Description

This invention relates to electronic cash registers (hereinafter referred to as the ECRs) and more particularly to an ECR which registers data on a commodity by reading bar codes attached to the commodity using a scanner.

As a method of recording by an ECR, there are two methods: one which registers the department code and unit price data of the commodities, which customers have bought, by keying them in from a keyboard, and the other which reads the bar codes attached to commodities by using a scanner and registers data on the commodities. An ECR which reads the bar code using a scanner has the feature that there is no need for a customer to input the department codes and unit price data of each commodity, so that the processing speed is increased.

Among the above bar codes, there are a so-called source marking which includes a bar code attached to a commodity in advance at a factory and a so-called in-store marking which includes a bar code attached to a commodity at a shop such as a supermarket. The source marking includes only a recorded department code while the in-store marking includes a department code as well as unit data recorded. When the source marking is read, unit data corresponding to the department code contained in the bar code is read from a PLU file contained in the ECR, on the basis of the department code, and registered. On the other hand, the in-store marking includes the department code and unit data recorded, so that the department code and unit data contained in the bar code are registered without reading the unit data from the PLU file. An electronic cash register of this type is known from EP-A-0 170 271

A supermarket or the like sometimes sells perishable foods, etc., at a discount for a period of time. In supermarkets or the like, generally, in-store markings are attached to perishable foods. In order to discount processing, the operator must key in the discount charge or rate from the keyboard before or after the operator reads the bar codes using the scanner. Thus, each time a customer buys a commodity to be discounted, the operator must key in the discount charge or rate from the keyboard. This operation may become complicated. The operator may sometimes forget a keying operation at the keyboard for discounting purposes and not reduce the price.

An electronic cash register according to the preamble of the claim is known from EP-A-0 169 573. In this scannerless cash register a price look up file for unit prices is provided and discount data are keyed in and stored at the time of processing for registration.

The invention is as claimed in the claim.

An ECR according to this invention beforehand stores data on discount corresponding to a commodity to which an in-store marking is attached. In accordance with reading of the bar code of the in-store marking, the data on the corresponding discount is read, a discount charge is subtracted from the unit data contained in the bar code and the result is registered. Therefore the operator can perform an automatic discounting operation without operating the keyboard. When the bar code is one of the source marking the unit price data store means is automatically accessed. In the drawings :

Fig. 1 is a flowchart for explaining the specific operation of one embodiment of this invention.

Fig. 2 is a schematic block diagram of one embodiment of this invention.

Fig. 3 shows a layout of keys of a keyboard shown in Fig. 2.

Fig. 4 is an example of the structure of a PLU and a subdepartment file.

Fig. 5 shows data stored in PLU files.

Fig. 6 shows data stored in the respective subdepartment files.

Fig. 7 shows a discount table.

Fig. 8 shows one example of an in-store marking.

Fig. 2 is a schematic block diagram of one embodiment of this invention. Fig. 3 is a layout of keys at the keyboard shown in Fig. 2.

First the structure of one embodiment of this invention will be described with reference to Figs. 2 and 3. As shown in Fig. 2, the ECR includes a CPU 1, a ROM 2, a RAM 3, a keyboard 4, a display 5, a printer 6, a cash drawer 7 and a scanner 8. CPU 1 registers data on commodities in accordance with a program stored in advance in ROM 2. RAM 3 includes a PLU file and a discount table such as is shown in Figs. 4-7 to be described later. As shown in Fig. 3, keyboard 4 includes a mode selector switch 41, department keys 42, ten-keys 43 and function keys 44.

Mode selector switch 41 selects any one of a preset mode (P), a power source off (OFF), a register mode (R) and an inspection mode (X). Section keys 42 input a department code, and ten-keys 43 inputs money data on the cash which a customer paid. Function keys 44 includes a PLU/SDP key 441, a subtotal key 442 and a deposit/current total cash key 443. PLU/SDP key 441 is operated when data on commodities is registered on the basis of a so-called price lookup (PLU) function which includes inputting a department code by operating the corresponding department key 42, and reading unit price data from the PLU file on the basis of the department code. Subtotal key 442 commands calculation of the total of the commodities registered so far. Deposit/current total key 443 performs a summing

operation and commands calculation of the changes when data on a deposit from a customer is keyed in by ten-keys 43.

