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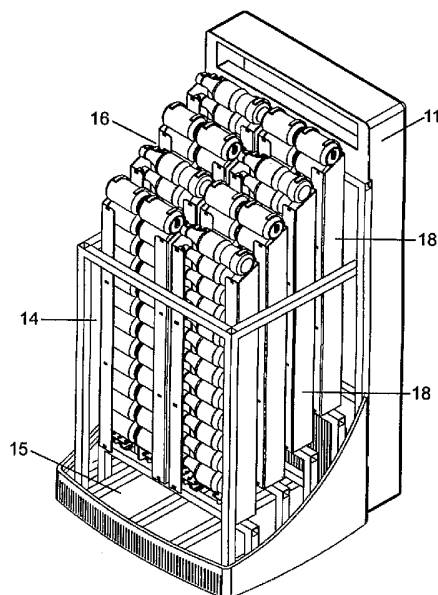
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(54) Title: A DISPLAY UNIT



(57) Abstract: A sales display unit (11) for the storage and sales of goods and a removable goods carrier (18) for use in the unit (11). The carrier (18) comprises an elongate hollow body (21) having a substantially enclosed elongate chamber (22) in which the goods (12, 13) are stored, the goods being moved from one end of the chamber to the other by an automatic feed system (31) housed in longitudinally extending groove(s) (27) in the rear wall (23) of the carrier body (21). The body (21) also has side walls (24) projecting forwardly of the rear wall, each with a limb (25) which extends back across the rear wall to retain goods (12, 13) on the carrier.

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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

A Display Unit

Field

This invention relates to sales display units and in particular to point-of-sale display units which may be used to display and dispense items for impulse sales in a retail or
5 catering environment.

Background of the Invention

Display units are often used in shops or other commercial premises to display and dispense a particular line, or lines
10 of goods which may often be produced by a single manufacturer. In particular, display units may be used in retail, restaurant, or canteen environments near to the point of sale, or payment to tempt customers to buy goods, particularly drinks and confectionary, on impulse whilst paying for other
15 goods.

In GB 2361 233 there is described a drinks dispenser in which the cans or bottles are loaded into carriers for the delivery of goods to an access point. The carriers may be replenished
20 in situ and are also removable from the display unit for restocking with goods.

The present invention provides an improves carrier unit for a drinks dispenser and drinks dispenser incorporating the same.
25

Statements of Invention

According to the invention there is provided a removable goods carrier for use in a sales display unit, the carrier comprising an elongate hollow body having a substantially enclosed chamber in which the goods are stored, the goods being movable from one end of the chamber to the other by at least one automatic feed system, the body comprising a rear wall for the chamber having at least one elongate groove formed therein for housing the feed system, side walls for the chamber projecting forwardly of the rear wall, each sidewall has at least one limb which extends back across the chamber to retain any goods therein.

Preferably, the feed system comprises a moveable flexible elongate belt, chain or band, preferably a flat section spiral spring. The goods are moved by a single abutment means slidable within the chamber which is attached to the spring. The abutment means preferably comprise a plate having a similar shape to the cross-section of the chamber.

Preferably, the coiled spring is attached to the underside of the abutment means, that is the side away from the good to be moved, and the free end of the spring is attached to said other end of the body.

The groove is preferably undercut, typically having an

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inverted "T" section, the abutment means engaging with the undercut with the wider portion of the groove accommodating the feed system and the narrower portion accommodating the movement of the abutment means.

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Each body may be provided with two grooves in the rear wall, each housing a feed system. The two feed systems are connected to a single abutment means but could be connected to a respective abutment means.

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In use, containers of pre-packaged goods are arranged in at least one linear array within the passageway with adjacent containers being in contact one with another, and the abutment means contacting a container at the end of each linear array so that the feed system can move the array of containers along the carrier towards the other end of the carrier. The containers may comprise cans or bottles.

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Alternatively the containers may comprise open rigid trays which can stack one on another, with pre-packages goods e.g. chocolate bars, arranged on the open trays.

20

Stop means holding the goods within the carrier are secured to the body at said other end of the passageway.

25

When, the or each carrier is arranged so that the respective

passageway is oriented along a substantially vertical axis the container are held in passageway by the limbs on the sidewalls.

- 5 The body and abutment means may be perforated with a plurality of apertures which in use permit through flow of cooling air.

