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- (71) Applicant and
(72) Inventor: **ANNING, Bernard, Edgar** [GB/GB]; 5 Cherry Tree Drive, Bracknell, Berkshire RG12 9HJ (GB).
- (74) Agents: **TOWNSEND, Victoria, Jayne** et al.; Fry Heath & Sepnce, The Old College, 53 High Street, Horley, Surrey RH6 7BN (GB).
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(54) Title: APPARATUS FOR CONTROLLING AND MONITORING THE DISPENSING OF BEVERAGES

(57) Abstract: The invention discloses an apparatus for controlling and monitoring the dispensing of drinks; the apparatus comprising : a plurality of metering dispensers for dispensing beverages; a plurality of locking means for preventing dispensing of a beverage, each locking means being operatively linked to a different one of said metering dispensers; a plurality of user identifying devices, each user identifying device being operatively linked to a different one of said locking means; a processor for receiving and processing and processing data from the said user identifying devices and metering dispensers and calculating the total value of each transaction made by each user; and a cash register operatively linked to the said processor which receives the calculated total value of each transaction made by each user.

APPARATUS FOR CONTROLLING AND MONITORING THE DISPENSING OF BEVERAGES

This invention relates to an apparatus for dispensing beverages which verifies the quantity of beverages dispensed by an identified user in execution of a transaction, calculates
5 the total value of the beverages dispensed by each identified user and optionally verifies the amount of cash placed in and removed from a cash register in settlement for that transaction.

Background of the Invention

10 A beverage system for a bar is disclosed in WO 93/25466 (Azbar Inc.) comprising a plurality of individual manually operated beverage dispensers for metering and dispensing a plurality of beverages upon command by a user. The system is further able to monitor consumption and estimate revenue from consumption. There is also provided user
15 identification (ID) means to prevent unauthorised dispensation of beverages and to identify which bartender has dispensed beverages and indicate whether each has collected an amount of cash commensurate with the value of the beverages dispensed.

The means may comprise a key actuated switch or a security code entry keypad. One user ID means prevents unauthorised use of all the beer and wine dispensers and another user
20 ID means prevents unauthorised use of all the spirit dispensers. A disadvantage of this system is that once a user ID means authorise use of all the beer and wine or spirit dispensers, there is no barrier to unauthorised use of the dispensers by another user. When there is more than one bartender using the dispensing system, the system is unable to identify which
25 beverage is dispensed by which bartender. Thus it is no longer possible to determine whether each has collected an amount of cash commensurate with the value of the beverages dispensed.

Furthermore the system does not provide a means to prevent unauthorised use of the soda or juice dispensers thus leaving the system open to fraud or error. Although the
30 dispensing system is provided with a cash register, no means are provided for the cash

register to verify the amount of cash placed therein and removed. Thus again the system is open to fraud or error.

Summary of the Invention

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This invention provides an apparatus for dispensing beverages which overcomes the aforementioned disadvantages. The apparatus of the invention provides information relating to transactions that are currently on-going as well as those that have already been settled. Dispensed beverages are matched to the individual user who dispensed the said beverages. This operation is possible even when the apparatus is in simultaneous use by several users. The invention also provides a means of verifying that the correct amount of cash has been paid for each transaction. The invention provides a means of reducing fraud and error and can form part of an apparatus for stock control by, for example, monitoring stock levels and maintaining them by ordering the required beverages automatically.

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Accordingly, in a first aspect, the invention provides an apparatus for controlling and monitoring the dispensing of drinks; the apparatus comprising:

- a plurality of metering dispensers for dispensing beverages;
- a plurality of locking means for preventing dispensing of a beverage, each locking means being operatively linked to a different one of said metering dispensers;
- a plurality of user identifying devices, each user identifying device being operatively linked to a different one of said locking means;
- a processor for receiving and processing data from the said user identifying devices and metering dispensers and calculating the total value of each transaction made by each user; and
- a cash register operatively linked to the said processor which receives the calculated total value of each transaction made by each user.

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It is preferred that the cash register is provided with means for verifying that the correct amount of cash has been placed therein in settlement of the said transaction, and

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preferably is capable of both counting money in and counting money out. Such means can operate by weighing the cash or by reading characteristic indicia on the cash or a combination of the two, for example. Examples of devices that may be used include load cells that can distinguish between the weights of different coins and bank notes or scanning devices that can scan bank notes to determine their value. The cash register is also provided with the means for manual input of transactions for those goods, such as food and beverages, not dispensed by the metering dispensers of the invention.

A means for recording credit card and smart card transactions may also be linked to the cash register and/or the processor. In this way, the dispensing operation is monitored by the apparatus and consequently the user is unable to dispense beverages from the metering dispensers of the invention without subsequent payment undetected.

The apparatus of the invention is particularly suitable for use in a large bar area where there are several barmen or bar women working the bar at the same time. Thus, each bar person is provided with his or her own user ID which can conveniently be carried on a magnetic, optical or electronic data carrier that can be read by a reader associated with a given beverage dispensing device. Alternatively the means of identifying a user may be by means of a personal electromagnetic radiation emitter or by a fingerprint. Activating the user ID device allows an authorised user to gain access to the drinks dispenser and at the same time sends information to the processor identifying the user. The user ID device can be instructed to allow access to the drinks dispenser only to authorised users thus preventing access to persons in possession of, for example, a stolen or lost data carrier or radiation emitter or to those persons otherwise barred from accessing the drinks dispenser. The quantity of beverage dispensed is then measured by a metering device associated with each metering dispenser and the information relayed also to the processor. When the user has finished dispensing the beverage, the user ID device is deactivated, e.g. by removing the data carrier from the reader, and the dispensing device can then be used by another user. The user can then go to the cash register where the total of the transaction has been recorded against the user ID and the transaction settled with the customer.

