

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
17 March 2011 (17.03.2011)

(10) International Publication Number
WO 2011/030320 A1

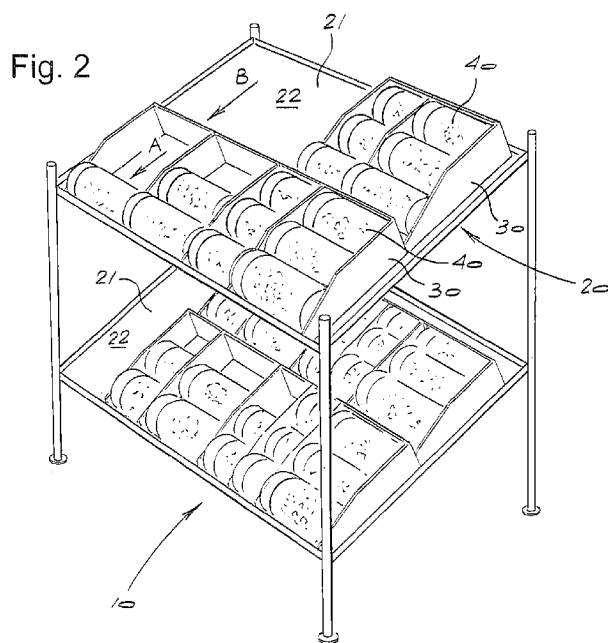
- (51) International Patent Classification:
A47F 1/12 (2006.01) A47F 7/28 (2006.01)
- (21) International Application Number:
PCT/IB2010/054130
- (22) International Filing Date:
14 September 2010 (14.09.2010)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
2009/06385 14 September 2009 (14.09.2009) ZA
- (71) Applicant (for all designated States except US): **EUREKA DIY SOLUTIONS (PROPRIETARY) LIMITED** [ZA/ZA]; No 1 Eureka Park, 53 Renico Crescent, Lea Glen, 1709 Roodepoort (ZA).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): **MARAIS, Hendrik, Dawid** [ZA/ZA]; 200A Frederick Drive, Northcliff, 2195 Randburg (ZA).
- (74) Agents: **SPOOR & FISHER** et al.; P O Box 454, 0001 Pretoria (ZA).

- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:
— with international search report (Art. 21(3))

[Continued on next page]

(54) Title: MODULAR DISPLAY AND DISPENSING ARRANGEMENT



(57) Abstract: This invention relates to a display and dispensing arrangement (10), and more particularly but not exclusively, to a display and dispensing arrangement for use in displaying containers for sale, and dispensing said containers under gravitational bias. The display and dispensing arrangement includes at least one shelf assembly (20), the shelf assembly including a shelf (21) having an upper surface (22) which is at least partially inclined relative to a horizontal plane, and a dispensing cartridge (30) locatable on the upper surface of the shelf assembly in order for the dispensing cartridge to be similarly inclined in use. A plurality of containers (40) to be dispensed is locatable inside the dispensing cartridge in a row, in order for containers that remain behind when a container at a lower elevation is removed to be displaced under gravity inside the dispensing cartridge towards a forward zone of the dispensing cartridge.

— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of*

amendments (Rule 48.2(h))

MODULAR DISPLAY AND DISPENSING ARRANGEMENT

BACKGROUND OF THE INVENTION

THIS invention relates to a display and dispensing arrangement, and more particularly but not exclusively, to a display and dispensing arrangement for use in displaying containers for sale, and dispensing said containers under gravitational bias.

Many different display arrangements for displaying goods to be sold are known in trade and industry. The need for arrangements that provide this functionality is ubiquitous, and some common forms include horizontal shelving on which products can be positioned, as well as elongate brackets from which a row of products to be sold can be suspended. In these typical configurations, the replenishing and rearrangement of stock is a labour intensive and time consuming exercise. For example, once the products at the front of the shelves have been removed, the products located further back on the shelf must be manually moved to the front to facilitate convenient access to a consumer, whilst also continuously rendering the display arrangement aesthetically pleasing. This process is typically referred to as 'facing' of shelves. Stocking and replenishing of the shelves are also a time consuming process, as articles must be independently placed onto the shelves. The same of course applies to arrangements

where products are suspended from the elongate brackets referred to above.

