scope of the appended claims.

What is claimed is:

1. A system for dispensing fuel, comprising:

- a nozzle for dispensing the fuel;
 - a controller in communication with the nozzle for selectively causing the nozzle to dispense the fuel at a discounted unit price;
 - a reader connected to the controller for reading data provided by a user and transferring the data to the controller; and
 - a database for creating and maintaining a record associated with purchases made by the user, the record including the users achievement of a purchasing criteria;
- whereby upon receipt of the data, the controller accesses said record and causes the nozzle to dispense the fuel at the discounted unit price associated with the users achievement of the purchasing criteria.

2. A system according to claim 1 wherein said purchasing criteria is encoded into said data.

3. A system according to claim 2 wherein said data comprises optical data.

4. A system according to claim 3 wherein said optical data comprises a bar code included on a receipt provided to the user by a point of sale controller.

5. A system according to claim 1 wherein said reader is capable of reading optical data.

6. A system according to claim 5 wherein said user scans said bar code into said reader and updates said record with the discounted unit price associated with the user based on the purchasing criteria.

7. A system according to claim 6 wherein said purchasing criteria comprises:

- a volume of goods purchased by said user;
- a volume of services purchased by said user;
- a certain type of goods purchased by said user;

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a certain type of services purchased by said user; and a specific quantity of goods or services purchased by said user over a certain time period.

8. A system according to claim 1 wherein said data comprises magnetic data. 5

9. A system according to claim 8 wherein said magnetic data comprises a magnetic strip included on a card updated by a point of sale controller.

10. A system according to claim 9 wherein said magnetic data is dependent on purchases made by said user. 10

11. A system according to claim 10 wherein said reader is capable of reading magnetic data.

12. A system according to claim 11 wherein said user inserts said card into said reader and updates said record with the discounted unit price associated with the user. 15

13. A system according to claim 12 wherein said purchasing criteria comprises:

- a volume of goods purchased by said user;
- a volume of services purchased by said user;
- a certain type of goods purchased by said user;
- a certain type of services purchased by said user; and
- a specific quantity of goods or services purchased by said user over a certain time period.

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14. A system for dispensing fuel, comprising:

- a nozzle for dispensing the fuel;
- a controller in communication with the nozzle for selectively causing the nozzle to dispense the fuel at a discounted unit price;

a reader connected to the controller for reading identification data provided by a user and transferring the identification data to the controller; and

a database for creating and maintaining a record associated with purchases made by the user, the record including the users achievement of a purchasing criteria;

whereby upon receipt of the identification data, the controller accesses said record and causes the nozzle to dispense the fuel at the discounted unit price associated with the users achievement of the purchasing criteria.

15. A system according to claim 14 further comprising a point of sale controller coupled to said database, wherein the record is modified to specify the discounted unit price of said fuel based on purchases made by said user.

* * * * *

Exhibit B

To Original Complaint

Excentus Corp. v. QuikTrip Corp. et al.



US006332128B1

(12) **United States Patent**
Nicholson

(10) Patent No.: **US 6,332,128 B1**
(45) Date of Patent: **Dec. 18, 2001**

(54) **SYSTEM AND METHOD OF PROVIDING MULTIPLE LEVEL DISCOUNTS ON CROSS-MARKETED PRODUCTS AND DISCOUNTING A PRICE-PER-UNIT-VOLUME OF GASOLINE**

WO-91/18373 * 11/1991 (GB) G07F/7/02
WO-96/
06415-A1 * 2/1996 (WO) G07F/13/02

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(73) Assignee: **AutoGas Systems, Inc., Abilene, TX (US)**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

* cited by examiner

(21) Appl. No.: **09/253,275**

Primary Examiner—Eric W. Stamber
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(74) *Attorney, Agent, or Firm*—Smith, Danamraj & Youst, P.C.

(22) Filed: **Feb. 19, 1999**

(57) **ABSTRACT**

Related U.S. Application Data

(60) Provisional application No. 60/093,813, filed on Jul. 23, 1998.

(51) Int. Cl.⁷ **G06F 17/00**

(52) U.S. Cl. **705/14; 235/381; 235/375; 235/378; 235/380**

(58) Field of Search **705/14, 10, 416; 235/383**

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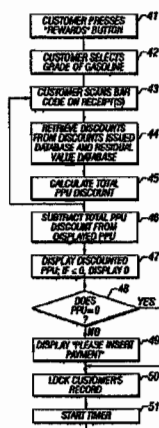
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27 Claims, 6 Drawing Sheets



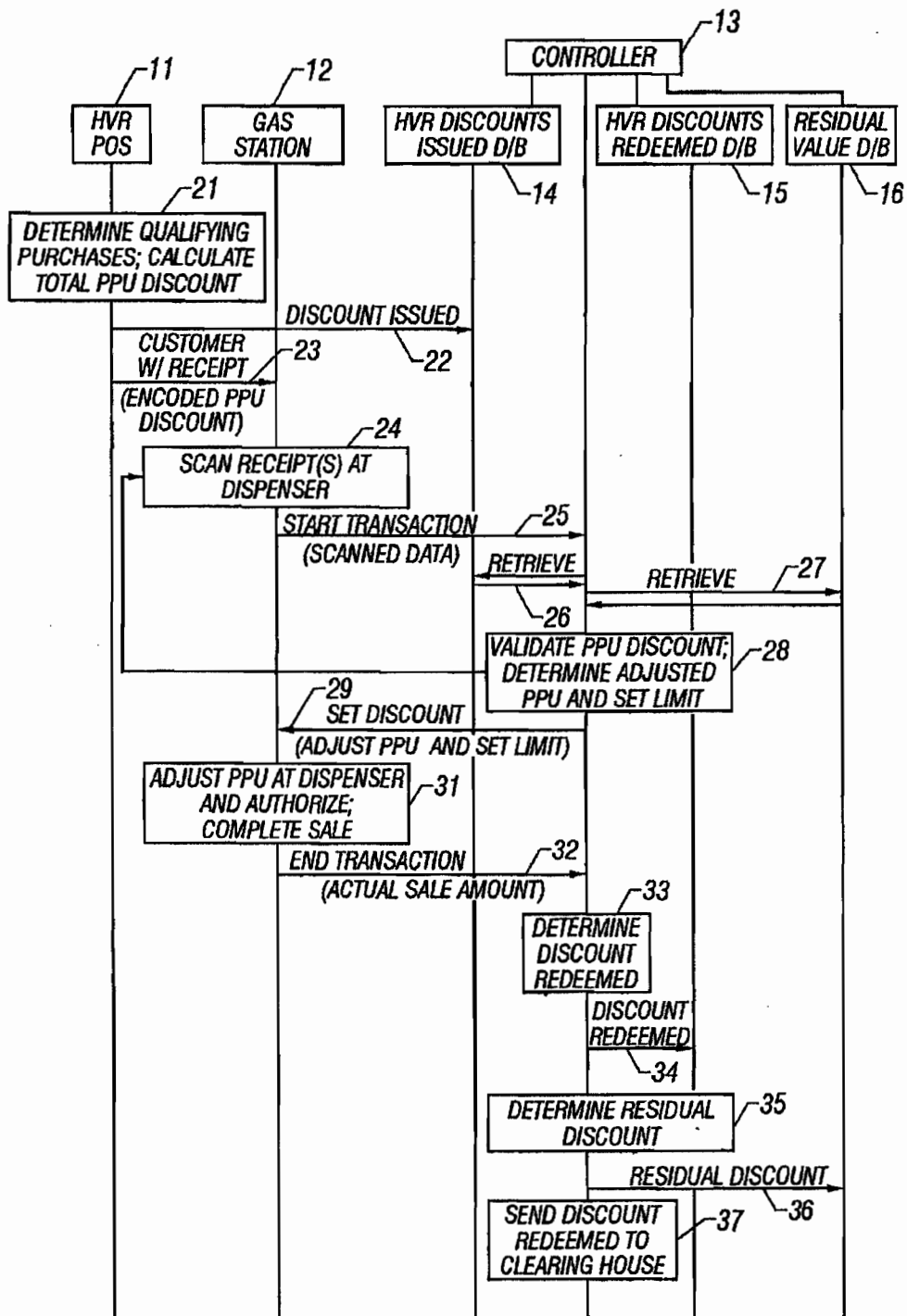


FIG. 1

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FIELD #	FIELD	DESCRIPTION	TYPE	MIN	MAX	EXAMPLE
1	DISCOUNTRFNO	MATCHES CUSTOMER'S RECEIPT WITH THIS RECORD	NUMERIC	20	20	1234561234 5600000001
1a	DISCOUNTCHAIN	CHAIN IDENTIFIER	NUMERIC	6	6	123456
1b	DISCOUNTSTORE	STORE IDENTIFIER	NUMERIC	6	6	123456
1c	DISCOUNTID	SITE-UNQUE DISCOUNT IDENTIFIER	NUMERIC	8	8	00000001
2	SALEDATE	LOCAL DATE OF POS SALE	DATE	8	8	19990125
3	SALETIME	LOCAL TIME OF POS SALE	TIME	8	8	090000
4	SALEPOSID	SITE-RELATIVE IDENTIFIER OF POS THAT ISSUED DISCOUNT	ALPA- NUMERIC	0	6	L45
5	UNITDISCOUNT	DISCOUNT IN CENTS PER FUEL UNIT VOLUME	NUMERIC (FLOAT)	4	5	0.15
6	DISCOUNTMAXUNITS	MAXIMUM FUEL UNITS AUTHORIZED FOR SALE AT DISCOUNT PRICE	NUMERIC	1	4	12
7	TOTALDISCOUNT	DISCOUNT EXPRESSED AS AMOUNT TO BE DEDUCTED FROM TOTAL SALE	NUMERIC (FLOAT)	3	5	2.75
8	DISCOUNTMINUNITS	MINIMUM FUEL UNITS THAT MUST BE PURCHASED TO QUALIFY FOR DISCOUNT	NUMERIC	1	3	5
9	DISCOUNTEXPIRES	LOCAL DATE OF LAST DAY THAT DISCOUNT IS VALID	DATE	8	8	19990210
10	COUPONIDS	LIST OF COUPON IDS THAT MADE UP THIS DISCOUNT	NUMERIC (WITH SUB- FIELDS)	0 EACH 0 TOTAL	5 EACH 179 TOTAL	23-171-999- 19713-2123
11	COUPONCOUNT	NO. OF COUPONS THAT MADE UP THIS DISCOUNT	NUMERIC	1	2	5
12	LOYALTYCARDID	LOYALTY CARD IDENTIFIER	NUMERIC	1	16	3456

FIG. 2

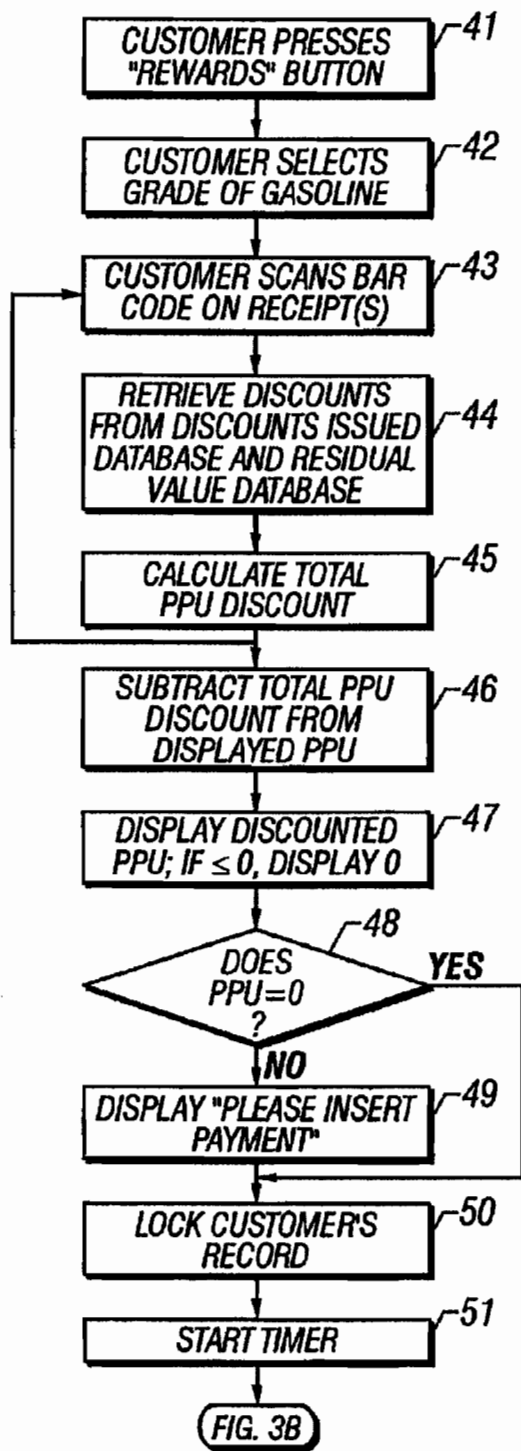


FIG. 3A

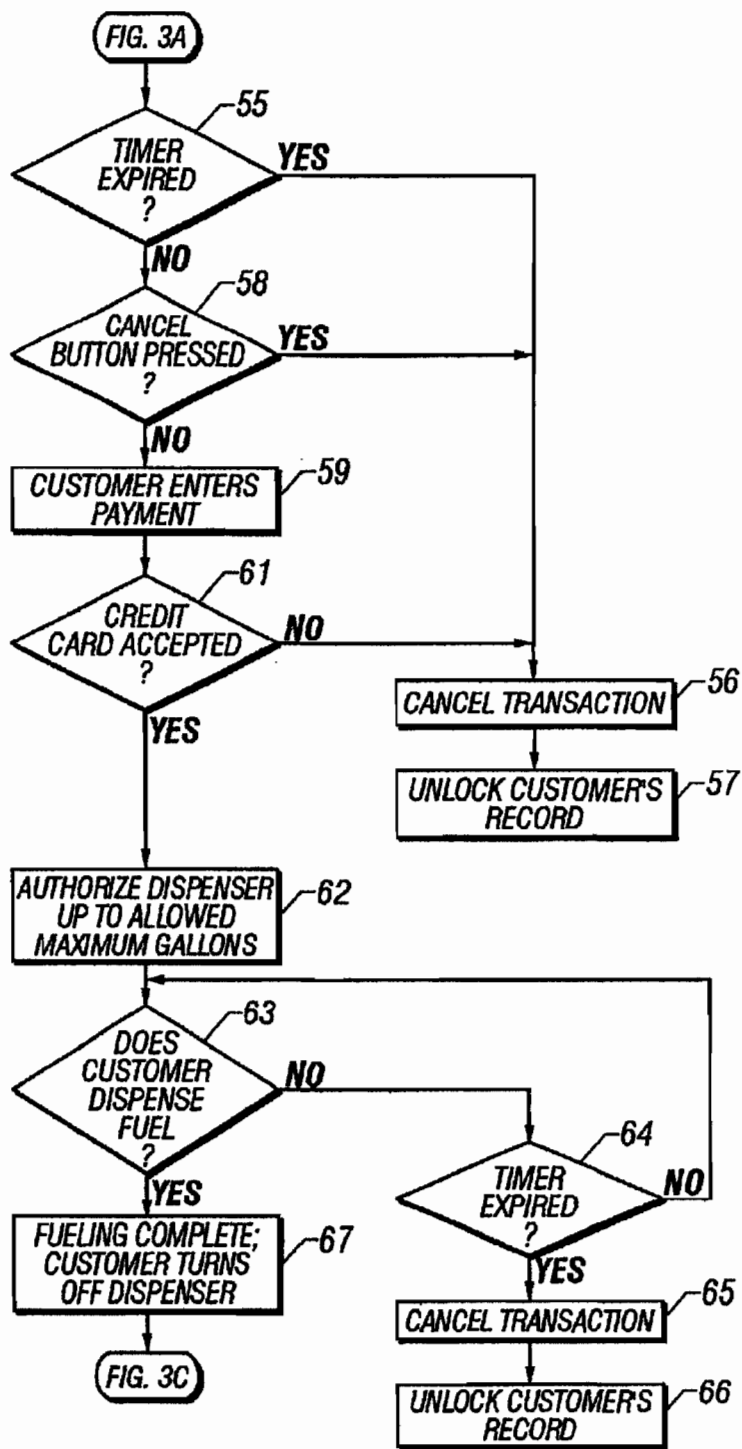


FIG. 3B

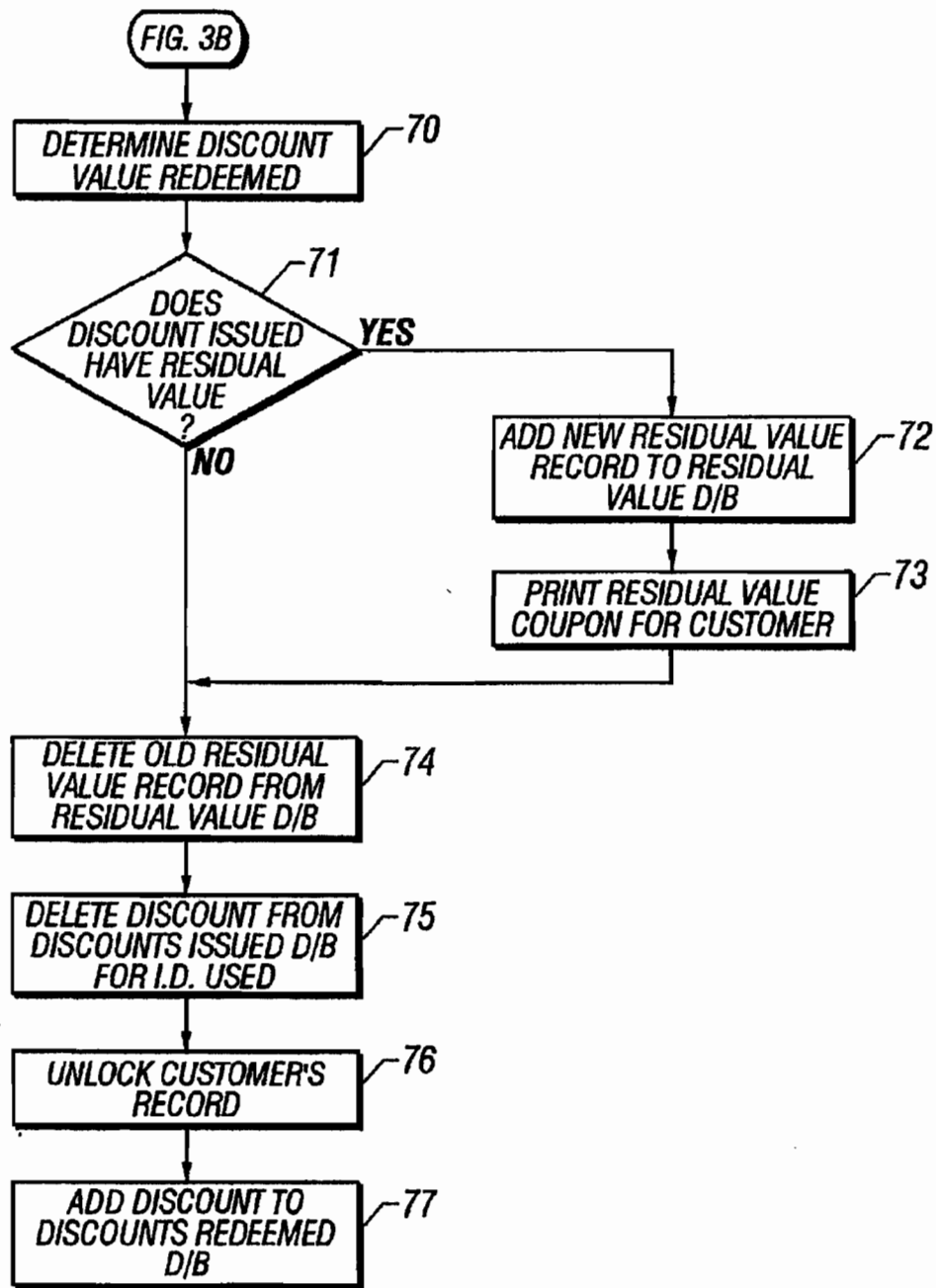


FIG. 3C

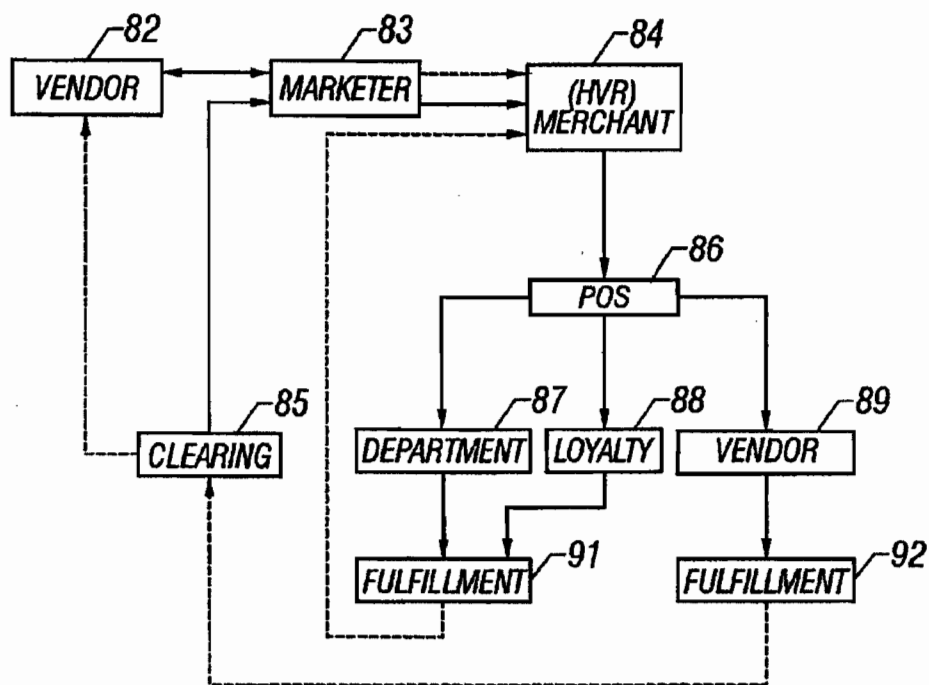


FIG. 4

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**SYSTEM AND METHOD OF PROVIDING
MULTIPLE LEVEL DISCOUNTS ON
CROSS-MARKETED PRODUCTS AND
DISCOUNTING A PRICE-PER-UNIT-
VOLUME OF GASOLINE**

This appl. claims benefit of Prov. No. 60/093,813 filed Jul. 23, 1998.

BACKGROUND OF THE INVENTION

1. Technical Field of the Invention

This invention relates to the generation and redemption of discount coupons for multiple vendors and, more particularly, to a system and method of controlling the generation, distribution, and redemption of coupons, and the allocation of discounted values to multiple vendors involved in cross-marketing ventures.