It is preferred that the cash register has a user identifying (ID) device operatively connected thereto, the cash register being arranged to display the calculated total value of the said transaction upon identification of an authorised user by the device. Thus, although the cash register may hold details of the transaction prior to the user ID device being activated, it will only display the total of the transaction for a given user upon activation of the user ID device by an authorised user. The advantage of this arrangement is that any number of users can use the cash register, each user activating the user ID device to display the transaction total when they are ready to settle the transaction with the customer. It can be envisaged that the processor can be combined with the cash register.

10

In order that each authorised user can keep track of the various dispensing operations and ensure that he or she has provided the customer with the correct number and type of drinks, a plurality of display monitors may be provided, each one of which can be programmed to display a running total of a transaction or series of transactions made by that user. Thus each user could be allocated their own individual display monitor.

15

The metering dispensers can be any of the types of dispensers typically found in bars. For example, the dispensers can be fixed volume spirits dispensers (for example the dispensers of the type sold by Gaskell & Chambers under the trade mark "Optic"), or they can be draught beverage dispensers such as beer dispensers, e.g. for dispensing beer under pressure or by means of hand-pulled pumps, or draught soft drinks dispensers for dispensing drinks such as fruit juices and carbonated drinks.

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The dispensers can also take the form of cabinets such as cold cabinets and ambient temperature cabinets containing bottled beverages such as bottled beers, cider and fruit juices and cordials or mixer drinks.

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In general, the apparatus will be adapted to accommodate at least two fixed volume spirits dispensers, and typically more than two. Each such dispenser will have its own associated user ID device and locking means.

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In general, also, the apparatus will be adapted to accommodate at least two dispensers for draught beverages such as beer, carbonated drinks and fruit juices, each dispenser having its own associated user ID device and locking means.

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The nature of the locking means will depend upon the nature of the metering dispenser. For example, if the metering dispenser is a fixed volume spirits dispenser, the locking means can be an electro-mechanical device that immobilises a dispensing arm or lever on the dispenser. The electro-mechanical device can be a solenoid-based device, the solenoid serving to actuate a locking element to bring it into or out of locking engagement with the dispensing arm or lever. Actuation of the solenoid is controlled by the user ID device associated with the dispenser.

When the dispensing device is for dispensing draught beverages such as beer, the locking means can simply take the form of an electronic locking mechanism by which the dispensing device is either enabled or disabled depending upon whether the user ID device has recognized a user.

Where the dispensing device is a cabinet, the locking device can take the form of a lock preventing the cabinet door from being opened.

In order to allow the volumes or units of beverage dispensed to be recorded, each dispensing device will have associated therewith a means for monitoring the amount of beverage dispensed. In the case of a fixed volume dispenser, this can take the form of a counting device that counts each volume dispensed. In the case of a draught beer dispenser, the monitoring mean can take the form of a flow meter that determines the fluid flow through the supply line leading to the dispenser. In the case of a cabinet, the monitoring means can take the form of a weighing device that records a change in weight of a shelf and relates this to the removal of a particular bottled beverage. Such a weighing device can be, for example, an analogue or digital load cell, or strain gauge.

Brief description of the drawings

The invention will now be described in more detail and illustrated, but not limited,
5 by reference to the particular embodiments shown in the accompanying drawings, in which:

Figure 1 is a schematic view of apparatus for dispensing beverages according to one
embodiment of the invention;

Figure 2 is a schematic view of a user identification (ID) device;

Figure 3 is a side view of a mechanical locking device comprising two pegs (only one
10 peg shown);

Figure 4 is a view from an angle of a fixed volume dispenser showing the elongate
cut-outs at the rear;

Figure 5 is a view of a mechanical locking device along the plane II - II;

Figure 6 is a view of a mechanical locking device along the plane I - I; and

15 Figure 7 is cross-sectional view of a fixed volume dispenser illustrating part of the
dispenser mechanism.

Detailed description of the Preferred Embodiments

20 Figure 1 illustrates the basic structure of an apparatus according to one embodiment
of the invention. The apparatus comprises a plurality of beverage metering dispensers 11 and
16 and a plurality of locking devices 15, for preventing dispensation of beverages from
dispensers 11 and 16, each locking device being operatively linked to a different one of said
metering dispensers. The dispensers 11 can be any of the types of dispensers commonly
25 found in bars such as fixed volume dispensers for beverages such as spirits, or a draught
liquid dispenser for beverages such as draught beer, and dispenser 16 can comprise a cabinet
for bottled beer or any other beverages suitably stored in a cabinet.

The apparatus further comprises a plurality of user identification (ID) devices 12,
30 each being operatively linked to a different locking device 15. User ID device 12 unlocks

locking device 15 on identification of an authorised user. Locking device 15 is locked when user ID device 12 can no longer identify a user. Each dispenser is operatively linked in series, in this case via a communications bus such as a type RS 485, to processor 13 via their respective user ID devices. Dispenser 16 is additionally connected, in this case via a communications bus such as a type RS 485, directly to processor 13. Processor 13 is further operatively linked, in this case via a communications bus such as a type RS 485, to cash register 14 which can be operated via user ID device 17.

In this embodiment the maximum number of user ID devices which may be connected in series via an RS 485 communications bus to one processor port is 31, each one allocated an address from integers 0-30. An apparatus can be envisaged comprising more than 31 user ID devices connected in series to a single processor port. In this embodiment the maximum number of processor ports is 9, each one allocated an address from integers 1-9. Again an apparatus can be envisaged comprising more than 9 processor ports. The location of each user ID device and hence dispenser in the apparatus is thus characterised by a user ID device address in combination with a processor port address, both of which are recognised by and programmed into processor 13.