Some display and dispensing arrangements have in the past been proposed to negate the requirement for continuous facing. These can typically be described as self-facing or automatically dispensing arrangements. Vending machines, by nature, need to be of a configuration wherein remaining products are automatically displaced forward once a selected product has been dispensed. However, this is typically achieved by utilizing a positive displacement means, such as a screw conveyor.

In some cases, for example some beverage shelves, remaining beverage cans are moved forward under the influence of gravity when a beverage can at the front of a row of cans is removed. This is achieved by the shelving on which the beverage cans are located being inclined, in order to overcome the sliding friction of the beverage cans, thus resulting in an entire row of cans moving forward. However, although no facing is required, the arrangement remains labour intensive, as the shelving must still be loaded and replenished by placing individual beverage cans on the inclined shelf. Also, the automatic displacement of the cans are not always optimal and satisfactory, due to the beverage cans experiencing a substantial amount of friction. One obvious solution may be to increase the inclination of the shelves, but this may render the arrangement unstable, as a beverage can may easily fall over due to its centre of gravity becoming increasingly offset relative to a base of the can.

It is accordingly an object of the invention to provide a display and dispensing arrangement which will, at least partially, alleviate the abovementioned disadvantages.

It is also an object of the invention to provide a display and dispensing arrangement which will be a useful alternative to existing display and dispensing arrangements.

It is a still further object of the invention to provide a display and dispensing arrangement in which products are automatically displaced to the dispensing point of the arrangement under the influence of gravity, and wherein bulk replenishing of the display and dispensing arrangement will be possible.

SUMMARY OF THE INVENTION

According to the invention there is provided a display and dispensing arrangement including:

at least one shelf assembly, the shelf assembly including a shelf having an upper surface which is at least partially inclined relative to a horizontal plane;

a dispensing cartridge locatable on the upper surface of the shelf assembly in order for the dispensing cartridge to be similarly inclined in use; and

a plurality of containers to be dispensed locatable inside the dispensing cartridge in a row, in order for containers that remain behind when a container at a lower elevation is removed to be displaced under gravity inside the dispensing cartridge towards a forward zone of the dispensing cartridge.

Preferably, the containers are of cylindrical configuration, and are locatable inside the dispensing cartridge in a horizontal orientation so as to allow the containers to roll relative to the dispensing cartridge.

There is provided for a plurality of dispensing cartridges, of the same or different configuration, to be located side by side on the shelf assembly.

There is also provided for a plurality of dispensing cartridges of the same configuration to be located end to end on the shelf assembly, in order for an operatively rear cartridge to slide forward to a front of the shelf assembly when an operatively forward cartridge is removed.

Preferably, a dispensing cartridge is in the form of a substantially rectangular container having a transparent, removable cover.

A corner zone of the dispensing cartridge may be at least partially beveled in order to facilitate easy removal of a container from the cartridge.

The inclination of the upper surface of the shelf assembly is preferably between 5 and 20 degrees.

BRIEF DESCRIPTION OF THE DRAWINGS

A preferred embodiment of the invention is described by way of a non-limiting example, and with reference to the accompanying drawings in which:

Figure 1 is a perspective view of one dispensing cartridge containing a single container, forming part of the display and dispensing arrangement in accordance with the invention; and

Figure 2 is a perspective view of the display and dispensing arrangement in accordance with the invention.

DETAILED DESCRIPTION OF INVENTION

Referring to the drawings, in which like numerals indicate like features, a non-limiting example of a display and dispensing arrangement in accordance with the invention is generally indicated by reference numeral 10. The display and dispensing arrangement 10 comprises a shelf assembly 20, a plurality of dispensing cartridges 30 located on the shelf assembly 20, and a plurality of containers 40 located inside the dispensing cartridges 30.

