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TITLE OF INVENTION

54 A GRAVITY FEED DISPENSING DEVICE

57

ABSTRACT (NOT MORE THAN 150 WORDS)

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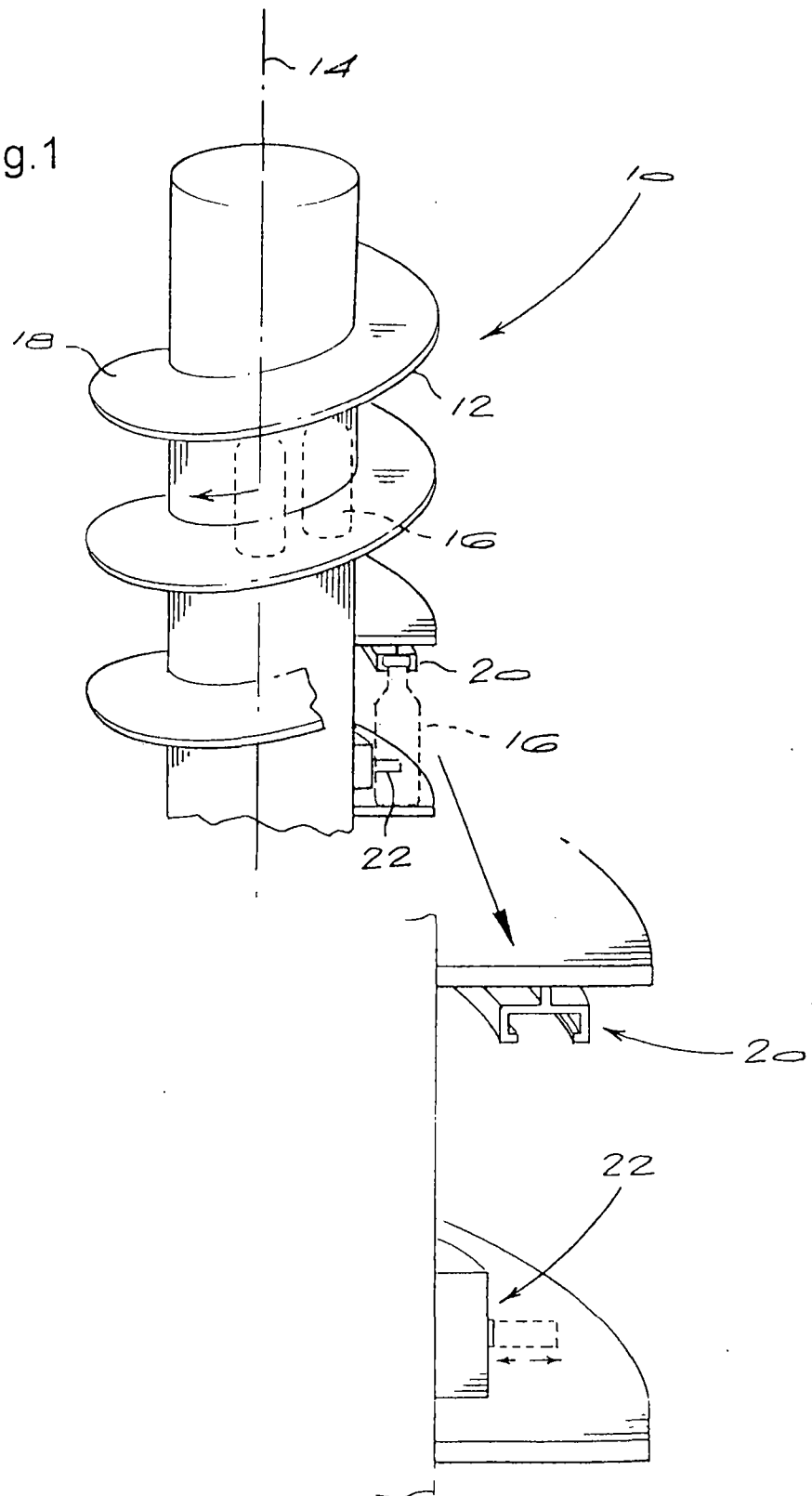
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If no classification is finished, Form P.9 should accompany this form.
The figure of the drawing to which the abstract refers is attached.

