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Email: jburt@hgdlawfirm.com

Attorneys for Plaintiff Cronos Technologies, LLC

**UNITED STATES DISTRICT COURT**

**DISTRICT OF NEVADA**

| | |
|---|---|
| CRONOS TECHNOLOGIES, LLC, a Delaware Limited Liability Company<br><br>Plaintiff,<br><br>v.<br><br>TOOLUP.COM, LLC., a Nevada Limited Liability Company,<br><br>Defendant. | **Case No.: 2:12-cv-1748**<br><br>**COMPLAINT FOR PATENT INFRINGEMENT**<br><br>**JURY DEMAND** |

Plaintiff Cronos Technologies, LLC ("Plaintiff" or "Cronos"), by and through its undersigned counsel, files this Complaint for patent infringement against Defendant Toolup.com LLC ("Defendant") as follows:

## JURISDICTION AND VENUE

1. This action arises under the Patent Laws of the United States, 35 U.S.C. § 1 *et seq.*, including 35 U.S.C. §§ 271, 281, 283, 284, and 285. This Court has subject matter jurisdiction over this case for patent infringement under 28 U.S.C. §§ 1331 and 1338(a).

2. The Court has personal jurisdiction over Defendant because: Defendant has minimum contacts within the State of Nevada and the District of Nevada; Defendant has purposefully availed itself of the privileges of conducting business in the State of Nevada and the District of Nevada; Defendant has sought protection and benefit from the laws of the State of Nevada; Defendant regularly conducts business within the State of Nevada and the District of Nevada; and Plaintiff's causes of action arise directly from Defendant's business contacts and other activities in the State of Nevada and the District of Nevada.

3. More specifically, Defendant, directly and/or through its intermediaries, ships, distributes, offers for sale, sells, and/or advertises (including the provision of an interactive web page) its products and services in the United States, the State of Nevada, and the District of Nevada. Upon information and belief, Defendant and/or its customers have committed patent infringement in the State of Nevada and in the District Nevada. Defendant solicits customers in the State of Nevada and in the District of Nevada. Defendant has many paying customers who are residents of the State of Nevada and the District of Nevada and who use Defendant's products and services in the State of Nevada and in the District of Nevada.

4. Venue is proper in the District of Nevada pursuant to 28 U.S.C. §§ 1391 and 1400(b).

## PARTIES

5. Cronos is a limited liability company organized under the laws of the State of Delaware. Plaintiff maintains its principal place of business at 717 N. Union St. #65, Wilmington, Delaware 19805.

6. Upon information and belief, Defendant is a limited liability company duly organized and existing under the laws of the State of Nevada, having a place of business located at 4170 West Harmon Avenue, Las Vegas, Nevada, 89103. Upon information and belief,

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SUITE 530
LAS VEGAS,
NEVADA 89128
(702) 382-4804

Defendant does business through its website, www.toolup.com, which is accused of infringing the Patent-in-Suit (defined herein).

**NATURE OF THE ACTION**

7. This is a patent infringement action to stop Defendants' infringement of Plaintiff's United States Patent No. 5,664,110 entitled "*Remote Ordering System*" (hereinafter, the "'110 patent", referred to as the "Patent-in-Suit"). A copy of the '110 patent, is attached hereto as Exhibit A. Plaintiff is the owner of the Patent-in-Suit with respect to the Defendant, including the exclusive right to sue the Defendant for infringement and recover past damages. Plaintiff seeks injunctive relief and monetary damages.

**FIRST CLAIM FOR RELIEF**

**INFRINGEMENT OF U.S. PATENT NO. 5,664,110**

**BY TOOLUP.COM**

8. The '110 patent was duly and legally issued by the United States Patent and Trademark Office on December 8, 1994 after full and fair examination. Plaintiff is the owner under the '110 patent with respect to Defendant, including the exclusive right to sue Defendant for infringement and recover past damages.

9. Plaintiff is informed and believes that Defendant owns, operates, advertises, and controls its website, www.toolup.com, that infringes the '110 patent either literally or under the doctrine of equivalents. Upon information and belief, Defendant has infringed and continues to infringe one or more claims of the '110 patent by making, using, and providing a remote ordering terminal, associated with Defendant and its order processing system with attendant item codes, comprised of a user identifier means, a data entry device, a user-specific database, a storage memory, a communication means between the devices and terminal, and a command entry device, in this district and elsewhere in the United States through its website.

10. Upon information and belief, Defendant has induced and continues to induce infringement of one or more claims of the '110 patent in this district and elsewhere in the United States, by its intentional acts which have successfully, among other things, encouraged, instructed, enabled and otherwise caused its customers to use a remote ordering terminal,

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LAS VEGAS,
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associated with Defendant and its order processing system with attendant item codes, comprised of a user identifier means, a data entry device, a user-specific database, a storage memory, a communication means between the devices and terminal, and a command entry device, said terminal having been provided by Defendant to its customers for the primary purpose of causing infringing acts by said customers. Defendant has had knowledge of the ’110 patent prior to commencement of this action and, upon information and belief, continues to encourage, instruct, enable and otherwise cause its customers to use its products in a manner which infringes the ’110 patent. Upon information and belief, Defendant has specifically intended that its customers use the accused products in such a way that infringes the ’110 patent by, at minimum, providing instructions to its customers on how to use the accused products in such a way that infringes the ’110 patent and knew that its actions, including but not limited to providing such instructions, would induce, have induced, and will continue to induce infringement by its customers.

11. On or about May 10, 2012, Plaintiff informed Defendant in writing of its ownership of the ‘110 patent and Plaintiff included a copy of the ‘110 patent with this correspondence.

12. Defendant’s aforesaid activities have been without authority and/or license from Plaintiff.

13. Plaintiff is entitled to recover from Defendant the damages sustained by Plaintiff as a result of Defendant’s wrongful acts in an amount subject to proof at trial, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

14. Defendant’s infringement of Plaintiff’s exclusive rights under the ‘110 patent will continue to damage Plaintiff, causing irreparable harm for which there is no adequate remedy at law, unless enjoined by this Court.

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## PRAYER FOR RELIEF

Plaintiff respectfully requests the following relief:

A. An adjudication that one or more claims of the ’110 patent have been infringed, either literally and/or under the doctrine of equivalents, by the Defendant;

B. An adjudication that one or more claims of the ’110 patent have been infringed, by customers of the Defendant, said customers having been induced to infringe by the intentional actions of the Defendant;

C. An award to Plaintiff of damages adequate to compensate Plaintiff for the Defendant’s acts of infringement together with prejudgment interest, including damages for willful infringement;

D. A grant of permanent injunction pursuant to 35 U.S.C. § 283, enjoining the Defendant from further acts of (1) infringement, (2) contributory infringement, and (3) actively inducing infringement with respect to the claims of the Patent-in-Suit;

E. That this Court declare this to be an exceptional case and award Plaintiff its reasonable attorneys’ fees and costs in accordance with U.S.C. § 285; and,

F. Any further relief that this Court deems just and proper.

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SUITE 530
LAS VEGAS,
NEVADA 89128
(702) 382-4804

**DEMAND FOR TRIAL BY JURY**

Plaintiff hereby demands a trial by jury on all issues raised in the Complaint which are triable by a jury.

Respectfully submitted this 5th day of October, 2012.

*/s/ Ryan Gile*

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Email: jburt@hgdlawfirm.com

***Attorneys for Plaintiff Cronos Technologies, LLC***

# EXHIBIT A

US005664110A

# United States Patent [19]

Green et al.

[11] Patent Number: 5,664,110

[45] Date of Patent: Sep. 2, 1997

[54] **REMOTE ORDERING SYSTEM**

[75] Inventors: **Jonathan B. Green**, Belmont; **William R. Pope**, Cambridge, both of Mass.

[73] Assignee: **Highpoint Systems, Inc.**, Belmont, Mass.

[21] Appl. No.: **351,795**

[22] Filed: **Dec. 8, 1994**

[51] **Int. Cl.**[6] ..... **G06F 7/06**; G06F 17/30

[52] **U.S. Cl.** ..... **705/26**; 705/1; 705/27

[58] **Field of Search** ..... 364/401, 406, 364/408, 403; 340/825.32, 825.35; 235/379–383; 395/201, 226, 227

[56] **References Cited**

U.S. PATENT DOCUMENTS

| | | | |
|---|---|---|---|
| 4,654,482 | 3/1987 | DeAngelis | 379/95 |
| 4,734,858 | 3/1988 | Schlafly | 364/408 |
| 4,882,475 | 11/1989 | Miller et al. | 235/383 |
| 4,897,865 | 1/1990 | Canuel | 379/91 |
| 4,947,028 | 8/1990 | Gorog | 235/381 |
| 4,972,318 | 11/1990 | Brown et al. | 364/403 |
| 4,984,155 | 1/1991 | Geier et al. | 364/401 |
| 5,023,904 | 6/1991 | Kaplan et al. | 379/91 |
| 5,047,614 | 9/1991 | Bianco | 235/385 |
| 5,117,354 | 5/1992 | Long et al. | 364/401 |
| 5,195,130 | 3/1993 | Weiss et al. | 379/98 |
| 5,250,789 | 10/1993 | Johnsen | 235/383 |
| 5,319,542 | 6/1994 | King, Jr. et al. | 364/401 |

OTHER PUBLICATIONS

Fergenoff, "CD-ROM Comes home=Bell Atlantic's intelligent home of the 21st century. (home-based information services", CD-ROM News Extra, v. 1, n. 6, p. 16(4), Dec. 1993, Dialog File 148, Acc. #06795500.

"Thomas Unveils Online Purchasing Network (Thomas Publishing introduces Connects electronic corporate purchasing network for industrial products", Electronic Buyers News, p.60, Dec. 11, 1995, Dialog file 9, Acc. No. 01355145.

Bethoney, "Made to order for online catalogs (iCat's Electronic commerce suite . . . )", PC Week, vol. 13, No. 45, p.80(1), Nov. 11, 1996, Dialog file 47 Acc. No. 04634978.

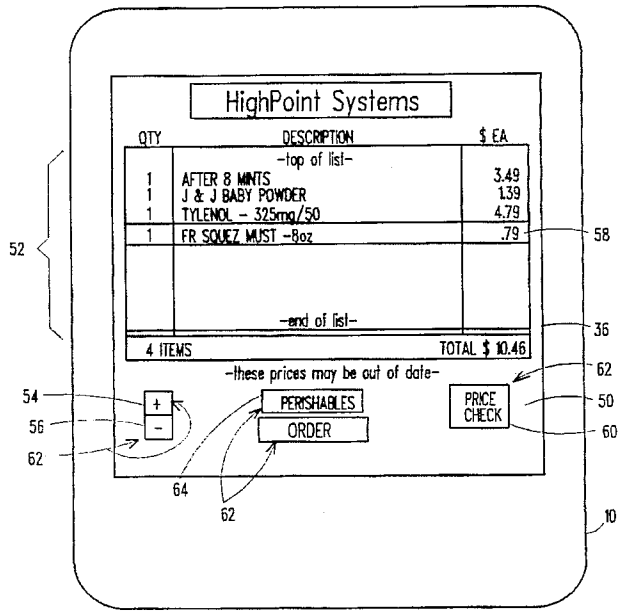
Staten, "iCat to do Net commerce. (Interactive Catalog's iCat Electronic Commerce Suite) . . . ", MacWeek, v. 10, n. 17, p.18(2), Apr. 29, 1996, Dialog file 148, Acc. No. 08633302.

*Primary Examiner*—Gail O. Hayes
*Assistant Examiner*—Frantzy Poinvil
*Attorney, Agent, or Firm*—Weingarten, Schurgin, Gagnebin & Hayes LLP

[57] **ABSTRACT**

A remote ordering system provides a user the ability to build and edit one or more order lists, resident in memory within a user device, and the further ability to review and manipulate a user interpretable display of the contents of such lists. A system comprising merchant stock databases, a data format/transfer computer (DFTC), and display/processor units (DPUs) (the user devices) enable creation and transmission of the order lists. Coded data read into each DPU identifies items to be added to the order lists. A DPU database contains user-discernable item information stored according to the associated coded data and is capable of learning new or updating old item information when in communication with the merchant database. Item information can be automatically or manually deleted to free DPU memory.

