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(54) POSITIONALLY-ADJUSTABLE DISPLAY UNIT

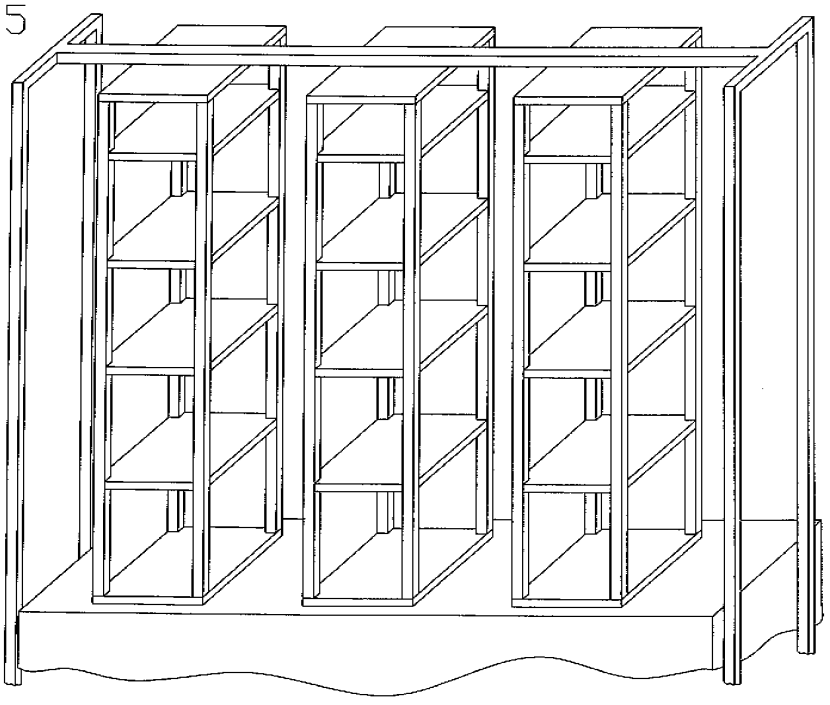
(57) The invention relates to a positionally-adjustable display unit which can be used to display products or photographs.

The inventive unit comprises a base which is equipped with mechanical, electrical and electronic means, a set of positionally-adjustable, rotating modules, a detector for detecting the position of each module and at least one handling member. According to the invention, the module is rotated in relation to a vertical or horizontal axis and can be supported or suspended.

The invention also comprises means for fixing photograph supports and other objects.

The invention is suitable for use in the production of commercial furniture.

Fig. 5



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Description

[0001] This invention refers to a positional display case ideal for displaying products or photographs.

[0002] In particular, it refers to a display case fitted with a set of horizontally or vertically-arranged sections, each of said sections being fitted with a motor system, and a control mechanism, so as to enable a sequence of rotary movements during which the required display is always seen by the customer.

[0003] The invention also extends to a means of controlling the display case movement, in which the individual movements of each of the display case units are defined.

BACKGROUND

[0004] In different commercial sectors it is always desirable to attract the possible customer's attention as far as possible in order for them to learn of a particular commercial offer, and for this to prove as appealing as possible.

[0005] Shop windows are designed for this purpose, for displaying products or photographs (for example in the case of real estate offers, samples of wall or floor paving, footwear, electrical mechanisms and lighting devices, and many others) inviting the consumer to come closer up to these and arouse the desire for the product on display.

[0006] However, a shop window always shows a single display, so that the customer only has static options available. There are occasionally mobile elements in the shop window, which, whilst fulfilling the function of attracting the consumer's attention, do not provide any advantages from the standpoint of taking advantage of space.

[0007] In interior display units there are manually or automatically rotating display devices, which if automatic do not allow stopping them at the customer's wish, or which necessarily have to be manipulated, such as the display units for postcards in which the user has to push or pull these to turn them round.

STATE OF THE ART

[0008] ES 1042049 discloses a rotating modular display case which has a base able to house a motor and a rotating section driven by said motor at the top.

[0009] ES 1047883 discloses a display case for ceramic items which has a leg and a manually-driven rotating section.

[0010] ES 1048433 U discloses a rotating modular display case, particularly for ceramic tiles, which has a support and a rotating section, as well as means for making the display panels tilt.

[0011] ES 1029620 U refers to an advertising display unit which discloses a polygonal rotating section fitted with motor drive.

