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(54) METHOD AND APPARATUS FOR DISPLAYING ARTICLES FOR SALE WITHIN A SHELF STRUCTURE

VERFAHREN UND VORRICHTUNG ZUR DARBIETUNG VON ARTIKELN ZUM VERKAUF IN EINER REGALSTRUKTUR

PROCÉDÉ ET APPAREIL PERMETTANT DE PRÉSENTER DES ARTICLES À VENDRE DANS UNE STRUCTURE D'ÉTAGÈRE

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EP 1 734 847 B1

Description

[0001] This invention relates to a method and apparatus for managing the display of articles for sale in a supermarket or the like with the aid of a modular shelving arrangement.

BACKGROUND ART

[0002] Presently there are a great many steps and large quantities of packaging material required in order to make available to the purchasing public articles for consumption or alternative uses.

[0003] Take for example the current management of having a packet of biscuits made available for sale on a supermarket shelf or the like from its point of manufacture within a factory or the like.

[0004] Generally such a management system requires that once the individual biscuits are wrapped into a sealed package, each of these packs are then re-handled to be stored in most commonly a cardboard container or box.

[0005] Therefore at least the first step in handling the processed article, in this example, of a packet of biscuits, will involve the packing of a series of these biscuits packets into a carton or box. This box needs to be sealed which can be achieved by passing it through an appropriately designed machine to carry out that task or alternatively have an individual or robot available with the means to apply tape or the like to secure the carton or box closed.

[0006] Once the box has been sealed the box itself will require further handling by then being stacked on a pallet or the like, where it will wait until the pallet itself has received enough boxes for a complete load. The pallet with the series of boxes thereon is then wrapped and then sealed and placed in storage for on forwarding to a warehouse or the like of a supermarket that has ordered a particular quantity of these biscuits.

[0007] The pallet full of boxes containing the individual packets of biscuits remains at the warehouse or some kind of storage facility of the supermarket until it is required to be stacked on the shelf or the like within the aisles of the supermarket. When the individual packets of biscuits are required, the individual boxes will have to be opened and then brought to that place along the aisle of the supermarket, and each individually hand-packed or the like into the existing shelf structure making up the aisle.

[0008] Problems with such an arrangement are numerous.

[0009] The individual biscuits require not only the packaging to secure them together as the one item "i.e. as a packet of biscuits" but also the further requirement of at least the carton or box to which the packet is placed into, the pallet in order to transport the cardboard boxes, as well as a shelf structure within the supermarket in order to display the packet of biscuits thereon.

[0010] Therefore beyond the package of biscuits itself, there still is a requirement for a carton box, pallet or the like, as well as an existing shelf structure within the aisle of a supermarket or the like, in order to display this article to the relevant purchasing public for sale.

[0011] WO 91/15723 discloses a wine cellar composed of module units, which can be associated with each other geometrically as in a construction set.

[0012] It is an object of the present invention to provide a method and apparatus for managing the display of articles for sale in a supermarket or the like without the need of packing individual items for sale within a container or the like that then has to be re-opened before the said items can be made available to the purchasing public for sale.

[0013] A further object of this invention is to overcome or least substantially ameliorate some of the disadvantages and shortcomings of the conventional management of the material handling of articles for sale from the location of manufacture to their display for purchase in a supermarket or the like, or alternatively, at least provide the public with an improved method and apparatus adapted to minimize or at least make more convenient the method, means and apparatus required to bring an article to display for sale from its point of manufacture to the supermarket or the like.

SUMMARY OF THE INVENTION

[0014] Accordingly, in one form of the invention there is provided a shelf structure having two or more module units vertically arranged, said module units adapted to receive individual articles at said articles location of manufacture or completion for usability, said articles ultimately to be displayed for purchase in a supermarket or the like from said module unit, said module unit having: a main body with at least one hollow section that defines an article storage location, at least one of an under side surface and/or an upper side load support surface, said upper load support surface adapted to vertically engage and support an adjacent underside module unit, such that when the or each module unit is stacked in a vertical arrangement, said arrangement forms a self-shelf structure of which individual items displayed within the or each module unit are freely accessible by members of the purchasing public.

[0015] In preference each shelf structure includes five module units that are vertically arranged in a column.

[0016] The or each column is adapted to laterally engage an adjacent column, such that, the or each column is adapted to form an array of columns within an aisle of a supermarket or the like.

[0017] An advantage of such an arrangement is that the individual module units by becoming available at the location of manufacture of an article, that will ultimately be displayed for purchase in a supermarket or the like, means that intermediate packaging and material handling arrangements can be avoided to more conveniently and cost effectively make products available within a su-

permarket or the like.

[0018] Advantageously the module unit replaces the need for a carton box or the like as the individual articles are now handled directly into the module unit which itself will form part of the shelf structure.

[0019] Advantageously as the or each module unit is adapted to vertically engage an adjacent module unit, consecutively stacked module units can form a column which will be similar in functionality to a conventional shelf structure existing within a supermarket or the like.

[0020] Preferably the module unit is adapted to engage a transfer means, for example the forks of a fork list truck.

[0021] Advantageously this feature means that a pallet or the like is now no longer required.

[0022] The stack of vertically aligned module units are therefore easily transportable directly to the supermarket or alternatively for temporary storage in the supermarket's warehouse or the like. Once the item for sale needs to be displayed for sale in the supermarket, the module units can then be simply brought directly out into the aisle of the supermarket so as to form part of the overall shelving arrangement in the aisle.

[0023] Advantageously the individual module units vertically aligned to form the column provide for their own inherent shelving arrangement. Hence there needs to be no existing shelving arrangement that currently exists in the supermarket or the like.

[0024] For example, presently individual packets of biscuits would need to be removed from a box or the like and then placed on a shelf in the aisle of the supermarket.

[0025] Advantageously in this invention it is the module unit themselves that forms this shelf structure.

[0026] Hence the module unit of this invention has accepted the packet of biscuits from the location of manufacture and has handled the same packets of biscuits all the way up and including the display thereof in the supermarket or the like, for their ultimate purchase by members of the public.

[0027] Preferably in one further embodiment of the invention the individual module units are characterized by a series of grooves and ridges which correspond with similar defining grooves and ridges in an adjacent module unit so that when such module units are vertically arranged the mating relationship between the grooves and ridges of said module units assists in stabilizing the unit from lateral or horizontal movement.

[0028] Still further, preferably the side panels of each module unit include substantially along at least part of its external facing grooves and ridges which are defined for a matching mating relationship with an adjacent unit when said module units are positioned side by side.

[0029] Preferably still further, each module unit has the side panels characterized by mating upper and lower shoulders that provide for a mating relationship when module units are vertically stacked one upon the other.

[0030] An advantage of such an arrangement of including corresponding ridges and grooves throughout various parts of the module unit is that such features provide an inherent adaptability for the module units to be placed in close proximity and remain fixed in place from both vertical and lateral perspective.

[0031] The mating between the grooves and ridges establishes a comfortable type friction or snap fit which only becomes disengagable when the module units are deliberately separated by a user.

[0032] Nonetheless, it is to be appreciated by a person skilled in the art that grooves and ridges are just one way of establishing a corresponding mating type fit between adjacent and side by side module units.

[0033] The characterization of this particular feature of the invention is the fact that there is some type of interaction between the various panels of the module unit so as to provide a nesting or the like stacking arrangement with one module unit with respect to the other to provide for greater stability.

[0034] In a further form of the invention the panels making up said module unit are each removable individually and independently so as to provide access to the hollow section that defines the article storage location.

[0035] An advantage of such an arrangement is the various panels that make up the main body of the module unit can be independently extracted or drawn from the module unit allowing access to the hollow section that defines where the articles are stored.

[0036] Advantageously, for example in some instances the top panel could be removed whereby access to the hollow section allows an article to be loaded in by this direction. Once loading has been completed and the products are ready to be stored in the module unit the top panel can then be replaced and retracted back into the module unit.

[0037] Again, advantageously when the module unit becomes vertically arranged in a shelf type structure within the supermarket instead of the top panel being removed, the front panel or even the side panel can be removed allowing access to the articles stored therein the module unit via these particular phases.

[0038] In a further form of the invention the module units are adapted to receive frozen refrigerated products by having the underside surface perforated so as to allow the refrigerated air flow to pass there through.

[0039] Preferably, additional ventilation recesses are located on the back panel of the module unit.

[0040] Preferably the modular unit is collapsible.

[0041] In preference, the or each module unit includes a coding means in order to identify the product and quantity within said module unit.

[0042] Presently when a supermarket or the like makes an order, for example, 10,000 packets of biscuits, it only knows that this order is being satisfied once the 10,000 biscuits have been delivered to a particular location, more than likely to the supermarket's warehouse or other storage area.

[0043] The problem with this arrangement is that in order to verify that the order has been fulfilled it is not possible to have parts of these 10,000 biscuits going directly

to several locations, for example two or more supermarket retail outlets.

[0044] If a major supermarket having outlets across the country were to order 10,000 biscuits it would not know if the order has been fulfilled if 3,000 went directly to two locations and 4,000 to one final location.

[0045] However, by having a coding means on each module unit and acknowledging this code once the module unit is received at a specific outlet of the supermarket, central communication means will be able to store the information so as to confirm that the overall order has been completed.

[0046] For example, if 5,000 packets of biscuits were handled into the module units and then sent to one particular supermarket outlet while the remaining 5,000 were put in a separate series of module units for delivery to another outlet, the coding means on each module unit once acknowledged by the particular supermarket outlet could then communicate with the one central processing means to confirm that delivery and fulfillment of the overall order by the supermarket had been achieved.

[0047] Advantageously under this management of the articles for display in the supermarket, bulk orders can be made by supermarkets without the need of first having to send the order to the essential distribution point for onforwarding to individual outlets. Under the coding means provided with the module units, no central delivery point is required as each individual supermarket can acknowledge that delivery has been made.

[0048] In a further form of the invention there is a method for managing the display of articles for sale in a supermarket or the like with the aid of individual module units, said method including the following steps: packing of those articles for display in the supermarket or the like into the module unit at the location of said articles original complete manufacturing or processing, arranging said module units vertically so as to form a single column or the like, transporting vertically arranged module units to a storage or waiting location, either within a supermarket or the like, or at a suitable warehouse or the like, placing said vertically arranged module units within an aisle of a supermarket so as to display said articles for sale to the purchasing public.

DETAILED DESCRIPTION OF THE INVENTION

[0049] For a better understanding of the invention it will now be described in relation to preferred embodiments, which shall be described with the assistance of drawings wherein: Figure 1 is a schematic view of the prior art management system for the display of articles for sale in a supermarket or like from the point of manufacture to making the article available in the shelf of a supermarket, Figure 2a is a perspective view of the module unit making up the shelf structure in one preferred embodiment, Figure 2b is Figure 2a with individual packets of biscuits stored therein, Figure 2c is figure 2a with a divider member separating different storage compartments within the module unit, Figure 3 shows a column of module units vertically arranged , Figure 4 shows the module units having a cover over the exposed hollow section and including a coding means of identifying the quantity and the like of the articles stored within the module unit, Figure 5 shows two columns of module units back-to-back and wrapped together and ready for transport from the location of manufacture of the articles contained within the module units ready for display in a supermarket or the like, Figure 6 shows a further preferred embodiment of the invention whereby a skeletal shelf arrangement is included as part of the module system that is able to slideably receive a column of module units and individually, if required, support independent module units, Figure 7 is a schematic view of the series of steps required to make available an article for sale in a supermarket or the like from its location of manufacture to the supermarket shelf or the like.