Display 5 displays the input department code of commodities, money data and the sum of money. Printer 6 prints these data on a receipt. Cash drawer 7 keeps money which a customer has paid, and changes. Scanner 8 reads a bar code attached to a commodity. ECR shown in Fig. 2 can register data on a commodity by keying in the data from keyboard 4, as described above. ECR can also read a bar code attached to the commodity using scanner 8 and register data on the commodity.

Fig. 4 is a view showing an example of the structure of PLU and subdepartment file. Fig. 5 is a view showing data stored in the respective PLU files. Fig. 6 is a view showing data stored in the respective subdepartment files. Fig. 7 is a view showing a discount table.

The PLU and subdepartment files shown in Fig. 4 are contained in RAM 3 shown in Fig. 2 and include areas 31, 32, 34 for storing a plurality of PLU records, and areas 33 and 35 for storing SDP records. For example, PLU record 31 includes an area 311 for storing department codes, an area 312 for storing the names of the commodities, an area 313 for storing data as to whether the commodity is a taxation commodity or not, etc., an area 314 for storing the unit prices of commodities belonging to that department, an area 315 as a summing unit for storing the sum total of bought commodities belonging to that department, and an area 316 for counting events of registration. Other area 32 and 34 for storing PLU records are also composed as is area 31.

Subdepartment file 33 includes areas 331-336 as substantially does the area 31 which stores the PLU records. However, a discount code is stored in area 334 of subdepartment file 33, and unit price data is not.

Discount codes corresponding to the respective discounts are recorded on a discount table 36 shown in Fig. 7 and a discount is designated by a discount code stored in area 334 of the subdepartment file.

Fig. 8 shows one example of an in-store marking. In this embodiment, the first 2-figure numerals "01", "02" represent an in-store marking. The next 5-figure numerals specify the subdepartment code. The next C/D is a check digit for the subdepartment code. The next 4-figure numerals P1-P4 specify the unit price of the commodity. The next C/D is a check digit for the unit price.

Fig. 1 is a flowchart for explaining the specific operation of one embodiment of this invention.

Now, referring to Figs. 1-8, the specific operation of one embodiment of this invention will be described. The operator reads a bar code attached to an commodity bought by a customer, using scanner 8. The reading output of scanner 8 is applied to CPU 1 which checks if the head of the read bar code contains the 2-figure numerals "01" or "02". If not, CPU determines that the bar code is a source marking, searches PLU and subdepartment files on the basis of the department code contained in the bar code, reads unit price data corresponding to the appropriate department code and performs a so-called PLU registration. This PLU registration is conventionally well known and any more detailed description will be omitted.

If the read bar code contains the 2-figure numerals "01" or "02" in its head, CPU stores the unit price data contained in the bar code in an area (not shown) of RAM 3 and converts the unit price data of the bar code to "00000". CPU searches PLU and subdepartment files on the basis of the converted bar code. CPU checks if there is a SDP record corresponding to the department code contained in the bar code. If there is the appropriate record, CPU checks if the requirements set in the area of the record are a subdepartment file. If there is no appropriate record or there is no set requirements of the subdepartment file in the appropriate record, CPU performs an error display.

If there is the set requirements of the subdepartment file, a discounted price is computed. Namely, CPU reads a discount code from area 334 of the subdepartment record, reads a discount corresponding to the discount code from the discount table, and computes the selling price by subtracting the discount from the unit price data contained in the bar code. Then, CPU reads the name of the commodity from area 332, causes the display 5 to display the name and selling price of the commodity, and causes printer 6 to print on a receipt. CPU updates summing unit 33 of the subdepartment records of the commodities and counter 336 along with the summing unit and counter, for example, of PLU record 32 to which the subdepartment record belongs to complete the series of operations.

