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(54) **TOWER TYPE MODULAR STRUCTURE FOR A DISPLAY STAND MADE OF CARDBOARD**

(57) The modular structure comprises modules of trays constituted by a cardboard blank having a portion; straight tubes that constitute modules of component uprights of respective corner columns, and connecting pieces in the form of corner knots, each of which has a central part with arms; in which the upright modules that make up corner columns are constituted from templates that form pairs of straight tubes, where each of said templates has a central portion of lateral closure between two consecutive overlapping tower trays, and two opposite sides constitute fold and tie lines with wings having fold lines, and a third side of the template constitutes a fold and tie line with a lateral lace wing in a false volumetric cardboard structure for support and reinforcement of said false structure.

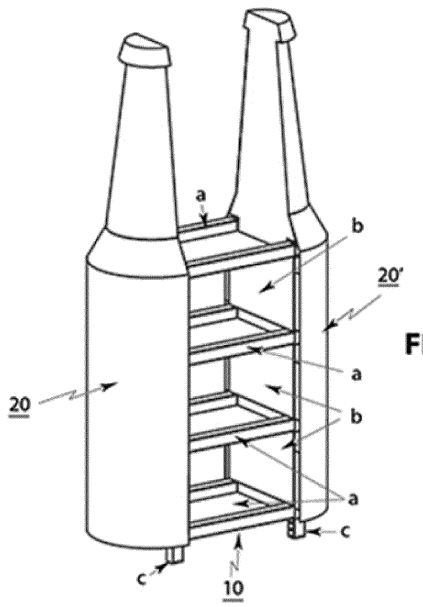

FIG. 1

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Description

Field of the invention

[0001] The present invention relates in general to a modular structure for a tower type cardboard display.

[0002] In more detail, this invention relates to a notable and innovative improvement in structures of the aforementioned type, composed by overlapping trays linked by corner posts, which consists of integrating other volumetric cardboard structures with various allegorical or representative formats of the products exhibited in these tower structures at sale points.

State of the Art

[0003] The patent application AR096797 A1 discloses a structure of the mentioned type, that includes:

- tray modules, each of which is constituted by a cardboard blank having a central portion in the form of a quadrilateral, the corners of which form incoming vertices and the sides of which constitute lines of folding and engagement with respective wings, having first portions with parallel consecutive fold lines capable of forming raised tubular edges, and second portions which together form a wall having the same area as the central portion of the insole and is superimposed therewith, each wing having reciprocal anchoring elements with said central portion of the insole,
- straight tubes that make up modules of the modules of each corner column, which have the same cross section as the perimeter tubular edges of each tray module, and
- the invention relates to connector parts in the form of corner nodes, each of which has a central part with arms, projected in three spatial orthogonal directions which fit at the concurrent ends of the tubular edges of each tray module, and the corresponding ends of the tubes that make up the frame modules.

Brief description of the invention

[0004] The inventive solution proposed is extremely effective and advantageous, obtaining very stable corrugated cardboard structures with reduced weight. In the case of display trays, the perimeter edges provide rigidity to the structure and serve as support for the displayed products. The disassembled modules occupy a minimum space and can be easily packed for storage and transport. At the point of sales, minimum movements and efforts are required to assemble or disassemble the display.

[0005] Based on the improvements, object of the present invention, an important innovation is obtained that provides greater visibility of advertising effect and improves the display structure.

[0006] According to the present invention, the upright modules of the tower type display structure are constituted by cardboard blanks that respectively form a lateral enclosing wall, a pair of straight tubes that are parts of two consecutive columns that coincide with said lateral of the tower type display, and integrated linking means for support and reinforcement of false volumetric lateral structures, which have an advertising character with allegorical formats with the products that are exhibited in the central structure.

[0007] Other characteristics and benefits of the object of the invention will be explained in the detailed description that follows.

Description of the drawings

[0008] Considering the aforementioned and other related purposes, the invention consists of the details of construction and combination of parts as will be understood on the basis of the following description referred to the drawings that are attached, in which:

Figure 1 is a perspective view of a basic example of an island construction or product display tower according to the present invention, consisting of trays, uprights and connecting pieces, and false lateral structures with allegorical shapes to the displayed products.

Figure 2 is a perspective view of the diecut cardboard blank conforming to each tray of the display.

Figure 3 is a perspective view showing the partially folded and assembled template with four connecting pieces.

Figure 4 is a perspective view of said tray in an assembled position with the connecting pieces.

Figure 5A is a plan view of the template proposed based on the present invention, according to a first embodiment, to form uprights between the consecutive superimposed trays of the display structure.

Figures 5B and 5C are perspective views showing the folding of the template of Figure 5A, with a lateral closing wall being formed between the immediate superimposed trays of the display structure, pair of straight tubes that make up the corner columns of said structure, and a wing for support and reinforcement, like a rib-transverse mode, with the corresponding false lateral structure.

Figures 5D and 5E are perspective views of uprights according to the present invention, in the folded position, according to two other embodiments of the respective wings for support and reinforcement, as a rib-transverse mode, with the corresponding false

lateral structures.

Figure 6 is a perspective view, showing two superimposed trays assembled with respective connecting pieces and two modules in projection according to Figures 5A, 5B and 5C, which form the uprights and side walls.

Figure 7 is a perspective view, showing the tower type structure composed of several consecutive superimposed display trays, with the uprights shaped according to Figures 5A, 5B and 5C, and showing the false lateral structures in projection, in the implementation, according to Figure 1.

Figure 8A is a partially exploded perspective view showing another implementation with random shapes for the false lateral structures and the corresponding support and linkage fins of the tower, according to Figures 5A, 5B and 5C.

Figure 8B is a perspective of the modular structure for a display according to the aforementioned variants in Figure 8A, showing it assembled.

Figures 9A and 10A are partially exploded perspective views, showing individual variants of embodiment with random shapes for the false lateral structures and the corresponding supporting and linking fins of the tower shaped according to the variants shown in Figures 5D and 5E.

Figures 9B and 10B are perspective views of the modular structures for displays according to the variants mentioned above in Figures 9A and 9B, showing them assembled.

[0009] In said figures, the same reference signs, indicate equal or corresponding parts.

List of numerical references:

[0010]

(a) Tray module.
(b) Upright module.
(c) Connecting piece in the form of a corner knot.

(1) Central portion in the shape of a quadrilateral of the template forming each upright (b).
(2) Fold lines of two opposite sides of the Central Portion (1).
(3) Wings linked to the central portion (1) by the fold lines (2).
(4) Parallel folding lines of each wing (3).
(5) Straight tubes formed by folded wings (3).
(6) Fold line formed on a third side of the central portion (1).
(7a-b-c) Variants of geometric conformation of the lace wing in the corresponding false lateral structure.
(8) The projection formed, at one end, of the first two portions of each wing (3), between the fold lines (3) and folding (4) lines.
(9) Entering of each wing (3), adjacent to each projection (8).
(10) Central structure formed by the tower type display, formed by trays (a), uprights (b) and connecting pieces (c).
(11) Peripheral tubular edges of each tray (a).
(12) Entering straight vertices of the central portion of the blank that make up each tray (a).
(20-20') Lateral volumetric false structures of advertising character with a random bottle shape with curved cross section.
(30-30') Variant of false lateral structures of advertising character with a random container or jar shape with curved cross section.
(40-40') Variant of the false lateral structures of advertising character with a random container shape with a narrow substantially rectangular cross section.
(50-50') Variant of the false lateral structures of advertising character with a random box type container shape in the form of a vertical rectangular prism.

