(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 2 787 492 A1

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
08.10.2014 Bulletin 2014/41

(51) Int Cl.:
G07F 7/06 *(2006.01)* ***G07F 11/62*** *(2006.01)*

(21) Application number: **14163604.3**

(22) Date of filing: **04.04.2014**

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA ME

(30) Priority: **05.04.2013 IE 20130115**

(71) Applicant: **Rossodonnell Limited**
County Tipperay (IE)

(72) Inventors:
- **O'Donnell, Noel**
  Cahir
  County Tipperary (IE)
- **Rossiter, Richard**
  Cahir
  County Tipperary (IE)

(74) Representative: **MacLachlan & Donaldson**
2b Clonskeagh Square
Clonskeagh Road
Dublin 14 (IE)

(54) Improved storage and dispensing apparatus

(57) A storage and dispensing apparatus (100) includes at least one section (120) for storing and dispensing gas cylinders (A). The section (120) has a number of compartments (122) for storing the gas cylinders. Each compartment (122) has a lockable and releasable door (124) and means for detecting the presence of a gas cylinder in the compartment. The apparatus (100) includes means for releasing the door for an empty compartment for the receipt of an empty gas cylinder which, when detected by the detection means, releases the door of a compartment having a filled gas cylinder.

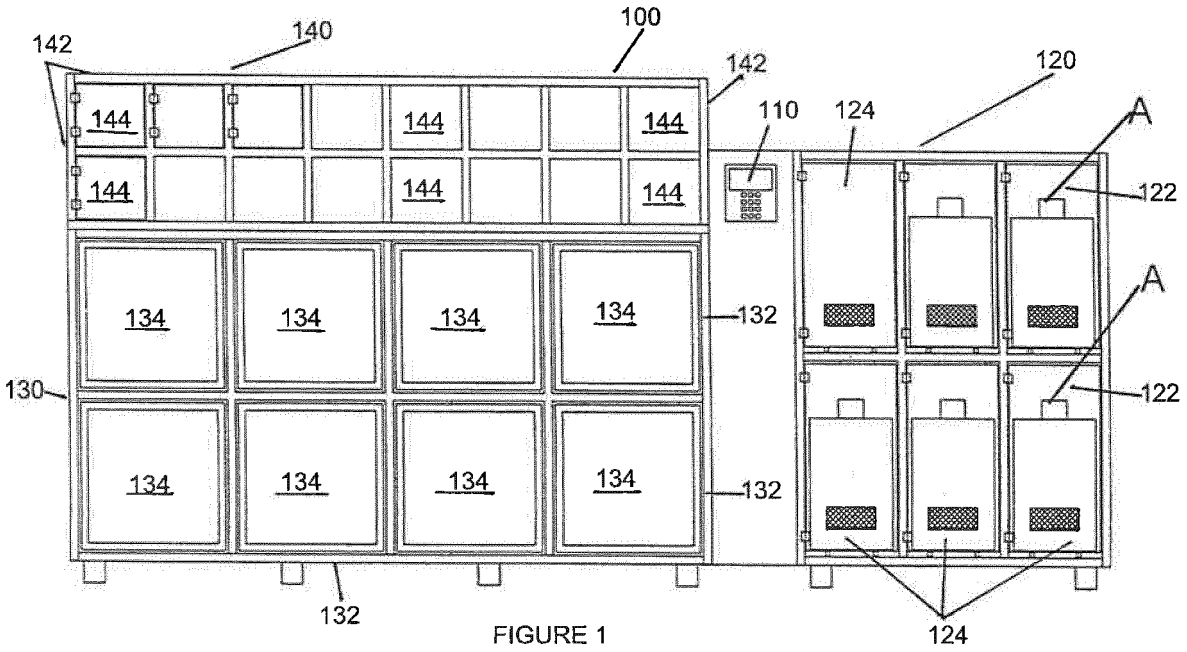

FIGURE 1

EP 2 787 492 A1

Description

[0001] The present invention relates to an improved storage and dispensing apparatus and in particular to an improved storage and dispensing apparatus for use in the retail trade for large bulky items such as propane and butane domestic gas cylinders, bags of coal and other such fuel, bales of peat briquettes, large bags of animal food, vegetables and many other bulky items which may be stored outside of a shop.

[0002] Typically, this type of arrangement of storing and dispensing bulky items occurs with retail premises located on the forecourts of garages and filling stations where the products are stored on the garage or filling station forecourt.

[0003] A particular problem occurs with the storage and sale of domestic gas cylinders, including the storage and retention of empty gas cylinders. Because gas cylinders are large and expensive items, they are generally stored in outdoor cages or chained to one another to prevent their theft. Therefore, when a customer purchases a replacement gas cylinder, a shop assistant must stop dealing with other customers, leave the shop area, collect the empty cylinder from the customer, unsecure the full cylinder and give it to the customer. All of these actions are time consuming while removing the shop assistant from their main area of responsibility within the shop. With other large bagged items, there is also a large risk of theft occurring which can cause a great deal of loss of income to the shop.

[0004] The object of the invention is to provide a storage and dispensing apparatus for bulky items which alleviates the above problems.

[0005] The present invention provides a storage and dispensing apparatus, including at least one section for storage and dispensing gas cylinders, said section having a plurality of compartments for storing individual gas cylinders, each compartment having a lockable and releasable door and means for detecting the presence of a gas cylinder in the compartment, the apparatus including means for releasing the door for an empty compartment for the receipt of an empty cylinder which when detected by the detection means releases the door of a compartment having a filled cylinder.

[0006] Advantageously, the means for releasing the doors of the compartments comprises a code entry means or a payment receiving means such as a credit/debit card reader. Preferably, the apparatus includes a section for storing and dispensing gas cylinders, a section for storing and dispensing large items and a section for storing and dispensing smaller items.

[0007] Ideally, the apparatus includes means for accessing each section, including a controller in conjunction with the code input means which operates the controller to allow access to a compartment in each section.

[0008] Advantageously, the gas cylinder section comprises a plurality of compartments each of which can accommodate a gas cylinder and has a lockable and releasable door, the section for large items has a plurality of compartments each of which has a lockable and releasable door and the section for smaller items has a plurality of compartments each of which has a lockable and releasable door.

[0009] Conveniently, each of the large compartments is provided with a bin into which the large item, such as a bag of coal, is placed, the bin being pivotable forward about a pivot point under the action of a spring, so as to make it easier for a customer to remove the bag of coal or the like from the bin.

[0010] Preferably, the compartments are provided with individual slam latch locks, each of which has a cam lock which is engageable against a striker bolt located on each door, and in which an electric signal to a specific lock releases the associated cam lock through the operation of an electric motor with the lock.

[0011] The apparatus has a power supply means which may include a solar panel.

[0012] Ideally, the code entry means comprises a key pad for inputting a code or a bar code reader for reading the bar code.

[0013] Preferably, the means for detecting the presence of a gas cylinder comprises a pivot switch or lever moveable by the gas cylinder on insertion into the compartment and thereby indicate the presence of a cylinder.

[0014] Alternatively, the means for detecting the presence of a gas cylinder comprises at least two electrical contact rails in the compartment with a cylinder in the compartment making electrical contact between the rails and thereby indicating the presence of a cylinder in said compartment.

[0015] Ideally, the application includes a code issuing terminal apparatus adapted to print or display a unique entry code or bar code for releasing a selected compartment door, a receiving terminal associated with the issuing terminal for reading the unique entry code or bar code, and an electronic point of sale (POS) apparatus linked to the code issuing terminal and the receiving terminal and to control the sale of products from the storage and dispensing apparatus and to record the successful vending of the products.

[0016] Preferably, the application includes means for generating stock control and reports of sales of products contained in the storage and dispensing apparatus.

[0017] Conveniently, the application includes a plurality of transport wheels and means for securely locating the apparatus in a desired location.