After the hardware making up the system has been installed, the relevant details for each dispenser (e.g. type of dispenser, type or brand of beverage, unit price of beverage, etc.) are programmed into processor 13, the details being entered against the relevant combination of user ID device address and processor port address. As will be appreciated, if details such as the brand of beverage dispensed from the dispenser or its price subsequently change, such changes can easily be recorded in the software in the processor. A list of authorised users is programmed into each user ID device via processor 13.

When the apparatus is in use, the identity of each authorised user is communicated to the processor from each user ID device on identification of the user.

Identification of beverages dispensed from dispensers 11 is effected by processor 13

by identification of the dispenser in use from details of the user ID device address and processor port address, each dispenser possessing a unique combination as already mentioned.

5 The process of identifying beverages dispensed from dispenser 16 differs from that described for dispenser 11. It can be appreciated that dispenser 16 can contain a variety of beverages at any one time, each type of beverage readily identifiable by its unit weight. Therefore identification by processor 13 is based on a combination of information regarding the volume, more particularly the weight, of beverage dispensed communicated directly to
10 the processor from the dispenser and the identity of the dispenser determined in the aforesaid manner. It can, of course, be envisaged that the information regarding the volume of beverage dispensed may be communicated to the processor via the user ID device.

Information regarding the volume of beverage dispensed by dispenser 11 is
15 communicated to processor 13 via user ID device 12. As previously mentioned, equivalent information from dispenser 16 is communicated directly to the processor by-passing the user ID device. As the unit price of each type of beverage has already been programmed into processor 13, the processor is then able to calculate the total cost of each transaction carried out by each user.

20 A bundle of information comprising the identity of the user, the type of beverages dispensed by that user, the volume of those beverages dispensed by the user, and the total cost of the transaction is communicated from processor 13 to cash register 14. When a user wishes to complete a transaction, cash register 14 provides the user with a description of the
25 transaction associated with a user and the total cost on identification of the user by user ID device 17. The information is stored for future reference once the transaction is complete. The user is then free to commence another transaction.

Figure 2 illustrates in more detail the user ID device 12. Thus, the user ID device
30 comprises a receptacle 22 for a personal electronic data carrier, an electronic processor 21,

a transistor 23 and an electrical circuit connecting the aforementioned elements. Each electronic data carrier carries a unique code identifying the user. In Figure 2, the receptacle for the personal electronic data carrier is shown as being in close proximity to processor 21, e.g. within the same casing, but it could alternatively be remote from the processor and connected by electrical wiring or other data transmission means. The electronic processor is able to read the code of each electronic data carrier when it is placed in the receptacle and thereby identify the user. When the data carrier is placed in the receptacle, provided that the data on the carrier is recognised by the electronic processor as being the data for an authorised user of the apparatus, the transistor activates external switch 24, which in this embodiment is a solenoid coil, to which it is attached opening locking device 15. If the data on the carrier cannot be matched to an authorised user, the locking device will not be unlocked. The locking device re-locks on removal of the data carrier from the receptacle.

In this embodiment, the personal electronic data carrier can be an electronic chip housed in a metal can. Such data carriers are available from Dallas Semiconductor (Texas, USA) as the DS19xx iButton series.

The locking device used in conjunction with a fixed volume dispenser comprises a mechanical locking device 32 as shown in Figure 3 comprising two pegs 31 (only one shown) able to insert into the bottom of elongate slots 42 shown in Figure 4 present on the operating lever 41 of a typical fixed volume dispenser. The pegs prevent the normal movement of the lever required for dispensing a beverage. Figure 5 shows the pegs as they appear when engaged with the lever. To disengage from the lever, the pegs retract into the body of mechanical locking device 32 such that the end faces of the pegs are flush with the outside of the exterior wall.

Mechanical locking device 32 operates via a series of racks and pinions. With reference to Figure 5, as rod 51 is pulled in the direction shown by the arrow, rack 52, which is directly connected to the said rod, is pulled in the same direction and pinion 53 rotates in a clockwise manner as indicated by the arrow. With reference to Figure 6, it can be seen that

pinion 53, rotating in a clockwise manner as shown by the arrow, moves racks 61 and pegs 31 attached thereto in opposite directions as indicated by the arrows, resulting in retraction of the pegs into the wall of mechanical locking device 32. By movement of the rod in the opposite direction, it can be seen that the pegs once more protrude from the walls of the
5 mechanical locking device.

Rod 51 is operated by a solenoid (external switch 24) in such a manner that when the data carrier is placed in receptacle 22 and the user identified, the external switch is activated by transistor 23 thereby retracting pegs 31 into the wall of the mechanical locking device.
10 Thus the normal movement of lever 41 is no longer impeded and the beverage can be dispensed from the fixed volume dispenser. On removing the data carrier, the solenoid coil deactivates and the pegs once again stand proud of the exterior walls of the mechanical locking device and engage the lever of the fixed volume dispenser rendering it inoperable.

15 When the dispensing unit is a draught liquid dispenser, such as those typically used for beverages such as draught beer, locking device 15 is a valve located on the feed line. The valve is operated by a solenoid (external switch 24) in such a manner that when the data carrier is placed in receptacle 22 and identified by electronic processor 21, transistor 23 activates the solenoid coil to open the valve. On removal of the data carrier from the
20 receptacle, the solenoid coil de-activates closing the valve.

