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(54) A SHOWCASE, ESPECIALLY FOR STORES

(57) The subject of the invention provides a showcase, especially for shops, used, among other things, for use on exhibition stands at shops, markets, showrooms or warehouses.

A showcase, especially for stores, according to the invention, includes a module (1) with two post-like legs (2) of a rectangular cross-section and a rear wall (3) removably installed to the legs (2) using a shaped link, where the rear wall (3) is a metal plate with impressions, where the impressions form parallel portions of the front surface (5) and portions of the rear surface (6) connected by means of skew sections (7), the rear wall (3), at the connection site of the elements of the front surface (5) and skew sections (7), near its side edge, is equipped with horizontal slots (8), in which a link (9) is installed formed as a flat element passing through at least two adjacent horizontal slots (8) and having shaped detents (10) at the external side in relation to the rear side (3), to connect with post-like legs (2), and it is characterised in that at least at one side of the rear wall (3), the horizontal slots (8), along part of their length, at the side opposite to the leg (2), have a channel (80) which receives a power strip (13) which supplies electrical energy.

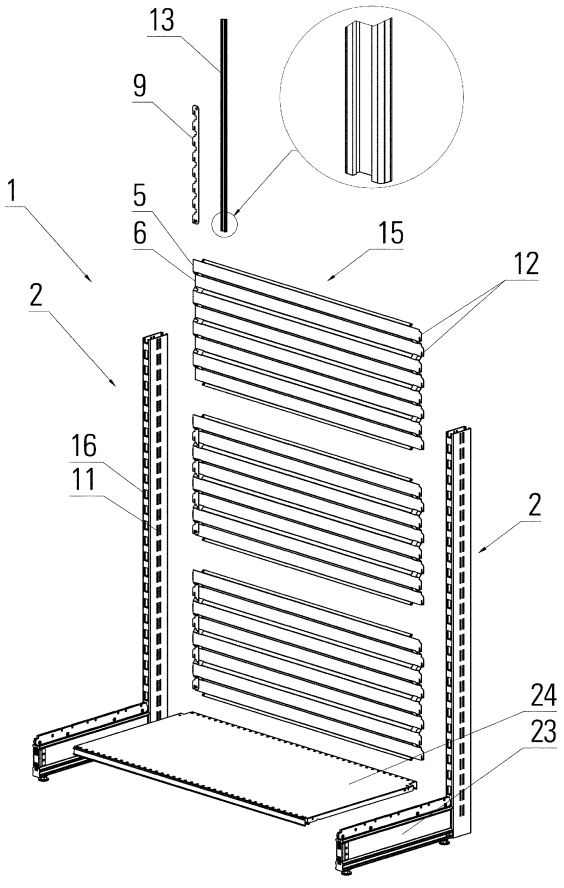

Fig. 1

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Description

[0001] The object of the invention is a showcase, especially for stores, intended to be used, among other things, on exhibition stands, at shops, markets, showrooms or warehouses.

[0002] Within the field of showcases used for presentation or storage of products or other items, especially on large areas, such solutions of showcases are known which include posts of various cross-sections as the basic elements, most frequently of rectangular cross-sections, provided with suitable holes mating with elements used to fix bracket arms to support shelves usually positioned in a horizontal plane or slightly inclined forwards or rearwards or to the sides for better presentation of products or items positioned on them.

[0003] Such showcases often include two independent post-like legs, between which a rear wall is provided that connects the post-like legs and reinforces the whole construction. This set creates a showcase module and allows for extending the showcase to a desired size by combining modules in order to build a showcase of the required dimensional parameters. A further module is added to already assembled showcase modules in such a way that a rear wall is added to an outer post-like leg of the set and another post-like leg is installed at the other side. This is possible because the post-like legs, in addition to suitable mounting holes in the front and rear walls, have further mounting holes in the left and right walls so that all the walls of the post-like legs may have appropriate mounting holes for installation of different components.

[0004] This type of showcases is made of metal, typically of sheets of steel or aluminium, this regards both the post-like legs and the rear walls or shelves. The rear wall is often equipped with hook detents on its side edges used to mount the rear wall in the mounting holes of the side walls of the post-like leg of the showcase. The structure of the rear wall is important for its construction.