[0012] ES 1002315 U defines a rotating device for alternate or intermittent display of messages by using a pinion in which a certain number of teeth have been removed, thus interrupting the movement of the message.

[0013] In none of these earlier devices is there any description of a motor-driven device for sequential rotation of a display/showcase section for displaying messages (photographs, datasheets etc.) which enables full control by the user and also allows the user to stop this without causing any damage to the device.

[0014] It is hence desirable for a display case or unit to meet the following characteristics:

- To be able to be fitted in a shop window or outdoor setting.
- To be able to be remotely controlled.
- Ability to give the display movement without the user's involvement.
- Being visible from the front, back and side.
- Allowing easy replacement of the item exhibited, such as photographs or small objects.
- Enabling the user to choose the position of the display unit/case even from outside the shop window.
- Enabling return to automatic function after a pre-set period of time without any specific orders from the user

SUMMARY OF THE INVENTION

[0015] To sum up, this invention refers to a display unit/showcase, specially designed for indoor use and shop windows, but also able to be used outside, which is fitted with:

- A lower, upper or lateral base fitted with drive means, transmission means, reduction units, electrical connections and electronic devices.
- Possibly a support structure.
- At least one display/showcase section or set of sections, each of these sections being fitted with a rotation axis on at least one of their ends or central part:
  - o The rotation may be horizontal or vertical.
  - o At least one of the ends of said sections or their central part must be supported or held at the base.
  - o The cross-section of these sections is preferably polygonal, although a square section has been chosen in a preferential embodiment.
- Means for coupling the display section or sections to the drive means.
- A means of controlling the rotation position of the section.
- A means for moving each of the sections
- A programmer which determines the movement sequence of each of the sections.
- Possibly a device for direct operation by the user.
- Possibly a remote control unit and a means for re-

ceiving the signal emitted by the remote control unit
- A clutch device for the rotating section in respect of its drive
- A position recovery device when the position has been lost
- Means for sliding the assembly around, such as a set of wheels located in the base.

[0016] This provides the following advantages:

The shop or business thus attracts the attention of the possible customer, and
the latter in turn feels more interested by the product on sale.

[0017] The staff of the establishment does not necessarily have to be involved.

[0018] The display unit goes back into automatic mode when the user ceases to operate this.

[0019] The rotation can be manually stopped, enabling it to go back into the automatic sequence through the clutch operation.

[0020] The rotating sections can easily be replaced.

[0021] The display sections can also easily be replaced.

BRIEF DESCRIPTION OF THE FIGURES

[0022]

Figure 1 shows a general perspective view of a display case fitted with a base and a set of display modules, sequentially rotating, each of these being provided with a number of display surfaces.
Figure 2 shows a cross-section view of a display surface in one of the display sections or modules.
Figure 3 shows a perspective view of a display support for photographs, in which a central housing between two laminar sections is set up for locating the photograph or similar item.
Figure 4 shows a perspective view of an example of a display support for products which has a hollow with a lower support surface for its display.
Figure 5 shows a perspective view of an example of an embodiment of the display modules fitted with display trays.
Figure 6 shows a front view of an example of a user-driven device, fitted with an illuminated sign, able to be driven by proximity, even through the glass of a shop window or with obstacles in the way.
Figure 7 shows a side view of the device in Figure 6 arranged and backing onto the inside of a glass surface, but also wood and others, such as the glass pane of the shop window, to be driven from the outside.

[0023] If it is a question of exhibiting products the support device can be ruled out and simply include a set of surfaces at different heights, depending on the system needed.

DETAILED DESCRIPTION OF THE INVENTION

[0024] According to a first form of embodiment, with reference to Figure 1, number 1 shows an example of the display unit, which has a lower support base 2, a structure 3 holding a set of support modules 4. The base 2 and the top 5 of the structure 3 determine an articulation for each of the rotating display modules 4 by means of the corresponding supports. The top 5 of the structure 3 is held up by lateral items 6.

[0025] As one can see, when the display modules 4 assume a certain position, these are visible both from the front and the rear and through the arrangement of the lateral items, also from either side, enabling the establishment's customer to view this properly from the shop window and also from the inside of the shop. Obviously, even when the display unit of the invention is ideal for its location in the shop windows of establishments, it can also be used for fitting on the inside.