**75 Claims, 15 Drawing Sheets**



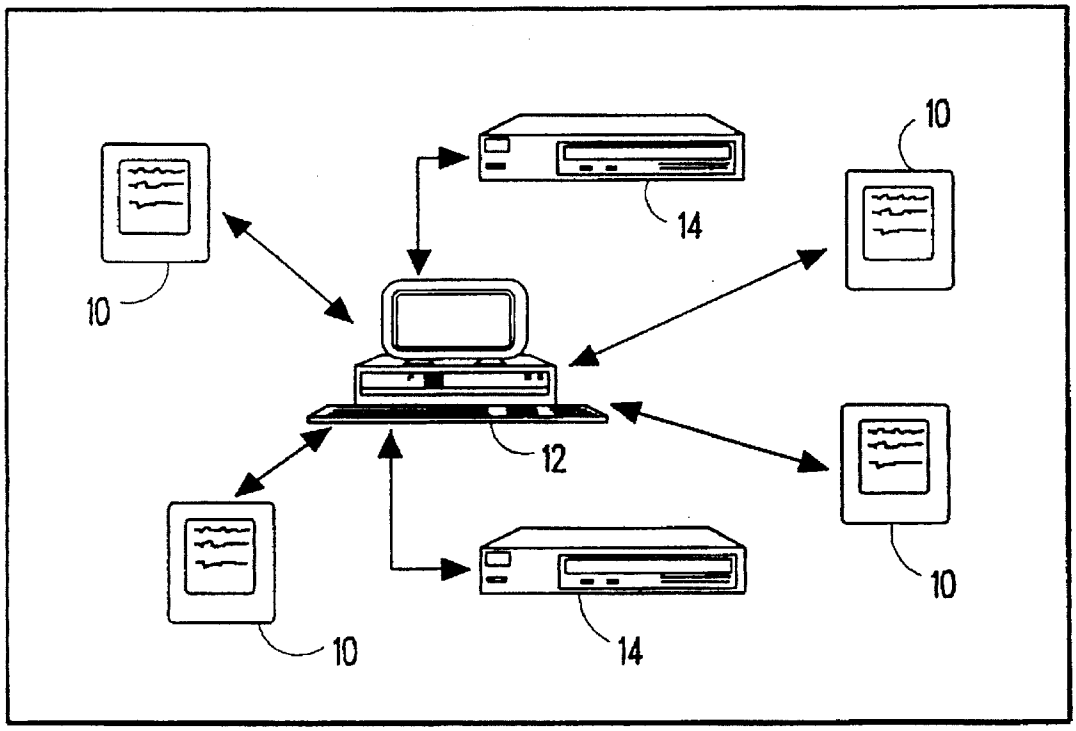



FIG. 1

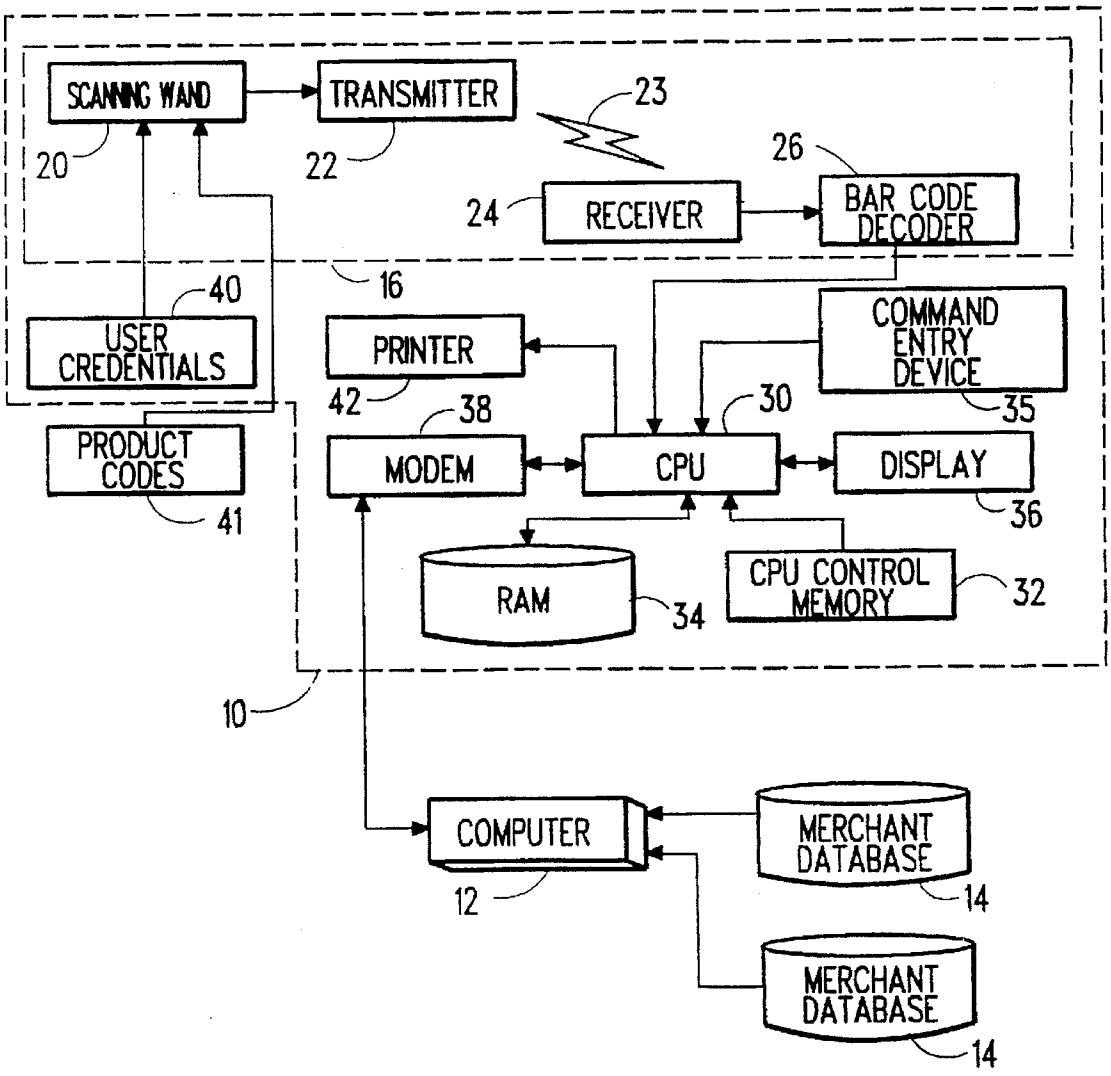

SCANNING WAND
TRANSMITTER
23
20
22
26
24
RECEIVER
BAR CODE DECODER
16
40
USER CREDENTIALS
PRINTER
COMMAND ENTRY DEVICE
42
38
30
35
PRODUCT CODES
MODEM
CPU
DISPLAY
41
36
RAM
CPU CONTROL MEMORY
34
32
10
COMPUTER
MERCHANT DATABASE
12
14
MERCHANT DATABASE
14

FIG. 2

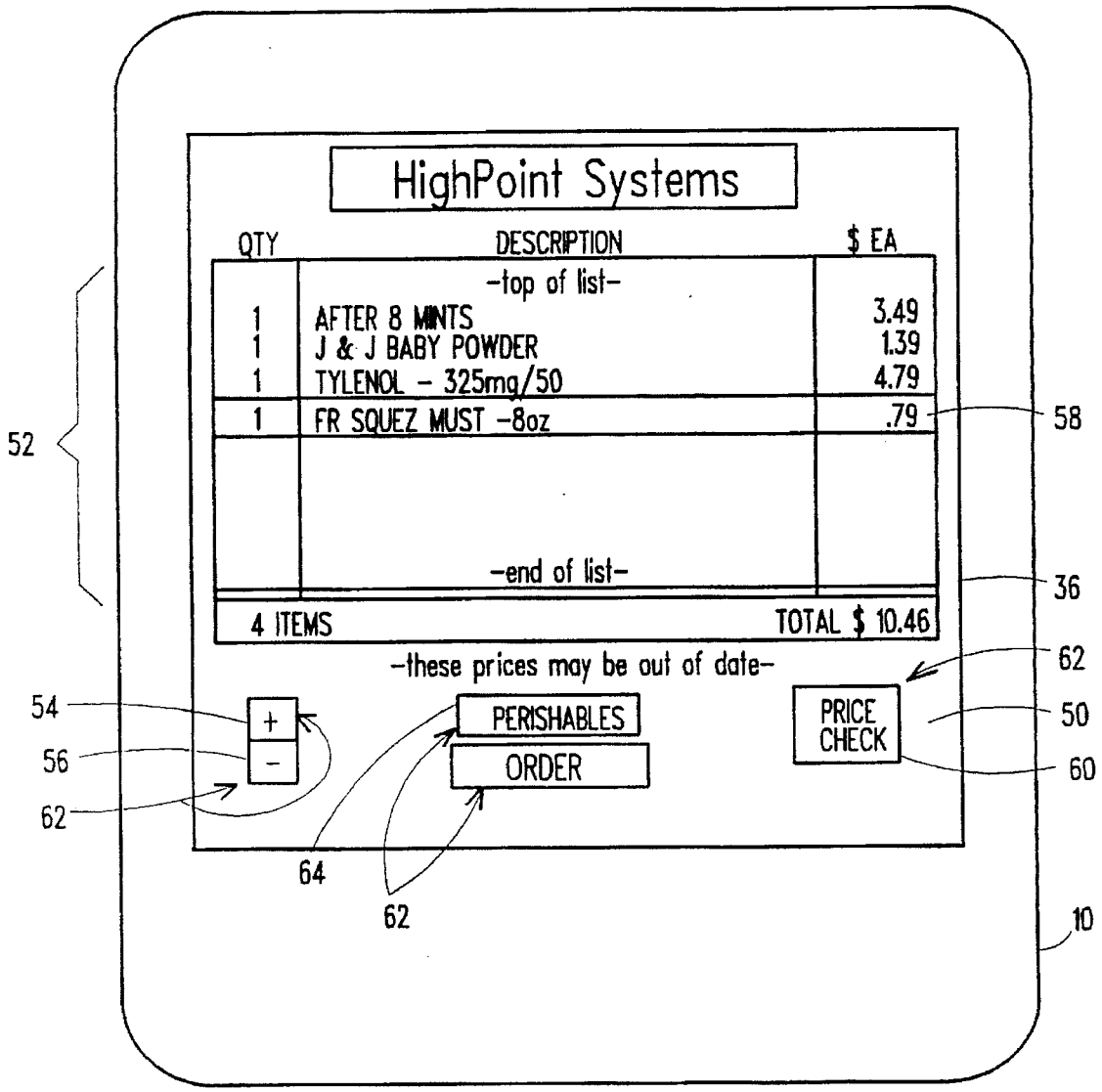

HighPoint Systems
QTY
DESCRIPTION
$ EA
-top of list-
1 AFTER 8 MINTS 3.49
1 J & J BABY POWDER 1.39
1 TYLENOL - 325mg/50 4.79
1 FR SQUEZ MUST -8oz .79
-end of list-
4 ITEMS
TOTAL $ 10.46
-these prices may be out of date-
+
-
PERISHABLES
ORDER
PRICE CHECK
52
54
56
62
64
62
58
36
62
50
60
10

FIG. 3

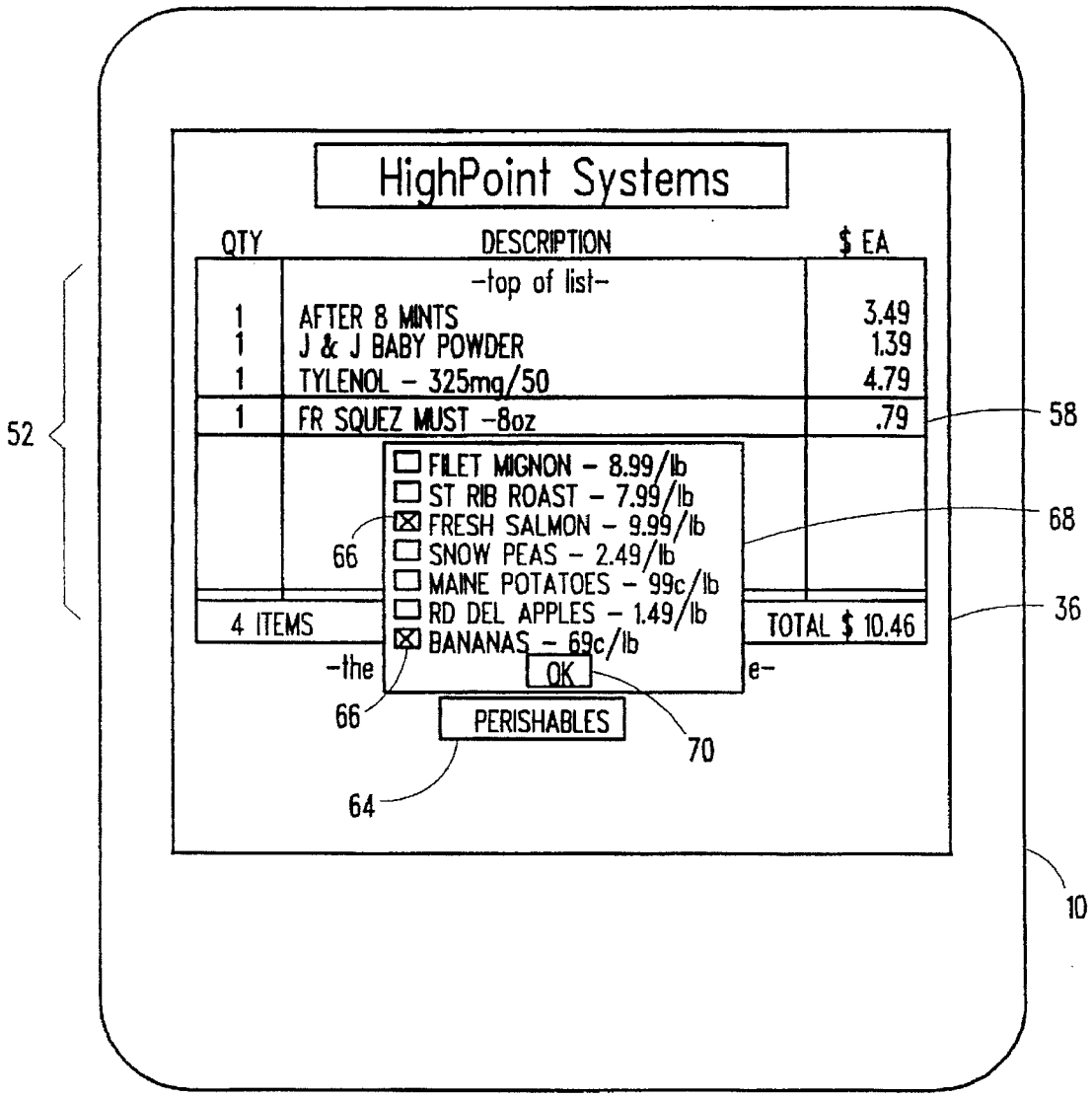

HighPoint Systems
QTY
DESCRIPTION
$ EA
-top of list-
1 AFTER 8 MINTS 3.49
1 J & J BABY POWDER 1.39
1 TYLENOL - 325mg/50 4.79
1 FR SQUEZ MUST -8oz .79
FILET MIGNON - 8.99/lb
ST RIB ROAST - 7.99/lb
FRESH SALMON - 9.99/lb
SNOW PEAS - 2.49/lb
MAINE POTATOES - 99c/lb
RD DEL APPLES - 1.49/lb
BANANAS - 69c/lb
4 ITEMS
TOTAL $ 10.46
-the
e-
OK
PERISHABLES
52
58
68
66
36
66
70
64
10

FIG. 4

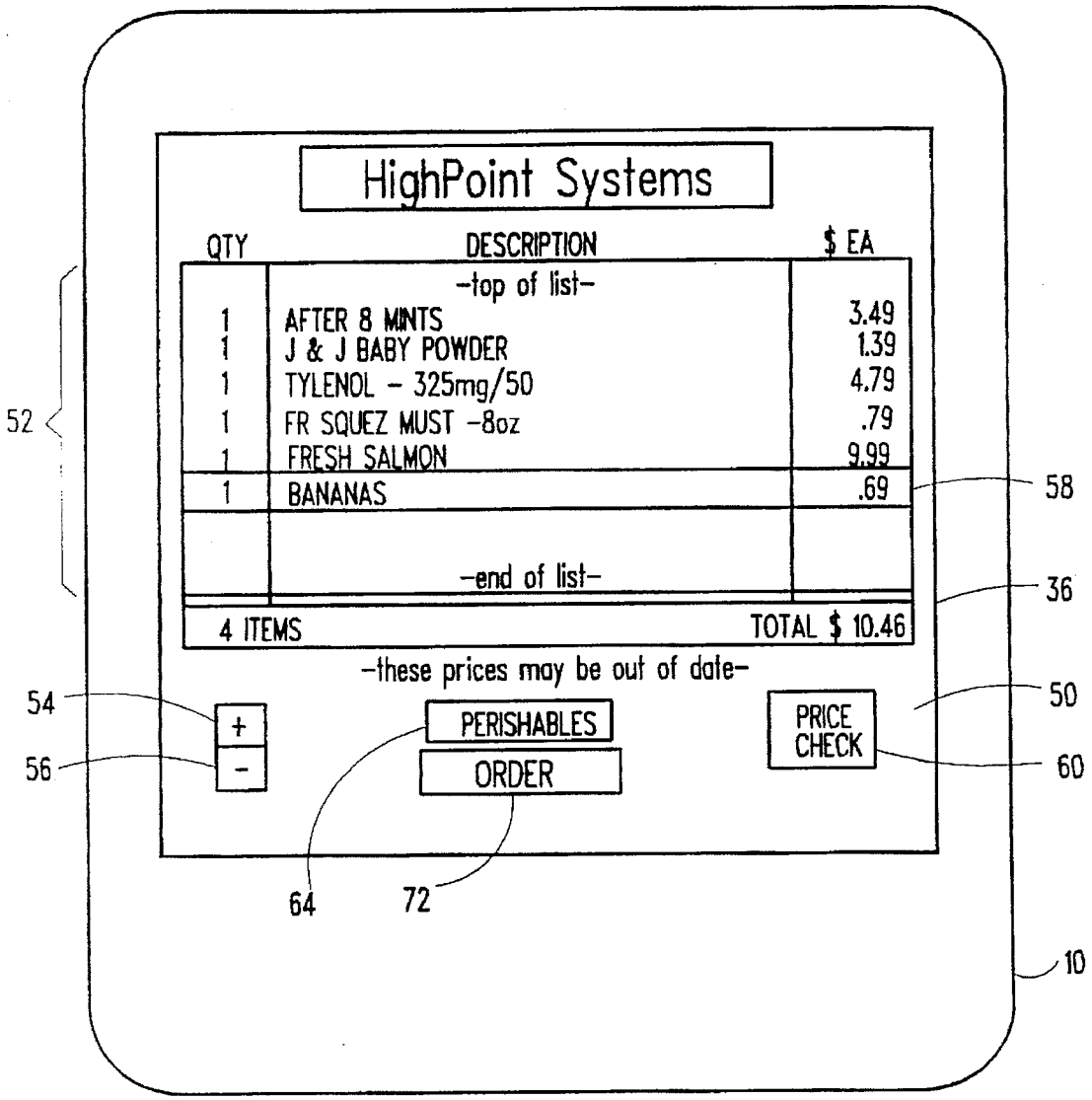

HighPoint Systems
QTY
DESCRIPTION
$ EA
-top of list-
1 AFTER 8 MINTS 3.49
1 J & J BABY POWDER 1.39
1 TYLENOL - 325mg/50 4.79
1 FR SQUEZ MUST -8oz .79
1 FRESH SALMON 9.99
1 BANANAS .69
-end of list-
4 ITEMS
TOTAL $ 10.46
-these prices may be out of date-
+
-
PERISHABLES
ORDER
PRICE CHECK
52
54
56
58
36
50
60
64
72
10