ABSTRACT

A dispensing device comprising a product dispensing member having upper and lower ends and being adapted to receive products to be dispensed and to direct the products to be dispensed towards the lower end under the influence of gravity. A closure member is moveable between an open position and a closed position so that when the closure member is in the open position at least one product is dispensed from the lower end of the product dispensing member and out of the dispensing device. The product dispensing member may be a helix shaped member. In another embodiment the device comprises a dispensing mechanism for dispensing products, data output means for transferring data to a memory device and a controller adapted to dispense a product from the dispensing device and to transfer data to the memory device via the data output means, the data including information identifying the dispensed product.

Fig.1



BACKGROUND OF THE INVENTION

The present invention relates to a dispensing device and to a point of sale system incorporating the dispensing device.

A retail-shopping environment, such as a supermarket, requires a shopper to place a number of items in a trolley or basket and then to proceed to a checkout where each of the purchased items is scanned or otherwise entered into a point of sale device.

The process is time-consuming and inefficient and the present invention seeks to address this.

SUMMARY OF THE INVENTION

According to the present invention there is provided a dispensing device comprising:

a product dispensing member having an upper end and a lower end and being adapted to receive products to be dispensed and to direct the products to be dispensed towards the lower end under the influence of gravity; and

a closure member moveable between an open position and a closed position so that when the closure member is in the open position at least one product is dispensed from the lower end of the helix and out of the dispensing device.

The product dispensing member may be a helix shaped member located around a vertical axis, the helix shaped member adapted to receive products to be dispensed and to direct the products to be dispensed towards the lower end of the helix.

The helix shaped member may have an upper surface on which the products to be dispensed are located.

The helix shaped member may also have a channel located on a lower surface thereof, wherein the dispensing device includes a locating member moveable in the channel, the locating member being removably connectable to one of the products to be dispensed.

According to the present invention there is further provided a dispensing device comprising:

a dispensing mechanism for dispensing products from the dispensing device;

data output means for transferring data to a memory device; and

a controller adapted to dispense a product from the dispensing device and to transfer data to the memory device via the data output means, the data including information identifying the dispensed product.

Preferably, the dispensing device includes data input means for receiving a request from a product to be dispensed, wherein the controller is adapted to only dispense a product and transfers data via the output means in response to a request received via the data input means.

The data input means may be a card reader and the data output means may be a card writer.

Typically, the card will be a magnetic stripe card or a smart card.

The present invention extends to a point of sale system comprising data input means for receiving data from a memory device, the data including information identifying a plurality of products which a purchaser wishes to purchase, the system being adapted to present the user with a bill in response to the data received from the memory device.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a schematic view of a dispensing device according to the present invention;

Figure 2 is a schematic representation of the electronic components of the dispensing device of Figure 1; and

Figure 3 is a schematic view of a locating member moveable within a channel to locate the products to be dispensed.

DESCRIPTION OF AN EMBODIMENT

Referring to Figure 1, the dispensing device 10 includes a product dispensing member in the form of a helix shaped member 12 located around a vertical axis 14. The helix shaped member 12 is adapted to receive products 16 which are to be dispensed and directs the product 16 towards a lower end of the helix under the influence of gravity.

The helix shaped member 12 has an upper surface 18 on which the products 16 are located and on which they slide under the influence of gravity towards the lower end of the helix.

The helix shaped member 12 also has a channel 20 located on a lower surface thereof. The channel 20 is connected to the products to hold the product to be dispensed in an upright position and slightly separate from one another so that they do not fall over as they are passing down the helix.

A closure member 22 is moveable between an open position and a closed position so that when the closure member is in an open position at least one products 16 is dispensed from the lower end of the helix and out of the dispensing device 10. It is also envisaged that two closure members may be required to work together, one to release a single product from the device and

one to ensure that the other products are kept away from the exit of the helix so that only one product is released at a time.

The components of the dispensing device are typically located in a housing (not shown), such as a glass enclosure with an opening adjacent the closure member 22 so that products can only be removed from the dispensing device via the opening.