[0026] The display modules 4 can have a regular or irregular section, but it seems advisable for these to be made in a polygonal shape or one with a symmetrical axis in the rotation axis.

[0027] According to one embodiment, the display modules have a set of showcase panels for flat items, such as photographs. For this purpose the module, which has a preferentially polygonal shape, is designed to have rods or stems 7 at the top on which a support surface 8 can be held, said support surface 8 being fitted with a viewing surface 10 and a securing counter-surface 9. In order to ensure verticality (according to the mode represented) a further support rod 11 is fitted.

[0028] The photographs can be adhered to or printed on the viewing surface 10 but, as is clearly seen in Figure 3, it may include a space determined by two sheets, the viewing surface and a counter-surface, some distance apart from each other, so that the photograph or laminar surface to be displayed can be set in this space between the sheets which define this.

[0029] The unit is similarly designed for displaying relatively small-sized products of any kind, defining similarly to the item previously described support trays instead of a viewing surface. One example can be seen in Figure 4.

[0030] According to one option, the display modules can simply include a number of parallel horizontal surfaces at different heights forming support zones for any type of product of a suitable size. One example can be seen in the drawing shown as Figure 5.

[0031] On the inside of the base there are all the electrical, mechanical and electronic items needed for the display case to work properly.

[0032] The modules are turned by means of an electric motor which drives through a reduction unit a transmission system by means of a pulley, such as a belt or polymeric ring endowed with a certain degree of elasticity

with a properly calibrated tension. This allows the device to be stopped by means of a user's voluntary operation without the motor suffering through this.

[0033] The movement of each of the display modules is intended to be positionally sequential, programmed according to a pre-set program or through the user's operation.

[0034] It is also possible for there to be a set of separate modules which can be governed by a single processor so that the display modules in different cabinets can be included in the movement sequence. The transmission of information between the furniture items and/or modules can be by means of connection cables or by wireless connection.

[0035] The rotation position of each of the modules is controlled by means of an encoder which informs the processor of the real position of the display module, regardless of any possible movements of the motor and transmission unit.

[0036] For the sake of simple assembly, the base is intended to house the rotation means of the display module, on which the module itself will be fitted by appropriate means (normally securing by screws).

[0037] The furniture unit is intended to have support wheels so that it is easy to clean and handle the whole assembly or replace the items on display.

[0038] In addition to the automatic programmable or pre-set mode, the display module will have a moving system, which can be individual for each module or for all of these as a whole and will normally be associated with the display unit.

[0039] Furthermore, as an additional embodiment, it is intended to add a second movement system to the display unit by means of a touch-sensitive surface which can be set outside or inside the glass pane of a shop window, so that at times when the business is closed, the customer can observe the information or the products on display, by selecting the required movement of each module themselves.

[0040] In alternative embodiments it is intended for the rotation axis to be suspended from the top or be set out in a horizontal position with the bases to one of the sides or in a central position. The free end of the display module can be secured or set with no support at the free end.

[0041] Furthermore, in any of the cases it is also possible to fit a support on a central base endowed with drive means, with an output to both sides or up and down.

[0042] As regards the drive system, a proximity pushbutton unit is defined which receives from the user at a certain distance a power signal (radiation emitted by the section or the user's finger) which is able to go through the glass pane of a shop window, a wooden door or even a brick wall.

[0043] The operating system can thus be located anywhere and on any appropriate surface, either directly or through an interspersed section.

[0044] The device includes a casing 22 for housing the electronic circuit and the other different items of which this consists, and includes a reception surface or antenna for the device 23, which transmits the signal received to an electronic circuit. Depending on the intensity and regularity of the signal, the device will acknowledge the proximity and send the corresponding signal to the display unit. The reception surface 23 can be at a distance from the casing section 22 by means of a spacing rod or securing screw.

[0045] The button also includes a self-adjustment device. Hence, for example, if a hooligan sticks an adhesive over the pushbutton surface, this will send the signal and remain active for a few seconds, and after detecting that the signal is stable, proceed to regulate the threshold or frequency of the radiation required to receive the signal.

[0046] The device 21 can, be adhered to the window pane 20 through the antenna 23, the sides of the carrying case or form a closed section with a casing, which will be stuck to the relevant place.

[0047] To draw attention to the pushbutton unit, this has been designed with a number of luminous diodes (LEDS) 24 set in an area close to the antenna or even superimposed on this.