The body is preferably formed by extrusion of a suitable material for example aluminium, or a suitable polymeric
10 material. The body may be a one piece extrusion or may comprise a plurality of extrusions assembled together, typically two or three pieces.

According to a second aspect of the present invention there is
15 provided a sales display unit for pre-packaged goods in containers, the unit comprising a housing with cooling means therein, an opening in the top of the housing, and at least one carrier according to the first aspect of the invention arranged in a substantially vertical orientation within the
20 housing.

Preferably a plurality of carriers arranged in tandem and/or side-by side in the housing.

- 25 The cooling means is preferably a built-in refrigeration unit housed beneath the carriers.

Preferably, the unit is primarily used for the storage and sale of drinks packaged in bottles and/or cans, other goods such as chocolates, sandwiches etc. supplied in open trays.

5 Description of the Drawings

The invention will be described by way of example only with reference to the accompanying drawings in which:

- Fig.1 is an isometric part cut-away view of a sales display unit showing carriers according to the present invention,
- Fig.2 is an isometric view of an empty carrier, as is used in Fig. 1 with the abutment means in the as loaded condition,
- Fig.3 is a front view of a carrier loaded with bottles, cans,
- Fig.4 is an isometric view of a carrier body,
- Fig.5 is a second isometric view of the display unit showing the arrangement of the carriers,
- Fig. 6 is a view from above of the display unit in Figs 1 & 5, and
- Fig.7 is a section of a carrier body.

Detailed Description of the Invention

With reference to Figs.1, 5 & 6, there is shown a sales display and dispensing unit 11 for drinks which in this example are packaged in bottles 12 and cans 13. The unit 11

may be free standing or built into a display wall. The unit 11 has a housing 14 standing on a base 15 with an opening 16 in the top of the housing 14 giving access to the goods within the housing. The opening 16 may be provided with a removable
5 lid 19.

The housing 14 may be provided with detachable decorative panels 17 as shown in Fig. 6.

10 Containers 12, 13 of pre-packaged goods e.g. soft drinks in bottles and/or cans are stored within the housing 14 within removable carriers 18. The housing 14 may house any desired number of carriers 18 and in the present example eight carriers 18 are arranged both in tandem and side by side
15 within the housing 14. The carriers 18 are arranged so that they are progressively raised at increasing heights above the base 15 with proximity to the rear of the housing 14. This ensures that each carrier 18 is substantially equally
20 accessible. The carriers 18 are each independently mounted in the housing by suitable means allowing for easy removal of a each carrier from the housing, preferably without disturbing the other carriers.

The housing 14 includes a refrigeration unit located within
25 the housing 13 beneath the carriers 18 for cooling the drinks stored in the unit. The refrigeration unit 43 cools by

circulation of cold air within the unit.

The carriers 18 are best seen in Figs. 2-5 and are similar to each other so that only one carrier will be described in
5 detail to give an understanding of the Invention.

Each carrier 18 comprises an elongate hollow body 21 having a substantially enclosed chamber or passageway 22 therein along which the goods pre-packed in bottles 12, cans 13, or other,
10 are guided and transported.

The body 21 has a rear wall 23 for the chamber 22 with a pair of sidewalls 24 for the chamber extending forwardly from the rear wall 23. The sidewalls 24 are each provided with a limb
15 25 which extends back across the rear wall to partially enclose the chamber 22.

Two elongate grooves 26 extending longitudinally of the body 21 are provided in the rear wall 23. Any number of grooves
20 may be provided in the rear wall as is desired, but will be typically between one and three grooves. The grooves 26 extend the full length of each carrier and each houses an automatic feed system 31 which transports the goods towards the opening 16 so that customers may remove the goods through
25 the opening for purchase. Each groove 26 is formed integrally with the rear wall 23 and is undercut each being typically

formed from an inverted T section having a narrower portion 28 adjacent the chamber 22 which opens into a wider portion 27.

The pre-packaged goods 12 are transported along the chamber 22
5 by an abutment means 32 in this case a plate, which is moved along the chamber pushing the goods towards the opening 16. The abutment plate 32 is attached by brackets 33 to two flat section spiral springs 37 which are each accommodated in the respective groove 26. The two brackets 33 engage behind the
10 undercut surfaces in the groove 26 and are free to slide along the narrower portion 28 of the groove 26.

