(54) Title: A DIGITAL ADVERTISING UNIT

(57) Abstract: An advertising unit (2) comprising a first part (4) including a body (10), a visual display unit (12) mounted to said body (10), an energy storage device (14) mounted to said body (10) and for supplying power to said first part (4) and means for displaying a content on the visual display unit

[Continued on next page]
Published: — with international search report (Art. 21(3))

(12), the advertising unit (2) further including a second part (6) to which said first part (4) is removably connected, said second part (6) comprising a device (16) for inputting energy into said energy storage device (14).
A DIGITAL ADVERTISING UNIT

This invention relates to a digital advertising unit which has a portable part which is charged when placed in an associated storage part.

Conventionally, in a store or shop, which has conveyor units leading to sales tills, such as in supermarkets, individual customers goods on the conveyor belt surface are separated by a plastics divider so that the sales person knows when to end and begin a new transaction.

According to the present invention there is provided an advertising unit comprising a first part including a body, a visual display unit mounted to said body, an energy storage device mounted to said body and for supplying power to said first part and means for displaying a content on the visual display unit, the advertising unit further including a second part to which said first part is removably connected, said second part comprising a device for inputting energy into said energy storage device.

Advantageously, the means for displaying a content can be a wireless communications device mounted within the advertising unit to receive the content over a wireless communications network. It is advantageous to have a content management system (CMS) controlling the content to be displayed on the visual display unit. Alternatively, the content to be displayed could be introduced by way of a content storage device, such as a memory card, connectable to the advertising unit.

Preferably, the advertising unit is a dividing member to be placed on a conveyer belt surface between adjacent customers goods. In this way, digital content can be displayed by way of the visual display unit and shared with a customer in a queue for a sales till or checkout. In a preferred embodiment, the energy storage device is a re-chargeable battery mounted in the body and the second part of the advertising unit is a charging device for charging the re-chargeable battery when the first part is connected to the second part. In this version, the second charger part would replace the simple rail currently used
whereby current plastics dividers are stacked end-to-end at the checkout.

Recharging of the battery is preferably via either metal contacts, or by contactless/wireless charging.

In order that the present invention can be clearly and completely disclosed, reference will now be made by way of example only to the accompanying drawings in which:

Figure 1 is a schematic wireframe view of a first part of an advertising unit,
Figure 2 is a perspective view of a first version of an advertising unit including a pair of the first parts shown in Figure 1 located on a charge rail, and
Figure 3 is a front view of a second version of an advertising unit similar to that in Figure 2.

Referring to the Figures, an advertising unit 2 for use at a store checkout station as a divider to be placed on the top surface of a conveying device between goods of customers in a queue comprises a first part 4 and a second part 6, separate from the first part 4. The first part 4 is in the form of a portable advertising unit having a body 10, a visual display unit (VDU) 12 in the form of a full colour display embedded in the body 10 and for displaying a digital content, and an internally located energy storage device in the form of a battery 14 in the base region of the body 10, for example a lithium-ion (Li-ion) battery. The second part comprises a charging rail 16 upon which the battery 14, in the base region of the body 10, is charged when the first part 4 is connected to the second part 6 by way of conductive contacts at the appropriate locations in the two parts. The second part 6 replaces the usual channel in which known conveyor dividers are stackable end-to-end.

The body 10 forms an outer casing of the first part 4 which can be any suitable shape or size. However, it is advantageous that at least the visual display unit 12 be arranged at an angle such that it is at the optimal viewing angle to the customer/viewer. The unit 2 is built from materials and components with relatively high impact resistance, since it is designed to take
the daily handling at a checkout while keeping customers attracted to it. The body 10 is preferably made from a thermoplastics material, such as an impact-resistant polycarbonate and ABS (Acrylonitrile butadiene styrene) mixture. The body 10 would be available in any colour in order to follow store colour preferences, which are often well-established.

The visual display unit 12, with its full colour screen, can be individually addressed remotely, which enables each first part 4 to have a different digital content running on it and being displayed on the VDU 12. For example, there could be up to five first parts 4 at a checkout (only two being shown in Figure 2), each one having different digital content running on it. As such, a large supermarket store could have 100 or more first parts 4 spread across a number of checkout positions and each one could display different digital content from each other. Real-time information can also be displayed on the individual first parts 4. The VDU should be of any suitable size, for example, a 4.3 inch screen (480mm x 272mm) or even a screen having a 21:9 aspect ratio.

