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DISPLAY RACK

- (57)

Display rack (1) consisting of the skeletal structure (10) made of metal, provided with vertical support columns (11, 12, 13, 14), and connecting crosspieces (15, 16, 17, 18), the vertical support columns provided with mounting sockets (19) for shelves (40), shelves (40) made of metal, provided with mounting brackets (47, 48)
- adapted for being placed in the shelf (40) mounting sockets (19), wherein the metal skeletal structure (10) is covered by an outer cover (30) made of a material suitable for coating by printing methods, provided with pass-through notches (36) at locations corresponding to the shelf (40) mounting sockets (19).

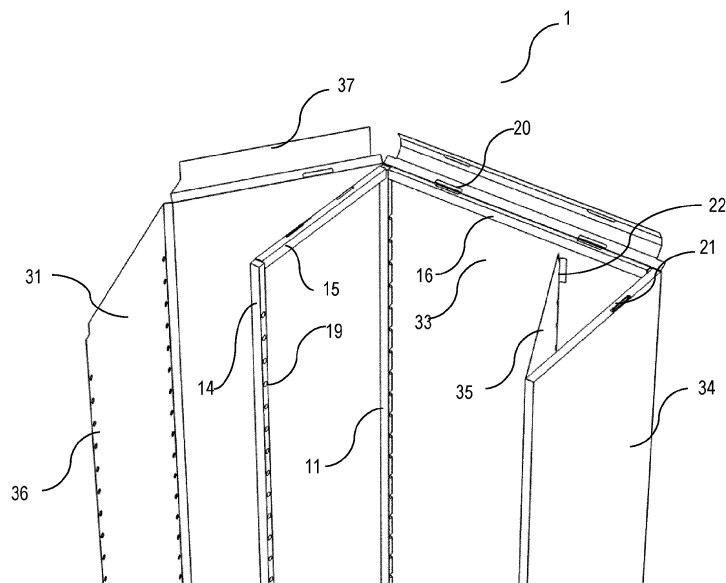


Fig. 3

Description

[0001] The object of the invention is a display rack. The invention has applications in commerce, in particular for the presentation of goods.

[0002] Display racks made of cardboard are known in the current state of the art; for example, GB1463899 describes a display rack characterised in that it consists of a supporting body made of cardboard or similar relatively rigid board-shaped material, consisting of two opposite, substantially parallel side plates shaped as isosceles triangles, which in use stand on their base lines, and two opposite rectangular side plates connect the side edges of the triangular side plates, each of the rectangular side plates having a shelf-like body made of plastic film and having indentations that constitute shelves for receiving articles for sale, and the two triangular side plates have fold lines extending along the perpendicular to the base line.

[0003] Display racks made of metals, such as steel, are also known; for example, KR20130058833 discloses a steel display rack for quick and safe assembly consisting of a left side plate forming the left plate; a right side plate forming the right plate; a back plate placed between the left side plate and the right side plate; shelves placed on the back plate; and a latch placed on the lower end of the right and left plates. In the right, left and back plates, as well as in the shelf, folded parts are formed on the edges between the parts.

[0004] In the current state of the art, there are also structures for display shelving, which can be made of any material; for example, US20060118502 discloses an inexpensive and easy-to-assemble merchandise display system. The system includes at least one longitudinal wall having front and rear edges and containing multiple notches extending from the front edge to the wall, and at least one shelf having front and rear edges and containing multiple notches extending from the rear edge to the shelf. The wall and shelf slits are configured to be interlocked so that the shelf and wall can be selectively coupled by interlocking the shelf slot and the wall slot to form a skeletal structure that defines uniform or non-uniform areas as required.

[0005] The gist of the invention is a display rack comprising a skeletal structure made of metal, provided with vertical support columns and connecting crosspieces, the vertical support columns being provided with shelf mounting sockets, the shelves being made of metal, provided with mounting brackets adapted for insertion into the shelf mounting sockets. According to the invention, the rack is characterised by the fact that the metal skeletal structure is covered by an outer cover made of a material suitable for coating by printing methods, provided with mounting protrusions and pass-through notches at locations corresponding to the shelf mounting sockets. The metal skeletal structure is provided with additional mounting sockets, configured to receive the mounting protrusions of the outer cover.

[0006] The rack, according to the invention, is characterised in that the skeletal structure is made of steel or aluminium.

5 **[0007]** The rack, according to the invention, is characterised in that the skeletal structure is covered with a protective coating applied by varnishing techniques.

[0008] The rack, according to the invention, is characterised in that the skeletal structure is covered with a protective coating applied by electroplating techniques.

10 **[0009]** The rack according to the invention, is characterised in that the cover is made of cardboard or paper board, suitable for printing.

15 **[0010]** The rack, according to the invention, is characterised in that it is also provided with covers for the fronts of the shelves, made of cellulose material.

[0011] The rack, according to the invention, is characterised in that the covers of the front surfaces of the shelves are made of cardboard or paper board, suitable for printing.

20 **[0012]** The rack, according to the invention, is characterised in that in the top view its outline has a rectangular shape with dimensions selected from the group consisting of the following dimensions: 1200 mm x 800 mm, 600 mm x 800 mm, 400 mm x 800 mm, 600 mm x 400 mm,

25 400 mm x 400 mm, 300 mm x 400 mm.