[0048] With no limitations to the sphere of the invention and only as an example, the diodes have been designed to visually form a slow rotation movement sequentially lighting up the diodes that have been programmed (one diode of every several items is lit up sequeutially).When the user draws near and the device detects this proximity, the electronic circuit modifies the sequence for lighting up the diodes, which will be illuminated more quickly and in greater numbers. Nevertheless, any other visual combination can be programmed.

[0049] The casing section 22 has a means of electric power supply and/or will include an electric battery.

[0050] The connection between the pushbutton unit and the display case can be by wire or wireless.

[0051] This is for application in making display units/showcases.

Claims

1. A display/showcase support or unit, specially conceived for the interiors and shop windows of establishments, **characterised by** incorporating:

   - A lower, upper or lateral base, fitted with a drive system, means of transmission, reduction units and electrical connections.
   - At least one display/showcase section, or a set of display/showcase sections, each one of said sections being provided with a rotation axis on at least one of their ends.
   - Means for coupling the display/showcase section or sections to the drive means included in the base.
   - A means for controlling the section rotation position.

• A means for moving each one of the sections.

2. A display/showcase support or unit, according to claim 1, **characterised by** also having:

• a structure for supporting the far ends of the display/showcase sections.

3. A display/showcase support or unit, according to claim 1, **characterised in that** the display/showcase section is held to the drive base at one of its ends.

4. A display/showcase support or unit, according to claim 1, **characterised in that** the display/showcase section is held to the drive base at both of its ends.

5. A display/showcase support or unit, according to claim 1, **characterised in that** the display/showcase section is held to the drive base at the middle.

6. A display/showcase support or unit, according to claim 1, **characterised in that** the display/showcase section has its rotation axis in a vertical position.

7. A display/showcase support or unit, according to claim 1, **characterised in that** the display/showcase section has its rotation axis in a horizontal position

8. A display/showcase support or unit, according to claim 1, **characterised in that** each of the sections has a polygonal cross-section.

9. A display/showcase support or unit, according to claim 1, **characterised in that** each of the display/showcase sections has a clutch mechanism between the rotating section and the drive means.

10. A display/showcase support or unit, according to claim 1, **characterised in that** each of the display/showcase sections has a device for recovering the position when this has been lost.

11. A display/showcase support or unit, according to claim 1, **characterised in that** this includes at least one means for controlled operation of the rotation of each of the rotating display/showcase sections.

12. A display/showcase support or unit, according to claim 11, **characterised in that** the controlled operation means is a programmer which determines the movement sequence of each of the sections.

13. A display/showcase support or unit, according to claim 11, **characterised in that** this also includes a device for direct operation by the user.

14. A display/showcase support or unit, according to any of claims 1 and 11, **characterised in that** this includes a remote control and a means for receiving the signal emitted by the remote control.

15. A display/showcase support or unit, according to either of claims 13 or 14, **characterised in that** the device for user operation includes a proximity detector pushbutton unit (21) able to be adhered to the glass pane (20) of a shop window or any other separating surface and be driven through this.

16. A support, according to claim 15, **characterised in that** the proximity detector pushbutton unit (21) consists of ;

• A support base (22) holding the electronic circuit and the other items of which this consists
• An antenna or reception surface (23)
• A means (25) for coupling the base (22) to the reception surface (23).

17. A support, according to claim 16, **characterised by** also incorporating a set of pilot lights, such as luminous diodes (LEDS) (24) acting in a set sequence.

18. A support, according to any of claims 15 to 18, **characterised in that** the pushbutton unit includes a self-adjustment device.