2. Description of Related Art

Vendors of various products often find it desirable to enter into cross-marketing agreements in which the purchase of a product from a first vendor earns a discount coupon for the consumer on a product from a second vendor. As used herein, the term "vendor" refers to the manufacturer of a specific product or the supplier of specific services. The term "high volume retailer (HVR)" refers to the store where the products or services are purchased, such as grocery stores, discount stores, warehouse stores, supercenters, etc.

Systems and methods exist which track the redemption of such cross-marketing coupons and control the allocation of discounted values between the vendors. These systems and methods, however, do not enable vendors to associate issued coupons directly with specific customers or transactions. Nor do existing systems and methods generate coupons or rewards applicable to discounts on the price per unit of a cross-marketed product such as gasoline which is sold by the gallon or liter. In addition, existing systems and methods are not flexible and do not enable a vendor to offer variable discounts which increase if a customer purchases a plurality of cross-marketed products or purchases products from a plurality of cross-marketing vendors. The discount amount is fixed for each purchase.

This is a disadvantage if vendors attempt to use existing systems and methods to cross-market a consumable such as gasoline which is sold at a particular price per gallon. Since the total amount of a gasoline purchase generally cannot be determined in advance, a discount for a particular amount may not be appropriate. For example, a \$5.00 discount is not appropriate if the consumer fills up an automobile with gasoline, and the total charge is only \$4.00. In addition, studies have shown that it is more attractive to consumers of gasoline to receive a discount on the price per gallon than it is to receive a fixed discount on the total purchase. Current control systems and methods cannot handle a discount on the price per gallon since the total discount is not known before the purchase is completed.

An additional problem with existing systems and methods for tracking and allocating discount coupons is that they do not allow for cumulative savings based on the purchase of multiple cross-marketed products. It would be desirable to gasoline vendors to have a method which would allow the application of varying discounts to the price per gallon based on the number of cross-marketed products purchased. For example, if the gasoline vendor had a cross-marketing agreement with various vendors of products sold by a HVR merchant, the purchase of Product A could result in a discount in the price of the gasoline of \$0.02 per gallon.

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Likewise, the purchase of Product B could result in a discount in the price of the gasoline of \$0.02 per gallon. If the consumer buys both products, it would be desirable to discount the price of the gasoline by \$0.04 per gallon. Existing systems and methods do not perform this function.

Although there are no known prior art teachings of a solution to the aforementioned deficiency and shortcoming such as that disclosed herein, several references discuss subject matter that bears some relation to matters discussed herein. U.S. Pat. No. 5,173,851 to Off et al. (Off) discloses a system for creating discount coupons in response to the purchases of products. Off includes a process in which a coupon is issued in response to the purchase of multiple triggering items. However, the coupon is for a predetermined amount, and is not variable. Multiple items must be purchased in order to qualify for the fixed discount.

U.S. Pat. No. 4,949,256 to Humble (Humble) discloses a coupon validation network for automatically processing product coupons. Databases are maintained for coupons issued by manufacturers and for coupons redeemed by retailers. The system enables retailers to automatically process coupons presented for redemption by consumers, and enables manufacturers to conveniently reimburse retailers for the value of the redeemed coupons. However, Humble does not teach or suggest a system or method of handling multiple level discounts or discounts on the basis of a price per gallon.

Review of each of the foregoing references reveals no disclosure or suggestion of a method such as that described and claimed herein. In order to overcome the disadvantage of existing solutions, it would be advantageous to have a method which enables vendors to associate issued coupons directly with specific customers or transactions, and which allows the application of multiple level discounts to the price per gallon of gasoline based on the number of cross-marketed products purchased. The present invention provides such a method.

SUMMARY OF THE INVENTION

In one aspect, the present invention is a method of providing multiple level discounts on a first product to a customer who purchases at least one cross-marketed product. The method comprises the steps of awarding a first discount on the first product to the customer based on a purchase by the customer of a first cross-marketed product, awarding a second discount on the first product to the customer based on a purchase by the customer of a second cross-marketed product, adding the first discount to the second discount to determine a total discount on the first product, and awarding the total discount to the customer.

In another aspect, the present invention is a method of providing a discount on a first product to a customer who purchases at least one cross-marketed product. The method begins by awarding a first discount on the first product to the customer based on a purchase by the customer of a first cross-marketed product, and then issuing a coupon to the customer which provides a customer identification and a transaction identification. A discount amount is stored in a discounts issued database which associates the discount amount with the customer identification and the transaction identification. This is followed by inputting, by the customer in a subsequent transaction, the customer identification and the transaction identification, retrieving the discount amount from the discounts issued database, and reducing the price of the first product by the discount amount.

In yet another aspect, the present invention is a method of providing multiple level discounts on gasoline to a customer

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who purchases at least one cross-marketed product. The method includes the steps of awarding to the customer, a first discount on the price-per-unit-volume of the gasoline based on a purchase by the customer of a first cross-marketed product, and awarding a second discount on the price-per-unit-volume of the gasoline based on the purchase of a second cross-marketed product. The first discount is then added to the second discount to determine a total discount on the price-per-unit-volume of the gasoline. A paper receipt is printed for the customer with a customer identification and a transaction identification encoded in a bar code thereon. The total discount, a maximum number of volume units allowed, and a minimum purchase of gasoline required in order to qualify for the discount are stored in a discounts issued database which associates these data with the customer identification and the transaction identification. The customer then scans the encoded bar code with a bar code scanner at a gasoline dispenser. The total discount is retrieved from the discounts issued database, and the gasoline station then reduces the price-per-unit-volume of the gasoline by an amount equal to the total discount. When the customer completes the gasoline purchase, a value of the total discount redeemed is determined. This is followed by verifying that the value of the total discount redeemed is equal to or less than the maximum discount allowed, and verifying that the amount of gasoline purchased is equal to or greater than the minimum purchase required to qualify for the discount. The value of the discount redeemed is then stored in a discounts redeemed database, and portions of the discount redeemed are allocated to vendors of the first and second cross-marketed products according to predetermined criteria.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention will be better understood and its numerous objects and advantages will become more apparent to those skilled in the art by reference to the following drawings, in conjunction with the accompanying specification, in which:

FIG. 1 is a message flow diagram illustrating the messages sent between the components of the system of the present invention during a cross-merchandising transaction;

FIG. 2 is a table illustrating an exemplary record format for a Discounts Issued message which informs a system controller of the discounts issued by a grocery store POS terminal;

FIGS. 3A-3C are a flow chart illustrating the steps of the method when a customer redeems an issued discount at a gasoline station; and

FIG. 4 is a flow chart illustrating an overall method of issuing, redeeming, and clearing discount coupons in which the method of the present invention may be practiced.

DETAILED DESCRIPTION OF EMBODIMENTS

The present invention is a method of utilizing electronic coupons for cross-marketing. By making a purchase of one or more products, a customer earns discount credits toward the purchase of another product such as gasoline. For example, if the customer buys Product A from a HVR merchant such as a grocery store or convenience store, she may earn a Price Per Unit (PPU) discount of \$0.02/gallon on her next purchase of gasoline at a participating gas station. Her receipt from the grocery store may be imprinted with an encoded bar code which is read by a bar-code reader at the gasoline dispenser. The price of the gasoline is then adjusted to provide her with her discount. The receipt is treated as a legal tender coupon. Therefore, if the discount earned is

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greater than the PPU price of the gasoline, the customer may get a credit back at the end of the transaction for the unused portion of the discount. Alternatively, the coupon can be printed to inform the customer that it is good only up to the PPU price of the gasoline.

The PPU price on the gasoline dispenser can be discounted to multiple levels, depending on the discount which the customer has earned. For example, if the customer also bought Product B which provides a gasoline discount of \$0.02/gallon, in addition to Product A, then the system automatically adds the two discounts together to calculate a total discount. Thus, when the customer scans in her receipt and purchases gasoline, she receives a PPU discount of \$0.04/gallon.

The system also tracks discounts that are not product-specific. For example, a HVR merchant such as a grocery store may offer a gasoline discount if a customer purchases a threshold amount of groceries over a designated period of time. For example, a purchase of \$100 in a single trip may earn a discount of \$0.10/gallon, while a purchase of \$200 may earn a discount of \$0.20/gallon. Alternatively, cumulative purchases over the time period may reach a threshold level and qualify for a discount. For example, purchases totaling \$300 in a week may qualify for a \$0.10/gallon discount. Additionally, since some products in the store provide a higher margin to the retailer, the grocery store may target the purchases to a specific department such as bakery goods. For example, a \$15 bakery purchase may entitle the customer to a \$0.04/gallon discount. Other products such as produce need to be sold fairly rapidly to avoid spoilage. These products may also be targeted to provide gasoline discounts.

The customer may also scan in several receipts at the gasoline dispenser and be awarded a cumulative discount. The receipts may be from several visits to a single HVR merchant, or may be from multiple independent HVR merchants. As discussed below, the receipt is encoded to provide the system with the proper information regarding the identity of the customer, the receipt, and the HVR merchant.

Some grocery stores offer frequent shopper cards to their customers which provide discounts on selected products if the card is scanned at the register at the time of purchase. The present invention enables the customer to utilize credits earned on her frequent shopper card to obtain PPU discounts on gasoline. The card may be electronically updated with credits earned at the conclusion of a shopping trip to the grocery store. The credits earned are also printed on the customer's receipt so that she has a record of the discount earned. The credits are then recognized when the customer scans the card at the gasoline station. The credit is then applied to the gasoline purchase. If the entire credit is not utilized, the remaining credit is updated on the card.

The present invention is not limited to any one method of providing the system with data regarding the identity of the customer, the receipt, and the issuing HVR merchant. Thus, for example, the discount may be encoded in a bar code on a printed receipt, it may be transferred by a radio frequency identification (RFID) device, or it may be magnetically encoded on a frequent shopper card or other magnetic medium such as a prepaid card or credit card. The customer may also be given a code number which may be entered at the gasoline dispenser in order to trigger the discount in the price per gallon. A personal identification number (PIN) may be utilized to trigger the discount or to provide security for any form of other electronic coupon.

The gasoline business is highly cost competitive, and customers generally purchase their gasoline at the station

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where they perceive they are getting the best price per gallon. It is difficult, however, for a gasoline retailer to maintain a competitive price advantage because as soon as he lowers his posted street price, his competitors lower their prices to match. The present invention offers a method by which a gasoline retailer can maintain a posted street price (seen by his competitors) while offering his customers the benefit of individualized prices which are discounted from the posted street price. The method also enables gasoline retailers who operate convenience stores in conjunction with their gasoline sales to increase inside sales by offering discounts on gasoline in response to the purchase of goods inside the store.

FIG. 1 is a message flow diagram illustrating the messages sent between the components of the system of the present invention during a cross-merchandising transaction. The system includes a HVR point of sale (POS) terminal 11, a gas station 12, and a controller 13 which is associated with a HVR discounts issued database 14, a HVR discounts redeemed database 15, and a residual value database 16.

When a customer purchases items from the HVR merchant, the HVR POS terminal 11 determines at 21 which purchases qualify for a price-per-unit (PPU) discount on gasoline. A total PPU discount is then calculated by adding each individual PPU discount for which the customer has qualified. Transaction data including an identification of the customer and the total discount issued is sent to the HVR discounts issued database 14 in a Discounts Issued message 22. The customer identification may be utilized to track customer loyalty or, in the case of HVR merchants that require memberships, the customer identification may be utilized to verify membership. At 23, the HVR POS terminal prints a receipt for the customer which includes an encoded customer identification and transaction identification associated with the discount, and the customer takes the receipt to the gas station 12.

Referring briefly to FIG. 2, an exemplary record format is shown for the Discounts Issued message 22 which carries customer, transaction, and store identifications to the HVR discounts issued database 14. Field 1 serves as the key for matching the customer's receipt with a particular discount record. This number may be encoded, for example, in a bar code on the POS sale receipt. Field 1 may be divided into sub-fields 1a-1c. Sub-field 1a identifies the chain to which the HVR store belongs. This number is unique across the discount program, and enables a customer to redeem a discount earned at a particular store in a chain at any other store in the chain. Sub-field 1b identifies the particular store within the HVR chain. This number must be unique within a chain or store ownership group. Sub-field 1c is a site-unique discount identifier which may be utilized in combination with sub-fields 1a and 1b to identify a particular customer or transaction. Sub-field 1c must be unique within a site (chain+store) discount expiration period. Fields 2 and 3 report the date and time of the sale.

Field 4 identifies a particular POS terminal within the identified site for store auditing purposes. Field 5 shows the PPU discount issued in cents per fuel-unit volume (for example, 0.15/gallon). Field 6 shows the maximum fuel units that are authorized for sale at the discounted price, and Field 7 shows the minimum fuel units that must be purchased in order to qualify for the discount. The POS terminal may issue a total discount instead of a PPU discount and, if so, this information is supplied in Field 7. When Field 7 (total discount) is supplied, Field 8 (minimum units) may also be supplied, but Field 5 (unit discount) must not be supplied. Conversely, when Field 5 (unit discount) is

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supplied, Field 6 may be supplied, but Field 7 (total discount) and Field 8 (minimum units) are ignored.

Field 9 provides the local date of the last day that the discount is valid. Field 10 provides a list of logical coupon identifications which made up the discount, and Field 11 provides a count of the number of logical coupons that made up the discount. The coupon IDs may be passed to the HVR discounts redeemed database 15 and to a clearing house (not shown) in a Discounts Redeemed record so that the discount can be allocated to the proper vendors according to predetermined criteria. The discount may be allocated according to negotiated agreements or on a pro rata basis. Field 12 provides a loyalty card identifier for individual customers of stores that use loyalty cards such as frequent shopper cards.

Referring again to FIG. 1, when the customer desires to redeem the discount, the receipt is scanned at 24 by a bar code scanner at the pump dispenser at the gasoline station 12. This causes the dispenser to send a start transaction message 25 to the controller 13. The start transaction message includes the data scanned from the customer's receipt. At 26, the controller retrieves information regarding the issued discount from the HVR discounts issued database 14. At 27, the controller also retrieves information regarding any residual discount that may have been stored in the residual value database 16 from a previous transaction. At 28, the controller validates the scanned data by comparing it with data retrieved from the HVR discounts issued database 14 and the residual value database 16. If the scanned data is valid, the controller adds any residual discount to the discount issued to obtain a total PPU discount. The controller then determines an adjusted PPU price by subtracting the total PPU discount from the normal price. The controller also sets an upper limit on the number of gallons subject to the discount. If the customer scans more than one receipt, the process from steps 24 to 28 is repeated, and the discount associated with each receipt is added to the total PPU discount, and is subtracted from the normal price.

The controller then sends a set discount message 29 to the dispenser and includes instructions to adjust the displayed price per gallon by the amount of the total PPU discount, and to set the maximum limit on the number of gallons that can be purchased at the discounted price. Alternatively, a maximum discount value can be set. If the calculated total PPU discount is greater than the PPU displayed on the gasoline dispenser, the controller sets the displayed PPU price to zero (0). On dispensers that will not display a PPU price of zero, the lowest price which the dispenser will display is shown to the customer. After the sale is complete, and the sale amount is reported to the controller at step 32, the controller sets the sale amount to zero.

At 31, the gasoline station dispenser adjusts the price per gallon on the dispenser, and the dispenser is authorized. When the sale is completed, the dispenser sends an end transaction message 32 to the controller and includes the actual sale amount. The actual value of the discount redeemed is then determined at 33. At 34, the discount redeemed amount is then sent to the HVR discounts redeemed database 15. The HVR merchant can compare data from the HVR discounts issued database 14 and the HVR discounts redeemed database 15 to determine the effectiveness of cross-marketing agreements on various products. The controller determines if there is any residual discount at 35, and if so, sends the residual discount at 36 to the residual value database 16. At 37, the controller sends the discount redeemed to a clearing house (not shown) for allocation to the proper vendors.

FIGS. 3A-3C are a flow chart illustrating the steps of the method when a customer redeems an issued discount at a

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gasoline station. Referring concurrently to FIG. 1 and FIG. 3A, it can be seen at step 41 that the process may be started by having the customer press a "Rewards" button at the gasoline dispenser, and then selecting a grade of gasoline to be purchased at step 42. Alternatively, the process may be started automatically when the customer selects a grade of gasoline and then at 43, scans the bar code on the receipt that was printed at the HVR POS terminal. At 44, the gas station then sends the information scanned from the bar code, which includes the discount reference number, a customer identification, and a transaction identification to the controller 13 which retrieves information relating to the issued discount from the discounts issued database 14. The controller also retrieves information regarding any residual discount that may have been stored from a previous transaction in the residual value database 16. The controller then calculates a total PPU discount at step 45 by adding the issued discount to the residual discount, if any. If the customer scans additional receipts, the process repeats steps 42-45 and calculates a total PPU discount that combines the discounts for all scanned receipts.

At 46, it is determined whether or not the calculated total PPU discount is greater than the PPU displayed on the gasoline dispenser. If not, the method moves to step 47 and subtracts the total PPU discount from the displayed PPU and then displays a new discounted PPU on the dispenser at 48. However, if the calculated new discounted PPU is less than or equal to zero, the discounted PPU is then set to zero (0) at 47 and is displayed on the dispenser. If the PPU is not zero at 48, the method moves to step 49 where the display instructs the customer to enter payment, which may be a credit card or dollar bills. If the PPU is zero, the method moves directly to step 50 where the customer's record is locked, and a timer is started at 51. The method then moves to FIG. 3B, step 55.

If the timer expires at step 55 before any further action is taken, the method moves to step 56 where the timer automatically ends the transaction. Thus, if the customer finds, for example, that he has no money, or is unable to complete the transaction for any other reason, the next person in line does not get the customer's discount. The customer's record is unlocked at 57, and the value of the customer's discount is retained.

If the customer presses a "Cancel Transaction" button at 58 before the timer expires at 55, the method also moves to step 56 where the transaction is canceled and the customer's record is unlocked at 57, and the value of the customer's discount is retained. If the Cancel Transaction button is not pressed, the method moves to step 59 where the customer enters his payment. At step 61, it is determined whether or not the customer's credit card is accepted. If not, the method moves to step 56 where the transaction is canceled and the customer's record is unlocked at 57, and the value of the customer's discount is retained. If the credit card is accepted, the method moves to step 62 where the dispenser is authorized to dispense up to the maximum number of gallons authorized in Field 6 of the Discount Issued message 22 (FIG. 2). The dispenser is automatically shut off if the maximum number of gallons is reached.

It is then determined at step 63 whether or not the customer has dispensed fuel. If not, it is determined at 64 whether or not the timer has expired. If the timer has not expired, the method returns to step 63 and waits for the customer to begin dispensing the fuel. If the customer does not begin dispensing fuel before the timer expires, the method moves to step 65 where the transaction is canceled and the customer's record is unlocked at 66, and the value

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of the customer's discount is retained. If the customer dispenses fuel at 63, the method moves to step 67 where the customer completes fueling and turns off the dispenser. The method then moves to FIG. 3C, step 70.

At step 70, the value of the discount redeemed is determined by multiplying the PPU discount by the number of gallons purchased. The process then moves to step 71 where it is determined whether there is any residual value to the issued discount. If so, the method moves to step 72 where the residual value is added to the residual value database 16 in a new residual value record. For the customer's convenience, the gasoline dispenser may then print a residual value coupon for the customer at 73 which can be utilized to redeem the residual value in a future transaction. Following this, or if the issued discount did not have any residual value, the method moves to step 74 where the old residual value record is deleted from the residual value database. At step 75, the discount is then deleted from the discounts issued database 14 for the discount reference number utilized. The customer's record is then unlocked at 76. At 77, the discount is then added to the discounts redeemed database 15.

FIG. 4 is a flow chart illustrating an overall method of issuing, redeeming, and clearing discount coupons in which the method of the present invention may be practiced. A vendor 82, a marketer 83, a HVR merchant 84, and a clearing house 85 are involved in the method. Dotted lines in the flow chart represent the passing of settlement information. The HVR merchant may be, for example, a grocery store or convenience store which also sells gasoline to its customers. The HVR merchant utilizes a POS terminal 86 through which sales transactions are processed. The transactions may be categorized as department transactions 87, loyalty transactions 88, or vendor transactions 89. A department transaction 87 may be sales in a particular department such as the bakery department in which the HVR merchant has decided to offer awards for bakery purchases. By purchasing a minimum amount of bakery goods, the customer is issued a discount coupon which is good for a reduction in the PPU price of gasoline at the store. Therefore, fulfillment at 91 and settlement are accomplished within the HVR merchant's own accounting system.

A loyalty transaction 88 may be a transaction in which the customer utilizes a store credit card or frequent shopper card. Fulfillment at 91 and settlement of the gasoline discount for this transaction are also accomplished within the HVR merchant's own accounting system. However, transactions involving the purchase of a participating vendor's products at 89 require fulfillment at 92 and settlement through the clearing house 85 and the marketer 83.

It is thus believed that the operation and construction of the present invention will be apparent from the foregoing description. While the method shown and described has been characterized as being preferred, it will be readily apparent that various changes and modifications could be made therein without departing from the scope of the invention as defined in the following claims.

What is claimed is:

1. A method of providing multiple level discounts on a price-per-unit (PPU) of a consumable good sold in multiple units to a customer who purchases a plurality of cross-marketed products, said method comprising the steps of:
 - awarding a first discount on the PPU of the consumable good to the customer in response to a purchase by the customer of a first cross-marketed product;
 - awarding a second discount on the PPU of the consumable good to the customer in response to a purchase by the customer of a second cross-marketed product;

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adding the first discount to the second discount to determine a total discount on the PPU of the consumable good; and

awarding the total discount to the customer.

2. The method of providing multiple level discounts of claim 1 wherein the customer purchases the first cross-marketed product from a first merchant, and purchases the second cross-marketed product from a second merchant.

3. The method of providing multiple level discounts of claim 1 wherein the consumable good is gasoline, and the first, second, and total discounts are discounts on the price-per-unit-volume of gasoline.

4. The method of providing multiple level discounts of claim 3 further comprising:

issuing an electronic coupon to the customer, said coupon providing a unique customer identification and a unique discount identification; and

storing the total discount in a discounts issued database which associates the total discount with the unique customer identification and discount identification.

5. The method of providing multiple level discounts of claim 4 wherein the electronic coupon is selected from the group consisting of:

a paper receipt with the unique customer identification and discount identification encoded in a bar code imprinted thereon;

a paper receipt with the unique customer identification and discount identification encoded in a code number imprinted thereon;

a frequent shopper card with the unique customer identification and discount identification magnetically encoded thereon;

a prepaid card with the unique customer identification and discount identification magnetically encoded thereon;

a credit card with the unique customer identification and discount identification magnetically encoded thereon;

a radio frequency identification (RFID) device with the unique customer identification and discount identification encoded in a RF transmission; and

a smart card.