The dispensing device may include a plurality of helixes and closure members in one housing so that a number of different products can be dispensed from the same housing.

Figure 2 schematically illustrates the circuit components included in the dispensing device.

The circuit components include a data output means 24 for transferring data to a memory device (not shown) and data input means 26 for receiving a request for a product to be dispensed.

A controller 28 is adapted to dispense a product from the dispensing device and to transfer data to the memory device via the data output means 24, the data including information identifying the dispensed product.

The controller 28 will typically only dispense a product and transfer data via the output means in response to a request received via the data input means.

In the preferred embodiment, the memory device is a memory device on a card such as a magnetic stripe card or a smart card in which case the data input means 26 and the data output means 24 are a card reader and a card writer respectively.

The preferred use of the dispensing device of the present invention is in a retail-shopping environment such as in a supermarket store, but it will be appreciated that the device could equally be used in other environments such as in warehouses, for example.

In a retail-shopping environment it is envisaged that a number of similar dispensing machines are located throughout the store, each one containing a different kind of product to be dispensed.

A shopper walks around the store with a magnetic stripe or smart card and swipes the card through the card reader to get a product dispensed.

The controller 28 detects that a card has been swiped through the card reader and treats this as a request for a product to be dispensed. The controller controls the closure member 22 which is moved from its closed position to an open position and it thereby dispenses a product from the dispensing device.

Substantially simultaneously, the controller transfers data via the data output means wherein the data includes information identifying the dispensed product.

If the data output means is a card writer, data is transferred to the card which is swiped through the card reader indicating that the particular product has been dispensed.

Alternatively, the data can be transmitted to a central data storage location for later use, as well be described in more detail below. If the data is transmitted to a central data storage location, the data will need to include identification information to identify the uniquely identifiable card.

When the user has a trolley or basket of dispensed products, they proceed to a check-out point, where a point of sale system has data input means for receiving data uniquely identifying the card. If the information detailing the products dispensed to the card are stored on the card, information will be downloaded to the point of sale system which will present the user with a bill.

Alternatively, the unique identity of the card will be used to access the information detailing the products dispensed to the card which the system will then use to compile the bill which is presented to the user.

Thus it will be appreciated that the present invention provides an improved dispensing device which operates in a point of sale environment aimed at making the checkout and procedure in a shopping environment easier for a user.

Referring to Figure 3, the figure illustrates an alternative channel 20 which will be attached to the underside of the helix shaped member 12 and which has a plurality of locating members 28 moveable in the channel. Each locating member is removably connectable to one of the products to be dispensed. A spacing element 30 ensures that two adjacent locating members 28 do not run onto one another so that the products which they hold are kept spaced apart from one another. It is envisaged that in this embodiment, the products will not slide on the upper surface of the helix but will be suspended above the portion of the helix below it as they move along the helix.

The channel 20 will typically be connected to the underside of the helix by mounting brackets, for example.

In a third embodiment, the helix shaped member is replaced by a different shaped product dispensing member having an upper end and a lower end and being adapted to receive products to be dispensed and to direct the products

to be dispensed towards the lower end under the influence of gravity. For example, the product dispensing member could be used for dispensing smaller items such as toothbrushes.

Since the products are dispensed under the influence of gravity, a drive mechanism is not required to push the products out of the dispensing device.

CLAIMS:

1. A dispensing device comprising:

a product dispensing member having an upper end and a lower end and being adapted to receive products to be dispensed and to direct the products to be dispensed towards the lower end under the influence of gravity; and

a closure member moveable between an open position and a closed position so that when the closure member is in the open position at least one product is dispensed from the lower end of the product dispensing member and out of the dispensing device.
2. A dispensing device according to claim 1 wherein the product dispensing member is a helix shaped member located around a vertical axis, the helix shaped member adapted to receive products to be dispensed and to direct the products to be dispensed towards the lower end of the helix.
3. A dispensing device according to claim 2 wherein the helix shaped member has an upper surface on which the products to be dispensed are located.
4. A dispensing device according to claim 2 wherein the helix shaped member has a channel located on a lower surface thereof, wherein the dispensing device includes a locating member moveable in the

channel, the locating member being removably connectable to one of the products to be dispensed.

