US007303124B2

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

(10) **Patent No.: US 7,303,124 B2**
(45) **Date of Patent: *Dec. 4, 2007**

(54) **METHOD AND SYSTEM FOR DISPOSING OF DISCARDED ITEMS**

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

This patent is subject to a terminal disclaimer.

(21) Appl. No.: **11/495,122**

(22) Filed: **Jul. 28, 2006**

(65) **Prior Publication Data**

US 2006/0261165 A1 Nov. 23, 2006

Related U.S. Application Data

(63) Continuation of application No. 10/684,328, filed on Oct. 13, 2003, now Pat. No. 7,086,592, which is a continuation of application No. 09/929,817, filed on Aug. 14, 2001, now Pat. No. 6,663,004.

(51) **Int. Cl.**
G06F 19/00 (2006.01)
B07C 7/04 (2006.01)

(52) **U.S. Cl.** **235/385**; 235/383; 235/462.01; 235/462.14; 209/703

(58) **Field of Classification Search** 235/385, 235/435, 462.14, 383, 462.01; 209/703, 209/583

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,636,950 A 1/1987 Caswell et al.
5,478,989 A 12/1995 Shepley
5,532,928 A 7/1996 Stanczyk et al.
5,699,525 A 12/1997 Embutsu et al.
5,712,989 A 1/1998 Johnson et al.
5,841,115 A 11/1998 Shepley
5,914,472 A 6/1999 Foladare et al.
5,933,829 A 8/1999 Durst
5,940,074 A 8/1999 Britt et al.
5,957,695 A 9/1999 Redford et al.
5,960,402 A * 9/1999 Embutsu et al. 705/1
5,965,858 A 10/1999 Suzuki et al.
5,978,773 A 11/1999 Hudetz et al.
5,979,240 A 11/1999 Rix et al.
5,979,757 A 11/1999 Tracy et al.
5,983,199 A 11/1999 Kaneko
5,987,440 A 11/1999 O'Neil et al.

(Continued)

OTHER PUBLICATIONS

Article: Dietitian/Healthy Eating Services "Tranforming How Dietitions Offer Advice"; AirClic ; 2001-2003.
Article: Shop Smart, Eat Right "Healthier, More Nutritious Meals"; Beeline Shopper; 2001-2003.
Article: Shop Smart, Eat Right—Sample Grocery List "Guide Yourself to Healthier Eating"; Beeline Shopper; 2001-2002.
Article: Shop Smart, Eat Right—Sample Recipes "Great Meals Made Easy"; Beeline Shopper; 2001-2002.

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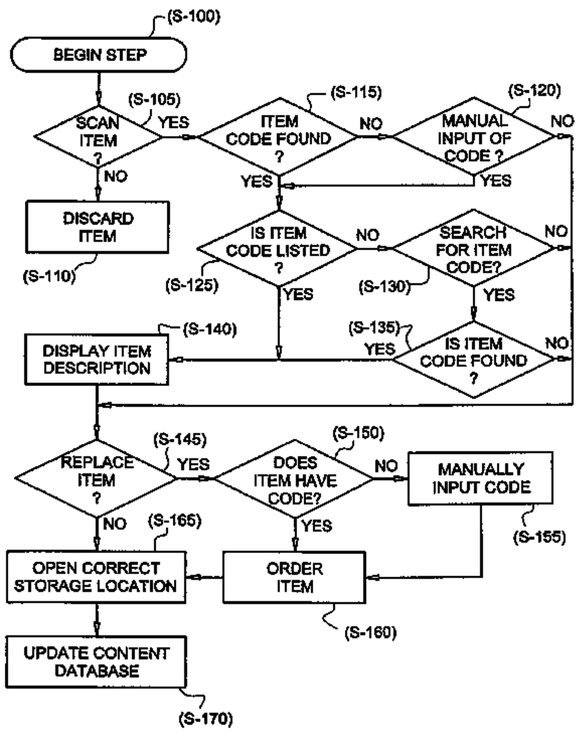
(57) **ABSTRACT**

An electronic trash disposal unit comprises a control unit which scans and identifies disposed items to store them in an appropriate recycling bin. The unit is connectable to a communication network which updates a central database with the contents of each unit. The unit initiates a reorder instruction to suppliers.

9 Claims, 3 Drawing Sheets



U.S. PATENT DOCUMENTS

5,995,105	A	11/1999	Reber et al.	
6,024,281	A	2/2000	Shepley	
6,031,621	A	2/2000	Binder	
6,034,680	A	3/2000	Kessenich et al.	
6,047,843	A	4/2000	Mecke	
6,089,453	A *	7/2000	Kayser et al.	235/383
6,131,744	A	10/2000	Pratt	
6,314,457	B1	11/2001	Schena et al.	
6,367,518	B2	4/2002	Duncan	
6,378,721	B1	4/2002	Williams	
6,386,386	B1	5/2002	George	
6,425,487	B1 *	7/2002	Emmott et al.	209/703
6,448,979	B1	9/2002	Schena et al.	
6,457,177	B1	9/2002	Reams	
6,530,518	B1	3/2003	Kirchilsky et al.	
6,845,388	B1	1/2005	Philyaw	
6,928,413	B1	8/2005	Philyaw	
6,993,507	B2	1/2006	Meyer et al.	
2002/0008145	A1 *	1/2002	Walsh et al.	235/462.46
2002/0016731	A1	2/2002	Kupersmit	
2002/0059175	A1	5/2002	Nanano	
2002/0120502	A1	8/2002	Sakaguchi	
2002/0161704	A1	10/2002	Powar	