6. The method of providing multiple level discounts of claim 5 further comprising the steps of:

inputting the electronic coupon by the customer for redemption at a gasoline station; and

reducing on a gasoline dispenser, the price-per-unit-volume of the gasoline by an amount equal to the total discount prior to the customer dispensing the gasoline.

7. The method of providing multiple level discounts of claim 6 wherein the step of inputting the electronic coupon by the customer for redemption at a gasoline station includes scanning the unique customer identification and discount identification from the encoded bar code with a bar code scanner at a gasoline dispenser, and the method further comprises, after scanning the encoded bar code, the steps of: associating the unique customer identification and discount identification with the total price-per-unit discount stored in the discounts issued database; and retrieving the total price-per-unit discount from the discounts issued database.

8. The method of providing multiple level discounts of claim 7 further comprising, after the step of scanning the unique customer identification and discount identification from the encoded bar code, the steps of:

requesting the customer to enter a personal identification number (PIN); and

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verifying the PIN prior to reducing the price-per-unit-volume of the gasoline on the gasoline dispenser.

9. The method of providing multiple level discounts of claim 7 further comprising, after the step of storing the total discount in a discounts issued database, the steps of:

storing, in the discounts issued database, a maximum number of gallons of gasoline to which the discount applies; and

storing, in the discounts issued database, a minimum purchase of gasoline required in order to qualify for the discount.

10. The method of providing multiple level discounts of claim 9 further comprising the steps of:

determining a value of the total discount redeemed;

verifying that the value of the total discount redeemed is less than or equal to the maximum discount allowed; and

verifying that the amount of gasoline purchased is greater than or equal to the minimum purchase required to qualify for the discount.

11. The method of providing multiple level discounts of claim 10 further comprising the steps of:

storing the value of the discount redeemed in a discounts redeemed database; and

allocating portions of the discount redeemed to vendors of the first and second cross-marketed products according to predetermined criteria.

12. A method of providing a discount on a price-per-unit (PPU) of a consumable good sold in multiple units to a customer who purchases at least one cross-marketed product, said method comprising the steps of:

awarding a first discount on the PPU of the consumable good to the customer in response to a purchase by the customer of a first cross-marketed product;

issuing a coupon to the customer, said coupon providing a customer identification and a transaction identification;

storing the first discount in a discounts issued database which associates the first discount with the customer identification and the transaction identification;

inputting by the customer in a subsequent transaction, the customer identification and the transaction identification;

retrieving the first discount from the discounts issued database; and

reducing the PPU of the consumable good by the first discount.

13. The method of providing a discount on a PPU of a consumable good of claim 12 further comprising, after the step of awarding a first discount, the steps of:

awarding a second discount on the PPU of the consumable good to the customer in response to a purchase by the customer of a second cross-marketed product; and

adding the first discount to the second discount to determine a total discount on the PPU of the consumable good.

14. The method of providing a discount on a PPU of a consumable good of claim 12 wherein the first product is gasoline, and the discount amount is a discount on the price-per-unit-volume of gasoline.

15. A method of providing multiple level discounts on gasoline to a customer who purchases at least one cross-marketed product, said method comprising the steps of:

awarding to the customer, a first discount on the price-per-unit-volume of the gasoline in response to a purchase by the customer of a first cross-marketed product;

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awarding to the customer, a second discount on the price-per-unit-volume of the gasoline in response to a purchase by the customer of a second cross-marketed product;

adding the first discount to the second discount to determine a total discount on the price-per-unit-volume of the gasoline;

printing a paper receipt for the customer with a customer identification and a discount identification encoded in a bar code thereon;

storing the total discount in a discounts issued database;

storing, in the discounts issued database, a maximum number of gallons to which the discount applies;

storing, in the discounts issued database, a minimum purchase of gasoline required in order to qualify for the discount;

scanning the encoded bar code with a bar code scanner at a gasoline dispenser;

verifying the discount scanned from the bar code by comparing the scanned discount with the stored discount in the discounts issued database;

reducing, by the gasoline dispenser, the price-per-unit-volume of the gasoline by an amount equal to the total discount;

determining a value of the total discount redeemed;

verifying that the value of the total discount redeemed is less than or equal to the maximum discount allowed;

verifying that the amount of gasoline purchased is greater than or equal to the minimum purchase required to qualify for the discount;

storing the value of the discount redeemed in a discounts redeemed database; and

allocating portions of the discount redeemed to vendors of the first and second cross-marketed products according to predetermined criteria.

16. A method of providing a price-per-unit-volume discount on gasoline to a customer who purchases a cross-marketed product in a sales transaction, said method comprising the steps of:

awarding the price-per-unit-volume discount to the customer in response to a purchase by the customer of a cross-marketed product;

issuing an electronic coupon to the customer, said coupon identifying the customer and the sales transaction;

storing the price-per-unit-volume discount in a discounts issued database which associates the discount with the customer and sales transaction;

storing, in the discounts issued database, a maximum number of volume units of gasoline to which the discount is applied;

storing, in the discounts issued database, a minimum purchase of gasoline required in order to qualify for the discount;

beginning a sales transaction by entering a customer identification and a transaction identification at a gasoline dispenser;

retrieving the price-per-unit-volume discount from the discounts issued database;

reducing, by the gasoline dispenser, the price-per-unit-volume of the gasoline by an amount equal to the discount;

determining a value of the total discount redeemed;

verifying that the value of the total discount redeemed is less than or equal to the maximum discount allowed;

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verifying that the amount of gasoline purchased is greater than or equal to the minimum purchase required to qualify for the discount; and

storing the value of the discount redeemed in a discounts redeemed database.

17. The method of providing a price-per-unit-volume discount on gasoline of claim 16 wherein a residual discount is stored in a residual value database, and the method further comprises, after retrieving the price-per-unit-volume discount from the discounts issued database, the steps of:

retrieving the residual discount from the residual value database; and

adding the residual discount to the price-per-unit-volume discount.

18. The method of providing a price-per-unit-volume discount on gasoline of claim 17 wherein the step of reducing the price-per-unit-volume of the gasoline by an amount equal to the discount includes the steps of:

determining whether the discount is greater than or equal to the price-per-unit volume of the gasoline; and

setting the price-per-unit volume of the gasoline equal to zero on a gasoline dispenser upon determining that the discount is greater than or equal to the price-per-unit volume of the gasoline.

19. The method of providing a price-per-unit-volume discount on gasoline of claim 18 wherein the step of setting the price-per-unit volume of the gasoline equal to zero includes the steps of:

determining whether the dispenser is of a type that can set the price-per-unit volume to zero;

setting the dispenser to the minimum price-per-unit volume that the dispenser allows, upon determining that the dispenser is of a type that cannot set the price-per-unit volume to zero; and

setting a sales transaction value of zero when the transaction is completed.

20. A system for providing multiple level discounts on a price-per-unit (PPU) of a consumable good sold in multiple units to a customer who purchases a plurality of cross-marketed products, said system comprising:

a discounts issued database for storing discounts;

means for calculating a first discount on the PPU of the consumable good in response to a purchase by a customer of a first cross-marketed product;

means for calculating a second discount on the PPU of the consumable good in response to a purchase by the customer of a second cross-marketed product; and

a database controller which adds the first discount to the second discount to determine a total discount for the customer on the PPU of the consumable good.

21. The system for providing multiple level discounts of claim 20 wherein the database controller includes means for adding a first discount from a first merchant to a second discount from a second merchant.

22. The system for providing multiple level discounts of claim 21 wherein the consumable good is gasoline, and the first, second, and total discounts are discounts on the price-per-unit-volume of gasoline.

23. The system for providing multiple level discounts of claim 22 further comprising:

a point of sale (POS) terminal that determines the first discount and issues an electronic coupon to the customer, said coupon providing a unique customer identification and a unique discount identification; and

transmission means for transmitting the unique customer identification and the discount identification from the POS terminal to the discounts issued database.

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24. A system for providing a discount on a price-per-unit (PPU) of a consumable good sold in multiple units to a customer who purchases at least one cross-marketed product, said system comprising:

a point of sale (POS) terminal that awards a first discount 5 on the PPU of the consumable good to the customer in response to a purchase by the customer of a first cross-marketed product, said POS terminal including means for issuing a coupon to the customer, said coupon providing a unique customer identification and a transaction identification; 10

means for sending the first discount from the POS terminal to a discounts issued database which associates the first discount with the unique customer identification and the transaction identification; 15

an input device for inputting by the customer in a subsequent transaction, the unique customer identification and the transaction identification;

a database controller that retrieves the first discount from the discounts issued database; and means for reducing 20 the PPU of the consumable good by the first discount in response to instructions from the database controller.

25 25. The system for providing a discount on a PPU of a consumable good of claim 24 wherein the POS terminal also includes means for awarding a second discount on the PPU of the consumable good to the customer in response to a purchase by the customer of a second cross-marketed product, and the database controller includes means for adding the first discount to the second discount to determine 30 a total discount on the PPU of the consumable good.

26. A system for providing a price-per-unit-volume discount on gasoline to a customer who purchases a cross-marketed product in a sales transaction, said system comprising:

a point of sale (POS) terminal comprising: means for awarding the price-per-unit-volume discount to the customer in response to a purchase by the customer of a cross-marketed product; and means for issuing an electronic coupon to the customer, 40 said coupon uniquely identifying the customer and the sales transaction;

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a discounts issued database for storing the price-per-unit-volume discount and uniquely associating the discount with the customer and sales transaction;

transmission means for sending from the POS terminal to the discounts issued database, a maximum number of volume units of gasoline to which the discount is applied, and a minimum purchase of gasoline required in order to qualify for the discount;

an input device at a gasoline dispenser at a gas station for entering a unique customer identification and a transaction identification;

a database controller for retrieving the price-per-unit-volume discount from the discounts issued database, upon associating the unique customer identification and the transaction identification with the stored price-per-unit-volume discount;

means for reducing, by the gasoline station, the price-per-unit-volume of the gasoline by an amount equal to the discount;

means within the database controller for determining a value of the total discount redeemed, verifying that the value of the total discount redeemed is less than or equal to the maximum discount allowed, and verifying that the amount of gasoline purchased is greater than or equal to the minimum purchase required to qualify for the discount; and

a discounts redeemed database for storing the value of the discount redeemed.

27. The system for providing a price-per-unit-volume discount on gasoline of claim 26 further comprising a residual value database for storing a residual discount, and 35 wherein the database controller also includes:

means for retrieving the residual discount from the residual value database; and

means for adding the residual discount to the price-per-unit-volume discount.

* * * * *

Exhibit C

To Original Complaint

Excentus Corp. v. QuikTrip Corp. et al.



US006732081B2

(12) **United States Patent**
Nicholson

(10) **Patent No.:** US 6,732,081 B2
(45) **Date of Patent:** *May 4, 2004

(54) **METHOD FOR PROVIDING PRICE-PER-UNIT DISCOUNTS FOR FUEL TO A CUSTOMER**

(75) **Inventor:** G. Randy Nicholson, Abilene, TX (US)

(73) **Assignee:** AutoGas Systems, Inc., Abilene, TX (US)

(*) **Notice:** Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 366 days.

This patent is subject to a terminal disclaimer.

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Related U.S. Application Data

(63) Continuation of application No. 09/253,275, filed on Feb. 19, 1999, now Pat. No. 6,332,128.

(60) Provisional application No. 60/093,813, filed on Jul. 23, 1998.

(51) **Int. Cl.⁷** G06F 17/60

(52) **U.S. Cl.** 705/14; 235/381; 235/375; 235/378; 235/380; 235/383; 705/10

(58) **Field of Search** 705/14

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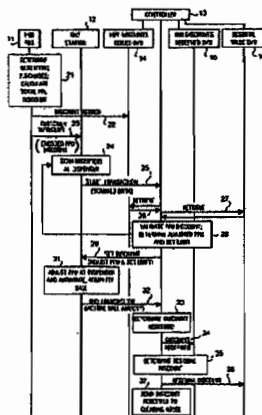
Primary Examiner—Eric W. Stamber
Assistant Examiner—Jean D Janvier

(74) *Attorney, Agent, or Firm*—Steven W. Smith

(57) **ABSTRACT**

A method of providing multiple level, price-per-unit (PPU) discounts on gasoline to a customer who purchases at least one cross-marketed product. The customer is awarded a first PPU discount on the gasoline based on a purchase by the customer of a first cross-marketed product, and is awarded a second PPU discount based on the purchase of a second cross-marketed product. The first discount is then added to the second discount to determine a total PPU discount, and a paper receipt is printed for the customer with a customer identification and a transaction identification encoded in a bar code thereon. The total discount is stored in a discounts issued database. The customer then scans the encoded bar code with a bar code scanner at a gasoline dispenser to redeem the discount. The total discount is retrieved from the discounts issued database, and the gasoline station then reduces the price-per-unit-volume of the gasoline by an amount equal to the total discount. When the customer completes the gasoline purchase, a value of the total discount redeemed is determined and stored in a discounts redeemed database. Portions of the discount redeemed are then allocated to vendors of the first and second cross-marketed products according to predetermined criteria.

11 Claims, 6 Drawing Sheets



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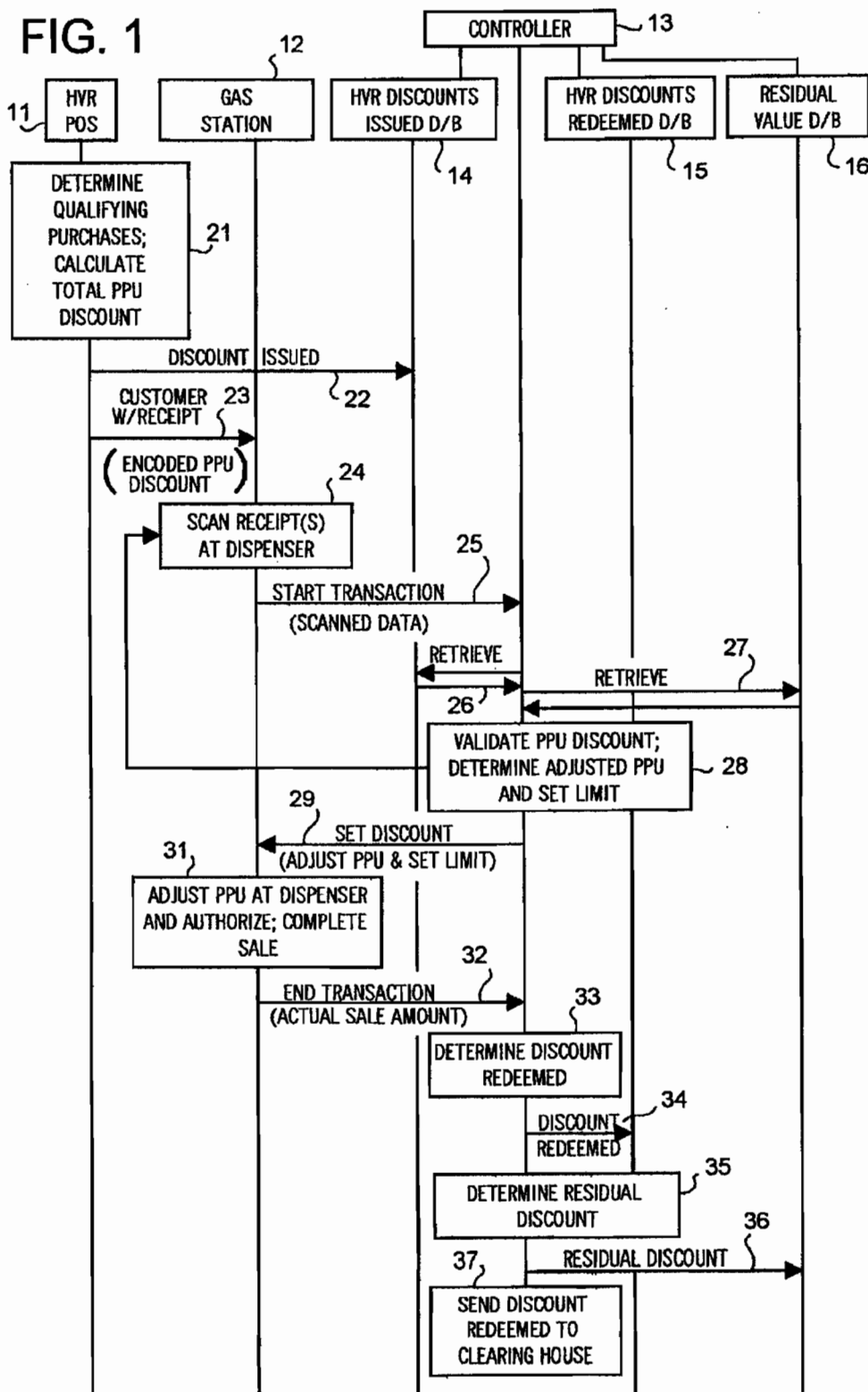
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FIG. 1



U.S. Patent

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FIELD #	FIELD	DESCRIPTION	TYPE	MIN	MAX	EXAMPLE
1	DISCOUNTRFNO	MATCHES CUSTOMER'S RECEIPT WITH THIS RECORD	NUMERIC	20	20	1234561234 5600000001
1a	DISCOUNCHAIN	CHAIN IDENTIFIER	NUMERIC	6	6	123456
1b	DISCOUNTSTORE	STORE IDENTIFIER	NUMERIC	6	6	123456
1c	DISCOUNTID	SITE-UNIQUE DISCOUNT IDENTIFIER	NUMERIC	8	8	00000001
2	SALEDATE	LOCAL DATE OF POS SALE	DATE	8	8	19990125
3	SALETIME	LOCAL TIME OF POS SALE	TIME	8	8	090000
4	SALEPOSID	SITE-RELATIVE IDENTIFIER OF POS THAT ISSUED DISCOUNT	ALPHA- NUMERIC	0	6	L45
5	UNITDISCOUNT	DISCOUNT IN CENTS PER FUEL UNIT VOLUME	NUMERIC (FLOAT)	4	5	0.15
6	DISCOUNTMAXUNITS	MAXIMUM FUEL UNITS AUTHORIZED FOR SALE AT DISCOUNT PRICE	NUMERIC	1	4	12
7	TOTALDISCOUNT	DISCOUNT EXPRESSED AS AMOUNT TO BE DEDUCTED FROM TOTAL SALE	NUMERIC (FLOAT)	3	5	2.75
8	DISCOUNTMINUNITS	MINIMUM FUEL UNITS THAT MUST BE PURCHASED TO QUALIFY FOR DISCOUNT	NUMERIC	1	3	5
9	DISCOUNTEXPIRES	LOCAL DATE OF LAST DAY THAT DISCOUNT IS VALID	DATE	8	8	19990210
10	COUPONIDS	LIST OF COUPON IDS THAT MADE UP THIS DISCOUNT	NUMERIC (WITH SUB- FIELDS)	0 EACH 0 TOTAL	5 EACH 179 TOTAL	23-171-999- 19713-2123
11	COUPONCOUNT	NO. OF COUPONS THAT MADE UP THIS DISCOUNT	NUMERIC	1	2	5
12	LOYALTYCARDID	LOYALTY CARD IDENTIFIER	NUMERIC	1	16	3456