[0018] The invention will hereinafter be more particularly described with reference to the accompanying drawings which show, by way of example only, two embodiments of a storage and dispensing apparatus according to the invention arranged in a plurality of configurations. In the drawings:

Figure 1 is a front view of a first embodiment and configuration of the storage and dispensing apparatus according to the invention, with six compartments

for gas cylinders, eight compartments for large bulky items and sixteen compartments for small compact items;

Figures 2 to 4 are a top view and two side view of the configuration shown in Figure 1;

Figures 5, 6 and 7 are elevation, plan and side views of a pivotally mounted bin forming part of each large compartment;

Figure 8 is a series of front views of a slam latch lock used in each compartment of the apparatus;

Figure 9 is a schematic front view of the arrangement shown in Figure 1, which includes a total of thirty compartments;

Figure 10 is a schematic front view of the arrangement shown in Figure 9 showing a total of twenty four compartments to the left of the keypad area;

Figure 11 is a schematic front view of a second arrangement of the first embodiment of the apparatus with a total of sixty compartments;

Figure 12 is a schematic view of a third configuration of the first embodiment with a total of ninety compartments;

Figure 13 is a schematic view of a fourth configuration of the first embodiment of two back to back units providing a total of sixty compartments;

Figure 14 is a schematic view of a fifth configuration of the first embodiment of two separate units arranged around a shop entrance with a total of one hundred and twenty compartments;

Figures 15 to 23 are a series of views of modules of a second embodiment of a storage and dispensing apparatus according to the invention with Figure 15 being a front view of a first module with seven compartments for small compact items and one compartment housing a control unit and six compartments for large bulky items;

Figure 16 is a side view of the first module;

Figure 17 is a perspective view of the first module;

Figure 18 is a front view of a second module of the second embodiment having eight small compartments and six large compartments;

Figure 19 is a side view of the second module;

Figure 20 is a perspective view of the second module;

Figure 21 is a front view of a third module of the second embodiment having six compartments for gas cylinders;

Figure 22 is a side view of the third module; and

Figure 23 is a perspective view of the third module.

[0019] Referring to the drawings and initially to Figures 1 to 10, the first configuration 100 of the embodiment of a storage and dispensing apparatus comprises a section 120 for storing and dispensing domestic gas cylinders A, a section 130 for storing and dispensing large items and a section 140 for storing and dispensing smaller items.

[0020] The access to each section is controlled by a code input key pad 110 which operates a controller (not shown) to allow access to a compartment in each section.

[0021] The gas cylinder section 120 comprises six compartments 122 each of which can accommodate a domestic size gas cylinder A and is closed by a lockable and releasable door 124. The section 130 for large items has eight compartments 132 each of which is closed by a lockable and releasable door 134 and the section 140 for smaller items has sixteen compartments 142 each of which is closed by a lockable and releasable door 144.

[0022] Each of the large compartments 132 is provided with a bin 136 into which the large item, such as a bag of coal, is placed. When the door 134 of a compartment 132 is opened the bin 136 pivots forward about the pivot point 137 under the action of a spring, so as to make it easier for a customer to remove the bag of coal or the like from the bin 136.

[0023] Each of the smaller compartments 142 is suitable in size to accommodate an item, such as a bale of peat briquettes or a bag of kindling.

[0024] All of the compartments 122, 132 and 142 are provided with individual slam latch locks 150 of each of which has a cam lock 151 which engages against a striker bolt 152 located on each door, 124, 134 and 144. An electric signal to a lock 150 releases the cam lock 151 through the operation of an electric motor with the lock 150.

[0025] In order to operate the apparatus, a customer goes into a shop and pays for an item such as a gas cylinder refill, a bag of coal or a bale of peat briquettes. The shop assistant then prints off and gives to the customer a slip of paper with a specific code number on the slip. The customer then takes the slip and inputs the code number into the code input key pad 110.

[0026] If the purchase is a gas refill cylinder, then the controller opens a door 124 of an empty compartment 122 so that the customer can insert an empty cylinder into the compartment 122 until it contacts a pivot switch or lever and pushes it forward to make a contact thus indicating that the compartment is no longer empty. The customer then closes the door 124 and a second door

124 of a different compartment 122 opens to allow the customer to remove a full cylinder.

[0027] If the purchase is a bag of coal, the customer inputs the given code into the key pad 100 and the controller opens a door 134 of a full compartment 132 so that the customer can withdraw the bag of coal or whatever item is in the bin 136 of the compartment. Likewise, if the purchase is a bale of briquettes or a smaller item, the customer inputs the given code into the key pad 110 and the controller opens a door 144 of a full compartment 142 so that the customer can withdraw the item from the compartment.

[0028] When it is desired to restock the apparatus, the shop assistant or operator inserts a restocking code into the key pad 110. The controller then opens all the doors of the sections being restocked in a sequential manner, thus reducing the power required to open all doors.

[0029] Figures 11 to 14 show four additional configurations 200, 300, 400 and 500 having different numbers of gas cylinder compartments 122, large item compartments 132 and smaller item compartments 142.

[0030] Referring to Figures 15 to 23, the second embodiment 600 of a storage and dispensing apparatus comprises a module 620 for storing and dispensing domestic size gas cylinders, and a module 630 having a section 631 for storing and dispensing large items and a section 633 for storing and dispensing smaller items.

[0031] The access to each section is controlled by a control unit 610 which operates a controller (not shown) to allow access to a compartment in each section or module.

[0032] The gas cylinder section or module 620 comprises six compartments 622 each of which can accommodate a domestic size gas cylinder and is closed by a lockable and releasable door 624. The section 630 for large items has eight compartments 632 each of which is closed by a lockable and releasable door 634 and the section 640 for smaller items has seven or eight compartments 642 each of which is closed by a lockable and releasable door 644.

[0033] Each of the large compartments 632 is suitable to accommodate a large item, such as a bag of coal and each of the smaller compartments 642 is suitable in size to accommodate a smaller item, such as a bale of peat briquettes or a bag of kindling.

[0034] All of the compartments 622, 632 and 642 are provided with individual slam latch locks 50 of each of which has a cam lock 151 (as in the first embodiment) which engages against a striker bolt 152 located on each door, 624, 634 and 644. An electric signal to a lock 150 releases the cam lock 151 through the operation of an electric motor with the lock 150.

[0035] In order to operate the apparatus, a customer goes into a shop and pays for an item such as a gas cylinder refill, a bag of coal or a bale of peat briquettes. The shop assistant then prints off and gives to the customer a slip of paper with a specific bar code on the slip. The customer then takes the slip and scans the bar code into the control unit pad 610.

[0036] If the purchase is a gas refill cylinder, then the controller opens a door 624 of an empty compartment 622 so that the customer can insert an empty cylinder into the compartment 622 until it contacts a pair of electrical contact rails in the compartment with the cylinder making the electrical contact between the rails to make a contact thus indicating that the compartment is no longer empty. The customer then closes the door 624 and a second door 624 of a different compartment 622 opens to allow the customer to remove a full cylinder.

[0037] If the purchase is a bag of coal, the customer scans the bar code into the control pad 100 and the controller opens a door 634 of a full compartment 632 so that the customer can withdraw the bag of coal or whatever item is in the compartment. Likewise, if the purchase is a bale of briquettes or a smaller item, the customer scans the given bar code into the controller 610 and the controller opens a door 644 of a full compartment 642 so that the customer can withdraw the item from the compartment.

[0038] When it is desired to restock the apparatus, the shop assistant or operator inserts a restocking code into the controller 610. The controller then opens all the doors of the sections being restocked in a sequential manner, thus reducing the power required to open all doors.

[0039] The fuel locker dispensing system consists of a WF-1000 issuing terminal, which produces a unique encrypted coded number in numerical and barcode format, either to be read off screen or printed on a receipt via a compatible RS232 printer. This code can then be inputted either via a keypad or through a bar code scanner, into a paired WF-1000 receiver terminal. When it is decrypted and once criteria are met, it will control an output in order to allow a predetermined action to take place. The code is time sensitive, date sensitive, site sensitive and product sensitive. The code may be either a single use or multi use within the time period. Once inputted and a valid transaction has taken place, the code will then become void.

[0040] The receiving terminal is attached to the fuel locker system. This can receive codes issued by the issuing terminal by either manual input through the keypad or via a bar code scanner. The inputted code is decrypted and its validity is confirmed. Once valid the required locker door is opened. The user is stepped through the procedure on the alphanumeric display. Should the transaction be successful, the code will be invalidated and the system will be ready for next code. Should there be a problem with the transaction, the unit will proceed to the next available locker until a valid vend is made. Should the unit be empty of that product the transaction will be cancelled and the code will be kept valid for use again.