[0050] Figure 8 is a perspective view of a further preferred embodiment of a particular module unit making up the invention.

[0051] Figure 9 shows a further preferred embodiment of a module unit which is adapted to receive frozen and refrigerated articles for storage therein.

[0052] Figure 10 is a front perspective view showing a further preferred embodiment of the invention whereby the module units of figure 8 are vertically stacked one with respect to the other to form a column.

[0053] Figure 11 is a perspective view showing the arrangement of the module units in figure 8 vertically stacked as in figure 8 and then in arrangement with columns both side by side and end to end.

[0054] Referring to the drawing now in greater detail, Figure 1 outlines schematically the conventional way in which articles for sale in a supermarket or the like are handled from the location of manufacturing to being placed or packed within the shelf of an aisle within a supermarket.

[0055] By way of example, in this preferred embodiment the articles to be managed for display for sale in a supermarket or the like are a pack of biscuits. However, the person skilled in the art appreciates that any article could be displayed using this arrangement. Further, the articles need not be necessarily grocery orientated and could include non-consumable items, for example household utensils and the like.

[0056] Packets of biscuits 10 travel along a conveyer 12 having been individually sealed as a package. A handler 14 is responsible for placing these individual packages of biscuits 10 into a carton box 16, which then continues along the conveyer 12 to a machine 18 that is responsible for sealing the carton 16 closed.

[0057] This carton containing the packets of biscuits 10 is then placed on a pallet 20, which is supported on a material handling lift 22 so as to receive a set amount of cartons 16 as represented at 24. The pallet 20 once filled with cartons 16 as shown at 25 is then normally sent to a central warehouse 26 where it is stacked to await

on- forward delivery to a particular supermarket outlet. Normally a truck 28 is loaded with the use of a forklift 30 and sends the filled pallet 20 to the storage area 32 of an individual supermarket outlet 34.

[0058] When the packets of biscuits 10 need to be displayed in the supermarket 34 the carton 16 is removed by a handler 36 who then unpacks the carton 16 and individually loads the packs of biscuitsI0 into existing shelving 38 that make up an aisle 40 at the supermarket outlet 34.

[0059] Referring now to the apparatus of a preferred embodiments of the invention, Figure 2a shows module unit 50. Module unit includes an upper load support surface 52 which is adapted to accept and engage an under side surface 54 of an adjacent module unit 50 in vertical arrangement. The under side 54 of the module unit 50 also includes engagement means 56 so as to be able to communicate with the transport means, for example forks of a forklift, so as to be able to move the module unit 50 or a plurality thereof to a separate location.

[0060] The module unit 50 includes an open hollow section 58 that is defined by opposed side panels 60,62 back panel 64 and the respective inner surfaces 66, 68 of the upper load support surface 52 and under side 54.

[0061] Figure 2b shows the packets of biscuits 10 being positioned within the hollow section 58 of the module unit 50. The packets of biscuits positioned within the hollow section 58 of the module 50 are readily accessible by members of the purchasing public wanting to buy such items when placed in the supermarket.

[0062] Figure 2c provides a further preferred item that includes a divider panel 70, which segregates the hollow section 58 up into separate compartments 72,74.

[0063] The advantage of having the divider panel 70 dividing the module unit 50 up into separate storage compartments 72,74 is that a variety of articles, for example in this preferred embodiment packets of biscuits, can be stored within the one module unit 50.

[0064] It is to be appreciated by the person skilled in the art that a variety of divider type panels can be included into the module unit so as to create a series of separate compartments allowing independent articles to be stored and displayed there in the module unit 50.

[0065] Figure 3 shows the module units 50 vertically arranged as a single column 76.

[0066] In some preferred forms of the invention this single column 76 forms the same column, which can be introduced within a shopping aisle at a supermarket outlet 34 for the immediate display of items, held there within the respective individual module units.

[0067] In a preferred embodiment as shown in Figure 4 covers 78 are attached to the module unit 50. The module unit also includes coding means 80 which identify the article and the quantity thereof to be displayed within the supermarket.

[0068] Figure 5 shows the column of module units 76 placed back-to-back with an adjacent column 76. In this preferred embodiment the back-to-back column 76 are wrapped with a suitable type flexible sheet for improved transport handling. The under side 54 and additional means 56 of the module unit 50 on the respective column 76 enables the module unit 50 to be engaged so as to move the column 76 from the location of manufacturing of the packets of biscuits 10 either directly to a supermarket outlet or to another storage location for on-forwarding ultimately to the supermarket.

[0069] Figure 6 shows a further preferred embodiment whereby in addition to the column of module units 50, a skeletal arrangement or framework 82 is included in the shelf structure. This skeletal shelf framework structure 82 is adapted to slideably receive either a full column 76 of individual module units but also by having the shelf skeletal framework 82 including a series of grooves or ridges 84, allows it to individually receive and/or support individual module units 50.

[0070] Referring now to Figure 7 and the method of managing the display of the packets of biscuits 10 to the aisle of the supermarket outlet 34 from the location of manufacture of the biscuits 10, there is a conveyor 90 that makes available packs of biscuits 92 according to conventional means. A handler 94 also using conventional methods then packs these packets biscuits 92 directly into the module unit 96. Each module unit 96 forms a column 98 to which covers 100 are then all proceedingly fixed thereto.

[0071] Each column 98 is then placed back-to-back with an adjacent column 98 where it is then wrapped with flexible material and able to be then handled by a fork lift or the like 102 for delivery by a truck or the like 104 to a supermarket outlet 106. Once at the supermarket outlet 34 the columns 98 may then be separated and when required by a handler 108 brought out so as to be slideably inserted within an aisle of the supermarket 106.

[0072] Referring to figure 8 where a particular further embodiment of a module unit making up the shelf structure is detailed. The module unit 199 includes two side panels 120, 122 a base and front panel 124, 126 and top and base panels 128, 130.

[0073] The module unit shown in figure 8 is such that panels 122 to 130 are each retractable or are able to be withdrawn from the module unit so as to expose the hollow storage section 132.

[0074] For example, it is possible to slide away the top panel 128 so as to allow access to the storage area 132. At the point of manufacturing or processing product can be packaged or loaded into the storage area 132 through the top of the module unit 199 by simply removing the top panel 128. When the product has been packed into the module unit, the top panel 128 can then be returned to its position in the module unit 199.

[0075] As shown in figure 10 the module unit 199 can be vertically stacked one on top of the other to complete a shelf structure that includes in this particular embodiment a column made up of 5 vertically stacked module units 199.

[0076] As shown in figure 10 once product 134 is stored

within the module unit 199 there is still spacing 136 available for more traditional material handling equipment to access the modular unit 199 in order to lift or separate one module unit 199 from an adjacent or proceeding module unit 199.

[0077] Nonetheless, as shown in figure 10 the side panels 120, 122 in this embodiment include apertures that extend along the breadth of each module unit 199 to which material handling devices could access in order to engage the module unit 199 and transport it to a separate location.

[0078] Referring also to figure 8 the various panels 120 to 130 may also include a series of ridges and grooves 138 and 140 which allow for a slideable type inter engagement with an adjacent or a side by side connecting module unit 199 so as to fixably hold one module unit 199 with respect to the other module unit 199.

[0079] Advantageously, the characteristic of having the mating grooves and ridges 138,140 on the external surfaces of the panels 120-130 provides for an inherent means of fastening one module unit 199 with respect to another either vertically in a column array or side by side in a series of vertical columns making up an aisle or the like within a supermarket.

[0080] Figure 8 also includes ventilation slits 142 which in this particular embodiment are placed on the front panel 124 of the modular unit 199.

[0081] Nonetheless, as the person skilled in the art would appreciate such ventilation slits 142, apertures or the like could be inserted or defined on any of panels 120 to 130 of the module unit 199.

[0082] The side panels 120, 122 also include an upper edge or shoulder which allows an adjacent or upper module unit 199 to have part of its corresponding lower portion of the side panel 120, 122 to nest or snug fit between respective module units 199.

[0083] Figure 10 best illustrates where the upper shoulder 144 of the module unit 199 can support the lower edge 146 of an adjacent module unit 199 stacked there upon.

[0084] In addition to shoulder 144 to support an adjacent lower edge 146, there may also be a groove and recess present on such edges and shoulders to provide for a mating relationship thereby securing the individual module units 199 in a more fixed and fastened position with respect to the other, both laterally and horizontally.

[0085] In relation to figure 9 this particular preferred embodiment of the modular unit 150 includes a perforated base panel 152 so as to support and allow refrigerated air flow to pass there through with the assistance of ventilation slits 144 on the back panel of this particular module unit 150.

[0086] Figure 11 shows how the individual module units 199 of figure 8 can be vertically stacked one upon the other so as to form columns 160 with said columns 160 forming an aisle 162. Columns 164 can then be arranged at the opposed ends of columns 160.

[0087] Advantageously, as the module units 199 making up the end columns 164 can have the side panels removed when required access to articles stored in the module units 199 of column 164 can still be accessed from the same aisle 162.

[0088] Still further, the various grooves and recesses that characterize the various panels 120 to 130 of the module units 199 allow for the fixing together of the separate module units 199 into a shelf structure that can be defined as shown in figure 11 to include both columns 160 stacked side to side and columns 164 positioned end to end with respect to columns 160.

[0089] It is to be appreciated by the person skilled in the art, that numerous variations and/or modifications may be made to this invention as shown in the specific preferred embodiments without departing from the scope of the invention as described.

[0090] Therefore, the present embodiments described above are to be considered in all respects as illustrative and not restrictive, particularly it can be appreciated that there are a variety of intermediate steps, apparatus and material handling ways in which the module unit can ultimately end up as a shelving structure in the supermarket or the like.

[0091] What is important to this invention is that at the location of manufacture articles or items that are to be displayed for sale in a supermarket are packed directly into a modular unit that will ultimately be the same unit that will be used in the supermarket outlet itself to displaying the article.

[0092] It is therefore the intention of this description to incorporate all such arrangements that can affect this direct packing of the articles into a module unit which will ultimately be used in the display of this same item within the supermarket or the like within a shelf structure.

Claims

1. A shelf structure comprising;
a plurality of module units (50, 96, 150, 199) vertically arranged, said module units being adapted to receive individual articles (10, 92, 134), wherein each module unit (50, 96, 150, 199) comprises:

a main body with at least one hollow section (58, 132) defining an article storage location, said hollow section (58, 132) being enclosed with a plurality of panels comprising a top panel (52, 128), a base panel (54, 130, 152), a pair of opposing side panels (60, 62, 120, 122), a front panel (78, 100, 124) and a back panel (64, 126) opposing the front panel (78, 100, 124), wherein said top panel (52, 128) is adapted to vertically engage and support an adjacent base panel (54, 130) of another module unit, and

wherein the side panels (60, 62, 120, 122) are the same size,

wherein the front panel (78, 100, 124) and the back panel (64, 126) are the same size, wherein at least two of the plurality of module units (50, 96, 150, 199) are vertically arranged in a column (76, 98, 160, 164), **characterized in**
that said module unit (50, 96, 150, 199) further comprises transfer means (56, 136) adapted to engage a material handling device (102) to move said module unit (50, 96, 150, 199);
that said module units (50, 96, 150, 199) are adapted to receive individual articles (10, 92, 134) at each article's location of manufacture, said articles (10, 92, 134) ultimately to be displayed for purchase in a retail store from said module unit (50, 96, 150, 199);
that when the plurality of module units (50, 96, 150, 199) are stacked in a vertical arrangement, articles (10, 134) displayed within each of the plurality of module units (50, 96, 150, 199) are freely accessible by a member of the purchasing public in the retail store, when at least one of the front panel (78, 100, 124) or side panels (60, 62, 120, 122), has been removed; and
that the column (76, 98, 160, 164) is adapted to laterally engage an adjacent column (76, 98, 160, 164) such that an array of columns (76, 98, 160, 164) form at least a part of an aisle (162) in the retail store.