Detailed description of the invention.

[0011] The present invention includes a tower type central display structure (10) and false lateral volumetric structures (20-20'), of advertising character and various allegorical formats with the displayed products, which are fixedly attached to the central tower structure (10). The central structure (10) is made up of tray modules (a), upright modules (b) that, according to this invention, form closing side walls, components of consecutive corner columns and structural and interlocking elements support of the lateral false structures (20-20'), likewise, the central structure (10) includes connecting pieces (c) in the form of knots to link the tray modules (a) and the upright modules (b).

[0012] Each tray module (a) is formed, from a diecut cardboard blank, whose development is show in this description, in Figures 2 and 3.

[0013] In the assembly position (figures 4 and 6), with each template, a tray is obtained (a) which has a main wall in a quadrilateral shape, with a supportive tubular perimeter flange and corners forming right-angled (12) where the connecting pieces (c) are respectively located. On the main wall of the tray can be assembled a false wall formed by a cardboard sheet (not shown) that strengthen the tray and can hold the appropriate graphic providing it an aesthetic cover. Briefly, since a detailed description is disclosed in patent AR096797 A1, in Figures 2 and 3, it is shown that the central wall in a quad-

rilateral shape has wings with consecutive parallel folding lines on all four sides to form the sections of the tubular perimeter flange.

[0014] According to the object of the present invention, each upright module (b) includes from a diecut cardboard blank whose development is illustrated in Figure 5A and complementary figures 5B and 5C.

[0015] The template in question has a central portion (1) in the shape of a quadrilateral, in which, two opposite sides constitute lines (2) of folding and linking with respective wings (3) that have parallel consecutive folding lines (4) that form two straight tubes (5). A third side of the template constitutes, likewise, a line (6) of bending and linking with a wing (7a) angularly positioned, preferably at 90°, with the portion (1).

[0016] In the embodiment illustrated in Figures 1, 5A, 5B, 5C, 6 and 7, the false volumetric structures (20-20') correspond to hollow bodies with curved cross section and the wings (7a) have a congruent curved edge.

[0017] It should be noted that the wing in question of the upright module (b) can have other perimeter shapes selected from polygonal, circular and ellipsoidal, regular and irregular, with sides selected from straight, curvilinear and combined between them, in each case congruent with the cross section of the corresponding false lateral volumetric structure.

[0018] In the description that follows, the citations to the false lateral volumetric structures are indicated with the references (20-20') and the wings of the uprights (b) with the references (7a).

[0019] In the uprights (b), the straight tubes (5) have the same cross section as the section of the tubular edges (11) of each tray (a), having a square section in this example.

[0020] As seen in Figure 5A, in the template forming each upright (b), the first two consecutive wall portions of the wings (3), which are delimited by the fold lines (2) and (4), form on one of the edges of the template, extensions (8) whose height is equal to the height of the perimeter tubular edges (11) of each tray module (a), followed by entering (9) with equal height.

[0021] The straight tubes (5) are components of corner column pairs of the central structure (10) and the wing (7a), acts for support and structural reinforcement, as a rib of the corresponding false structure (20-20').

[0022] As emerges from Figures 1 and 6, the central portion (1) of each upright module forms a lateral closing wall between two consecutive superimposed trays (a) of the tower (10) and with reference to Figure 1, it is seen that said wall (1) also closes the portion of the immediate facing face of the attached lateral false structure (20-20').

[0023] The connecting pieces (c) will be briefly described as being the same as those disclosed in patent AR096797 A1. These connector pieces (c) are basically corner knots to structurally link each tray module (a) with the uprights (b), comprising a central part and arms projected in three spatial orthogonal axes. The aforementioned arms of the connector pieces (c) have a square cross section for cooperating fit at the corresponding ends of the tubular edges (11) of the tray modules (a) and straight tubes (5) of the uprights (b).

[0024] The straight tubes (5) of each upright (b) respectively have at one end a defined neckline during the folding of the insole by the entering (9) adjacent the corresponding extension (8). The height of each neckline or entering (9) is equal to the height of the central part of each piece-node (c), with which, in the assembly position (figures 1 and 7) the uncut wall portion, that is, the extensions (8) they cover the mentioned central part of the corresponding piece-knot (c).

[0025] The false lateral structures (20-20 ') are structures that, as previously explained, have an allegorical advertising character with the products that are displayed for sale on the trays (a) of the central structure (10). These false structures (20-20') are preferably made of flexible cardboard, known in the art as "soft cardboard" capable of molding more or less intricate shapes.

[0026] In the embodiment shown in Figures 1 and 7, these false lateral structures (20-20') have a random half-bottle shape with an open flat face facing the corresponding side of the tower (10) and section transverse congruent with the free contour of the wings (7a), (figures 5A, 5B, 5C and 6) which fit into the insert structure for support and structural reinforcement, like ribs, thereof.

[0027] The assembly of the set begins with the folding of the tray modules (a), as illustrated in Figures 2 and 3. For each tray (a), at the ends of two opposite tubular edges (11) the corresponding four-knot arms (c) are inserted. Then, the two remaining opposite wings are folded and fixed in the same way, wrapping the opposite arms of the knots (c), remaining inserts at the ends of these new tubular edges (11), all in accordance with what is shown in Figures 3 and 4.

[0028] Next, the upright modules (b) are assembled, proceeding to the folding of the corresponding templates, as shown in Figures 5B and 5C, with the straight tubes (5) being formed on both sides of the wall (1) and the respective fins (7a) bent at a required angle with said wall (1).

[0029] As can be seen in figure 6, the tray modules (a) thus assembled are linked in a tower shape by fitting the ends of the tubes (5) into the arms of the corresponding corner knots (c). In this position and as shown in figure 7, the lower arms of the nodes (c) of the first lower tray (a) form legs of the structure, likewise, the set of wings (7a) are positioned perpendicular to the walls (1), projecting outward on both sides of the structure (10).

[0030] The assembly of the set (figure 1) is completed with the previous assembly of the false structures (20-20 '), coupling the wings (7a) in said structures, being able to be reinforced said assembly with fixing elements selected from what is known, for example, screws (not shown) that attach fins or other perimeter parts of the false structures with the tubes (5) or with the wall (1) of the uprights (b).

[0031] With reference to Figures 8A, 8B, 9A, 9B, 10A

and 10B, other variants are shown, with free-form shapes, non-limiting shapes, for the false lateral structures.