[0041] The apparatus has the following elements:

1) Ticket Issuing Terminal (at POS)

[0042]

o Produces encrypted barcodes for up to 7 product types (2 Product Types are reserved for gas cylinder and gas cylinder return)
o Thermal ticket paper requiring no ink or ribbons

■ Stand alone independent printer module
■ Readily available printer paper rolls (standard 58mm roll)

o Fast ticket print

■ Prints ticket within 1 second

■ Prints a unique 8 digit code along with barcode

o Full audit printout

■ Outputs individual product sales
■ Outputs total sales
■ User resettable figures and accumulating (non resettable)figures

o Integrated keypad
o Integrated buzzer for audible feedback
o Completely stand alone operation

■ No wiring or RF communications required with the receiving terminal

o Integrated 2 line x 20 character display
o Client logo incorporated
o Incorporating time/date and expiry time

■ User adjustable expiry time on ticket from 1 hour to 1 month

o Compatible with existing POS *

■ Capable of printing a unique barcode per product to allow user to Scan into their existing POS system

o Low voltage operation maximum of 24VDC
o Power consumption TBD

(2) Ticket Receiving Terminal (at Locker System)

[0043]

○ 2 line x 20 character alphanumeric display
o White character on blue background character height : 5.8mm
o Viewable area 16mm x 100mm
o Barcode reader image capture

■ Non laser operation
■ Capable of reading barcodes of smart phones
■ Internal LEDS allow use in low light conditions
o Up to 7 product types analysed
o Integrated buzzer for audible feedback
o Panel mounted front plate
o No wires or RF comms required with issuing terminal

• Expansion board (at locker system)

[0044]

o Allows receiving terminal to drive (up to) 16 outputs per expansion board
o Maximum of 3 expansion boards per system, therefore maximum of 48 outputs
o Gas cylinder module will require its own expansion board due to returns option. Note that each gas cylinder enclosure will utilise 2 outputs of the expansion board. Therefore a maximum of 8 gas cylinders lockers can be incorporated.
o Low voltage operation of 12VDC

• Microprocessor controlled VMC

[0045]

o Flash based 8 bit technology
o Allows for upgrading of devices in the field
o Modular design
o Fuse protected

• Low voltage operation (conforms to SELV regulations) low power

[0046] For solar panel operation, the unit will go to 'sleep' when not in use, thereby using the minimum of power (circa 10mA = 0.12W). Wakeup will be on valid key press or scan barcode. A 30W solar panel will be used in conjunction with a backup battery and voltage regulator that will allow ample capacity for the unit to operate during daytime and nighttime conditions.

• * Optional add-ons

[0047]

o Option to attain remote access to sales via SMS or a web based application. Compatible with most remote access systems subject to software upgrade.
o Option to pay by text
o Compatible with POS systems through direct barcode or via serial link
o Option to issue tickets through a coin operated self service kiosk
o Optional solar panel system making the system completely standalone and wirefree
o Inclusion of a 30W solar panel with rechargeable battery. Once user approaches the locker, the unit will 'wakeup', perform the transaction and go to

'sleep' again

[0048] The apparatus is operational in accordance with the following steps:

Step 1: Shop assistant selects required product type (#1-7), where 6 is reserved for gas cylinder and 7 is reserved for gas cylinder with return.

Step 2: Ticket is printed with barcode and expiry time. The ticket is valid for a single locker only and not multiple.

Step 3: Customer presents barcode to barcode reader at receiving terminal

Step 4: Receiving terminal will open the next available locker for that product type. The locker will be opened in sequential manner ensuring stock rotation.

Step 5: Should locker not open, the unit will bypass that locker and proceed to next.

Step 6: If there are no available lockers the transaction will be cancelled and the customer will be requested to return to point of purchase.

Step 7: Transaction completed

In the case of Gas Cylinder with Return,

[0049]

Step 1: Shop assistant selects required product type (#7), where 6 is reserved for gas cylinder and 7 is reserved for gas cylinder with return.

Step 2: Ticket is printed with barcode and expiry time. The ticket is valid for a single locker only and not multiple.

Step 3: Customer presents barcode to barcode reader at receiving terminal.

Step 4: Receiving terminal will open the next available empty locker for that product type. The user is requested to insert the empty cylinder into the compartment. The customer will be given 3 attempts to do this before the transaction is cancelled. The ticket needs to be scanned again. Once a cylinder has been detected as entered, the module will open the next available full cylinder locker. The locker will be opened in sequential manner ensuring stock rotation.

Step 5: Should locker not open, the unit will bypass that locker and proceed to next.

Step 6: If there are no available lockers the transaction will be cancelled and the customer will be requested to return to point of purchase.

Step 7: Transaction completed.

[0050] The apparatus is provided with a service mode.

[0051] Within service mode, the user can re-configure the terminal via the 4x3 keypad arrangements. Within service mode the user can view/modify the following. Service mode is accessible by entering a unique password or by pressing the red service button located on the main circuit board.

[0052] There are 3 service modes which are accessible to the user with each mode been accessed using its own unique password.

(i) 'Operator mode' allows the user to print audit readings, clear readings and to add additional credits.

(ii) 'Engineer mode' allows all the features of the 'operator mode' plus additional features like time/date settings, setting up expiry times, product types and code modes.

(iii) 'Control mode' allows all the features of 'operator mode' and 'engineer mode' plus the additional features of configuring the terminal. This mode of operation is strictly reserved for use by the terminal provider only.

Accessing Service Mode (Issuing Terminal)

[0053] Service mode is accessed by entering a password or by pressing the red service button (on the main circuit board)

(I). Press and hold the '*' button on the keypad until the display requests the password (after 3 seconds)
(ii). Enter the appropriate password as give by your terminal provider.
(iii). incorrect password entry will automatically revert the unit back to standby mode
(iv). A correct password entry will allow the user to access to the service mode (v). Depending on the password entered, the level of features available to the user will be displayed

Notes:

[0054] (I). Pressing the red button on the circuit board will bypass the password feature and will allow the user access to 'operator mode' level of service mode.

[0055] Note that not all options will be available to the user depending on the terminal purchased. Additional options can be made available by contacting the terminal provider.

Operator Mode

[0056] Within 'Operator Mode' the user will be allowed to print off audit results, clear audit results, set up prices*, and request credit codes*. Once within service mode, button 1 is used to scroll through the various options, button 7 is used to enter the displayed option and * is used to exit service mode. The unit will also time-out of service mode after a preset time of inactivity is expired.

[0057] Options within 'Operator Mode'

(I). Audit report print out
(ii). Clearing audit totals
(iii). Request credit codes

* may not be available to all users.

Audit Report Print Out

[0058] This allows the user to print out a report detailing the number of transactions per product type that have taken place.

Procedure

[0059]

(I). Enter service mode via password or red button press
(ii) Press button 1 to scroll to 'print audit report'
(iii). Press button 7 to select.
(iv). A report will now be printed
(v). Press * to exit service mode or '1' to access further options.

Clearing the Sales Figures

[0060] This allows the user to clear the audit totals.

Procedure

[0061]

(I). Enter service mode via password or red button press
(ii) Press button 1 to scroll to 'clearing audit totals'
(iii). Press button 7 to select.
(iv). Unit will now clear all the audit readings to zero with the exception of the accumulated totals which cannot be reset.
(v). Press * to exit service mode of '1' to access further options.

[0062] Although not shown in the drawings, the sections or modules of the application may be provided with transport wheels to enable the apparatus to be moved from one location to another and means to secure the apparatus in the desired location.

[0063] It is to be understood that the invention is not limited to the specific details described herein which are given by way of example only and that various modifications and alterations are possible without departing from the scope of the invention as defined in the appended claims.

Claims

1. A storage and dispensing apparatus, including at least one section for storage and dispensing gas cylinders, said section having a plurality of compartments for storing individual gas cylinders, each compartment having a lockable and releasable door and means for detecting the presence of a gas cylinder in the compartment, the apparatus including means for releasing the door for an empty compartment for the receipt of an empty cylinder which when detected by the detection means releases the door of a compartment having a filled cylinder.

2. A storage and dispensing apparatus as claimed in Claim 1, in which the means for releasing the doors of the compartments comprises a code entry means or a payment receiving means such as a credit/debit card reader.