The first part 4 is electronically managed preferably by an Android operating system. The preferred way of electronically managing the digital content is by way of an HTML5 CMS. However, it is also possible to use any Android-based CMS or even just show content from a memory card, for example a secure digital card (SD-card), insertable into a corresponding slot in the part 4.

The first parts 4 can, advantageously, communicate with the point of sale computer software, each shop thus being able to affect the content displayed depending on the items purchased. Each part 4 can have standard RS-232 and/or USB interfaces which are compatible with most cash registers and point of sale units. Therefore, once a product is scanned by a checkout assistant, the VDU 12 could be used as the checkout register as well as displaying possible promotional messages to the customer that point out that there is an offer available for a product at the time of purchase and/or that there is a future promotional offer to be given to the customer in relation to
future purchases of that particular product.

It is a further advantage that the first parts 4 have the ability to communicate via a wireless communications network. A means for displaying the content can thus be a wireless communications device mounted within the part 4. Thus, the first part 4 can have built-in Wifi and/or a Bluetooth which makes the part 4 extremely versatile and an easily extendable platform for checkout signage deployment. The ability to communicate wirelessly means that the first parts 4 are able to communicate with mobile communications devices, such as smartphones and tablets, via a wireless communications connection, for example a Bluetooth personal area network creating a two way "conversation" between the smartphone/tablet and the part 4. Thus, the part 4 can affect the content on the smartphone/tablet and vice versa the smartphone/tablet can affect the content on the advertising unit.

A further option would be for the part 4 to be able to communicate over a mobile cellular network if required.

The digital content can also be transferred to a mobile communications device via Near Field Communication (NFC). NFC is a set of standards for mobile communications devices to establish radio communication with each other by touching them together or bringing them into close proximity, such that by tapping the smartphone on the part 4, digital content can be transferred between the two objects. This allows for contactless payment/mobile payment systems to be introduced in a relatively simple manner.

The part 4 can also be arranged to have an audio output to compliment the digital content displayed on the VDU 12 if required. However, the sound would be muted when the part 4 is placed on the charge rail 16 of the second part 6. This prevents a large number of parts 4 playing sounds when not in use at the checkout.

As an alternative version to conveyor dividers, the units 2 may also be adapted to be used as shelf edge displays, as shown in Figure 3, with all the
same functionality as the divider version. Referring to Figure 3, a plurality of
first parts 4 connect to the second part 6 mounted to the front edge of a shelf
by way of the charging rail 16. The VDUs 12 are able to display digital content
relevant to the product on the shelf at that location, a "SPECIAL OFFER"
promotion being shown for example.

In addition, the first parts 4 can be mounted on a shopping trolley with all the
same functionality. Furthermore, when mounted to a trolley, the first part 4
can be arranged to change the digital content when in a specific location in
the store via a wireless connection, for instance by way of a Bluetooth
beacon. It is therefore possible to deliver relevant information to the
customer, such as promotions for tomatoes when you are next to tomatoes, or
run a relevant advert when you are next to a particular product. Advantageously, a locking chain which secures a plurality of trolleys together
in one place can be used as the second part 6 to recharge the batteries in the
first parts 4. Such a part 4 mounted to a trolley could also be adapted to
communicate with hand-held scanning devices used by some stores,
particularly supermarkets, for customers to scan products as they put them in
the trolley for purchase. Subsequently, the products can then, if so desired, be
purchased by way of the contactless payment method mentioned above.
Furthermore, a socket for an audio jack can be provided in the part 4 to
enable a customer to plug-in a set of earphones to receive the audio output
mentioned above as they walk around the store.

A second part 6, which allows for wireless or inductive charging, would be
beneficial to keep the parts 4 topped up with charge when not in a contact
storage situation.

Bluetooth beacons can also be arranged to have the part 4 display way-finder
information on the VDU 12 which can thus guide a customer around the store
to find the items desired by that customer and/or guide you to promotions. In
this respect, the first part 4 can be extended to be made compatible with
indoor positioning systems for location awareness purposes, such as Apple
iBeacon and Qualcomm Gimbal systems.
The first part 4 may further comprise a solar panel (not shown) as a back-up to the charging for the unit 2. This would enable the unit 2 to be powered a little longer and, in the event that the unit is stolen, especially the shopping trolley version described above, use of the mobile cellular network would enable tracking of the first part 4. Such a solar panel can be, for example, a solar power panel battery charger, having preferably anti-knock, weatherproof, drop resistance, anti-corrosion and fireproofing functionality. The solar power panel battery charger is a compact and lightweight solar charger especially designed for objects that get moved around and it proves useful as a back-up power supply. Using advanced solar cell and Li-ion battery technologies, the solar charger will charge itself in all daylight conditions and will store power for times when needed.