30 **[0013]** The display rack, according to the invention, facilitates the presentation of products with considerable weight, for which all-cardboard constructions did not have sufficient strength, while at the same time retaining external surfaces on which prints can be applied with high-quality printing techniques due to the ability of cardboard or cellulose materials in general to absorb ink. Another advantage is that the outer cover can be replaced independently of the supporting skeletal structure. This reduces the use of cardboard and plant-based materials.

35 **[0014]** The advantageous embodiment of the subject of the invention has been shown in greater detail in the following figures; whereby:

40 Fig. 1 shows a skeletal structure of the display rack according to the invention;

Fig. 2 shows the outer cover of a display rack according to the invention;

Fig. 3 shows the rack skeletal structure with the outer cover during assembly of the rack, according to the invention;

45 Fig. 4 shows the rack skeletal structure wrapped in an outer cover;

Fig. 5 shows the rack skeletal structure wrapped in an outer cover together with a shelf;

50 Fig. 6 shows a cover for the front edge of a shelf according to a preferred embodiment;

Fig. 7 shows an additional structural element of the rack according to another embodiment.

55 **[0015]** Fig. 1 shows the skeletal structure 10 of a display rack according to a preferred embodiment. The skeletal structure is built of metal sections preferably made

of steel, with a square or rectangular cross-section. The skeletal structure is provided with four support columns 11, 12, 13, 14, which are connected by three crosspieces 15, 16, 17 in the upper part, and at the base are connected by four crosspieces 15', 16', 17', 18'. Support columns and crosspieces are preferably made of a section with the same cross section and material, which facilitates their connection. The skeletal structure elements can be connected permanently, for example by welded joints, but they can also be detachable, for example by connected bolted, riveted, or press-fit connections. Vertical columns 11, 12, 13, 14 are provided with sockets 19 for receiving shelves, and these sockets can be standard shelf mounting sockets traditionally used in store shelving, preferably they are sockets in the form of oval holes. The sockets 19 for mounting shelves can be made on the inner side of the support columns, or preferably on the two opposite sides of the support columns, passing from the inside to the outside of the rack. The top crosspieces 15, 16, 17 are provided with additional mounting sockets 20, configured for attaching the cardboard outer cover 30. The additional mounting sockets 20 can be located in any of the walls of the top crosspieces 15, 16, 17, 18, preferably in the lower wall of the top crosspieces, and take the form of a longitudinal slit configured to receive the protrusion of the cardboard outer cover.

[0016] Fig. 2 shows an outer cover 30 of a display rack according to a preferred embodiment. The outer cover 30 is provided with a left part 31, 32 consisting of an inner wing 31 and a left outer wall 32, a right part 34, 35 provided with an inner wing 35 and a right outer wall 34, and a back 33 that connects the left part 31, 32 with the right part 34, 35.

[0017] The left inner wing 31 and the right inner wing 35 are provided with a set of pass-through notches in locations corresponding to the shelf mounting sockets 40 in the columns 11, 12, 14, 14 of the skeletal structure 10. In addition, the left outer wall 32, the back 33 and the right outer wall 34 are provided with flaps 37. The flaps 37 are configured so that when the outer cover 30 is put on the skeletal structure 10, the flaps 37 cover the upper crossbars 15, 16, 17 of the skeletal structure 10 from above.

[0018] The outer cover 30 is also provided with mounting protrusions 38 and additional pass-through notches 39 located where additional mounting sockets 20 are placed in the skeletal structure.

[0019] The outer cover 30 is preferably made of a single sheet of cardboard, and its individual elements are separated by cardboard creasing to facilitate bending of the cover in designated places. In other beneficial embodiments, the outer cover can be made of multiple sheets joined together.

[0020] Figs. 3 and 4 show the display rack 1 during the process of wrapping the skeletal structure 10 with the outer cover 30. The outer cover 30 wraps the skeletal structure 10 of the rack 1 from the outside so that the

inner left wing 31 is inside rack 1 and the through pass-through notches 36 are at the height of the mounting sockets 19.

[0021] In a preferred embodiment, the skeletal structure 10 can be equipped with mounting slits 20 located in the upper crosspieces 15, 16, 17, with which the pass-through notches 21 located in the flaps 37 of the cover 30 interlock. The flaps 37 wrap from the top around the upper crosspieces of the skeletal structure 10. The mounting slits are configured to receive an additional display element 25 provided with inserts 24 which are inserted from above through the pass-through notches 21 into the mounting slits 20 in the skeletal structure 10.

[0022] Advantageously, the left inner wings 31 and the right inner wings 35 are provided with protrusions 22 configured to be inserted between the skeletal structure columns 10 and the back wall 33 of the outer cover 30, which protrusions 22 stabilise the position of the inner wings 31 and 35 inside the rack 1.

[0023] Figs. 5 and 6 show a rack with shelves 40 and shelves 40. Shelves 40 are made of metal, preferably steel or aluminium. The shelves are provided with mounting brackets 47, 48 configured for being placed in the shelf mounting sockets 19 of the skeletal structure 10. Advantageously, the mounting brackets 47, 48 on at least one side of the shelf are tiltable, which facilitates the seating of the shelves 40 in the sockets 19 in the skeletal structure 10. In a preferred embodiment, the shelf 40 mount, the mounting brackets 47, 48 consist of a pair of stationary retention pins 48 interlocking with sockets in the rack skeletal frame and, on the other hand, a pair of movable retention pins 47, advantageously fixed on a swivel on a common pin on the underside of the shelf 40. In order to fix the shelf in the mounting sockets 19, first the stationary retention pins 48 are inserted into the mounting sockets 19 and then the shelf 40 is lowered and in the next step, the movable retention pins 47 are inserted into the mounting sockets 19 on the opposite side of the skeletal structure. Advantageously, the shelf 40 is provided with retention notches 43 for attaching the front edge cover 45 of the shelf. The front edge 45 of the shelf 40 is advantageously curved upward or downward, which advantageously stiffens the shelf structure. Advantageously, the side edges 46 of the shelf 40 are also curved downward or upward.