[0032] In the variant shown in Figures 8A and 8B, the false lateral structures refer to halves (30-30 ') of a jar type container, with a curved cross section. Figure 8A shows that the upright modules (b) include wings(7a) with curved edge.

[0033] In the variant shown in Figures 9A and 9B, the false side structures refer to halves (40-40') of a container with a narrow substantially rectangular cross-section. In figure 9A it is shown that the upright modules (b) include rectangular wings (7b) like those shown in figure 5D.

[0034] According to another variant represented schematically in Figures 10A and 10B, the false lateral structures refer to volumes (50-50') in the form of prisms vertical rectangular. Figure 10A shows that the upright modules (b) include rectangular wings (7c) with straight sides as shown in Figure 5E.

Claims

1. Modular structure for a tower type cardboard display, comprising:

   - tray modules, each of which is constituted by a cardboard blank having a central portion in the form of a quadrilateral, the corners of which form incoming vertices and the sides of which constitute lines of folding and engagement with respective wings, having first portions with parallel consecutive fold lines capable of forming raised tubular edges, and second portions which together form a wall having the same area as the central portion of the insole and is superimposed therewith, each wing having reciprocal anchoring elements with said central portion of the template,
   - straight tubes that make up modules of the modules of each corner column, which have the same cross section as the perimeter tubular edges of each tray module, and
   - the invention relates to connector parts in the form of corner nodes, each of which has a central part with arms, projected in three spatial orthogonal directions which fit at the concurrent ends of the tubular edges of each tray module, and the corresponding ends of the tubes that make up the upright modules,

   characterized in that the upright modules that constitute the corner columns are made up of templates that form pairs of straight tubes, where each of said templates has a central portion in the shape of a quadrilateral, with lateral closure between two consecutive superimposed trays of the tower, in which two opposite sides constitute folding and bonding lines with respective wings that have parallel consecutive folding lines that form two tubes, and where a third side of the template constitutes in turn a folding and linking line with a lateral lace wing in a given false volumetric cardboard structure, representative of an allegorical body, for support and structural reinforcement of said false structure, where said wing is shaped perimeter copying the cross section of the false volumetric structure.

2. Modular structure for a tower type cardboard display, according to claim 1, **characterized in that** in each upright module, the wings of two opposite sides of the central quadrilateral-shaped portion of the template, which have parallel consecutive fold lines that form two tubes, comprise two first consecutive wall portions, which on one edge of the template form extensions whose height is equal at the height of the central part of the corresponding connector piece and the height of the perimeter tubular edges of each tray module.

3. Modular structure for a tower type cardboard display, according to claim 1, **characterized in that**, in each upright module, the wing of the lateral fit in a given cardboard post-volumetric structure has shapes selected from polygonal, circular and ellipsoidal, regular and irregular, with sides selected from straight, curvilinear and combined between them.

4. Modular structure for tower-type cardboard display, in accordance with the claim number 1, **characterized in that** the tower-type structure has fixedly attached to at least one of the faces that form the sides of the tower, a given false cardboard volumetric structure representative of an allegorical body with the displayed products.

5. Modular structure for a tower type cardboard display, according to claim 1, **characterized in that** in each upright module, the central quadrilateral-shaped portion of the template constitutes a closing wall of the immediate facing face of the attached false lateral structure.