FIG. 2

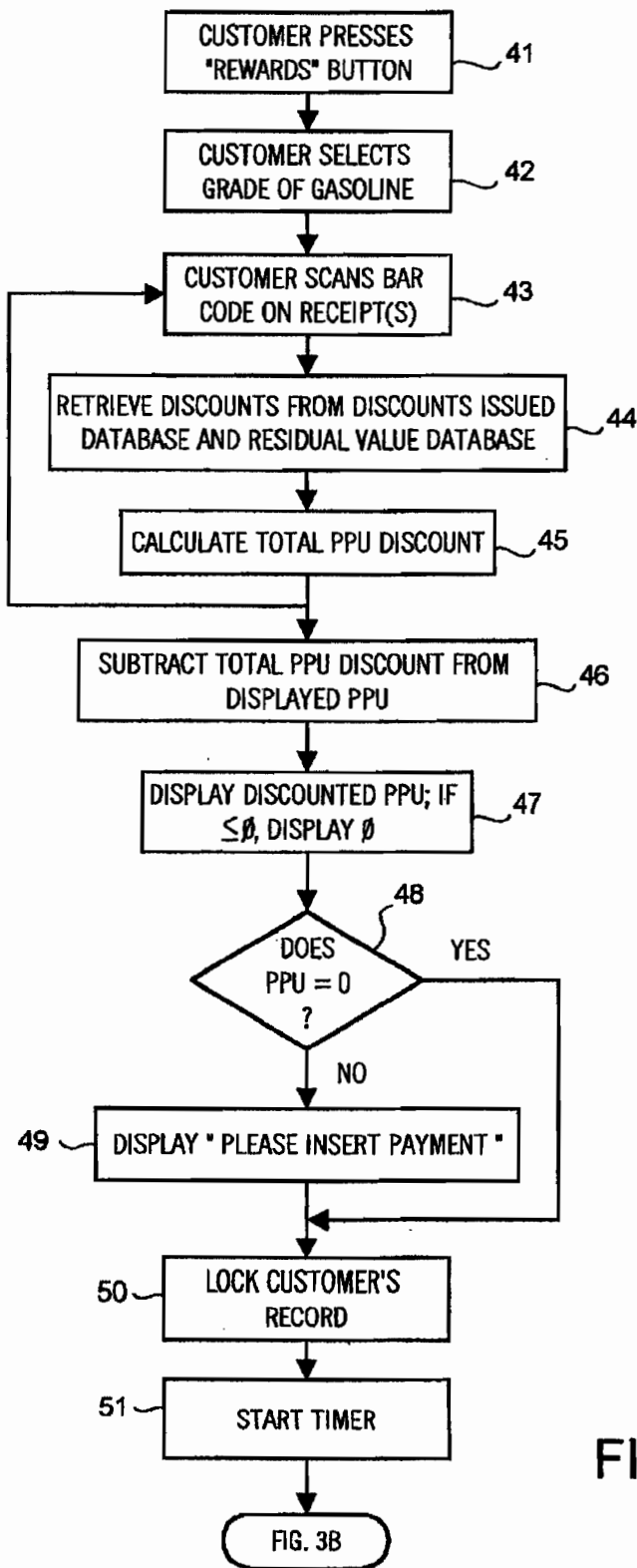
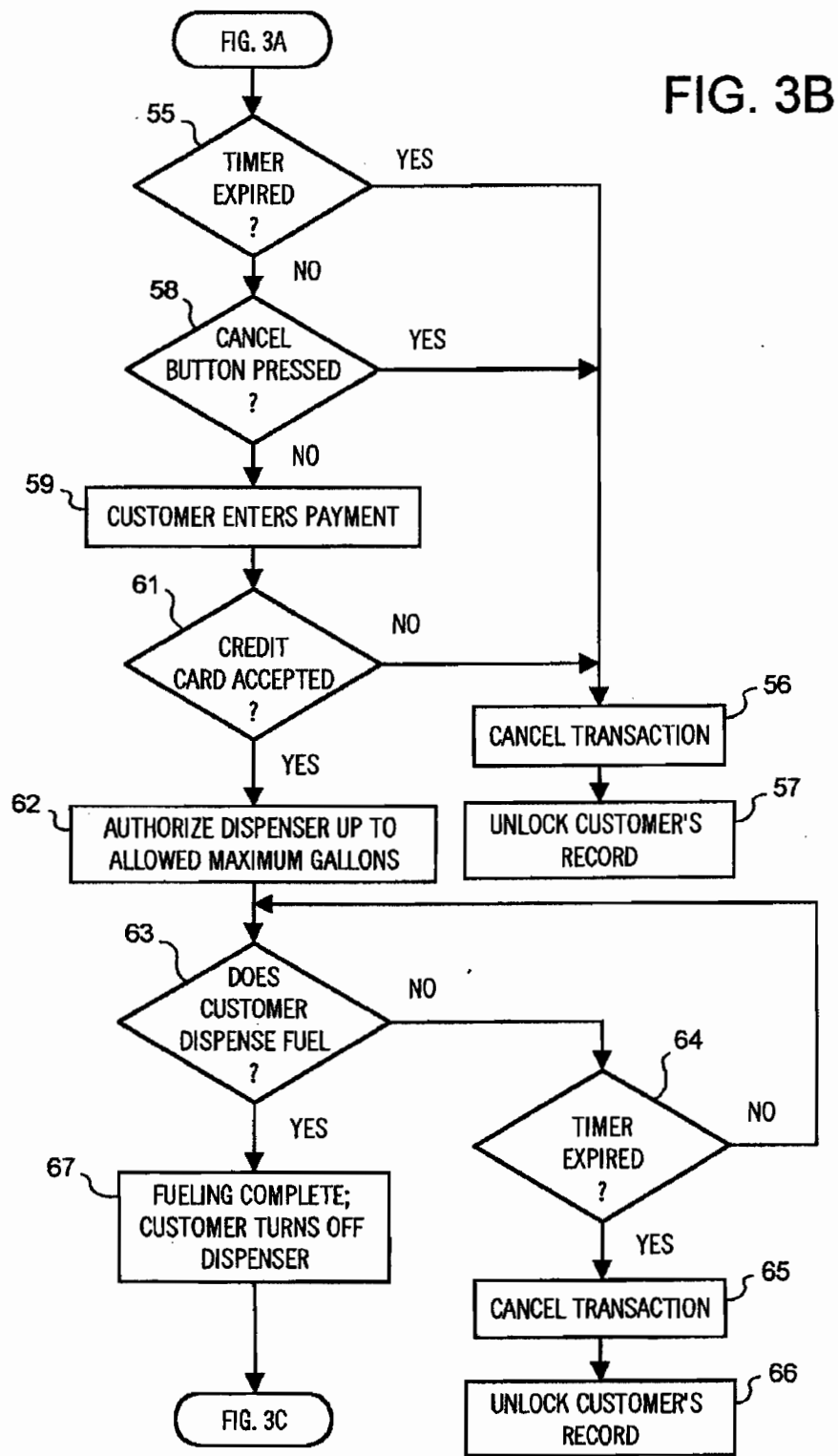


FIG. 3A



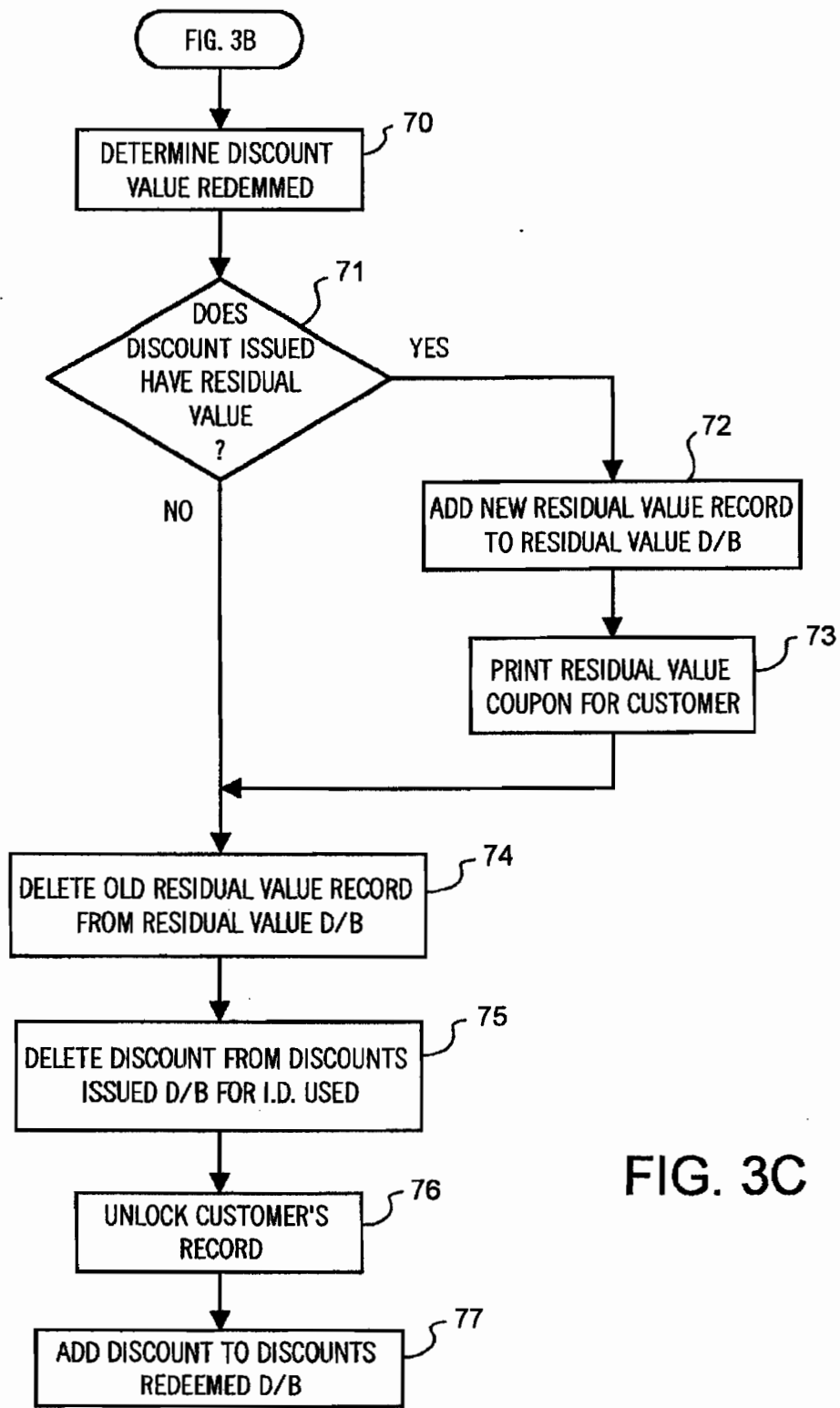


FIG. 3C

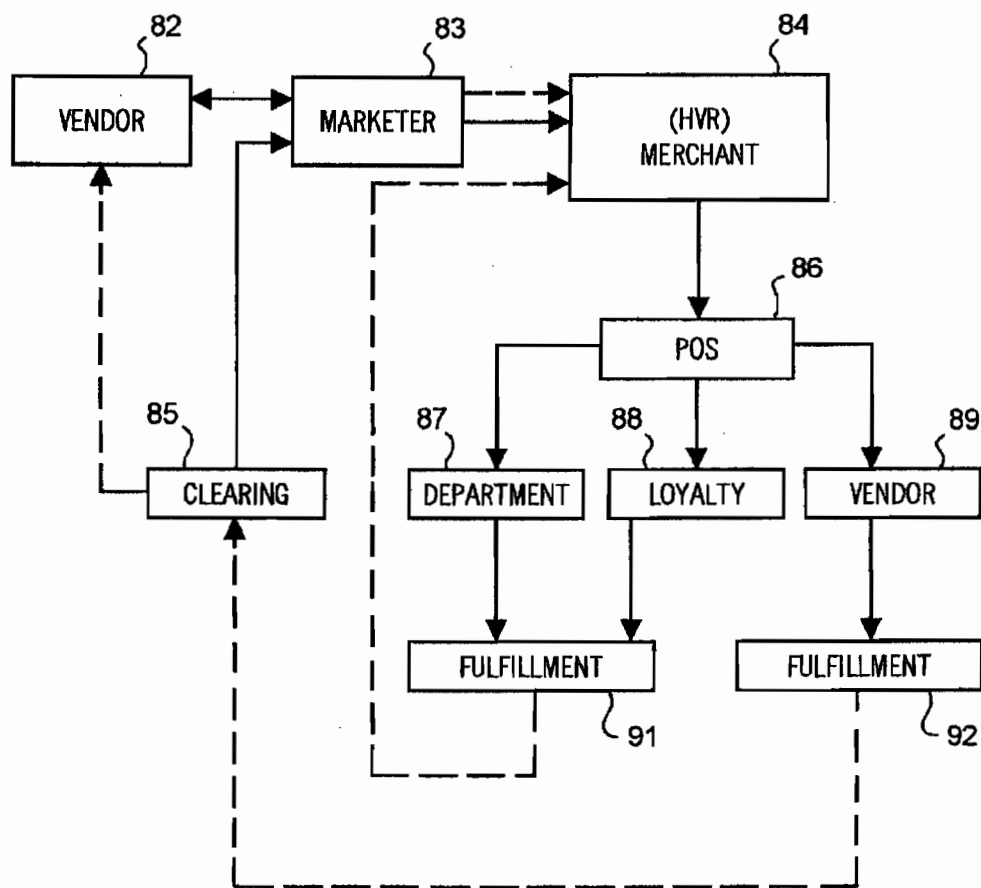


FIG. 4

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METHOD FOR PROVIDING PRICE-PER-UNIT DISCOUNTS FOR FUEL TO A CUSTOMER

RELATED APPLICATIONS

This nonprovisional application is a continuation of copending U.S. nonprovisional Patent application: application Ser. No. 09/253,275 filed Feb. 19, 1999 by G. Randy Nicholson for 'Method of Cross-Marketing Utilizing Electronic Coupons now U.S. Pat. No. 6,332,128,' which is hereby incorporated by reference for all purposes; which claims priority from Provisional Application No. 60/093,813 filed Jul. 23, 1998 by G. Randy Nicholson for 'System for Cross-Marketing Utilizing Electronic Coupons,' which is hereby incorporated by reference for all purposes.

BACKGROUND OF THE INVENTION

1. Technical Field of the Invention

This invention relates to the generation and redemption of discount coupons for multiple vendors and, more particularly, to a method of controlling the generation, distribution, and redemption of coupons, and the allocation of discounted values to multiple vendors involved in cross-marketing ventures.

2. Description of Related Art

Vendors of various products often find it desirable to enter into cross-marketing agreements in which the purchase of a product from a first vendor earns a discount coupon for the consumer on a product from a second vendor. As used herein, the term "vendor" refers to the manufacturer of a specific product or the supplier of specific services. The term "high volume retailer (HVR)" refers to the store where the products or services are purchased, such as grocery stores, discount stores, warehouse stores, supercenters, etc.

Systems and methods exist which track the redemption of such cross-marketing coupons and control the allocation of discounted values between the vendors. These systems and methods, however, do not enable vendors to associate issued coupons directly with specific customers or transactions. Nor do existing systems and methods generate coupons or rewards applicable to discounts on the price per unit of a cross-marketed product such as gasoline which is sold by the gallon or liter. In addition, existing systems and methods are not flexible and do not enable a vendor to offer variable discounts which increase if a customer purchases a plurality of cross-marketed products or purchases products from a plurality of cross-marketing vendors. The discount amount is fixed for each purchase.

This is a disadvantage if vendors attempt to use existing systems and methods to cross-market a consumable such as gasoline which is sold at a particular price per gallon. Since the total amount of a gasoline purchase generally cannot be determined in advance, a discount for a particular amount may not be appropriate. For example, a \$5.00 discount is not appropriate if the consumer fills up an automobile with gasoline, and the total charge is only \$4.00. In addition, studies have shown that it is more attractive to consumers of gasoline to receive a discount on the price per gallon than it is to receive a fixed discount on the total purchase. Current control systems and methods cannot handle a discount on

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the price per gallon since the total discount is not known before the purchase is completed.

An additional problem with existing systems and methods for tracking and allocating discount coupons is that they do not allow for cumulative savings based on the purchase of multiple cross-marketed products. It would be desirable to gasoline vendors to have a method which would allow the application of varying discounts to the price per gallon based on the number of cross-marketed products purchased. For example, if the gasoline vendor had a cross-marketing agreement with various vendors of products sold by a HVR merchant, the purchase of Product A could result in a discount in the price of the gasoline of \$0.02 per gallon. Likewise, the purchase of Product B could result in a discount in the price of the gasoline of \$0.02 per gallon. If the consumer buys both products, it would be desirable to discount the price of the gasoline by \$0.04 per gallon. Existing systems and methods do not perform this function.

Although there are no known prior art teachings of a solution to the aforementioned deficiency and shortcoming such as that disclosed herein, several references discuss subject matter that bears some relation to matters discussed herein. U.S. Pat. No. 5,173,851 to Off et al. (Off) discloses a system for creating discount coupons in response to the purchases of products. Off includes a process in which a coupon is issued in response to the purchase of multiple triggering items. However, the coupon is for a predetermined amount, and is not variable. Multiple items must be purchased in order to qualify for the fixed discount.

U.S. Pat. No. 4,949,256 to Humble (Humble) discloses a coupon validation network for automatically processing product coupons. Databases are maintained for coupons issued by manufacturers and for coupons redeemed by retailers. The system enables retailers to automatically process coupons presented for redemption by consumers, and enables manufacturers to conveniently reimburse retailers for the value of the redeemed coupons. However, Humble does not teach or suggest a system or method of handling multiple level discounts or discounts on the basis of a price per gallon.

Review of each of the foregoing references reveals no disclosure or suggestion of a method such as that described and claimed herein. In order to overcome the disadvantage of existing solutions, it would be advantageous to have a method which enables vendors to associate issued coupons directly with specific customers or transactions, and which allows the application of multiple level discounts to the price per gallon of gasoline based on the number of cross-marketed products purchased. The present invention provides such a method.

SUMMARY OF THE INVENTION

In one aspect, the present invention is a method of providing multiple level discounts on a first product to a customer who purchases at least one cross-marketed product. The method comprises the steps of awarding a first discount on the first product to the customer based on a purchase by the customer of a first cross-marketed product, awarding a second discount on the first product to the customer based on a purchase by the customer of a second

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cross-marketed product, adding the first discount to the second discount to determine a total discount on the first product, and awarding the total discount to the customer.

In another aspect, the present invention is a method of providing a discount on a first product to a customer who purchases at least one cross-marketed product. The method begins by awarding a first discount on the first product to the customer based on a purchase by the customer of a first cross-marketed product, and then issuing a coupon to the customer which provides a customer identification and a transaction identification. A discount amount is stored in a discounts issued database which associates the discount amount with the customer identification and the transaction identification. This is followed by inputting, by the customer in a subsequent transaction, the customer identification and the transaction identification, retrieving the discount amount from the discounts issued database, and reducing the price of the first product by the discount amount.

In yet another aspect, the present invention is a method of providing multiple level discounts on gasoline to a customer who purchases at least one cross-marketed product. The method includes the steps of awarding to the customer, a first discount on the price-per-unit-volume of the gasoline based on a purchase by the customer of a first cross-marketed product, and awarding a second discount on the price-per-unit-volume of the gasoline based on the purchase of a second cross-marketed product. The first discount is then added to the second discount to determine a total discount on the price-per-unit-volume of the gasoline. A paper receipt is printed for the customer with a customer identification and a transaction identification encoded in a bar code thereon. The total discount, a maximum number of volume units allowed, and a minimum purchase of gasoline required in order to qualify for the discount are stored in a discounts issued database which associates these data with the customer identification and the transaction identification. The customer then scans the encoded bar code with a bar code scanner at a gasoline dispenser. The total discount is retrieved from the discounts issued database, and the gasoline station then reduces the price-per-unit-volume of the gasoline by an amount equal to the total discount. When the customer completes the gasoline purchase, a value of the total discount redeemed is determined. This is followed by verifying that the value of the total discount redeemed is equal to or less than the maximum discount allowed, and verifying that the amount of gasoline purchased is equal to or greater than the minimum purchase required to qualify for the discount. The value of the discount redeemed is then stored in a discounts redeemed database, and portions of the discount redeemed are allocated to vendors of the first and second cross-marketed products according to predetermined criteria.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention will be better understood and its numerous objects and advantages will become more apparent to those skilled in the art by reference to the following drawings, in conjunction with the accompanying specification, in which:

FIG. 1 is a message flow diagram illustrating the messages sent between the components of the system of the present invention during a cross-merchandising transaction;

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FIG. 2 is a table illustrating an exemplary record format for a Discounts Issued message which informs a system controller of the discounts issued by a grocery store POS terminal;

FIGS. 3A-3C are a flow chart illustrating the steps of the method when a customer redeems an issued discount at a gasoline station; and

FIG. 4 is a flow chart illustrating an overall method of issuing, redeeming, and clearing discount coupons in which the method of the present invention may be practiced.

DETAILED DESCRIPTION OF EMBODIMENTS

The present invention is a method of utilizing electronic coupons for cross-marketing. By making a purchase of one or more products, a customer earns discount credits toward the purchase of another product such as gasoline. For example, if the customer buys Product A from a HVR merchant such as a grocery store or convenience store, she may earn a Price Per Unit (PPU) discount of \$0.02/gallon on her next purchase of gasoline at a participating gas station. Her receipt from the grocery store may be imprinted with an encoded bar code which is read by a bar-code reader at the gasoline dispenser. The price of the gasoline is then adjusted to provide her with her discount. The receipt is treated as a legal tender coupon. Therefore, if the discount earned is greater than the PPU price of the gasoline, the customer may get a credit back at the end of the transaction for the unused portion of the discount. Alternatively, the coupon can be printed to inform the customer that it is good only up to the PPU price of the gasoline.

The PPU price on the gasoline dispenser can be discounted to multiple levels, depending on the discount which the customer has earned. For example, if the customer also bought Product B which provides a gasoline discount of \$0.02/gallon, in addition to Product A, then the system automatically adds the two discounts together to calculate a total discount. Thus, when the customer scans in her receipt and purchases gasoline, she receives a PPU discount of \$0.04/gallon.

The system also tracks discounts that are not product-specific. For example, a HVR merchant such as a grocery store may offer a gasoline discount if a customer purchases a threshold amount of groceries over a designated period of time. For example, a purchase of \$100 in a single trip may earn a discount of \$0.10/gallon, while a purchase of \$200 may earn a discount of \$0.20/gallon. Alternatively, cumulative purchases over the time period may reach a threshold level and qualify for a discount. For example, purchases totaling \$300 in a week may qualify for a \$0.10/gallon discount. Additionally, since some products in the store provide a higher margin to the retailer, the grocery store may target the purchases to a specific department such as bakery goods. For example, a \$15 bakery purchase may entitle the customer to a \$0.04/gallon discount. Other products such as produce need to be sold fairly rapidly to avoid spoilage. These products may also be targeted to provide gasoline discounts.

The customer may also scan in several receipts at the gasoline dispenser and be awarded a cumulative discount.

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The receipts may be from several visits to a single HVR merchant, or may be from multiple independent HVR merchants. As discussed below, the receipt is encoded to provide the system with the proper information regarding the identity of the customer, the receipt, and the HVR merchant.

Some grocery stores offer frequent shopper cards to their customers which provide discounts on selected products if the card is scanned at the register at the time of purchase. The present invention enables the customer to utilize credits earned on her frequent shopper card to obtain PPU discounts on gasoline. The card may be electronically updated with credits earned at the conclusion of a shopping trip to the grocery store. The credits earned are also printed on the customer's receipt so that she has a record of the discount earned. The credits are then recognized when the customer scans the card at the gasoline station. The credit is then applied to the gasoline purchase. If the entire credit is not utilized, the remaining credit is updated on the card.

The present invention is not limited to any one method of providing the system with data regarding the identity of the customer, the receipt, and the issuing HVR merchant. Thus, for example, the discount may be encoded in a bar code on a printed receipt, it may be transferred by a radio frequency identification (RFID) device, or it may be magnetically encoded on a frequent shopper card or other magnetic medium such as a prepaid card or credit card. The customer may also be given a code number which may be entered at the gasoline dispenser in order to trigger the discount in the price per gallon. A personal identification number (PIN) may be utilized to trigger the discount or to provide security for any form of other electronic coupon.

The gasoline business is highly cost competitive, and customers generally purchase their gasoline at the station where they perceive they are getting the best price per gallon. It is difficult, however, for a gasoline retailer to maintain a competitive price advantage because as soon as he lowers his posted street price, his competitors lower their prices to match. The present invention offers a method by which a gasoline retailer can maintain a posted street price (seen by his competitors) while offering his customers the benefit of individualized prices which are discounted from the posted street price. The method also enables gasoline retailers who operate convenience stores in conjunction with their gasoline sales to increase inside sales by offering discounts on gasoline in response to the purchase of goods inside the store.

FIG. 1 is a message flow diagram illustrating the messages sent between the components of the system of the present invention during a cross-merchandising transaction. The system includes a HVR point of sale (POS) terminal 11, a gas station 12, and a controller 13 which is associated with a HVR discounts issued database 14, a HVR discounts redeemed database 15, and a residual value database 16.

When a customer purchases items from the HVR merchant, the HVR POS terminal 11 determines at 21 which purchases qualify for a price-per-unit (PPU) discount on gasoline. A total PPU discount is then calculated by adding each individual PPU discount for which the customer has qualified. Transaction data including an identification of the customer and the total discount issued is sent to the HVR discounts issued database 14 in a Discounts Issued message

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22. The customer identification may be utilized to track customer loyalty or, in the case of HVR merchants that require memberships, the customer identification may be utilized to verify membership. At 23, the HVR POS terminal prints a receipt for the customer which includes an encoded customer identification and transaction identification associated with the discount, and the customer takes the receipt to the gas station 12.