The coil of each spiral spring 37 is attached to the underside of the abutment plate 32 and extends behind the bracket 33 and
15 upwardly in the respective groove 26 and is secured to upper end of the body 21 by suitable fixings 38, for example rivets, screws, nuts & bolts etc.

Each spiral spring 37 is in an extended loaded state when the
20 plate 32 is in its lower position as shown in Fig. 2 and the spring bias rewinds the coil as the plate 32 moves upwardly. The narrow portion 28 of the groove accommodates the passage of spring 37 as it rewinds itself.

25 With reference now to Fig. 3A, bottles 12 are placed transversely into the carrier 18 one by one from the top

against the spring bias. The limbs 25 retain the bottles within the chamber 22 and the bottles are arranged side by side in the chamber with the abutment plate 32 acting directly against the adjacent end bottle to move the array of bottles
5 along the chamber. The bottles are held in the carrier 18 against the spring bias by two stops 35,36 located on the carrier body 21 at the upper end thereof which engage with the top bottle in the array. The stops 35,36 are in the form of flexible hooks which allow easy removal or re-stocking of a
10 bottle

Each carrier body 21 is formed by extrusion of a suitable material in this example aluminium but other materials such as thermoplastics materials may also be suitable. The carrier
15 body 21 may be formed from a single extrusion, or more typically from two or three extrusions assembled together. The carrier body may be provided with a plurality of apertures or perforations 39 which allow for the circulation of cooling air. The abutment plate 32 is also provided with perforations
20 40.

The abutment plate 32 may be formed as a single plate or alternatively in two halves 41,42, which are interconnected by a link 43 for use with most goods e.g bottles or may
25 disconnected so that the two halves 41 42 may operate independently of each other if desired, as will be explained

below.

With reference to Fig 3b, there is shown a carrier 18 which houses an array of rigid open trays 45. The trays 45 may house
5 pre-packages goods such as chocolate, confectionary etc. A suitable stop means 46 are provided.

Fig. 3C shows a carrier 18 adapted for use with cans 13. In this example, the two halves 41, 42 of the plate 32 are not
10 interconnected. Each feed system may operate independently to move its respective array of cans towards the sales point and a divider 44 is located between the two feed systems to prevent interferences. Two sets of stop means 47, 48 are provided at the upper end of the carrier body 21 for retention.
15 of the two different arrays of cans.

The limbs 25 of the each carrier 18 hold the bottles/cans/boxes in place on each respective carrier, and help guide the upward movement of the bottles etc..
20

As a bottle 12 or can 13 etc. is removed from the top portion of each carrier 22, the respective feed system 31 automatically propels the array of bottles/cans etc. upward until the next bottle contacts its respective stop means.
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When any carrier 22 is empty, the carrier 18 can be re-filled

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by removing the carrier 22 from the sales unit 11 for filling on the site or at a remote location. It may be desirable to have spare pre-filled carriers of pre-chilled goods previously made ready for loading into the unit.

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Claims

1. A removable goods carrier for use in a sales display unit, the carrier comprising an elongate hollow body having a substantially enclosed elongate chamber in which the goods are stored, the goods being movable from one end of the chamber to the other by at least one automatic feed system, the body comprising a rear wall for the chamber having at least one longitudinally extending groove therein housing the feed system, side walls for the chamber projecting forwardly of the rear wall, each sidewall having at least one limb which extends back across the chamber to retain any goods therein.
2. A carrier as claimed in Claim 1 wherein the feed system comprises a flat cross-section spiral spring.
3. A carrier as claimed in Claim 1 or Claim 2 wherein feed system further includes an abutment means which is slidable within the chamber to move goods along the chamber, the abutment means being attached to the spring.
4. A carrier as claimed in Claim 3 wherein the abutment means is a plate having a similar shape to the cross-section of the chamber.
5. A carrier as claimed in Claim 3 or Claim 4 wherein the spiral spring coil is attached to the underside of the

abutment means and the free end of the spring is attached to said other end of the body.

6. A carrier as claimed in any one of Claims 1 to 5, wherein
5 each groove is undercut and the abutment means engages the undercut with the wider portion of the groove accommodating the feed system and the narrower portion adjacent the chamber accommodating the movement of the abutment means.

10 7. A carrier as claimed in any one of Claims 1 to 6, wherein each body is provided with at least two grooves in the rear wall, each housing a feed system.