When the dispensing unit is a cabinet, locking device 15 is a lock, which in this case is an electromagnetic lock, fitted to the cabinet door controlled by a magnetic coil (external
25 switch 24). Control is effected in a similar manner to that described for a fixed volume dispenser or a draught liquid dispenser. When data carrier receptacle 22 is empty, the door is locked. On placing the data carrier in the receptacle, the magnetic coil deactivates unlocking the door once the user is identified as being an authorised user.

When the dispenser is a fixed volume dispenser, the volume of beverage dispensed
30 is metered using external switch 25. In this embodiment the external switch comprises a

magnet detection circuit such as a field effect device, attached to a non-moving part of the fixed volume dispenser, in communication with electronic processor 21. A magnet is attached to a moving part of the fixed volume dispenser proximate the field effect device such that each time a beverage is dispensed, the magnet moves in relation to the magnet detection circuit sending a signal to electronic processor 21 where it is stored as a single count. It is readily apparent that the field effect device may be located on a moving part of the fixed volume dispenser and the magnet placed on a non-moving part such that each time a beverage is dispensed, the magnet moves in relation to the magnet detection circuit sending a signal to the electronic processor.

10

With reference to Figure 7, the magnet 71 is located, in this embodiment, at the extremity of an arm 72 which rotates about a pivot 73 in the manner shown by the arrow. Arm 72 is biased by one end of a spring 74, the other end attached to other parts of the fixed volume dispenser mechanism which for clarity are not shown. Arm 72 further comprises two pins 75 (only one shown) which protrude either side of the arm and which engage elongate slots 42 (only one shown). When lever 41 is moved in the direction shown by the arrow to dispense a beverage, the elongate slots move in the same direction. Pins 75 move towards the base of the elongate slots rotating arm 72, and hence magnet 71, about pivot 73 in an anti-clockwise manner. The rotating movement of the magnet is detected as a change in the magnetic field strength by a field effect device located nearby which sends a signal to electronic processor 21.

20

When the dispenser is a draught liquid dispenser, the volume of beverage dispensed is also metered using external switch 25. As for the fixed volume dispenser, external switch 25 comprises a magnet detection circuit such as a field effect device. However the magnet detection circuit, which is in communication with electronic processor 21, is attached to the exterior of the feed line. At least one magnet is placed on a different one of each blade of an impeller located within the feed line adjacent to the magnet detection circuit. As the beverage passes through the feed line, the impeller blade rotates displacing the magnet relative to the magnet detection circuit which sends signals to the electronic processor

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indicative of the volumetric flow.

When the dispensing unit is a cabinet, the volume of beverages dispensed is also metered using a weighing apparatus attached to each cabinet shelf. A suitable weighing
5 apparatus is an analogue or digital load cell. Each load cell is able to measure differences in weight, thus the removal of any beverages from any of the shelves is immediately detected by the load cells.

Several fixed volume dispensers, draught liquid dispensers or cabinets, but not
10 including load cells, can be connected in series via a RS 485 communications bus to one processor port. Load cells are served by a separate processor port. If analogue, only a single load cell can be connected to a processor port via a RS 232 communications bus. The load cell output must be converted into a digital output using an analogue digital converter (ADC) in order to be carried by the RS 232 communications bus. If the load cell has a digital output,
15 a plurality can operate from a single processor port via a RS 485 communications bus. An alternative arrangement is provided by a quad load cell (QLC) converter, which incorporates an ADC, operating from a single processor port via a RS 232 or RS 485 communications bus connected to up to four analogue load cells. In RS 485 mode, several QLC's may operate from a single processor port. The QLC can indicate to the processor whether there has been
20 a change in the output of any of the load cells. Another arrangement is offered by a device similar to the QLC operatively linked to more than four analogue load cells.

The invention may optionally comprise a plurality of cash registers. A further option is a cash register 14 able to identify each note and coin placed therein and removed by
25 provision of, for example, weigh cells attached to every note and coin tray. The cash register is thus able to verify that the correct amount of cash is placed in and removed from the cash register thereby reducing error and fraud.

Each user could also be provided with one or more display units 18, operatively
30 linked with processor 13, that provides to the user and any person being served by the user

a description of the transaction associated with the user and the total cost both during and on settlement of the transaction.

5 Another option is the provision of a timer delay for draught liquid dispensers which maintains the solenoid coil (external switch 24) activated for a pre-set period after removal of the data carrier from receptacle 22. The period of delay allows a pre-determined amount of over-fill when dispensing beverages such as beer that are characterised by a foaming head.

10 Further processors may be provided as a back-up for processor 13.

It will readily be apparent that numerous modifications and alterations could be made to the apparatus described and shown in the drawings without departing from the principles underlying the invention and all such modifications and alterations are intended to be embraced by this application.

15

CLAIMS

1. Apparatus for controlling and monitoring the dispensing of drinks; the apparatus comprising:
 - 5 a plurality of metering dispensers for dispensing beverages;
 - a plurality of locking means for preventing dispensing of a beverage, each locking means being operatively linked to a different one of said metering dispensers;
 - a plurality of user identifying devices, each user identifying device being operatively linked to a different one of said locking means;
 - 10 a processor for receiving and processing data from the said user identifying devices and metering dispensers and calculating the total value of each transaction made by each user; and
 - a cash register operatively linked to the said processor which receives the calculated total value of each transaction made by each user.
- 15 2. Apparatus according to claim 1 wherein the cash register is provided with means verifying that the correct amount of cash has been placed therein in settlement of the said transaction.
- 20 3. Apparatus according to claim 1 or claim 2 wherein the cash register has a user identifying device operatively connected thereto, the cash register being arranged to display the calculated total value of the said transaction upon identification of a user by the device.
- 25 4. Apparatus according to any one of the preceding claims comprising a plurality of display monitors, each of which is adapted to display a running total of a transaction or series of transactions made by a user.
- 30 5. Apparatus according to claim 4 wherein each display monitor is set up to display the running total of a different user.