* cited by examiner

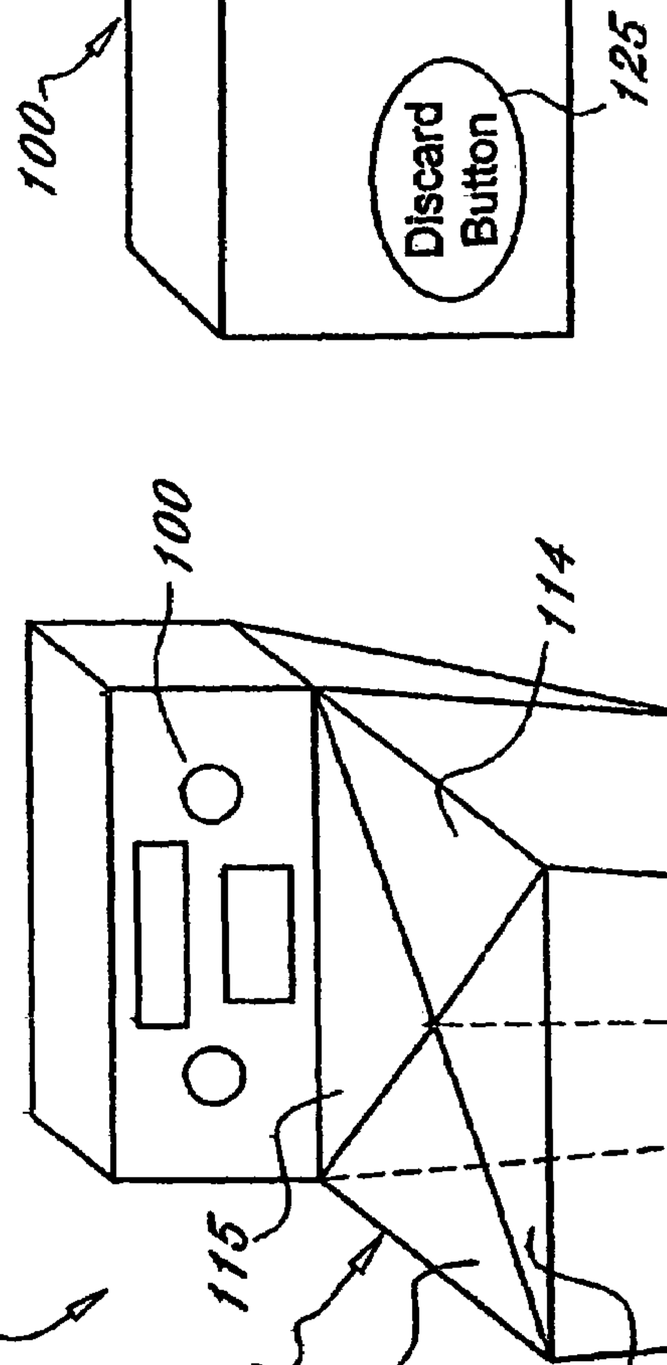


Fig. 2

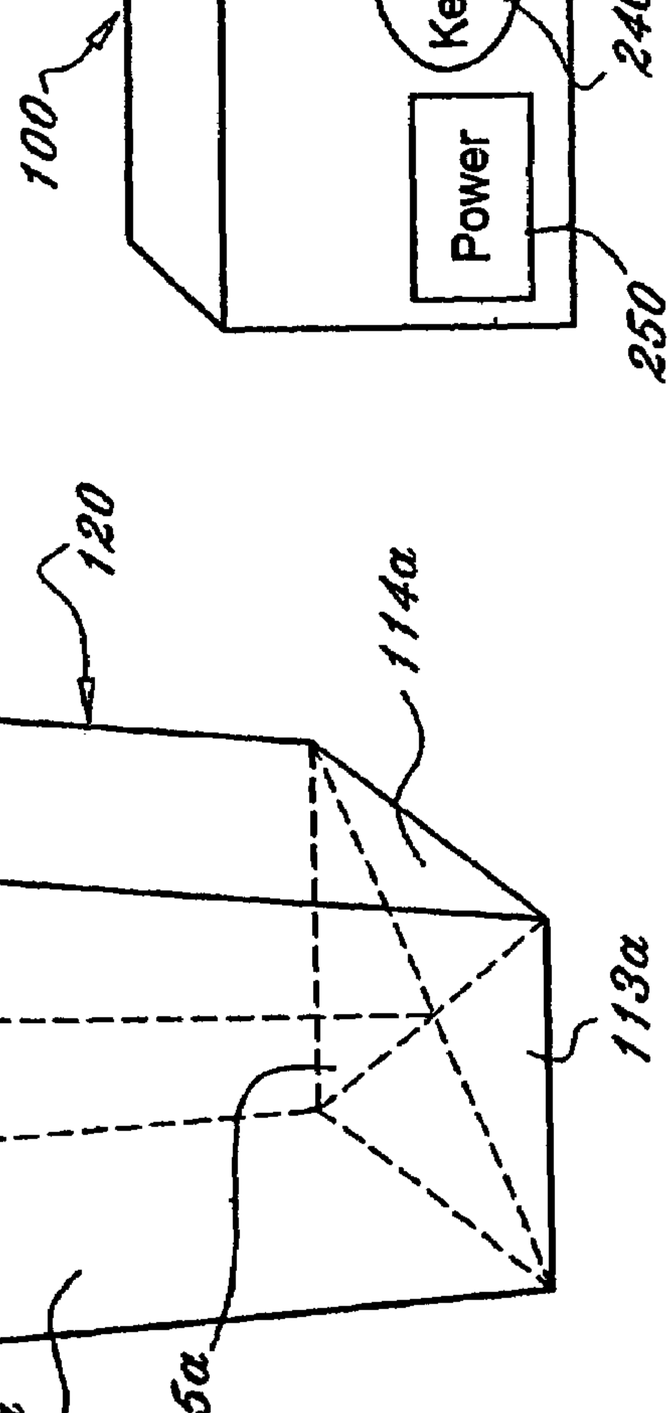


Fig. 3

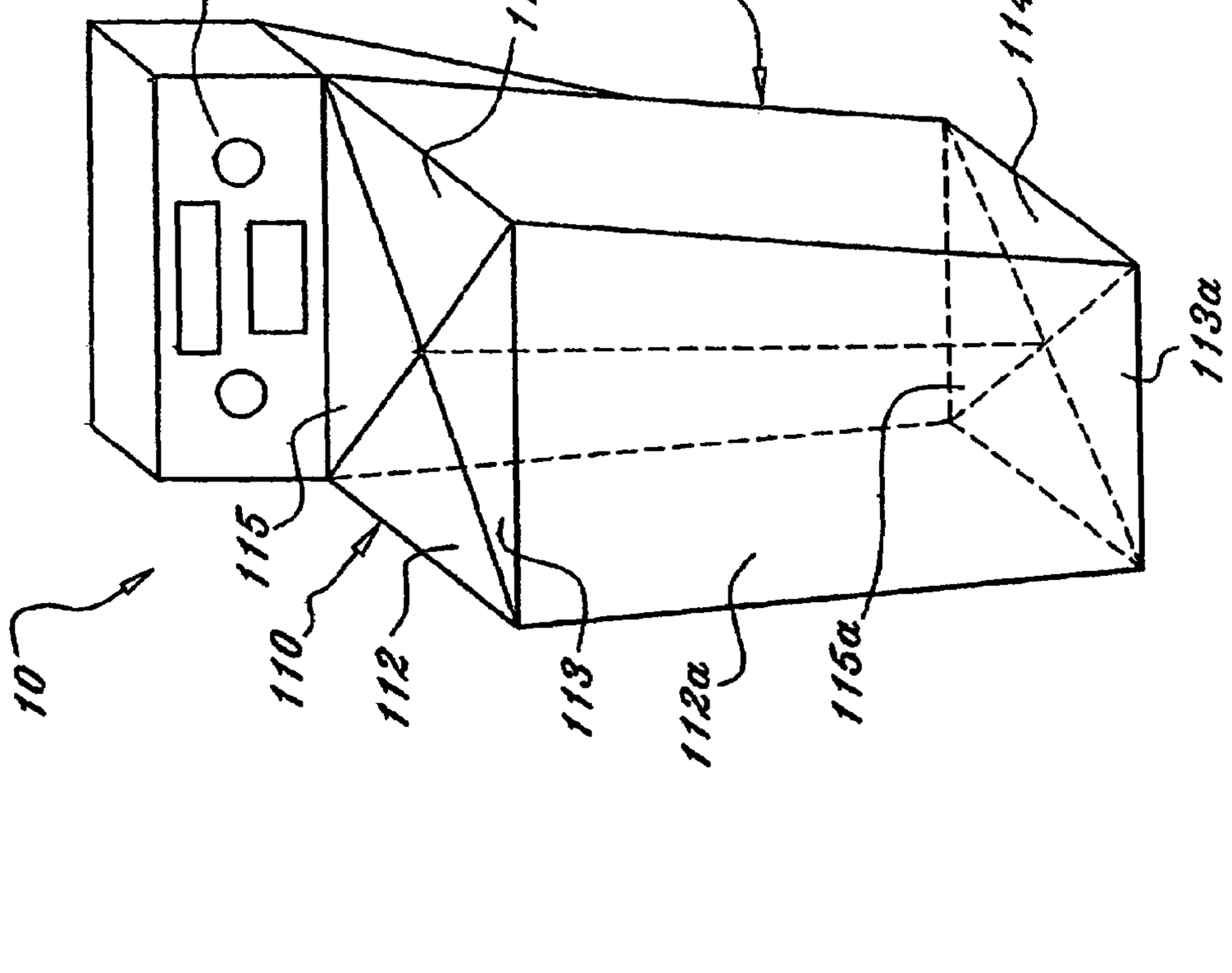


Fig. 1

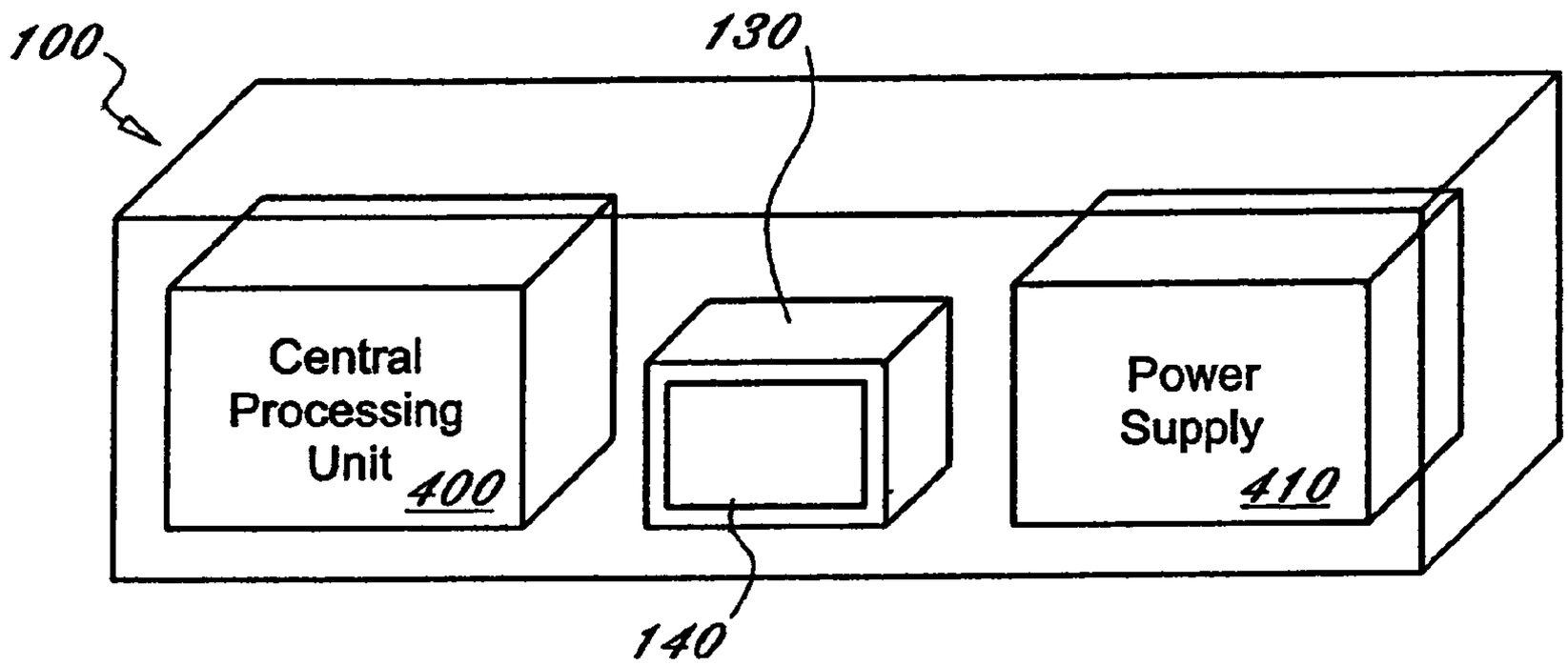

100
130
Central Processing Unit
400
Power Supply
410
140

Fig. 4

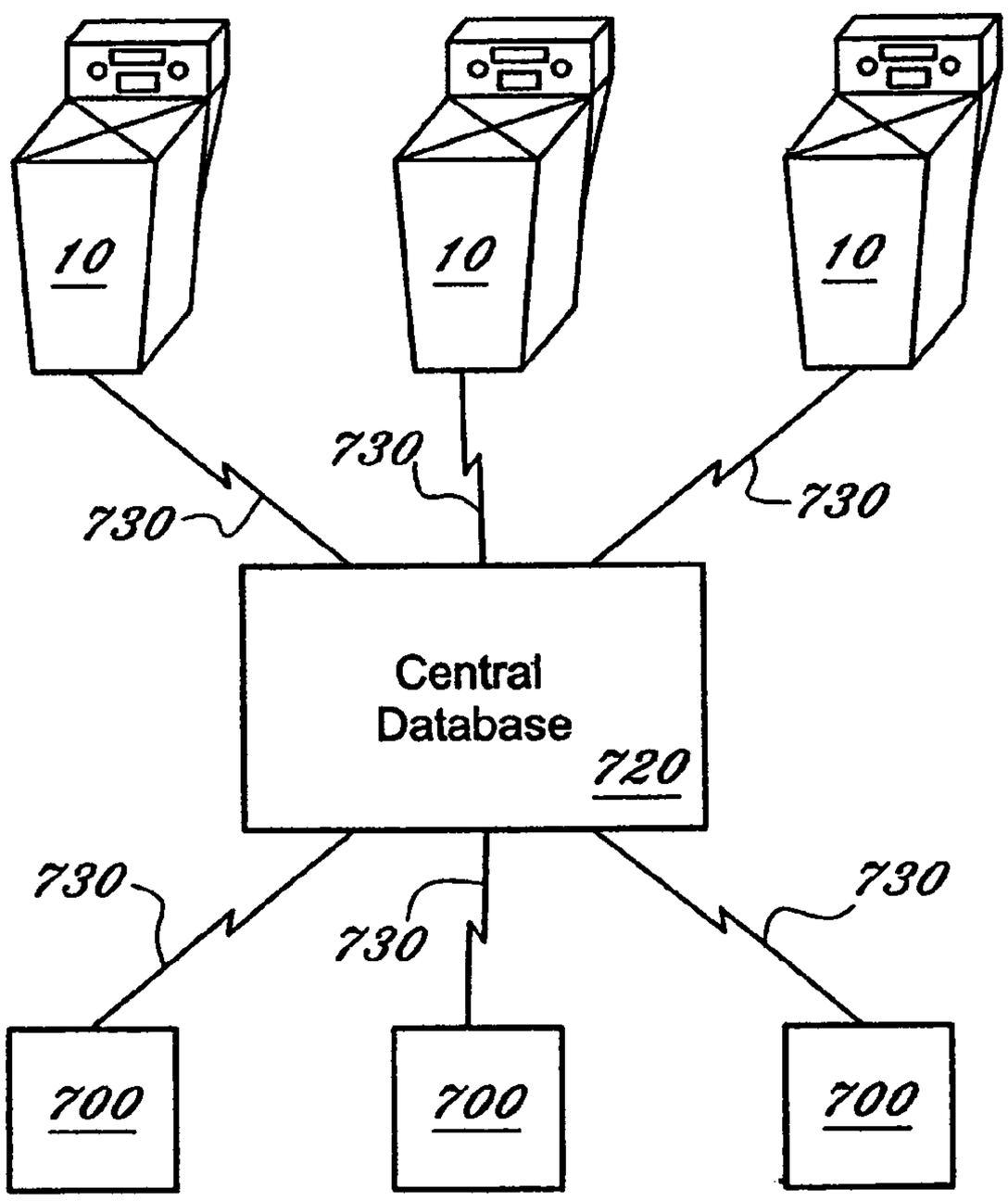

10
10
10
730
730
730
Central Database
720
730
730
730
700
700
700

Fig. 5

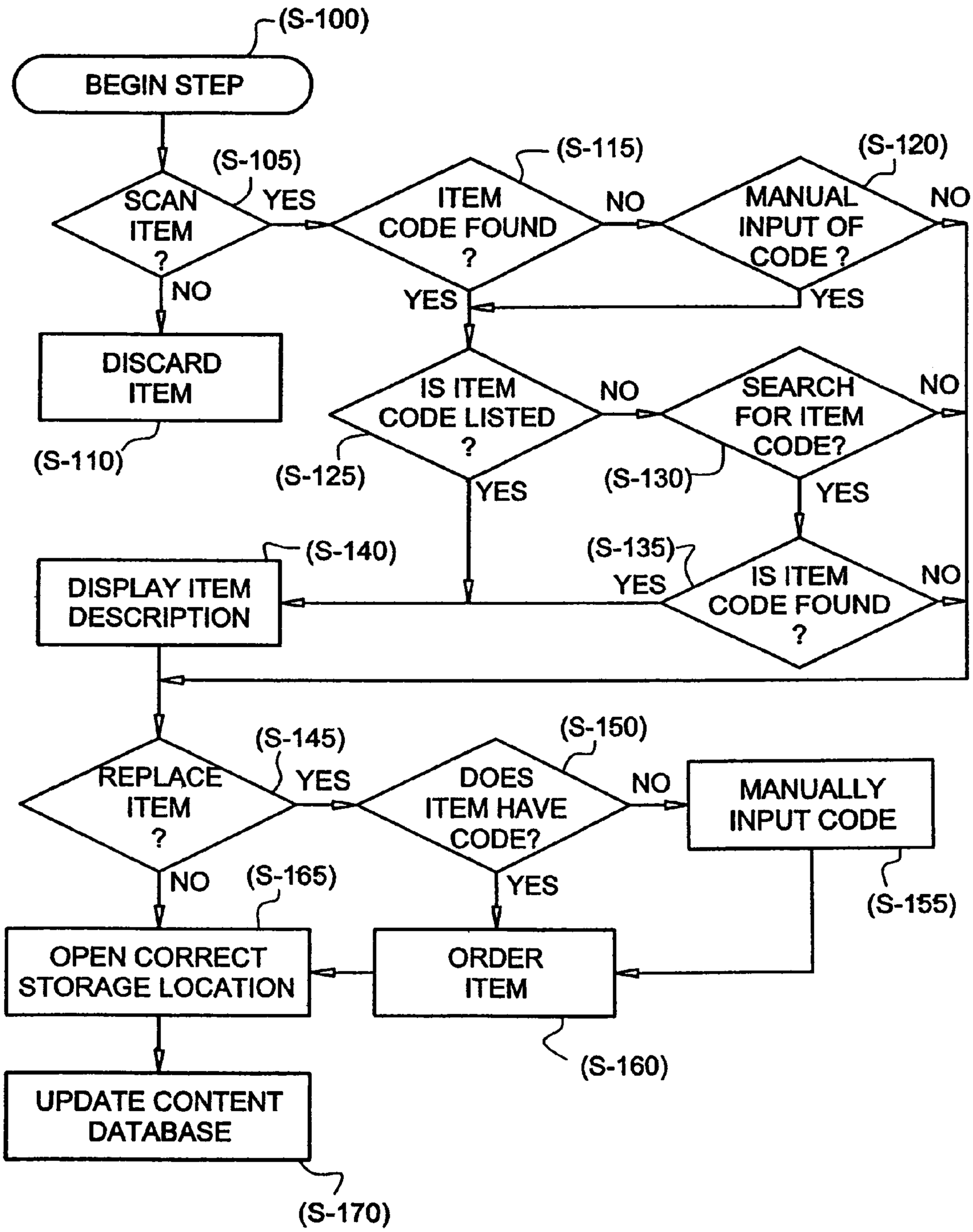

(S-100)
BEGIN STEP
(S-105)
SCAN ITEM ?
YES
NO
DISCARD ITEM
(S-110)
(S-115)
ITEM CODE FOUND ?
NO
YES
(S-120)
MANUAL INPUT OF CODE ?
NO
YES
IS ITEM CODE LISTED ?
NO
YES
(S-125)
SEARCH FOR ITEM CODE?
NO
YES
(S-130)
(S-135)
IS ITEM CODE FOUND ?
YES
NO
(S-140)
DISPLAY ITEM DESCRIPTION
(S-145)
REPLACE ITEM ?
YES
NO
(S-150)
DOES ITEM HAVE CODE?
NO
YES
MANUALLY INPUT CODE
(S-155)
(S-165)
OPEN CORRECT STORAGE LOCATION
ORDER ITEM
(S-160)
UPDATE CONTENT DATABASE
(S-170)

Fig. 6

METHOD AND SYSTEM FOR DISPOSING OF DISCARDED ITEMS

This is a continuation of U.S. patent application Ser. No. 10/684,328, filed Oct. 13, 2003, now U.S. Pat. No. 7,086,592, which is a continuation application of U.S. Pat. Application Ser. No. 09/929,817, filed Aug. 14, 2001, now U.S. Pat. No. 6,663,004.

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

n/a

FIELD OF THE INVENTION

The present invention relates to a trash disposal system and method, and in particular, to an electronic trash disposal system and method which automatically facilitates the reordering and recycling of disposed items.

BACKGROUND OF THE INVENTION

