

LAMINATE DEVICE AND SYSTEM FOR DISPLAYING ITEMS

5 **Field of Invention**

The present invention relates to a laminate and system for displaying items. In particular, it relates to a laminate device that allows fixtures to be magnetically attached to its display surface. The laminate device and system may be used for displaying items for
10 sale in retail shops or as part of an effort to dress up a retail shop.

Background

At present, most retail display devices, such as shelves and railings for hanging clothes
15 hangers, are mounted to a wall using aluminium U channels with hanging slots cut out in it. These are then screwed onto the dry wall into rawl plugs in a concrete wall. The devices are then mounted between these aluminium slotted U channels. The U channels need to be exposed because the slots are used to mount shelves, hangers and other fixtures to display the goods for sale. These are usually solid core medium density
20 fibreboard, wood framed with plywood sides, or laminates. The installation of such display devices requires two persons or more to align the device between the aluminium U channels for a good fit. A good fitting requires a small gap between the channels and the device, and this is difficult to achieve and skilled workers are needed. In any event, once the retail store is fitted out using the current system of bolts, nuts and screws, the
25 display devices are fixed and not easily changeable because they are screwed onto the walls. The store appears static and displays become boring after a few weeks. There appears a need to provide for an improved display device and system that is easy to install; that conceals the ugly screws, bolts and nuts; and allows for easy re-configuration of the display devices within the store.

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Summary of Invention

In accordance with a first aspect of the invention, there is provided a laminate device for displaying items, the device comprising (a) a first layer of a rigid material having a

display surface; and (b) a second layer of a rigid material bonded to the first layer on the opposite side of the display surface, wherein the second layer comprises at least one magnetic element.

5 By "displaying items", it includes any exhibition or showing of items such as goods, merchandise or wares, including storage. An example would include displaying shoes, clothes, accessories for sale in a retail store, or for dressing up the interior of a retail store.

10 By "rigid material", it is meant to include any material that is resistant to bending. The material may be malleable and allows for easy moulding, but it should retain its structure such that it supports the magnetic element and items that are on display.

Preferably, the second layer may be made from any rigid and light-weight material. More
15 preferably, the second layer is made from a material selected from the group comprising: polyurethane foam, plastic, expanded polystyrene, Styrofoam, cardboard, low-density polyethylene, and wood.

Preferably, the structure of the second layer may be that of a "honeycomb" which
20 resembles hexagonal cells. A magnetic element may be embedded or placed in one of these hexagonal cells. Advantageously, the "honeycomb" structure allows the second layer to be structurally rigid and yet provides the advantage of being light-weight.

By "magnetic element", it is included any element such as a magnet that attracts other
25 magnets or metallic objects. Preferably, the magnetic element is bonded to the second layer by a thermoplastic resin such as epoxy. In order to prevent the magnetic element from being brittle, the magnetic element may be coated with chromium. The coating process may be any coating process, such as electroplating, known to the skilled person in the art.

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Preferably, the first layer is a metal plate made of aluminium and the width of the first layer is between 0.5 to 1.0mm.

Preferably, the laminate device further comprises a third layer bonded to the second layer on the opposite side of the first layer. More preferably, the third layer may be a metal plate made of aluminium. Alternatively, the third layer may be made from a non-metallic material selected from the group comprising: plastic and wood. In any case, it is preferred that the first and third layers are made of a non-magnetic material. Advantageously, the first and third layers will not interfere with the magnetic waves of the magnetic element in the second layer.

Preferably, the three layers are bonded together by adhesives through a lamination process known to the skilled person.

Preferably, at least one metallic fixture is magnetically engaged to the display surface. More preferably, the at least one metallic fixture is made of a non-magnetic material. The at least one metallic fixture may be selected from the group comprising: shelf, rack, railing, hanger and bracket. More preferably, at least one locator pin engages the fixture to the display surface. By "pin", it is included any piece of metal that supports or attaches the metallic fixture to the display surface.

In accordance with a second aspect of the invention, there is provided a display system comprising (a) at least one laminate device according to the first aspect of the invention, wherein the device is secured to a structural surface.