FIG. 5

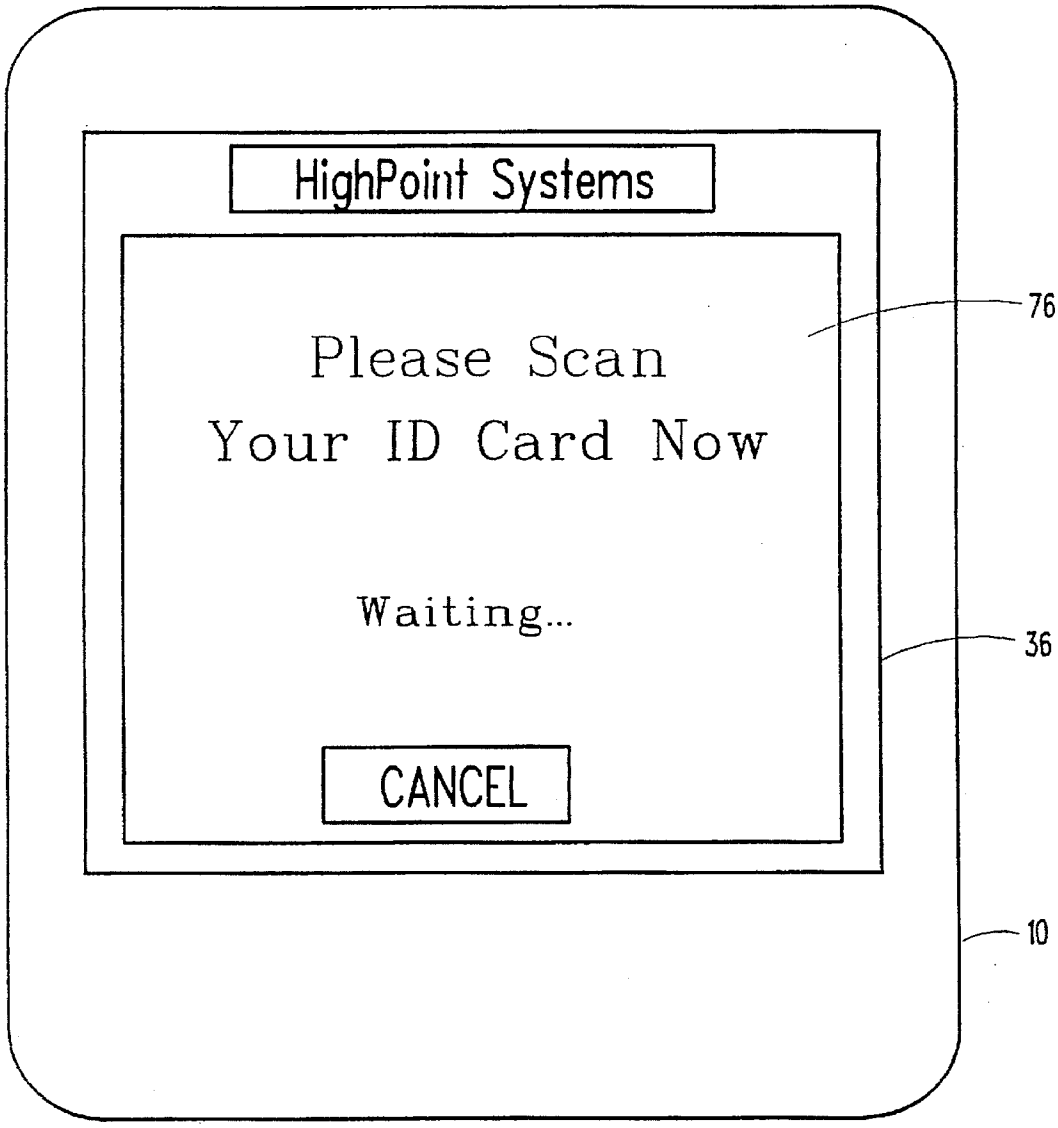

HighPoint Systems
Please Scan
Your ID Card Now
Waiting...
CANCEL
76
36
10

FIG. 6

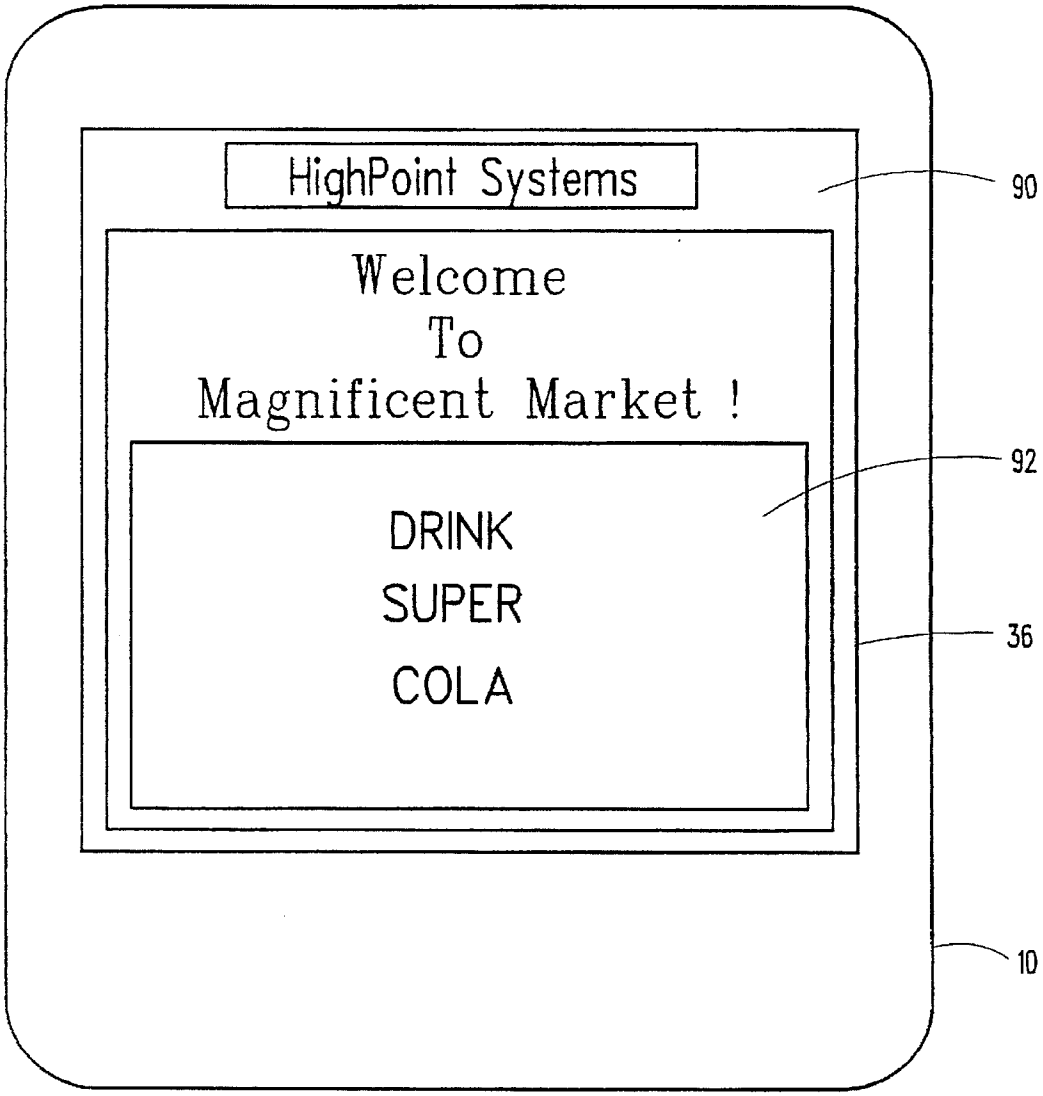

HighPoint Systems
Welcome
To
Magnificent Market !
DRINK
SUPER
COLA
90
92
36
10

FIG. 7

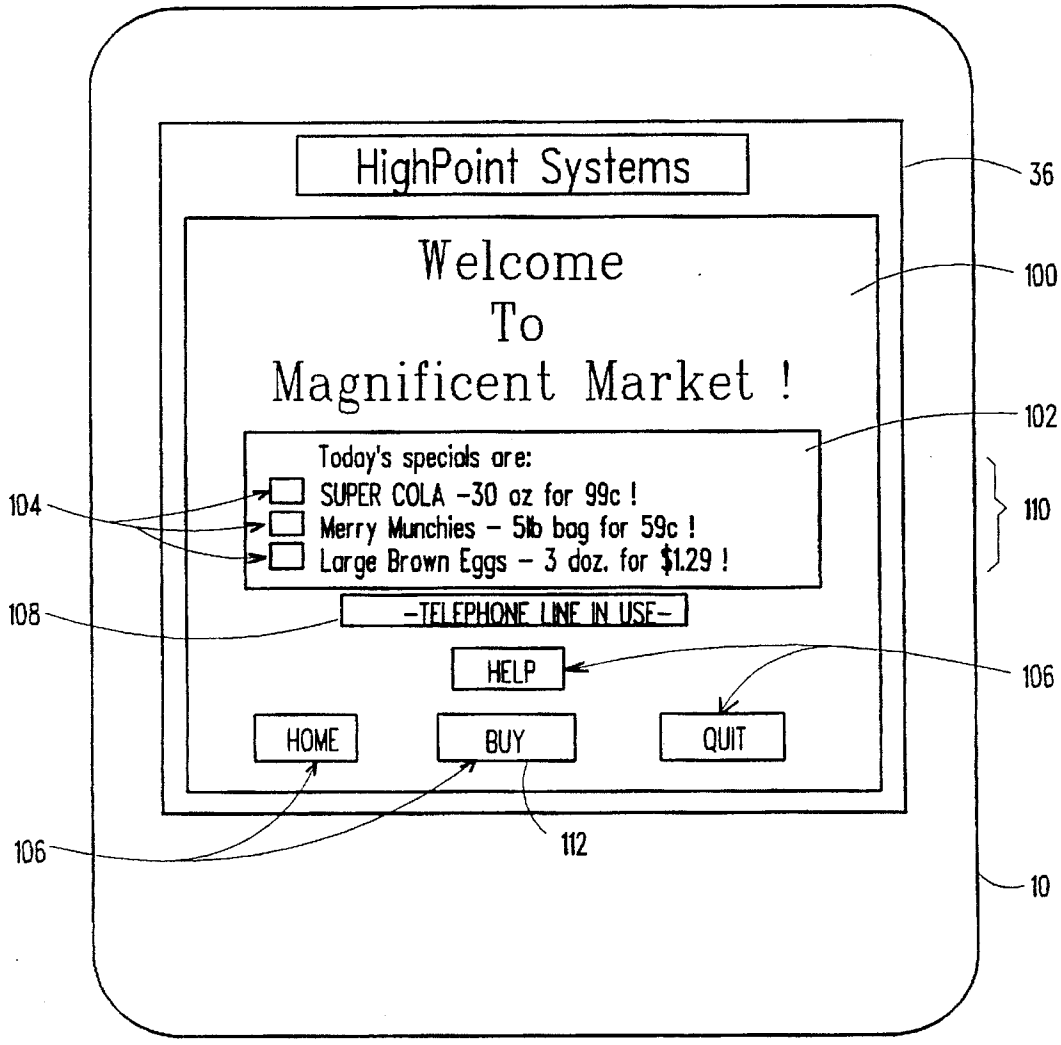

HighPoint Systems
Welcome
To
Magnificent Market !
Today's specials are:
SUPER COLA -30 oz for 99c !
Merry Munchies - 5lb bag for 59c !
Large Brown Eggs - 3 doz. for $1.29 !
-TELEPHONE LINE IN USE-
HELP
HOME
BUY
QUIT
36
100
102
104
110
108
106
106
112
10

FIG. 8

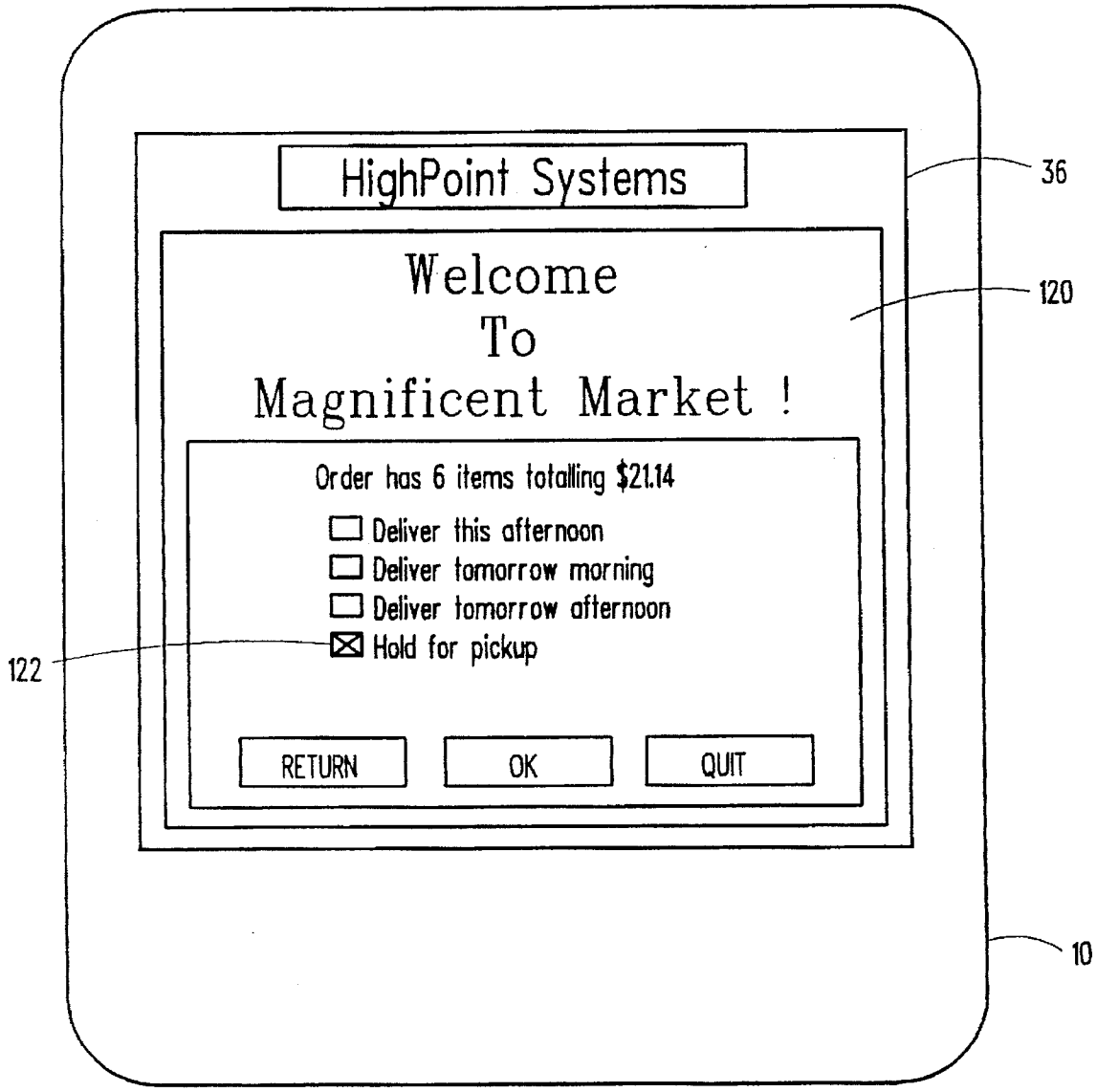

HighPoint Systems
36
Welcome
To
Magnificent Market !
120
Order has 6 items totalling $21.14
Deliver this afternoon
Deliver tomorrow morning
Deliver tomorrow afternoon
Hold for pickup
122
RETURN
OK
QUIT
10