[0024] Fig. 6 shows the shelf 40 together with the cover 41 of the front edge of the shelf 45. The cover 41 of the front edge 45 of the shelf 40 is made of cardboard or paper board, advantageously the cover of the front edge of the shelf is made of the same material as the outer cover of the shelf. The cover 41 of the front edge of the shelf is provided with retention notches 42, which are configured to interlock with the retention notches 43 of the shelf 40 for fixing the cover of the front edge of the shelf. The cover 41 of the front edge of the shelf is provided with a series of creasing 44 to facilitate wrapping the front edge 45 of the shelf 40 with the cover 41 of the front edge of the shelf. The creases 44 in the shelf's front

edge cover run essentially parallel to the front edge of the shelf 45.

[0025] The rack according to the invention advantageously has a top view outline in a rectangular shape. Preferably, the top view outline of the rack has a rectangular shape with dimensions selected from the group consisting of the following dimensions: 1200 mm x 800 mm, 600 mm x 800 mm, 400 mm x 800 mm, 600 mm x 400 mm, 400 mm x 400 mm, 300 mm x 400 mm.

[0026] Preferably, the rack is equipped with casters mounted in the corners of the base. The casters are attached in a way that allows 360° rotation which allows the filled rack to be manoeuvred freely around an exhibition or retail space. Advantageously, the casters of the rack are provided with brakes that block the rotation of the wheels, preventing the rack according to the invention from moving around the exhibition or retail space.

[0027] Fig. 7 shows another preferable embodiment, in which the rack 1 is provided with an additional display element 25, which is inserted in the slits 21 of the outer cover and the slits 20 of the crosspieces of the skeletal structure 10. The additional display element is preferably made of the same material as the outer cover and serves as the advertising/information area.

Claims

1. Display rack (1) consisting of

the skeletal structure (10) made of metal, provided with vertical support columns (11, 12, 13, 14), and connecting crosspieces (15, 16, 17, 18), the vertical support columns provided with mounting sockets (19) for shelves (40), shelves (40) made of metal, provided with mounting brackets (47, 48) adapted for being placed in the shelf (40) mounting sockets (19),

characterised in that

the metal skeletal structure (10) is covered by an outer cover (30) made of a material suitable for coating by printing methods, provided with pass-through notches (36) at locations corresponding to the shelf (40) mounting sockets (19).

2. The rack, according to claim 1, wherein that the skeletal structure (10) is made of steel or aluminium.

3. The rack, according to claim 1 or 2, wherein the skeletal structure (10) is covered with a protective coating applied by varnishing techniques.

4. The rack, according to claim 1 or 2, wherein the skeletal structure (10) is covered with a protective coating applied by electroplating techniques.

5. The rack, according to any of the preceding claims, wherein the outer cover (30) is made of cardboard or paper board suitable for printing.

6. The rack, according to any of the preceding claims, wherein it is further provided with covers (41) for the front edges of the shelves (40), made of cellulose material.

7. The rack, according to claim 6, wherein the covers (41) of the front edges of the shelves are made of cardboard or paper board suitable for printing.

8. The rack, according to any of the preceding claims, wherein its top view outline has a rectangular shape with dimensions selected from the group consisting of the following dimensions: 1200 mm x 800 mm, 600 mm x 800 mm, 400 mm x 800 mm, 600 mm x 400 mm, 400 mm x 400 mm, 300 mm x 400 mm.

9. The rack, according to any of the preceding claims, wherein it is provided with casters fixed in a way that allows 360° rotation, and a brake.

10. The rack, according to any of the preceding claims, wherein the outer cover (30) is provided with flaps (37) configured to wrap around the upper crosspieces (15, 16, 17) of the skeletal structure (10).

11. The rack, according to any of the preceding claims, wherein the outer cover (30) is provided with flaps (37) configured to wrap around the upper crosspieces (15, 16, 17) of the skeletal structure (10), the upper crosspieces (15, 16, 17) being provided with slits (20), whereby the flaps (37) are provided with pass-through notches (21) corresponding to the slits (20) in the skeletal structure (10), and the rack includes an additional display element (25) provided with protrusions (24) which are configured for being inserted through the pass-through notches (21) into the slits (20).

12. The rack, according to any of the preceding claims, wherein the left (31) and right (35) inner wings are provided with protrusions (22), configured to be inserted between the columns of the skeletal structure (10) and the back wall (33) of the outer cover (30).