The VDU 12 can be exchanged for an auto stereoscopic three-dimensional (3D) screen which upgrades the unit 2 to a 3D device without the need for customers to wear 3D glasses.

Low energy versions of the advertising units 2 can also be made available by replacing the full colour screens of the VDUs 12 with electrophoretic ink (so-called e-Ink) displays. Such displays have ultra low power consumption.

The unit 2 can therefore replace those conventional mundane and lifeless plastics dividers currently used at checkouts.

With digital content being more captivating than still imagery, the part 4 is a useful advertising and marketing solution since it grabs the attention of customers whilst they are in a place with not much else to do apart from wait in line to be served.

Not only is the unit 2 useful at a point of sale location, but it may also be useful as any table-top unit, such as in restaurants or cafes.
CLAIMS

1. An advertising unit comprising a first part including a body, a visual display unit mounted to said body, an energy storage device mounted to said body and for supplying power to said first part and means for displaying a content on the visual display unit, the advertising unit further including a second part to which said first part is removably connected, said second part comprising a device for inputting energy into said energy storage device.

2. An advertising unit according to claim 1, wherein the means for displaying a content can be a wireless communications device mounted within the advertising unit to receive the content over a wireless communications network.

3. An advertising unit according to claim 1 or 2, and further comprising a content management system (CMS) controlling the content to be displayed on the visual display unit.

4. An advertising unit according to claim 1 or 2, wherein the content to be displayed is by way of a content storage device connectable to the advertising unit.

5. An advertising unit according to any preceding claim, wherein the unit is a dividing member placed on a conveyer belt surface between adjacent customers goods.

6. An advertising unit according to any preceding claim, wherein the energy storage device is a re-chargeable battery mounted in the body and the second part is a charging device for charging the re-chargeable battery when the first part is connected to the second part.

7. An advertising unit according to claim 6 as appended to claim 5, wherein the second charger part is a charging rail.

8. An advertising unit according to claim 6 or 7, wherein the re-chargeable battery is recharged via either metal contacts, or by contactless/wireless charging.

9. An advertising unit according to any one of claims 1 to 4, or any one of claims 6 to 8 as appended to claims 1 to 4, wherein the unit is a shelf edge display with the second part mounted to a front edge of a
10. An advertising unit according to one of claims 2 to 4, or any one of claims 6 to 8 as appended to claims 2 to 4, wherein the first part is mountable to a shopping trolley whereby the first part is arranged to change the digital content when in a specific location by way of the wireless communications network.

11. An advertising unit according to claim 10, wherein the second part is a locking chain for securing a plurality of trolleys together in one place.

12. An advertising unit according to any preceding claim, wherein the visual display unit is an auto stereoscopic three-dimensional screen.

13. An advertising unit according to any preceding claim, and further comprising a solar power panel battery charger.
### A. CLASSIFICATION OF SUBJECT MATTER

**INV.** G09F23/06 G09F9/35

**ADD.** A47F9/04 B62B3/14 G09F3/20 G09F27/00 G07G1/00

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

### B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

A47F G09F B62B G06Q G07G

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 practicable, search terms used)

EPO-Internal, WPI Data

### C. DOCUMENTS CONSIDERED TO BE RELEVANT

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<td>US 2011/102155 AI (CHOI JAEYEON [KR] ET AL) 5 May 2011 (2011-05-05) paragraphs [0055] - [0059], [0062] - [0070], [0074], [0093]; figure 1, 2</td>
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<td>WO 2006/117627 AI (SPRINGBOARD RETAIL NETWORKS LICENSING SRL [BB]; PERRIER SYLVAIN [CA];) 9 November 2006 (2006-11-09) paragraphs [0033], [0038] - [0043], [0046], [0048], [0049]; figures 1, 5, 8, 17, 18-20</td>
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**X** Further documents are listed in the continuation of Box C.

**X** See patent family annex.

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**Date of the actual completion of the international search:**

1 July 2015

**Date of mailing of the international search report:**

07/07/2015

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Vautrin, Florent
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<td>EP 2 273 444 A2 (MEDIA CART HOLDINGS INC [US]) 12 January 2011 (2011-01-12) claim 1; figure 1</td>
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