Referring briefly to FIG. 2, an exemplary record format is shown for the Discounts Issued message 22 which carries customer, transaction, and store identifications to the HVR discounts issued database 14. Field 1 serves as the key for matching the customer's receipt with a particular discount record. This number may be encoded, for example, in a bar code on the POS sale receipt. Field 1 may be divided into sub-fields 1a-1c. Sub-field 1a identifies the chain to which the HVR store belongs. This number is unique across the discount program, and enables a customer to redeem a discount earned at a particular store in a chain at any other store in the chain. Sub-field 1b identifies the particular store within the HVR chain. This number must be unique within a chain or store ownership group. Sub-field 1c is a site-unique discount identifier which may be utilized in combination with sub-fields 1a and 1b to identify a particular customer or transaction. Sub-field 1c must be unique within a site (chain+store) discount expiration period. Fields 2 and 3 report the date and time of the sale.

Field 4 identifies a particular POS terminal within the identified site for store auditing purposes. Field 5 shows the PPU discount issued in cents per fuel-unit volume (for example, 0.15/gallon). Field 6 shows the maximum fuel units that are authorized for sale at the discounted price, and Field 8 shows the minimum fuel units that must be purchased in order to qualify for the discount. The POS terminal may issue a total discount instead of a PPU discount and, if so, this information is supplied in Field 7. When Field 7 (total discount) is supplied, Field 8 (minimum units) may also be supplied, but Field 5 (unit discount) must not be supplied. Conversely, when Field 5 (unit discount) is supplied, Field 6 may be supplied, but Field 7 (total discount) and Field 8 (minimum units) are ignored.

Field 9 provides the local date of the last day that the discount is valid. Field 10 provides a list of logical coupon identifications which made up the discount, and Field 11 provides a count of the number of logical coupons that made up the discount. The coupon IDs may be passed to the HVR discounts redeemed database 15 and to a clearing house (not shown) in a Discounts Redeemed record so that the discount can be allocated to the proper vendors according to predetermined criteria. The discount may be allocated according to negotiated agreements or on a pro rata basis. Field 12 provides a loyalty card identifier for individual customers of stores that use loyalty cards such as frequent shopper cards.

Referring again to FIG. 1, when the customer desires to redeem the discount, the receipt is scanned at 24 by a bar code scanner at the pump dispenser at the gasoline station 12. This causes the dispenser to send a start transaction message 25 to the controller 13. The start transaction message includes the data scanned from the customer's receipt. At 26, the controller retrieves information regarding the issued discount from the HVR discounts issued database 14.

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At 27, the controller also retrieves information regarding any residual discount that may have been stored in the residual value database 16 from a previous transaction. At 28, the controller validates the scanned data by comparing it with data retrieved from the HVR discounts issued database 14 and the residual value database 16. If the scanned data is valid, the controller adds any residual discount to the discount issued to obtain a total PPU discount. The controller then determines an adjusted PPU price by subtracting the total PPU discount from the normal price. The controller also sets an upper limit on the number of gallons subject to the discount. If the customer scans more than one receipt, the process from steps 24 to 28 is repeated, and the discount associated with each receipt is added to the total PPU discount, and is subtracted from the normal price.

The controller then sends a set discount message 29 to the dispenser and includes instructions to adjust the displayed price per gallon by the amount of the total PPU discount, and to set the maximum limit on the number of gallons that can be purchased at the discounted price. Alternatively, a maximum discount value can be set. If the calculated total PPU discount is greater than the PPU displayed on the gasoline dispenser, the controller sets the displayed PPU price to zero (0). On dispensers that will not display a PPU price of zero, the lowest price which the dispenser will display is shown to the customer. After the sale is complete, and the sale amount is reported to the controller at step 32, the controller sets the sale amount to zero.

At 31, the gasoline station dispenser adjusts the price per gallon on the dispenser, and the dispenser is authorized. When the sale is completed, the dispenser sends an end transaction message 32 to the controller and includes the actual sale amount. The actual value of the discount redeemed is then determined at 33. At 34, the discount redeemed amount is then sent to the HVR discounts redeemed database 15. The HVR merchant can compare data from the HVR discounts issued database 14 and the HVR discounts redeemed database 15 to determine the effectiveness of cross-marketing agreements on various products. The controller determines if there is any residual discount at 35, and if so, sends the residual discount at 36 to the residual value database 16. At 37, the controller sends the discount redeemed to a clearing house (not shown) for allocation to the proper vendors.

FIGS. 3A-3C are a flow chart illustrating the steps of the method when a customer redeems an issued discount at a gasoline station. Referring concurrently to FIG. 1 and FIG. 3A, it can be seen at step 41 that the process may be started by having the customer press a "Rewards" button at the gasoline dispenser, and then selecting a grade of gasoline to be purchased at step 42. Alternatively, the process may be started automatically when the customer selects a grade of gasoline and then at 43, scans the bar code on the receipt that was printed at the HVR POS terminal. At 44, the gas station then sends the information scanned from the bar code, which includes the discount reference number, a customer identification, and a transaction identification to the controller 13 which retrieves information relating to the issued discount from the discounts issued database 14. The controller also retrieves information regarding any residual discount that may have been stored from a previous trans-

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action in the residual value database 16. The controller then calculates a total PPU discount at step 45 by adding the issued discount to the residual discount, if any. If the customer scans additional receipts, the process repeats steps 42-45 and calculates a total PPU discount that combines the discounts for all scanned receipts.

At 46, it is determined whether or not the calculated total PPU discount is greater than the PPU displayed on the gasoline dispenser. If not, the method moves to step 47 and subtracts the total PPU discount from the displayed PPU and then displays a new discounted PPU on the dispenser at 48. However, if the calculated new discounted PPU is less than or equal to zero, the discounted PPU is then set to zero (0) at 47 and is displayed on the dispenser. If the PPU is not zero at 48, the method moves to step 49 where the display instructs the customer to enter payment, which may be a credit card or dollar bills. If the PPU is zero, the method moves directly to step 50 where the customer's record is locked, and a timer is started at 51. The method then moves to FIG. 3B, step 55.

If the timer expires at step 55 before any further action is taken, the method moves to step 56 where the timer automatically ends the transaction. Thus, if the customer finds, for example, that he has no money, or is unable to complete the transaction for any other reason, the next person in line does not get the customer's discount. The customer's record is unlocked at 57, and the value of the customer's discount is retained.

If the customer presses a "Cancel Transaction" button at 58 before the timer expires at 55, the method also moves to step 56 where the transaction is canceled and the customer's record is unlocked at 57, and the value of the customer's discount is retained. If the Cancel Transaction button is not pressed, the method moves to step 59 where the customer enters his payment. At step 61, it is determined whether or not the customer's credit card is accepted. If not, the method moves to step 56 where the transaction is canceled and the customer's record is unlocked at 57, and the value of the customer's discount is retained. If the credit card is accepted, the method moves to step 62 where the dispenser is authorized to dispense up to the maximum number of gallons authorized in Field 6 of the Discount Issued message 22 (FIG. 2). The dispenser is automatically shut off if the maximum number of gallons is reached.

It is then determined at step 63 whether or not the customer has dispensed fuel. If not, it is determined at 64 whether or not the timer has expired. If the timer has not expired, the method returns to step 63 and waits for the customer to begin dispensing the fuel. If the customer does not begin dispensing fuel before the timer expires, the method moves to step 65 where the transaction is canceled and the customer's record is unlocked at 66, and the value of the customer's discount is retained. If the customer dispenses fuel at 63, the method moves to step 67 where the customer completes fueling and turns off the dispenser. The method then moves to FIG. 3C, step 70.

At step 70, the value of the discount redeemed is determined by multiplying the PPU discount by the number of gallons purchased. The process then moves to step 71 where it is determined whether there is any residual value to the issued discount. If so, the method moves to step 72 where

the residual value is added to the residual value database 16 in a new residual value record. For the customer's convenience, the gasoline dispenser may then print a residual value coupon for the customer at 73 which can be utilized to redeem the residual value in a future transaction. 5
Following this, or if the issued discount did not have any residual value, the method moves to step 74 where the old residual value record is deleted from the residual value database. At step 75, the discount is then deleted from the discounts issued database 14 for the discount reference number utilized. The customer's record is then unlocked at 76. At 77, the discount is then added to the discounts redeemed database 15.

FIG. 4 is a flow chart illustrating an overall method of issuing, redeeming, and clearing discount coupons in which the method of the present invention may be practiced. A vendor 82, a marketer 83, a HVR merchant 84, and a clearing house 85 are involved in the method. Dotted lines in the flow chart represent the passing of settlement information. The HVR merchant may be, for example, a grocery store or convenience store which also sells gasoline to its customers. The HVR merchant utilizes a POS terminal 86 through which sales transactions are processed. The transactions may be categorized as department transactions 87, loyalty transactions 88, or vendor transactions 89. A department transaction 87 may be sales in a particular department such as the bakery department in which the HVR merchant has decided to offer awards for bakery purchases. By purchasing a minimum amount of bakery goods, the customer is issued a discount coupon which is good for a reduction in the PPU price of gasoline at the store. Therefore, fulfillment at 91 and settlement are accomplished within the HVR merchant's own accounting system.

A loyalty transaction 88 may be a transaction in which the customer utilizes a store credit card or frequent shopper card. Fulfillment at 91 and settlement of the gasoline discount for this transaction are also accomplished within the HVR merchant's own accounting system. However, transactions involving the purchase of a participating vendor's products at 89 require fulfillment at 92 and settlement through the clearing house 85 and the marketer 83.

It is thus believed that the operation and construction of the present invention will be apparent from the foregoing description. While the method shown and described has been characterized as being preferred, it will be readily apparent that various changes and modifications could be made therein without departing from the scope of the invention as defined in the following claims.

What is claimed is:

1. A method of providing a discount on a price-per-unit (PPU) of a consumable good sold in multiple units to a customer who purchases at least one cross-marketed product, said method comprising the steps of:
awarding a first discount on the PPU of the consumable good to the customer in response to a purchase by the customer of a first cross-marketed product;
awarding a second discount on the PPU of the consumable good to the customer in response to a purchase by the customer of a second cross-marketed product;
adding the first discount to the second discount to determine a total discount on the PPU of the consumable good;

storing the total discount in a discounts issued database which associates the total discount with a customer identification and a transaction identification;

initiating by the customer, a subsequent purchase of the consumable good, said initiating step including inputting the customer identification and the transaction identification;

retrieving the total discount from the discounts issued database; and

reducing the PPU of the consumable good by the total discount.

2. The method of providing a discount on a PPU of a consumable good of claim 1 wherein the first product is fuel, and the first and second discounts are discounts on the price-per-unit-volume of fuel.

3. The method of providing a discount on a PPU of a consumable good of claim 2 further comprising reducing on a fuel dispenser, the price-per-unit-volume of the fuel by an amount equal to the total discount prior to the customer dispensing the fuel.

4. The method of providing a discount on a PPU of a consumable good of claim 3 further comprising the steps of:
calculating a value of the discount redeemed after the customer completes dispensing the fuel;

storing the value of the discount redeemed in a discounts redeemed database; and

allocating portions of the discount redeemed to vendors of the first and second cross-marketed products according to predetermined criteria.

5. The method of providing a discount on a PPU of a consumable good of claim 2 further comprising the steps of:
storing, in the discounts issued database, a maximum number of volume units of fuel to which the total discount applies, thereby establishing a maximum value of the total discount that may be redeemed by the customer;

after the customer initiates the subsequent purchase, retrieving along with the total discount, the maximum number of volume units of fuel from the discounts issued database;

after reducing the PPU by the total discount, dispensing fuel to the customer up to the maximum number of volume units allowed;

determining a value of the total discount redeemed;

verifying that the value of the total discount redeemed is less than or equal to the maximum discount allowed by the merchant or the vender; and

storing the value of the discount redeemed in a discounts redeemed database.

6. The method of providing a discount on a PPU of a consumable good of claim 5 wherein a residual discount is stored in a residual value database, and the method further comprises, after retrieving the total discount from the discounts issued database, the steps of:

retrieving the residual discount from the residual value database; and

adding the residual discount to the total discount.

7. The method of providing a discount on a PPU of a consumable good of claim 5 further comprising the steps of:
storing, in the discounts issued database, a minimum purchase of fuel required in order to qualify for the discount; and

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after dispensing the fuel, verifying that the amount of fuel purchased is greater than or equal to the minimum purchase required to qualify for the discount.

8. A method of providing multiple level discounts on fuel to a customer who purchases at least one cross-marketed product, said method comprising the steps of:

awarding to the customer, a first discount on the price-per-unit-volume of the fuel in response to a purchase by the customer of a first cross-marketed product;

awarding to the customer, a second discount on the price-per-unit-volume of the fuel in response to a purchase by the customer of a second cross-marketed product;

adding the first discount to the second discount to determine a total discount on the price-per-unit-volume of the fuel;

storing the total discount in a discounts issued database which associates the first discount with a customer identification and a transaction identification;

storing, in the discounts issued database, a maximum number of gallons to which the discount applies;

initiating by the customer, a subsequent purchase of fuel, said initiating step including inputting the customer identification and the transaction identification at a fuel dispenser;

reducing, by the fuel dispenser, the price-per-unit-volume of the fuel by an amount equal to the total discount prior to the customer dispensing the fuel;

dispensing fuel to the customer;

determining a value of the total discount redeemed;

verifying that the value of the total discount redeemed is less than or equal to the maximum discount allowed; and

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storing the value of the discount redeemed in a discounts redeemed database.

9. The method of providing multiple level discounts of claim 8 further comprising allocating portions of the discount redeemed to vendors of the first and second cross-marketed products according to predetermined criteria.

10. The method of providing multiple level discounts of claim 8 further comprising the steps of:

storing, in the discounts issued database, a minimum purchase of fuel required in order to qualify for the discount; and

after dispensing fuel to the customer, verifying that the amount of fuel purchased is greater than or equal to the minimum purchase required to qualify for the discount.

11. A method of providing multiple level discounts on a price-per-unit (PPU) of a consumable good sold in multiple units to a customer who purchases a plurality of cross-marketed products or services, said method comprising the steps of:

awarding a first discount on the PPU of the consumable good to the customer in response to a purchase by the customer of a first cross-marketed product or service;

awarding a second discount on the PPU of the consumable good to the customer in response to a purchase by the customer of a second cross-marketed product or service;

adding the first discount to the second discount to determine a total discount on the PPU of the consumable good; and

awarding the total discount to the customer.

* * * * *

Exhibit D

To Original Complaint

Excentus Corp. v. QuikTrip Corp. et al.



US007383204B2

(12) **United States Patent**
McCall et al.

(10) **Patent No.:** **US 7,383,204 B2**
 (45) **Date of Patent:** **Jun. 3, 2008**

(54) **SYSTEM AND METHOD PROVIDING CUSTOMER INCENTIVE TO PURCHASE NON-FUEL PRODUCTS AND SERVICES**

(58) **Field of Classification Search** 705/14, 705/26, 27; 235/380, 381, 382, 383
 See application file for complete search history.

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G. Randy Nicholson, Abilene, TX (US)

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(73) **Assignee:** **AutoGas Systems, Inc.**, Abilene, TX (US)

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(*) **Notice:** Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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(21) **Appl. No.:** **11/702,866**

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(22) **Filed:** **Feb. 6, 2007**

Primary Examiner—Jean D. Janvier
 (74) *Attorney, Agent, or Firm*—Steven W. Smith

(65) **Prior Publication Data**

US 2007/0174126 A1 Jul. 26, 2007

Related U.S. Application Data

(57) **ABSTRACT**

(60) Division of application No. 10/679,860, filed on Oct. 6, 2003, now abandoned, which is a division of application No. 09/746,392, filed on Dec. 21, 2000, now abandoned, which is a continuation-in-part of application No. 09/542,178, filed on Apr. 4, 2000, now abandoned, which is a continuation of application No. 09/255,472, filed on Feb. 23, 1999, now Pat. No. 6,321,984, which is a continuation-in-part of application No. 09/026,634, filed on Feb. 20, 1998, now Pat. No. 6,112,981.

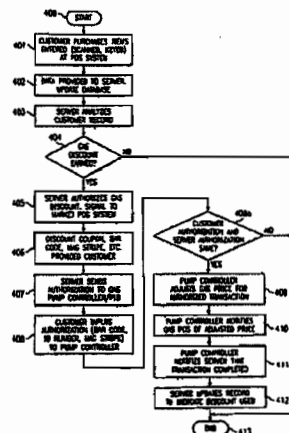
A system and computer-implemented method of providing an incentive for a customer to purchase non-fuel products or services at a store that sells the products or services and fuel. The system detects that the customer purchased a number of non-fuel products or services in a first visit to the store, and provides the customer with a first reward entitling the customer to a first amount of free fuel. The system then detects that the customer purchased a number of non-fuel products or services in a second visit to the store, and provides the customer with a second reward entitling the customer to a second amount of free fuel. The customer is identified during a subsequent fueling transaction, and the system dispenses an amount of free fuel to the customer equal to the total of the first and second amounts of free fuel.

(60) Provisional application No. 60/039,007, filed on Feb. 25, 1997.

(51) **Int. Cl.**
G06Q 30/00 (2006.01)

(52) **U.S. Cl.** 705/14; 705/26; 705/27;
 235/380; 235/381; 235/382; 235/383

18 Claims, 10 Drawing Sheets

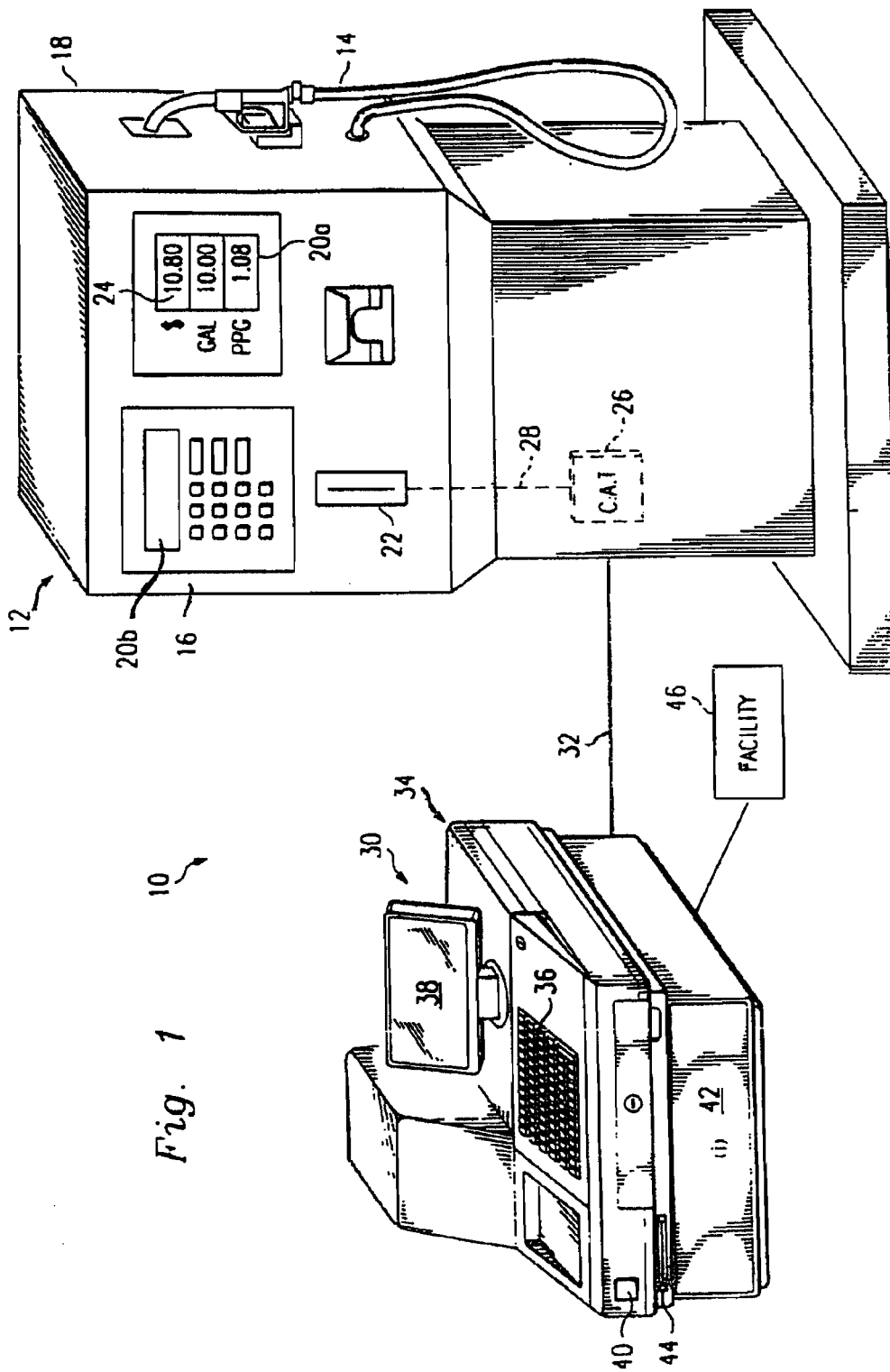


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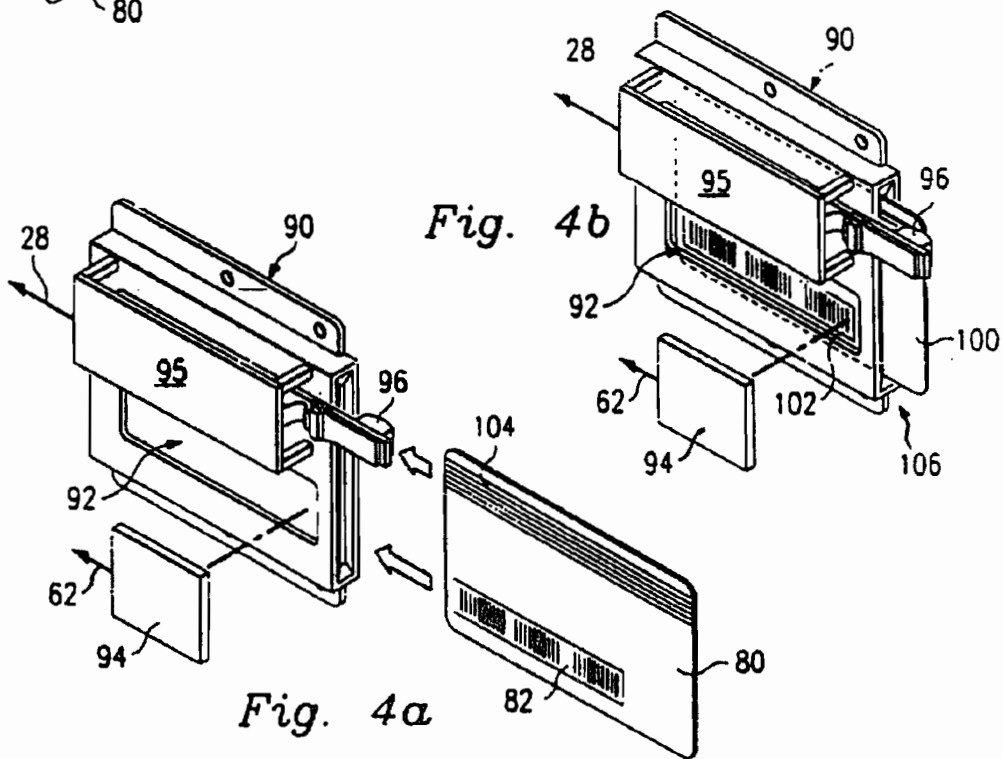
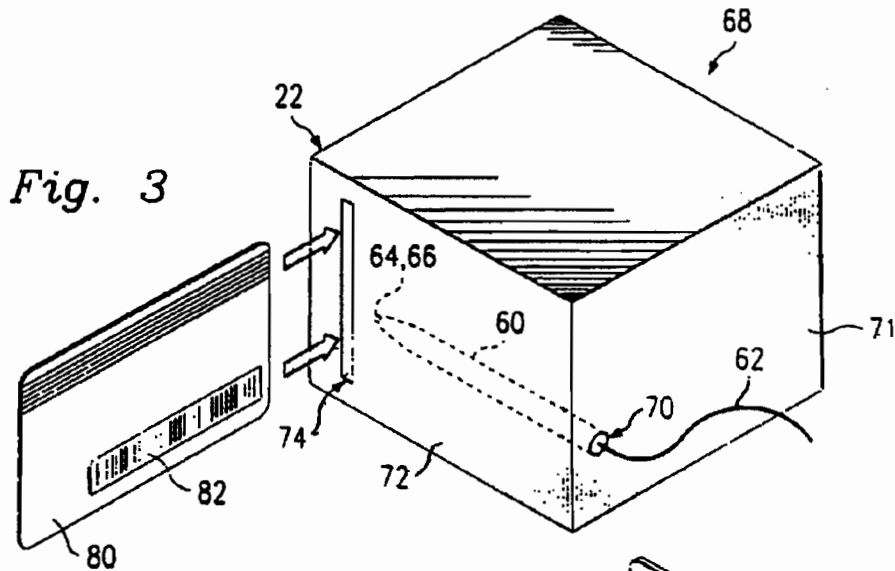
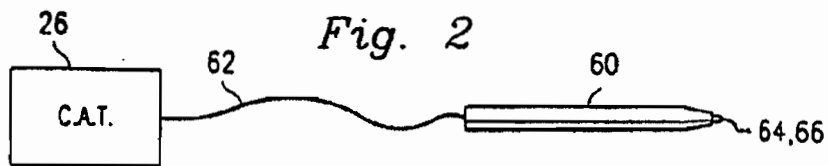