6. Apparatus according to any one of the preceding claims wherein the metering dispensers are selected from fixed volume spirits dispensers, draught beverage dispensers, cold cabinets and ambient cabinets.
- 5
7. Apparatus according to claim 6 wherein the plurality of metering dispensers comprises at least two fixed volume spirits dispensers.
8. Apparatus according to claim 6 or claim 7 wherein the plurality of metering dispensers comprises a cold cabinet or ambient cabinet, the cold cabinet or ambient cabinet having a weighing device associated with each shelf therein for detecting the removal of a beverage container from the cabinet, the weighing device being operatively linked to the processor.
- 10
9. Apparatus according to claim 8 wherein the weighing device is an analogue or digital load cell or strain gauge.
- 15
10. Apparatus according to any one of the preceding claims wherein the user identifying device comprises a reader device for an electronic, optical or magnetic data carrier.
- 20
11. Apparatus according to claim 6 wherein the plurality of beverage dispensers comprises a fixed volume spirits dispenser, and the locking means comprises an electro-mechanical locking device connected to the dispenser.
- 25
12. Apparatus according to claim 11 wherein the electro-mechanical locking device comprises a locking element for engaging a dispensing arm or lever of the dispenser to restrict movement thereof and prevent dispensing of the beverage, the locking element being actuable when a user is identified by the user identifying means to disengage the dispensing arm or lever of the dispenser to permit dispensing of the beverage.
- 30

13. Apparatus according to claim 12 wherein the locking element is actuatable by means of a solenoid.
- 5 14. An electro-mechanical locking device for attachment to a fixed volume spirits dispenser, the locking device being as defined in any one of claims 11, 12 or 13.
15. A dispensing cabinet for containing beverages, the dispensing cabinet having one or more shelves therein, each shelf having attached thereto a weighing device for
10 detecting changes in the weight of items on the shelves.
16. A dispensing cabinet according to claim 15 comprising or being operatively connected to means for calculating from the changes in weight the identity or type of an item removed from or added to the shelf.
- 15 17. A dispensing cabinet according to claim 15 or claim 16 wherein the weighing device comprises a load cell.
18. Apparatus for dispensing beverages substantially as described herein with reference
20 to the figures.