2. The shelf structure of claim 1, wherein the transfer means (136) includes spacing (136) to receive a fork of a fork lift (102).

3. The shelf structure of claim 2 wherein at least one of the plurality of module units (199) further comprises:

a series of grooves (140) and ridges (138), corresponding with similarly defined grooves (140) and ridges (138) of an adjacent module unit (199), such that when the module units (199) are vertically arranged, a mating relationship between the grooves (140) and ridges (138) of said module units (199) assists in stabilizing the mated module units (199) from lateral movement.

4. The shelf structure of claim 1 wherein at least one of the plurality of side panels (120, 122) of each module unit (199) includes a plurality of external facing grooves (140) and ridges (138) configured for a mating relationship with the plurality of external facing grooves (140) and ridges (138) of the side panel (120, 122) of an adjacent module unit (199) when said module units (199) are positioned side by side.

5. The shelf structure of claim 1, wherein at least one of the plurality of side panels (120, 122) comprises; a mating upper shoulder (144) and a mating lower shoulder (146) configured for a mating relationship when at least two of the plurality of module units (199) are stacked in a vertical arrangement.

6. The shelf structure of claim 1, wherein at least one of the panels (78, 100, 120, 122, 124, 126, 128) is configured to be removable individually and independently to provide access to the hollow section (58, 132).

7. The shelf structure of claim 1, wherein at least one of the plurality of module units (150) is adapted to receive frozen refrigerated products by having the base panel (152) perforated to allow passage of refrigerated air flow.

8. The shelf structure of claim 7, wherein a plurality of ventilation recesses (144) are located on the back panel of at least one of the plurality of module units (150).

9. The shelf structure of claim 1, wherein each module unit (50, 96, 150, 199) is collapsible.

10. The shelf structure of claim 1, wherein each module unit (50) includes a coding means (80) for identifying and quantifying the articles within said module unit (50).

11. A method for managing display of articles (10, 92, 134) for sale in a retail store, within a module unit (50, 96, 150, 199) comprising a pair of opposing side panels (60, 62, 120, 122), a front panel (78, 100, 124) and a back panel (64, 126) opposing the front panel (78, 100, 124), wherein the side panels (60, 62, 120, 122) are the same size, and wherein the front panel (78, 100, 124) and the back panel (64, 126) are the same size, the method comprising:

packing of the articles (10, 92, 134) for display in the retail store into the module unit (50, 96, 150, 199) at the article's original complete manufacturing or processing location;
arranging said module units (50, 96, 150, 199) vertically to form a column (76, 98, 160, 164);
transporting the column (76, 98, 160, 164) to a storage location (106) within the retail store or a waiting location at a suitable warehouse of the retail store;
placing the column (76, 98, 160, 164) within an aisle of the retail store to display said articles (10, 92, 134) for sale; and removing at least one of the front panel (78, 100, 124) or side panels (60, 62, 120, 122) such that the articles (10, 92, 134) are freely accessible.

Patentansprüche

1. Regalstruktur, umfassend

eine Vielzahl vertikal angeordneter Moduleinheiten (50, 96, 150, 199), die dazu ausgebildet sind, einzelne Artikel (10, 92, 134) aufzunehmen, wobei jede Moduleinheit (50, 96, 150, 199) Folgendes umfasst:

einen Hauptkörper mit mindestens einem Hohlprofil (58, 132), das einen Artikellagerort definiert, wobei das Hohlprofil (58, 132) durch eine Vielzahl von Platten umschlossen ist, umfassend eine obere Platte (52, 128), eine Grundplatte (54, 130, 152), ein Paar gegenüberliegender Seitenplatten (60, 62, 120, 122), eine Frontplatte (78, 100, 124) und eine der Frontplatte (78, 100, 124) gegenüberliegende Rückplatte (64, 126), wobei die obere Platte (52, 128) dazu ausgebildet ist, in eine benachbarte Grundplatte (54, 130) einer anderen Moduleinheit vertikal einzugreifen und diese zu stützen, und

wobei die Seitenplatten (60, 62, 120, 122) die gleiche Größe haben,
wobei die Frontplatte (78, 100, 124) und die Rückplatte (64, 126) die gleiche Größe haben,
wobei mindestens zwei der Vielzahl von Moduleinheiten (50, 96, 150, 199) vertikal in einer Säule (76, 98, 160, 164) angeordnet sind,
dadurch gekennzeichnet
dass die Moduleinheit (50, 96, 150, 199) weiterhin Transportmittel (56, 136) umfasst, die dazu ausgebildet sind, in eine Materialhandhabungsvorrichtung (102) einzugreifen, um die Moduleinheit (50, 96, 150, 199) zu bewegen; dass die Moduleinheiten (50, 96, 150, 199) dazu ausgebildet sind, einzelne Artikel (10, 92, 134) an dem Herstellungsort des jeweiligen Artikels aufzunehmen, wobei die Artikel (10, 92, 134) letztendlich zur Auslage zum Verkauf in einem Einzelhandelsgeschäft aus den Moduleinheiten (50, 96, 150, 199) vorgesehen sind;
dass, wenn die Vielzahl von Moduleinheiten (50, 96, 150, 199) in einer vertikalen Anordnung gestapelt ist, die in jeder der Vielzahl von Moduleinheiten (50, 96, 150, 199) ausgestellten Artikel (10, 134) für ein Mitglied der einkaufenden Öffentlichkeit in dem Einzelhandelsgeschäft frei zugänglich sind, wenn zumindest die Frontplatte (78, 100, 124) und/oder eine der Seitenplatten (60, 62, 120, 122) entfernt wurde; und
dass die Säule (76, 98, 160, 164) dazu ausgebildet ist, in eine benachbarte Säule (76, 98, 160, 164) seitlich einzugreifen, so dass eine Anordnung von Säulen (76, 98, 160, 164) zumindest einen Teil eines Gangs (162) in dem Einzelhandelsgeschäft bildet.

2. Regalstruktur nach Anspruch 1, wobei die Transportmittel (136) eine Beabstandung (136) zur Aufnahme einer Gabel eines Gabelstaplers (102) umfassen.

3. Regalstruktur nach Anspruch 2, wobei zumindest eine der Vielzahl von Moduleinheiten (199) weiterhin Folgendes umfasst:

eine Reihe von Rinnen (140) und Rippen (138), die mit gleichartig ausgebildeten Rinnen (140) und Rippen (138) einer benachbarten Moduleinheit (199) korrespondieren, so dass bei vertikaler Anordnung der Moduleinheiten (199) eine Passung zwischen den Rinnen (140) und den Rippen (138) der Moduleinheit (199) bei der Stabilisierung der gepaarten Module (199) gegenüber einer seitlichen Bewegung unterstützt.

4. Regalstruktur nach Anspruch 1, wobei zumindest eine der Vielzahl von Seitenplatten (120, 122) jeder Moduleinheit (199) eine Vielzahl nach außen gerichteter Rinnen (140) und Rippen (138) umfasst, die für eine Passung mit der Vielzahl nach außen gerichteter Rinnen (140) und Rippen (138) der Seitenplatte (120, 122) einer benachbarten Moduleinheit (199) ausgebildet sind, wenn die Moduleinheiten (199) seitlich aneinander positioniert werden.

5. Regalstruktur nach Anspruch 1, wobei zumindest eine der Vielzahl von Seitenplatten (120, 122) Folgendes umfasst: eine obere Passschulter (144) und eine untere Passschulter (146), ausgebildet für eine Passung, wenn zumindest zwei der Vielzahl von Moduleinheiten (199) in einer vertikalen Anordnung gestapelt werden.

6. Regalstruktur nach Anspruch 1, wobei zumindest eine der Platten (78, 100, 120, 122, 124, 126, 128) dazu ausgebildet ist, einzeln und unabhängig entfernt zu werden, um Zugang zu dem Hohlprofil (58, 132) zu ermöglichen.

7. Regalstruktur nach Anspruch 1, wobei zumindest eine der Vielzahl von Moduleinheiten (150) dazu ausgebildet ist, gefrorene Kühlprodukte aufzunehmen, indem die Moduleinheit eine perforierte Grundplatte (152) aufweist, um Durchtritt von gekühltem Luftstrom zu ermöglichen.

8. Regalstruktur nach Anspruch 7, wobei eine Vielzahl von Belüftungsaussparungen (144) an der Rückplatte zumindest einer der Vielzahl von Moduleinheiten (150) angeordnet ist.

9. Regalstruktur nach Anspruch 1, wobei jede Moduleinheit (50, 96, 150, 199) zusammenlegbar ist.

10. Regalstruktur nach Anspruch 1, wobei jede Moduleinheit (50) Kodiermittel (80) zur Identifikation und Mengenbestimmung der Artikel in der Moduleinheit (50) umfasst.

11. Verfahren zum Verwalten des Ausstellens von Artikeln (10, 92, 134) zum Verkauf in einem Einzelhandelsgeschäft innerhalb einer Moduleinheit (50, 96, 150, 199), die Folgendes umfasst: ein Paar gegenüberliegender Seitenplatten (60, 62, 100, 122), eine Frontplatte (78, 100, 124) und eine der Frontplatte (78, 100, 124) gegenüberliegende Rückplatte (64, 126), wobei die Seitenplatten (60, 62, 120, 122) die gleiche Größe haben und wobei die Frontplatte (78, 100, 124) und die Rückplatte (64, 126) die gleiche Größe haben, wobei das Verfahren Folgendes umfasst:

Einlagern der Artikel (10, 92, 134) zur Ausstellung in dem Einzelhandelsgeschäft in die Moduleinheiten (50, 96, 150, 199) an dem ursprünglichen, vollständigen Herstellungs- oder Verarbeitungsort der Artikel;
vertikales Anordnen der Moduleinheiten (50, 96, 150, 199) zur Bildung einer Säule (76, 98, 160, 164);
Transportieren der Säule (76, 98, 160, 164) zu einer Lagerposition (106) innerhalb des Einzelhandelsgeschäfts oder zu einer Warteposition in einem geeigneten Warenhaus des Einzelhandelsgeschäfts;
Abstellen der Säule (76, 98, 160, 164) innerhalb eines Gangs des Einzelhandelsgeschäfts zur Ausstellung der Artikel (10, 92, 134) zum Verkauf;
und Entfernen zumindest der Frontplatte (78, 100, 124) und/oder einer der Seitenplatten (60, 62, 120, 122), so dass die Artikel (10, 92, 134) frei zugänglich sind.