Preferably, the device may be magnetically engaged to at least one metallic strip secured on the structural surface. Particularly, the honeycomb structure of the laminate device of the present invention allows the laminate device to be relatively thin and light weight. This makes for easy installation of the device in a retail store. Since the device is mounted and secured to the wall of a retail store by magnetic means, the device can be easily interchanged as they are only mounted using magnetic force. Also, these lightweight devices and magnetic mounts allow devices within a store to be easily interchanged since they are modular in size. The magnets in the laminate device allow for the snapping of the laminate device onto metal strips secured on the wall, and also allow for fixtures to magnetically attach to the laminate device using the same magnets.

It provides flexibility to a store designer on the position of display device and fixtures in a store. In addition, extra new device can be added to update the store display and to reduce the boring factor, so important in retail. There are no visible screws, bolts and nuts in the present laminate device and display system using the laminate device which
5 makes the display of goods in a retail store aesthetically appealing.

Brief Description of Figures

In order that the present invention may be fully understood and readily put into practical
10 effect, there shall now be described by way of non-limitative examples only preferred embodiments of the present invention, the description being with reference to the accompanying illustrative figures.

In the figures:

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Figure 1 is a cross-sectional view of a laminate device according to an embodiment of the present invention;

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Figure 2 is a perspective view of the second layer of the laminate device according to an embodiment of the present invention;

Figure 3 is a cross-sectional view of the laminate device and display system according to an embodiment of the present invention; and

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Figure 4 is a perspective view of Figure 3.

Detailed Description of The Preferred Embodiments

Referring to the accompanying drawings, Figure 1 shows an example of a laminate
30 device (5) according to an embodiment of the present invention. In particular, the laminate device (5) is made up of a first layer (10) made of a rigid material. In this example, the first layer (10) is a metal plate made of aluminium. The rigid material used may be metallic or non-metallic, preferably the first layer (10) is made of a rigid material that is non-magnetic. One of the advantageous of the present invention is the light-

weight of the laminate device. Therefore, light-weight metals such as aluminium may be used. Other types of non-metals such as plastic or thin ply-wood may also be used. The first layer (10) has a display surface (15) for placing and engaging fixtures. These fixtures provide support on which items for display may be placed on. The engagement of the fixtures will be explained below.

A second layer (30) is bonded to the first layer (10) on the opposite side of the display surface (15). In a preferred embodiment, the structure of the second layer (30) is preferably one that resembles a "honeycomb" structure, i.e. resembling hexagonal cells.

This "honeycomb" structure of the second layer (30) is shown in Figure 2. Once again, similar to the structure of the first layer (10), the second layer (30) may be made of any rigid and light-weight material. Alternatively, the second layer (30) is made of polyurethane foam. The foaming process and the density of the foam used in order to obtain the desired hardness may be carried out by any known process known to the skilled person. For example, the density of the foam used in the present invention may range from 30g to 250g. Alternatively, other rigid materials such as plastic, expanded polystyrene, Styrofoam, cardboard, low-density polyethylene (LDPE) and wood may be used as material for the second layer (30).

A third layer (20) is further bonded to the second layer (30) on the opposite side of the first layer (10) as shown in Figure 1. Similar to the first layer (10), the third layer (20) may be made of a metallic or non-metallic material, so long as the material selected and used is rigid for providing structural support and light-weight. Examples include light-weight metals such as aluminium and other types of non-metals such as plastic or thin ply-wood may be used. In the present embodiment, the third layer (20) is a metal plate made of aluminium. Preferably, the third layer (20) is made of a non-magnetic material. In the present example, both the first layer (10) and third layer (20) are metal plates made of aluminium.

It will be appreciated that, in various alternative embodiments of the invention, the first layer (10) may be an aluminium plate while the third layer (20) may be non-metal such as plastic or ply-wood. Or, both the first layer (10) and the third layer (20) are non-metal plastic sheets or ply-wood.

The laminate device (5) is prepared by bonding all three layers (10, 20, 30) by any lamination process known to the skilled person in the art. The lamination process basically involves preparing the material and layers, cleaning the surface of the layers, applying a thermoplastic resin such as epoxy to the surface of the layers being bonded, and providing the conditions for bonding (for example, cold or hot bonding). The width of the first layer (10) may be about between 0.5 to 1.0 mm. The width of the second layer (30) and third layer (20) may vary depending on the desired strength and thickness required when applying the laminate device (5) on a structural surface of a retail store. The thickness of the laminate device (5) may be about 14.0 mm. The resulting laminate device may be very flat and ideal for high quality images to be pasted on its display surface (15) and displaying items.