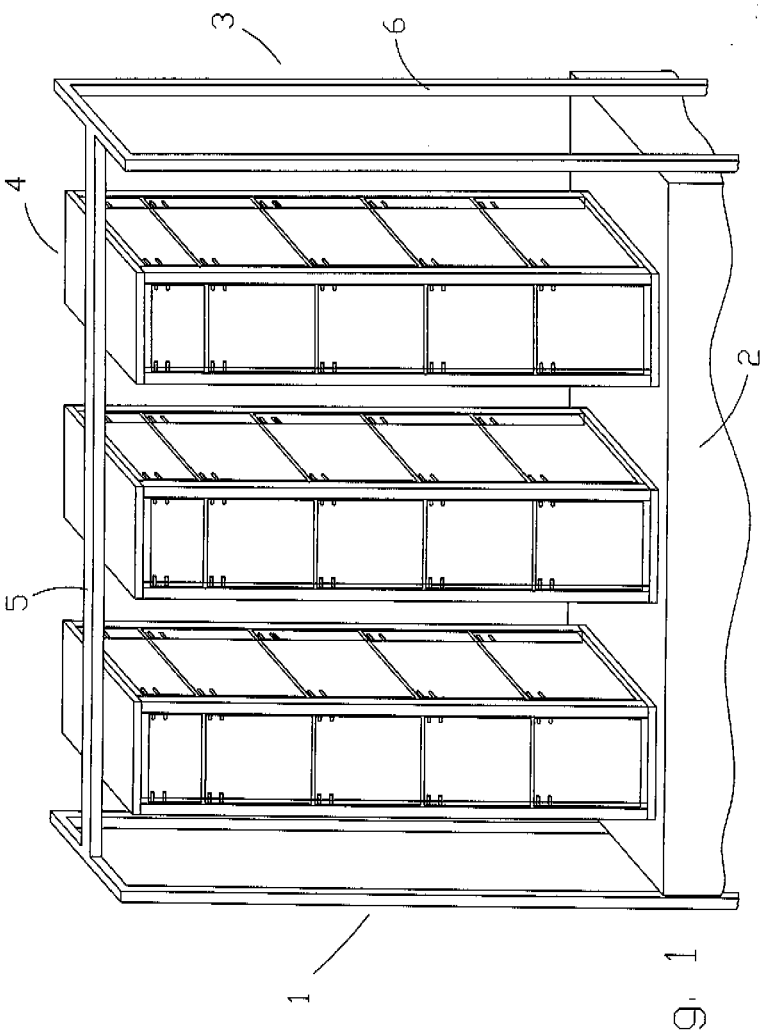


Fig. 1

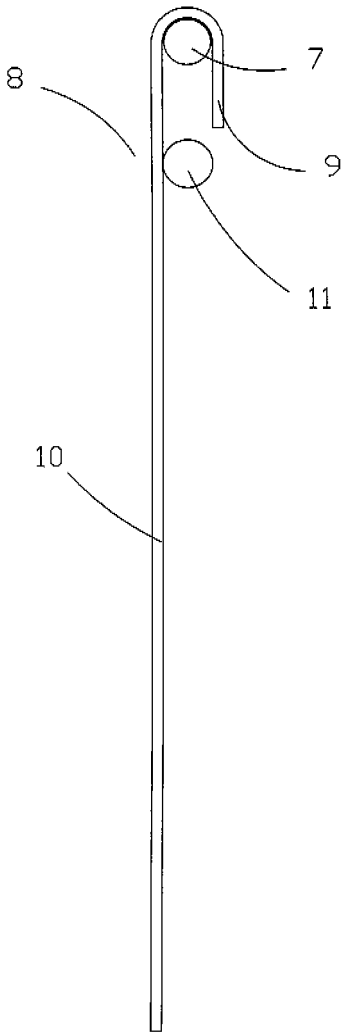