Revendications

1. Structure d'étagère comprenant :

une pluralité d'unités (50, 96, 150, 199) de module disposées verticalement, les unités de module étant conçues pour recevoir des articles (10, 92, 134) individuels, chaque unité (50, 96, 150, 199) de module comprenant :

un corps principal ayant au moins une partie (58, 132) creuse définissant un emplacement de stockage d'un article, la partie (58, 132) creuse étant délimitée par une pluralité de panneaux, comprenant un panneau (52, 128) de sommet, un panneau (54, 130, 152) de base, une paire de panneaux (60, 62, 120, 122) latéraux opposés, un panneau (78, 100, 124) avant et un panneau (64, 126) arrière opposé au panneau (78, 100, 124) avant, le panneau (52, 128) de sommet étant conçu pour s'enclencher verticalement avec un panneau (54, 130) de base voisin d'une autre unité de module et le supporter et

dans laquelle les panneaux (60, 62, 120, 122) latéraux ont la même dimension,
dans laquelle le panneau (78, 100, 124) avant et le panneau (64, 126) arrière ont la même dimension,
dans laquelle au moins deux de la pluralité d'unités (50, 96, 150, 199) de module sont disposées verticalement suivant une colonne (76, 98, 160, 164),
caractérisée
en ce que l'unité (50, 96, 150, 199) de module comprend,
en outre, des moyens (56, 136) de transfert conçus pour coopérer avec un dispositif (102) de manipulation de matériel pour déplacer l'unité (50, 96, 150, 199) de module ;
en ce que les unités (50, 96, 150, 199) de module sont conçues pour recevoir des articles (10, 92, 134) individuels à chaque emplacement de fabrication d'articles, les articles (10, 92, 134) devant finalement être présentés à la vente dans un magasin de détail à partir de l'unité (50, 96, 150, 199) de module ;
en ce que, lorsque la pluralité d'unités (50, 96, 150, 199) de module sont empilées suivant un agencement vertical, des articles (10, 134) présentés dans chacun de la pluralité d'unités (50, 96, 150, 199) de module sont accessibles librement par un membre du public achetant dans le magasin de détail, lorsqu'au moins l'un du panneau (78, 100, 124) avant ou des panneaux (60, 62, 120, 122) latéraux a été enlevé et
en ce que la colonne (76, 98, 160, 164) est conçue pour coopérer latéralement avec une colonne (76, 98, 160, 164) voisine, de manière à ce qu'un réseau de colonnes (76, 98, 160, 164) forment au moins une partie d'une allée (162) du magasin de détail.

2. Structure d'étagère suivant la revendication 1, dans laquelle les moyens (136) de transfert comprennent un espacement (136) pour recevoir une fourche d'un chariot (102) élévateur.

3. Structure d'étagère suivant la revendication 2, dans laquelle au moins l'un de la pluralité d'unités (199) de module comprend, en outre :

un série de rainures (140) et de nervures (138), correspondant à des rainures (140) et des nervures (138) définies de manière similaire d'une unité (199) de module voisine, de manière à ce que, lorsque les unités (199) de module sont disposées verticalement, une relation de conju-

gaison entre les rainures (140) et les nervures (138) des unités (199) de module facilite la stabilisation des unités (199) de module mises en conjugaison à l'encontre d'un mouvement latéral.

4. Structure d'étagère suivant la revendication 1, dans laquelle au moins l'un de la pluralité de panneaux (120, 122) latéraux de chaque unité (199) de module comprend une pluralité de rainures (140) et de nervures (138) faisant face vers l'extérieur configurées pour avoir une relation de conjugaison avec la pluralité de rainures (140) et de nervures (138) faisant face vers l'extérieur du panneau (120, 122) latéral d'une unité (199) de module voisine, lorsque les unités (199) de module sont placées côte à côte.

5. Structure d'étagère suivant la revendication 1, dans laquelle au moins l'un de la pluralité de panneaux (120, 122) latéraux comprend : un épaulement (144) supérieur de conjugaison et un épaulement (146) inférieur de conjugaison configurés pour une relation de conjugaison, lorsqu'au moins deux de la pluralité d'unités (199) de module sont empilées suivant un agencement vertical.

6. Structure d'étagère suivant la revendication 1, dans laquelle au moins l'un des panneaux (78, 100, 120, 122, 124, 126, 128) est configuré pour être amovible individuellement et indépendamment, afin de ménager un accès à la partie (58, 132) creuse.

7. Structure d'étagère suivant la revendication 1, dans laquelle au moins l'une de la pluralité d'unités (150) de module est conçue pour recevoir des produits réfrigérés congelés en ayant le panneau (152) de base perforé pour permettre le passage d'un courant d'air réfrigéré.

8. Structure d'étagère suivant la revendication 7, dans laquelle une pluralité de chambrages (144) de ventilation sont placés sur le panneau arrière d'au moins l'une de la pluralité d'unités (150) de module.

9. Structure d'étagère suivant la revendication 1, dans laquelle chaque unité (50, 96, 150, 199) de module est repliable.

10. Structure d'étagère suivant la revendication 1, dans laquelle chaque unité (50) de module comprend un moyen (80) de codage pour identifier et quantifier les articles dans l'unité (50) de module.

11. Procédé de gestion d'une présentation d'articles (10, 92, 134) à vendre dans un magasin de détail au sein d'une unité (50, 96, 150, 199) de module, comprenant une paire de panneaux (60, 62, 120, 122) latéraux, un panneau (78, 100, 124) avant et un panneau (64, 126) arrière faisant face au panneau (78, 100, 124) avant, les panneaux (60, 62, 120, 122) latéraux ayant la même dimension et le panneau (78, 100, 124) avant et le panneau (64, 126) arrière ayant la même dimension, procédé dans lequel :

on met les articles (10, 92, 134) à présenter dans le magasin de détail dans l'unité (50, 96, 150, 199) de module à un emplacement de fabrication ou de traitement complet d'origine des articles ;
on dispose les unités (50, 96, 150, 199) de module verticalement pour former une colonne (76, 98, 160, 164) ;
on transporte la colonne (76, 98, 160, 164) à un emplacement (106) de stockage dans le magasin de détail ou à un emplacement d'attente à un entrepôt approprié du magasin de détail ;
on met en place la colonne (76, 98, 160, 164) dans une allée du magasin de détail pour présenter les articles (10, 92, 134) à vendre et on retire au moins l'un du panneau (78, 100, 124) avant ou des panneaux (60, 62, 120, 122) latéraux, de manière à ce que les articles (10, 92, 134) soient accessibles librement.

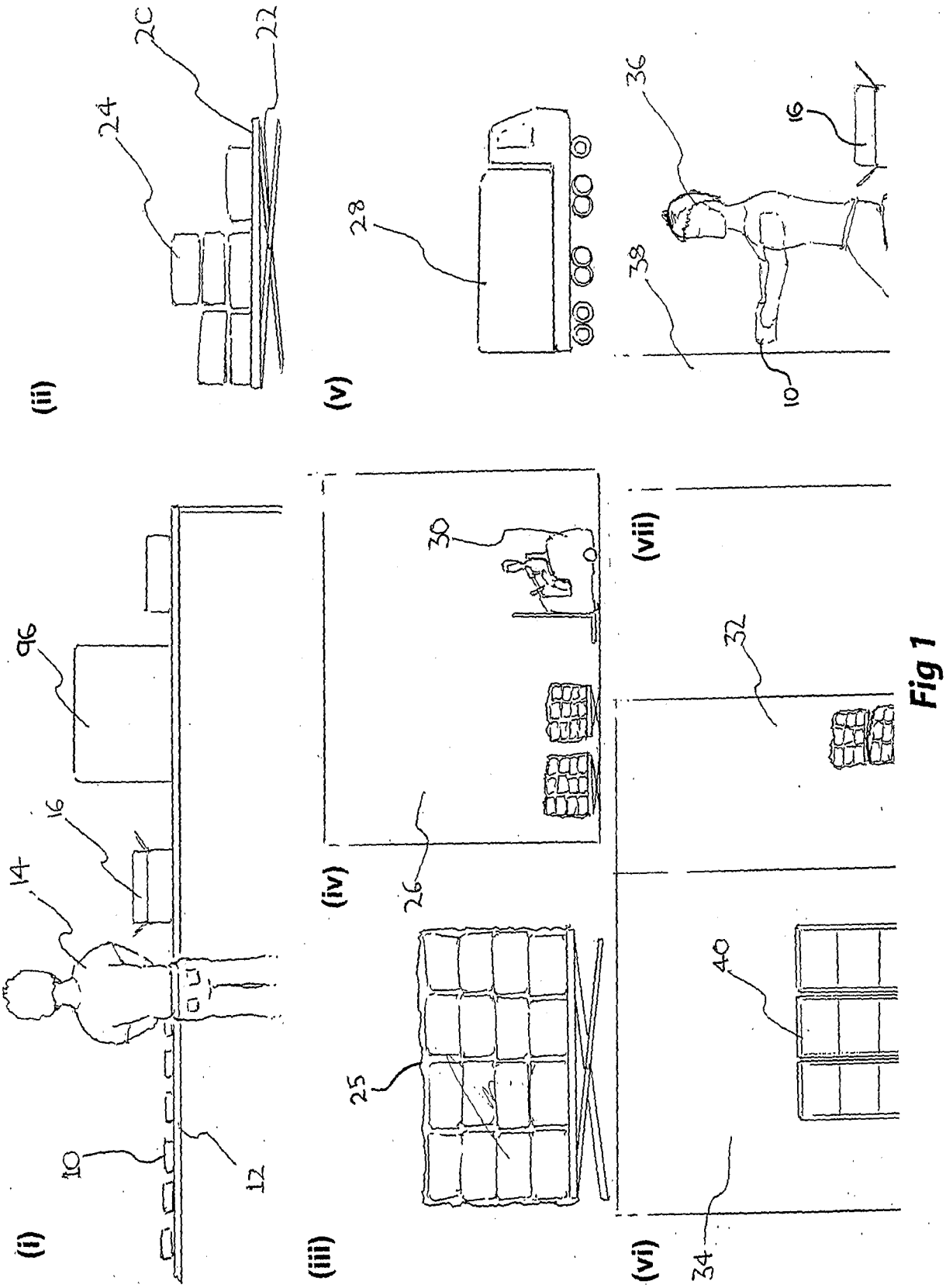

(i)
96
16
14
10
12
(ii)
24
20
22
(iii)
25
(iv)
30
26
(v)
28
(vi)
34
40
(vii)
32
36
16
38
10

