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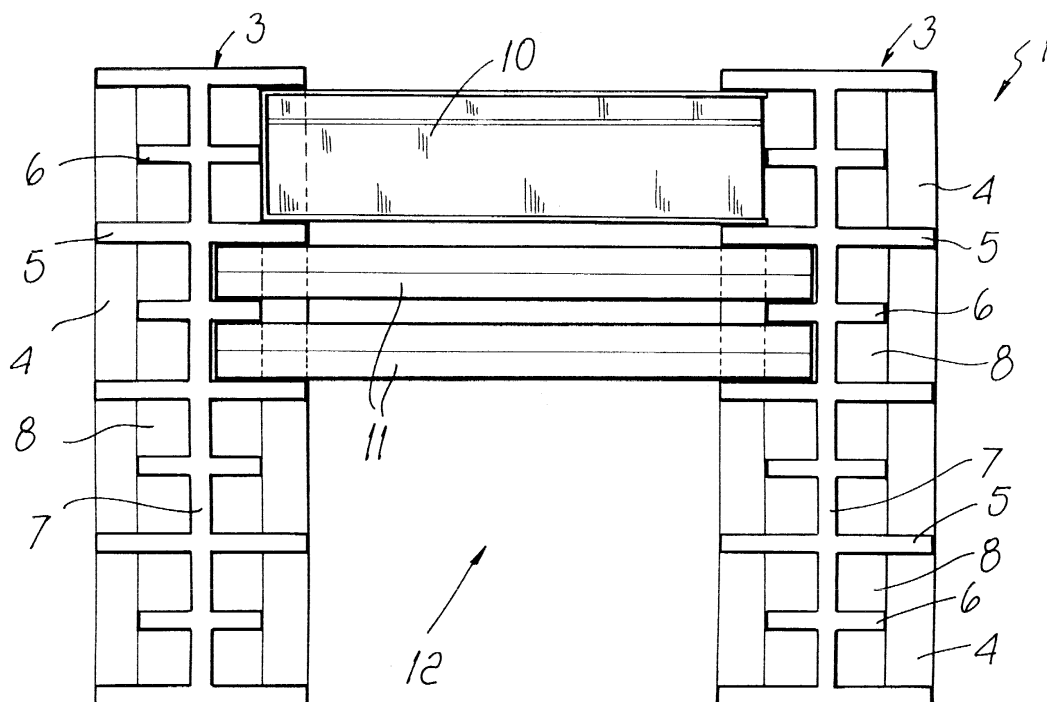
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(54) **Modular component for magazines**

(57) A modular component for magazines, particularly for storing items (10, 11) shaped substantially like a parallelepiped, includes pairs of lateral guides for the sides of each item, the lateral guides being formed by series of parallel and superimposed brackets which are

anchored, by one of their ends, to a longitudinal support. The modular component includes at least two series of brackets (3) which have different transverse dimensions and are arranged alternately so as to constitute supporting surfaces for the sides of items (10, 11) which may have different dimensions.



Description

[0001] The present invention relates to a modular component for magazines of items shaped substantially like a parallelepiped, particularly but not exclusively for vending machines for such items.

[0002] Some of the conventional vending machines are provided with magazines which are composed of a supporting structure in which a plurality of compartments are provided to form receptacles for containing items such as cassettes, boxes, nonprescription drugs, food and other packaged goods. At the front, the magazines are open in order to allow to remove and reposition the items in the containment receptacles, while at the back they are usually closed by a panel which also constitutes a support for the items inserted in the receptacles. The supporting structure can be made of metal, while the walls of the receptacles are usually made of plastics in order to reduce the overall weight of the structure. The receptacles are slightly larger than the stored items and their dimensions vary according to the items to be contained but remain constant for the receptacles of a same magazine.

[0003] A drawback of such prior art is that the configuration of the magazines cannot be modified easily unless one disassembles their supporting structure, requiring the design and manufacture from scratch, in each instance, of each individual magazine according to the items that it will have to contain. All this, combined with the considerable work required to connect the receptacles, which are generally made of plastics, to the supporting structure, which is generally made of metal, causes a considerable increase in manufacturing costs and production and delivery times and also causes limited versatility of those types of magazine.

[0004] The above-cited drawbacks have been overcome by a modular component of the type described in Italian utility model No. 229318, in the name of this same Applicant, which discloses a modular component for magazines of items shaped substantially like a parallelepiped which is composed of pairs of lateral guides for the sides of each item. These lateral guides are formed by series of identical, parallel and stacked brackets which are fixed transversely, at preset distance, to a longitudinal support. A plurality of receptacles shaped substantially like a parallelepiped for containing the items are thus formed. The receptacles are partially open on three sides and extend transversely to a depth which is shallower than the corresponding depth of the items, so as to allow their easy handling from the side that lies opposite the longitudinal support. The mutual distance between the brackets of a series can vary according to the number of items to be contained, and this can be achieved by eliminating one or more brackets at regular intervals or by varying the distance of the brackets by modifying the basic mold used to produce the different series of brackets, whereas the longitudinal distance between two mutually opposite series at the sides of each

item can be modified by providing a longitudinal support with different distances between the coupling points of the guides. Such modular components can be used in the internal magazines of automatic vending machines to contain in a same magazine items having distinctly different dimensions. Particularly in a vending machine for audiovisual media, a same magazine can be composed of modules for containing audio cassettes, VHS videocassettes, compact discs, and DVDs, by replacing one or more modular components with other compatible ones which are suitable for the specific requirements.

[0005] Those modular components have the drawback that, particularly in a vending machine for video media, the containers of VHS videocassettes and the containers of video CDs and DVDs must be stored in two different types of receptacle; this prevents optimization of the magazine, since the DVD containers are thinner than the VHS containers.