Fig. 2

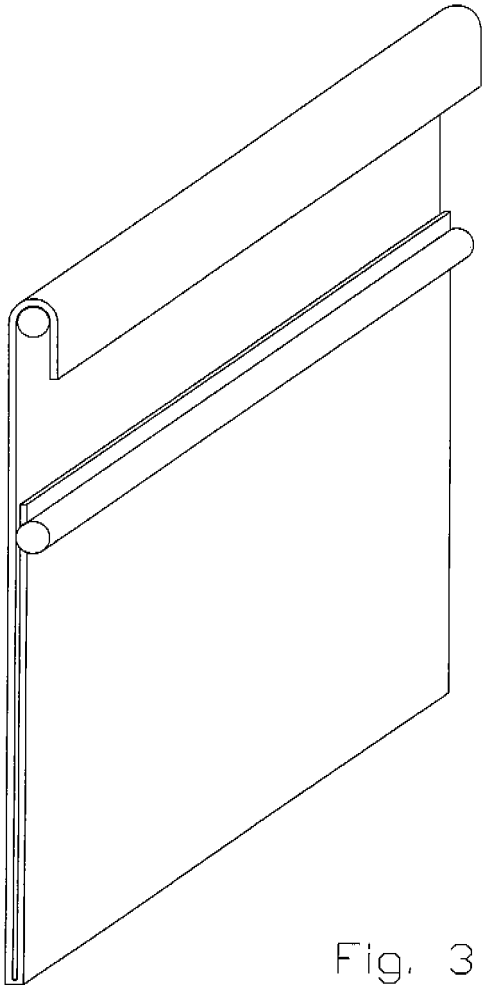
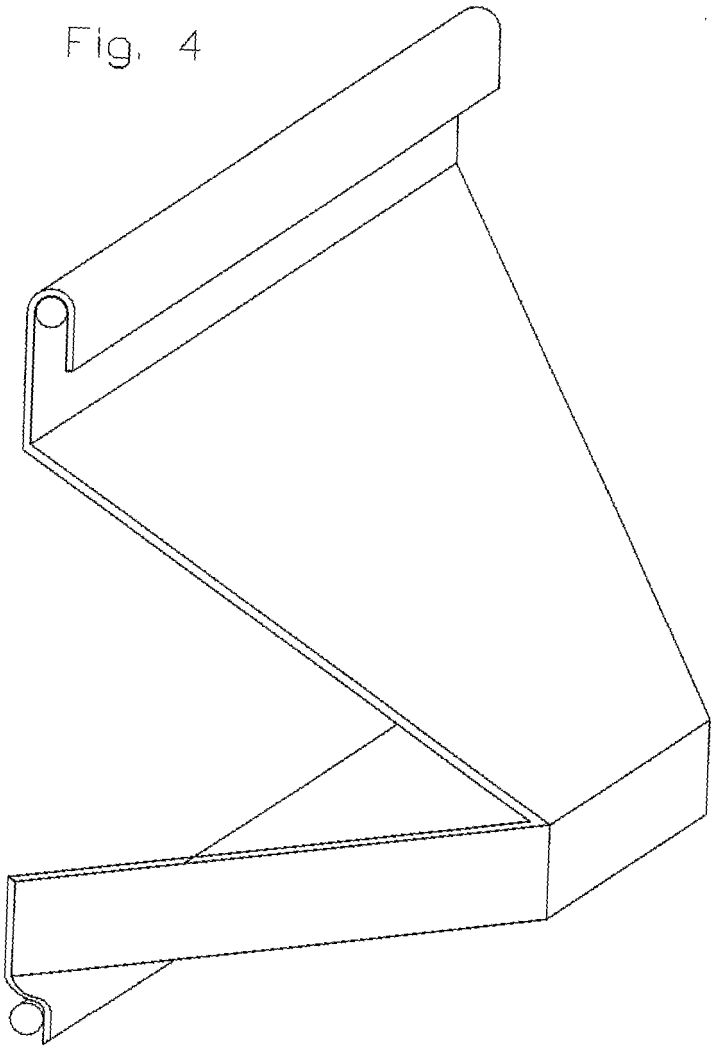