Fig 1

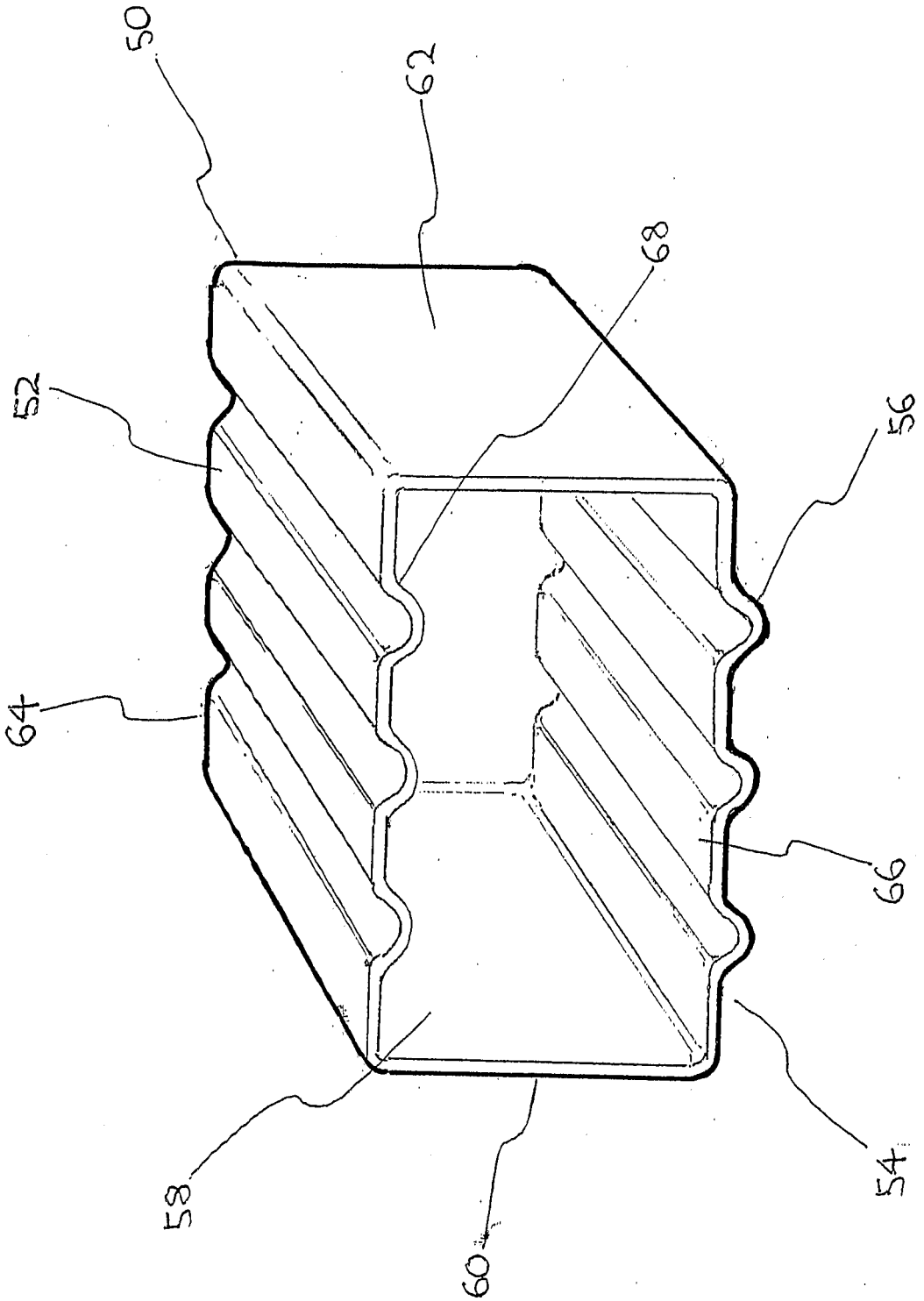


Fig 2a

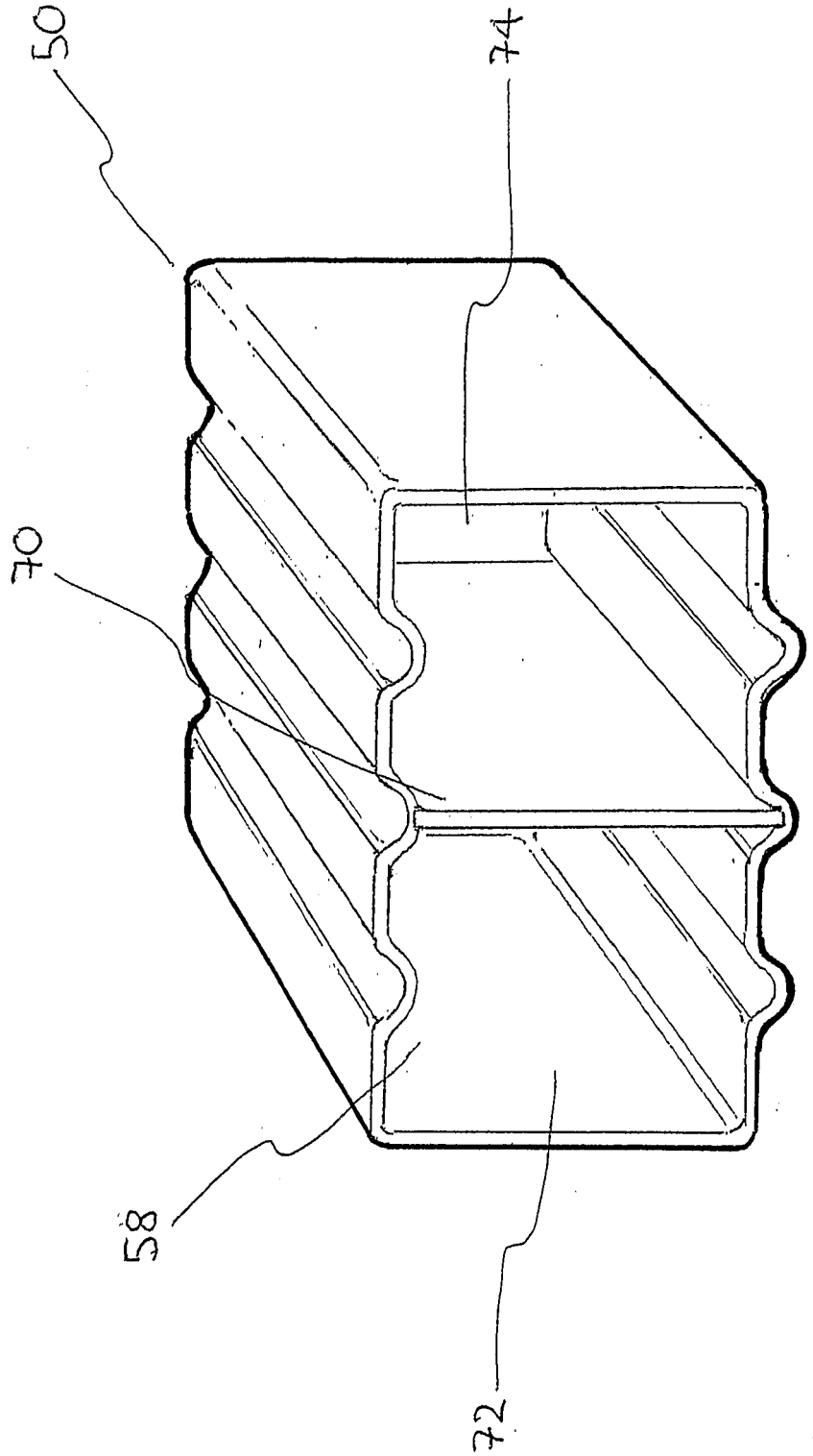


Fig 2b

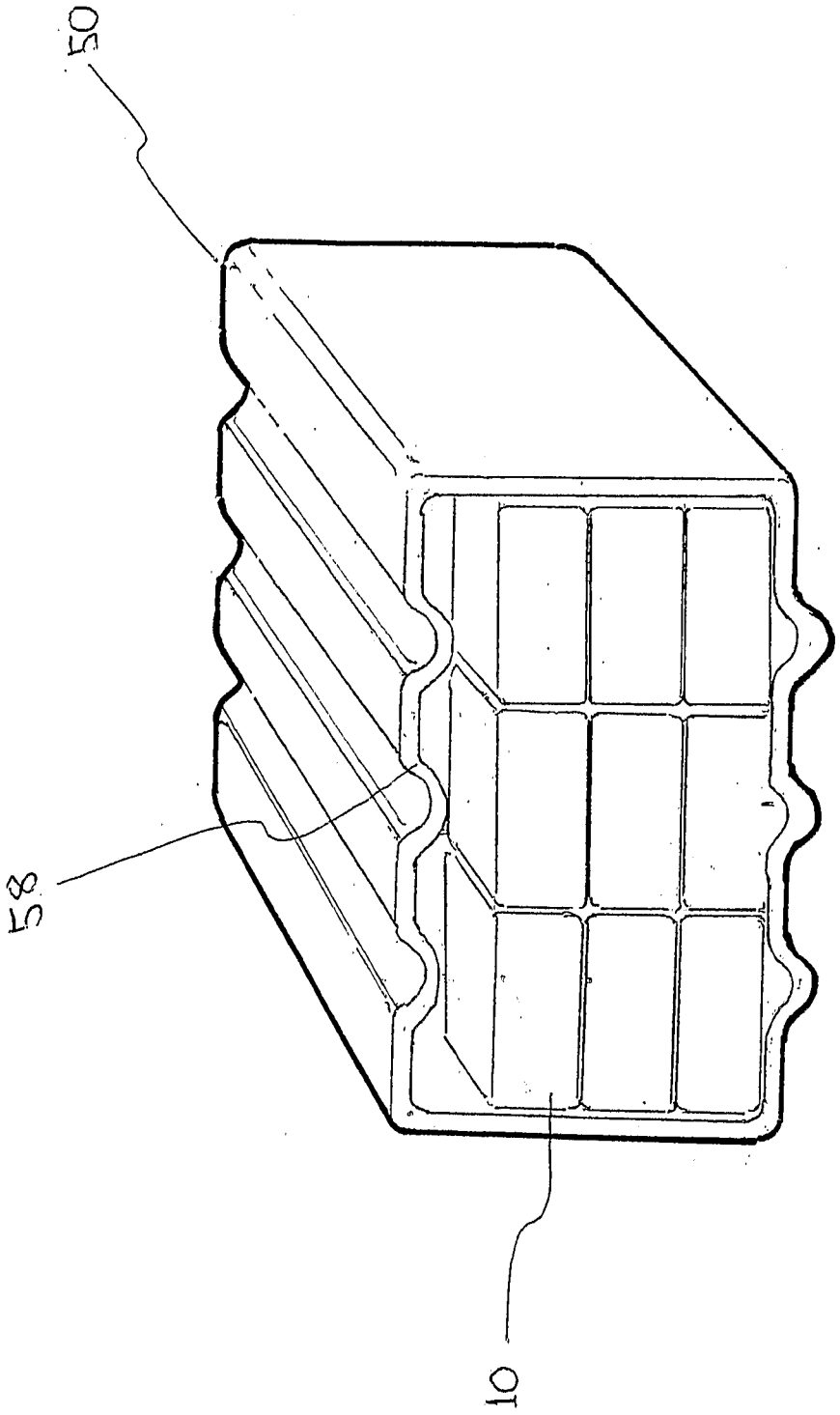


Fig 2c