Figure 2 shows the second layer (30) made of polyurethane foam and having a "honeycomb" structure having hexagonal cells. The "honeycomb" structure allows placement of magnets (50) in the "honeycomb". There may be a plurality of magnets (50) equally distributed in the second layer (30) and the number of magnets (50) may be vary depending on the number of fixtures or weight of the items on display on the display surface (15) of the laminate device (5). For example, 1, 2, 3, 4 or 5 magnets may be equally distributed throughout the second layer (30) with each magnet (50) occupying a hexagonal cell. Alternatively, each hexagonal cell may contain a magnet (50). The magnets (50) may be bonded to the second layer by a thermoplastic resin such as epoxy. Alternatively, the magnets (50) may be moulded and formed together with the second layer (30).

The magnets (50) may be coated, for example by electroplating, with chromium to improve strength, durability and quality of the magnets (50). The size and strength of the magnets may be varied according to the desired strength required to hold the fixtures (90) on the display surface (15).

As shown in Figure 3, fixtures (90) may be mounted onto the display surface (15) of the laminate device (5) which, in turn, is mounted onto a structural surface (60). In the present case, the structural surface (60) is a wall. Alternatively, the laminate device (5) may not be mounted on the wall (60) but may lean on any structural support. In Figure 3,

the embodiment shows that the laminate device (5) is mounted, i.e. secured, to the wall (60). Figure 4 shows a perspective view of the embodiment shown in Figure 3.

Preferably, the fixtures are metallic so that they are magnetically engaged to the display surface (15) of the laminate device (5). The magnetic engagement is allowed because of the magnets (50) bonded or embedded in the second layer (30) of the laminate device (5). By "fixtures", it is meant to include any metallic structure that may be fixed in place onto the display surface (15) by magnetic means and may be used to hold or contain any item for display. Preferably, these metallic fixtures are not magnetic. In the present invention, fixtures may include railings, hangers, shelves or brackets for supporting any structure like shelves. As shown in Figure 4, fixtures (90) such as brackets may be used to support shelves (125) that may be non-metallic, e.g. wooden shelves. The fixture (90) itself may be the item on display on the display surface (15) or may support the item on display. As an example, the fixture (90) may also be a metal frame for hanging clothing or garments, wherein the metal frame will magnetically snap onto the display surface (15). These fixtures (90) can easily be magnetically attached to the surface of the display device (5), and easily removed, i.e. magnetically engaged and, therefore, releasably attached.

The positions of the magnets (50), including their polarity, may be arranged in such a way so as to fix and determine the positions on which the fixtures (90), including their orientation, may be attached to the display surface (15). In the retail industry, it is important to maintain a consistent "look and feel" that is true to the branding concept and strategy of the brand. Therefore, in a chain of retail stores, the present invention allows the "look and feel" of the branding concept to be maintained in a chain of retail stores by providing laminate devices where the position and orientation of the fixtures are fixed.

The fixture (90) may be magnetically engaged to the display surface (15) of the laminate device (5) by a locator pin (95). The locator pin (95) may be any piece of metal that supports or attaches the fixture (90) to the display surface (15). In addition to providing support, the locator pin (95) also helps to identify the position at which the fixture (90) may be place on the display surface (15). This is achieved by providing holes (100) at predetermined positions in the laminate device (5) so that a locator pin (95) may be inserted into a hole (100). The locator pin may be further inserted into a sleeve (105) in

the laminate device (5) in order to provide additional support to the fixture (90). Since these pins are used to support the fixture and/or the display item on the fixture, the number of pins used will depend on the weight of the fixture (90) or item to be displayed. The fixtures (90), for example shelves and hangers, remain magnetically engaged to the display surface (15) because of the magnets (50) embedded into the second layer (30), and the locator pins (95) act to reduce the vertical shear that is exerted by the weight of the shelf and the weight of the display item.