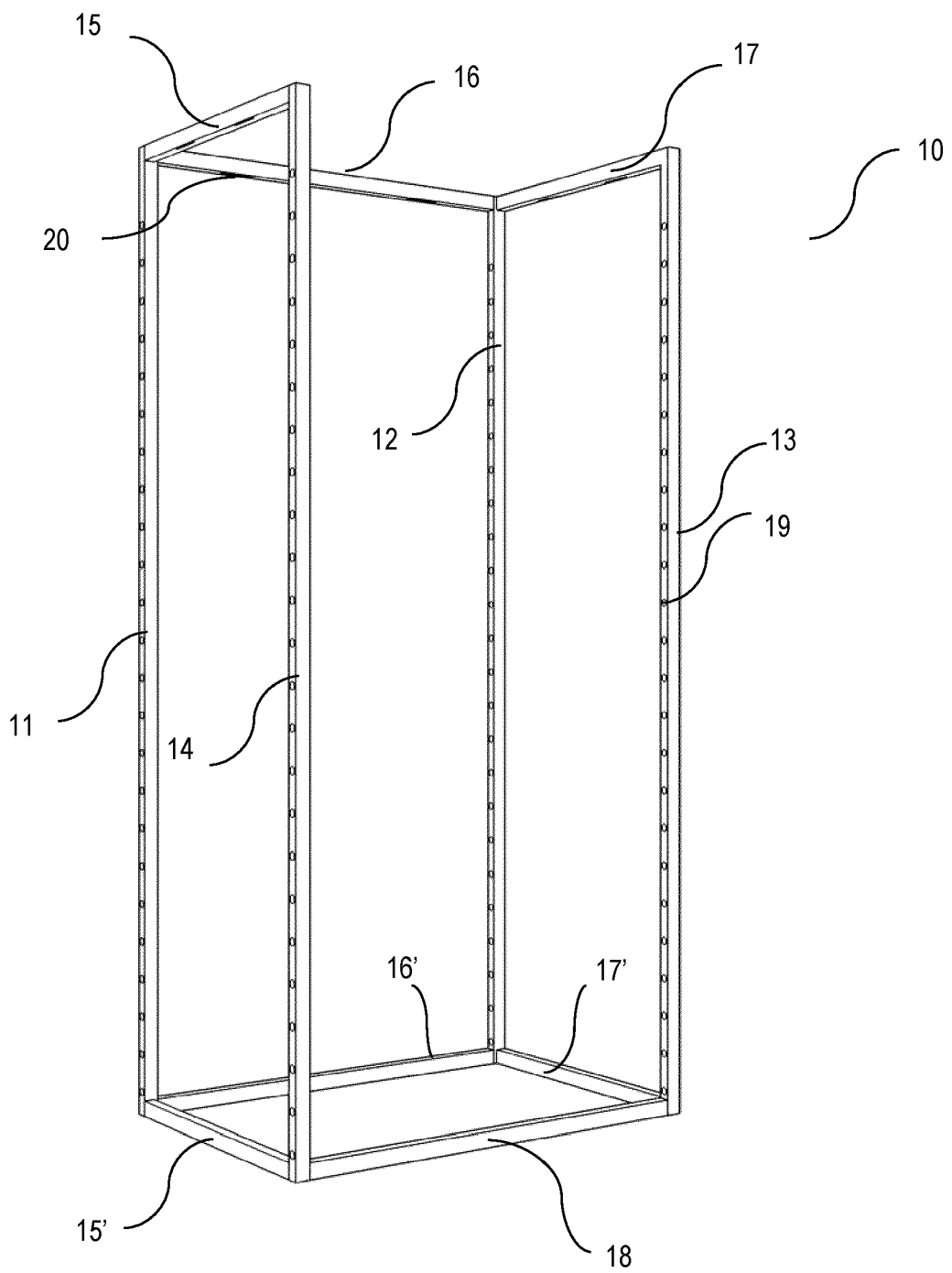


Fig. 1

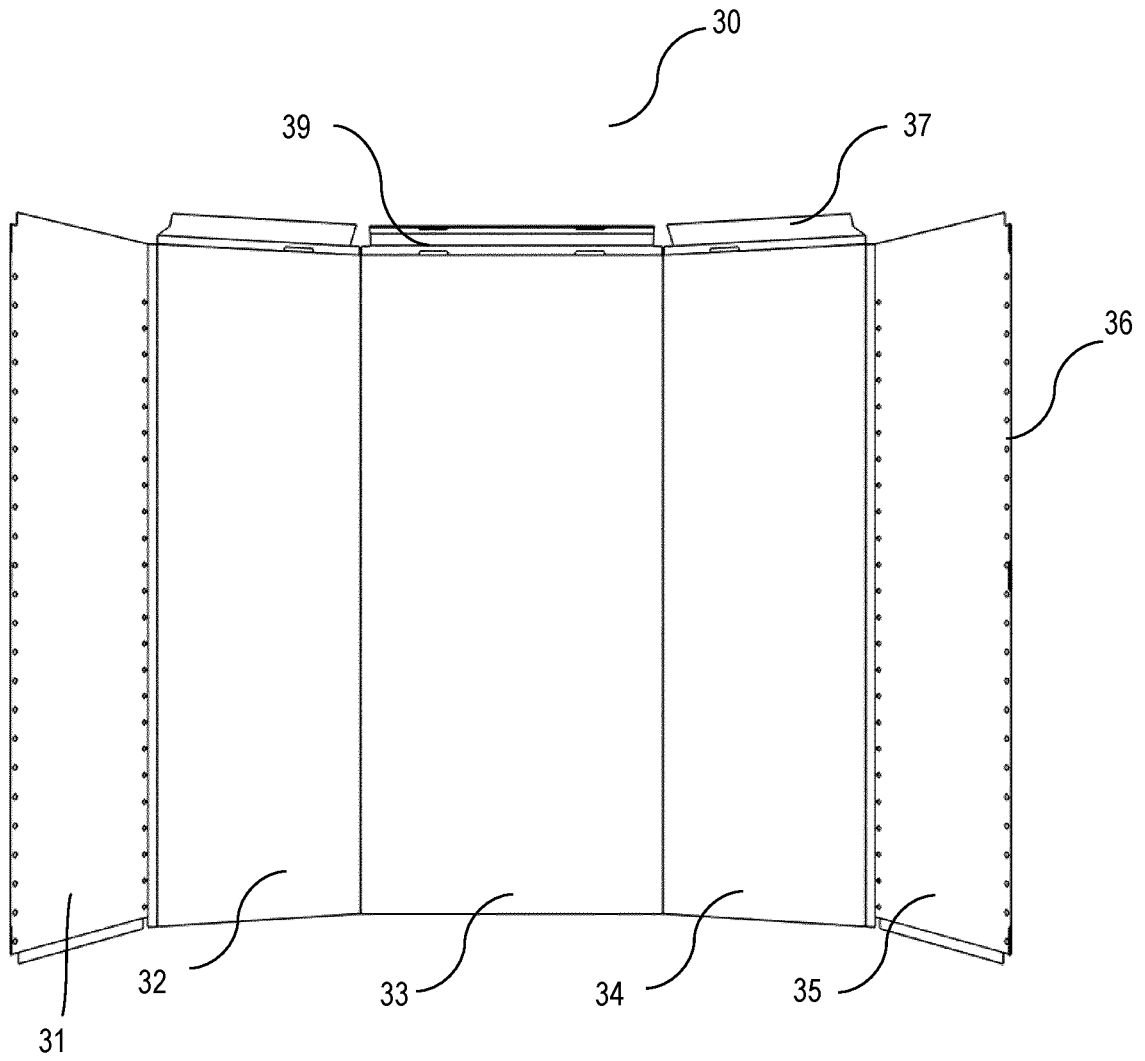


Fig. 2

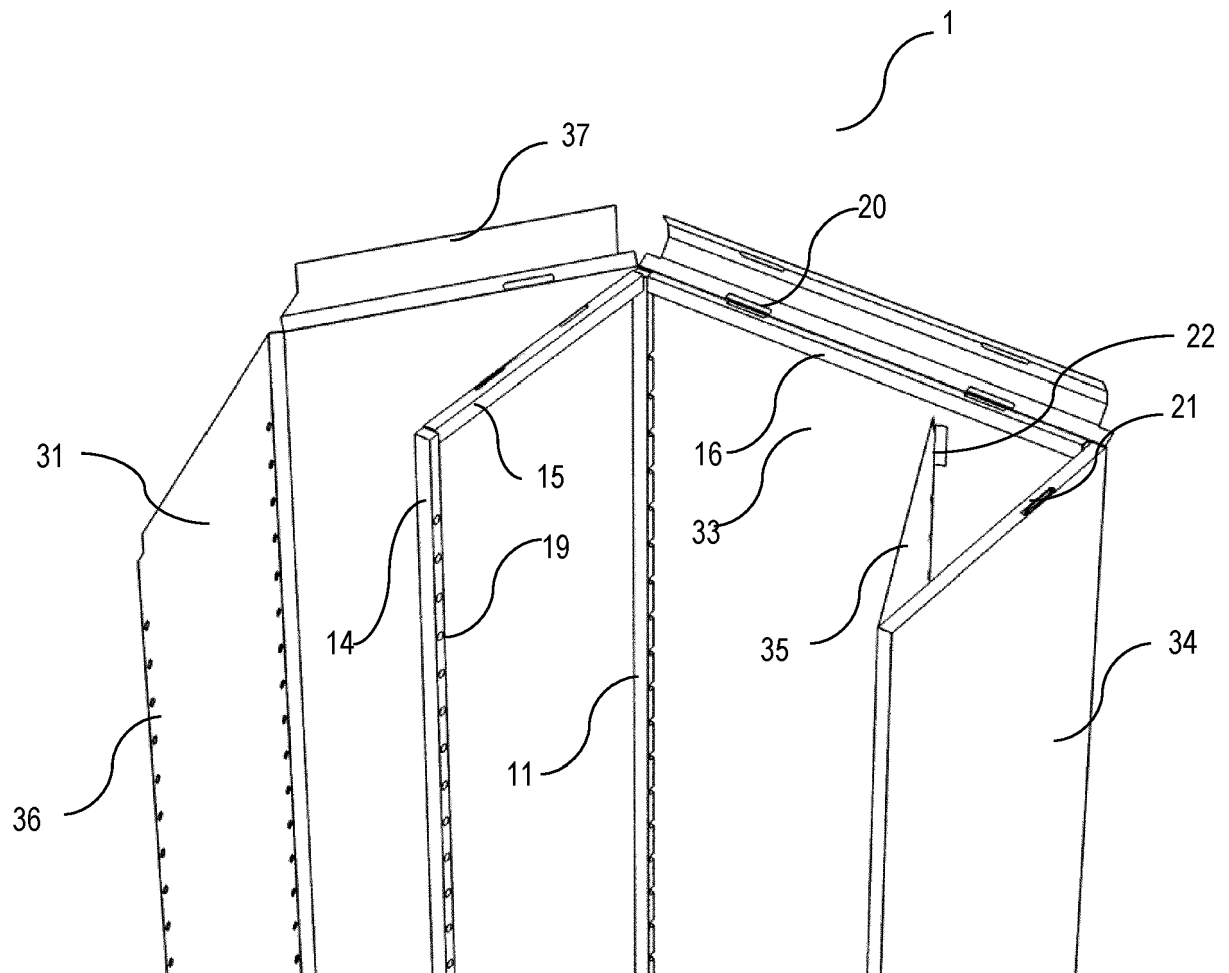


Fig. 3

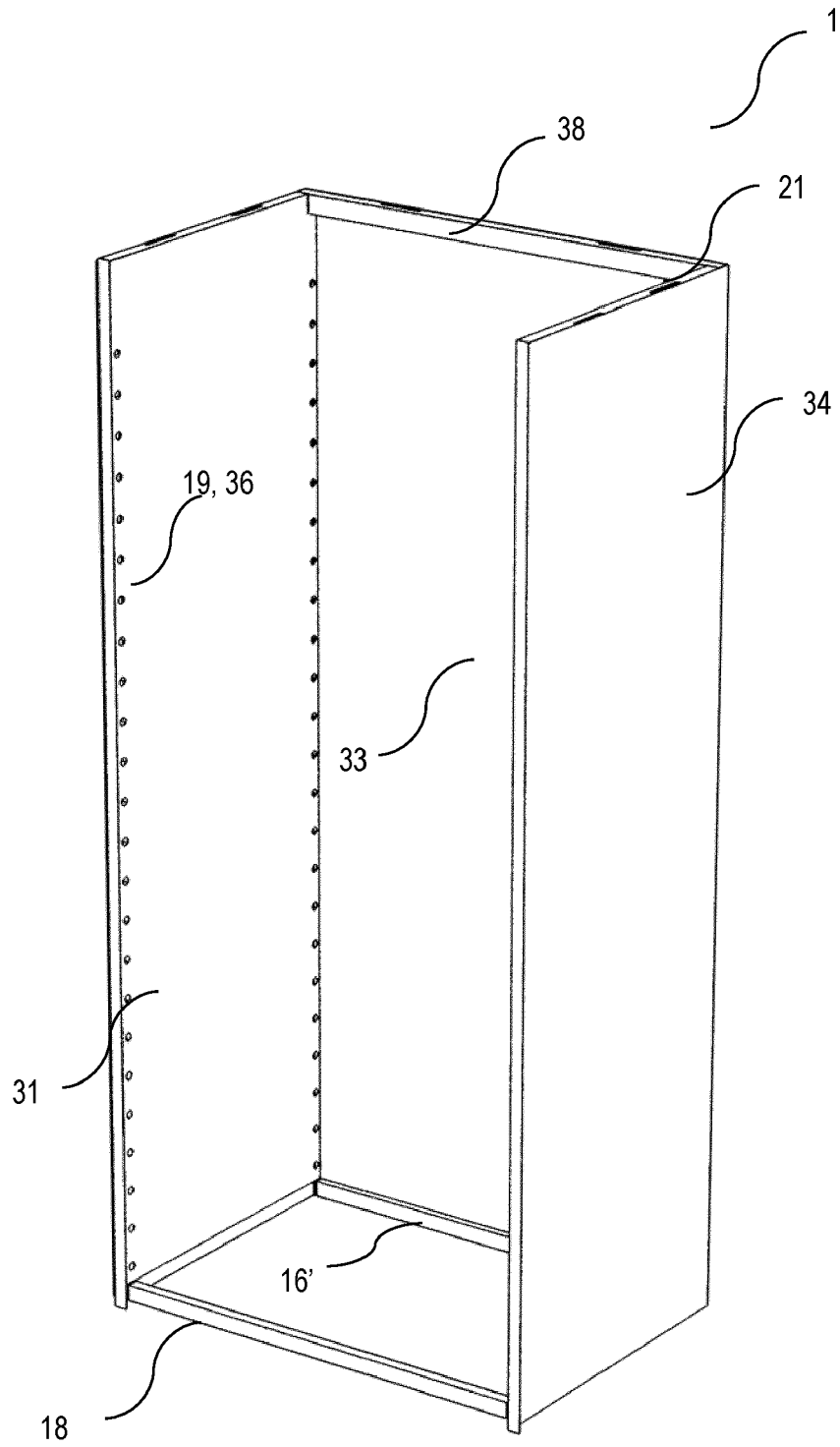


Fig. 4

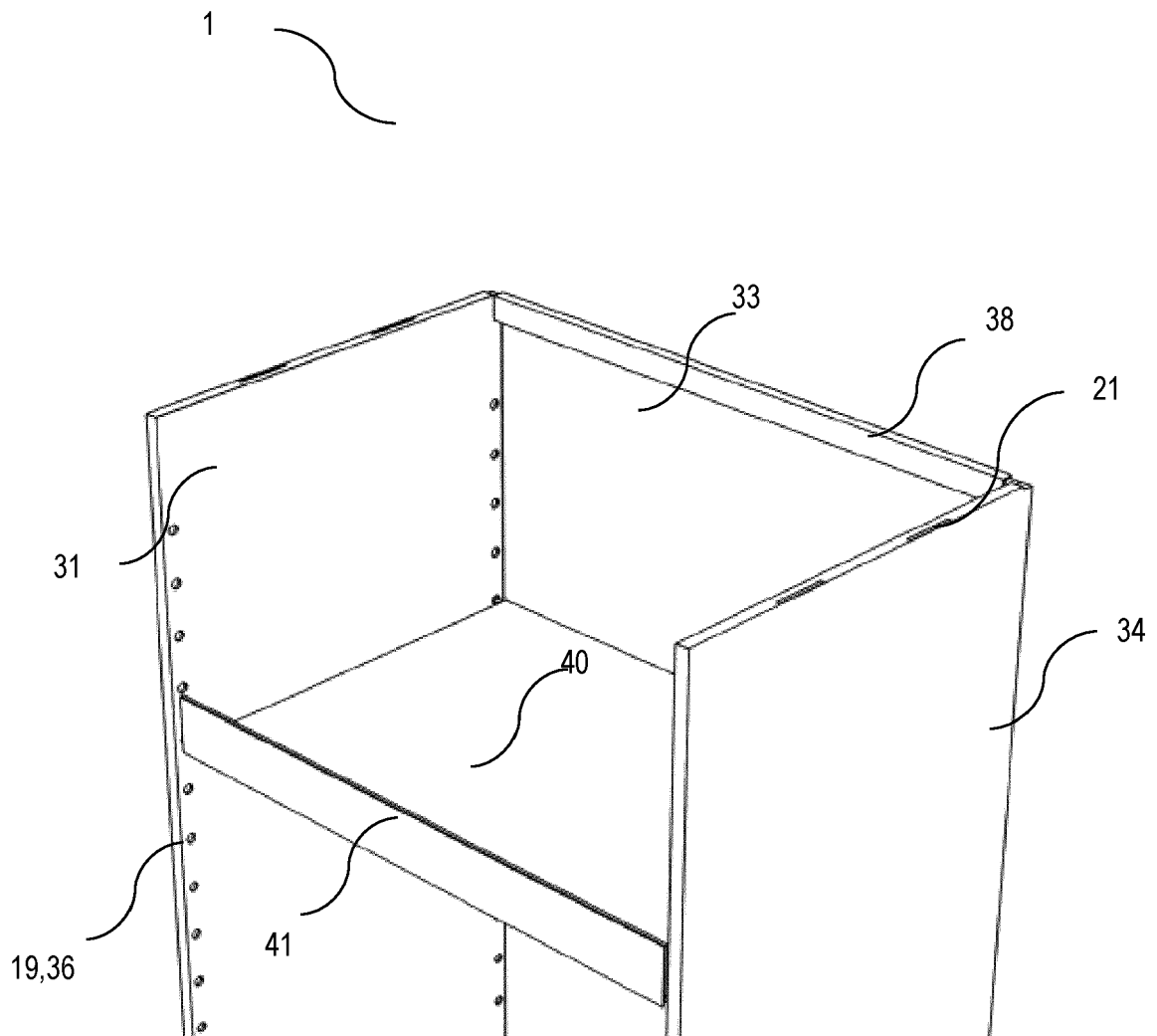


Fig. 5

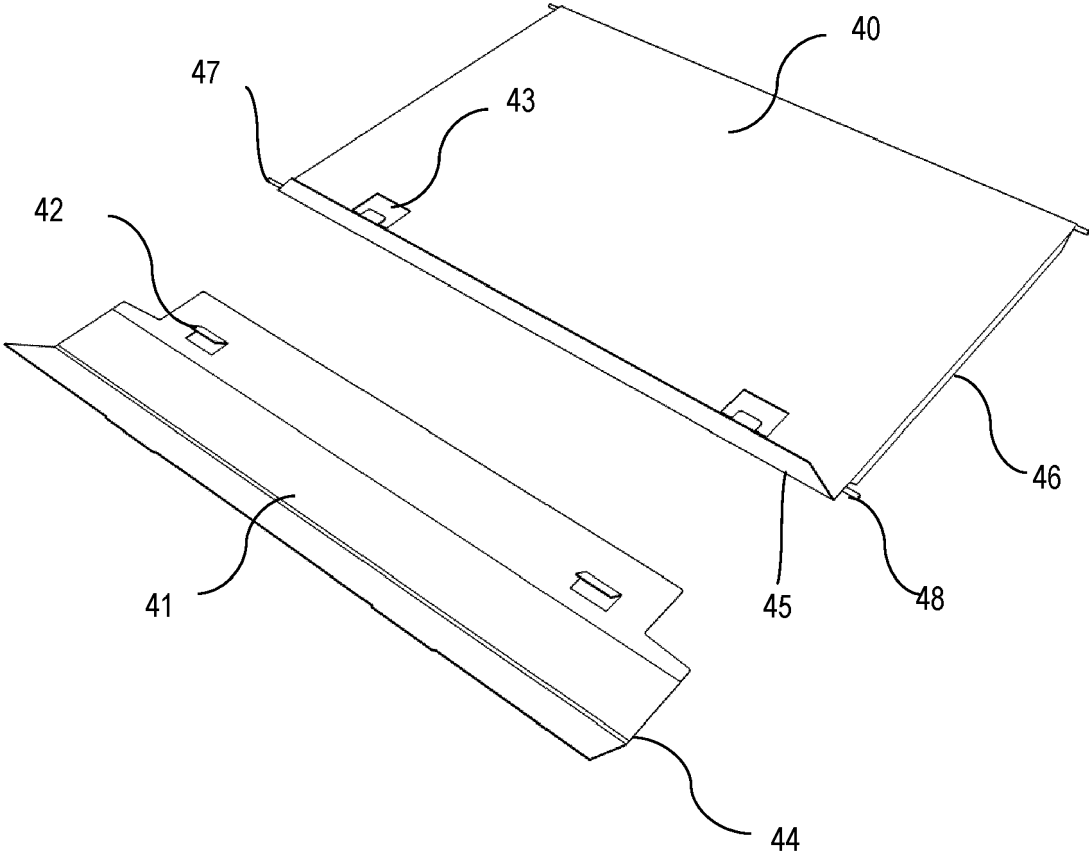


Fig. 6