Disposal of trash has been an issue humans have had to deal with since the beginning of civilization. Often when trash became a problem, people would simply cover over the trash with dirt and build on top of the rubble. Countless plagues have been associated with improper refuse disposal and, although modern technology has helped society deal with waste disposal, the challenge remains to handle discarded items efficiently and safely.

Because of the world's expanding population, the age-old solution of burying trash is becoming less attractive for many reasons including limited space and contamination of the environment, to name a few. In an effort to help alleviate some of the problems associated with discards, recycling has been gaining in popularity. Although recycling helps both by reducing the overall amount of trash and by making more efficient use of natural resources, it generally requires more processing including separating different kinds of recyclable articles from the general refuse. Consumers often regard the extra effort and/or cost associated with recycling less than favorably.

Another consideration of modern trash disposal is that when an item is discarded, it often needs to be replaced. Generally, this requires a human operator to take action to ensure that the required item is replaced.

A trash disposal system is needed which can track the disposal of items and automatically reorder required items that have been discarded as well as help alleviate some of the perceived shortcomings of recycling.

SUMMARY OF THE INVENTION

An embodiment of the present invention provides an electronic discard unit which includes a central processing unit (CPU), an identification database accessible by the CPU, a content database accessible by the CPU, at least one input device coupled to the CPU. The CPU executes programmatic software to perform functions including:

1. using the at least one input device to obtain a code corresponding to a discarded item;
2. identifying the discarded item by referring to the identification database;
3. updating the content database to include an entry corresponding to the identified discarded item; and

4. generating a re-order instruction for replacing the discarded item.

Another embodiment of the present invention provides a trash receiving unit which includes a holding container and a computer operably coupled to the holding container. The computer has a central processing unit, at least one user operable input device and a content database which is accessible by the computer. The computer is operable to execute programmatic software instructions to perform the functions of:

1. updating the content database with information regarding a trash item stored the holding container;
2. receiving input from at least one user operable input device, the received input includes an instruction to reorder the trash item; and
3. generating a re-order instruction corresponding to the trash item in the holding container.

Yet another embodiment of the present invention provides an electronic trash system which includes one or more electronic discard-units. Each unit includes a central processing unit (CPU), an identification database accessible by the CPU, a content database accessible by the CPU and at least one input device coupled to the CPU. The CPU executes programmatic software that perform functions including:

1. using at least one input device to obtain a code corresponding to a discarded item;
2. identifying the discarded item by referring to the identification database;
3. updating the content database to include an entry corresponding to the identified discarded item; and
4. generating a re-order instruction for replacing the discarded item.

The system also includes a central database and a communication networked that couples one or more of the electronic discard units to the central database.

Yet a further embodiment of the present invention provides an electronically activated disposal unit which includes a storage container having an opening, an input device operatively coupled to the opening for identifying a discarded item passing through the opening and a computer operatively coupled to the input device. The computer executes a program that performs the functions of:

1. receiving a code corresponding to the discarded item from the input. device;
2. identifying the discarded item based on the code;
3. updating a content database with information corresponding to the discarded item; and
4. generating a re-order instruction for a selected discarded item.

A further embodiment of the present invention provides a trash disposal system which includes a storage container, a means for identifying an item placed in the storage container, a means for separating identified items according to one or more recycling rules; and a means for re-ordering the identified discarded item.