3. A storage and dispensing apparatus as claimed in Claim 1 or Claim 2, including a section (120) for storing and dispensing gas cylinders (A), a section (130) for storing and dispensing large items and a section (140) for storing and dispensing smaller items.

4. A storage and dispensing apparatus according to Claim 2, including means for accessing each section, including a controller in conjunction with the code entry means (110) which operates the controller to allow access to a compartment in each section.

5. A storage and dispensing apparatus according to any one of the preceding claims, in which the gas cylinder section (120) comprises a plurality of compartments (122) each of which can accommodate a gas cylinder (A) and has a lockable and releasable door (124), the section (130) for large items has a plurality of compartments (132) each of which has a lockable and releasable door (134) and the section (140) for smaller items has a plurality of compartments (142) each of which has a lockable and releasable door (144).

6. A storage and dispensing apparatus according to any one of the preceding claims, in which each of the large compartments (132) is provided with a bin (136) into which the large item, such as a bag of coal, is placed, the bin (136) being pivotable forward about a pivot point (137) under the action of a spring, so

as to make it easier for a customer to remove the bag of coal or the like from the bin (136).

7. A storage and dispensing apparatus according to any one of the preceding claims, in which the compartments (122), (132), (142) are provided with individual slam latch locks (150) of each of which has a cam lock (151) which is engageable against a striker bolt (152) located on each door, (124), (134) and (144) and in which an electric signal to a specific lock (150) releases the associated cam lock (151) through the operation of an electric motor with the lock (150).

8. A storage and dispensing apparatus according to any one of the preceding claims, including a power supply means.

9. A storage and dispensing apparatus according to Claim 8, in which the power supply means includes a solar panel.

10. A storage and dispensing apparatus according to Claim 2, in which the code entry means comprises a key pad for inputting a code or a bar code reader for reading the bar code.

11. A storage and dispensing apparatus according to any one of the preceding claims, in which the means for detecting the presence of a gas cylinder comprises a pivot switch or lever moveable by the gas cylinder on insertion into the compartment and thereby indicate the presence of a cylinder.

12. A storage and dispensing apparatus as claimed in any one of Claims 1 to 10, in which the means for detecting the presence of a gas cylinder comprises at least two electrical contact rails in the compartment with a cylinder in the compartment making electrical contact between the contact rails and thereby indicating the presence of a cylinder in said compartment.

13. A storage and dispensing apparatus as claimed in any of the preceding claims, including a code issuing terminal apparatus adapted to print or display a unique entry code or bar code for releasing a selected compartment door, a receiving terminal associated with the issuing terminal for reading the unique entry code or bar code, and an electronic point of sale (POS) apparatus linked to the code issuing terminal and the receiving terminal and to control the sale of products from the storage and dispensing apparatus and to record the successful vending of the products.

14. A storage and dispensing apparatus as claimed in Claim 13, including means for generating stock control and reports of sales of products contained in the storage and dispensing apparatus.

15. A storage and dispensing apparatus as claimed in any one of the preceding claims, including a plurality of transport wheels and means for securely locating the apparatus in a desired location.