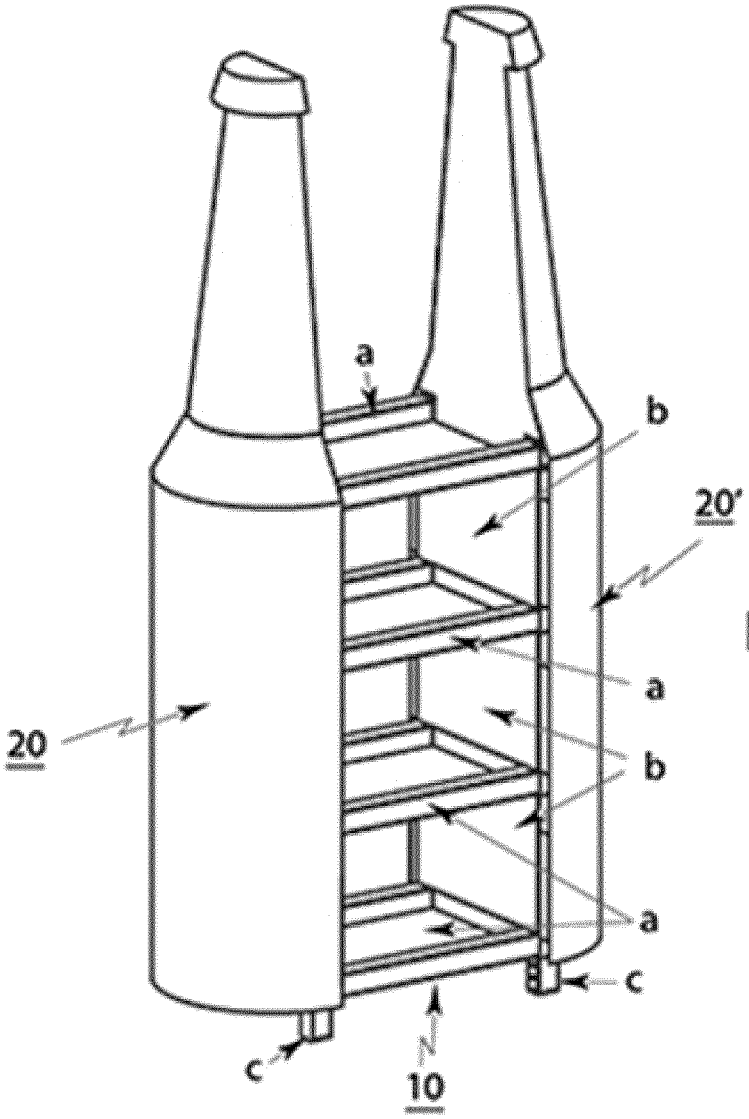

FIG. 1

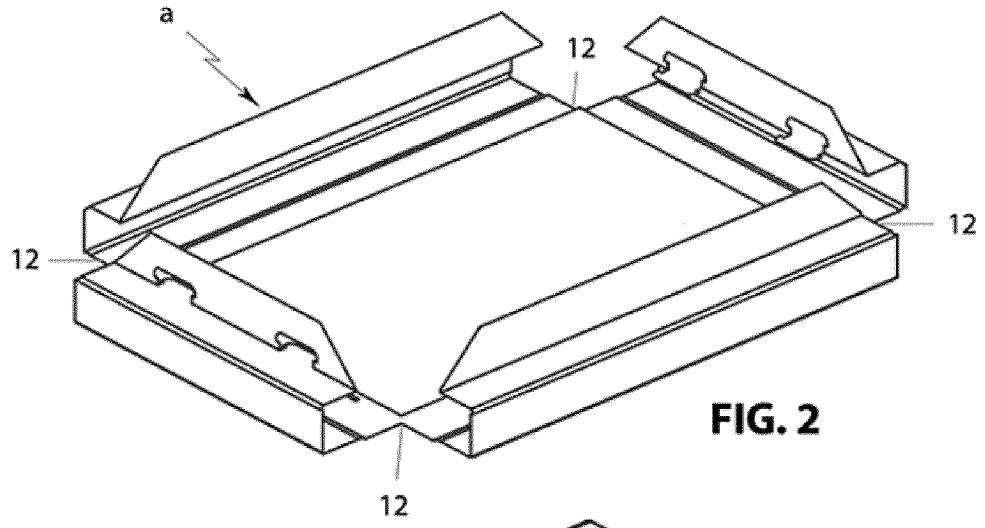

FIG. 2

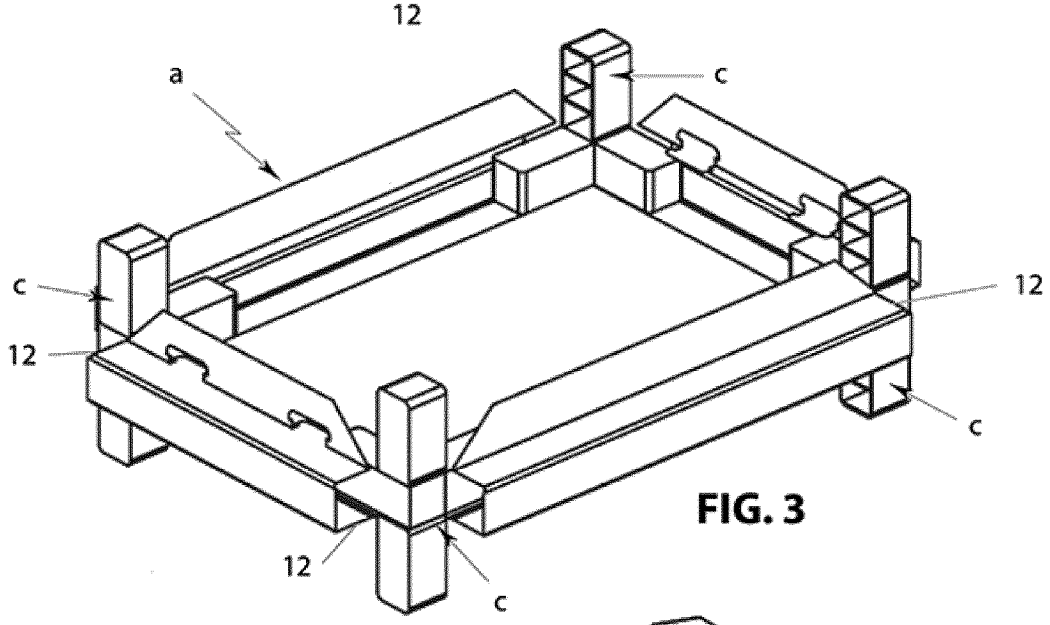

FIG. 3

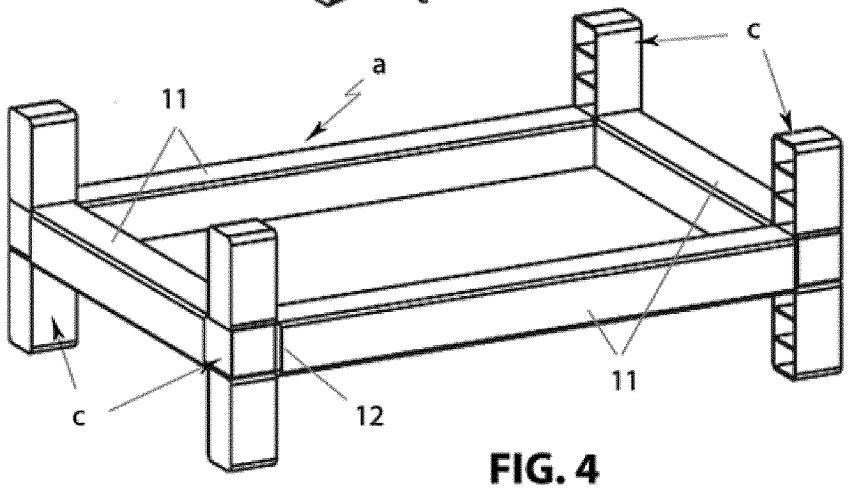

FIG. 4

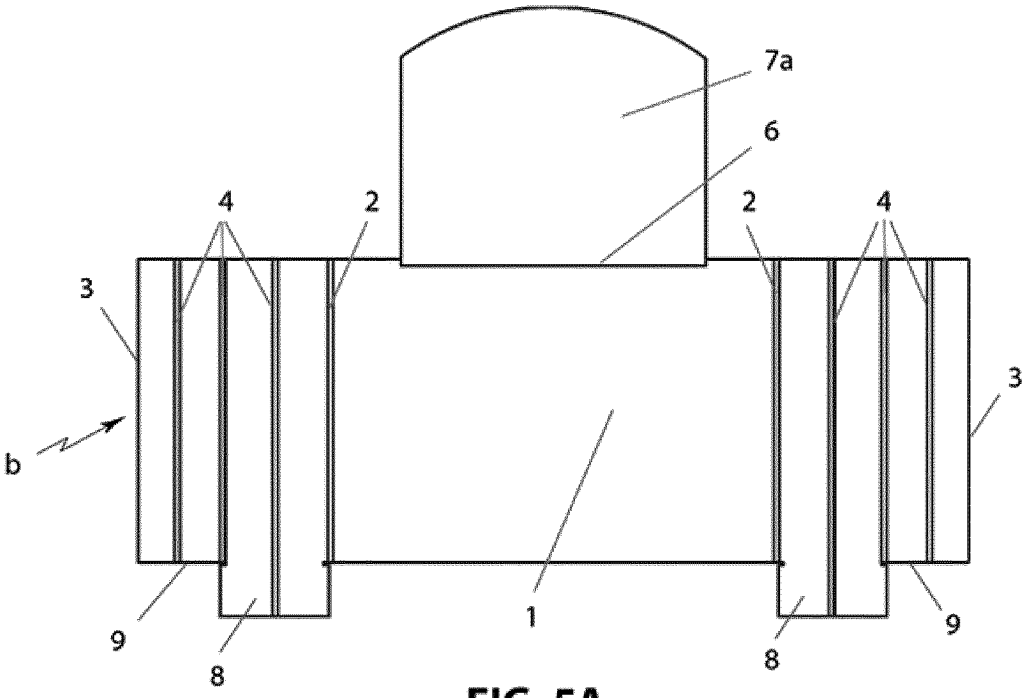

FIG. 5A

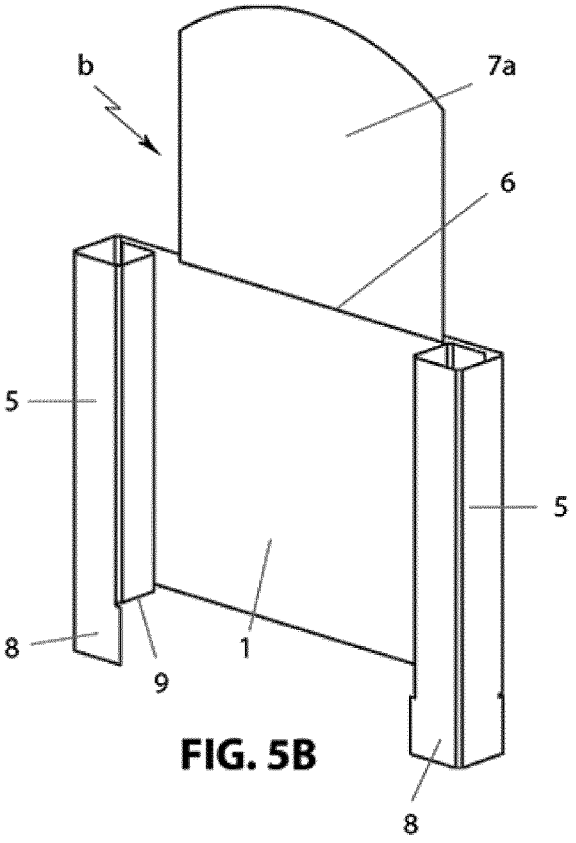

FIG. 5B

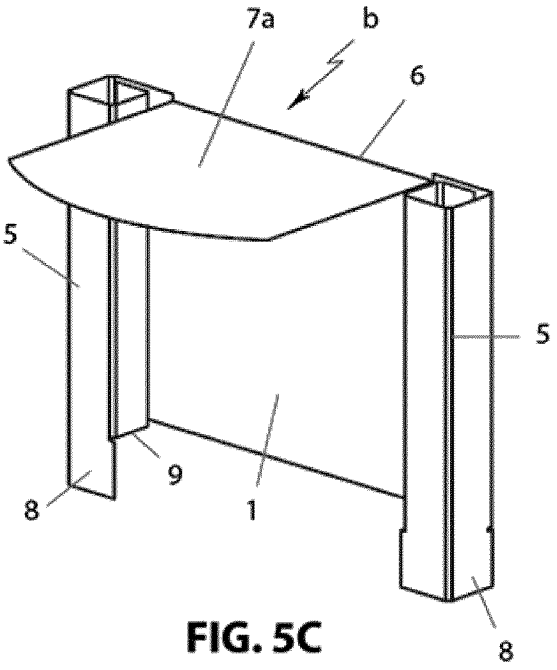

FIG. 5C

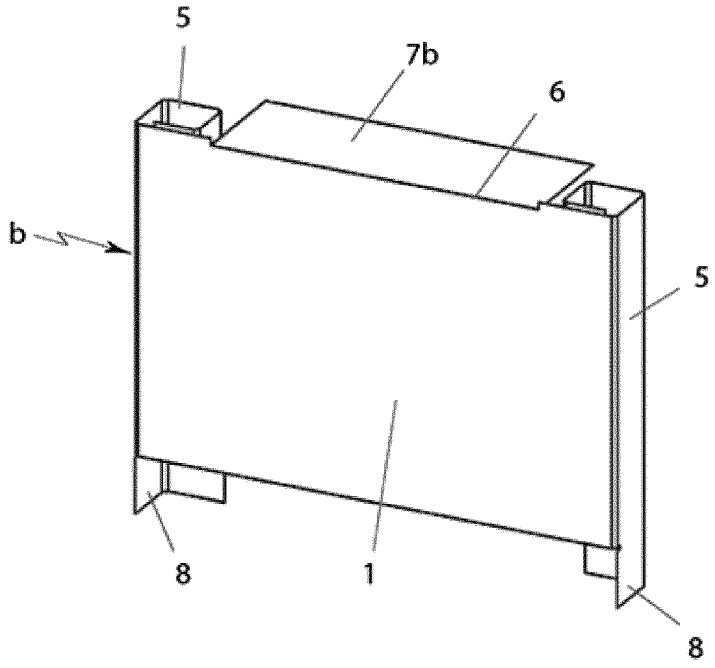

FIG. 5D

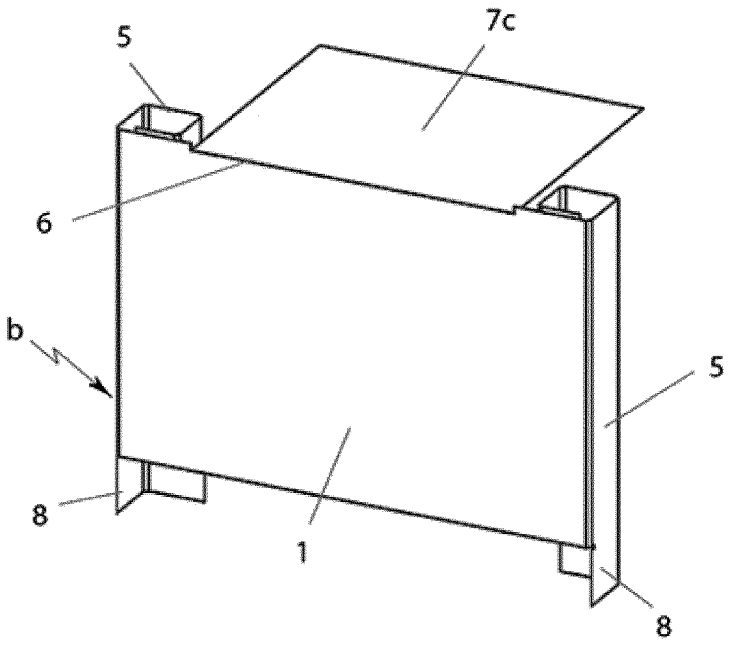

FIG. 5E