5. A dispensing device comprising:

a dispensing mechanism for dispensing products from the dispensing device;

data output means for transferring data to a memory device;
and

a controller adapted to dispense a product from the dispensing device and to transfer data to the memory device via the data output means, the data including information identifying the dispensed product.

6. A dispensing device according to claim 5 including data input means for receiving a request from a product to be dispensed, wherein the controller is adapted to only dispense a product and transfers data via the output means in response to a request received via the data input means.
7. A dispensing device according to claim 5 wherein the data input means is a card reader and the data output means is a card writer.
8. A dispensing device according to any one of claims 5-7 wherein the memory device is a card.
9. A dispensing device according to claim 8 wherein the card is a magnetic stripe card or a smart card.

10. A point of sale system comprising data input means for receiving data from a memory device, the data including information identifying a plurality of products which a purchaser wishes to purchase, the system being adapted to present the user with a bill in response to the data received from the memory device.
11. A dispensing device according to claim 10 wherein the memory device is a card.
12. A dispensing device according to claim 11 wherein the card is a magnetic stripe card or a smart card.
13. A dispensing device substantially as herein described with reference to illustrated embodiments.

DATED THIS 17TH DAY OF MAY 2005



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APPLICANTS PATENT ATTORNEYS

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Fig.1

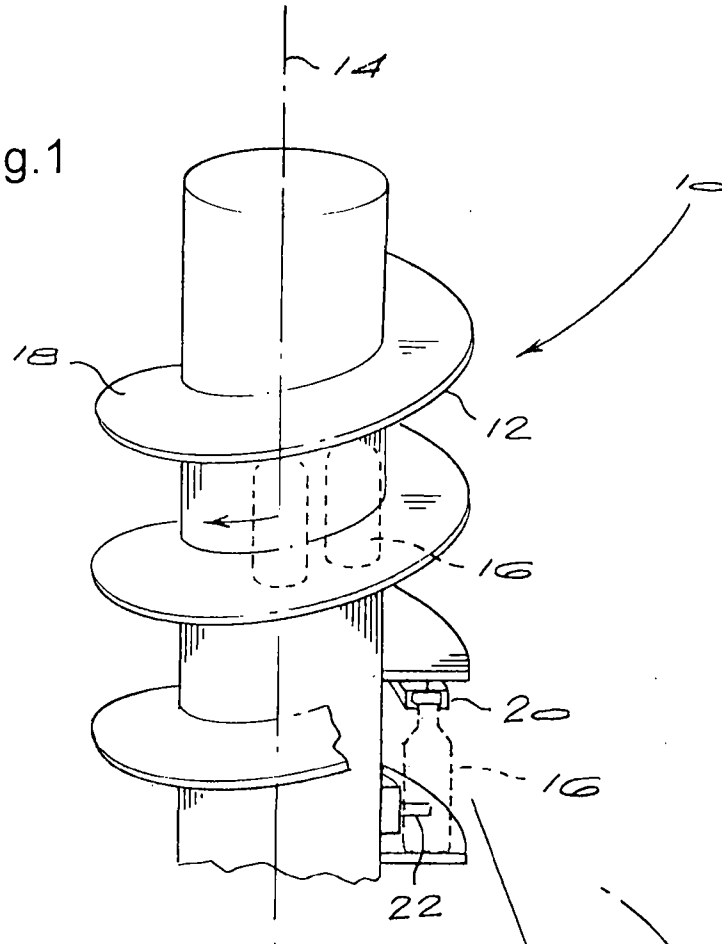
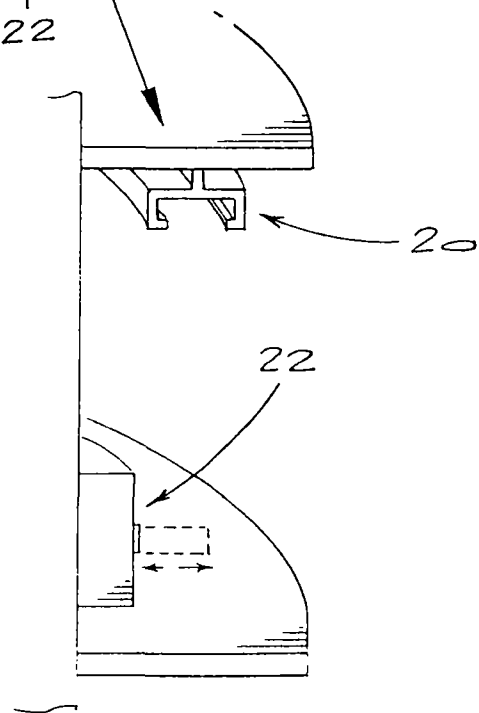
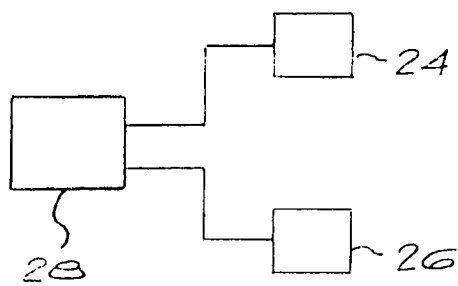
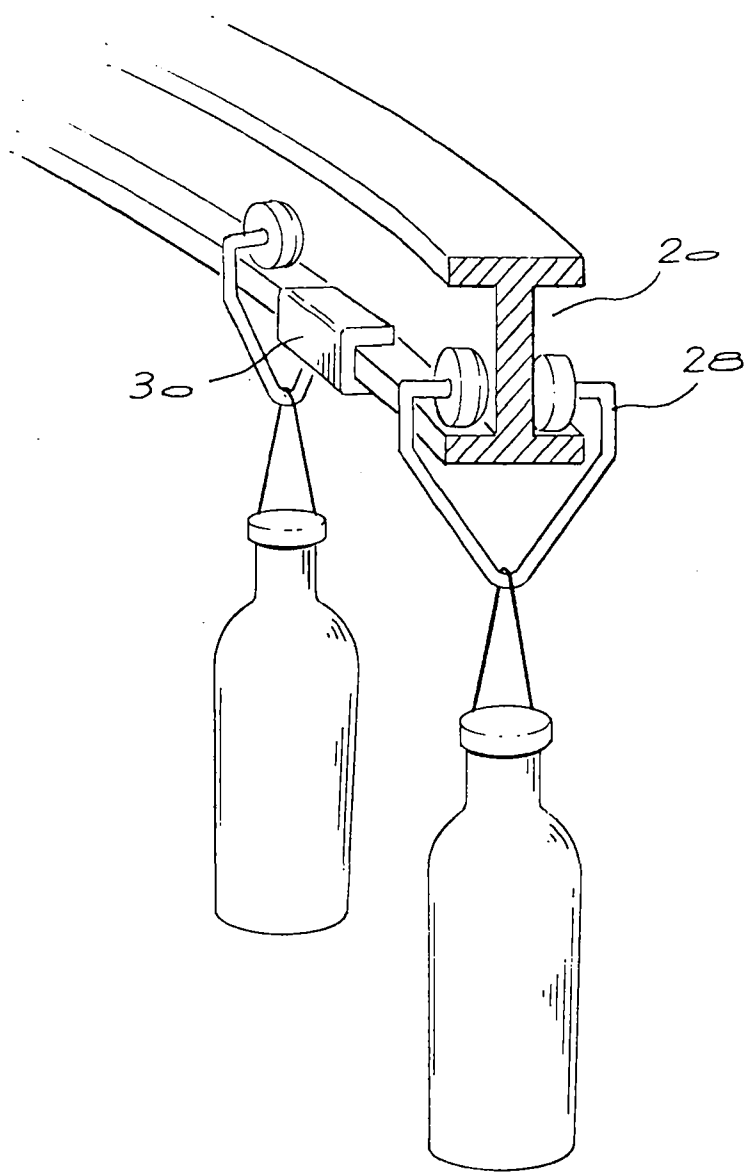


Fig.2



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Fig.3




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