FIG. 9

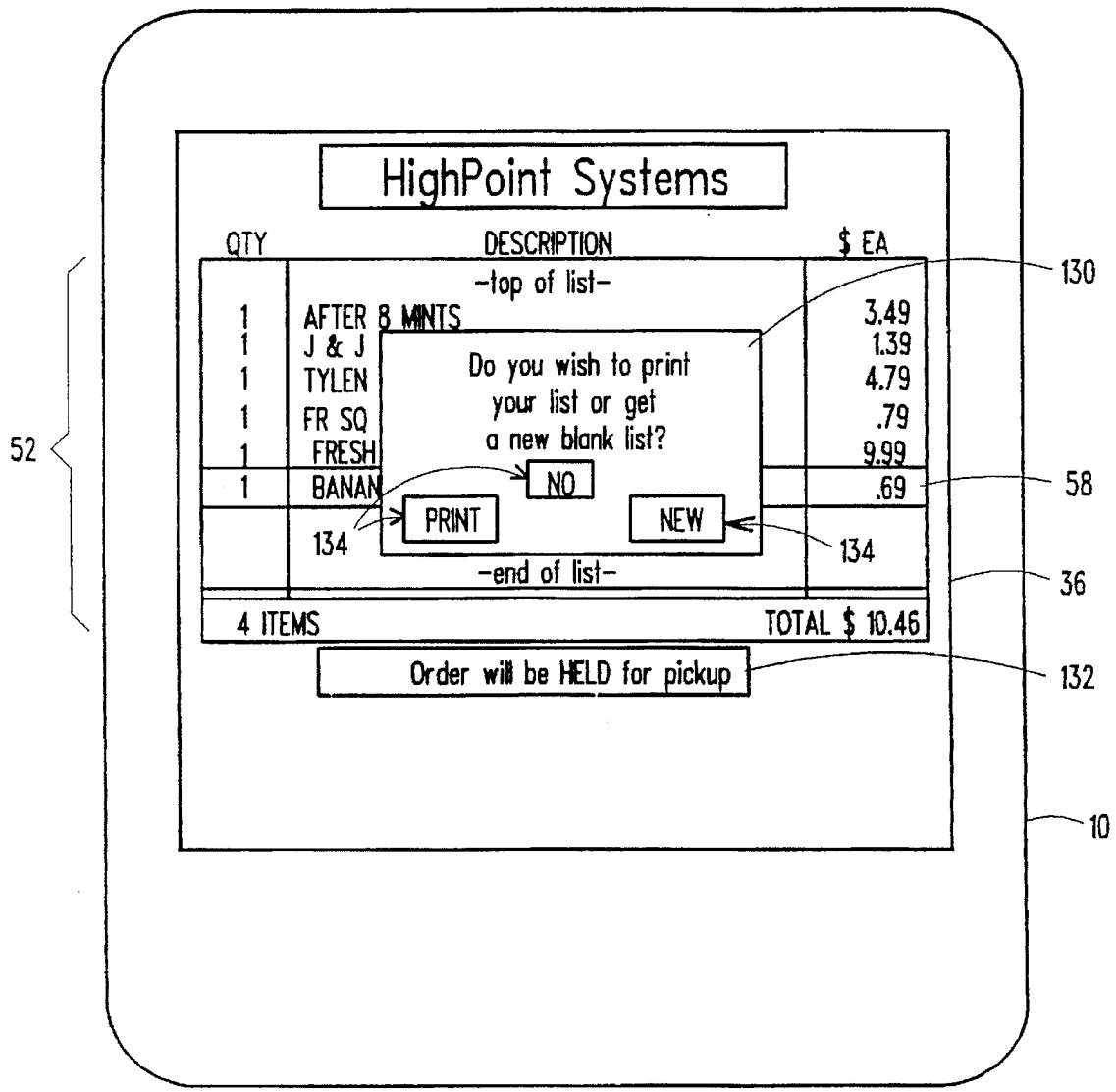

HighPoint Systems
QTY
DESCRIPTION
$ EA
-top of list-
1 AFTER 8 MINTS 3.49
1 J & J 1.39
1 TYLEN 4.79
1 FR SQ .79
1 FRESH 9.99
1 BANAN .69
Do you wish to print your list or get a new blank list?
NO
PRINT
NEW
134
134
-end of list-
4 ITEMS
TOTAL $ 10.46
Order will be HELD for pickup
52
130
58
36
132
10

FIG. 10

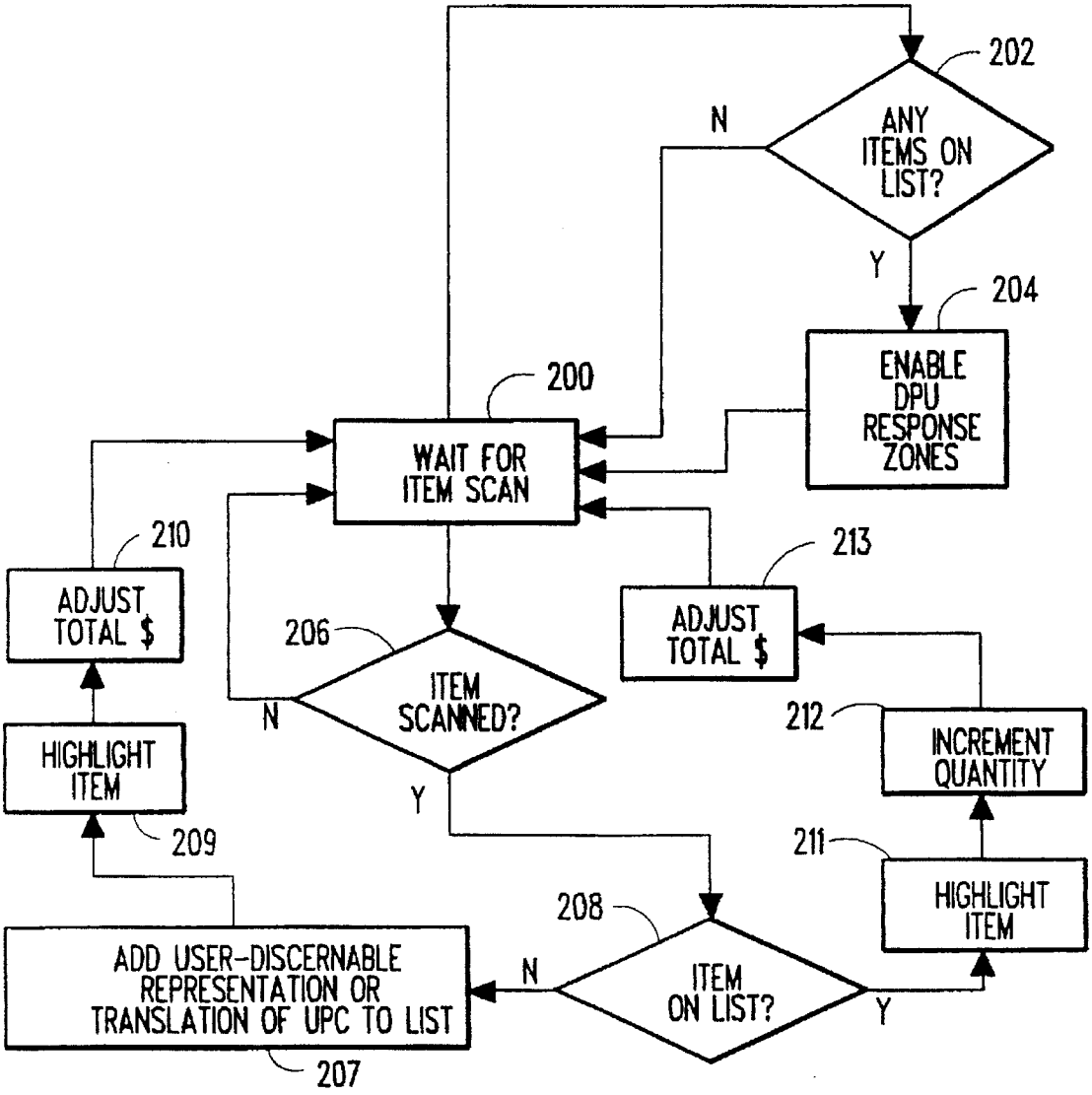

202
ANY ITEMS ON LIST?
N
Y
204
ENABLE DPU RESPONSE ZONES
200
WAIT FOR ITEM SCAN
210
ADJUST TOTAL $
206
ITEM SCANNED?
N
Y
213
ADJUST TOTAL $
212
INCREMENT QUANTITY
HIGHLIGHT ITEM
209
211
HIGHLIGHT ITEM
208
ADD USER-DISCERNABLE REPRESENTATION OR TRANSLATION OF UPC TO LIST
N
ITEM ON LIST?
Y
207

FIG. 11

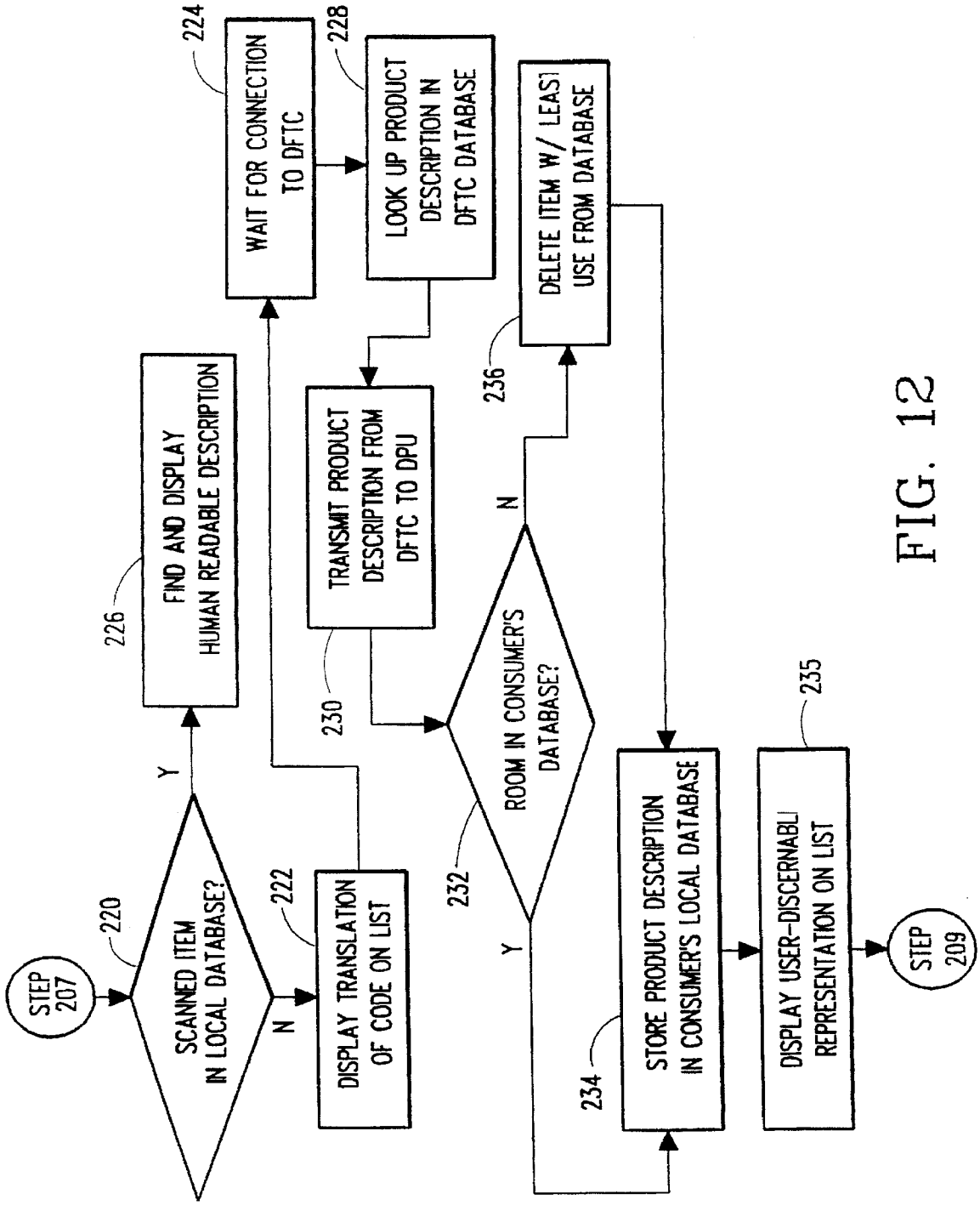

STEP 207
220
SCANNED ITEM IN LOCAL DATABASE?
Y
N
226
FIND AND DISPLAY HUMAN READABLE DESCRIPTION
222
DISPLAY TRANSLATION OF CODE ON LIST
224
WAIT FOR CONNECTION TO DFTC
228
LOOK UP PRODUCT DESCRIPTION IN DFTC DATABASE
230
TRANSMIT PRODUCT DESCRIPTION FROM DFTC TO DPU
232
ROOM IN CONSUMER'S DATABASE?
N
Y
236
DELETE ITEM W/ LEAST USE FROM DATABASE
234
STORE PRODUCT DESCRIPTION IN CONSUMER'S LOCAL DATABASE
235
DISPLAY USER-DISCERNABLE REPRESENTATION ON LIST
STEP 209