Another embodiment of the present invention provides a method of disposing of an item using an electronic trash unit which has a storage bin includes scanning the item for a machine readable code. The machine readable code is stored in an electronic storage medium. A re-order instruction is generated for the item based on the machine readable code. The item is stored in the storage bin, and a content database is updated with information regarding the item.

BRIEF DESCRIPTION OF THE DRAWINGS

A more complete understanding of the present invention, and the attendant advantages and features thereof, will be more readily understood by reference to the following detailed description when considered in conjunction with the accompanying drawings wherein:

FIG. **1** is a perspective drawing of an electronic trash unit according to an embodiment of the invention;

FIG. **2** is a front view of the control panel shown in FIG. **1**;

FIG. **3** is a rear view of the back of the control panel shown in FIG. **2**;

FIG. **4** is a view of the internal components of the control panel according to an embodiment of the invention;

FIG. **5** is a block diagram of an electronic trash network according to an embodiment of the invention; and

FIG. **6** is a flow chart of a detailed process of disposing of trash according to an embodiment of the invention.

DETAILED DESCRIPTION OF THE INVENTION

Referring to FIG. **1**, an electronic trash (e-trash) unit is shown generally as **10** and includes a storage area **120**, a controllable lid **110** which is moveably connected to cover the storage area **120** and a control panel **100** which is positioned on top of the controllable lid **110**. Storage area **120** can take the form of any suitable shape (i.e., cylindrical, rectangular, square, etc.). In the embodiment shown, trash is deposited in the proper container using gravity. As illustrated, the controllable lid **110** contains four separate openings **112**, **113**, **114** and **115** and four separate storage bins **112***a*, **113***a*, **114***a* and **115***a* which correspond to the openings, respectively. In the closed position, these openings work together to provide a temporary holding shelf where a trash item to be discarded (not shown) may be placed. The trash item to be discarded is placed so that a scanning device **140** located on the control panel **100** can electronically read a code such as a bar code located on the trash item. The trash item is identified and the proper opening is activated allowing the trash item placed on the controllable lid **110** to fall into the proper storage bin (**112***a*, **113***a*, **114***a* and **115***a*) in storage area **120**. The storage bins (**112***a*, **113***a*, **114***a* and **115***a*) as well as the storage area **120** may be constructed of metal and fabricated using known methods of construction, or may be constructed out of a polymer or composite material. Each of the storage bins (**112***a*, **113***a*, **114***a* and **115***a*) may contain a removable liner (not shown) to facilitate emptying of the unit **10**. The liner may be disposable and remain with the discarded trash or it may be a reusable liner that may be emptied into a larger depository and returned to the unit **10**. The liners may be made in different colors to indicate the kind of recyclables present therein. It should be apparent to those skilled in the art that other means of sorting and storing trash would be suitable and are considered to be within the scope of this disclosure such as using a conveyor belt system to transport the trash items identified in the manner disclosed above to the storage area **120**. Also, although four openings are shown (**112**, **113**, **114** and **115**), more or fewer openings may be utilized without departing from the spirit of the present invention.

The control panel **100** is described with reference to FIGS. **2-4**. As shown, the control panel **100** is arranged to provide an easy to operate user interface for the e-trash unit **10**. The control panel **100** includes an information display **130** which displays information about the trash item discarded in accordance with the present invention. Examples of the kind of information displayable include detailed descriptions about the item, cost to replace the item, title of the item, identification code, product advertisement, as well as other information that might be useful to the user. The displayed information may be customized to suit the individual needs of the user. The displayable information may be stored in a database that resides within the unit **10** or may be accessed from a remote database using a communication network such as the Internet.

Although the display **130** is depicted as a visual display, it is within the scope of this disclosure to use any suitable means to communicate the desired information to the user such as a speech synthesis output device.

In an embodiment of the invention, a discard button **125** is used to initiate the control command that scans the trash item. Other methods could be used such as a pressure activated switch located on the controllable lid **110** that automatically starts the process when the trash item is placed thereon. Other user functions may be incorporated as needed and are representatively illustrated as button **126**. Button **126** may be a software programable button which is user configured to customize the unit **10** or it may be a function specific input such as an over-ride switch. A bar code scanner **140** is positioned to scan the trash item placed on the controllable lid **110** to identify the item using a machine scan-able code affixed thereon. The code may be affixed from the manufacturer or it may be applied by the user of the present invention. Other electronic means of item identification may be used such as optical laser scanners or magnetically encoded labels as is known in the art to identify the trash item and are included in this disclosure.

The control unit **100** may also have a variety of interface components as needed by particular applications. In an embodiment, the control unit **100** includes a keyboard port **240**, a serial port **230** a phone line adaptor **220** and a network adaptor such as an Ethernet adaptor **210**. A keyboard (not shown) may be used to enter alphanumeric information into the control unit **100** such as item codes or discard instructions. The serial port **230** may be used to connect a variety of external peripherals such as but not limited to personal digital assistant (PDA), printers, backup drives, etc. Such devices are known in the art and the present invention allows users to utilize appropriate technology to interface with the control unit **100** to best suit the need of the user. For example, a tape backup drive can be plugged in to the serial port **230** to make a nightly backup of the day's activity of the unit **10** or a user might connect a PDA to the control unit **100** using the appropriate interface (i.e. serial port **230** or network adaptor **210**, etc.) for downloading the contents of the unit **10** into the PDA. Other configurations are possible depending on the particular needs of the user and may include universal serial bus (USB) ports, pointing device inputs among other input/output interfaces as are known in the art. In addition to standard telephone inputs such as the phone line adaptor **220**, a wireless communication link may be used to communicate with a communications network (i.e. the Internet) using an antenna **200**. The antenna **200** may also be placed inside the control unit **100**. A power button **250** is provided to control power to the electronics included in the control unit **100**.

Internal to the control unit **100** is a CPU **400**, associated memory and other components which allow the CPU **400** to operate as a computer as is known in the art. The CPU **400** controls the function of the scanner **140**, the display **130** and the controllable lid **110**. The CPU may be permanently connected to a communications network or may initiate a

connection as needed. The connectivity of the unit **10** will be discussed in more detail below.