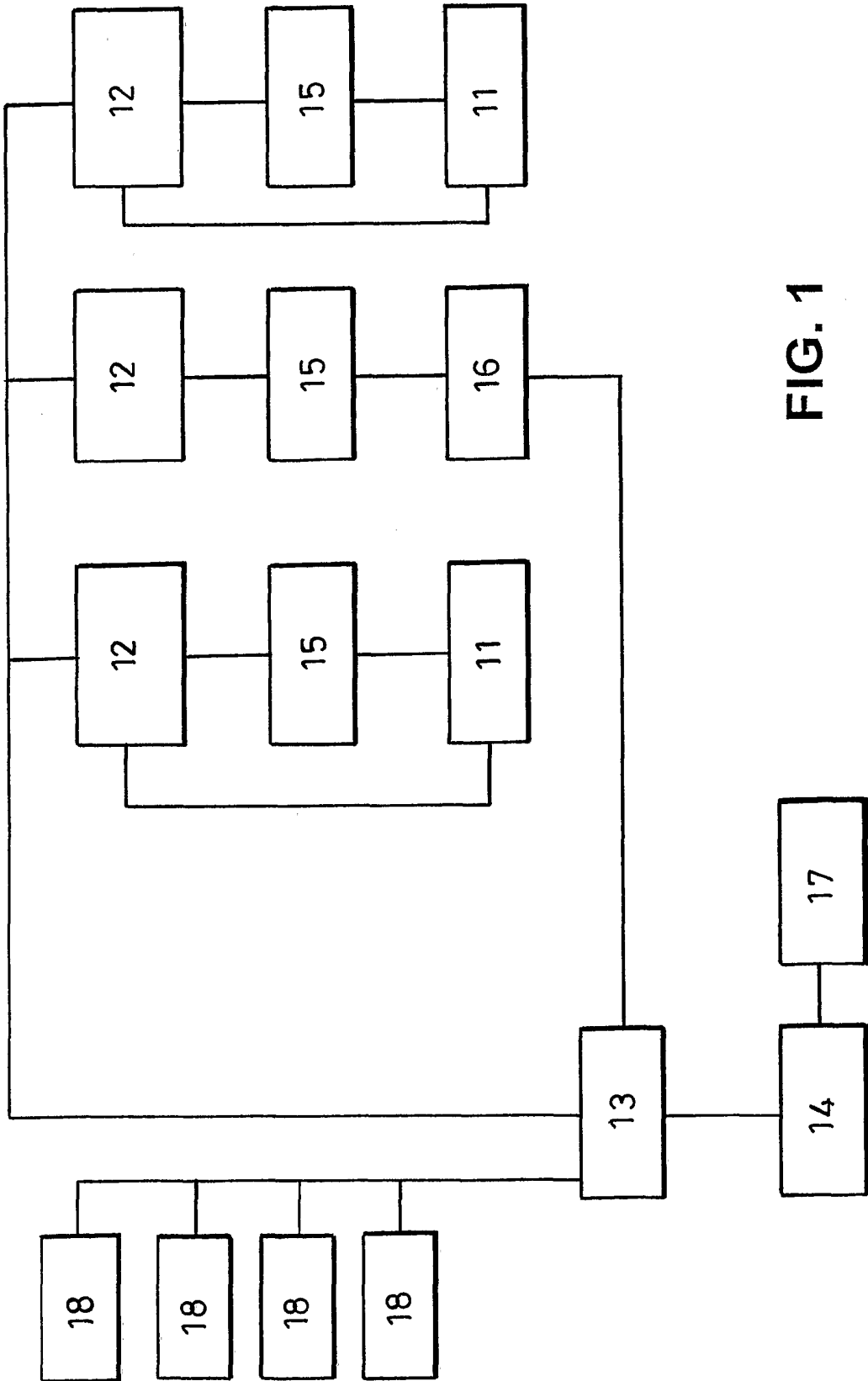


FIG. 1

FIG. 2

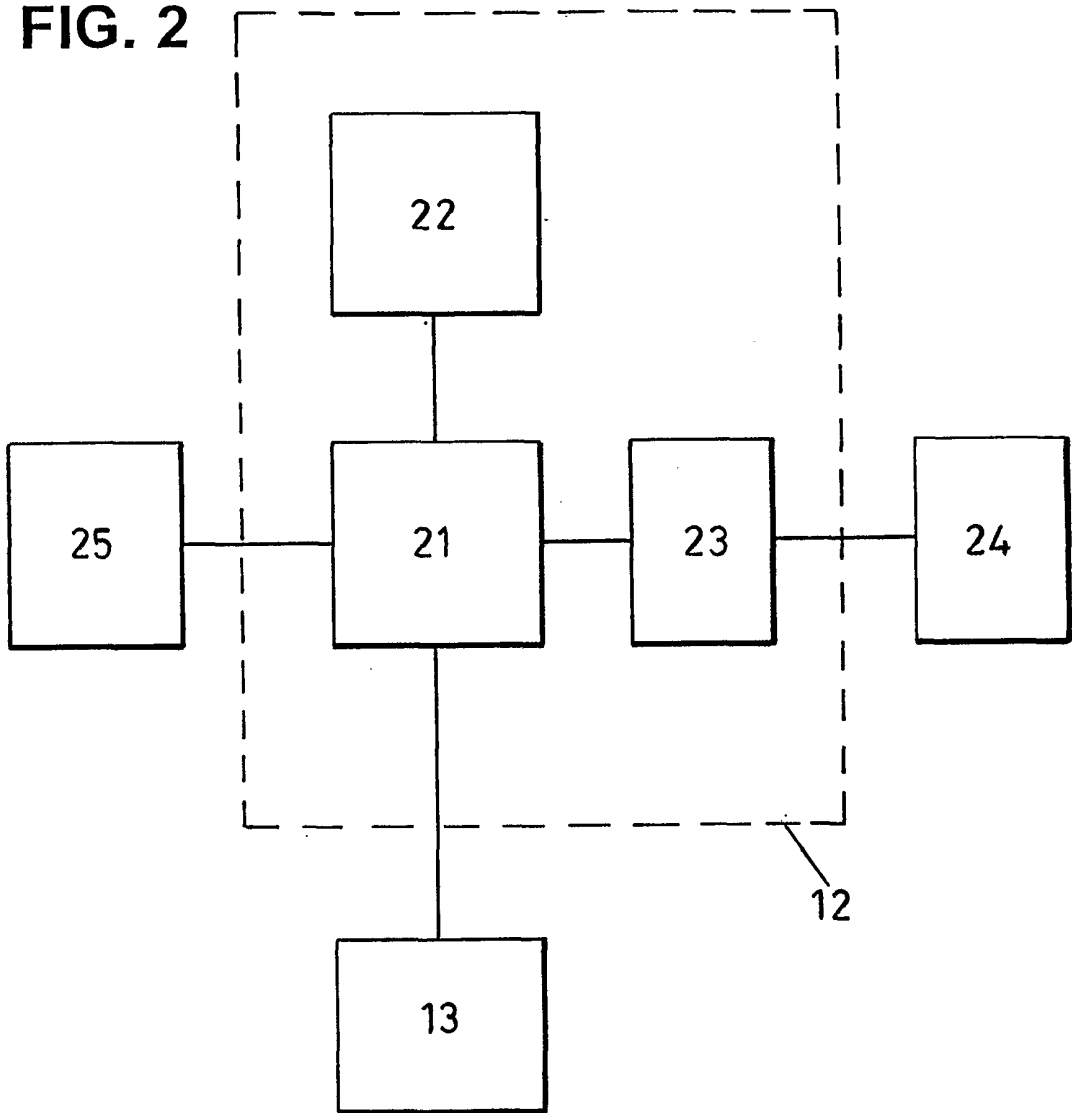
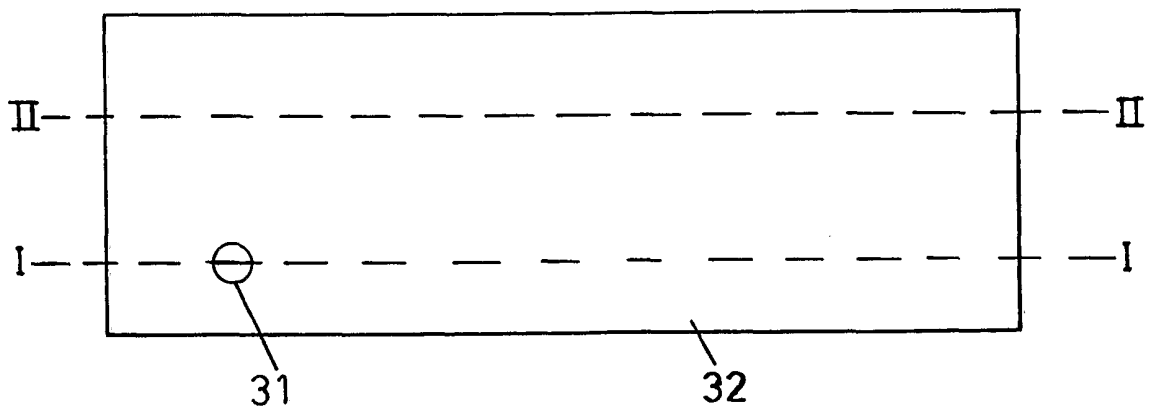