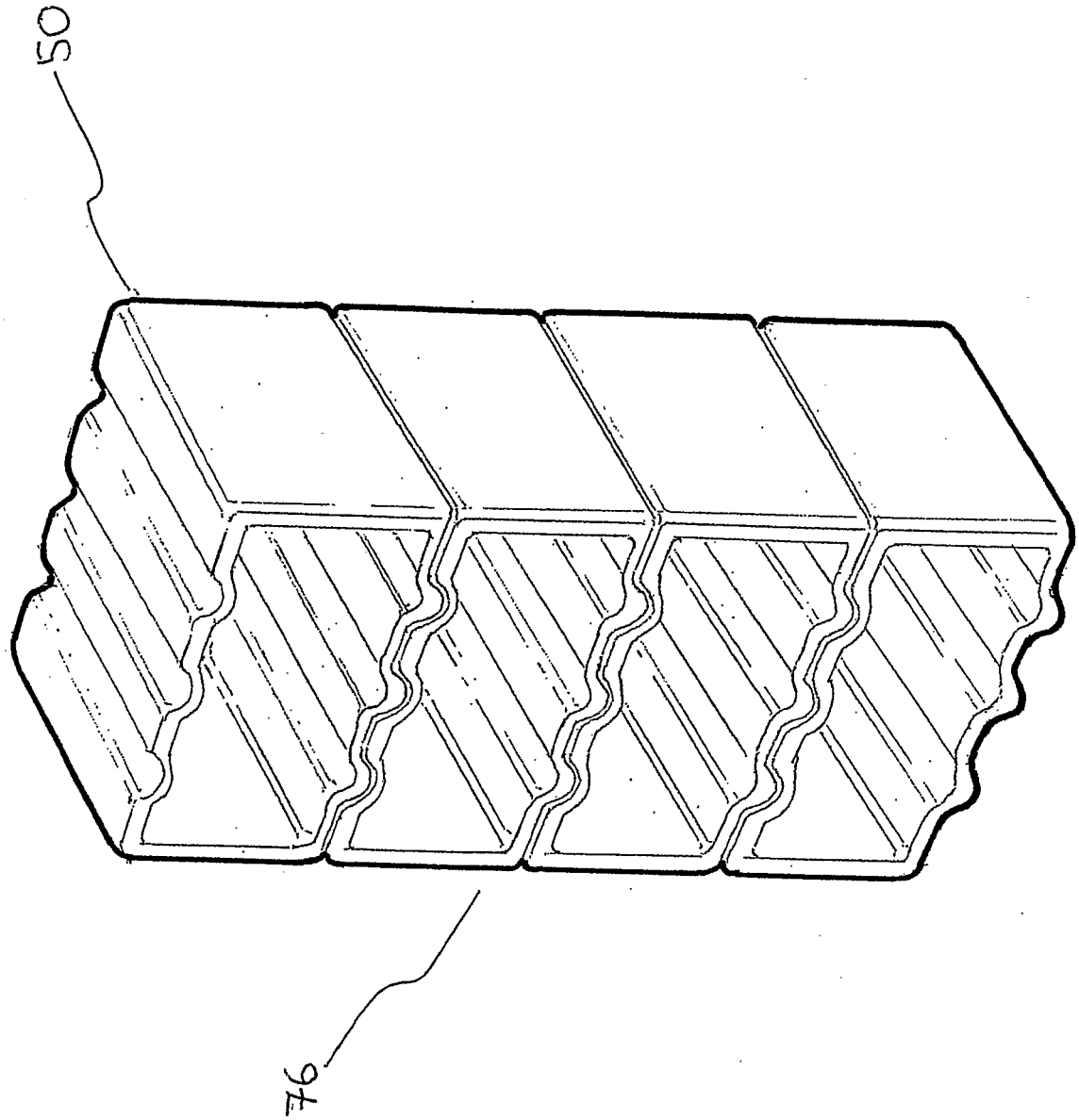


Fig 3

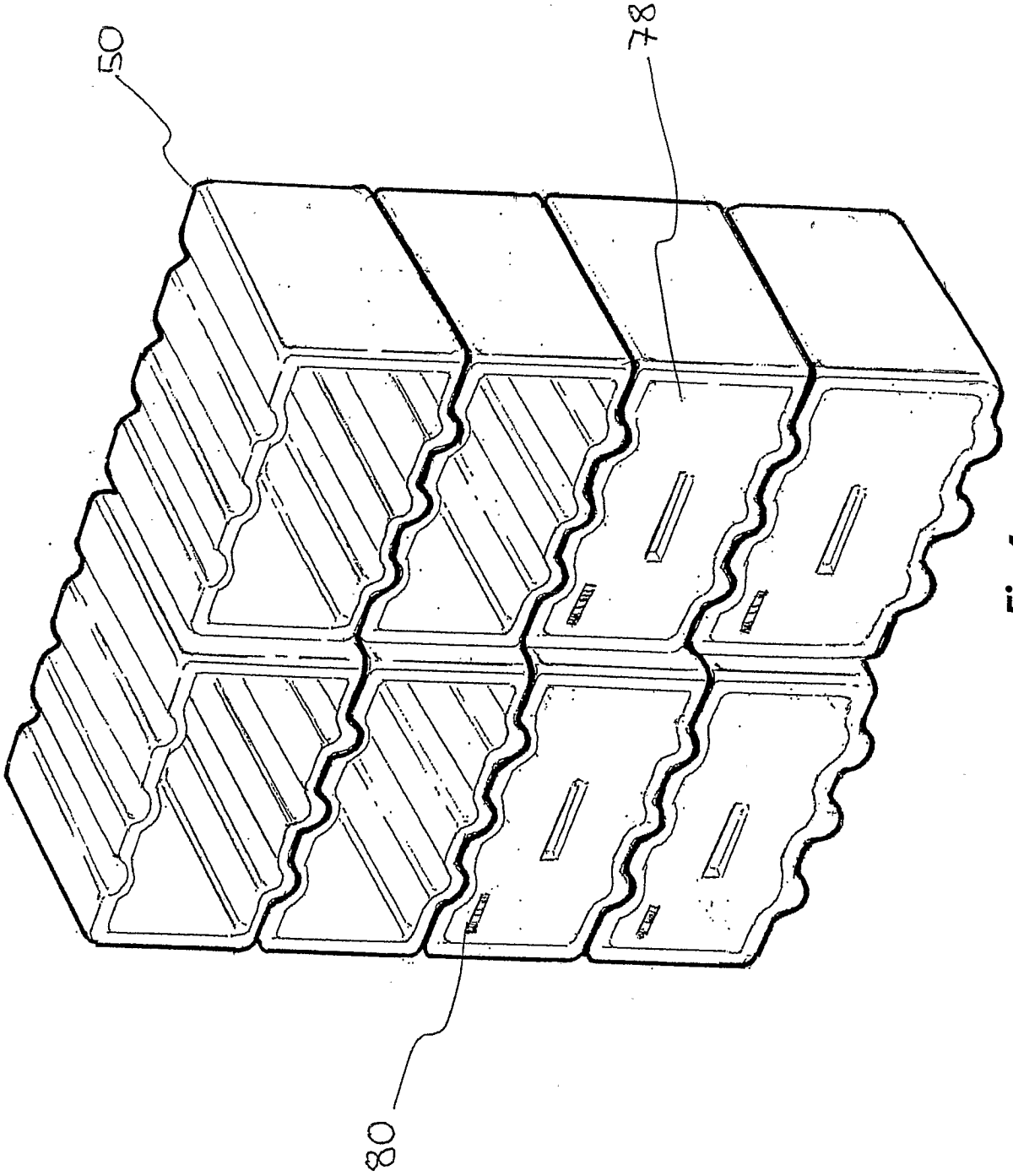


Fig 4

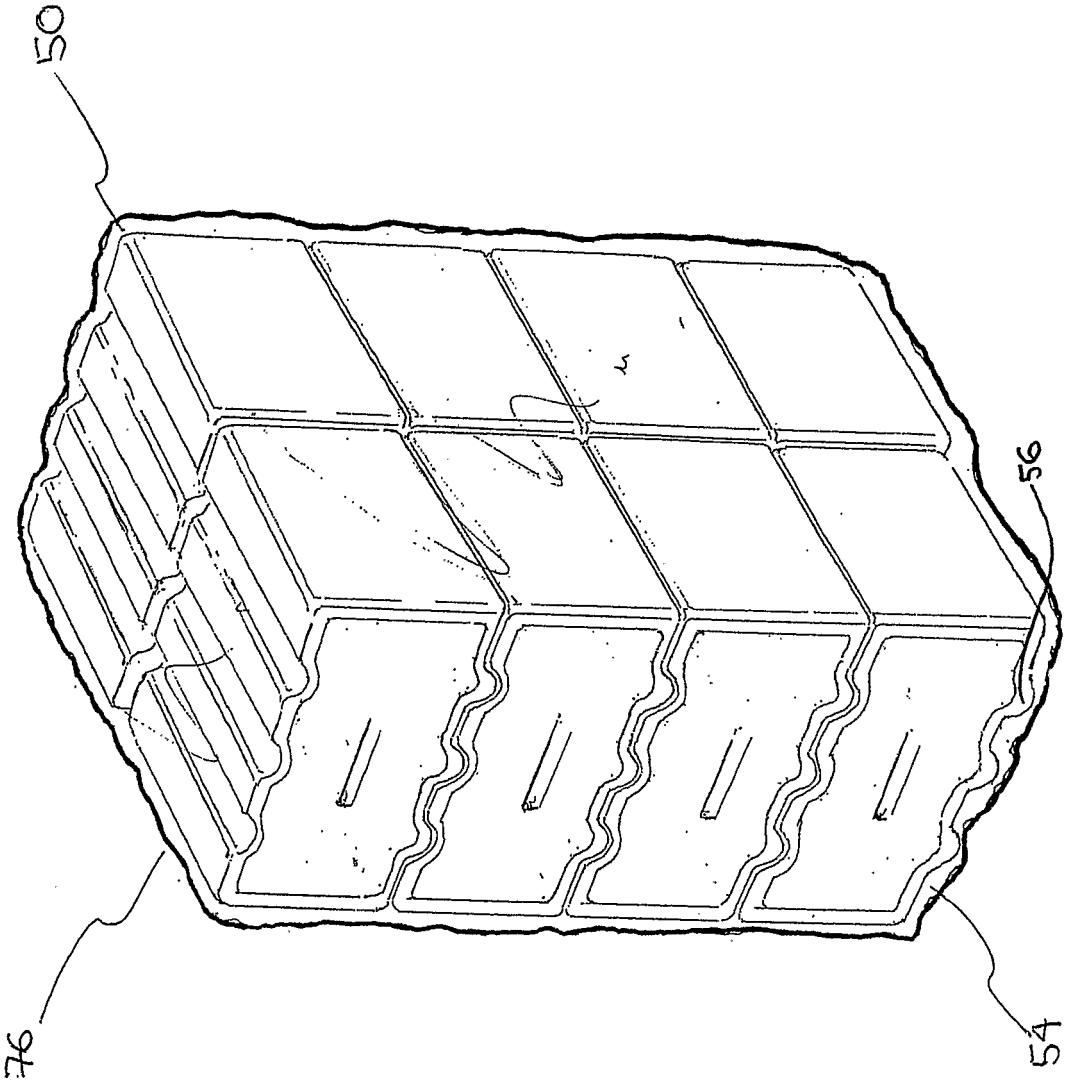


Fig 5

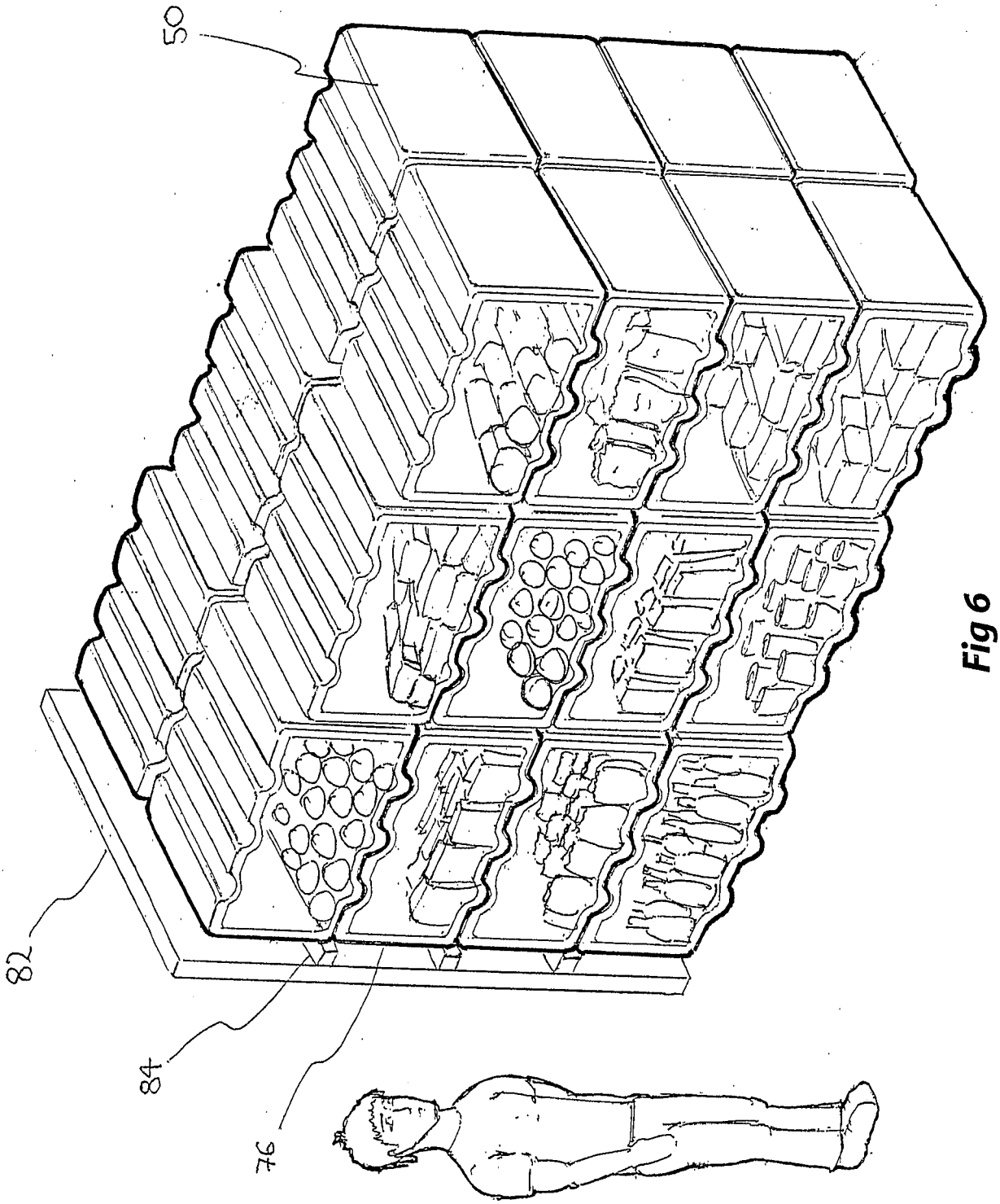


Fig 6