FIG. 12

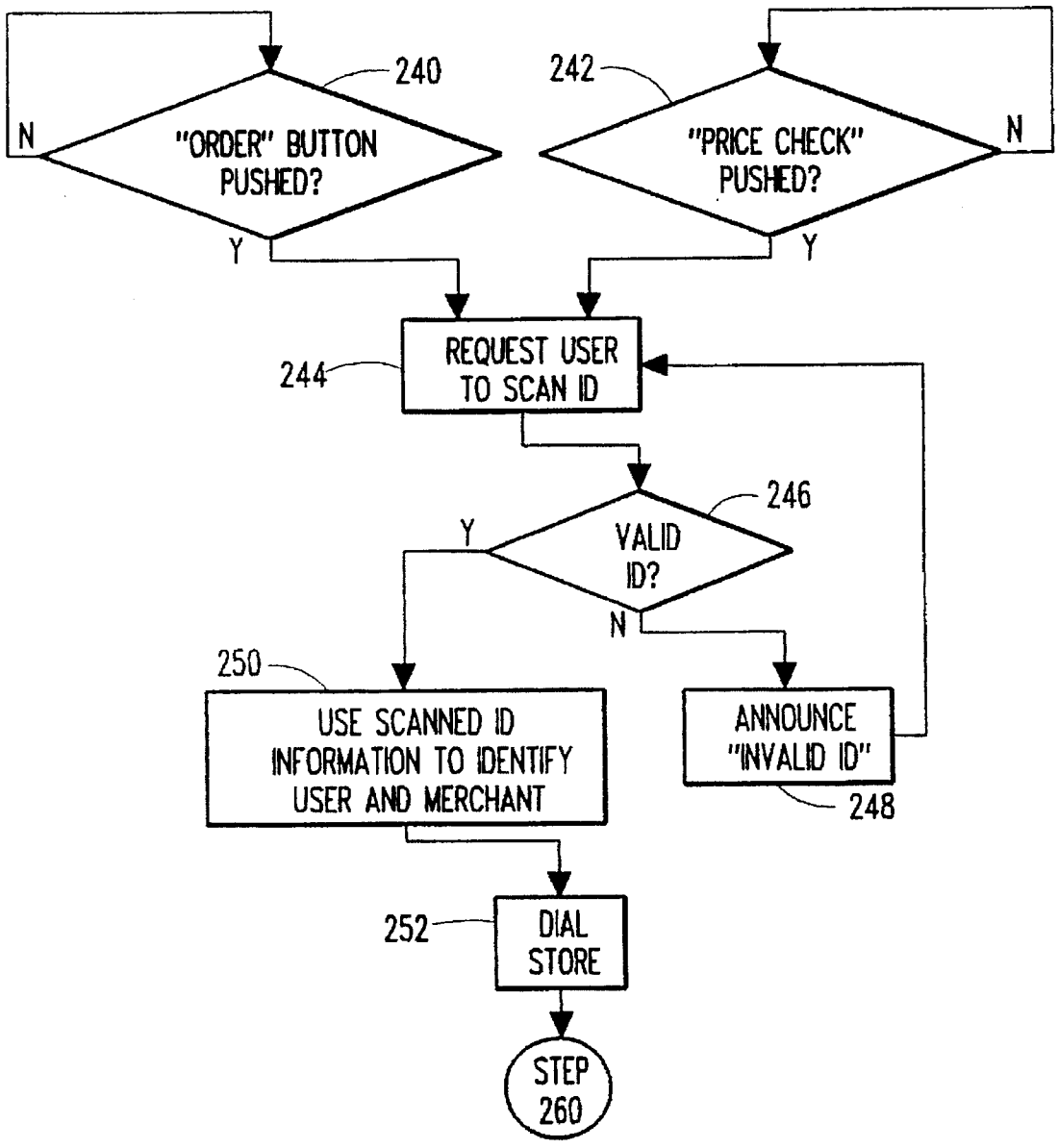

240
"ORDER" BUTTON PUSHED?
N
Y
242
"PRICE CHECK" PUSHED?
N
Y
244
REQUEST USER TO SCAN ID
246
VALID ID?
Y
N
250
USE SCANNED ID INFORMATION TO IDENTIFY USER AND MERCHANT
ANNOUNCE "INVALID ID"
248
252
DIAL STORE
STEP 260

FIG. 13

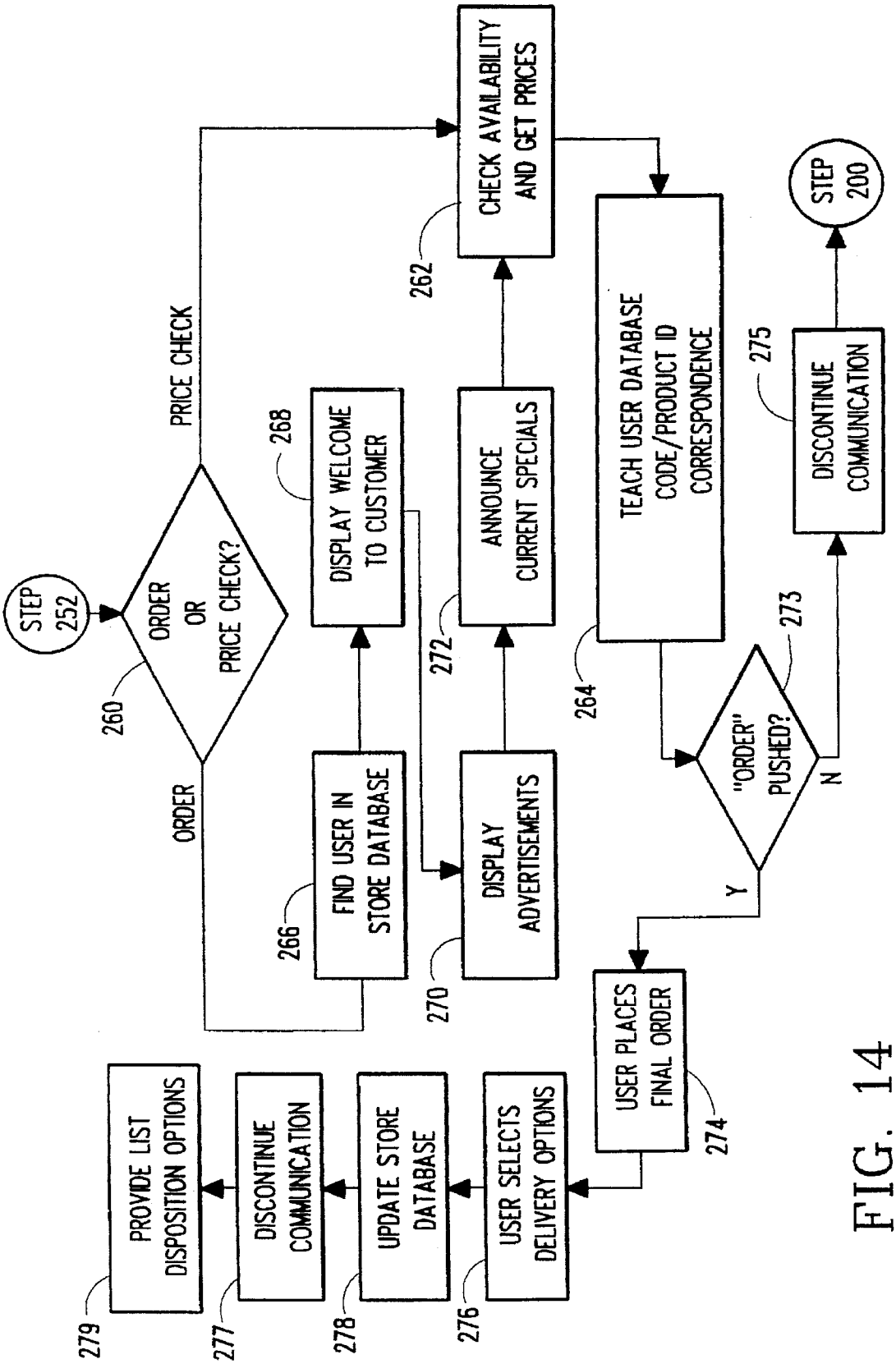

STEP 252
ORDER OR PRICE CHECK?
260
PRICE CHECK
ORDER
DISPLAY WELCOME TO CUSTOMER
268
FIND USER IN STORE DATABASE
266
ANNOUNCE CURRENT SPECIALS
272
DISPLAY ADVERTISEMENTS
270
CHECK AVAILABILITY AND GET PRICES
262
TEACH USER DATABASE CODE/PRODUCT ID CORRESPONDENCE
264
"ORDER" PUSHED?
273
Y
N
DISCONTINUE COMMUNICATION
275
STEP 200
USER PLACES FINAL ORDER
274
USER SELECTS DELIVERY OPTIONS
276
UPDATE STORE DATABASE
278
DISCONTINUE COMMUNICATION
277
PROVIDE LIST DISPOSITION OPTIONS
279

FIG. 14

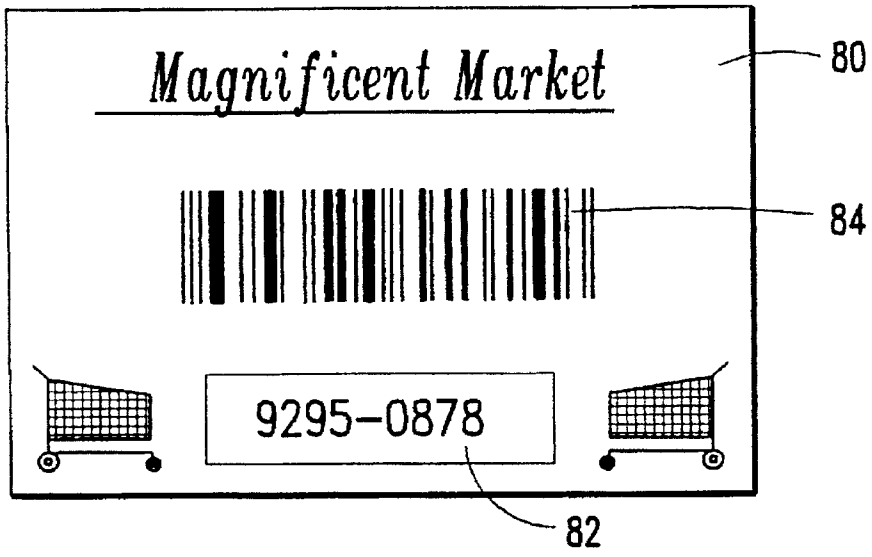



FIG. 15A

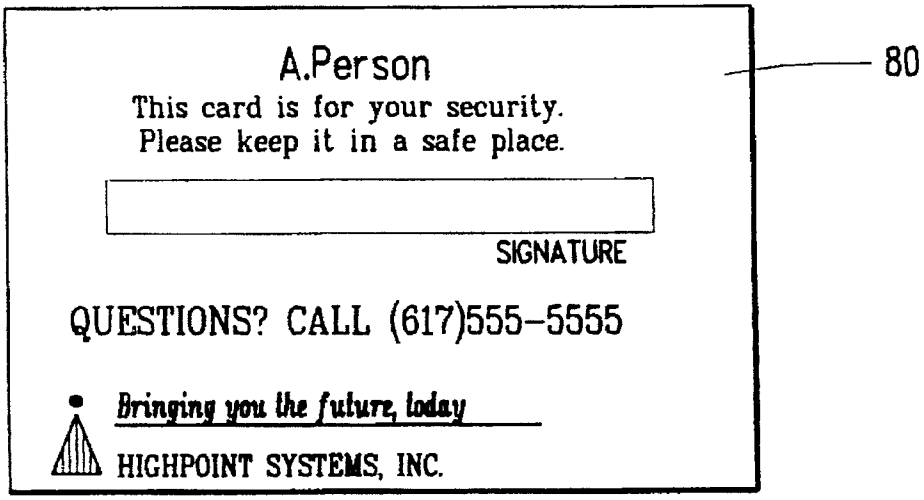



FIG. 15B

# REMOTE ORDERING SYSTEM

## FIELD OF THE INVENTION

The present invention relates to the field of remote ordering systems, and in particular to a remote ordering system which enables the building of a database of user-discernable product or service identification information within a user-accessible device.

## BACKGROUND OF THE INVENTION

Remote ordering systems have been proposed for providing homeowners and business-persons the ability to order staple items from one or more merchants without the need to travel to a merchant location. However, such prior art systems have failed to provide the user with adequate information necessary for tracking or editing orders made or lists compiled.

Typically, prior art remote ordering systems provide some form of optical or magnetic scanner associated with a remote interface for reading coded product identification information found on product packaging. Most such systems, such as U.S. Pat. No. 4,654,482 (DeAngelis), provide an indication that a product code has been scanned, either via an audible tone or a visual indicator such as an LED. However, none of the prior art systems describes how to produce a user-interpretable description of the products placed in a list of items based on the scanned codes such as manufacturer and product name, product size, and product cost while such list is being constructed. For example, user-readable product descriptions are only provided in DeAngelis once an order list has been completed and conveyed to a merchant's order receiving apparatus, and only while connected to a merchant's order receiving apparatus.

## SUMMARY OF THE INVENTION

A remote ordering system according to the present invention provides a user the ability to build and edit one or more order lists, resident in memory within a user device, and the further ability to review a user interpretable display of the contents of such lists. The present invention provides multiple merchant stock databases, a data format/transfer computer (DFTC) as an interface between customers and the merchant databases, and a user device referred to as a display/processor unit (DPU) at each of multiple customer sites for creating and transmitting order lists.

The DPU, in an illustrative embodiment, includes of a user identification code card and a data entry device providing desired item, user, and merchant data to the remainder of the DPU. To create an order list, an item code, provided by the data entry device, is checked against a DPU internal database. For instance, the item code can be provided by scanning an optical wand over a bar code. If user-discernable information corresponding to the item code, including product manufacturer, product description, and unit price, is in the DPU database, this information is displayed to the user via a DPU display. Else, the DPU communicates with the DFTC and thence to a specified merchant database to retrieve such user-discernable information, adds it to the DPU database, and updates the displayed list. In this manner, a DPU database of user-discernable product information (also referred to as user-cognizable identifiers) is created such that order lists, comprised of products or services to be ordered, can be visually reviewed, modified, and/or confirmed by the user without communication between the DPU and an associated DFTC.



Once the order list is complete, the user identification code card is provided to the data entry device. Coded information read from the card represents user name and address, merchant name and address, and other order specific information pertinent to this user and merchant, and is interpreted by the DFTC. The order list created within the DPU is processed in conformity with this coded information.

## BRIEF DESCRIPTION OF THE DRAWINGS

These and other features of the present invention are more fully set forth below in the fully exemplary detailed description and accompanying drawings of which:

FIG. **1** is a schematic representation of the remote ordering system according to the present invention;

FIG. **2** is a further schematic representation of the system of FIG. **1**;

FIG. **3** is a view of a first screen display on a display/processor unit (DPU) of the system of FIG. **1**;

FIG. **4** is a view of a second screen display on a DPU of the system of FIG. **1**;

FIG. **5** is a view of a third screen display on a DPU of the system of FIG. **1**;

FIG. **6** is a view of a fourth screen display on a DPU of the system of FIG. **1**;

FIG. **7** is a view of a fifth screen display on a DPU of the system of FIG. **1**;

FIG. **8** is a view of a sixth screen display on a DPU of the system of FIG. **1**;

FIG. **9** is a view of a seventh screen display on a DPU of the system of FIG. **1**;

FIG. **10** is a view of a eighth screen display on a DPU of the system of FIG. **1**;

FIG. **11** is a flow chart representation of a product input function of the system of FIG. **1**;

FIG. **12** is a flow chart representation of a database update function of the system of FIG. **1**;

FIG. **13** is a flow chart representation of establishment of a communication link in the system of FIG. **1**;

FIG. **14** is a flow chart representation of an interactive session in the system of FIG. **1**;

FIG. **15A** is a first side view Of a user identification control card employed in the system of FIG. **2**; and

FIG. **15B** is a second side view of the user identification control card of FIG. **15A**.