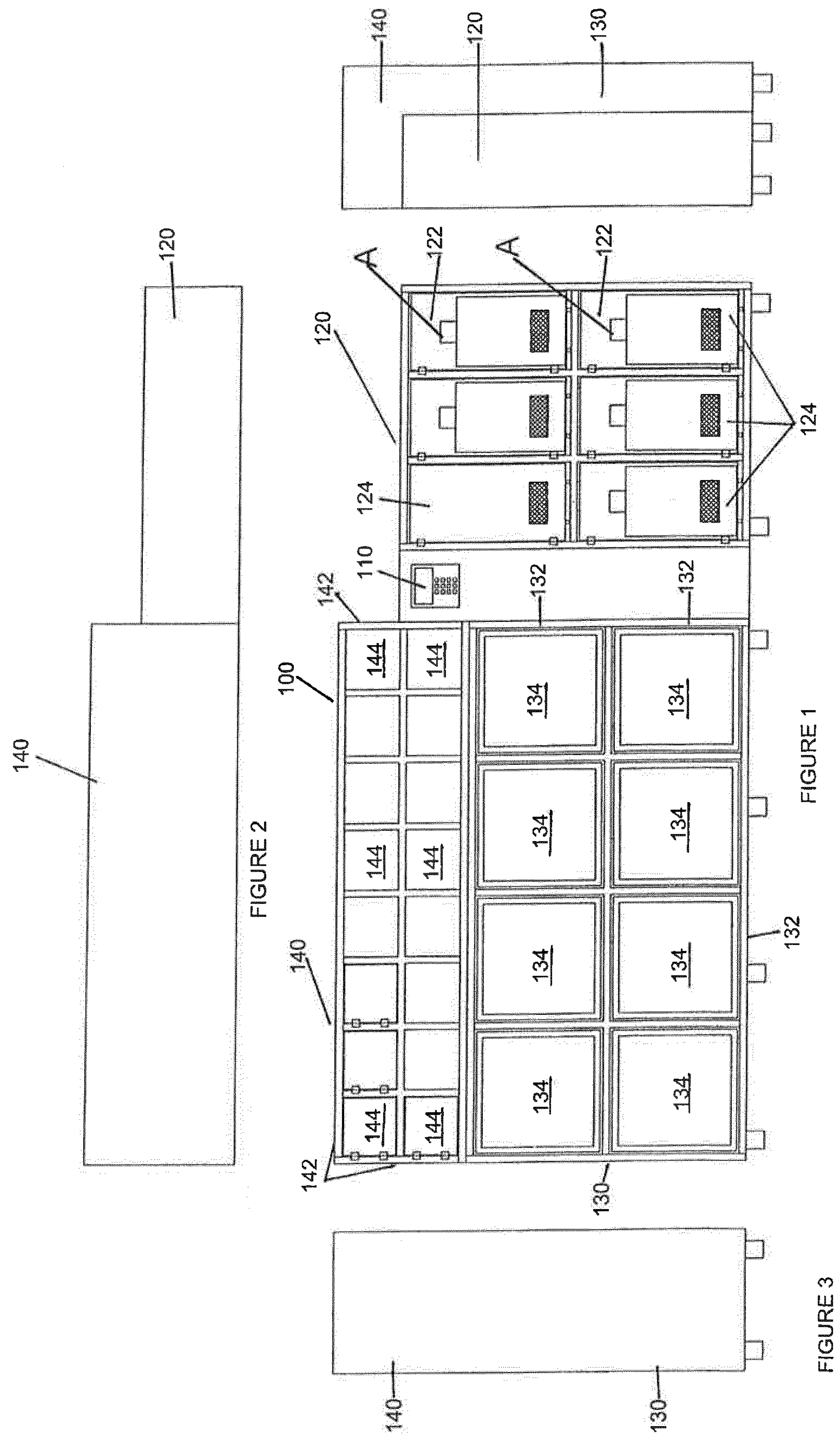

FIGURE 1

FIGURE 2

FIGURE 3

FIGURE 4

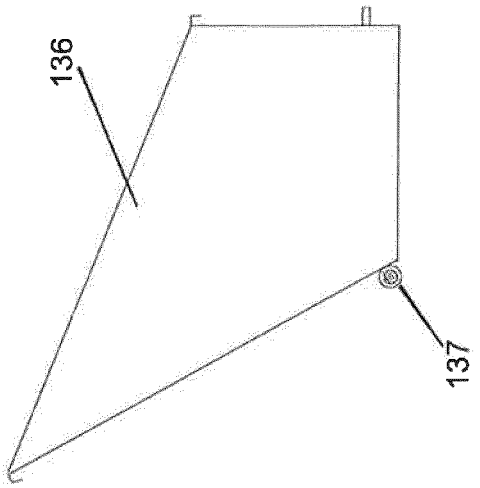

FIGURE 7

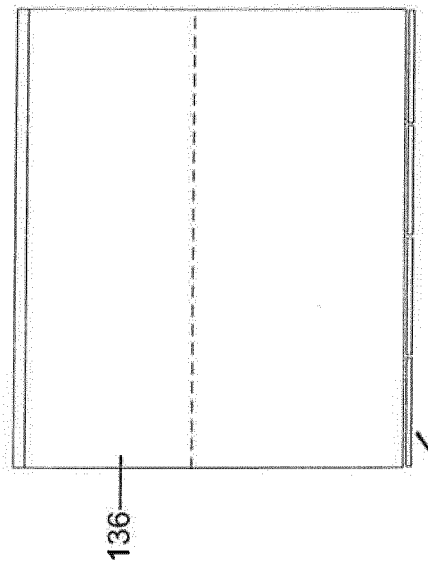

FIGURE 5

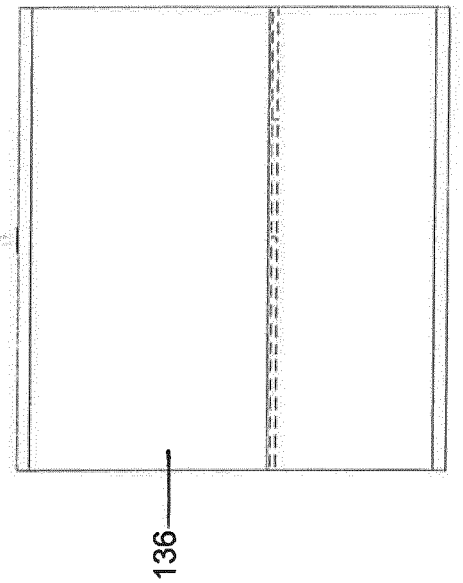

FIGURE 6

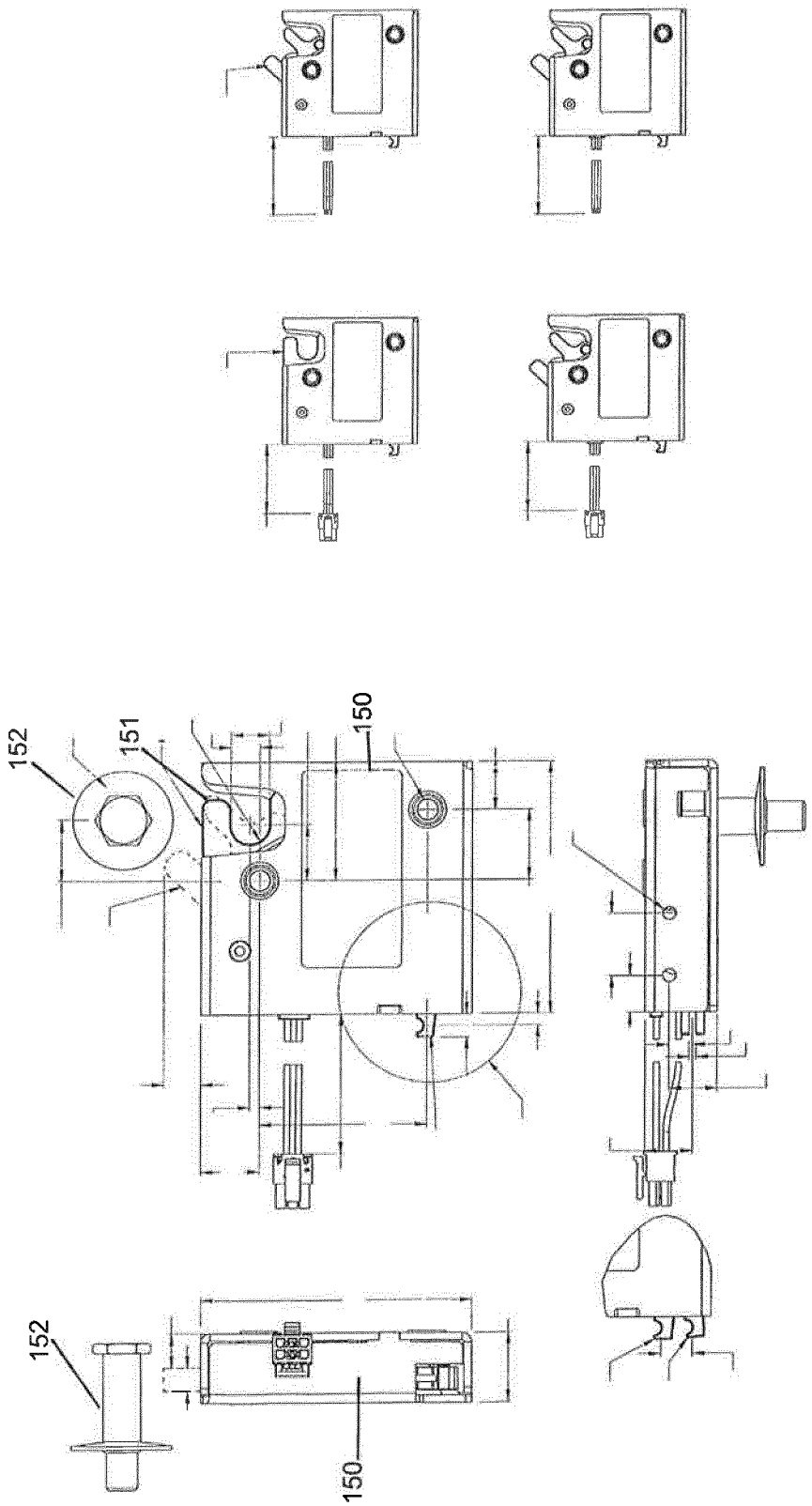

FIGURE 8

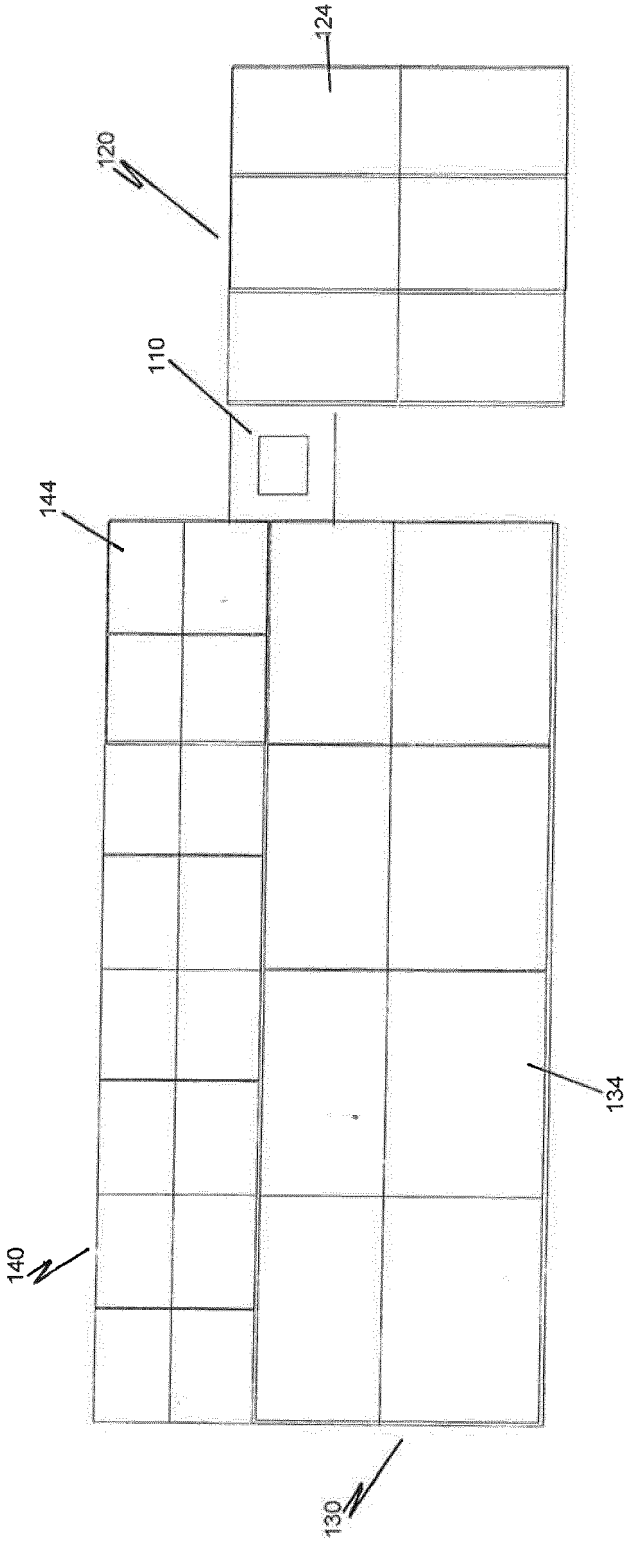

FIGURE 9

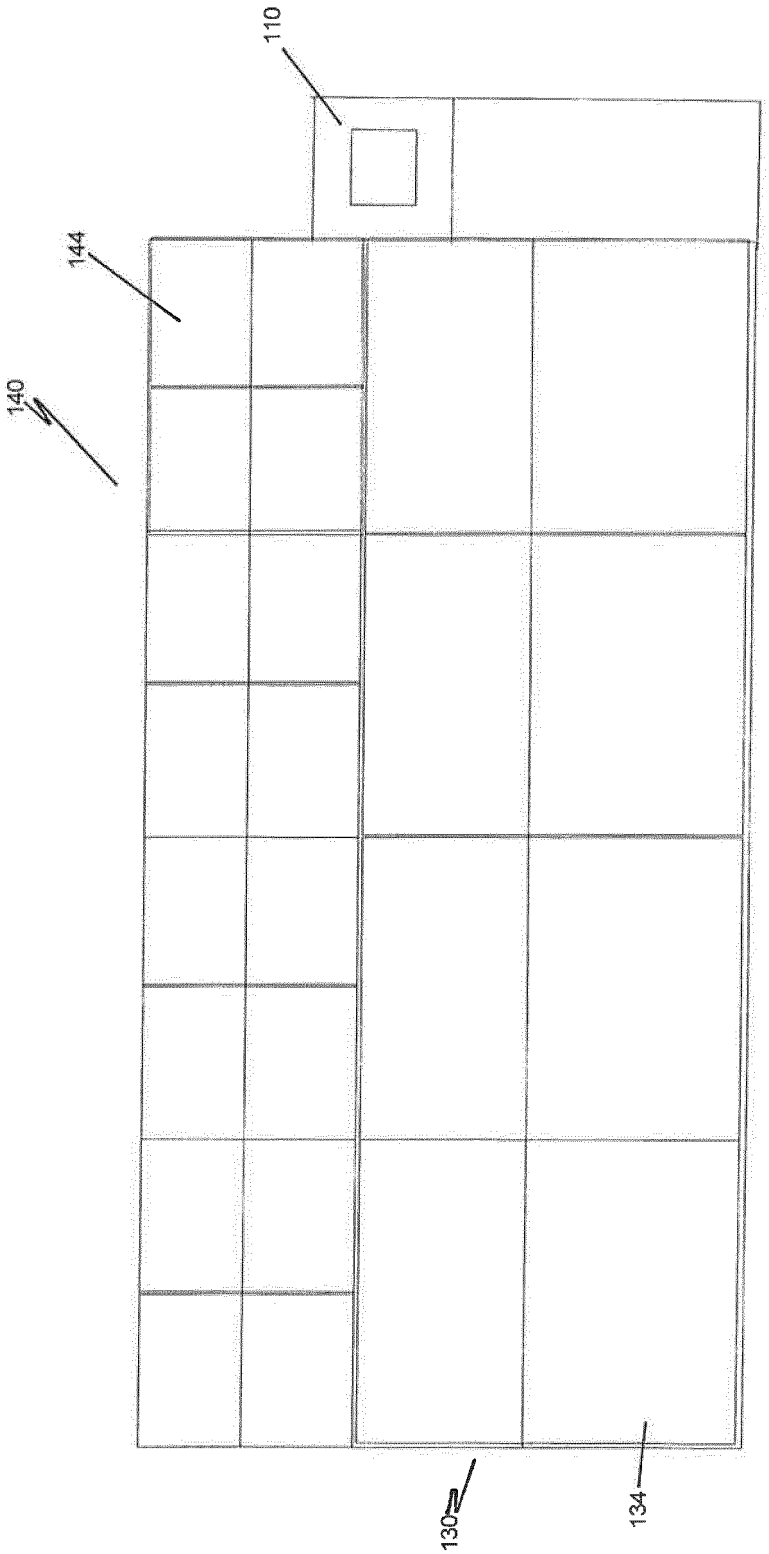

FIGURE 10

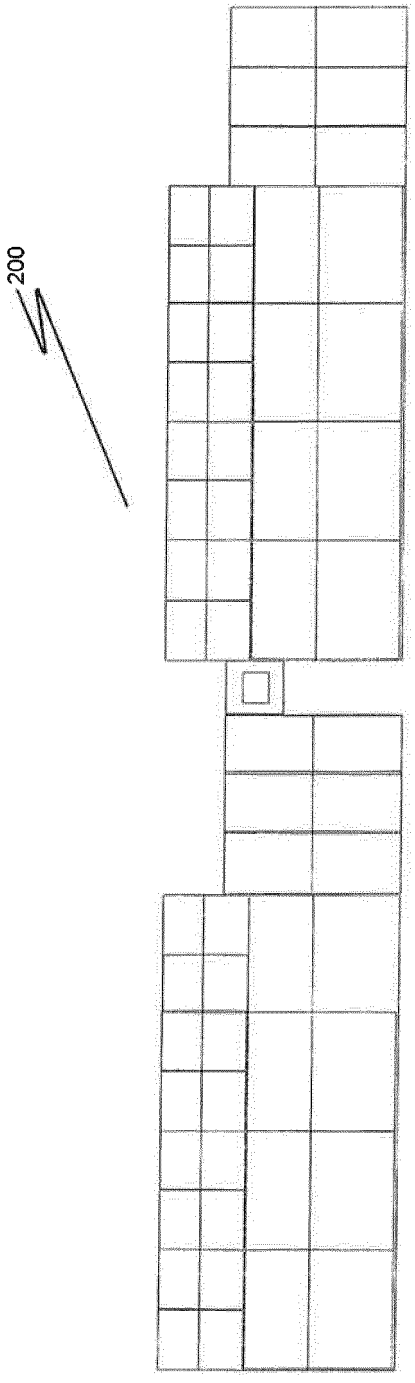

FIGURE 11

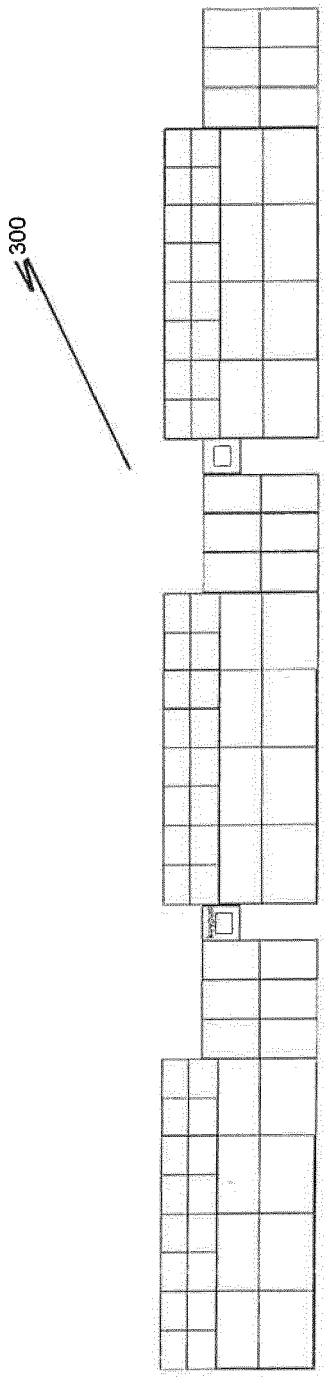

FIGURE 12