While in the above description CPU has been described as storing a discount code in the subdepartment record and storing in discount table 36 a discount corresponding to the discount code, it may store not a discount code but a discount rate in advance in the subdepartment record without providing a discount table. CPU may compute a discount by multiplying a discount rate by unit data contained in the bar code and compute the selling price by subtracting the discount from the unit price data.

As described above, according to this invention, in accordance with the reading of the bar code of an in-store marking, data on a discount corresponding to the department code contained in

the bar code is read, a discount is made on the unit price data contained in the bar code on the basis of the data on the discount, and the discounted price data is registered, so that it is unnecessary for the operator to operate the keyboard, and discount processing is performed automatically.

Claims

1. An electronic cash register comprising
first store means (314) for beforehand storing unit price data of commodities,
second store means (36) for beforehand storing discount data of commodities,
characterized by said electronic cash register registering data of commodities to which a bar code including a department code is attached as a source marking at a factory and of commodities to which a bar code including a department code and unit price data is attached as an in-store marking at a shop, and further comprising
bar code read means (8) for reading said bar code,
determination means (1) for determining whether said bar code read by said bar code read means is a source marking or an in-store marking,
register processing means (1) for, when said bar code is determined as said source marking by said determination means, reading from said first store means (314) unit price data corresponding to the department code contained in the bar code and registering the read data, and when said bar code is determined as said in-store marking, reading from said second store means (36) discount data corresponding to the department code contained in said bar code, and discounting the unit price based on said discount data.

Patentansprüche

1. Elektronische Registrierkasse mit
ersten Speichermitteln (314) zum Vorab-Speichern von Einheitenpreisdaten von Waren,
zweiten Speichermitteln (36) zum Vorab-Speichern von Rabattdaten von Waren,
dadurch gekennzeichnet, daß die elektronische Registrierkasse Daten von Waren, an welchen ein einen Abteilungscode enthaltender Balkencode als Quellenmarkierung beim Hersteller angebracht ist, und von Waren, an welchen ein einen Abteilungscode und Einheitenpreisdaten enthaltender Balkencode als eine Im-Geschäft-Markierung im Laden angebracht ist, registriert und daß sie ferner
Balkencodelesemittel (8) zum Lesen des Balkencodes,
Bestimmungsmittel (1) zum Bestimmen, ob der mit den Balkencodelesemitteln gelesene Balkencode eine Quellenmarkierung oder eine Im-Geschäft-Markierung ist,
Registrierverarbeitungsmittel (1) zum, wenn der Balkencode durch die Bestimmungsmittel als Quellenmarkierung bestimmt ist, Auslesen aus den ersten Speichermitteln (314) von Einheitenpreisdaten, die dem in dem Balkencode enthaltenen Abteilungscode entsprechen, und Registrieren der gelesenen Daten, und, wenn der Balkencode als Im-Geschäft-Markierung bestimmt ist, Auslesen aus den zweiten Speichermitteln (36) von Rabattdaten, die dem in dem Balkencode enthaltenen Abteilungscode entsprechen, und Diskontieren des Einheitenpreises auf der Grundlage der Rabattdaten.

Revendications

1. Une caisse enregistreuse électronique comprenant :
un premier moyen de mémoire (314) pour mémoriser au préalable des données de prix unitaires de produits,
un deuxième moyen de mémoire (36) pour mémoriser au préalable des données de ristournes de produits,
caractérisée en ce que ladite caisse enregistreuse électronique enregistre des données de produits, auxquels un code à barres est attaché en usine comme marquage de source, et de produits, auxquels un code à barres incluant un code de département et une donnée de prix unitaire est attaché dans un commerce comme marquage interne au magasin, et comprenant en outre
un moyen de lecture (8) de code à barres afin de lire ledit code à barres,
un moyen de détermination (1) afin de déterminer si ledit code à barres lu par ledit moyen de lecture de code à barres est un marquage de source ou un marquage interne au magasin,
un moyen de traitement d'enregistrement (1) afin de lire dans ledit premier moyen de mémoire, lorsque ledit code à barres est déterminé comme marquage de source par ledit moyen de détermination, une donnée de prix unitaire correspondant au code de département contenu dans le code à barres et enregistrer la donnée lue, et pour lire dans ledit deuxième moyen de mémoire (36), lorsque ledit code à barres est déterminé comme ledit marquage interne au magasin, une donnée de ristourne correspondant au code de départe-