The shelf assembly 20 may take many forms, provided that it includes shelves 21 having upper surfaces 22 that are inclined relative to a horizontal plane. The shelves 21 may form part of a knock down shelf assembly forming part of the display and dispensing arrangement 10, but may also be in the form of fixed inclined shelves located in a store or at a point of sale. The inclination of the shelves 21 may vary, but it is foreseen that it will be somewhere between 5 and 20 degrees.

One dispensing cartridge 30 is shown in Figure 1, and is in the form of a rectangular box configured and dimensioned to receive a plurality of containers 40 as is described in more detail below. The cartridge 30 has an open upper end 32, which is sealed by way of a transparent lid during transportation and prior to use. The use of a transparent lid is beneficial, in that it simplifies inspection of the content of the cartridges, whilst also enabling efficient inventory control and identification. An end 33 of the cartridge includes an at least partially beveled cut-away zone, and enable easy removal of containers 40 from the cartridge when in use. There is provided for cartridges of various sizes and configurations (for receiving

containers of various sizes and configuration) to form part of a set that will in use fit inside a bulk container.

The containers 40 are in the form of cylindrical receptacles 41 having open ends that are sealed by way of removable closures 42. In this example the closures are in the form of screw on lids, but many configuration (such as for example flip tops) are envisaged. An important feature of the invention is that the cylindrical containers are positioned sideways inside the cartridges, in order for cylindrical axes of the containers to be substantially parallel with a bottom surface of the cartridges 30, and therefore in use also with the upper surfaces 22 of the shelf assembly 20, thus allowing the containers to roll relative to the cartridges. In use, the containers will be filled with products to be sold. Although the content may vary, it is foreseen that the display and dispensing arrangement will be particularly useful for hardware products such as fasteners and the like.

In use a predetermined quantity and configuration of dispensing cartridges 30, each containing a number of containers 40 filled with various products to be sold, are placed on the shelves of the shelf assembly 20, with the transparent covers (not shown) of the dispensing cartridges 30 having been removed. The containers 40 at the open ends of the cartridges 30 can now be removed by consumers. Once a container 40 located towards the front ~~face of the shelf assembly has been removed,~~ the remaining containers 40 in the cartridge 30 will roll forward due to gravity as indicated by arrow A, thus ensuring that the shelf is automatically faced. When a cartridge 30 is empty, the empty cartridge can be removed, and a cartridge located at the back of the empty cartridge will slide forward towards the front of the shelf, as is indicated by arrow B. A new cartridge, including multiple containers, can subsequently be located on the shelf at the now empty space, this negating the need to replace individual containers 40.

A number of advantages is associated with the display and dispensing arrangement described above, and include the following:

- The display and dispensing arrangement is of a self-facing nature, but without the need for intricate and expensive conveyance and positive displacement devices;
- The cartridges contain a plurality of articles to be sold, thus enabling bulk replenishing of stock;
- The display and dispensing arrangement comprises a set of pre-configured dispensing cartridges containing different products, thus rendering the display and dispensing arrangement of a substantially modular configuration;
- The design of the dispensing cartridges allows for efficient stock control, identification and inspection;
- The predetermined number and types of cartridges that are to be used with the display and dispensing arrangement allows for an efficient packaging solution to be utilized wherein the full stock for a display and dispensing arrangement can be placed in a single container of predetermined size.

The above list is not exhaustive, but merely emphasizes some of the most important benefits.

Also, it will be appreciated that the above is only one embodiment of the invention and that there may be many variations without departing from the spirit and/or the scope of the invention.