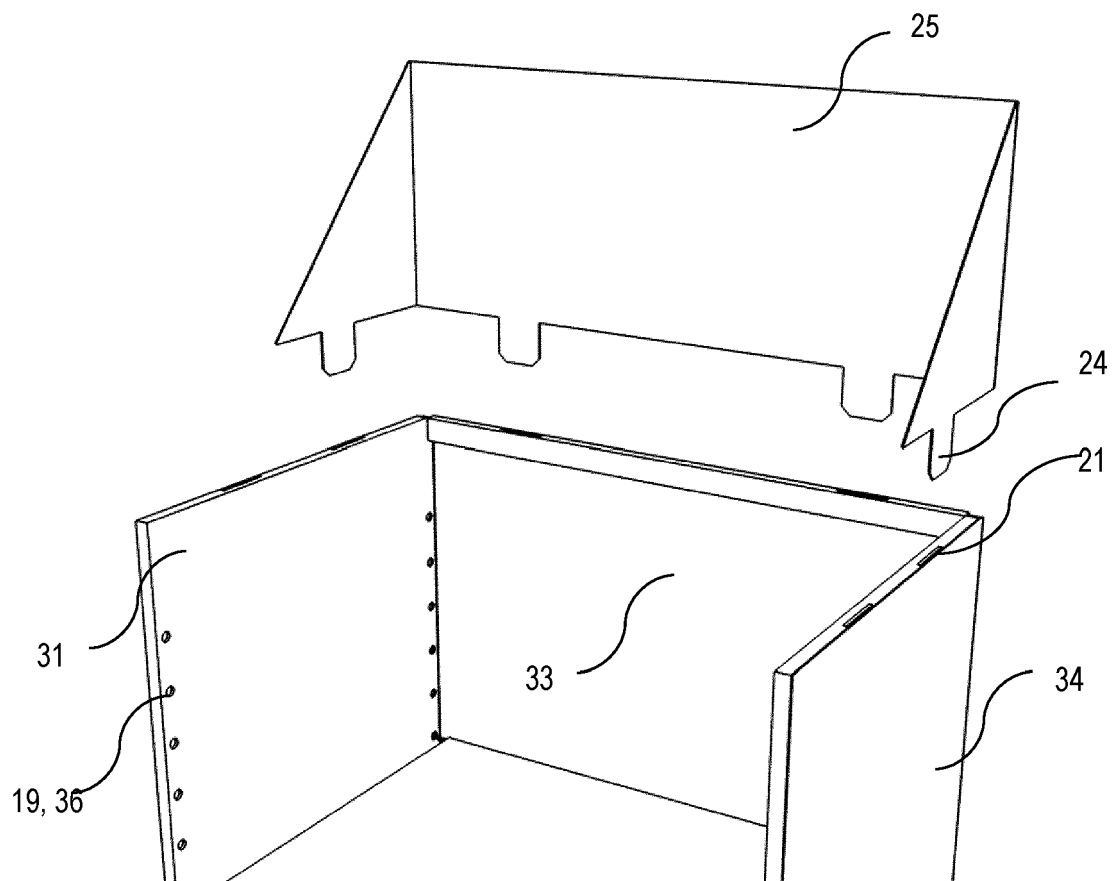


Fig. 7



EUROPEAN SEARCH REPORT

Application Number

EP 22 19 3822

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EPO FORM 1503 03.82 (P04C01)

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 2007/000857 A1 (ROTH MICHAEL C [US]) 4 January 2007 (2007-01-04)	1-10, 12	INV. A47B47/00
A	* paragraphs [0023], [0030] * * figures 1-7 *	11	A47B57/20 A47F5/11

X	US 2005/109723 A1 (CZERWINSKI DAVID J [US]) 26 May 2005 (2005-05-26)	1-12	
	* figures 18-23 *		

X	WO 2018/109655 A1 (PURE VALUE EUROPE NV) 21 June 2018 (2018-06-21)	1-12	
	* figures 6A-6E *		

			TECHNICAL FIELDS SEARCHED (IPC)
			A47B A47F G09F
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 3 February 2023	Examiner de Cornulier, P
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 22 19 3822

5 This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
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03-02-2023

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2007000857 A1	04-01-2007	NONE	
US 2005109723 A1	26-05-2005	NONE	
WO 2018109655 A1	21-06-2018	EP 3551009 A1	16-10-2019
		US 2019328159 A1	31-10-2019
		WO 2018109655 A1	21-06-2018

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- GB 1463899 A [0002]
- KR 20130058833 [0003]
- US 20060118502 A [0004]