Now referring to FIGS. **2**, **3** and **5**, a communication network **730** such as the Internet is used to provide connectivity of each unit **10** with a central database **720** that keeps track of the disposed contents in each unit **10**. The communication network **730** may be accessed using the network adaptor **210** or by connecting the control unit **100** to a modem (not shown) using the phone line adaptor **220** or through a wireless connection using an internal modem (not shown) coupled to the antenna **200** as is known in the art. Permanent "always on" connections such as digital subscriber line (DSL), T1, satellite links, cable hookups, dial-up modems plugged into a phone line or networked connections such as local or wide area networks (LAN or WAN) may be utilized to provide the needed connectivity.

Suppliers, market researchers, recycling companies and other interested parties **700** is also connect using the communication network **730** to access information contained in the central database **720**. Each e-trash unit **10** sends its information which includes the type and amount of trash stored in each bin (**112***a*, **113***a*, **114***a* and **115***a*). Either the user or a third party contractor **700** may be notified when it is time to empty the bins by a message being transmitted from the central database **720** using the communication network **730** or the user may be notified of the need to empty the bins by a notification message appearing on the information display **130** located on the control unit **100**. Other methods of notification, such as an indicator light (not shown) mounted on the control unit **100** or on the controllable lid **110** can be used. In the embodiment which relies on notification from the central database **720** to inform the interested party (either the user or third party contractor such as a recycling company) of the need to empty the bin, a communication (such as an e-mail, telephone or data message) may be sent back to the CPU **400** in the control unit **100**. The information may be displayed on the information display **130**. The choice of the method used to deliver emptying instructions may be selected by the user to best suit the application.

In operation, the trash item is temporarily placed on the controllable lid **110** so that the bar code reader **140** can scan the item for an identification code. Most products today have a scanable code affixed thereon but the process for dealing with code-less and unrecognizable items is discussed below. The bar code reader **140** identifies the discarded item by referring to an identification database (not shown) which is accessible by the CPU **400**. The identification database can physically reside within the e-trash unit **10** or it may be accessible by the CPU **400** through the communication network **730**. A user presses the discard button **125** to initiate the process of scanning and identifying the item. Once the item is identified, the relevant information is displayed on display **130** such as a description, title, reorder code or price of the replacement. If the user wishes to reorder the item being discarded, an order is initiated in accordance to predefined ordering instructions. The reordering process can take place automatically, that is whenever a recognized item is disposed using the unit **10**, the CPU generates and transmits a reorder instruction to a selected supplier. In this way, reordering is automatically accomplished using the present invention.

In another embodiment, the user is given the opportunity to confirm the desire to reorder the discarded item. The user's choice may be inputted into the control unit **100** using any suitable input method such as pressing the "soft button" **126** when instructed to do so by an instruction displayed on the information display **130**, pressing a key on a keyboard (not shown) or by speaking if a voice recognition input is implemented as is known in the art. In one embodiment, the unit **10** transmits information regarding a discarded item being disposed of in a unit **10** to a central reordering site such as a purchasing officer's workstation (not shown) and allows the reordering decisions to be centralized rather than individually made at the local unit **10** level. Once an identification is made, the proper storage bin (**112***a*, **113***a*, **114***a* or **115***a*) is selected to store the item. The proper bin opening (**112**, **113**, **114** or **115**) is opened and the item falls into the selected storage bin. The central database **720** is informed of the location of the trash item. The proper storage bin is selected according to recycling guidelines which can be customized depending on the geographic location of the user and the recycling options available. Examples include of a simple recycling scheme would include separating the trash into glass, plastic, metal and all else. A more elaborate scheme may be used to suit the individual needs of the user such as separating different color glass or different kinds of plastic, etc.

Some items like discarded organic or packing materials are not identifiable by the unit **10** and the user may simply wish to discard them without identifying or reordering. They may be simply discarded using a bypass means such as by pressing the "soft button" **126** if the button is so programmed. Of course any other input means to indicate the discard choice would be acceptable as discussed above. Non-recyclable items may be stored in an appropriate bin. Items that are recyclable but not reordered are still identified so as to be placed in the proper bin and to update the central database **720** with the contents of the unit **10**.

The initial programming of the unit **10** is provided by the manufacturer of the unit **10**. The manufacturer may offer different options such a providing a unit **10** that only has a wireless interface for connecting with the communication network **730** or may provide a "standard" unit **10** that includes most of the common options with the user using the unit **10** in a way that makes sense in the context of the user's application. Another embodiment includes a user programable unit **10** that may be customized by the user. It is anticipated that an operating system would be built into the CPU **400** along with a user specific program interface that would allow the user to select various options from a menu presented. In another embodiment, a large user of the present invention could specify the functionality desired and the manufacturer would program the specific requirements into the individual units **10**. Some units **10** could be programmed to meet different needs (i.e. some units **10** may have a voice recognition input while others use a keyboard) and yet communicate and work together over the communication network **730** to perform the required functions as a whole.

A method of the use an apparatus of one or units **10** is described with reference to FIG. **6**, a flow chart of the method of disposing of trash according to the present invention. Initially, a trash item is placed on controllable lid **110** (step S-**100**). The user is presented with a bypass (step S-**105**) to deal with the case of unidentifiable or non-scannable items. Items selected for bypass are simply discarded (step S-**110**). Items so discarded are placed in a general storage bin. If the bypass (step S-**105**) is not selected, the item is scanned to see if a code is detectable (step S-**115**). If no code is found, the user is given an opportunity to manually input a code (step S-**120**). If the item code is located (step S-**115**) or manually inputted (step S-**120**), the code may be manually inputted using a suitable input device such as voice recognition or keyboard as

discussed above), the code is compared using an identification database (step S-**125**). If a matching code is found in the database, information such as title, price to replace or reordering code, etc. is displayed on the display **140** (step S-**140**) allowing the user to decide whether or not to replace and reorder the item (step S-**145**). If no matching code is found (step S-**125**), the unit may optionally search using the communication network **730** (step S-**130**) and, if found, the information is displayed as discussed above. If no code is located (step S-**135**), the user is still given the opportunity to reorder the item (step S-**145**), however, no information will be displayed and a code will have to be manually entered if not previously done (steps S-**150** and S-**155**). A reorder instruction is generated and transmitted to the proper supplier (step S-**160**). The reorder instruction is generated by the CPU **400** according to the programming provided and customized by the user as discussed above. The reorder instruction may be printed out and sent by mail to a supplier may be transmitted electronically to the supplier. Next, the proper bin opening (**112**, **113**, **114** or **115**) is selected (step S-**165**) and the content database is updated to keep a record of the items stored therein (step S-**170**). As discussed above, the proper bin is selected by referring to the local recycling rules programmed into the CPU **400** or by the generic rules programmed by the manufacturer.