8. A carrier as claimed in Claim 7, wherein the two feed
15 systems are connected to a single abutment means.

9. A carrier as claimed in any one of Claims 1 to 8 wherein the body and abutment means are perforated with a plurality of apertures which in use permit through flow of cooling air.

20 10. A carrier as claimed in any one of Claims 1 to 9 wherein the body is formed from a single extrusion.

11. A carrier as claimed in any one of Claims 1 to 10 and
25 further including rigid open trays arranged in a linear array within the chamber, per-packaged good in use being stored in

the trays.

12. A carrier as claimed in any one of Claims 1 to 11 and further including at least one stop means secured to the
5 carrier at said other end of the chamber.

13. A sales display unit for pre-packaged goods in containers, the unit comprising a housing with cooling means therein, an opening in the top of the housing, and at least one carrier as
10 claimed in any one of Claims 1 to 12 arranged in a substantially vertical orientation within the housing.

14. A sales display unit as claimed in Claim 13, wherein a plurality of carriers are arranged in tandem and/or side-by
15 side in the housing, each carrier being independently removable from the housing.

15. A sales display unit as claimed in Claim 14, wherein the carriers are progressively raised above the housing base
20 towards the rear of the housing and a built-in refrigeration unit is located in the space beneath the carriers.

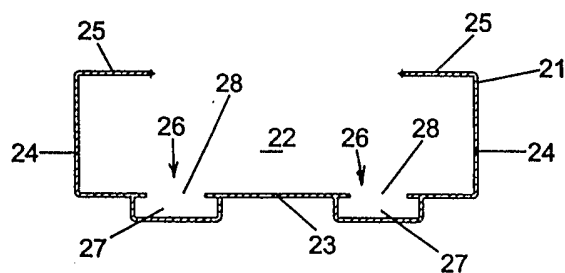
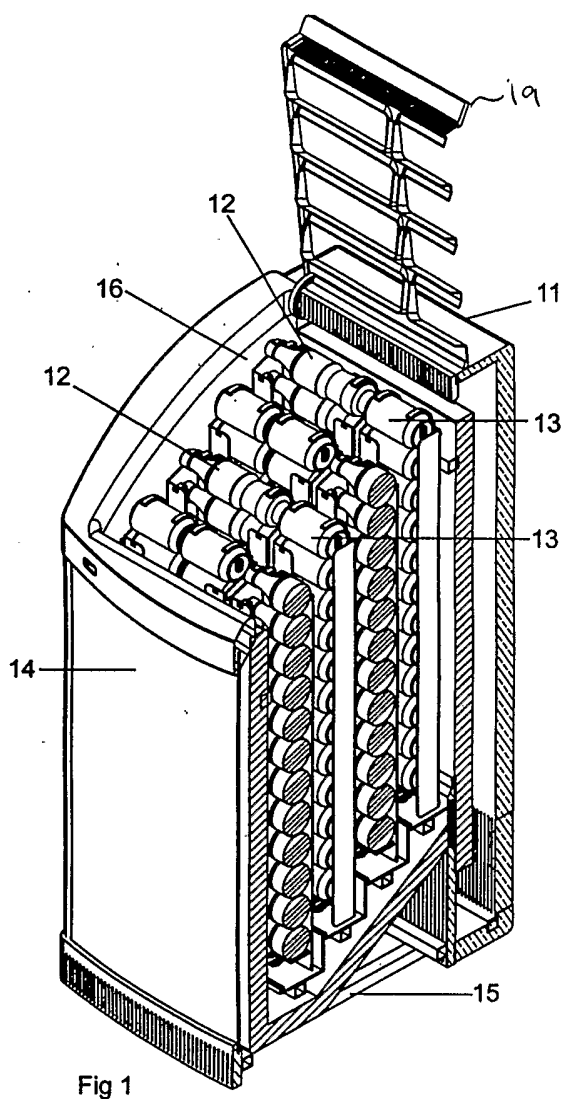