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the bar code is read, a discount is made on the unit price data contained in the bar code on the basis of the data on the discount, and the discounted price data is registered, so that it is unnecessary for the operator to operate the keyboard, and discount processing is performed automatically.

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characterized by said electronic cash register registering data of commodities to which a bar code including a department code is attached as a source marking at a factory and of commodities to which a bar code including a department code and unit price data is attached as an in-store marking at a shop, and further comprising
bar code read means (8) for reading said bar code,
determination means (1) for determining whether said bar code read by said bar code read means is a source marking or an in-store marking,
register processing means (1) for, when said bar code is determined as said source marking by said determination means, reading from said first store means (314) unit price data corresponding to the department code contained in the bar code and registering the read data, and when said bar code is determined as said in-store marking, reading from said second store means (36) discount data corresponding to the department code contained in said bar code, and discounting the unit price based on said discount data.

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ersten Speichermitteln (314) zum Vorab-Speichern von Einheitenpreisdaten von Waren,
zweiten Speichermitteln (36) zum Vorab-Speichern von Rabattdaten von Waren,
dadurch gekennzeichnet, daß die elektronische Registrierkasse Daten von Waren, an welchen ein einen Abteilungscode enthaltender Balkencode als Quellenmarkierung beim Hersteller angebracht ist, und von Waren, an welchen ein einen Abteilungscode und Einheitenpreisdaten enthaltender Balkencode als eine Im-Geschäft-Markierung im Laden angebracht ist, registriert und daß sie ferner
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Bestimmungsmittel (1) zum Bestimmen, ob der mit den Balkencodelesemitteln gelesene Balkencode eine Quellenmarkierung oder eine Im-Geschäft-Markierung ist,
Registrierverarbeitungsmittel (1) zum, wenn der Balkencode durch die Bestimmungsmittel als Quellenmarkierung bestimmt ist, Auslesen aus den ersten Speichermitteln (314) von Einheitenpreisdaten, die dem in dem Balkencode enthaltenen Abteilungscode entsprechen, und Registrieren der gelesenen Daten, und, wenn der Balkencode als Im-Geschäft-Markierung bestimmt ist, Auslesen aus den zweiten Speichermitteln (36) von Rabattdaten, die dem in dem Balkencode enthaltenen Abteilungscode entsprechen, und Diskontieren des Einheitenpreises auf der Grundlage der Rabattdaten.

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caractérisée en ce que ladite caisse enregistreuse électronique enregistre des données de produits, auxquels un code à barres est attaché en usine comme marquage de source, et de produits, auxquels un code à barres incluant un code de département et une donnée de prix unitaire est attaché dans un commerce comme marquage interne au magasin, et comprenant en outre
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un moyen de traitement d'enregistrement (1) afin de lire dans ledit premier moyen de mémoire, lorsque ledit code à barres est déterminé comme marquage de source par ledit moyen de détermination, une donnée de prix unitaire correspondant au code de département contenu dans le code à barres et enregistrer la donnée lue, et pour lire dans ledit deuxième moyen de mémoire (36), lorsque ledit code à barres est déterminé comme ledit marquage interne au magasin, une donnée de ristourne correspondant au code de départe-

ment contenu dans ledit code à barres et effectuer une ristourne sur ledit prix unitaire sur la base de ladite donnée de ristourne.