Users of the e-trash units **10** may customize each unit to meet specific needs of the user. Examples of the preferences users may specify include reordering periods such as weekly, monthly or when the total value of the reorder equals or exceeds a certain level. Other customizable preferences include which supplier or suppliers to use which may be further customized by best price, specific supplier for a specific consumable, method of payments such as credit card, billing, check etc., which recycling company or companies to use, etc. Because the e-trash units **10** are customizable, the user experiences great flexibility when implementing the present invention. The user benefits by using the e-trash units **10** by allowing automated replacement of consumables and automated separation of recyclable materials. Because the use of e-trash units **10** reorders consumables as specified by the user, inventories may be reduced leading to enhanced productivity on the part of the user. If the e-trash units **10** are used in a home setting, the user spends less time in the supermarket since a list of used consumables is constantly available. The "grocery list" can be generated by the e-trash unit **10**. Additionally, because of the ease and automated handling of recyclables, the user may be able to benefit financially from the resale of the recycling materials sorted by the unit **10**. Also, all of the system and transaction information, such as reordering period, reordering levels, suppliers, billing information, order history, order status, user account information, recycling options, credits and the like, can be made available to users over the Internet.

The role of the central database **720** in the function of the e-trash units **10** is to store detailed lists of the contents of each unit **10** linked to the database **720**. Additionally, the central database **720** stores the user preferences discussed above such as how often to reorder, who to reorder from, the best price to pay, etc. Also, the central database functions to authorize credit transactions between users, suppliers and other third parties such as recycling and market research companies. The central database may also send confirmations of orders or emptying instructions as discussed above. These instructions and confirmations can be sent by e-mail, "regular mail" or fax. Another role of the central database **720** is that of statistic gatherer enabling the user to better anticipate their future needs and trends.

Suppliers who participate in the present invention benefit by receiving automatic reorders which enhances customer loyalty. Credit may be preauthorized reducing the risk of write-offs. Suppliers also benefit by the statistical data generated by the central database **720** which allows the supplier to reduce the inventory required to meet the customer's needs. Written confirmations of orders are sent by the central database **720** providing a written contract to facilitate good business relations.

Participating recycling companies benefit by having a steady source of separated recyclables without having to deal with intermediaries which drives up the cost. Credits for materials received from users can be credited through the central database **10**, thereby streamlining operations. Additionally, many users will wish to contract with the recycling companies directly to empty the units **10** automatically, thereby increasing revenues for the recycling companies.

Other third parties such as marketing research companies benefit by having a detailed list of the disposed items in each unit **10**. This will allow research into ways to decrease supplier and user waste and to study consumer behavior. Additionally, research may be done on ways to develop more environmental packaging, especially in regard to high volume items as identified by the present invention.

It will be appreciated by persons skilled in the art that the present invention is not limited to what has been particularly shown and described herein above. In addition, unless mention was made above to the contrary, it should be noted that all of the accompanying drawings are not to scale. A variety of modifications and variations are possible in light of the above teachings without departing from the scope and spirit of the invention, which is limited only by the following claims.

What is claimed is:

1. A system, comprising:

an input device operatively configured to scan information from an item;

a computer coupled to the input device;

a display device; and

program software stored in memory configured to:

receive a code that corresponds to the scanned item from the input device;

retrieve information from a database that identifies the scanned item based at least in part on the code;

display the information retrieved from the database on the display device;

read user specified preference information on when a re-order is to be placed, wherein the user specified preference information specifies a supplier preference;

generate a re-order instruction for the scanned item at least partly in response to the user specified preference information.

2. The system as defined in claim **1**, further comprising a waste receptacle.

3. The system as defined in claim **1**, further comprising a coded liner corresponding to a type of recyclable.

4. The system as defined in claim **1**, wherein the input device is configured to read a magnetically encoded label.

5. The system as defined in claim **1**, wherein the input device is a barcode scanner.

6. The system as defined in claim **1**, further comprising an interface that can be coupled to a personal digital assistant, wherein the system is configured to transfer via the interface information to a personal digital assistant.

7. The system as defined in claim 1, further comprising a wireless communication link coupled to an antenna and used to communicate with a communications network.

8. A system, comprising:

an input device operatively configured to scan information from an item;

a computer coupled to the input device;

a display device; and

program software stored in memory configured to:

receive a code that corresponds to the scanned item from the input device;

retrieve information from a database that identifies the scanned item based at least in part on the code;

display the information retrieved from the database on the display device;

read user specified preference information on when a re-order is to be placed;

generate a re-order instruction for the scanned item at least partly in response to the user specified preference information,

wherein the user specified preference information specifies that a reorder is to be placed when the value of the reorder reaches at least a first amount.

9. A system, comprising:

an input device operatively configured to scan information from an item;

a computer coupled to the input device;

a display device; and

program software stored in memory configured to:

receive a code that corresponds to the scanned item from the input device;

retrieve information from a database that identifies the scanned item based at least in part on the code;

display the information retrieved from the database on the display device;

read user specified preference information on when a re-order is to be placed;

generate a re-order instruction for the scanned item at least partly in response to the user specified preference information,

wherein the user specified preference information specifies that a reorder is to be placed at specified time intervals.

* * * * *

UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF CORRECTION

PATENT NO. : 7,303,124 B2
APPLICATION NO. : 11/495122
DATED : December 4, 2007
INVENTOR(S) : Wagner et al.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

At Title Page Column 2 Item [56] (Other Publications), Line 1: Delete "Tranforming" and insert -- Transforming --, therefor.

At Title Page Column 2 Item [56] (Other Publications), Lines 1-2: Delete "Dietitions" and insert -- Dietitians --, therefor.

At Column 2 Item [56], Line 21 (Approximately): Delete "discard-units." and insert -- discard units. --, therefor.

At Column 5, Lines 17-40: Delete "Suppliers, market researchers, …….. suit the application." and insert the same on line 16 after "connectivity." as a continuation of the same paragraph.

At Column 5, Line 18: After "700" delete "is".

At Column 5, Line 45: Delete "is" and insert -- are --, therefor.

Signed and Sealed this

Nineteenth Day of August, 2008

JON W. DUDAS
Director of the United States Patent and Trademark Office