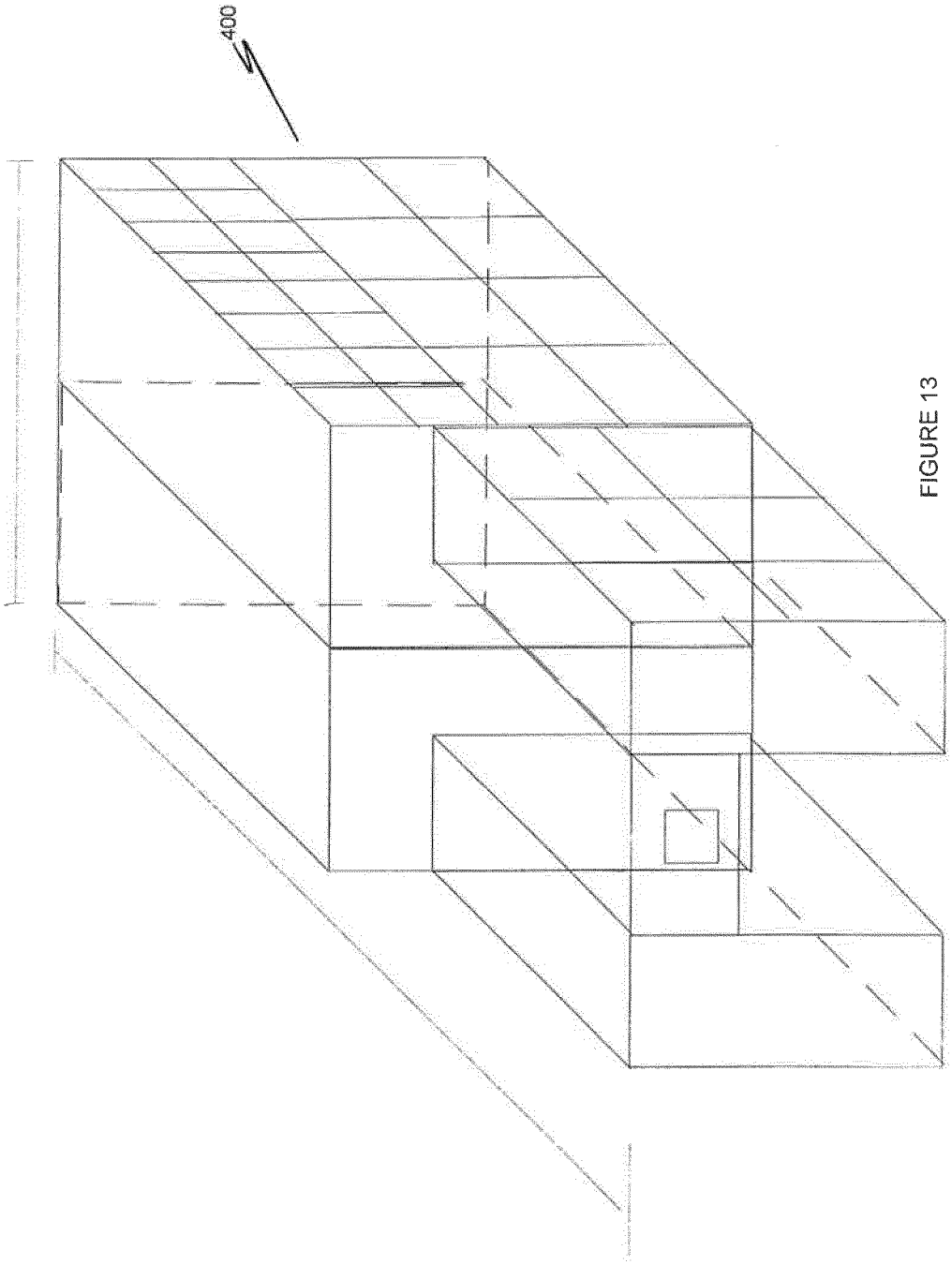

FIGURE 13

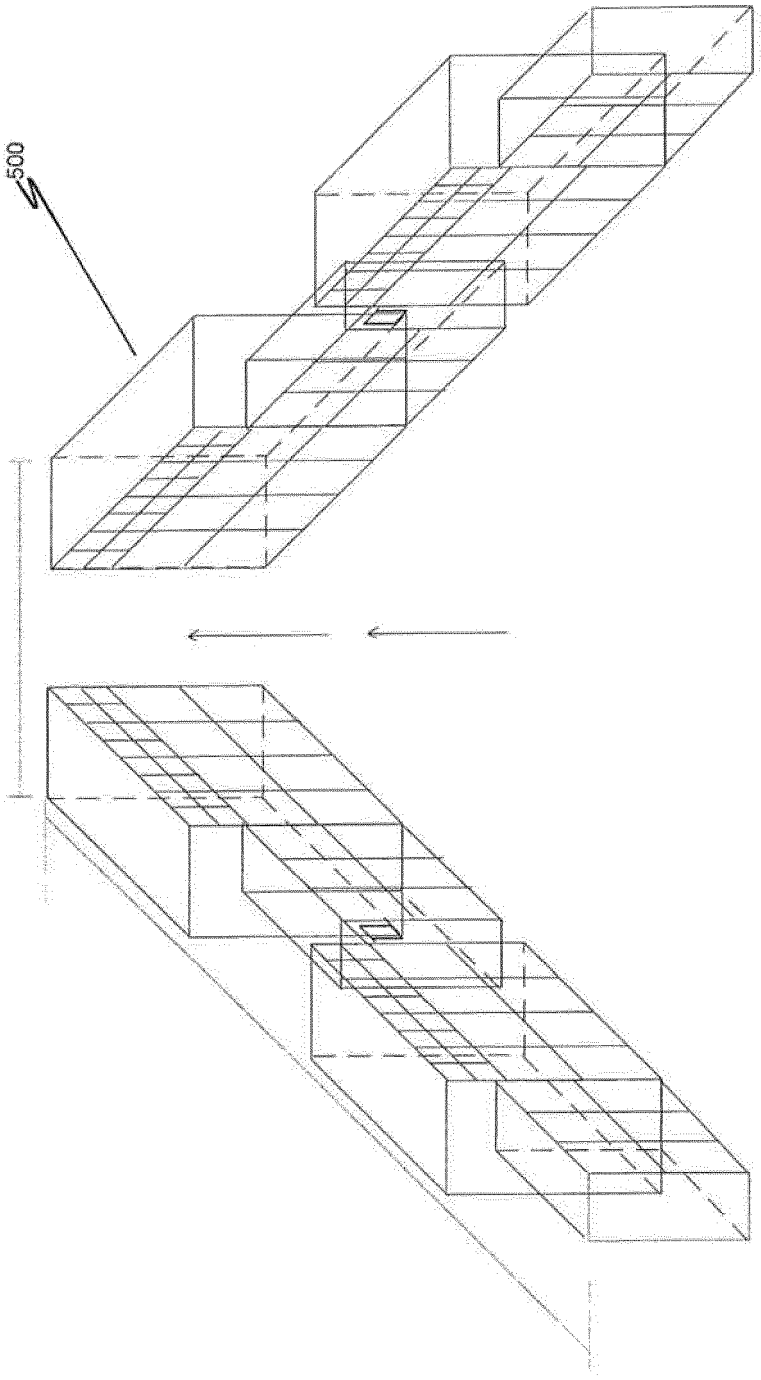

FIGURE 14

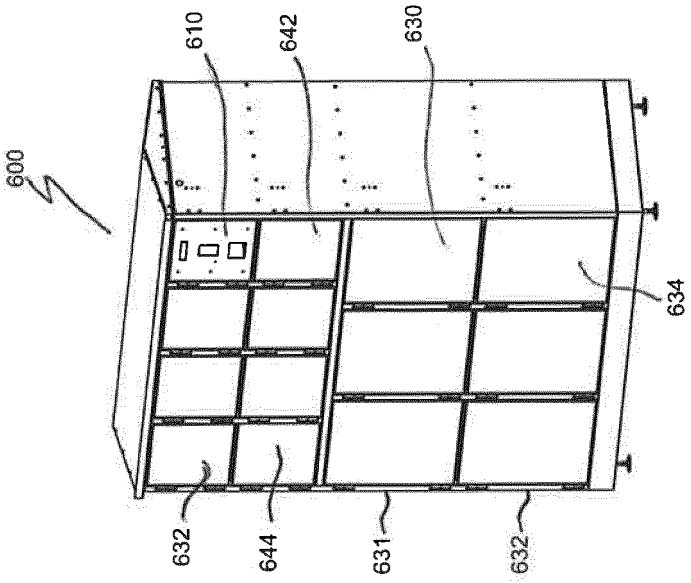

Figure 17

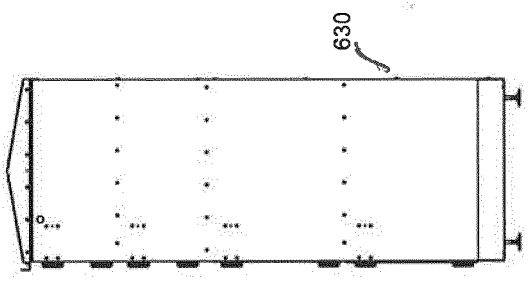

Figure 16

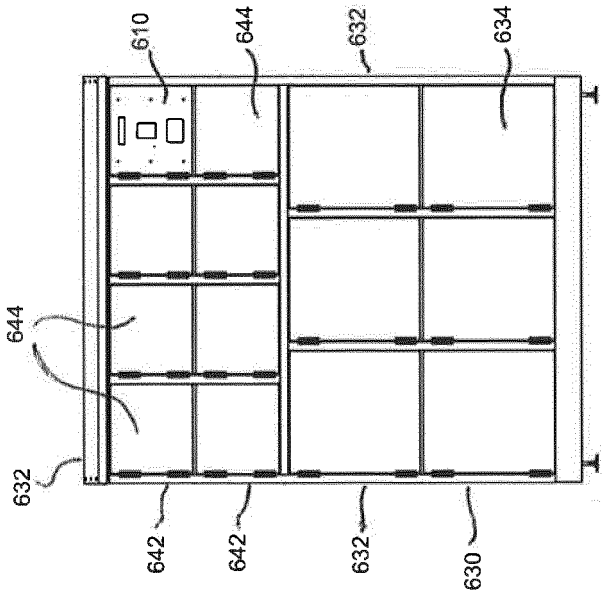

Figure 15

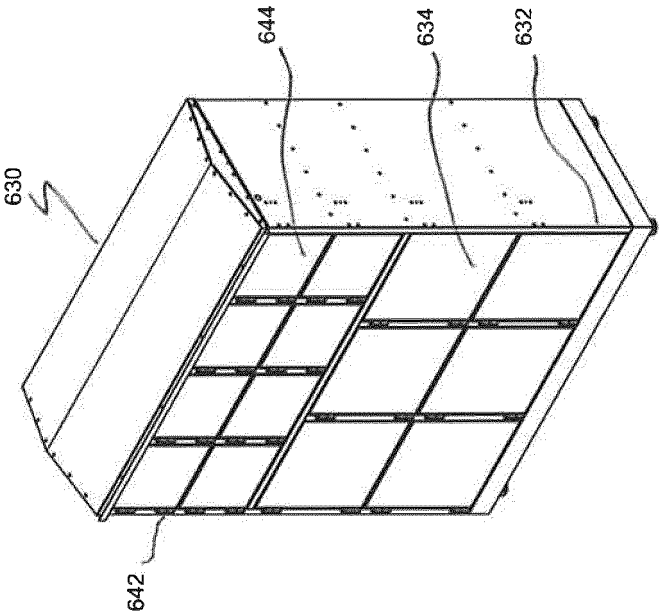

Figure 20

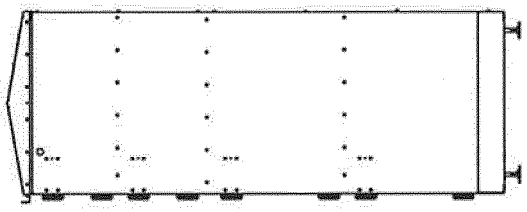

Figure 19

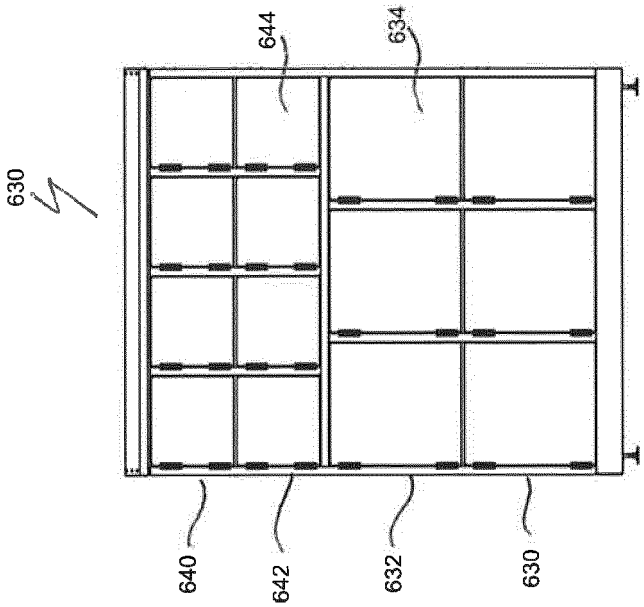

Figure 18

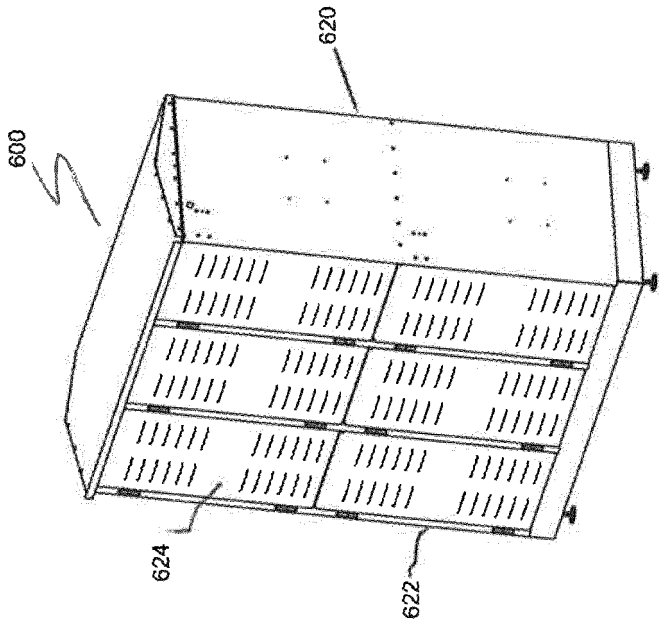

Figure 23

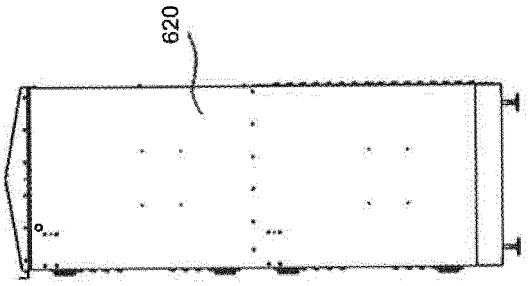