Fig 7

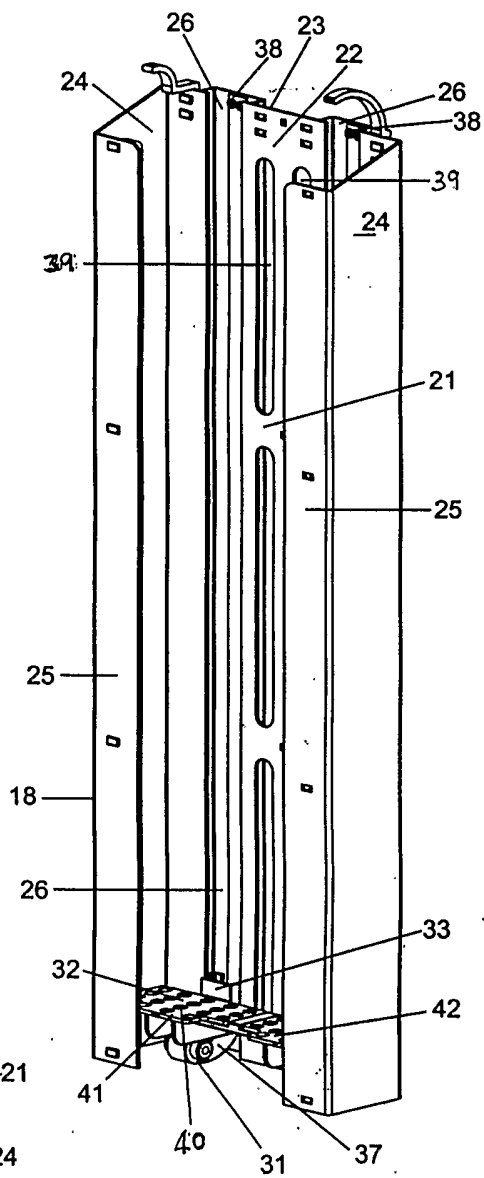


Fig 2

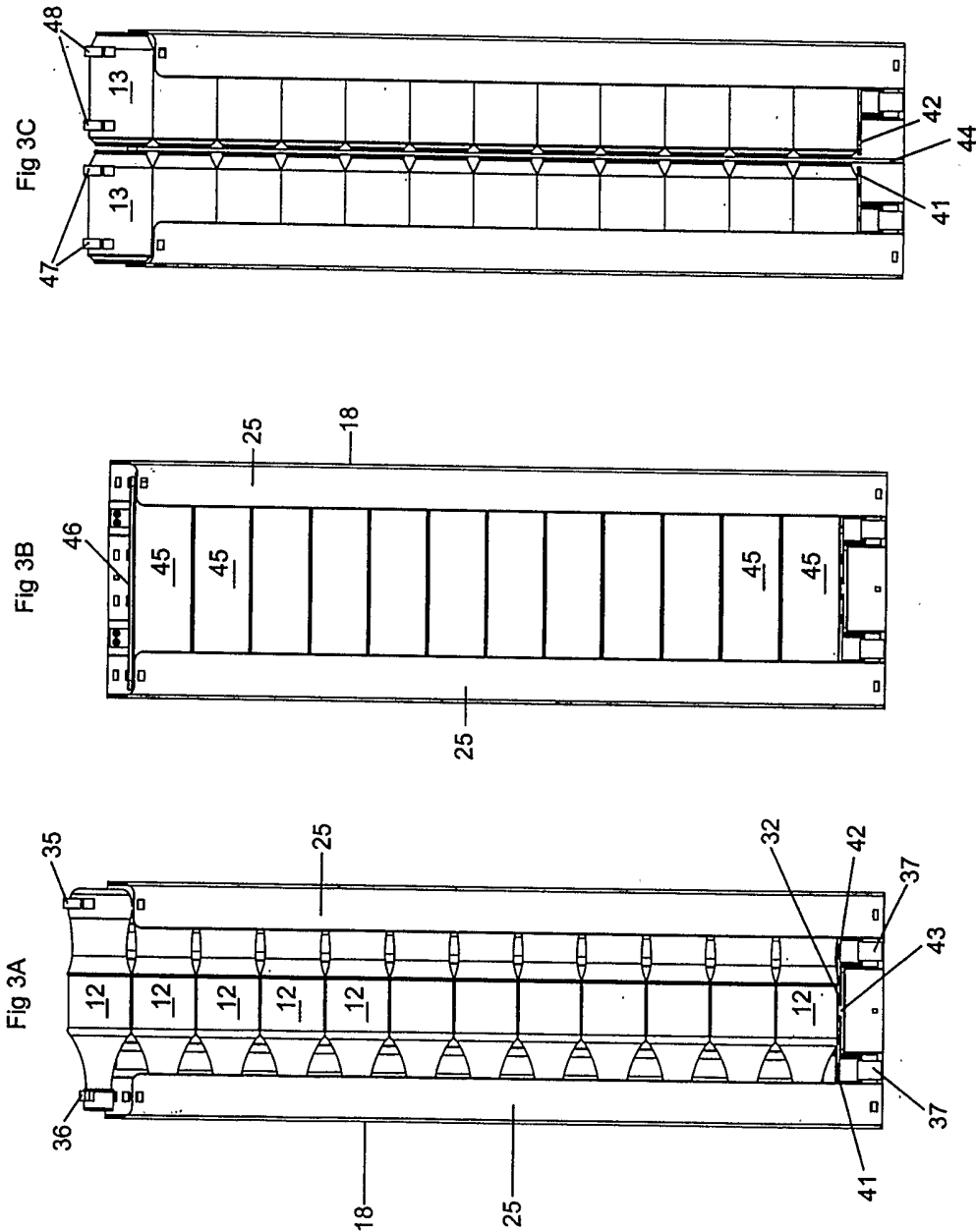


Fig 3