CLAIMS:

1. A display and dispensing arrangement including:
 - at least one shelf assembly, the shelf assembly including a shelf having an upper surface which is at least partially inclined relative to a horizontal plane;
 - a dispensing cartridge locatable on the upper surface of the shelf assembly in order for the dispensing cartridge to be similarly inclined in use; and
 - a plurality of containers to be dispensed locatable inside the dispensing cartridge in a row, in order for containers that remain behind when a container at a lower elevation is removed to be displaced under gravity inside the dispensing cartridge towards a forward zone of the dispensing cartridge.
2. The display and dispensing arrangement of claim 1 in which the containers are of cylindrical configuration, and are locatable inside the dispensing cartridge in a horizontal orientation so as to allow the containers to roll relative to the dispensing cartridge.
3. The display and dispensing arrangement of claim 1 or claim 2 in which ~~a plurality of dispensing cartridges, of the same or different configuration,~~ are located side by side on the shelf assembly.
4. The display and dispensing arrangement of any one of the preceding claims in which a plurality of dispensing cartridges of the *same configuration are located end to end on the shelf assembly*, in order for an operatively rear cartridge to slide forward to a front of the shelf assembly when an operatively forward cartridge is removed.

5. The display and dispensing arrangement of any one of the preceding claims in which a dispensing cartridge is in the form of a substantially rectangular container having a transparent, removable cover.
6. The display and dispensing arrangement of any one of the preceding claims in which a corner zone of the dispensing cartridge includes an at least partially beveled cut-away in order to facilitate easy removal of a container from the cartridge.
7. The display and dispensing arrangement of any one of the preceding claims in which the inclination of the upper surface of the shelf assembly is preferably between 5 and 20 degrees.

Fig. 1

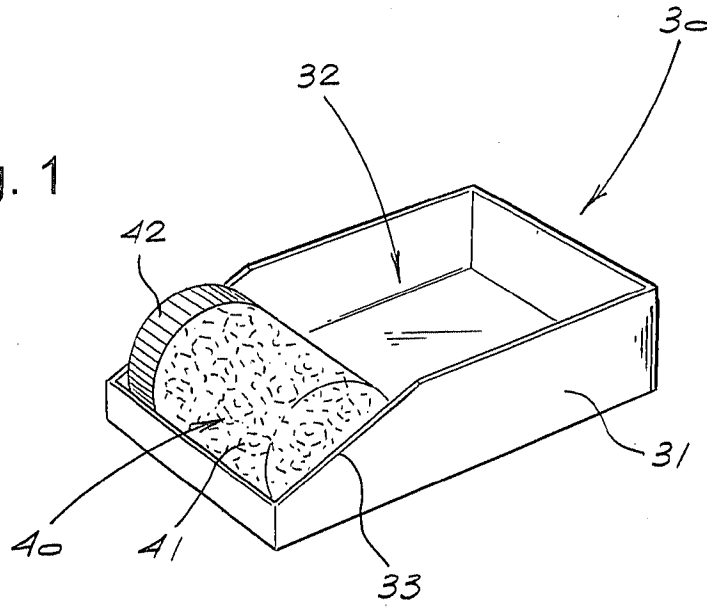
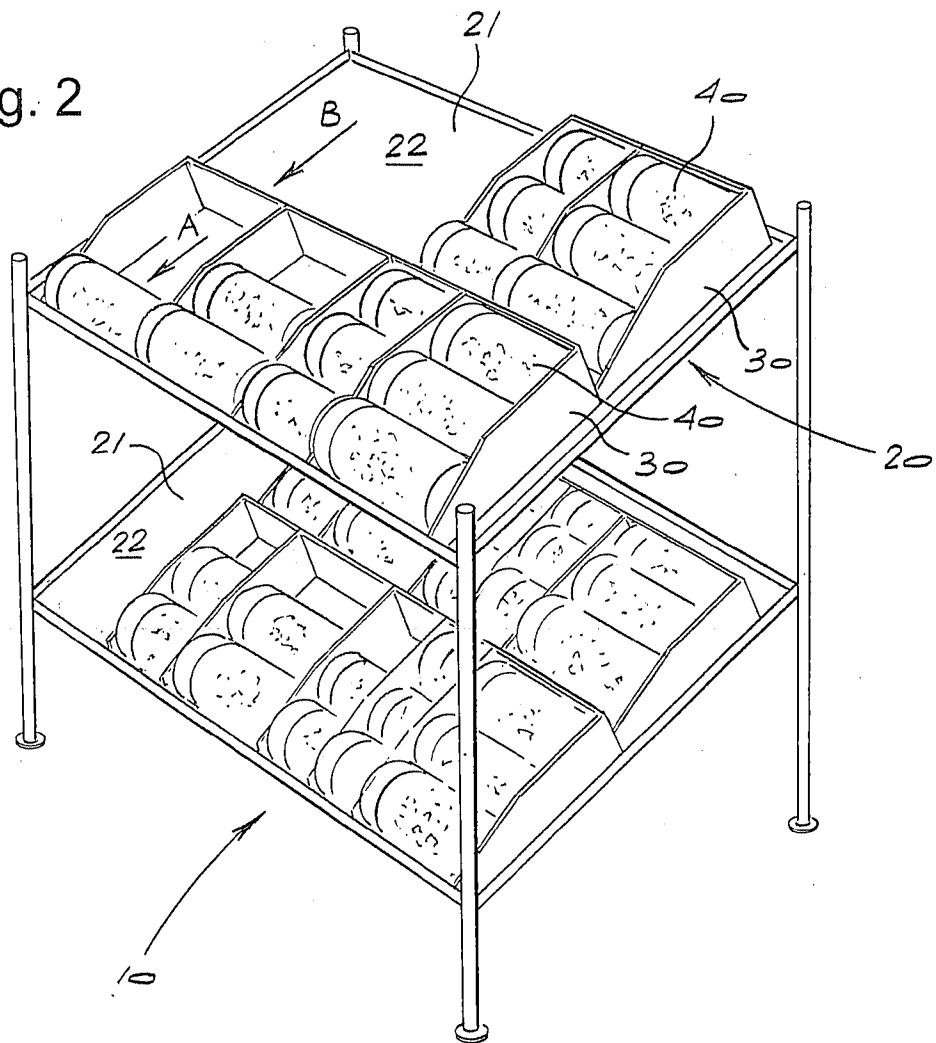