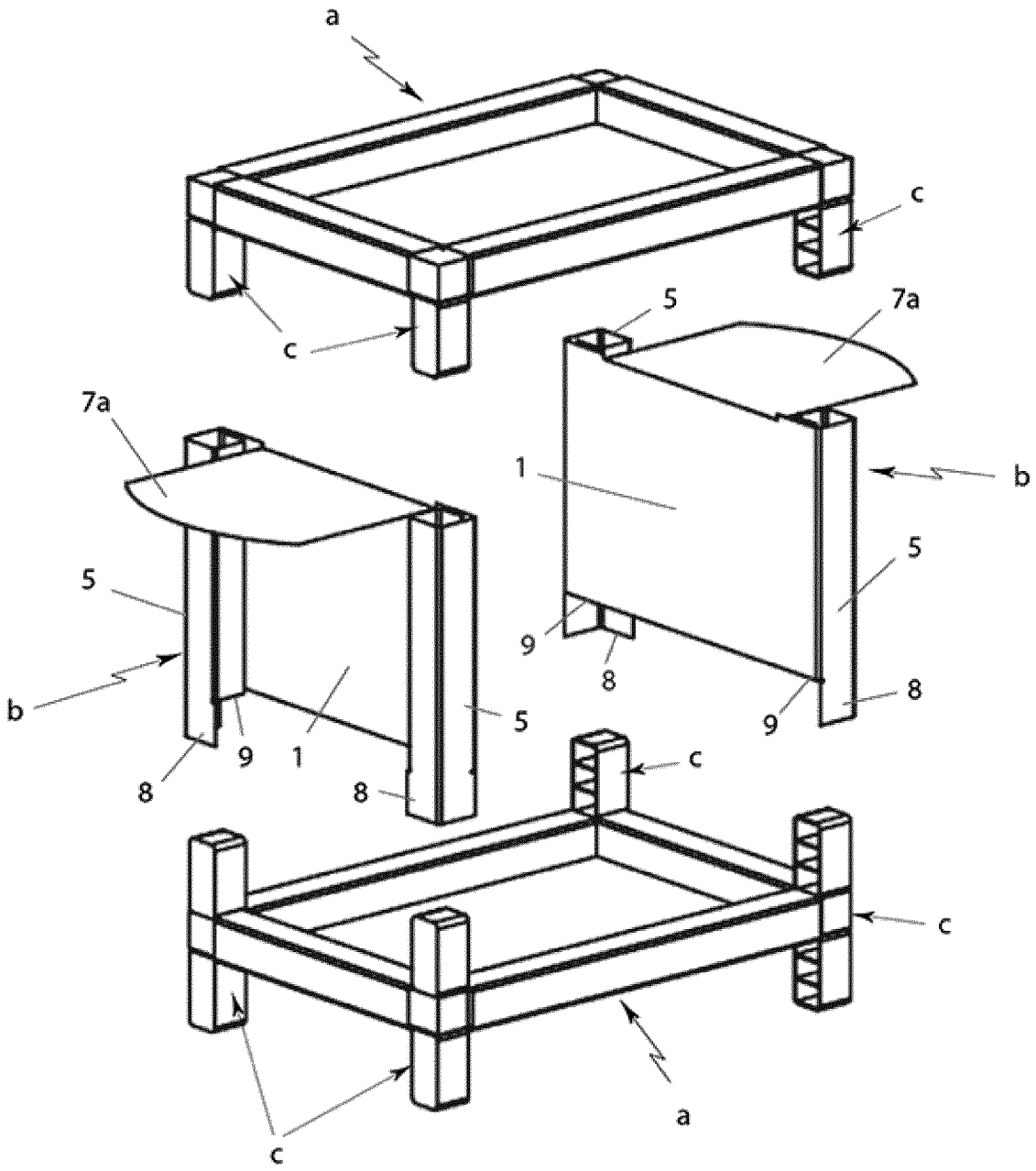

FIG. 6

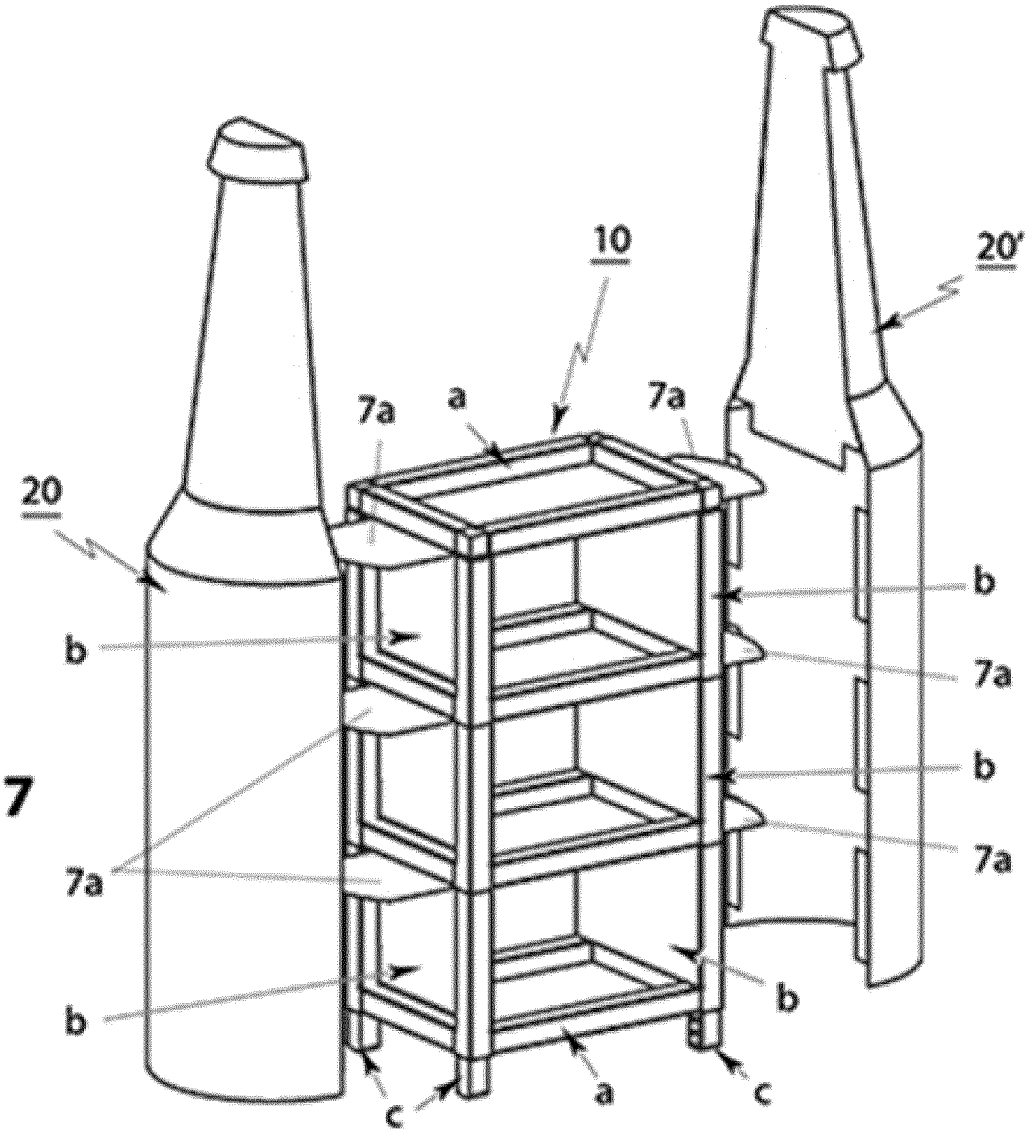

FIG. 7

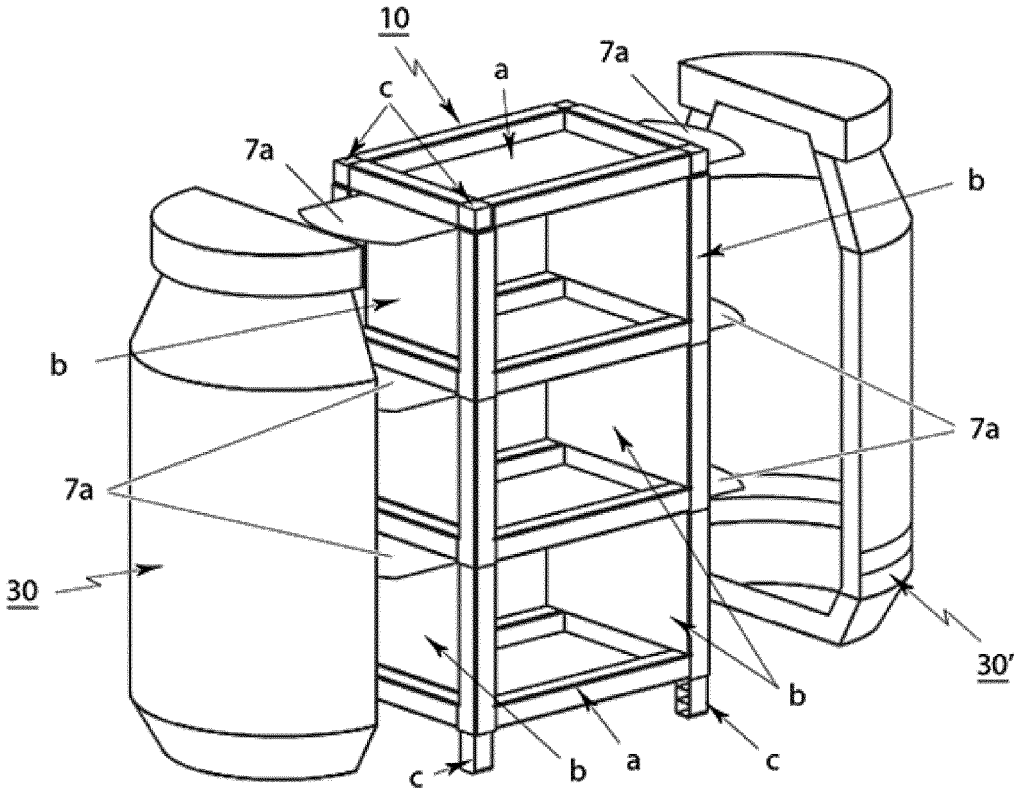

FIG. 8A

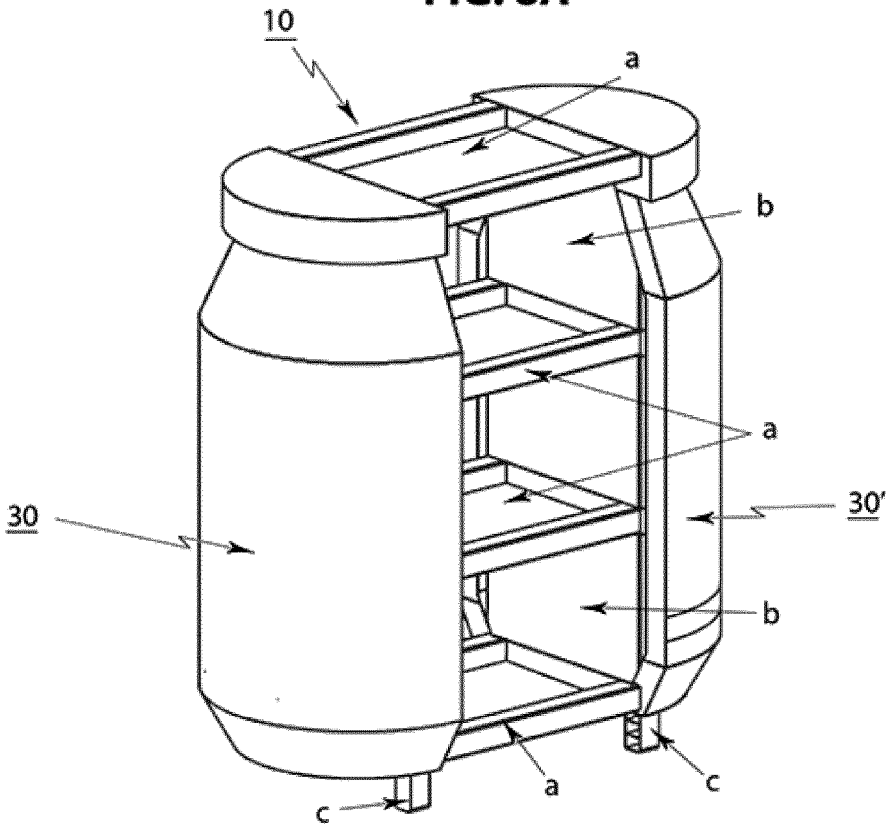

FIG. 8B

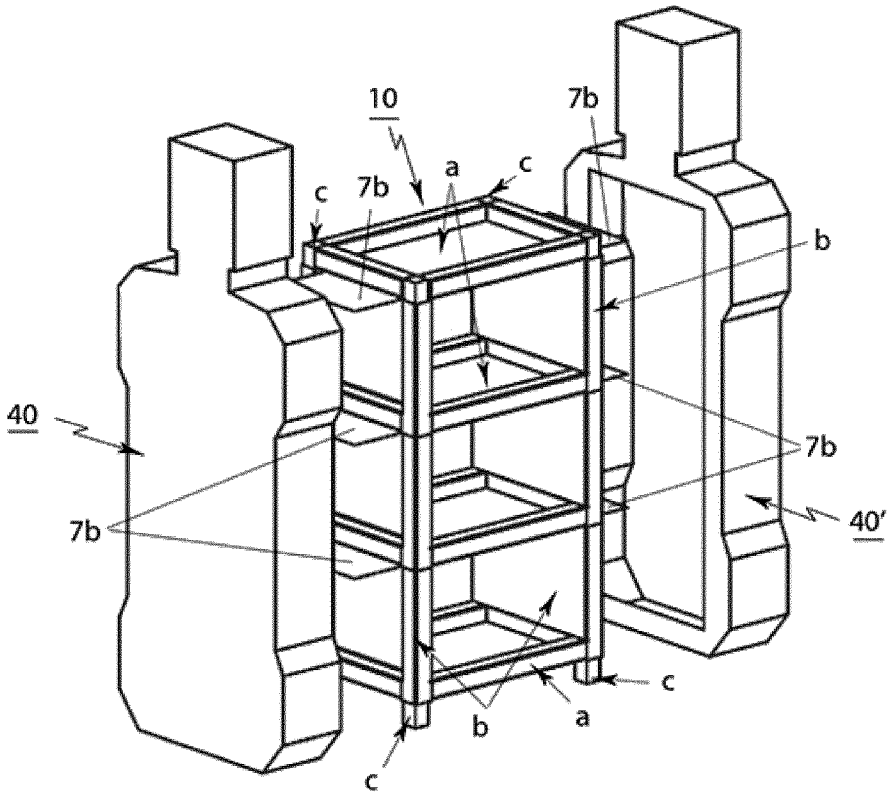

FIG. 9A

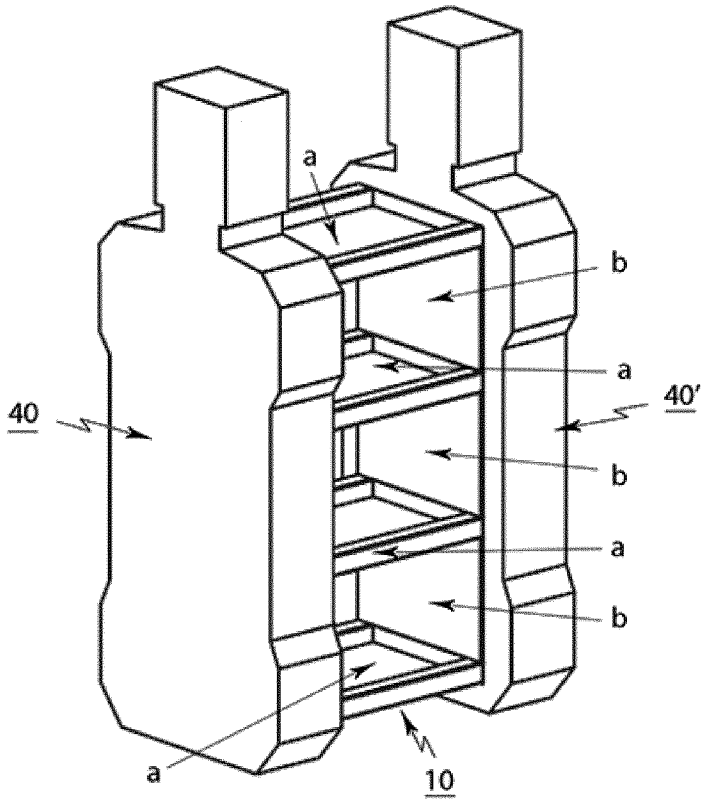

FIG. 9B

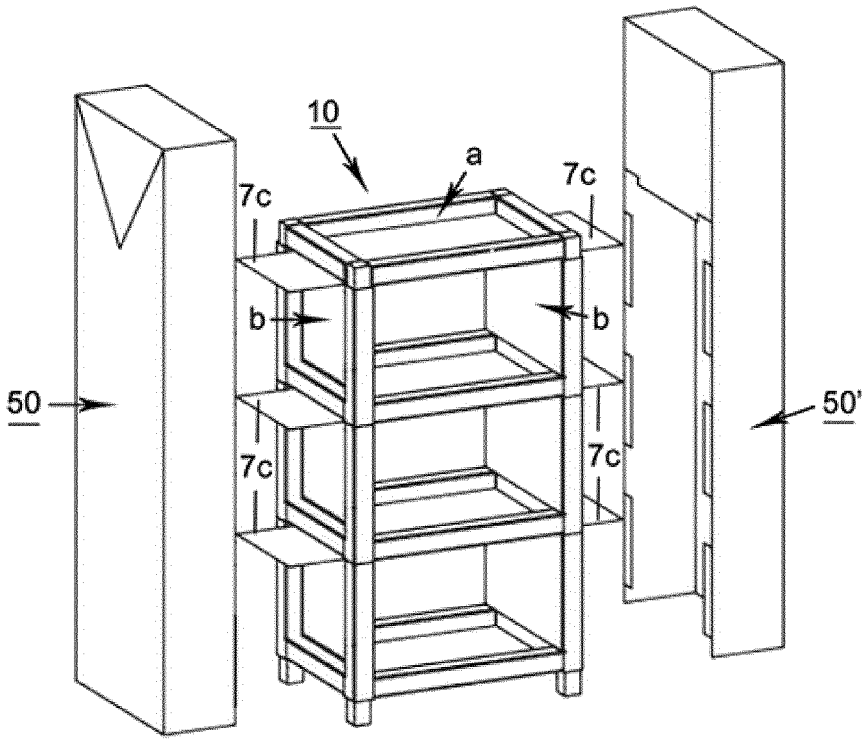

FIG. 10A

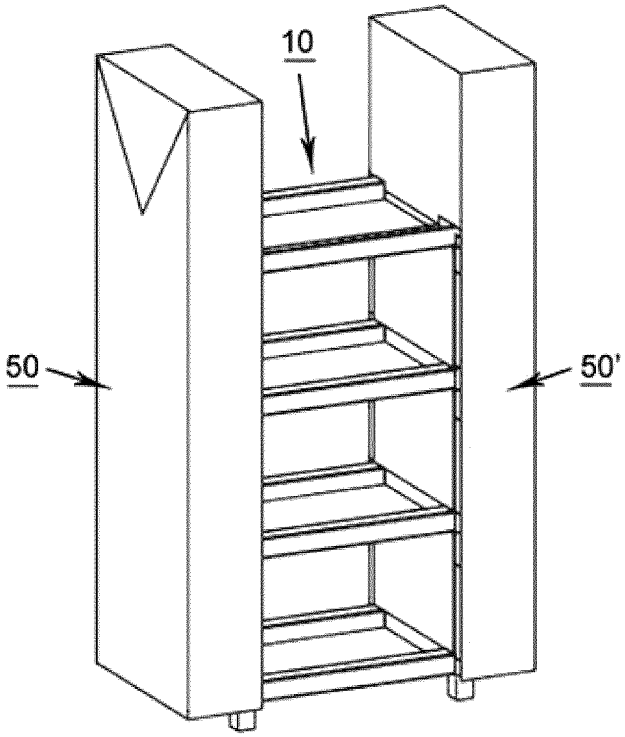

FIG. 10B

INTERNATIONAL SEARCH REPORT

International application No
PCT/ES2020/070545

A. CLASSIFICATION OF SUBJECT MATTER
INV. A47F5/11 A47B87/02
ADD. G09F1/10

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)
A47B A47F G09F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2016/278545 A1 (FERNANDEZ JULIO MIARNAU [ES]) 29 September 2016 (2016-09-29) figures 1-4	1-5
A	JP S53 155394 U (UNKNOWN) 6 December 1978 (1978-12-06) figures 1-2	1
A	US 2018/199707 A1 (BURNETT MARVIN K [US] ET AL) 19 July 2018 (2018-07-19) paragraph [0058]; figures 1-2,4a,4b paragraph [0052] - paragraph [0054] paragraph [0057] - paragraph [0058]	1
A	DE 20 2008 000742 U1 (STANGE HANS PETER [DE]) 20 March 2008 (2008-03-20) figures 4,5,10	1

-/--

[X] Further documents are listed in the continuation of Box C.

[X] See patent family annex.

* Special categories of cited documents :

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"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

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Date of the actual completion of the international search	Date of mailing of the international search report
18 May 2021	28/05/2021

Name and mailing address of the ISA/	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Martinez Valero, J

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INTERNATIONAL SEARCH REPORT

International application No
PCT/ES2020/070545

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