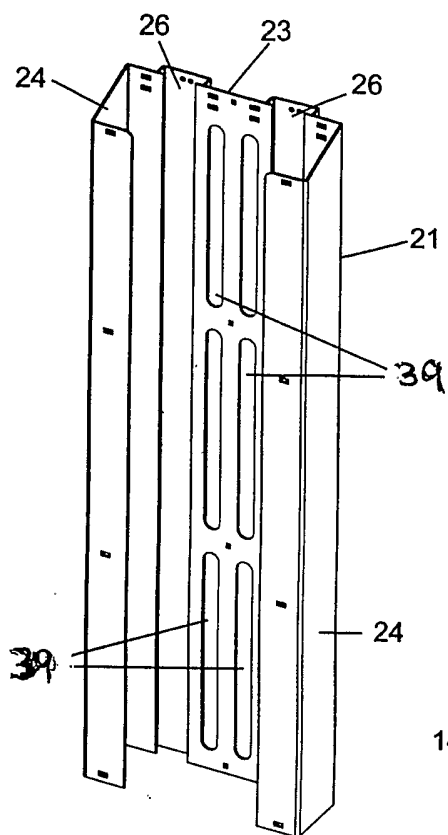


Fig 4

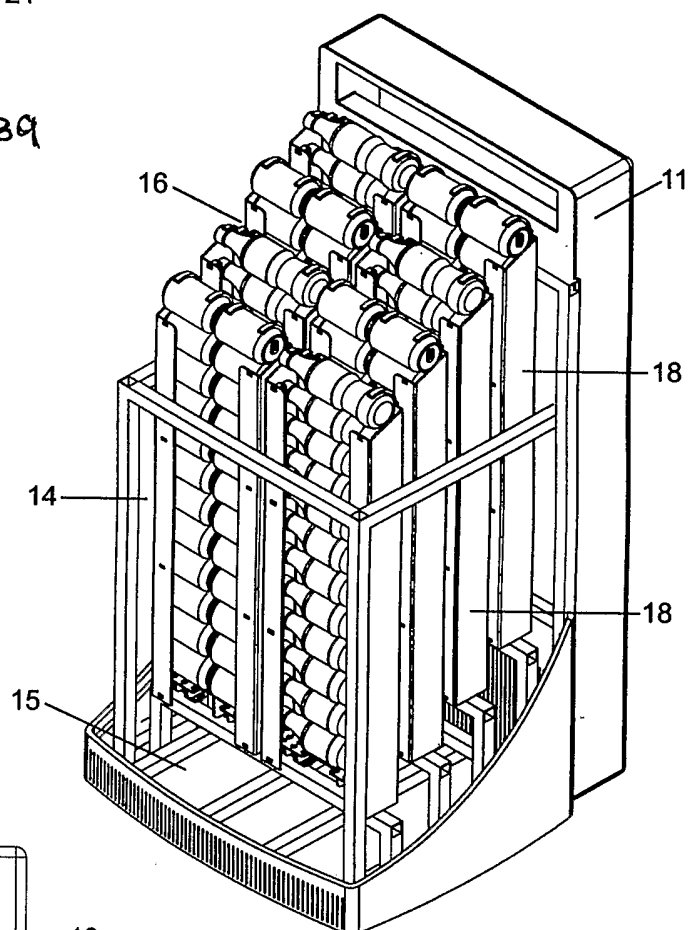
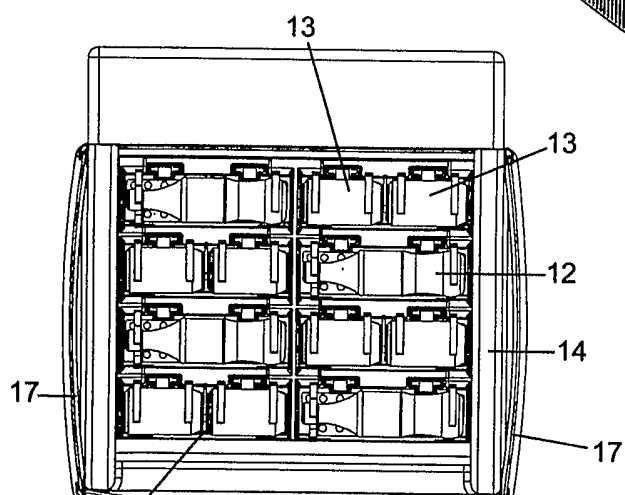