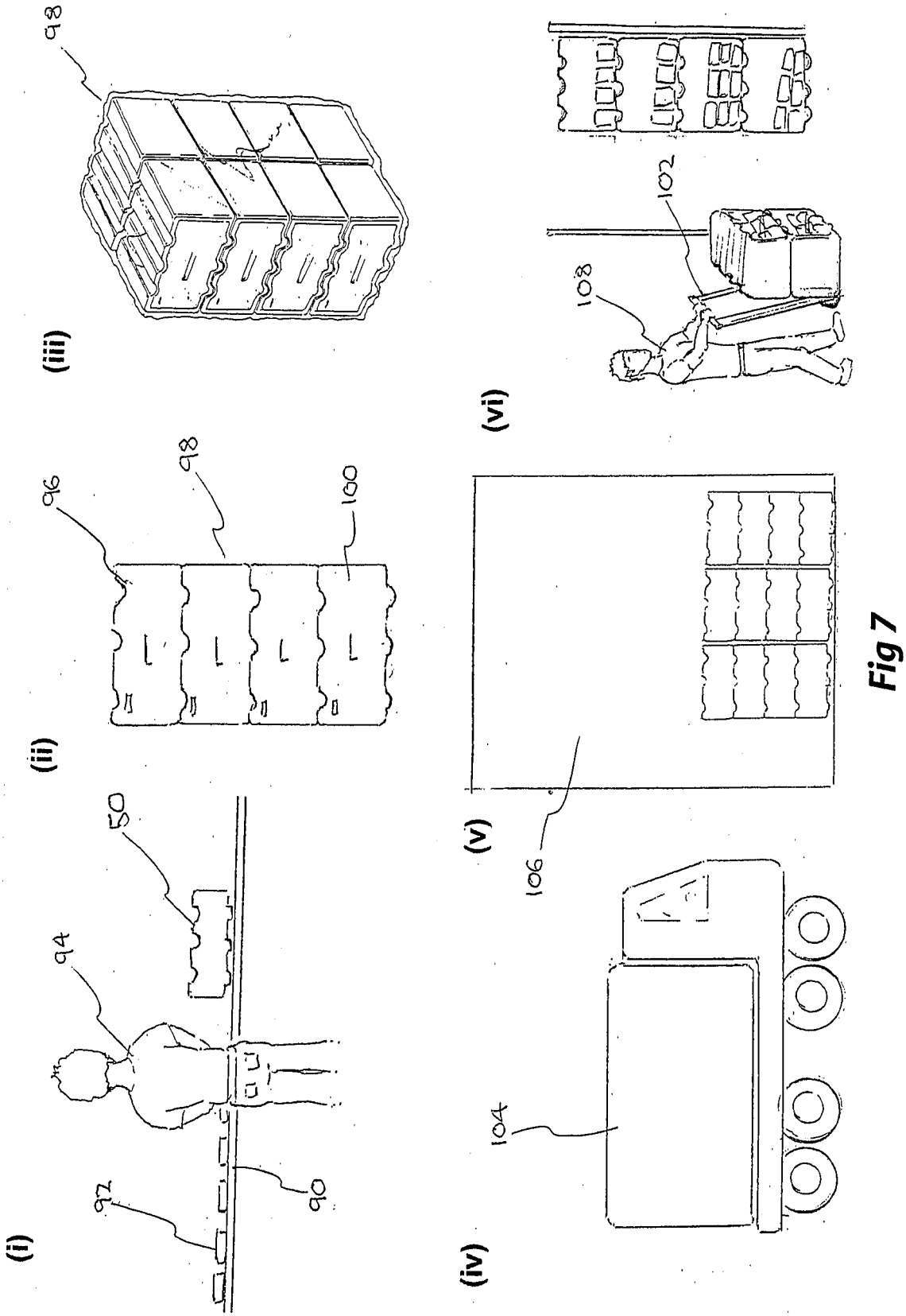


Fig 7

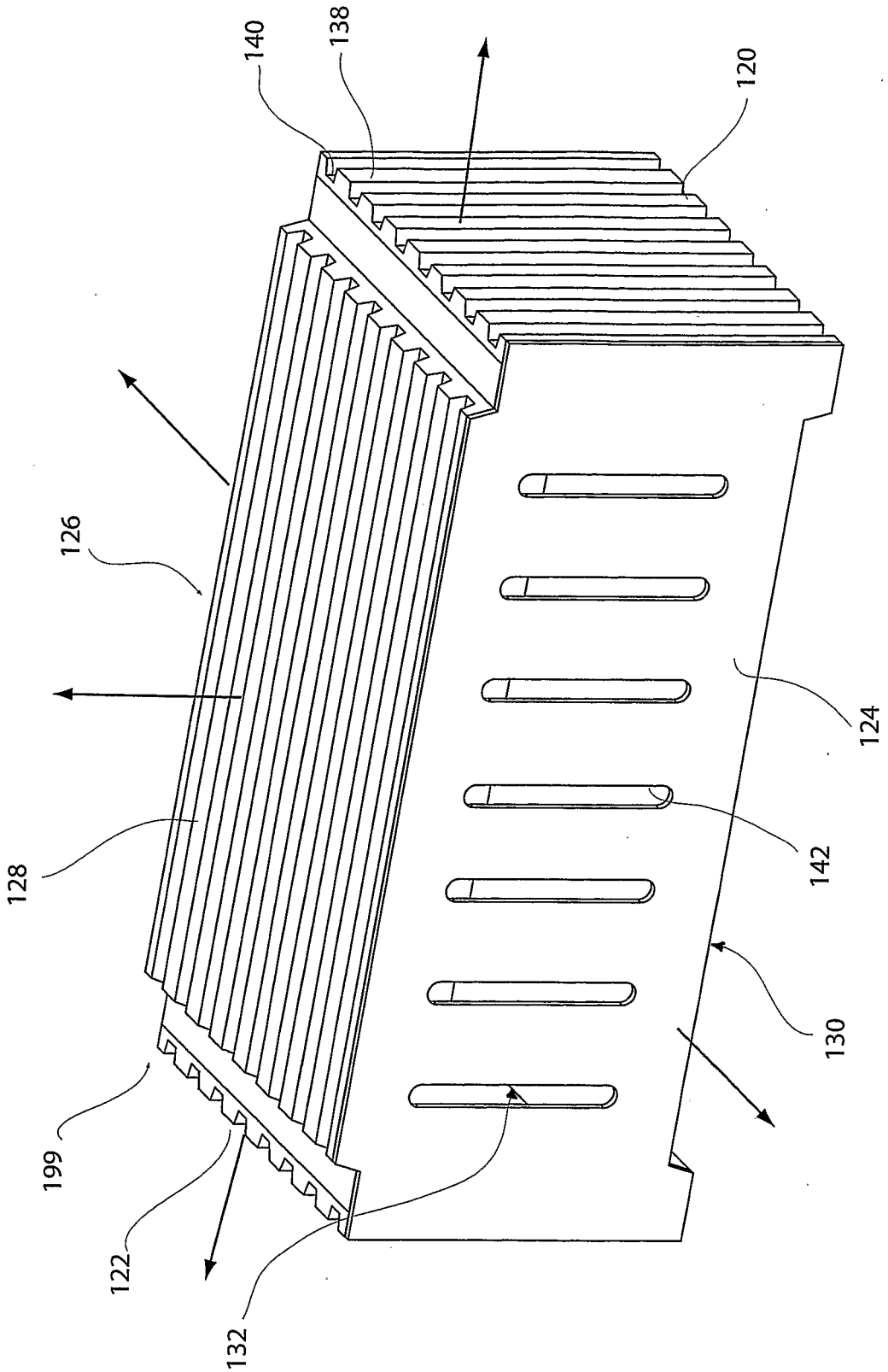


Fig 8

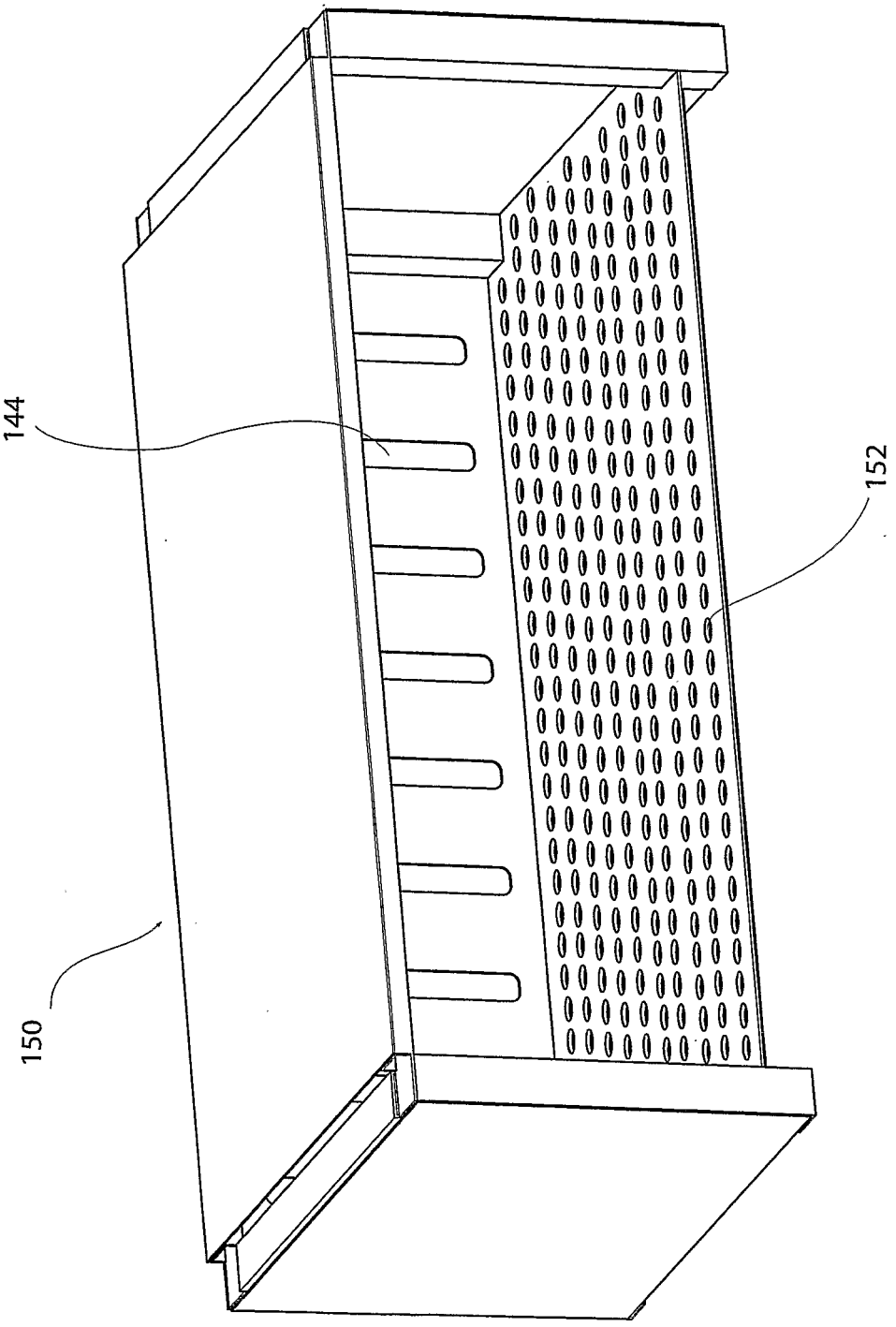


Fig 9

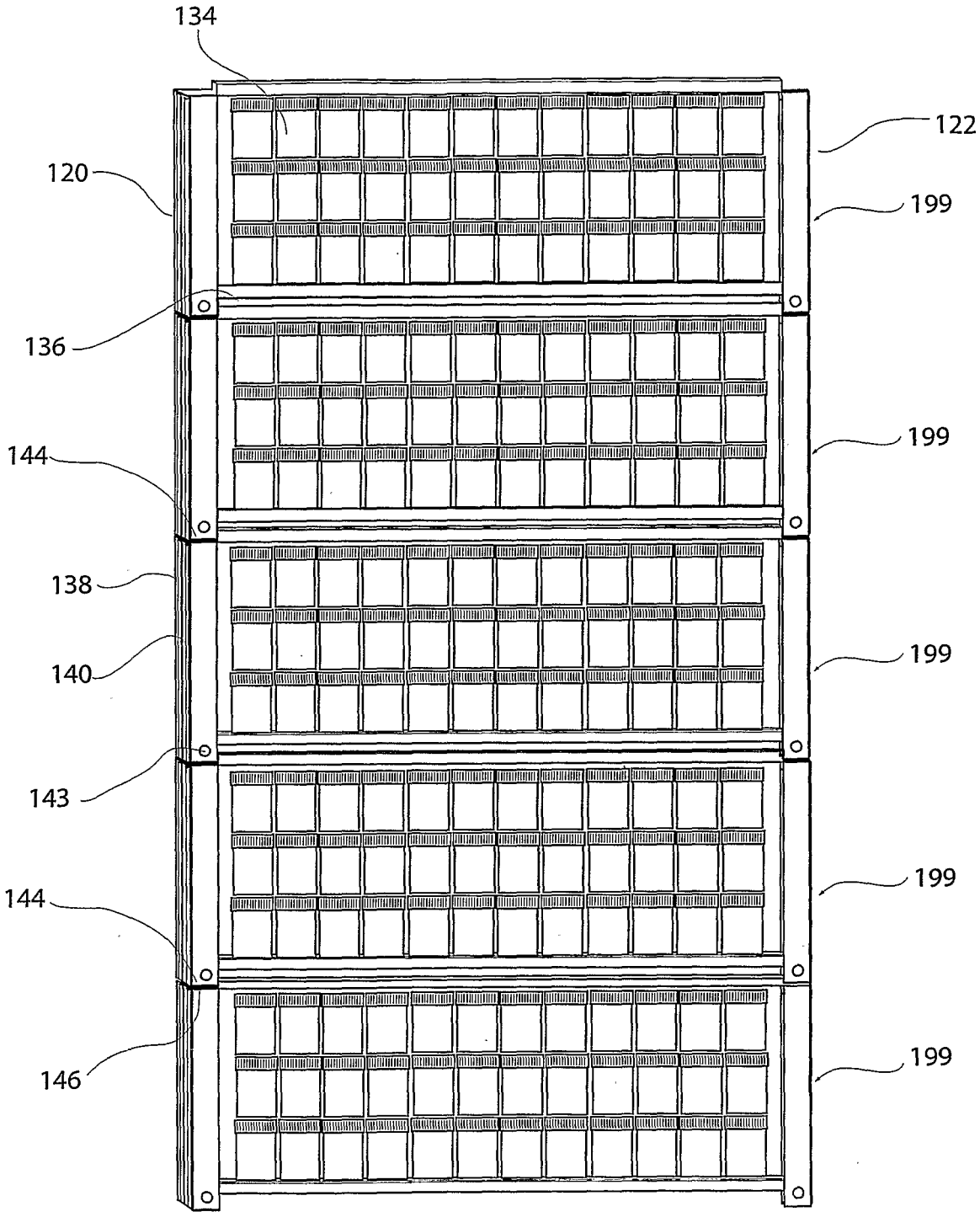