Fig. 5

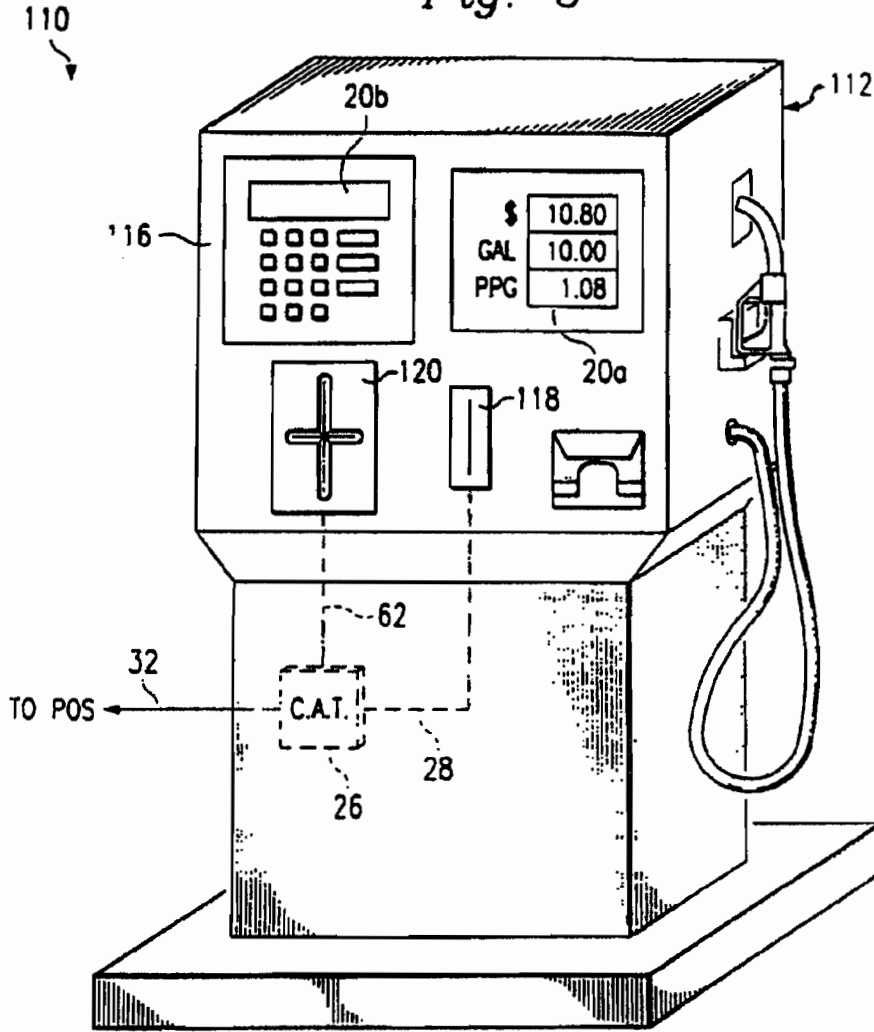
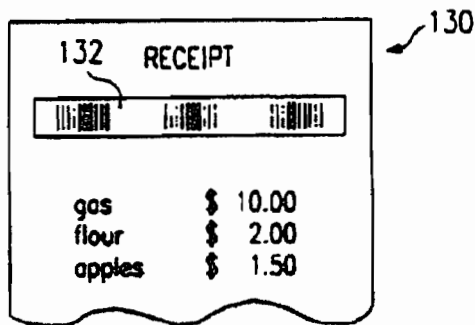


Fig. 6

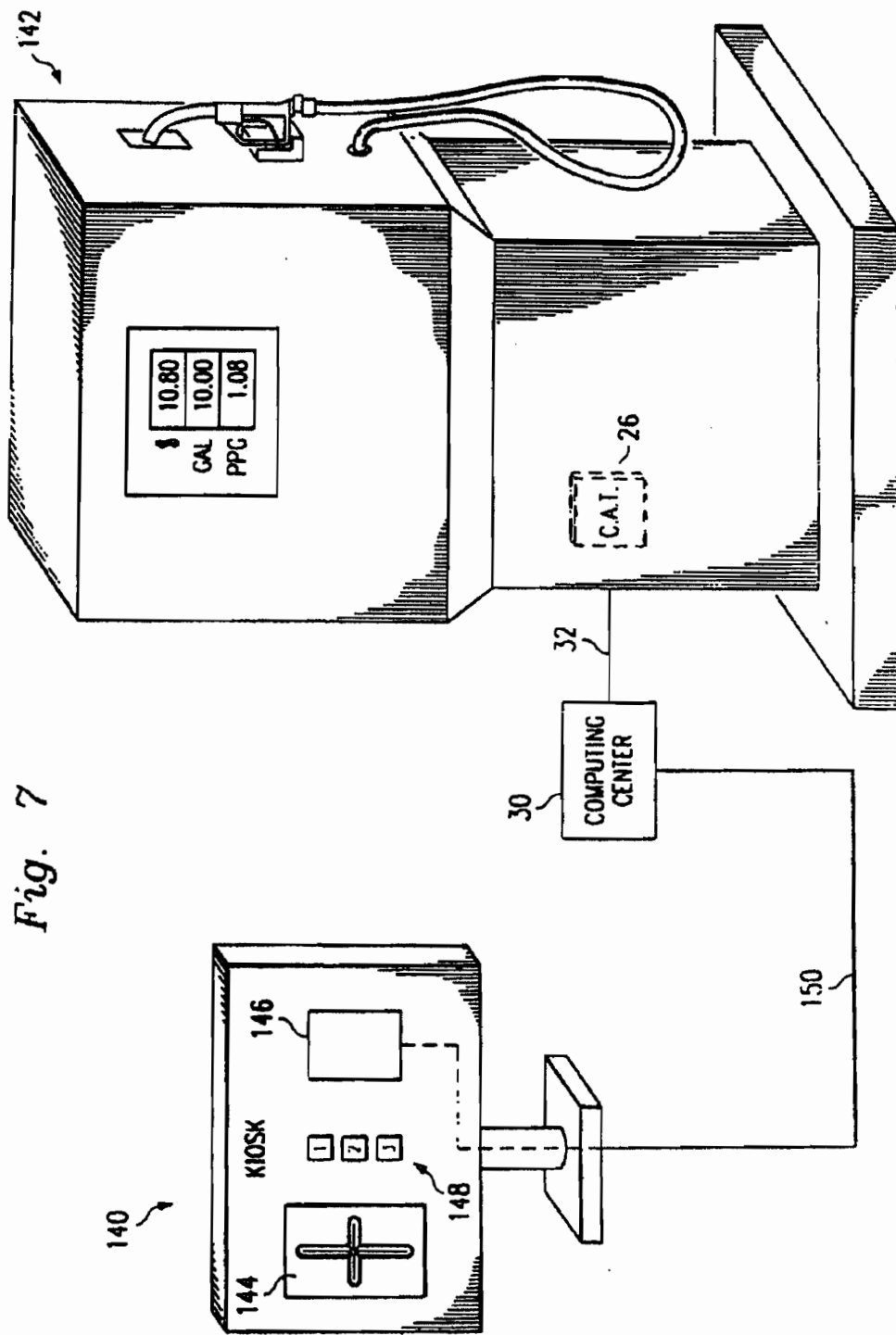


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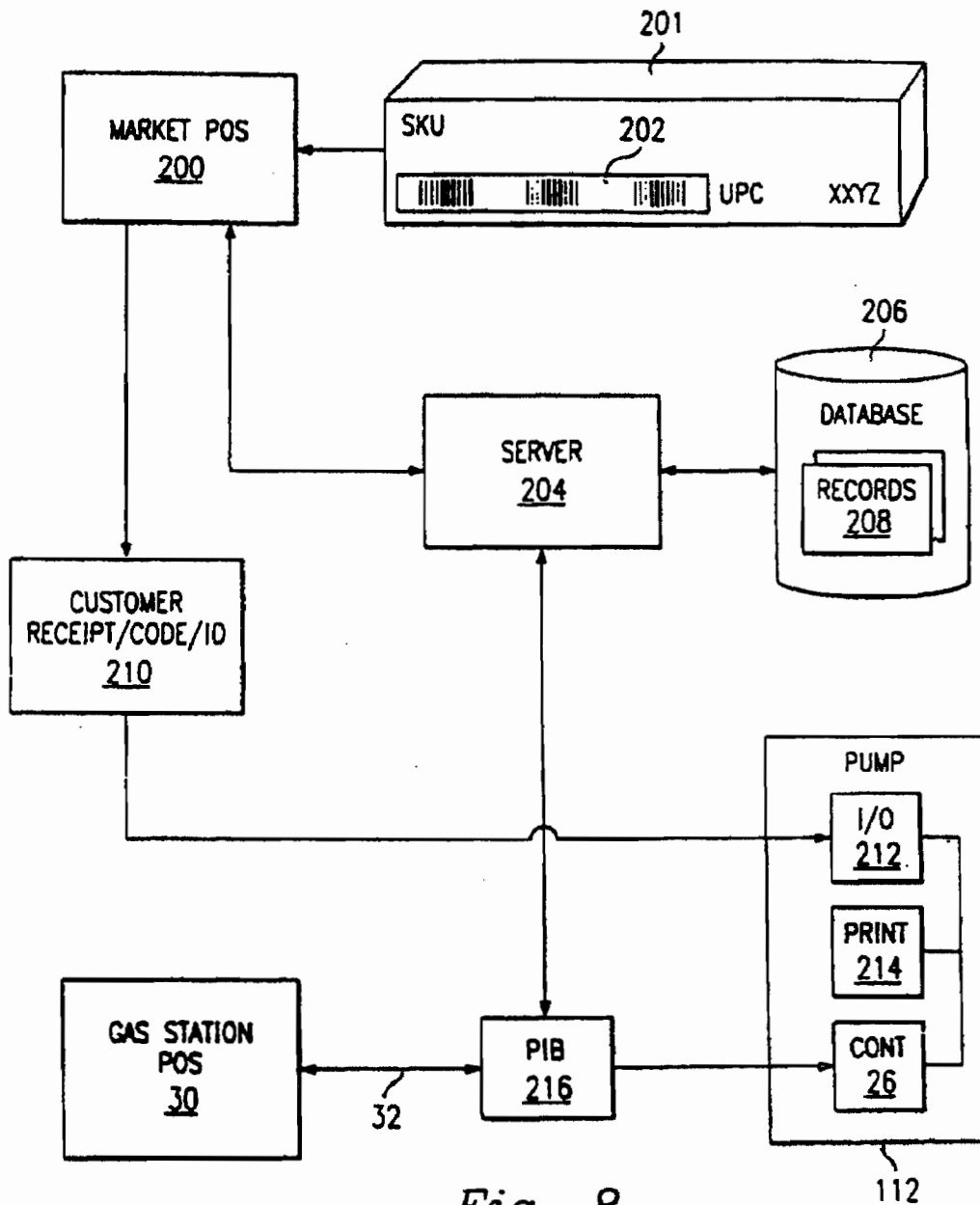


Fig. 8

Fig. 9

300 SMITH, A ID NO. 1234ABC						
DATE	PURCHASES	QUANTITY OF DESIGNATED ITEMS (PROMO)	TOTAL QUANTITY (LOYALTY)	DISCOUNT	DISCOUNT USED	DISCOUNT AMOUNT
302	304	306	308	310	312	314
1/5/99	20\$	3	5	N		
1/17/99	15\$	5	10	Y (≥5 PROMO)	1/20/99	10¢/GAL
1/28/99	45\$	2	4	N		
2/4/99	25\$	1	3	Y (>20 LOY) Y (>100\$)		10¢/GAL } 15¢/GAL } 25¢/GAL
TOTAL	\$105	11	22			

208

316 318 320

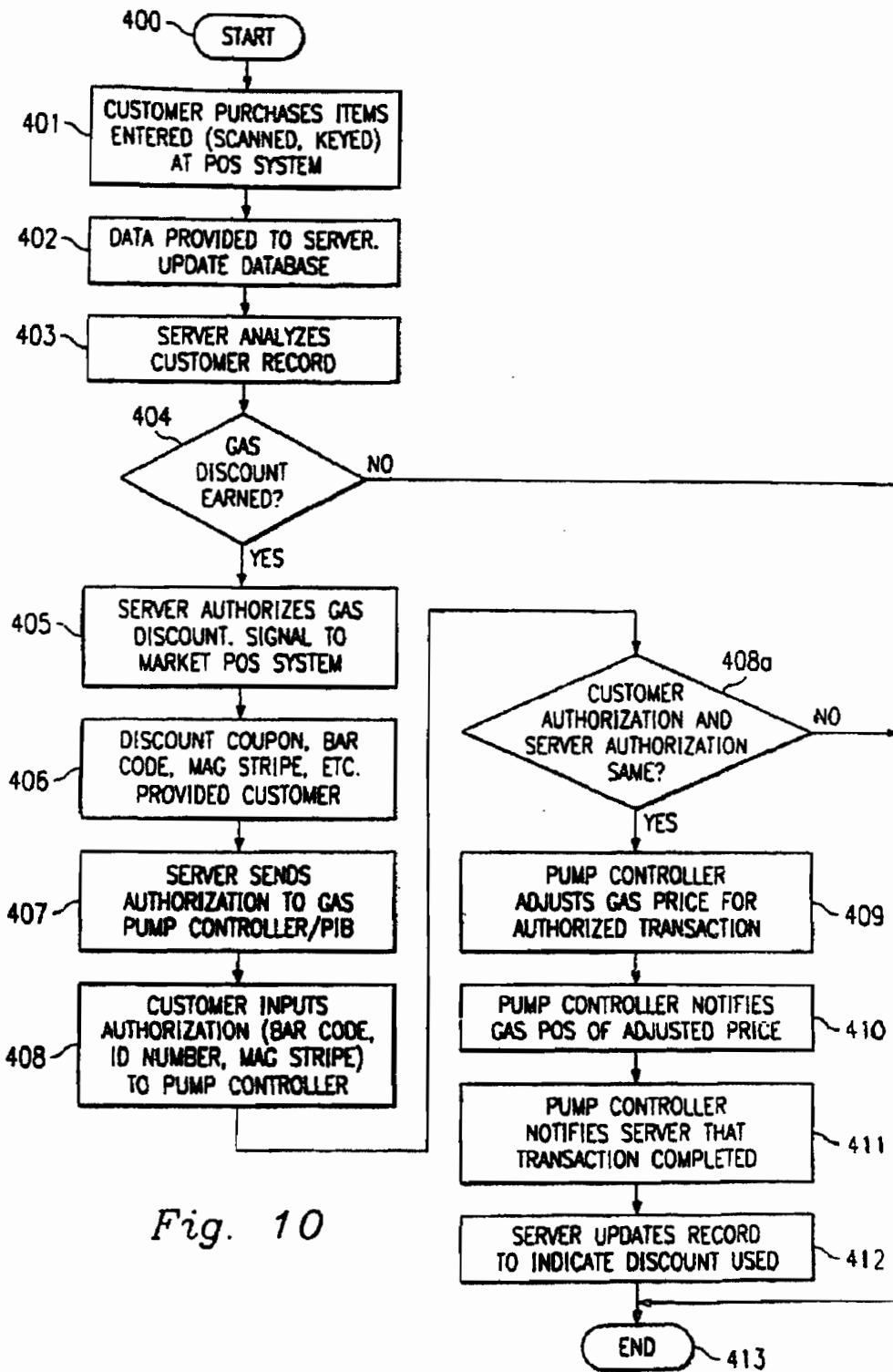


Fig. 10

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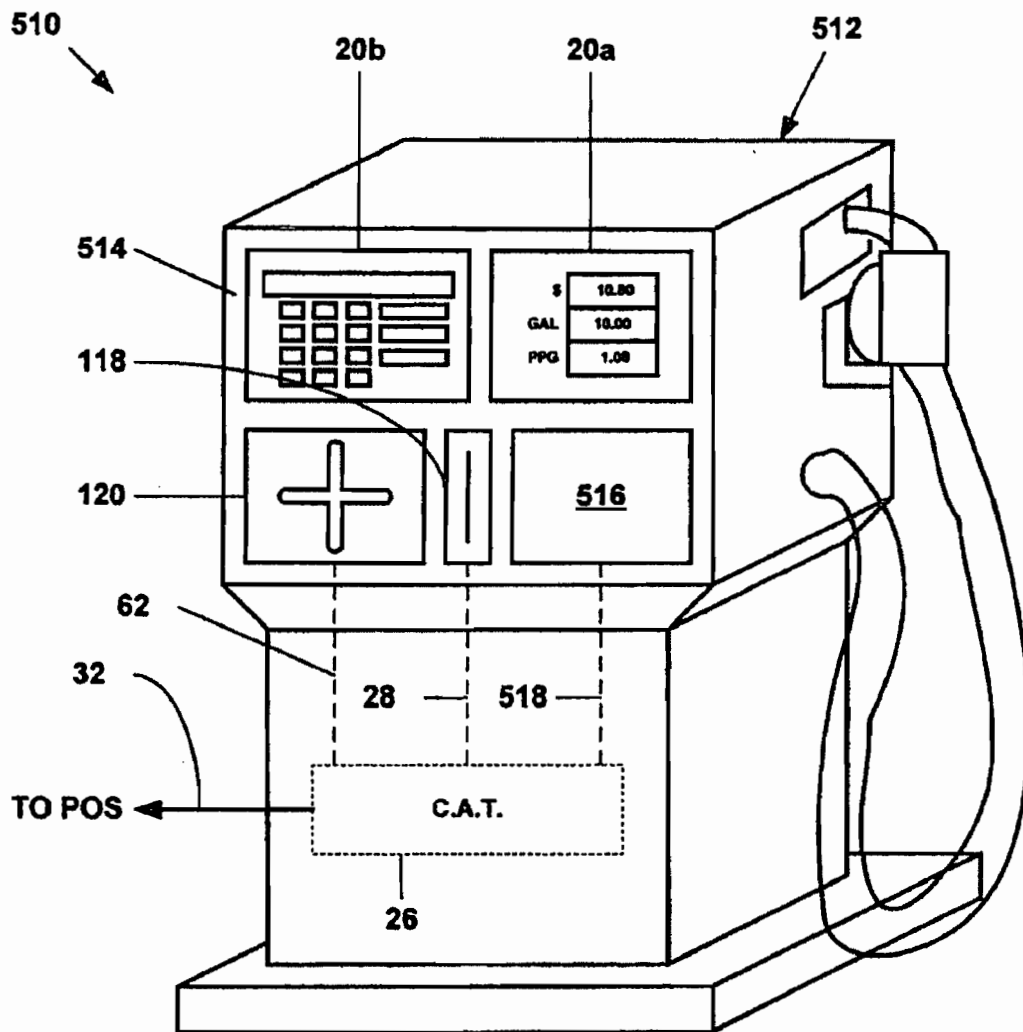