Fig 5



INTERNATIONAL SEARCH REPORT

International application No

PCT/GB2005/004436

A. CLASSIFICATION OF SUBJECT MATTER

A47F1/06

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)

A47F

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)

EP0-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2003/183646 A1 (SOUTER GARY ET AL) 2 October 2003 (2003-10-02) the whole document -----	1-15
A	GB 2 263 474 A (* ORION DESIGN & DISPLAY LIMITED; WILLIAM DRYDEN * HENDERSON) 28 July 1993 (1993-07-28) the whole document -----	1-15
A	US 5 813 569 A (CIHANEK ET AL) 29 September 1998 (1998-09-29) the whole document -----	1-15
A	EP 0 410 138 A (SOCIETE DES PRODUITS NESTLE S.A) 30 January 1991 (1991-01-30) the whole document ----- -/--	1-15

☒ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

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* & * document member of the same patent family

Date of the actual completion of the international search

1 March 2006

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INTERNATIONAL SEARCH REPORT

International application No
PCT/GB2005/004436

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 3 625 397 A (GEORGE R. SHELLY ET AL) 7 December 1971 (1971-12-07) the whole document -----	1-15
A	US 4 738 114 A (MULLEN ET AL) 19 April 1988 (1988-04-19) the whole document -----	1-15
A	FR 2 838 035 A (TRAUX BINSSE MARIE LAURE) 10 October 2003 (2003-10-10) the whole document -----	1-15
A	US 6 155 437 A (RASSENT ET AL) 5 December 2000 (2000-12-05) the whole document -----	1-15

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/GB2005/004436

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 2003183646	A1	02-10-2003	AU 4670801 A EP 1274331 A1 GB 2361233 A WO 0178559 A1	30-10-2001 15-01-2003 17-10-2001 25-10-2001
GB 2263474	A	28-07-1993	NONE	
US 5813569	A	29-09-1998	AU 732011 B2 AU 2053897 A CA 2248995 A1 DE 886748 T1 EP 0886748 A1 ES 2173830 T1 JP 2002504215 T NO 984142 A WO 9734118 A1	12-04-2001 01-10-1997 18-09-1997 02-10-2002 30-12-1998 01-11-2002 05-02-2002 26-10-1998 18-09-1997
EP 0410138	A	30-01-1991	AU 621791 B2 AU 5781390 A CA 2019170 A1 JP 3063489 A US 4941327 A	19-03-1992 24-01-1991 24-01-1991 19-03-1991 17-07-1990
US 3625397	A	07-12-1971	NONE	
US 4738114	A	19-04-1988	AU 609893 B2 AU 2511488 A CA 1322189 C EP 0390772 A1 JP 8023464 B MX 159951 A WO 8802836 A1	09-05-1991 17-05-1990 14-09-1993 10-10-1990 06-03-1996 13-10-1989 21-04-1988
FR 2838035	A	10-10-2003	AU 2003260010 A1 CN 1646044 A EP 1492435 A1 WO 03084371 A1	20-10-2003 27-07-2005 05-01-2005 16-10-2003
US 6155437	A	05-12-2000	NONE	