The laminate device (5) may be secured and mounted onto a structural surface, for example a wall structure (60), as shown in Figure 3. The laminate device (5) magnetically engages short metal strips (70) that are secured on the wall either by screws or any adhesive such as sticky tape or glue. It is the third layer (20) of the laminate device (5) that contacts the metal strips (70). Once again, the magnets (50) in the second layer (30) allows for such magnetic engagement of the laminate device (5) to the metal strips (70) on the wall (60). The metal strips (70) may be positioned such that they are aligned to the magnets in the laminate device (5). This method of mounting on to the wall (60) conceals any screws, bolts and nuts that are typical of a standard retail fixture. The laminate device (5) is easily mounted on to the wall (60) and still allows fixtures like shelves (90) to be hung on its vertical display face (15). In a preferred embodiment, a flange (120) may be placed at the base of the laminate device (5) adjacent the wall structure (60) in order to provide support to the laminate device (5).

The magnetic mounting of the display device (5) on the wall and the magnetic releasably attachment of fixtures (90) on the display face (80) of the display device (5) allows the concealment of any screws, nuts or bolts. The mounting is primarily magnetic in nature having two pins on the fixture. In addition to the locator pin (95) described above, a further vertical shear pin may be used to correctly position the fixture so that it can attach itself aggressively to the laminate device (5). A shear pin is usually larger than the locator pin (95) and is able to support a heavier load. A pull grip on the fixture (90) allows for easy detachment to "break" the magnetic force with an outward movement.

The present invention allows for easy interchanging of the devices, addition of decorative cloth covered devices, moving devices around, as well as removing older devices and replacing with newer devices with an updated message. Colourful devices,

devices covered with fabric metal inserts are snapped onto the shell wall plate for enhanced store decoration. Either the laminate device (5) or other colourful displays can be moved around easily by the store staff instead of having to get in store outfitters to redo the displays.

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Whilst there has been described in the foregoing description preferred embodiments of the present invention, it will be understood by those skilled in the technology concerned that many variations or modifications in details of design or construction may be made without departing from the present invention.

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CLAIMS

1. A laminate device for displaying items, the device comprising:
 - (a) a first layer of a rigid material having a display surface; and
 - (b) a second layer of a rigid material bonded to the first layer on the opposite side of the display surface,wherein the second layer comprises at least one magnetic element.
2. The laminate device according to claim 1, further comprising a third layer bonded to the second layer on the opposite side of the first layer.
3. The laminate device according to any one of claim 1 or 2, wherein the first and third layers are made of a non-magnetic material.
4. The laminate device according to any one of the preceding claims, wherein the second layer is made from a rigid material selected from the group comprising: polyurethane foam, plastic, expanded polystyrene, Styrofoam, cardboard, low-density polyethylene, and wood.
5. The laminate device according to any one of the preceding claims, wherein the second layer resembles hexagonal cells and the at least one magnetic element is placed in at least one of the hexagonal cells.
6. The laminate device according to any one of the preceding claims, wherein the at least one magnetic element is bonded to the second layer by epoxy.
7. The laminate device according to any one of the preceding claims, wherein the at least one magnetic element is coated with chromium.
8. The laminate device according to any one of the preceding claims, wherein the width of the first layer is between 0.5 to 1.0mm.

9. The laminate device according to any one of the preceding claims, wherein the layers are bonded together by adhesives.
10. The laminate device according to any one of the preceding claims, wherein the
5 first layer is a metal plate made of aluminium.
11. The laminate device according to any one of the preceding claims, wherein at least one metallic fixture is magnetically engaged to the display surface.
- 10 12. The laminate device according to claim 11, wherein the at least one metallic fixture is made of a non-magnetic material.
13. The laminate device according to claims 11 or 12, wherein the at least one metallic fixture is selected from the group comprising: shelf, rack, railing, hanger and
15 bracket.
14. The laminate device according to any one of claims 11 to 13, wherein at least one locator pin engages the fixture to the display surface.
- 20 15. The laminate device according to any one of claims 2 to 14, wherein the third layer is metal plate made of aluminium.
16. The laminate device according to any one of claims 2 to 14, wherein the third layer is of a non-metallic material selected from the group comprising: plastic and wood.
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17. A display system comprising:
(a) at least one laminate device according to any one of claims 1 to 16,
wherein the device is secured to a structural surface.
- 30 18. The display system according to claim 17, and comprising a laminate device according to any one of claims 1 to 15, wherein the device is magnetically engaged to at least one metallic strip secured on the structural surface.