Fig. 11

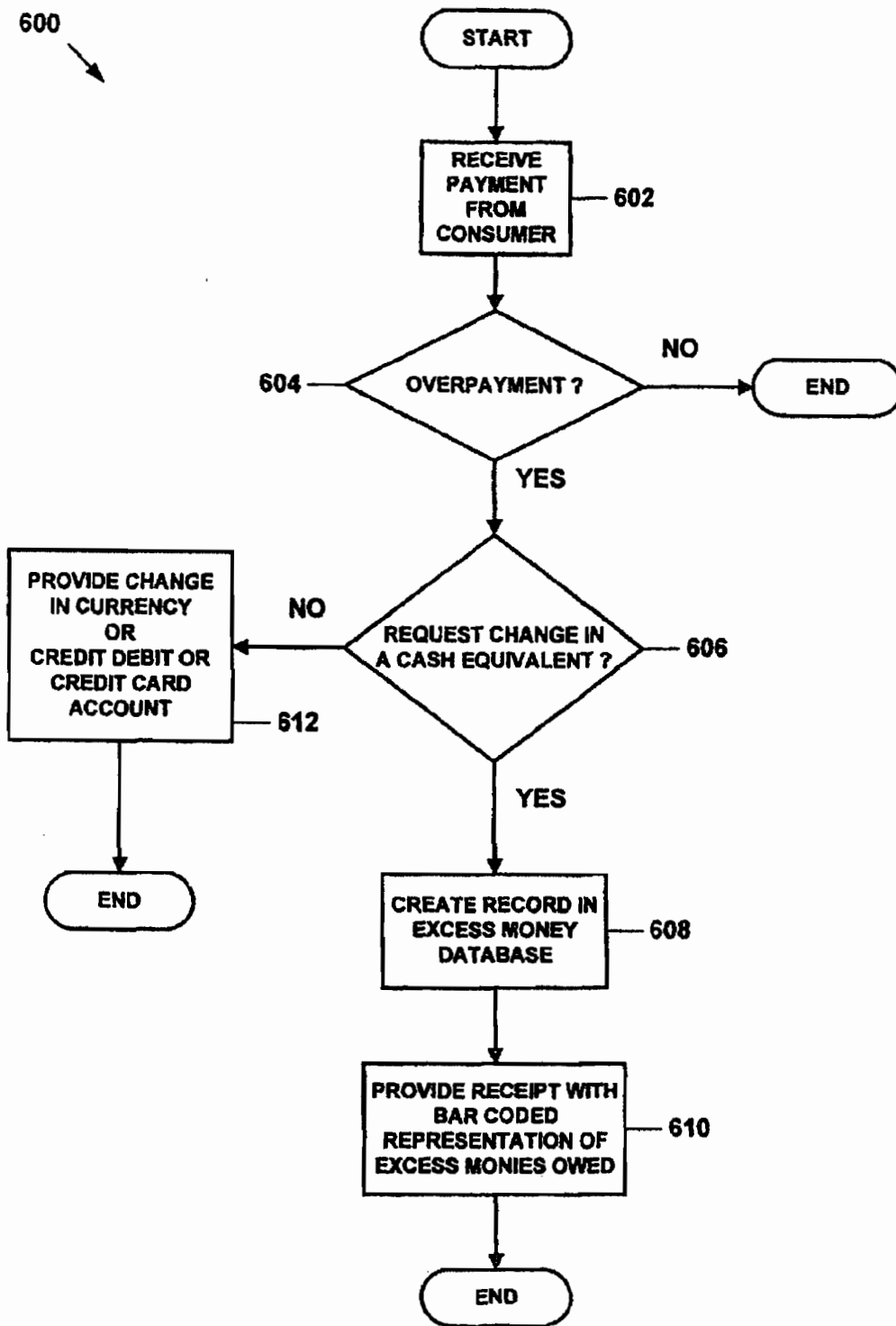


Fig. 12a

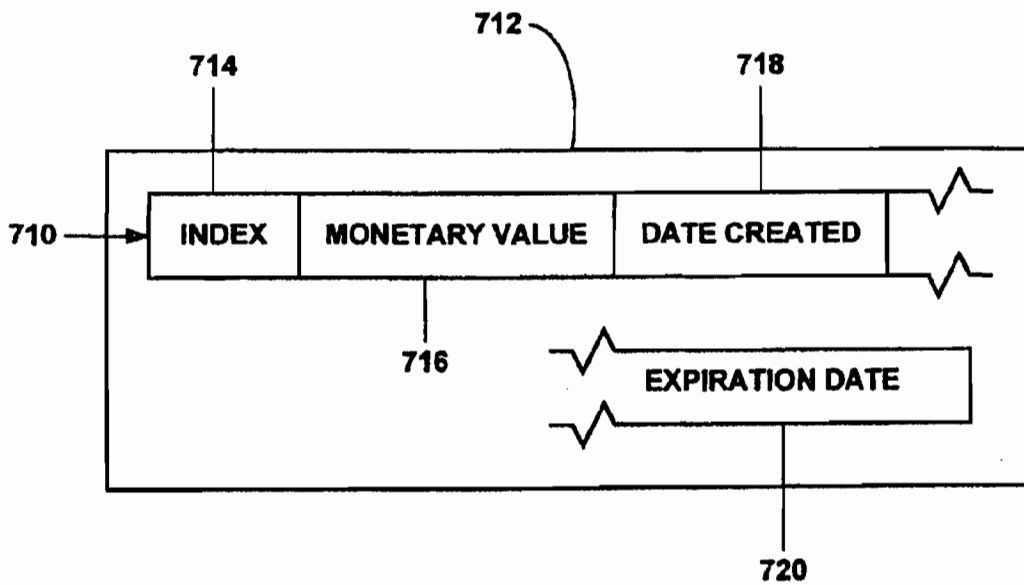


Fig. 12b

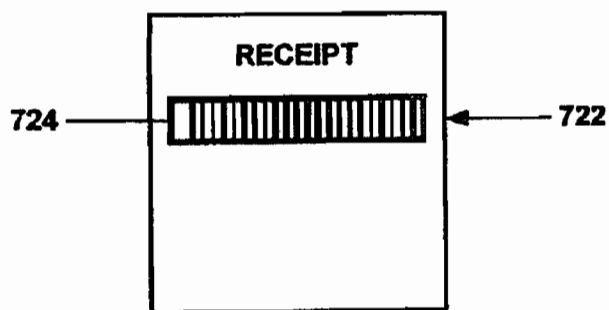


Fig. 12c

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**SYSTEM AND METHOD PROVIDING
CUSTOMER INCENTIVE TO PURCHASE
NON-FUEL PRODUCTS AND SERVICES**

RELATED APPLICATIONS

This application is a divisional of U.S. patent application Ser. No. 10/679,860, filed Oct. 6, 2003, now abandoned which is a divisional of U.S. patent application Ser. No. 09/746,392, filed on Dec. 21, 2000 now abandoned, which was a continuation-in-part of U.S. patent application Ser. No. 09/542,178, filed Apr. 4, 2000, now abandoned, which was a continuation of U.S. patent application Ser. No. 09/255,472, filed Feb. 23, 1999, now U.S. Pat. No. 6,321,984, which was a continuation-in-part of U.S. patent application Ser. No. 09/026,634, filed Feb. 20, 1998, now U.S. Pat. No. 6,112,981, which claimed the benefit of U.S. Provisional Application No. 60/039,007, filed Feb. 25, 1997, the disclosures of which are hereby incorporated by reference.

BACKGROUND OF THE INVENTION

This invention relates to automated retail systems and, more particularly, to a system and method for providing an incentive for a customer to purchase non-fuel products or services at a store that sells the products or services and fuel.

Typically, a cash back machine can be used to return unused monies to a consumer that uses a bill accepting device or magnetic card reader to pay for fuel. However, cash back machines are costly. Furthermore, using cash back machines to return unused monies to consumers do not increase consumer loyalty.

The present invention is directed to overcoming one or more of the limitations of systems for purchasing fuel.

SUMMARY OF THE INVENTION

In one aspect, the present invention is directed to a computer-implemented method of providing an incentive for a customer to purchase non-fuel products or services at a store that sells the products or services and fuel. The method includes the steps of detecting that the customer purchased a number of non-fuel products or services in a first visit to the store; providing the customer with a first reward entitling the customer to a first amount of free fuel in exchange for purchasing the non-fuel products or services in the first visit; detecting that the customer purchased a number of non-fuel products or services in a second visit to the store; and providing the customer with a second reward entitling the customer to a second amount of free fuel in exchange for purchasing the non-fuel products or services in the second visit. The method also includes identifying the customer during a subsequent fueling transaction; and dispensing an amount of free fuel to the customer equal to the total of the first and second amounts of free fuel.

In another aspect, the present invention is directed to a system for providing an incentive for a customer to purchase non-fuel products or services at a store that sells the products or services and fuel. The system includes means for detecting that the customer purchased a number of non-fuel products or services in a first visit to the store, and that the customer purchased a number of non-fuel products or services in a second visit to the store; and means for providing the customer with a first reward entitling the customer to a first amount of free fuel in exchange for purchasing the non-fuel products or services in the first visit, and for

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providing the customer with a second reward entitling the customer to a second amount of free fuel in exchange for purchasing the non-fuel products or services in the second visit. The system also includes means for identifying the customer during a subsequent fueling transaction; and means for dispensing an amount of free fuel to the customer equal to the total of the first and second amounts of free fuel.

In yet another aspect, the present invention is directed to a computer-implemented method of providing an incentive for a customer to purchase non-fuel products or services at a retail store. The method includes the steps of detecting that the customer purchased a number of non-fuel products or services in a first visit to the store; providing the customer with a first reward entitling the customer to a first amount of free fuel in exchange for purchasing the non-fuel products or services in the first visit; detecting that the customer purchased a number of non-fuel products or services in a second visit to the store; and providing the customer with a second reward entitling the customer to a second amount of free fuel in exchange for purchasing the non-fuel products or services in the second visit. The method also includes identifying the customer during a subsequent fueling transaction at a fueling station having a cross-marketing agreement with the retail store; and dispensing by the fueling station, an amount of free fuel to the customer equal to the total of the first and second amounts of free fuel.

In yet another aspect, the present invention is directed to a computer-implemented method of providing an incentive for a customer to purchase non-fuel products or services at a plurality of retail stores. The method includes the steps of detecting that the customer purchased a number of non-fuel products or services in a visit to a first retail store; providing the customer with a first reward entitling the customer to a first amount of free fuel in exchange for purchasing the non-fuel products or services in the visit to the first retail store; detecting that the customer purchased a number of non-fuel products or services in a visit to a second retail store; and providing the customer with a second reward entitling the customer to a second amount of free fuel in exchange for purchasing the non-fuel products or services in the visit to the second retail store. The method also includes storing the first and second rewards in a rewards database; identifying the customer during a subsequent fueling transaction at a fueling station having a cross-marketing agreement with the first and second retail stores; retrieving the first and second rewards from the rewards database; and dispensing by the fueling station, an amount of free fuel to the customer equal to the total of the first and second amounts of free fuel.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a diagram of an embodiment of a fuel dispenser system.

FIG. 2 is a diagram of a bar code wand used in the fuel dispenser system of FIG. 1.

FIG. 3 is a diagram of a card reader device used in the fuel dispenser system of FIG. 1.

FIGS. 4a and 4b are diagrams of another card reader device used in the fuel dispenser system of FIG. 1.

FIG. 5 is a diagram of another embodiment of a fuel dispenser system.

FIG. 6 is an illustration of a receipt used in the fuel dispenser system of FIG. 5.

FIG. 7 is a diagram of a kiosk used with a conventional fuel dispenser system for implementing features of the present invention.

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FIG. 8 is a block diagram of the components that can be utilized to implement the present embodiments which integrates a customer reward system with a fuel dispenser having a dynamically adjustable price.

FIG. 9 is an example of a record that could be used to track customer eligibility for fuel discount rewards in accordance with the present embodiments.

FIG. 10 is a flowchart of the process implemented by the present embodiments to encourage customer loyalty by providing discount fuel based on predefined purchase criteria.

FIG. 11 is a diagram of another embodiment of a fuel dispenser system.

FIG. 12a is a flowchart of the process implemented by the present embodiments to permit a consumer to receive change in the form of a cash equivalent.

FIG. 12b is a diagram of an excess money database including records representative of change provided to consumers in the form of a cash equivalent.

FIG. 12c is a diagram of a receipt provided to a consumer that provides change in the form of a cash equivalent.

DETAILED DESCRIPTION

In FIG. 1, the reference numeral 10 designates a fuel dispenser system embodying features of one embodiment of the present invention. The fuel dispenser system 10 includes a fuel dispenser 12, which contains many elements of a conventional fuel dispenser such as a fuel nozzle 14 connected to a fuel supply (not shown). The dispenser 12 has a front side 16 and a back side 18. In the following description, only the front side 16 will be discussed for ease of description. However, the features described herein may also be applied on the back side 18, thereby allowing the dispenser to be operated by two customers at the same time.

The front side 16 houses conventional graphics displays 20a, 20b and a reader device 22 embodying features of the present invention. The graphics displays 20a, 20b each include a large, conventional, LCD panel for showing text and numerals, such as a price 24 that corresponds to an amount of fuel dispensed, or other customer-related messages. The reader device 22 includes magnetic strip reading circuitry connected to a controller 26 through a cable 28 such as an RS232 serial data bus. For the sake of example, the controller 26 controls the reader device 22 as well as other functions of the dispenser 12, such as a controller that includes a Customer Activated Terminal ("CAT") computer produced by the Wayne Division of Dresser Industries. Both the controller 26 and the cable 28 are conventional devices housed inside the dispenser 12. It is understood that the reader device 22 and controller 26 continue to provide conventional magnetic strip reading functions in addition to the functions and features herein described.

The controller 26 is also connected to a computing center 30 through a bus 32. In one embodiment, the computing center 30 is remotely located inside a store (not shown) or at an unattended site where it may be readily accessed. The computing center 30 includes a point-of-sale ("POS") controller 34. The POS controller 34 includes many features of a conventional electronic cash register, such as a keyboard 36, a display 38, a database 40, a cash drawer 42, and an internal card reader device 44, for use by an operator in charge of overseeing and maintaining the dispenser system 10. It is understood that the database 40 may be remote, and is shown with the POS 34 for ease of description. Also, the POS controller 34 may be in communication with other systems or devices, such as a carwash facility 46.

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The database 40 contains a collection of records pertaining to its customers. For example, the store may be a member-oriented retail outlet, and a record for each customer indicates that the customer is a member and a "level" of benefits or privileges that the customer may receive. One level may indicate a first discount to the customer of the goods he purchases while another level may indicate a second discount. The POS controller 34 can thereby receive information from the controller 26, access the database 40, and return control codes which indicate, for example, membership status, level of benefits, or an "OK" signal to allow fuel dispensing.

Referring to FIG. 2, the controller 26 is also connected to one end of a bar code detector 60 with a second cable 62. The bar code detector 60 is a standard, decoded-type handheld stationary beam bar code reader such as the Welsh Allyn model Scanteam ST6180 reader. The bar code detector 60 also includes, at the end opposite the second cable 62, a photo detector 64 and a light source 66. The photo detector 64 may be a photo cell, photo diode or photo transistor, while the light source 66 may be a light emitting diode.

Referring to FIG. 3, the reader device 22 is surrounded by a housing 68 and a hole 70 is established on a side face 71 of the housing near a front face 72. The hole 70 extends to a slot 74 used for receiving cards such as debit/credit cards, but is separated from the slot by a small plastic or glass window (not shown). As a result, the hole 70 does not interfere with any pre-existing circuitry of the reader device 22. The hole 70 is also of sufficient size for viewing one bit of bar coded data at a time. The bar code detector 60 is inserted into the reader device 22 through the hole 70 so that the end with the cable 62 hangs out of the hole. In this way, the photo detector 64 is installed behind the small window and may access cards slid into and out-of the slot 74.

In operation, the reader device 22 receives a bar coded card 80. As the bar coded card 80 is slid into the slot 74, light from the light source 66 reflects off the bar coded card 80 so that the photo detector 64 can sequentially read bits of optical (bar coded) data 82 stored on the card. The bar code detector 60 interprets the bar coded data 82 and converts it into ASCII data, which it transmits to the controller 26, FIG. 1, through the cable 62. Firmware in the controller 26 detects the presence of the ASCII data and processes it into electronic data, a method similar to that used to process magnetic strip cards. The controller 26 then transmits the electronic data to the POS controller 34 through the bus 32. The POS controller 34 uses the electronic data in order to secure payment in accordance with the data, such as by forwarding the electronic data to a credit card processing network (not shown) for authorization and/or charging the sale to an account associated with the electronic data. The POS controller 34 then returns one or more control codes that direct the controller 26 to allow fuel to dispense and potentially, to indicate any discounts to be provided.

In another embodiment, FIGS. 1 and 2, the bar coded data 82 is processed by the POS controller 34 and a local billing file is established for billing the customer later. It is also possible for the POS controller 34 to have a local negative file of all invalid account numbers or a local positive file of all valid card numbers. In such cases the electronic data could be kept and billed locally, or forwarded in "batches" to another computer on-site or off-site for billing. The electronic data provided by the bar code detector 60 can also be differentiated from electronic data conventionally read from a magnetic strip card by the reader 22. This differentiation may, for example, be used for frequent shopper

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tracking and awards, or for providing a price discount, described in greater detail below.

Referring to FIGS. 4a and 4b, in another embodiment, a reader device 90 is used in place of the reader device 22 (FIG. 3). Instead of having the roundish hole 70 for the wand of the bar code detector 60, the reader device 90 includes a rectangular-shaped window 92 for simultaneously viewing all of the bar coded data. The window 92 allows a scanning bar code reader 94, such as Symbol model LS1220-1300A produced by Symbol Technologies, Inc., to read the bar coded data 82 on the card 80. The scanning bar code reader 94 has many of the same components as the bar code detector 60, but is advantageous because it moves its light source (not shown) in multiple directions, thereby increasing its ability to read bar coded data. Also, as is the case for the reader device 22 of FIG. 3, the reader device 90 includes conventional magnetic strip circuitry 95 and a magnetic strip reader 96 to read conventional magnetic strip data.

In operation, the reader device 90 receives the card 80. The card 80 has the bar coded data 82 and may also include magnetic strip data 104 stored thereon. The reader device 90 reads the magnetic strip data 104 in a conventional manner with the magnetic strip reader 96 and reports it to the controller 26 through the cable 28, as is done in the device 22 (FIG. 3). To read the bar coded data 82, the card 80 is slid into a slot 106 of the device 90 until the bar coded data 82 is fully exposed in the window 92. Light from the light source of the scanning bar code reader 94 reflects off the bar coded data 82, thereby allowing the reader to read the data. The scanning bar code reader 94 interprets the bar coded data 82 and converts it into ASCII data, which it then transmits to the controller 26 through the cable 62. Firmware in the controller 26 detects the presence of the ASCII data and processes it into electronic data, a method similar to that used to process magnetic strip cards and described with reference to FIG. 3, above. It is understood that different combinations of bar coded and magnetic strip data are expected, and the card 80 is meant to illustrate only some of the combinations. In typical operation, a successful product scan is acknowledged by an audiovisual signal by connection to the POS controller 26.

A benefit of the modified reader devices 22, 90 is that their modification can be done very easily, while maintaining full functionality of the remaining components. Also, the modification can be sold as a kit to simply replace the previous, conventional magnetic-strip-only reader devices with the improved devices 22, 90. Other modifications can easily be supported, such as using a single cable instead of two cables 28, 62, or sharing some or all of the circuitry 95 for use in bar coded and magnetic data interpretation.

Referring to FIG. 5, the reference numeral 110 refers to a fuel dispenser system embodying features of another embodiment of the present invention. The fuel dispenser system 110 contains a fuel dispenser 112 connected to the computing center 30 and many components similar to those in the fuel dispenser system 10 (FIG. 1), such components being similarly numbered.

A front side 116 houses the conventional graphics displays 20a, 20b and (optionally) a conventional magnetic-strip-only reader device 118. The front side 116 also houses a scanning bar code reader 120. The magnetic strip reader device 118 and scanning bar code reader 120 are connected to the controller 26 through cables 28, 62 respectively. The scanning bar code reader 120 is similar to the reader 94 (FIGS. 4a, 4b) in that it moves its light source (not shown) in multiple directions, thereby increasing its ability to read bar coded data. By being placed directly on the front side

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116, the scanning bar code reader 120 realizes several additional benefits discussed in greater detail, below.

In operation, the bar coded card 80, discussed above, may simply be placed or waved in front of the scanning bar code reader 120. At this time, light from the light source projected from the scanning bar code reader 120 reflects off the bar coded card 80 so that a photo detector (also not shown) can read the bar coded data 82. The scanning bar code reader 120 interprets the bar coded data 82 and converts it into ASCII data (or data in any other suitable format), which it transmits to the controller 26 through the cable 62. Firmware in the controller 26 detects the presence of the data and processes it into electronic data, a method similar to that used with the bar code reader 60 and described with reference to FIG. 3, above.

Referring to FIG. 6, another benefit provided by the scanning bar code reader 120 is that it can read bar coded data from items other than bar coded cards. The reference numeral 130 designates a paper receipt with bar coded data 132 printed thereon. The receipt 130 may also be placed or waved in front of the scanning bar code reader 120, as described above with reference to FIG. 5.

Referring to FIG. 7, in another embodiment, a separate system, such as a kiosk 140, may be provided to interface with one or more conventional fuel dispensers 142. The kiosk 140 includes a scanning bar code reader 144, a display screen 146, and a keypad 148. The kiosk 140 is in communication with the computing center 30, discussed above, which in turn is in communication with the controller 26 of the conventional dispenser 142. By using the kiosk 140, the features of the present invention may be achieved without physically modifying the fuel dispenser system 142.

Listed below are several examples of how the fuel dispenser systems described above may be used. It is understood that the functionality described below is interchangeable with the different systems, and is not meant to be an exhaustive list.

EXAMPLE A (FIGS. 5-6)

1. A customer enters a store and purchases, among other things, \$10 worth of gasoline.
2. The store gives the customer a receipt (similar to the receipt 130) which includes a description of the purchases and bar coded data (similar to bar coded data 132) indicating the prepaid \$10 amount.
3. The customer places the receipt in front of the scanning bar code reader 120 and then operates the fuel dispenser 110 to dispense \$10 worth of gas.

EXAMPLE B (FIGS. 5-6)

1. A customer enters a store and purchases several items.
2. The store, which has a reward program that gives free gasoline, gives the customer a receipt (similar to the receipt 130) having bar coded data (similar to bar coded data 132) indicating a free \$1 worth of gasoline.
3. The customer collects four more receipts over several visits to the store, each indicating a free \$1 worth of gasoline.
4. The customer sequentially places the five receipts in front of the scanning bar code reader 120, and then operates the fuel dispenser 110 to dispense \$5 worth of gas.
5. The customer also inserts a magnetic strip credit card into the magnetic strip reader device 118 to allow an additional amount of gasoline to be dispensed. A charge for

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the additional amount is reported to a credit agency identified by the magnetic strip credit card.

EXAMPLE C (FIG. 7)

1. A customer obtains a bar coded card (similar to the card 80) indicating a "member" status (e.g., the customer is eligible for certain benefits).

2. The customer places the card near the scanning bar code reader 144 of the kiosk 140. The card identifies an account and an appropriate benefit (e.g., a 10.cent. per gallon discount).

3. The customer enters on the keypad 148 a number identifying the fuel dispenser 142.

4. The customer operates the fuel dispenser 142 to dispense gasoline and the account is credited for the purchase (adjusted by the 10.cent. per gallon discount).

EXAMPLE D (FIGS. 1-3)

1. A customer obtains a bar coded card (similar to the card 80) which identifies a first account for a store and a conventional magnetic strip credit card which identifies a second account with a bank.

2. The customer approaches the fuel dispenser 12 associated with the store and places the bar coded card into the reader 22.