[0006] Another drawback is that, in a magazine that includes these elements, there must be definite positions for each individual object, and this prevents space optimization.

[0007] Another drawback is that, in order to allow further insertions of containers for VHS cassettes and for DVDs, it is necessary to add and/or modify, with the intervention of a qualified technician, the modular components for both kinds of receptacle, and this entails continuous reorganization of the magazine.

[0008] The aim of the present invention is to overcome the drawbacks of the cited prior art.

[0009] An important object of the invention is to eliminate the above-noted drawbacks by providing a modular component for providing magazines which have a simple, low-cost structure and are suitable for simultaneously storing a first item and a second item having mutually distinctly different dimensions in the same modular component, obtaining, in the case of vending machines for audiovisual media, the optimization of the magazine and particularly the storage, in the same receptacle, of a first item or of a plurality of the second items.

[0010] Another object of the invention is to provide a modular component in which it is possible to equally insert the first item and the second item.

[0011] This aim and these and other objects which will become better apparent hereinafter are achieved by a modular component for magazines, particularly for storing items shaped substantially like a parallelepiped, comprising pairs of lateral guides for the sides of each item, the lateral guides being formed by series of parallel and superimposed brackets which are anchored, by virtue of one of their ends, to a longitudinal support, characterized in that it comprises at least two series of the brackets which have different transverse dimensions and are arranged alternately so as to constitute supporting surfaces for the sides of the items, which may have different dimensions.

[0012] Further characteristics and advantages of the

present invention will become better apparent from the following detailed description of a preferred but not exclusive embodiment thereof, illustrated only by way of non-limitative example in the accompanying drawings, wherein:

Figure 1 is a partial front elevation view of a modular component according to the invention;

Figure 2 is a perspective view of the modular component of Figure 1, illustrating a container for VHS videocassettes and a container for DVDs;

Figure 3 is a view, similar to Figure 2, of a container for VHS videocassettes accommodated in the modular component according to the invention;

Figure 4 is a view, similar to Figure 3, of a container for DVDs which is accommodated in the modular component according to the invention.

[0013] With reference to the figures, the modular component according to the invention, generally designated by the reference numeral 1, constitutes one of the components for containing two types of item, designated by the reference numerals 10 and 11 respectively, which are substantially shaped like a parallelepiped.

[0014] Each modular component 1 includes a longitudinal support 2 which is substantially flat and to which several series of brackets 3 are fixed transversely at preset distances, constituting guiding members for the lateral sides of the items 10 and 11 to be contained and forming a plurality of receptacles 12 which are shaped substantially like a parallel and are meant to contain the items 10 and 11.

[0015] The receptacles 12 are partially open both on the parallel horizontal faces and on the side that lies opposite the longitudinal support 2 in order to allow easy handling of the contained items.

[0016] Each series of brackets 3, preferably made of plastics, by means of thermoforming or injection-molding processes, is formed by a substantially flat connecting portion 4 from which a plurality of brackets 5 protrude transversely and are alternated with a plurality of brackets 6 which are mutually parallel but differ in terms of the extension of the longitudinal surface. The brackets 5 and 6 are spaced transversely by spacer ribs 7 which connect, proximate to their centerline, the mutually facing brackets 5 and 6.

[0017] A contact wing 8 is provided between the brackets 5 and 6, proximate to the connecting portion 4, and protrudes longitudinally from the spacer rib 7 for an extent which is equal in length to the surface of the bracket 6 that has a smaller longitudinal extension.

[0018] The operation of the modular component according to the invention is simple and allows to store containers of various sizes. In the illustrated case, reference is made to a container 10 for VHS videocassettes and to a container 11 for DVDs, but it will be apparent to the person skilled in the art that the same inventive concept can also be applied to containers of a

different type having different dimensions.

[0019] The VHS videocassette container 10 is inserted between the two longer brackets 5. These brackets, together with the shorter bracket 6, form the lateral guides for the sides of the container 10. The transverse depth of the seat is limited by the connecting portion 4 and is smaller than the depth of the container, so as to allow easy handling thereof. The DVD container 11 is inserted between the two brackets 5 and 6, which have different lengths. These brackets, together with the spacer rib 7, form the lateral guides for the sides of the container. The transverse depth of the seat is limited by the contact wing 8 and is less than the depth of the container, so as to allow easier handling thereof.

[0020] In practice it has been observed that the invention achieves the intended aim and objects, a modular component having been provided which allows to store and handle containers having different dimensions simply and handily.

[0021] The modular component according to the invention is susceptible of numerous modifications and variations, within the scope of the appended claims; all the details may be replaced with technically equivalent elements.

[0022] The materials used, as well as the dimensions, may of course be any according to requirements and to the state of the art.

Claims

1. A modular component for magazines, particularly for storing items shaped substantially like a parallelepiped, comprising pairs of lateral guides for the sides of each item, said lateral guides being formed by series of parallel and superimposed brackets which are anchored, by one of their ends, to a longitudinal support, characterized in that it comprises at least two series of said brackets which have different transverse dimensions and are arranged alternately so as to constitute supporting surfaces for the sides of the items, even if they have different dimensions.
2. The modular component according to claim 1, characterized in that said items comprise containers for VHS videocassettes and containers for DVDs.
3. The modular component according to claim 1 or 2, characterized in that said brackets are mutually connected by spacer ribs which protrude at right angles from the centerline of said brackets.
4. The modular component according to one or more of the preceding claims, characterized in that the height of said spacer ribs is slightly greater than the thickness of the respective items.

5. A magazine adapted to contain at least two kinds of item, characterized in that it comprises modular components according to one or more of the preceding claims.

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