## DETAILED DESCRIPTION

A remote ordering system according to the present invention and FIG. **1** includes at least one user device referred to as a display/processor unit (DPU) **10** or a remote ordering terminal, a data format/transfer computer (DFTC) **12** (also referred to as a central processing means or a central computer), and at least one merchant database **14** (also referred to as a central inventory database). In an exemplary embodiment used in the present description, one DPU **10** is in communication with one merchant database **14** through a DFTC **12**. However, it is envisaged that each system will typically have multiple DPUs **10** and merchant databases **14**.

While a discrete piece of hardware has been identified as the merchant database **14** in FIG. **1**, it is to be understood that throughout this document the merchant database **14** refers to a database of information not having one specific physical location. That is, the merchant database **14** can be

physically located within the DFTC **12**, within another computer or memory device located at the site of the DFTC **12** and connected thereto, or within a computer or memory device at a merchant location.

As illustrated in FIG. **2**, each DPU **10** is partially comprised of a data entry device **16** which provides coded information to the rest of the DPU **10**. In the embodiment of FIG. **2**, the data entry device **16** is made up of an optical scanning wand **20** having an RF transmitter **22** in communication with an RF receiver **24**, and made up of a bar code decoder **26**. It is intended that the scanning wand be passed over some form of bar code **41**, whether printed on packaging for a desired product, in a catalog of codes, on coupons, or printed on a credit-card sized identification control card. The specific bar code employed can be Code 128, Codabar, or one of the UPC (UPC-A, UPC-E) or EAN (EAN-8, EAN-13) codes, or any other code including system specific code. In any case, the received code is interpreted by the bar code decoder **26** to provide a common representation of the coded information, such as in ASCII format.

The RF linked scanning wand provides superior portability in a light-weight package. However, a number of other suitable devices are envisaged for the data entry device **16**. Specifically, an optical, hard-wired scanning wand **20** may be employed in lieu of the wand **20**, RF transmitter **22**, RF link **23** and RF receiver **24**. Thus, the link **23** can represent a path for optical, audio, RF, IR or any other energy capable of conveying information. Further, a portable optical scanning wand **20** having a limited amount of memory may be employed to gather and store coded information within the wand **20**. This scanned information is then transferred to the remainder of the DPU **10** by the appropriate link **23**. Further alternative embodiments of the data entry device **16** of the present invention employ a standard "QWERTY" keyboard or custom keypad in communication with the remainder of the DPU **10** for manual data input, or voice-recognition circuitry or magnetic stripe input means.

In a smart terminal version of the DPU **10** shown in FIG. **2**, a central processing unit (CPU) **30** and associated CPU control memory **32** manage the DPU **10** operations. In the illustrated embodiment, the control memory **32** is read-only memory (ROM). The other memory associated with the CPU **30** in this embodiment is a random access memory (RAM) **34**. This RAM **34** can be subdivided into a submemory for maintenance and storage of a database of user-discernable information correlating to user-input codes (also referred to as a database memory), a submemory for maintenance and storage of custom reference lists, and a submemory for maintenance and storage of one or more active ordering lists. The custom reference lists referred to include sublists which a user may wish to recall and incorporate into an order list currently being constructed. Examples of such custom reference lists include: a) a list of perishables regularly ordered from a grocery; b) a list of office products such as staples and paper regularly ordered from a stationary supplier; and, c) a list of dairy products regularly ordered from a dairy. User-discernable information, as referred to herein, includes descriptions of products or services selected by a user, typically including manufacturer, item name or description, unit size, and unit cost. Depending upon the item (product or service) selected, other information can be displayed to the user.

Note that in alternative embodiments, the DPU **10** can have only one memory such as RAM **34**, the CPU control functions being downloaded thereto upon communication with the DFTC **12**. Further, it is envisaged in alternative embodiments that the CPU control functions are both found in ROM **32** as well as in RAM **34**. Thus, the illustrated memory configuration is but one acceptable alternative.

A further alternative configuration for the DPU **10** includes a removable media interface associated with the RAM **34**. For instance, this interface can be a CD-ROM reader, a magnetic diskette reader, a PCMCIA card interface, or any other form of interface for a removable data storage element. This configuration thus enables the DPU **10** to have a database of user-discernable information correlating to user-input codes (the database memory) which can, at least in part, be updated en masse. The RAM **34** associated with the removable media provides storage for user-discernable information not found on the removable media, and provides storage for more current information associated with certain user-input codes than that found on the removable media. Thus, references herein to "a DPU database stored within a database memory in RAM" includes, in this alternative embodiment, a DPU database stored within a database memory in RAM and in removable media associated with the DPU.

Without establishing communications between the DPU **10** and the DFTC **12**, data from the data entry device **16** (referred to as input code) to the CPU **30** is checked against a DPU **10** database stored within a database memory in RAM **34**. If user-discernable information correlating to the input code exists within the database memory in RAM **34**, the user-discernable information is added to a list of products to be ordered being constructed within the RAM **34**. Simultaneously, the user-discernable information is provided to a display **36** under the control of the CPU **30** where the information is added to the displayed list of products being ordered. The CPU **30** is in charge of creating and displaying order lists on the display **36**. Note that the user-discernable information can be presented to the user as printed text, graphic images, or a combination of both. Thus, list building, reviewing, and/or modification is done on the DPU **10** without a communications link being established between the DPU **10** and the DFTC **12**.

Once the user has completed an order list, the CPU **30** can receive commands from the user via a command entry device **35** to convey the list to a merchant. The specific steps involved will be discussed subsequently. In an illustrative embodiment of the DPU **10** according to the present invention, the command entry device **35** is a display **36** having a touch-sensitive screen. This touch sensitivity can be implemented through an IR or heat sensitive display **36** or electrically conductive grids on the display **36**. Other embodiments of the command entry device **35** for transmission of user commands include touch-responsive icons on an electro-optical display **36**, programmable buttons located on the DPU **10** housing and proximate to the display **36**, and a keyboard attached to the DPU **10**. In yet another embodiment, the DPU **10** receives user instructions via a command entry device **35** such as a mouse, light pen, trackball or remote pointing device such as an air mouse, each either in wired or wireless communication with the DPU **10**, as appropriate. Further, the same device can be used to perform the functions of both the data entry device **16** and the command entry device **35**.

In response to these user instructions, the CPU **30** can command a modem **38** to establish telephone communications, either cellular or wired, with the DFTC **12**. Alternative embodiments of the present invention can employ interactive CATV, satellite communications, or fiber-optic data transmission for the link between the DPU **10** and the DFTC **12**. The DPU **10** is used to initiate an

interactive session with the DFTC **12** after an order has been compiled within the DPU **10**. The DPU **10** can also initiate an interactive session with the DFTC **12** when identification, price or nutritional information regarding a particular product is desired by a user and is not found within a DPU **10** database.

The DFTC **12** controls the flow of information between the DPU **10** and the merchant database **14** during such an interactive session. The DFTC **12** communicates with the merchant database **14** to ascertain product availability, product identification information such as name, container size, and nutritional data, and current product price. This information is then relayed back to the DPU **10** for display to the user and for addition to or substitution within the DPU **10** database. Depending upon the actual physical location of the merchant database **14**, this communication can be a telephonic serial data transfer, a serial or parallel transfer of information over a data bus or link, or a serial transfer of information over a communications network such as the Internet. Other known communication means are envisioned.

The DFTC **12** also interprets information entered from user identification control cards **40** reflective of user and merchant identification. Typically, these identification control cards **40** provide information from which merchant name and location, user name, address and account number, payment arrangements, preferred product delivery option, and consumer profile can be determined. In alternative embodiments of the present invention, the DPU **10** has such user and merchant identification pre-stored therein, such that the user selects a merchant from a displayed menu of merchants. The appropriate account number, preferred delivery mode, etc. can then be automatically selected, or the user can choose an account number along with other appropriate parameters from another displayed menu. In any case, information identifying the user and the desired merchant, among other transaction specific information, is referred to as a transaction identifier or as identifier means.

The DFTC **12** also provides advertising to the display **36** pertinent to the merchant being accessed and potentially according to the user profile. This advertising draws the attention of the user to special sale items. An exemplary advertising screen will be discussed in conjunction with FIGS. **7** and **8**. Other information can be conveyed in addition to or in place of advertising. For instance, a message indicative of an available credit limit or past due payments can be displayed, as well as a summary of payment or delivery options selected.

As depicted in FIG. **2**, the DFTC **12** serves as an intermediary between the DPU **10** and one or more merchant databases **14**. Note that, as shown in FIG. **1**, more than one DPU **10** can be in communication with any one DFTC **12**, and thence to a plurality of merchant databases **14**. Typically, a DFTC **12** will access a merchant database **14** upon receipt of an order from a DPU **10**. The computer **12** can verify that the merchant database **14** reflects availability of a sufficient quantity of the items requested and can confirm the preferred mode of payment and order delivery, both for the user and the merchant, by searching the merchant database **14**. The DFTC **12** can also access the merchant database **14** upon receipt of a request from a DPU **10** to update the DPU database memory in RAM **34**.

Note that the communication links between an individual DPU **10** and an associated DFTC **12**, and between the DFTC **12** and a merchant database **14**, need not be concurrently established. Thus, if the communications link between the DFTC **12** and the merchant database **14** is unavailable for any reason, the DPU **10** is not tied up pending successful establishment of this link. The DFTC **12** can, as a result of periodic communications with the merchant database **14**, supply the DPU **10** with the requested information. Further, the DFTC **12** can cause an indication to be displayed on the DPU **10** that the user should attempt the operation requiring DFTC-merchant database communication again at a later time.

If the DPU **10** has never been used to order a particular item and if the DPU **10** database was not preloaded with user-discernable information relating to the particular time, the DPU **10** database stored in RAM **34** will be unable to provide the user with a user-discernable interpretation of the product identifying code and/or a most-recent per unit cost, since list building is ordinarily performed "off-line", or in the absence of DPU **10**-DFTC **12** communications. Instead, the DPU **10** can display, for instance, a numerical representation of the scanned code information. Under most circumstances, this information will be of little use to the DPU **10** user, who can command the DPU **10** to search the merchant database **14** via the DFTC **12** for user-discernable product description. In an alternative embodiment, price information can also be returned in conjunction with the user-discernable product information. As noted, the returned user-discernable information, including unit cost if desired, is stored within the DPU **10** database in the database memory within RAM **34**, and is substituted for the numerical representation on the DPU display **36**.

In a further alternative embodiment of the present remote ordering system, each DPU **10** may be issued to a user with a pre-programmed DPU database stored within RAM **34**. Such a database stored therein can include common household staple items such as milk, bread, butter, etc. for a DPU **10** to be used primarily for grocery ordering, though other items are envisaged depending upon the intended use. Thus, in addition to being delivered with an empty database in RAM **34**, a DPU **10** may come with a standard pre-programmed database in RAM **34**, a pre-programmed database in RAM **34** configured for a particular user, or a pre-programmed database in RAM **34** configured for a particular merchant.

In yet another embodiment of the present invention, if a DPU **10** user believes a price associated with a displayed product description is out-of-date, the user can command the DPU **10** to update the price in the DPU database within RAM **34** by accessing the merchant database **14** via the DFTC **12**. The merchant database **14** can indicate the current price, which the DFTC **12** returns to the DPU CPU **30** for substitution into the database in RAM **34**. The merchant database **14** can also return information on alternative products if ordered products are out of stock or are not carried by that merchant.

The steps involved in updating the DPU **10** database are further explored in conjunction with exemplary display screens and operational flow charts, as described below.

The DPU **10** can also have an associated printer **42** as illustrated in FIG. **2**. This enables a user to make a hard copy of one or more order lists prior to list deletion. The printer **42** can be housed within a DPU **10** housing, or can be a peripheral device attached to the DPU **10** housing. Other peripheral devices which can be employed with the DPU **10** include but are not limited to a magnetic memory read/write device such as a disk drive, PCMCIA cards, a magnetic stripe card reader, or a voice recognition circuit and associated hardware.

In addition to printing a processed order list, the order list can be stored within the DPU RAM **34**. Thus, as described above, custom reference lists can be created for frequently ordered items. These lists can be periodically recalled from database memory **34** by the user, edited according to the user's present needs, used as the basis for a new order, and stored anew. Alternatively, the newly modified list can be discarded, leaving the original list in memory **34**. In this manner, a number of useful lists can be created and stored within database memory **34** for subsequent retrieval and use by a user. Further, one list can serve as the basis for a number of lists, each developed according to products offered by a respective merchant.

In FIGS. **3–10**, exemplary DPU display screens are illustrated, roughly following a sequence of steps involved in creating and submitting an order list. Note that variations in the format and order of the illustrated screens is within the scope of the present invention. These figures will also be discussed in conjunction with flow charts depicted in FIG. **11–14**, in which the operation of the remote ordering system according to the present invention is mapped.

FIG. **3** illustrates a typical order entry screen **50**. It is envisaged that the DPU **10** will typically remain in an "ON" state, even when not in use, waiting for an order to be added to an open order list **52**, though minimal power will be consumed. No communications link is established between the DPU **10** and the DFTC **12** during the building of an order list. Thus, when a user determines that a particular product is needed, or will soon be needed, a user must only input a desired product identifying code such as by scanning the wand **20** across a bar code. In one embodiment of the DPU **10**, a screen saver function may be implemented which blanks the display **36** after a predetermined amount of idle time. Thus, it is preferred that the DPU **10** is "ON" and has an order list on the display **36** at an initial step **200** in FIG. **11**.

In the illustrated embodiment of FIG. **3**, once an item has been added to a current product order list **52**, response icons **62** are provided along the bottom of the display **36**, though it is understood that the icons **62** could be disposed in other locations within the display **36**. The icons **62**, also referred to as command entry devices **35**, are virtual buttons provided on the display **36** and are responsive to touch from a finger or stylus, or to light from a light wand (depending upon the embodiment of the display **36**), and in the illustrative embodiment include increment/decrement icons **54**, **56** for adjusting the listed quantity associated with a highlighted item **58**. Activation of the icons **62** is represented at steps **202** and **204** of FIG. **11**.

As illustrated in steps **206**, **207**, **208**, **209**, **210**, **211**, **212** and **213**, an item is added to the order list **52** by scanning the product code. If the item is not on the order list **52** already, a user-discernable description of the item is entered onto the bottom of the list **52** if such description exists with the database, and the description becomes the highlighted item **58**. In the alternative embodiment as described above, a unit price taken from the database in the memory **34** also appears within the order list **52**. The order cost total is then updated. Note that while not illustrated, the DPU **10** is capable of calculating applicable sales tax and adding this amount to the total cost. Flags associated with each product in the database in RAM **34** would provide an indication to the DPU **10** that the item is subject to local sales tax. Note further that if all items on the current order list do not have corresponding user-discernable descriptions and associated prices, no total will be calculated at step **210**.

An item already on the order list **52** can also become the highlighted item **58** by manipulation of arrow icons or keys (not illustrated) disposed proximate the response icons **62** or fabricated on the DPU **10** housing, or by activating the product description of the item on a touch sensitive or electro-optical display **36**. Highlighting an item already on the order list **52** as described, followed by activating either the "+" icon or the "–" icon, causes the quantity ordered to increment or decrement. Alternatively, scanning the highlighted item causes the quantity ordered to increment. Once incremented, the total cost is updated based upon the number of incremented items and the unit cost per item. This description of how a product is added to an order list **52** assumes that a user-discernable description corresponding to an input product code exists in the DPU **10** database, and is represented schematically by steps **220** and **226** of FIG. **12**.