Fig 10

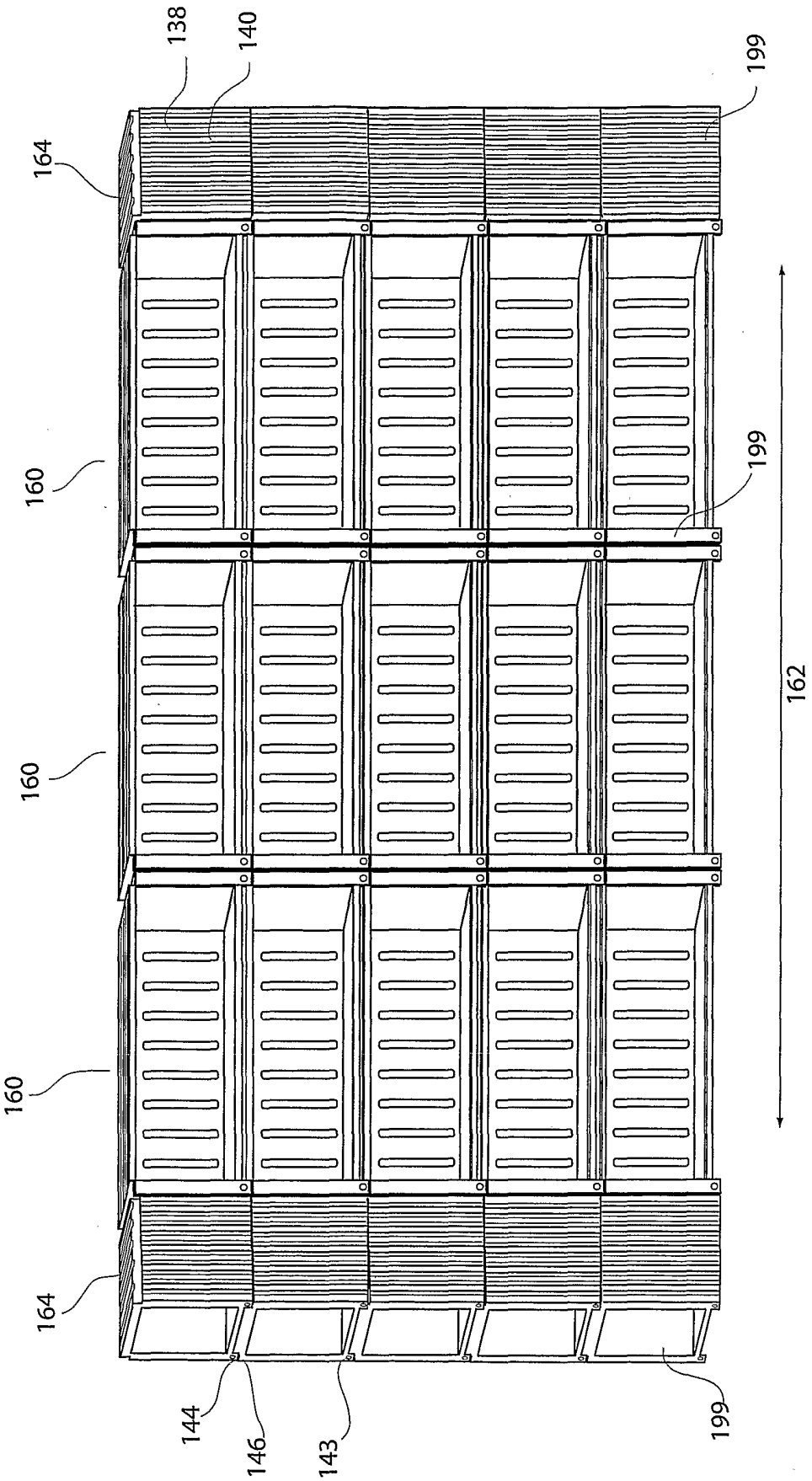


Fig 11

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

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