FIG. 3



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FIG. 4

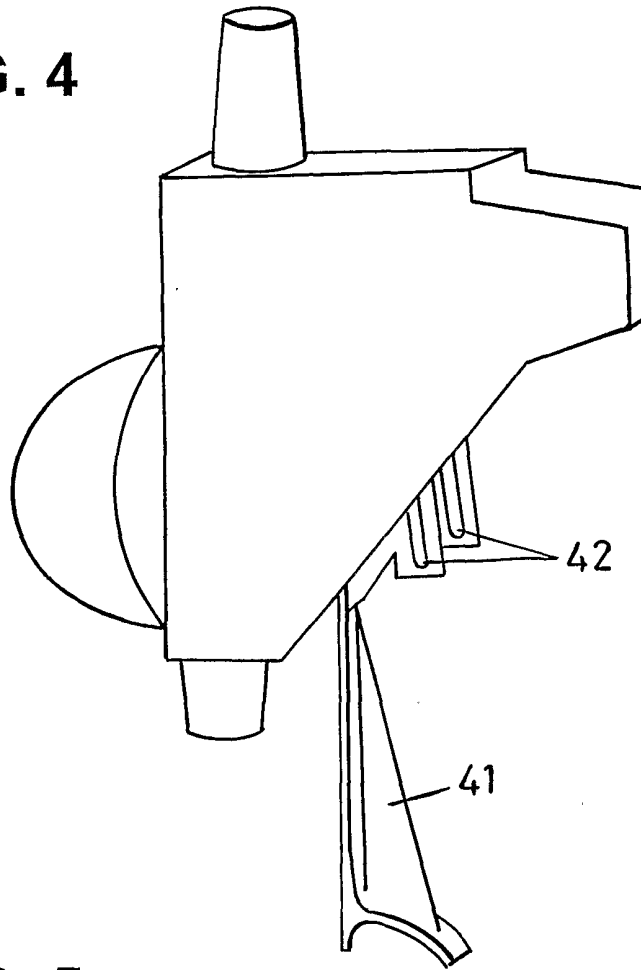
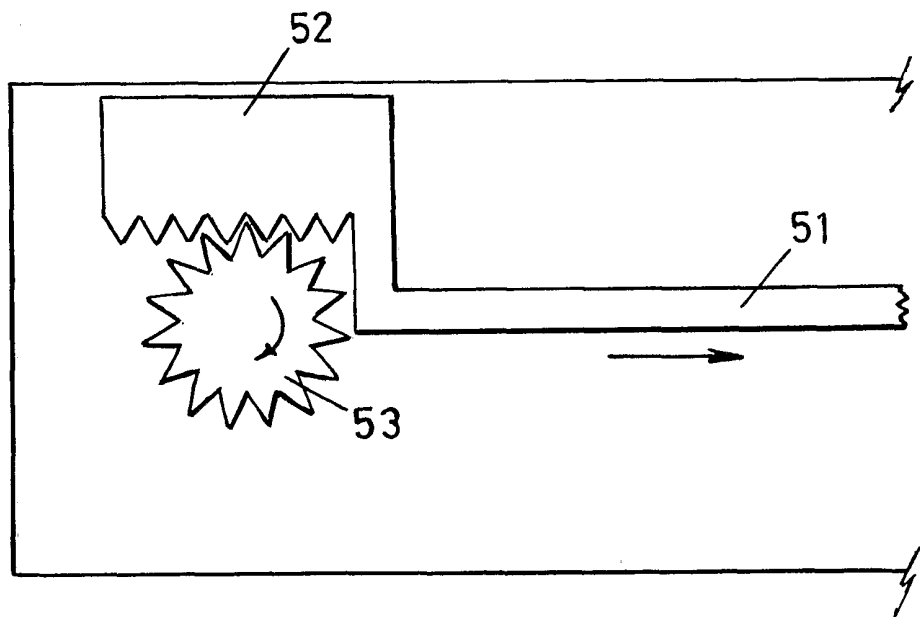