Fig. 2



INTERNATIONAL SEARCH REPORT

International application No PCT/IB2010/054130

A. CLASSIFICATION OF SUBJECT MATTER
 INV. A47F1/12 A47F7/28
 ADD.

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)

EPO-Internal, PAJ, 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 A	US 3 643 808 A (RYAN JAMES D ET AL) 22 February 1972 (1972-02-22) column 2, line 30 - column 4, line 51; figures 1-5 -----	1,3-7 2
X A	JP 2006 239137 A (OKAMURA MFG CO LTD) 14 September 2006 (2006-09-14) paragraph [0014] - paragraph [0039]; figures 1-6 -----	1,3-7 2
X A	FR 1 405 351 A (PIERRE VALLON) 9 July 1965 (1965-07-09) page 1 - page 2; figures 1-3 -----	1,3-7 2
X	US 3 203 554 A (PENDERGRAST JR JOHN B ET AL) 31 August 1965 (1965-08-31) column 3, line 3 - column 4, line 43; figures 1-8 -----	1-7

Further documents are listed in the continuation of Box C.

See patent family annex.

* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "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
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- "&" document member of the same patent family

Date of the actual completion of the international search

3 February 2011

Date of mailing of the international search report

10/02/2011

Name and mailing address of the ISA/

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

Authorized officer

Klintebäck, Daniel

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/IB2010/054130

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 3643808	A	22-02-1972	NONE
-----	-----	-----	-----
JP 2006239137	A	14-09-2006	NONE
-----	-----	-----	-----
FR 1405351	A	09-07-1965	NONE
-----	-----	-----	-----
US 3203554	A	31-08-1965	NONE
-----	-----	-----	-----