In the case where the desired item is not in the DPU **10** database, step **207** of FIG. **11** would further include steps **220**, **222**, and **224** of FIG. **12**. Having scanned such an item, the DPU **10** provides a translation of the scanned code in place of a user-discernable product description in the display **36**. No unit price is displayed. Note also that only this translation of the scanned code is derivable from the scanned code. The translation is distinct from the user-discernable representation of the scanned product provided by the DPU **10** database, the latter being in no way directly derivable from the product code. The translation remains in the order list **52** until communication between the DPU **10**, DFTC **12**, and merchant database **14** is initiated.

Once such a DPU **10** to DFTC **12** communication has been initiated, each ordered product or service placed on the order list being compiled not having a user-discernable representation in the local DPU **10** database is scanned for in DFTC memory. The associated user-discernable representation is then returned by the DFTC **12** to the DPU **10** for storage within the DPU **10** database in RAM **34**.

In the alternative embodiment of the present invention in which unit price data is available to the user, activation of a price inquiry icon **60** also causes the DFTC **12** to return a user-discernable product description and current unit price from the merchant database **14** to the DPU display **36** for those items having a translation of the respective item code on the display **36** and not having a user-discernable product description in the DPU **10** database, as indicated in steps **228**, **230**, **232** and **234** of FIG. **12**. This product description and price information will also be added to the DPU **10** database in RAM **34**. Of course, such information cannot be supplied if the product is not found within the merchant database **14** or the DFTC **12**. If not found within the DFTC **12**, communication is initiated between the DFTC **12** and the merchant database **14** to provide such information.

In a further alternative embodiment of the ordering system according to the present invention, the user can request nutritional information on one or more items found on a current order list. In place of or in addition to the price inquiry icon **60**, the DPU **10** may provide a nutritional information icon (not shown). As with the price inquiry icon **60**, information pertaining to a highlighted product will be returned from the DFTC **12**. The user can further be provided with the ability to request nutritional information on other items on the order list at that time, or on comparable items supplied by the merchant involved in the proposed transaction.

Each time product information is updated via activation of the price inquiry icon **60** or via initiation of an order, a product information access date in the DPU **10** database associated with each item on the order list **52** is updated along with any new product identification and unit price

information provided by the merchant database **14**, as noted in step **230** of FIG. **12**. In a first embodiment, if insufficient memory space exists within the DPU database to add a new product description and associated unit price, or if a predefined maximum size for the DPU **10** database would be exceeded by adding this new information to the database, the CPU **30** determines the oldest, or least accessed, product information based on access date. This oldest information is aged out, or deleted, from the database until sufficient room exists within RAM **34** to substitute in the new product information, as indicated in steps **236** and **234** of FIG. **12**. This creation of space within RAM **34** is referred to as database "aging". Once the user-discernable information is stored within the DPU database, it can be displayed within the displayed list, as indicated by step **235** of FIG. **12**.

In another embodiment, the CPU **30** can automatically age out information based upon frequency of use. Further, products or services can be organized within classes, with each class having its own aging parameters. Alternatively, the present invention can rely upon user intervention for decisions as to which information should be deleted from memory.

Other response icons **62** include the price inquiry icon **60** in an alternative embodiment. Since the DPU internal database within RAM **34** can contains product prices as of the date of the last order or price inquiry, a user may wish to determine the most up-to-date unit prices. Activating this icon **60** initiates communication between the DPU **10** and the DFTC **12**, the latter providing the desired unit prices for all of the items on the order list **52**. A more detailed description of the steps involved in the initiation of the communication between the DPU **10** and the merchant database **14** is provided in conjunction with the discussion of FIG. **13**, below.

Another response icon **62** which can be provided to a user via the DPU display **36** is an option list icon **64**. In the embodiment illustrated in FIG. **3**, this option list icon **64** is labelled "PERISHABLES" and when activated provides a list of frequently ordered perishables taken from the DPU internal database within memory **34**. In an alternative embodiment, activation of an option list icon **64** invokes communication between the DPU **10** and the merchant database **14** via the DFTC **12**. The merchant database **14** is prompted by the DFTC **12** for an option menu, containing names of sub-menus available, provided to the user at the DPU display **36**. For instance, if the merchant is a grocery store, the option menu can include sub-menus labelled "butcher counter", "delicatessen", "fruits", "vegetables", etc. Selection of one of these sub-menu options would result in a menu of products (and associated unit prices in the alternative embodiment) appropriate to the chosen sub-menu.

In a further embodiment of the present system, the user can scan a bar code or other machine readable code, as appropriate to the data entry device **16** or command entry device **35**, in order to invoke such sub-menus. For example, the user may wish to order butter, but may not know which brand is most suited to the user's needs. By scanning a bar code labelled "butter" on a printed menu, a sub-menu similar to those described above can be displayed, providing the user with a range of butter products to choose from. Of course, this embodiment is equally applicable to other products or services, depending upon the application for the system.

In FIG. **4**, a general list of perishables has been requested. This display can be the result of activation of the option list icon **64** labelled "PERISHABLES" in FIG. **3**, and can be the result of a suggested or typical shopping list provided by either the merchant during programming of the DPU **10** or by the supplier of the DPU **10**. Alternatively, the user can create its own custom list to be displayed upon selection of the appropriate icon from an option list.

In the exemplary embodiment of FIG. **4**, the user has chosen two items from this option list **68** of perishables, including "FRESH SALMON" and "BANANAS" as indicated by an "X" in icons **66** associated with these items. Again, these icons **66** can be touch-sensitive or electro-optical. Once the user is satisfied with the selections made from this option list **68**, the "OK" icon **70** is activated and the chosen items are added to the currently active order list **52**, as shown in FIG. **5**. Note that the highlighted item **58** in the order list **52** is now the last item from the option list **68** in FIG. **4**.

Once an order list **52** is complete and a user wishes to place an order with a merchant, an "ORDER" response icon **72** is activated. Note that this icon **72** can be otherwise labelled and located. This initiates communication between the DPU **10** and the DFTC **12**, which typically has access to a number of merchant databases **14** as depicted in FIG. **2**, and as represented by step **240** in FIG. **13**. Note that the sequence of steps taken in establishing communication between the DPU **10** and the DFTC **12** is identical to the sequence of steps initiated by activation of the price inquiry icon **60** of FIG. **3**, as represented by step **242** in FIG. **13**.

In the illustrated embodiment, to determine which of multiple merchants to order from and to determine the identity of the user, the DFTC **12** causes the DPU **10** to provide a prompt screen **76** on the DPU display **36**, shown in FIG. **6**, represented by step **244** of FIG. **13**. Each user has at least one identification control card **80** for each merchant with which the user has a remote ordering account. The identification control card **80**, which carries a user number **82**, can resemble a credit card, as illustrated in FIGS. **15A** and **15B**. The identification control card **80** can additionally or alternatively carry a coded representation **84** of the user number **82**.

As noted, the user identification control card **80** represents information regarding the merchant to be interfaced with, typically including but not limited to merchant location and account number, and further represents user information such as user name and address, delivery preference, and user profile. Security is thus provided to both the merchant and the user, since only users having valid identification control cards in their possession can initiate an order and charge to a particular account. Additional security means, such as the implementation of a call-back system or use of user-entered PIN numbers, can be incorporated into the present system.

In an alternative embodiment in which DPU **10** access security is not of heightened concern, the DPU **10** can have a code stored within the DPU **10** corresponding to a user's account number, profile, etc. as well as merchant information such as telephone number and address. The desired merchant is then chosen from a submenu of merchants.

Regardless of the means for providing user and merchant information to the DPU **10** and thus to the DFTC **12**, such information is provided only in a coded format. For instance, each user has one code assigned to him or her. Merchant account numbers, user profiles, etc. are stored within the DFTC **12**, and are accessed by the user code. Similarly, each merchant has a code. All information pertaining to each merchant is similarly stored within the DFTC **12** and can be made available to the user via the DPU **10**.

The prompt screen **76** results in input of the user number **82** or the coded representation thereof **84** into the DPU **10**. In FIG. **6**, the DPU **10** is indicating that the user should pass a scanning wand **20** over the coded representation **84** of the user identification control card **80**. The CPU **30** is able to interpret the coded information provided by the identification control card **80** via the data entry device **16** to make an initial determination whether the identification control card is valid, as depicted in step **246** of FIG. **13**. If the identification control card **80** is determined to be not valid, a message to that effect is provided to the display **36** for a limited time before the prompt screen **76** is redisplayed, as in steps **248** and **244** of FIG. **13**. However, if the validity of the identification control card **80** is confirmed by the CPU **30** as represented by step **250** and **252** of FIG. **13**, the DPU **10** uses the identification control card **80** information to identify the merchant database **14** to be interfaced and communicates with the DFTC **12**, which in turn accesses the appropriate merchant database **14**.

How a merchant database **14** reacts to communication initiated by a DPU **10** depends on whether the communication is a result of a price inquiry (activation of a price inquiry icon **60**, FIG. **3**) or of an order command (activation of an order icon **72**), as shown in step **260** in FIG. **14**. As discussed, if a user is merely requesting a price inquiry (step **242**), information is requested from the identification control card **80** for identification of the proper merchant database (steps **244** and **250**, FIG. **13**). The CPU **30** then indicates to the DPTC **12** that availability and price information is being requested for the items in the order list **52** (step **252**, FIG. **13** and step **262**, FIG. **14**). The DFTC **12** searches the merchant database **14** for accurate product description information, unit price, and product availability, and returns this information to the DPU **10**. If each product on the order list **52** had previously been ordered, and therefore a user-discernable product description is already associated with the corresponding product code in the DPU database in memory **34** for each product, the relevant product descriptions and unit prices are updated, if necessary, and the access dates are updated. If a user-discernable product description is not in the DPU **10** database and the user has requested a price inquiry, such user-discernable product information, along with current unit price, is initially downloaded to the DPU **10** database. The latter step is referred to as "teaching" the DPU **10** database. This corresponds to step **264** in FIG. **14**.

Once all items in the current list have been checked for validity and updated, if necessary, the price inquiry procedure is terminated, and the DPU **10** returns to an item entry state (steps **273** and **275**, FIG. **14**).

On the other hand, if the user has indicated a desire to place an order by activating the order icon **72**, several intermediate steps are taken, as illustrated by steps **266**, **268** and **270** of FIG. **14**. The user is first identified to the merchant database **14** according to the information provided by the scanned identification control card **80**, as shown in FIG. **13**. If there is nothing barring trade with this user, a greeting screen **90** can be provided on the DPU display **36**, as illustrated in FIG. **7**. The greeting screen **90** can be customized according to the merchant, and can include general information such as hours of operation, store locations, or advertising in a portion **92** of the DPU display **36**. Alternatively, user specific information can be provided, including account status, availability of frequently ordered products, or other personalized messages. The greeting screen **90** can remain on the display **36** for a pre-programmed time, or can remain displayed until the user takes some action, including activation of a response icon similar to those in FIG. **3**.

A promotional screen **100** can be provided to the user as depicted in FIG. **8** and as represented by step **272** of FIG. **14**. This screen **100** illustrates the ability to inform the user of special promotions which the merchant is offering. As shown, a window **102** of promotional items **110** provides both information regarding the items **110**, as well the opportunity for the user to add these items **110** to the present order list **52**. Icons **104** associated with the promotional items **110** enable such order list **52** addition. Other response icons can be provided to give the user various options regarding the purchase of the promotional items **110**.

Promotional screens **110** such as the one illustrated in FIG. **8** can be the result of merchant database **14** providing the DFTC **12** with specials to be advertised for a given period. In this case, the merchant database **14** provides advertising information to the DFTC **12** on a regular, periodic basis. In another embodiment of the present system, advertising information is provided to the DFTC **12** when the DFTC **12** contacts the merchant database **14** as a result of either a price inquiry or an order command. The advertising prompted by the merchant database **14** can be either generic in nature, that is, applicable to all users, or can be customized to the individual buying patterns of the user in question.

Also shown in FIG. **8** is a reminder indication **108** which informs the user that the DPU modem **38** is presently in communication with the DFTC **12** using the user's telephone line. As with other messages provided to the DPU display **36**, this reminder indication **108** can be in reverse video, and can be blinking on and off at a rate chosen to gain the attention of the user. While not shown in other illustrative screens provided to the user during telephonic communication between the DPU **10** and the DFTC **12**, this or an analogous message may be employed somewhere on the DPU display **36**.

After the promotional screen **100**, the user can be provided with another opportunity to review the items compiled in the present order list via a screen similar to that illustrated in FIG. **5**. This is of particular use if one or more items on the list were not previously in the DPU internal database. In such case, the user would have been provided with a numeric representation of the input product code prior to communication with the merchant database **14**. After communication, a user-discernable representation of the product code would be substituted into the order list **52**, thus enabling the user to confirm an order of the item. These user-discernable representations will also be entered into the DPU database within RAM **34** for future use, as indicated by steps **262** and **264** of FIG. **14**.

Similarly, the unit price for items in the order list is updated according to current prices as provided by the merchant database **14** to the DFTC **12**, both on the DPU display **36** and in the DPU internal database in RAM **34**.

Once the order list has been reviewed and confirmed, the user can command the DPU **10** to execute the order, as in steps **273** and **274** of FIG. **14**. This can be done by user activation of a response icon **62** such as the icon **72** labelled "ORDER" in FIG. **5**, or by activation of other similarly labelled response mechanisms. The DPU modem **38** conveys the execution order to the DFTC **12**, which can then provide the user with option screens such as a delivery option screen **120**, shown in FIG. **9** and step **276** of FIG. **14**. The user is thus provided with the opportunity to specify how the ordered products are to be conveyed. In FIG. **9**, the

user has activated a response icon **122** directing that the order be held for pick-up. The order list is then provided to the merchant from the DFTC **12** telephonically via voice, in hard copy, on magnetic media, or telephonically via a modem. It is further envisaged that the order list is conveyed electronically to the merchant such that the merchant is able to update the merchant's inventory control system automatically based on the order list.

Once the user has responded to whatever option screens are provided, depending upon the configuration of the ordering system, telephonic communication between the DPU **10** and the DFTC **12** is terminated, as in step **277**. From the point of view of the user, a final step in the ordering process can be a list disposition option screen **130**, as shown in FIG. **10**. This screen **130** provides the user with the ability, through the use of response icons **134**, to print the current order list **52**, to generate a new blank order list, to return to the order list **52** just completed, or to store the order list **52** within RAM **34**, as reflected in step **279** of FIG. **14**.

In an alternative embodiment, the list disposition option screen **130** can provide the user the opportunity to store the current option order list **52** as one of several user selectable order lists. Such an alternative embodiment can further provide the user the ability to recall one of several stored order lists. An option menu can provide a textual description of stored order lists available, or such stored lists can be made available via descriptive icons.

From the point of view of the merchant database **14**, the final step in the ordering process, as reflected in step **278** of FIG. **14**, is to update the merchant database **14** to reflect the user order just processed. Thus, in addition to providing a convenient way for a user to compile and order a list of needed products, the present system enables automated maintenance of merchant inventory.

The foregoing description of the remote ordering system according to the present invention has been described with reference to an individual user ordering products, specifically groceries. It should be understood that the present system is in no way limited in product applications to a single user ordering groceries. Rather, the user can be multiple employees of a commercial customer, and the products being ordered can be regularly ordered items such as office products. Further, there is no limitation to products; the present system can also be employed to order services from a variety of sources. Examples of products and services which can be ordered using the present invention include video rental, dry cleaning and laundry, snow removal, lawn mowing, prescriptions, and overnight delivery services.