FIG. 5



4/4

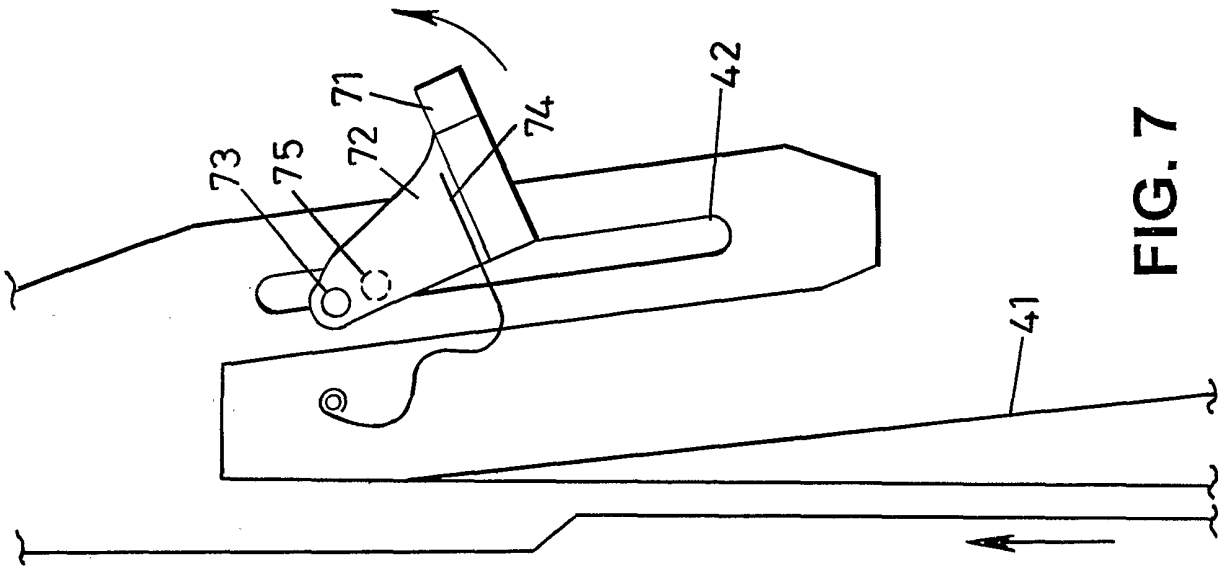


FIG. 7

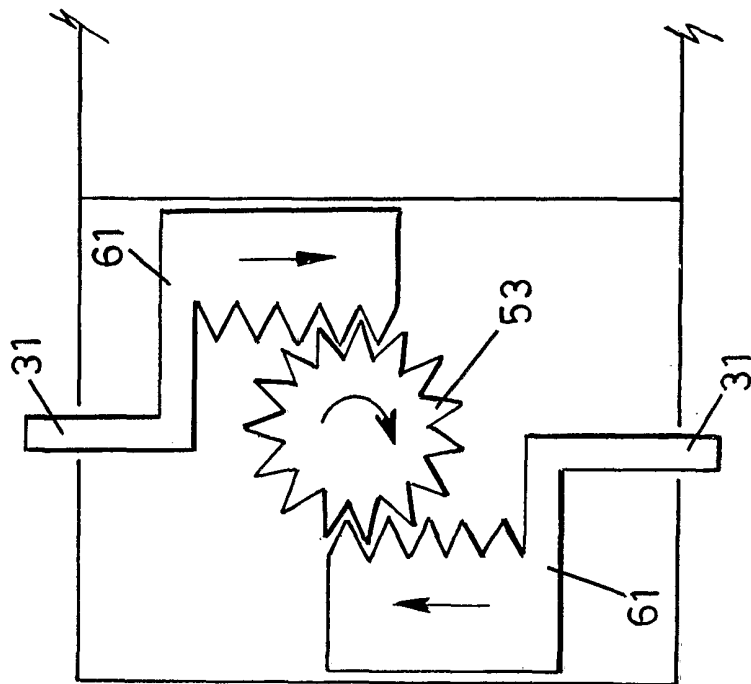


FIG. 6

INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 01/05119

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 B67D1/06

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 B67D E05B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 769 271 A (MILLER HANS-PETER) 23 June 1998 (1998-06-23)	1,3-7,11
Y	column 3, line 33 - column 4, line 33; figure 1 column 4, line 51 - line 54 column 5, line 11 - line 21	2,8-10, 12-14
Y	WO 93 25466 A (AZBAR INC) 23 December 1993 (1993-12-23) cited in the application page 9, line 16 - line 30	2
X	EP 0 340 420 A (HOGATRON AG) 8 November 1989 (1989-11-08)	15-17
Y	column 2, line 1 - line 22; figures 3,4 column 3, line 1 - line 2 column 6, line 3 - line 19	8-10
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 Further documents are listed in the continuation of box C. Patent family members are listed in annex.

° Special categories of cited documents:

A document defining the general state of the art which is not considered to be of particular relevance

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O document referring to an oral disclosure, use, exhibition or other means

P document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

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Date of the actual completion of the international search

6 March 2002

Date of mailing of the international search report

14/03/2002

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Schneider, M

INTERNATIONAL SEARCH REPORT

 International Application No
 PCT/GB 01/05119

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	FR 1 208 974 A (FABRE HENRI) 26 February 1960 (1960-02-26) page 1, paragraph 1 - paragraph 4; figure 1	12-14
X	US 5 913 454 A (MCHALE JAY T) 22 June 1999 (1999-06-22) column 1, line 38 - line 45; figures 1,2,6 column 2, line 29 -column 3, line 26	1-4,6,7, 10
X	WO 97 32284 A (THORP RICHARD SYDNEY) 4 September 1997 (1997-09-04) page 4, line 22 -page 5, line 14; figure 4 page 6, line 25 -page 7, line 4 page 9, line 22 -page 10, line 10	1,3,6,10
X	US 3 863 724 A (DALIA JR NICHOLA) 4 February 1975 (1975-02-04) column 2, line 57 -column 3, line 9; figure 1	15-17

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-12

Apparatus for controlling and monitoring the dispensing of drinks of a plurality of metering dispensers.

2. Claim : 14

Locking device for a fixed volume spirit dispenser.

3. Claims: 15-17

Dispensing cabinet with beverages weighing device.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.2

Claims Nos.: 18

Rule 6.2(a) PCT

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/GB 01/05119

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