Fig. 3

Fig. 4



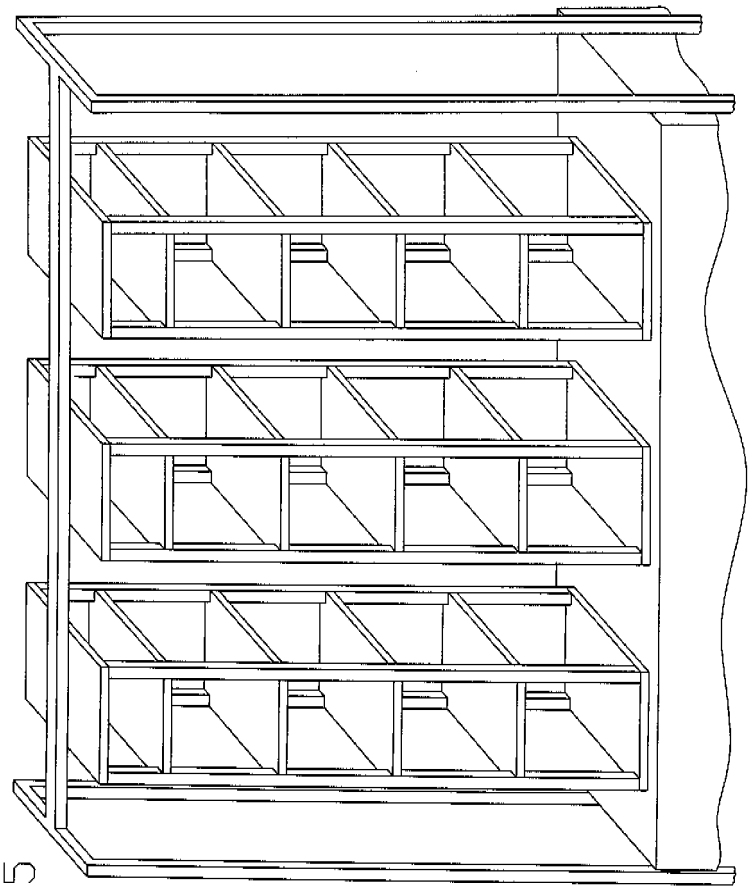


Fig. 5

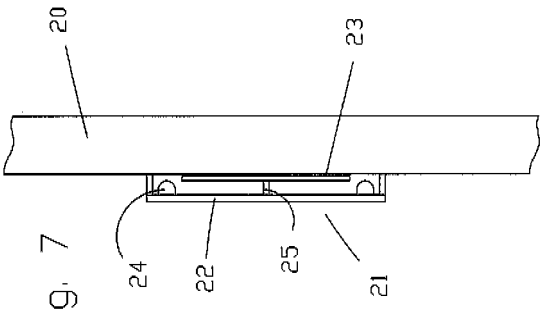


Fig. 7

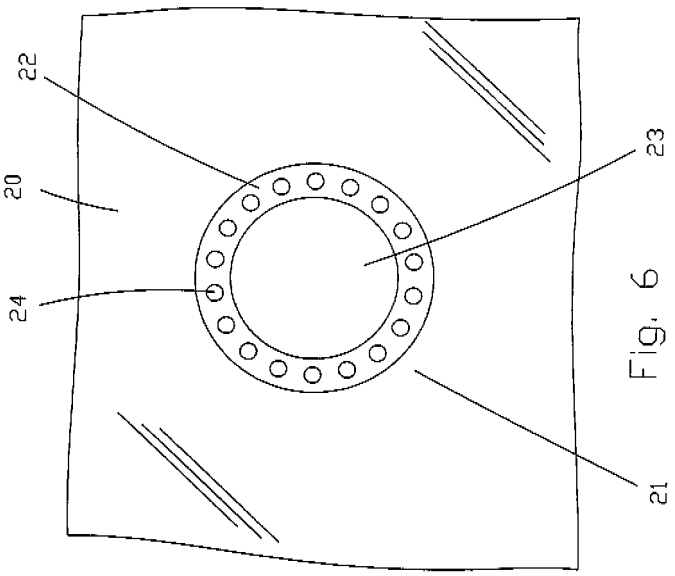


Fig. 6

INTERNATIONAL SEARCH REPORT

International application No.
PCT/ ES 2006/070001

A. CLASSIFICATION OF SUBJECT MATTER

G 09 F 11/02 (2006.01)

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)

G 09 F

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)

CIBEPAT, EPODOC, WIPL

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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Y		13, 14
Y	US 6 104 313 A (BOYD) 15.08.2000, **all the document**	13, 14
X	Base de datos EPODOC en EPOQUE, JP 02 240 683 A (NAKAMATSU) 25.09.1990, **abstract drawings**	1-8, 11
A	US 4 930 236 A (HART) 05.06.1990, **all the document**	1, 15, 16
A	GB 244 528 A (ELLIOTT) 21.12.1925, **all the document**	1, 9

☐ Further documents are listed in the continuation of Box C. ☒ See patent family annex.

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Date of the actual completion of the international search	Date of mailing of the international search report
(20.04.2006)	(03-05-2006)
Name and mailing address of the ISA/	Authorized officer
Facsimile No.	Telephone No.

Form PCT/ISA/210 (second sheet) (July 1992)

INTERNATIONAL SEARCH REPORT
Information on patent family members

International Application No
PCT/ ES 2006/070001

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REFERENCES CITED IN THE DESCRIPTION

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- ES 1047883 **[0009]**
- ES 1048433 U **[0010]**
- ES 1029620 U **[0011]**
- ES 1002315 U **[0012]**