3. The customer then places the magnetic strip credit card into the reader 22.

4. The customer operates the fuel dispenser 12 to dispense gasoline and the second account is credited for the purchase.

5. The store records a data record in the first account of the customer's fuel purchase.

6. Steps 2-5, above, are repeated four more times.

7. The fuel dispenser 12 displays on the screen 20b a message:

BECAUSE YOU HAVE PURCHASED FUEL
HERE FIVE TIMES IN THE LAST THIRTY
DAYS, YOU MAY HAVE A COMPLIMENTARY
CAR WASH

and provides the customer with a predetermined number.

8. The customer drives to the nearby carwash facility 46 and enters the predetermined number on an attached keypad (not shown).

9. The carwash facility 46 interprets the predetermined number to identify that the customer has a complimentary carwash and performs the carwash service.

It should be noted that the carwash facility 46 described in Example D above may also have a bar code reader connected to the computing center 30. In this way, the carwash facility 46 may provide similar functions as those described above with the reader 22. Also, the carwash facility 46 and fuel dispenser 12 may be in communication so that instead of providing a predetermined number, a record associated with the bar coded card is stored indicating the complimentary carwash.

Referring to FIG. 8, a block diagram of the components included in a preferred embodiment are shown and will now be described. A market point of sale (POS) terminal 200 is shown that may be located in a retail store, or the like. For example a Wal-Mart store is one type of retail outlet that may include a POS 200 in accordance with the present invention. Reference numeral 201 represents an item to be purchased by a customer in the retail store including POS

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200. It is the usual case that each item will include stock keeping unit (SKU) number, as well as a Universal Purchase Code (UPC) that is provided as an optically scannable bar code 202. When purchasing the item 201, a customer will present the item at POS 200 where it will be scanned in or otherwise entered.

A server data processing system 204 is shown and coupled with POS 200. Server 204 may be a commercially available workstation computer from one of the various computer manufacturers, such as Compaq Computer, IBM Corporation, Hewlett Packard, or the like. A database 206 is linked to server 204 and includes multiple records 208 that correspond to customers purchasing items through POS 200. It should be noted that many POS terminals 200 are contemplated as being connected to server 204 and may be distributed remotely across more than one store. Server 204 will include software that manages the transactions occurring on POS 200, as well as the records 208 in database 206. In a preferred embodiment, database 206 may be magnetic storage media, optical storage or the like.

Upon completion of a purchase transaction at POS 200, the customer (if eligible) will be provided with a mechanism 210 that will allow discounted fuel to be purchased at pump 112. That is a receipt, such as receipt 130 having a bar code 132 thereon may be provided to the customer. Additionally, a card with a magnetic stripe may be updated by POS 200 with information authorizing a fuel discount. Further, an identification code may be provided to the customer which can then be entered on a keypad included in the pump input/output I/O device 212. It will be understood that I/O device 212 may also include a magnetic card reader 118, bar code reader 120, or the like. Pump 112 also includes controller 26 that is electrically coupled to server 204 and printer 214. Controller 26 includes a microcontroller that processes and controls the various activity at pump 112. Peripheral interface board (PIB) 216 or other device is included in a preferred embodiment to provide an interface between server 204 and controller 26. PIB 216 allows the control signal output by server 204 to be interpreted by controller 26. That is, PIB 216 receives the control signal from server 204 with the authorization code and the unit price discount offered to the customer. Interface board 216 will then issue an command to controller 26 to map the discount amount to each of the fueling point product select positions, i.e. regular, premium, etc. In one example, the discount value range may be encoded as an eight bit value to give 256 different discount amounts. In this manner, the server 204 will be able to authorize a price discount, PIB 216 will then issue a command compatible with controller 26 to cause pump 112 to dispense fuel at the discounted unit price.

It should be noted that while a single retail store and corresponding fuel dispensing facility have been shown in FIG. 8 and described above, the present invention contemplates the situation where an entire chain of stores or related stores may be interconnected such that any one of their POS terminals can be connected to a server through a network. Further, numerous fuel stations can also be coupled to a server to allow discounted fuel in response to customer purchases at one of the associated stores. For example, Wal-Mart and Starbucks may form an alliance such that purchases from one or the other (or both) stores can cause fuel discounts to be made available. A POS terminal in either store can be coupled to a server that maintains customer records. Also, fuel companies can also form alliances such that Texaco and Mobil can have their pump controllers connected to the same server. In this manner a customer may be entitled to fuel at a reduced unit cost based on purchases

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made at any Wal-Mart or Starbucks store nationwide, and be able to redeem that discount at any Texaco or Mobil station independent of geographic location. Further, it can be seen that with the Internet it is possible to connect virtually any retailer wishing to offer discounted fuel based on predefined purchase criteria with virtually any fuel station without geographic boundary. Discounts may also be offered for purchase of items other than fuel, such as in the case of a POS 30, discussed above, located at a convenience store or other retailer.

FIG. 9 is a more detailed view of the fields that may be included in record 208 corresponding to a particular customer, e.g. A. Smith. As shown in field 300 of FIG. 9, the customer name is provided along with an identification number. For new customers, or when the system of the present invention is first installed, a record will be created when the first item is purchased at POS 200.

The date of purchase when at least one item was purchased at POS 200 of an associated retailer is provided in field 302. The dollar value of the purchases is listed in field 304. Retailers may often designate various items to trigger discounts related to competing or related items. The quantity of these designated, or trigger items, that were purchased on each date (if any) are provided in field 306. As an example of a trigger item, a certain brand of baby formula may be purchased which will cause a coupon to be generated for a competing baby formula. Also, complementary items may be used as trigger items. That is, the purchase of cereal may trigger a coupon for a discount on milk.

Field 308 is the total quantity of items purchased by a certain customer on a specific date. This field, along with field 304 can be used as a criterion for determining customer loyalty. Field 310 will include data representing the availability of a fuel discount. The record will be updated in field 312 when a discount is actually used by a customer and the discount amount is provided in field 314. Fields 316, 318 and 320 provide totals for the dollar value fields 304, designated items purchased 306 and total quantity 308, respectively.

As an example, when A. Smith purchases \$20 of merchandise on Jan. 5, 1999, record 208 is created by server 204 and stored in database 206. At that time three (3) designated items were purchased out of a total quantity of five (5) items. These purchases did not meet the established criteria that would cause a discount on fuel to be made available.

Then, on Jan. 17, 1999, A. Smith purchased five designated items, 10 total items for \$15.00. This purchase will cause the total designated item purchase by this customer to exceed five and cause a fuel discount to be offered. Thus, field 310 will indicate that a fuel discount was offered to A. Smith on Jan. 17, 1999. The discount amount is noted as \$0.10 per gallon in field 314. As noted above, the mechanism by which the discount is offered may be a receipt with a bar code, updated magnetic card, alphanumeric authorization code, or the like.

Further, record 208 shows that this customer took advantage of the discount and used it to purchase fuel on Jan. 20, 1999. It will be understood that this data can then be analyzed to determine the success of the discount program. That is, the predefined purchase criteria can be adjusted as needed to provide the discount for different items, different quantities of the items or a different discount amount.

Returning to the current example, A. Smith returns to the associated store and purchases additional items on Jan. 28, 1999, totaling \$45.00. However, at this time A. Smith has not reached the next purchasing criteria threshold that will cause discounted fuel to be offered.

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On Feb. 4, 1999, A. Smith once again purchases items from this, or another participating store. This purchase causes the total purchases to exceed \$100.00. Also, A. Smith purchased three total items that caused the total quantity of merchandise purchased at this store to be greater than 20 items. In this example, exceeding both of these criteria will trigger a fuel discount. That is, purchasing greater than 20 items within a month will cause a \$0.10 fuel discount to be offered and exceeding \$100.00 in total purchase price will cause a \$0.15 fuel discount. Those skilled in the art will understand that the fuel discount system of the present invention can be designed to offer the highest discount of the two, e.g. \$0.15 per gallon, the lowest discount \$0.10, an average of the two, or add the discounts and offer a \$0.25 per gallon discount to the customer. In any event, it can be seen that information provided in a record 208 can be used to monitor a customer's status relative to being offered discounted fuel and to determine when such offer is to be made to the customer.

Of course, those skilled in the art will appreciate that many other types of data may be used in addition to, or instead of the various information discussed as an example with regard to FIG. 9. And, it should be understood that the scope of the present invention contemplates such additional information.

FIG. 10 is a flowchart showing the process implemented by the present embodiments to cause fuel discounts to be made available to eligible customers.

At step 400 the process is started and the customer purchases items at step 401 where the identification code for the purchased items is entered at POS 200. The customer identity is also entered by using a member club card, personal identification number (PIN), or the like, such that an associated record can be created or updated. The data relating to the purchased items is then provided by POS 200 to server 204, at step 402. Server 204 then analyzes the customer record (step 403). That is, server 204 will create a record for a new customer or maintain an existing record by updating it with current purchases for customers already having a record.

At step 404 a determination is made as to whether the current purchases will cause a fuel discount to be offered. As noted above this step may include determining if the customer has purchased certain designated items that will trigger a discount, whether a total dollar value spent exceeds a predefined threshold and/or if a total quantity of items exceeds a threshold.

If at step 404 it is determined that the customer has not yet earned a fuel discount, then the method proceeds to step 413 and ends. However, if at step 404 it is determined that a fuel discount is available, then at step 405 the server authorizes the discount and sends a signal to the market POS termination 200. At step 406, a bar coded discount coupon, alphanumeric authorization code, updated magnetic card or other mechanism is provided to the customer. At step 407, server 204 sends an authorization signal to PIB 216, which then provides corresponding commands to controller 26 in pump 112. The signal from server 204 will include an authorization code and a discount amount. The customer then inputs the fuel discount authorization code from POS 200 at pump 112 in step 408. More particularly, the customer may swipe a magnetic card, scan in a bar code from a receipt of key in an alphanumeric code at I/O 212 of pump 112. After the customer authorization code is entered the process then compares (step 408a) the authorization code from server 204 with the code from the customer and if a match exists then proceeds to step 409 and adjusts the price of the fuel to be

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dispensed for this transaction. However, if a match does not occur at step 408a, then an error has occurred or an unauthorized customer is attempting to obtain discounted fuel. When no match occurs the process continues to step 413 and ends without allowing discounted fuel to be dispensed. Of course, those skilled in the art will understand that it is possible to send a notification signal to server 204, gas station POS 34 or another terminal when a match does not occur to indicate a potentially fraudulent user may be attempting to obtain discounted fuel.

At step 410, pump controller 26 notifies gas station POS 34 of the adjusted fuel price such that the fuel sales records will be in order and to ensure that the customer is correctly charged the discounted fuel price. Next, at step 411 pump controller 26 notifies server 204 of completion of the transaction for discounted fuel and readjusts the fuel price to its normal level by mapping the discount amount to zero. Server 204 then updates the customer record 208 in database 206 to reflect that the discount was used. Subsequent to step 412, the process of the present embodiment continues to step 413 and ends.

Of course, many other configurations are contemplated by the present embodiment. For example, gas station POS 34 can also be a source of discounted gas. That is, POS 34 may be in a convenience store that also desires to develop customer loyalty by providing fuel discounts. In this scenario, a customer may purchase a certain volume of gas or other items such as candy bars and coffee which triggers a discount in the price of fuel. Authorization can then be provided directly to PIB 216 from POS 34 to adjust the unit price of fuel dispensed from pump 112. Additionally, the authorization could be sent to server 204 to update or create customer record 208.

Further, the purchase of fuel at full price could also be used to trigger discounts on items in the retail store having POS 200. For example, when a customer purchases fuel a signal can be sent from controller 26 to PIB 216 to server 204 which then updates and analyzes the customer's record (or creates a record if none exists). If the customer has purchased fuel in excess of a predetermined value (dollar) or quantity (gallons) threshold, then a signal can be sent from server 204 back to controller 26 via PIB 216, to authorize a discount for this customer on merchandise to be purchased at a participating store. More particularly, a bar coded receipt can be printed by printer 214 that the customer can then take to the participating store and redeem for a discount on one or more items purchased as POS 200. When purchased a signal will be sent to server 204 and the customer record will be updated accordingly.

Other arrangements are also contemplated to implement discounts at the fuel dispensing system or associated store. For example, the mechanism 210 may not be needed if other means are provided to identify the customer at either the market POS 200 or the POS 30. In one example, a customer card or number used at the market POS 200 may similarly be used at the gas station POS 30 such that the customer's discount can be automatically applied at the POS 30. Identification may also be accomplished by an initial registration procedure whereby a customer card/number may be matched with the credit or debit account of the customer that the customer utilizes to make purchases at the POS 30. In one example, transponder technology may be utilized at one or both of the market POS 200 or gas station POS 30 to properly identify the customer. Furthermore, the barcode may have some form of embedded security identification information for authenticating the purchase. In other configurations, the peripheral interface board may not be

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required. Pertaining to the discounts, a variety of arrangements are contemplated. Some examples entail the funding of the discount or reward by third parties other than the supplier of petroleum. Other discounts are offered in the form of a club discount or volume discount. The controller utilized may be any type of hardware device with software programming to implement the intended functions.

Referring to FIG. 11, the reference numeral 510 refers to a fuel dispenser system embodying features of another embodiment of the present invention. The fuel dispenser system 510 includes a fuel dispenser 512 connected to the computing center 30 and many components similar to those in the fuel dispenser systems 10 and 110 (FIGS. 1 and 5), such components being similarly numbered.

A front side 514 of the fuel dispenser houses the conventional graphics displays, 20a and 20b, (optionally) the conventional magnetic-strip-only reader device 118, and the scanning bar code reader 120. The front side 514 further houses a conventional currency accepting and change providing device 516 operably coupled to the CAT 26 by a conventional communications interface 518. As will be recognized by persons having ordinary skill in the art, the currency accepting and change providing device 516 permits a customer to purchase a product by inserting paper and/or coin currency into one or more openings in the device. Any change owed to the consumer is then provided by the currency accepting and change providing device 516 in the form of paper and/or coin currency. The design and operation of currency accepting and change providing devices 516 is considered well known.

In operation, a consumer may purchase fuel using currency, a magnetic strip credit or debit card, a bar coded card (similar to the bar coded card 80), or a bar coded receipt (similar to the receipt 130). Regardless of the mode of payment used by the consumer, the consumer can overpay for the dispensed fuel and request currency (or the functional equivalent) as change or request that the system credit their credit or debit card account. In particular, referring to FIGS. 12a-12c, the system 510 may implement a purchase process 600 in which the consumer may pay for the purchased fuel in step 602. If the consumer overpays for the purchased fuel in step 602, then the consumer may request that the system 510 credit their credit/debit card account, provide change in the form of currency, or provide change in the form of a currency equivalent in the form of a bar coded receipt in steps 604 and 606. If the consumer requests change in the form of a currency equivalent in step 606, then the system 510 generates a record 710 in an excess money database 712 that includes a record index 714, the monetary value 716 assigned to the record index, the date 718 the record was created, and a predetermined expiration date 720 for the record in step 608. The system 510 then prints out and provides the consumer with a bar coded receipt 722 that includes a bar coded representation 724 of the record index 714 in step 610. The consumer may then use the bar coded receipt 722 to purchase fuel using the system 510 prior to the expiration date 720 of the corresponding record 710. If the consumer does not request change in the form of a currency equivalent in step 606, then the system 510 provides change in the form of currency or credits the account of the corresponding credit or debit card in step 612. In this manner, the system 510 increases the number of purchases of fuel by the consumer since the cash equivalent must be used on a compatible system. As a result, consumer loyalty is enhanced thereby increasing profits for the operator of the fuel dispensing system 510.

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More generally, the teachings of the system 510 may be utilized in a general fashion in any retail or wholesale business in order to permit consumers to overpay for goods and services and receive cash-equivalents as change. The cash-equivalents may then be used by the consumers to purchase goods and services at retail and wholesale establishments having compatible purchasing systems.

Furthermore, the cash-equivalent could be a bar coded receipt or a magnetic strip card that includes one or more index values 714 encoded onto the magnetic strip. The index values 714 encoded onto the magnetic strip can then be accessed in a random or sequential pattern to permit purchases of goods and services.

The present embodiments of the invention provide a number of advantages. For example, the present embodiments provide a system for dispensing fuel in which users may be provided change in the form of a cash equivalent. The cash equivalent may then be used by the user to purchase fuel using the system. The system further creates a database that includes a plurality of records having corresponding index and monetary values. The cash equivalents may then be provided in the form of a bar coded or magnetic representation of the corresponding records. In this manner, the present embodiments of the invention provide a cost efficient and commercially valuable system for enhancing the profitability of fuel dispensing systems by improving customer loyalty.

Although illustrative embodiments of the invention have been shown and described, a wide range of modification, changes and substitution is contemplated in the foregoing disclosure. In some instances, some features of the present invention may be employed without a corresponding use of the other features. Accordingly, it is appropriate that the appended claims be construed broadly and in a manner consistent with the scope of the invention.

The invention claimed is:

1. A computer-implemented method of providing an incentive for a customer to purchase non-fuel products or services at a store that sells the products or services and fuel, said method comprising:

detecting that the customer purchased a number of non-fuel products or services in a first visit to the store; providing the customer with a first reward entitling the customer to a first amount of free fuel in exchange for purchasing the non-fuel products or services in the first visit;

detecting that the customer purchased a number of non-fuel products or services in a second visit to the store; providing the customer with a second reward entitling the customer to a second amount of free fuel in exchange for purchasing the non-fuel products or services in the second visit;

identifying the customer during a subsequent fueling transaction; and

dispensing an amount of free fuel to the customer equal to the total of the first and second amounts of free fuel.

2. The method according to claim 1, wherein the first and second amounts of free fuel are equal amounts.

3. The method according to claim 1, wherein the first and second amounts of free fuel are different amounts.

4. The method according to claim 1, wherein the steps of providing the customer with first and second rewards include providing the customer with first and second reward receipts having bar coded data imprinted thereon, said bar coded data indicating the first and second amounts of free fuel;

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wherein the step of identifying the customer during a subsequent fueling transaction includes scanning the first and second reward receipts by a bar code reader at a fuel dispenser.

5. The method according to claim 1, wherein the steps of providing the customer with first and second rewards include storing the first and second rewards in a rewards database;

wherein the step of identifying the customer during a subsequent fueling transaction includes identifying the customer based on one of:

reading a magnetic strip on an identification card; reading a transmission from a transponder device identifying the customer; and

obtaining a personal identification number from the customer.

6. The method according to claim 1, further comprising: reading a credit card inserted into a card reader at the dispenser;

dispensing additional fuel to the customer; and charging the credit card only for the additional fuel dispensed.

7. A system for providing an incentive for a customer to purchase non-fuel products or services at a store that sells the products or services and fuel, said system comprising:

means for detecting that the customer purchased a number of non-fuel products or services in a first visit to the store, and that the customer purchased a number of non-fuel products or services in a second visit to the store;

means for providing the customer with a first reward entitling the customer to a first amount of free fuel in exchange for purchasing the non-fuel products or services in the first visit, and for providing the customer with a second reward entitling the customer to a second amount of free fuel in exchange for purchasing the non-fuel products or services in the second visit;

means for identifying the customer during a subsequent fueling transaction; and

means for dispensing an amount of free fuel to the customer equal to the total of the first and second amounts of free fuel.

8. The system according to claim 7, wherein the means for providing the customer with the first and second rewards provides the customer with first and second rewards entitling the customer to equal amounts of free fuel.

9. The system according to claim 7, wherein the means for providing the customer with the first and second rewards provides the customer with first and second rewards entitling the customer to different amounts of free fuel.

10. The system according to claim 7, wherein the means for providing the customer with the first and second rewards includes means for providing the customer with first and second reward receipts having bar coded data imprinted thereon, said bar coded data indicating the first and second amounts of free fuel;

wherein the means for identifying the customer during a subsequent fueling transaction includes a bar code reader for reading the first and second reward receipts.

11. The system according to claim 10, wherein the bar code reader is implemented in a fuel dispenser.

12. The system according to claim 7, wherein the means for providing the customer with the first and second rewards includes a rewards database for storing the first and second rewards;

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wherein the means for identifying the customer during a subsequent fueling transaction includes identifying means selected from a group consisting of: means for reading a magnetic strip on an identification card; means for reading a transmission from a transponder device identifying the customer; and means for obtaining a personal identification number from the customer.

13. The system according to claim 7, further comprising: means for reading a credit card inserted into a card reader at the dispenser; means responsive to reading the credit card for dispensing additional fuel to the customer; and means for charging the credit card only for the additional fuel dispensed.

14. A computer-implemented method of providing an incentive for a customer to purchase non-fuel products or services at a first retail store, said method comprising: detecting that the customer purchased a number of non-fuel products or services in a first visit to the first retail store; providing the customer with a first reward entitling the customer to a first amount of free fuel in exchange for purchasing the non-fuel products or services in the first visit; detecting that the customer purchased a number of non-fuel products or services in a second visit to the first retail store; providing the customer with a second reward entitling the customer to a second amount of free fuel in exchange for purchasing the non-fuel products or services in the second visit; identifying the customer during a subsequent fueling transaction at a fueling station having a cross-marketing agreement with the retail store; and dispensing by the fueling station, an amount of free fuel to the customer equal to the total of the first and second amounts of free fuel.

15. The method according to claim 14, further comprising reimbursing the fueling station by the retail store for the amount of free fuel dispensed to the customer.

16. The method according to claim 14, wherein the steps of providing the customer with first and second rewards include storing the first and second rewards in a rewards database;

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wherein the step of identifying the customer during a subsequent fueling transaction includes identifying the customer based on one of: reading a magnetic strip on an identification card; reading a transmission from a transponder device identifying the customer; and obtaining a personal identification number from the customer.

17. A computer-implemented method of providing an incentive for a customer to purchase non-fuel products or services at a plurality of retail stores, said method comprising:

detecting that the customer purchased a number of non-fuel products or services in a visit to a first retail store; providing the customer with a first reward entitling the customer to a first amount of free fuel in exchange for purchasing the non-fuel products or services in the visit to the first retail store;

detecting that the customer purchased a number of non-fuel products or services in a visit to a second retail store;

providing the customer with a second reward entitling the customer to a second amount of free fuel in exchange for purchasing the non-fuel products or services in the visit to the second retail store;

storing the first and second rewards in a rewards database; identifying the customer during a subsequent fueling transaction at a fueling station having a cross-marketing agreement with the first and second retail stores; retrieving the first and second rewards from the rewards database; and

dispensing by the fueling station, an amount of free fuel to the customer equal to the total of the first and second amounts of free fuel.

18. The method according to claim 17, wherein the step of identifying the customer during a subsequent fueling transaction includes identifying the customer based on one of:

reading a magnetic strip on an identification card; reading a transmission from a transponder device identifying the customer; and obtaining a personal identification number from the customer.

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