Figure 22

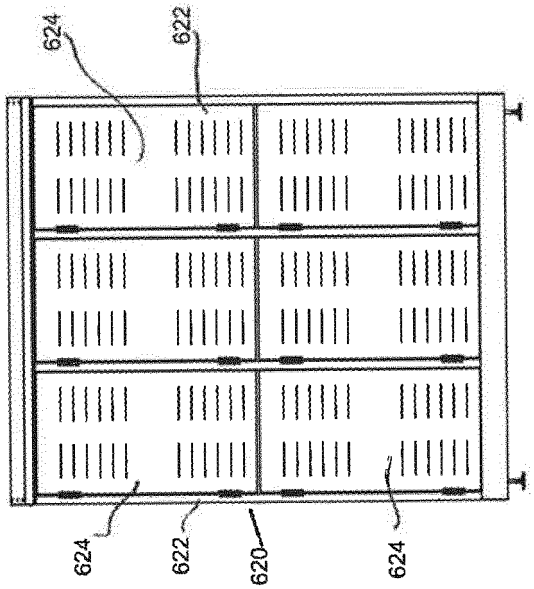

Figure 21

Europäisches Patentamt
European Patent Office
Office européen des brevets

EUROPEAN SEARCH REPORT

Application Number
EP 14 16 3604

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	FR 2 853 438 A1 (TORRA JOEL [FR]) 8 October 2004 (2004-10-08) * page 1 - page 6 * * figure 1 * -----	1-15	INV. G07F7/06 G07F11/62
X	FR 2 963 543 A1 (SIRAGA SA [FR]) 10 February 2012 (2012-02-10) * page 3 - page 7 * * figures 1-4 * -----	1-15	

TECHNICAL FIELDS SEARCHED (IPC)

G07F

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	28 May 2014	Spitaler, Thomas

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 14 16 3604

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

28-05-2014

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
FR 2853438 A1	08-10-2004	EP 1614074 A2	11-01-2006
		FR 2853438 A1	08-10-2004
		WO 2004090357 A2	21-10-2004
FR 2963543 A1	10-02-2012	NONE	

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82