The greeting screen **90**, the promotional screen **100**, and the delivery options screen **120** have each been described as discrete screens to be sequentially provided on the DPU display **36**. However, it is understood that one or more of these screens may be combined with other displayed information in order to provide some or all of the referenced information and capabilities to the user in other combinations.

The physical embodiment of the ordering system of the present invention has been described as a DPU **10** having various user activated response icons or command entry devices **35** located within the display **36**, such as the icons **104**, **106** illustrated in FIG. **8** and the icons **134** illustrated in FIG. **10**. It has been noted that these icons can be provided as IR touch-sensitive, electrically conductive touch-sensitive, or electro-optically responsive. The function of the response icons or command entry devices **35** can also be performed by software programmable function keys disposed about the periphery of the DPU display **36**. However, in order to minimize DPU **10** unit cost and to simplify the appearance and operation of the DPU **10**, response icons such as those referenced above are preferred.

In an alternative embodiment to the DPU **10** as illustrated in and discussed with respect to FIG. **2**, the DPU **10** is a dumb terminal which must be in communication with the DFTC **12** in order to provide user-discernable representations of scanned items. Thus, the database of such representations is found within the DFTC **12**, rather than in the DPU **10** RAM **34**. In such a configuration, database updating can be executed upon scanning an item at a DPU **10**, at a regular interval with each or selected merchants, or at the time of execution of an order, price inquiry, or request for nutritional information.

In a further alternative to the embodiment described above, it is envisaged that the system of the present invention can be responsive to a bar code or other machine readable code such that a number of items are added to an order list currently being constructed. For instance, a recipe can have an associated bar code printed with it. Once scanned, the bar code is used to locate a number of products associated with the scanned code representing various ingredients needed for the preparation of the recipe. The user can then determine if any of the ingredients are on hand and can thus be removed from the list prior to commanding an order. Note that the ingredients are added to the displayed list in user-discernable format. Thus, the list of contents for each recipe is treated as an individual item by the DPU **10**, described above. If the recipe has not been "learned" by the DPU **10** database in RAM **34**, the DPU **10** will communicate with the DFTC **12** in order to learn the ingredients of the recipe. If the database is too full to learn the recipe ingredients, the database will "age-out" the earliest stored and least used item or recipe, as described above. Of course, this alternative embodiment for the present system can be applied to other products and services, depending upon the nature of the goods ordered via the DPU **10**, and is not limited to recipes.

These and other examples of the concept of the invention illustrated above are intended by way of example and the actual scope of the invention is to be determined from the following claims.

What is claimed is:

**1**. A remote ordering terminal for providing at least one list of at least one item or group of items to a remotely located order processing system associated with one or more merchants on each of a plurality of occasions, each item or group of items having an item code associated therewith, said remote ordering terminal comprising:

user and/or merchant identifier means;

at least one data entry device for providing said terminal with said item associated item codes and with data from said user and/or merchant identifier means;

a database unit providing a user-specific database including user-discernable item data associated with item codes for user-selected items or groups of items;

memory to provide storage for said user-specific database, said memory in communication with said at least one data entry device for storing said at least one list;

communication means for associating said memory and said order processing system upon user command for remotely accessing said order processing system over a multi-user network, for transmitting said at least one list to said order processing system using said data from said user and/or merchant identifier means, and for

receiving new and/or replacement user-discernable item data from said order processing system during association of said memory and said order processing system, said new and/or replacement user-discernable item data corresponding only to said at least one item or group of items of said at least one list;

a message display portion in communication with said memory and said user-specific database for displaying order pertinent information including said user-discernable item data from said memory; and

at least one command entry device responsive to user selection of items from said order pertinent information for assembling said at least one list and for enabling said user command, resulting in said transmitting of said at least one list to said order processing system,

wherein said at least one list is comprised of an order to be processed by said order processing system, or a provisional order list transmitted to said order processing system, transmission of either resulting in on-demand receipt of said new and/or replacement user-discernable item data within said user-specific database for said at least one item or group of items.

**2.** The terminal according to claim **1**, wherein said identifier means comprise data necessary for accessing said order processing system by a user including user account number.

**3.** The terminal according to claim **2**, wherein said identifier means are disposed within said remote ordering terminal memory.

**4.** The terminal according to claim **3**, wherein said identifier means are selectable by said user from a list of said identifier means stored within said remote ordering terminal memory.

**5.** The terminal according to claim **2**, wherein said identifier means are disposed external to and independent from said remote ordering terminal memory.

**6.** The terminal according to claim **1**, wherein said at least one data entry device comprises bar code detection and analysis circuitry.

**7.** The terminal according to claim **1**, wherein said identifier means are selectively associated with said at least one data entry device for machine recognition of said identifier means.

**8.** The terminal according to claim **1**, wherein said at least one data entry device is selected from a group consisting of a keyboard, a keypad, a magnetic stripe reader, and a voice recognition circuit.

**9.** The terminal according to claim **1**, wherein said memory is random access memory.

**10.** The terminal according to claim **1**, wherein said memory further stores at least one previously user-compiled list.

**11.** The terminal according to claim **1**, wherein said user-discernable database is stored within said memory.

**12.** The terminal according to claim **1**, wherein said terminal further comprises a processor in communication with said memory, said at least one data entry device, said communication means, said user-specific database, said message display portion, and said at least one data entry device.

**13.** The terminal according to claim **1**, wherein said user-discernable item data includes nutritional data applicable to a corresponding item code.

**14.** The terminal according to claim **1**, wherein said user-discernable item data includes a pictorial representation of an item having a corresponding item code.

**15.** The terminal according to claim **1**, wherein said order pertinent information includes promotional information provided by said order processing system to said remote ordering terminal via said communication means.

**16.** The terminal according to claim **1**, wherein said at least one command entry device and said message display portion collectively comprise a touch-sensitive display disposed within said remote ordering terminal.

**17.** The terminal according to claim **1**, wherein said at least one command entry device is selected from the group consisting of a mouse, a light pen, a trackball, and an air mouse.

**18.** The terminal according to claim **1**, wherein said at least one data entry device and said at least one command entry device are the same at least one device.

**19.** The terminal according to claim **1**, wherein said command entry device comprises at least one function key disposed within said remote ordering terminal.

**20.** The terminal according to claim **1**, wherein said memory comprises a removable media interface for interfacing removable media.

**21.** The terminal according to claim **20**, wherein said user-specific database is stored within said removable media.

**22.** A method for remote ordering at least one desired item by a user from one of a plurality of merchants using a system having a user device, a central computer, one of a plurality of merchant databases, and a communications link including a multi-user network, said at least one desired item having a unique identifying code associated therewith, the method comprising:

storing for a plurality of user-specific items, in an identifier database accessible at said user device for user perception at said user device, a user-cognizable identifier of said at least one item corresponding to said identifying code;

user inputting said identifying code corresponding to said at least one desired item into said user device by machine recognition of said user input identifying code;

accumulating from said identifier database selected ones of said user-cognizable identifiers corresponding to said input identifying codes in at least one list of desired items;

selectively associating a transaction identifier having user and/or merchant identifications with said user device to identify a selected merchant database and/or to identify said user to a selected merchant database;

commanding said user device to establish remote communication between said user device and said selected merchant database corresponding to said merchant identification through said central computer over said communications link including said multi-user network;

interactively updating only said selected one of said user-cognizable identifiers in said identifier database of user-specific items with current information provided by said merchant database over said communications link in response to a user action at said user device, said user action including

the communication of a provisional list of desired items transmitted to said selected merchant database for the purpose of providing said interactive updating, or

the communication of an order list of desired items transmitted to said selected merchant database for the purpose of providing said interactive updating and remote ordering said desired items comprising said order list; and

passing transaction specific information over said communications link including said identifying codes between said user device and said selected merchant database.

**23.** The method according to claim **22**, wherein said step of user inputting said identifying code includes scanning said identifying code with a bar code reader in communication with said user device.

**24.** The method according to claim **22**, wherein said step of user inputting said identifying code includes user inputting said identifying code corresponding to a plurality of unique products.

**25.** The method according to claim **22**, wherein said step of user inputting said identifying code by machine recognition includes the processing of a scanned bar code by bar code detection circuitry.

**26.** The method according to claim **22**, wherein said step of user inputting said identifying code by machine recognition includes the processing of input data from an element selected from the group consisting of a keyboard, a keypad, a magnetic stripe reader, and a voice recognition circuit.

**27.** The method according to claim **22**, wherein said step of accumulating from said identifier database selected ones of said user-cognizable identifiers in said at least one list further comprises the step of reviewing said at least one list including said user-cognizable identifiers by said user at said user device.

**28.** The method according to claim **22**, wherein said step of accumulating from said identifier database selected ones of said user-cognizable identifiers in said at least one list further comprises the step of modifying said at least one list including said user-cognizable identifiers by said user at said user device.

**29.** The method according to claim **22**, wherein said step of storing in an identifier database is comprised of storing in an identifier database disposed within said user device.

**30.** The method according to claim **22**, wherein said identifier database is disposed in conjunction with said central computer.

**31.** The method according to claim **22**, wherein said step of storing a user-cognizable identifier includes storing a user-readable description of an item corresponding to said identifying code.

**32.** The method according to claim **31**, wherein said step of storing a user-readable description includes storing a unit price.

**33.** The method according to claim **31**, wherein said step of storing a user-readable description includes storing nutritional data.

**34.** The method according to claim **22**, wherein said step of storing a user-cognizable identifier includes storing a pictorial representation of an item corresponding to said identifying code.

**35.** The method according to claim **22**, wherein said step of selectively associating a transaction identifier comprises selectively associating data indicative of information necessary for accessing said selected merchant database by said user including user account number.

**36.** The method according to claim **35**, wherein said step of selectively associating a transaction identifier includes transmitting said user and/or merchant identifications from said user device over said communications link to said merchant database via said central computer.

**37.** The method according to claim **36**, wherein said step of selectively associating a transaction identifier includes transmitting user and/or merchant identifications from a transaction identifier selected by said user from a list of plural transaction identifiers stored within said user device.

**38.** The method according to claim **22**, wherein said step of selectively associating a transaction identifier includes selectively associating a transaction identifier disposed external to and independent from said user device.

**39.** The method according to claim **38**, wherein said step of selectively associating a transaction identifier includes selectively associating a transaction identifier with said user device via machine recognition of said user and/or merchant identifications.

**40.** The method according to claim **39**, wherein said step of selectively associating a transaction identifier via machine recognition of said user and/or merchant identifications is executed by bar code detection and analysis circuitry.

**41.** The method according to claim **22**, wherein said step of commanding said user device comprises user establishment of said communication by selecting a user-responsive element associated with said user device.

**42.** The method according to claim **41**, wherein said step of user establishment of said communication comprises selecting a region on a touch-sensitive display disposed within said user device.

**43.** The method according to claim **41**, wherein said step of user establishment of said communication comprises selecting a function key disposed on said user device.

**44.** The method according to claim **22**, wherein said step of passing transaction specific information further includes passing advertising and promotional information supplied by said selected merchant database to said user device.

**45.** A remote ordering system for processing at least one order list of at least one user-selected item to be ordered, each said item having a corresponding item code, said system comprising:

a central inventory database;

a user-specific database of user-discernable item data corresponding to said item codes;

central processing means for providing remote communication over a multi-user network between said central inventory database and said user-specific database in response to a user action for teaching user-discernable item data received from said central inventory database to said user-specific database, for interactively updating said user-discernable item data contained within said user-specific database with replacement user-discernable item data received from said central inventory database in response to a user action, and for aging-out infrequently accessed user-discernable item data from said user-specific database;

memory means in communication with said central processing means and thus to said user-specific database for maintaining said at least one order list; and

an order device associated with said user-specific database, in communication with said central inventory database via said central processing means and said multi-user network, and responsive to user input, said order device comprising:

communication means for interfacing said order device with said central processing means;

identifier means for providing said remote ordering system with user and/or merchant information;

input means for providing said order service with said item codes corresponding to said at least one user-selected item to be ordered;

a display in communication with said memory means and said central processing means for providing order pertinent information, including said user-discernable item data, to a user; and

management means for controlling said display and said communication means, said management means responsive to said user input and said central processing means,

wherein said user-discernable item data to be taught and said replacement user-discernable item data correspond only to said at least one user-selected item to be ordered of said at least one order list and are interactively receivable as a result of said central processing means, responding to said user input at said order device, transmitting to said central inventory database said at least one order list comprising a list of items to be ordered or a provisional list of items for which updated user-discernable item data is desired.

**46**. The system according to claim **45**, wherein each said user-discernable item code corresponds to a plurality of unique products.

**47**. The system according to claim **45**, wherein each said item code is comprised of a bar code.

**48**. The system according to claim **47**, wherein said input means comprises a bar code reader and bar code detection circuitry.

**49**. The system according to claim **45**, wherein said central inventory database comprises said user-discernable item data.

**50**. The system according to claim **45**, wherein said central inventory database comprises promotional information to be communicated to said order device.

**51**. The system according to claim **45**, wherein said central inventory database is physically disposed within said central processing means.

**52**. The system according to claim **45**, wherein said user-specific database is physically disposed within said central processing means.

**53**. The system according to claim **45**, wherein said user-specific database is physically disposed within said order device.

**54**. The system according to claim **45**, wherein said user-discernable item data includes a user-readable description of an item corresponding to an item code.

**55**. The system according to claim **54**, wherein said user-readable description includes a unit price.

**56**. The system according to claim **54**, wherein said user-readable description includes nutritional data.

**57**. The system according to claim **45**, wherein said user-discernable item data includes a pictorial representation of an item corresponding to an item code.

**58**. The system according to claim **45**, wherein said user-discernable item data is taught to said user-specific database if said user-discernable item data has not been previously taught to said user-specific database.

**59**. The system according to claim **45**, wherein said user-discernable item data within said user-specific database is updated if said user-discernable item data within said user-specific database is not identical to said user-discernable item data from said central inventory database.

**60**. The system according to claim **45**, wherein said infrequently accessed user-discernable item data is aged out of said user-specific database when said user-specific database has reached a predetermined capacity.

**61**. The system according to claim **45**, wherein said central processing means further provides promotional information from said central inventory database to said user-specific database.

**62**. The system according to claim **45**, wherein said memory means is disposed within said order device.

**63**. The system according to claim **45**, wherein said memory means is disposed within said central processing means.

**64**. The system according to claim **45**, wherein said at least one order list further includes at least one interim list currently being compiled by a user, said at least one interim list being accessible for review and modification at said order device.

**65**. The system according to claim **45**, wherein said identifier means comprise data indicative of information necessary for accessing said central inventory database by a user including a user account number.

**66**. The system according to claim **45**, wherein said identifier means are disposed within said order device.

**67**. The system according to claim **66**, wherein said identifier means are selectable by said user from a list of said identifier means stored within said order device.

**68**. The system according to claim **45**, wherein said indentifier means are disposed external to and independent from said order device.

**69**. The system according to claim **68**, wherein said identifier means are selectively associated with said order device via machine recognition of said identifier means.

**70**. The system according to claim **69**, wherein said machine recognition of said identifier means is executed by bar code detection and analysis circuitry.

**71**. The system according to claim **45**, wherein said display further provides promotional information to a user.

**72**. The system according to claim **45**, wherein said order device further comprises at least one user-responsive element.

**73**. The system according to claim **72**, wherein said display is a touch-sensitive display, and

wherein said at least one user-responsive element comprises a region on said touch-sensitive display.

**74**. The system according to claim **72**, wherein said at least one user-responsive element comprises a function key disposed on said order device.

**75**. The system according to claim **72**, wherein said at least one user-responsive element comprises an external pointing device.

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