[0005] Often, the rear wall is made of a flat metal sheet mounted, using the above-mentioned means, to the post-like legs. In such solutions, undesirable vibrations and reduced stability of the showcase may often be present. To ensure appropriate parameters, such a wall must be made of sheets of a considerable thickness, and this increases both the cost and weight of the showcase.

[0006] To increase the rigidity of the rear wall, the latter may be made with corrugated impressions, which increase the rigidity and allow for reducing the thickness of the sheets the rear wall is made of. Impressions may form portions of the front surface and, parallel to it, rear surface, connected by means of skew sections; however, the front and rear surfaces are separated from each other by a specified distance.

[0007] To facilitate the manufacture and storage of the showcase elements when the showcase is not used, the rear wall can be made of segments dividing the rear wall into smaller parts. Most frequently, such division is made at the rear wall, which is to say that the rear wall is formed by arranging the segments one above the other.

[0008] International patent application WO2010031746 discloses a showcase with two post-like legs, to which a rear wall is attached. The rear wall is made of a flat metal sheet mounted to the post-like legs by means of hook detents provided on its side edges and interacting with the holes in the side walls of the post-like legs, arranged in one vertical row. For reinforcement purposes, the rear wall is provided with impressions on its upper and lower edges.

[0009] French patent application FR 2799941 discloses a showcase solution with two post-like legs, to which a rear wall is attached. The rear wall is made of a metal sheet mounted to the post-like legs with mounting holes, provided on their side edges, which receive hook detents of a plate fixed permanently to the post-like leg. The rear wall is made with corrugated impressions to increase rigidity and allow for reducing the thickness of the sheets the rear wall is made of. Impressions form portions of the front surface and rear surface, parallel to it, connected by means of skew surfaces; however, the front and rear surfaces are separated from each other by a specified distance.

[0010] Patent application EP 2695543 discloses a showcase solution with two post-like legs, to which a rear wall is attached. The rear wall is made of a metal sheet mounted to the post-like legs using an intermediate element. The rear wall is made with corrugated impressions to increase rigidity and allow for reducing the thickness of the sheets the rear wall is made of. Impressions form portions of the front surface and rear surface, parallel to it, connected by means of skew surfaces; however, the front and rear surfaces are separated from each other by a specified distance. Portions of the front surface and rear wall rear surface parallel to it, on both of its edges, are provided with rectangular mounting holes. An intermediate element is located between the rear wall and the post-like leg and contains at least one link adapted to secure the rear wall using its mounting hole. The intermediate element contains at least one mounting member, adapted for mounting in at least one complementary mounting member on the post-like leg and which contains at least one locking element, arranged for cooperation with the complementary locking element on the post-like leg. The post-like legs have one vertical row of holes in their side walls.

[0011] The specification of Polish patent application P. 410953 discloses a showcase, especially for stores, containing a module with two post-like legs of a rectangular cross-section and a rear wall removably attached to the legs using a profiled connector, where the back wall is made of a metal sheet with impressions; the impressions forming parallel portions of the front surface and portions of the rear surface connected by means of skew sections. The rear wall, at the front surface and rear surface near its side edge, is provided with shaped cut-outs formed as a hole that opens to the external side part of the rear wall, the hole having a vertical projection with a horizontal

bend provided along the side part of the rear wall, wherein the holes receive a link formed as a spatially shaped element, passing through at least two adjacent holes, wherein the link contains two parallel connecting walls connected by means of platforms having, in their centre portions, vertical tabs pointed upwards of a width smaller than the distance of the connecting walls of the link, and the link has, from the external side in relation to the rear wall, shaped detents on each connecting wall, and the vertical distance between the platforms corresponds to the vertical distance of the holes in the rear wall, wherein the post-like legs, at their side walls facing the side wall, have recesses, formed as vertical slots, formed in two parallel vertical rows, by which the shaped link detents are fixed.

[0012] For better exposure of the products presented in them, all the above showcases should be equipped with their own lighting, particularly useful in stores or presentation halls with a limited level of illumination.

[0013] The easiest solution to this problem is to connect an electrical installation to the showcase and connect a typical lamp installed in the showcase.

[0014] Such a solution is, however, non-aesthetic, cumbersome to install and handle and can also be dangerous for users and customers.

[0015] For this reason, electrical installations are arranged inside the showcase elements so as they do not protrude and are not visible.

[0016] U.S. patent application US 4949487 discloses modular lighting of suspended information letters, wherein electrical energy supply for this lighting is provided by a suspended horizontal strip of two current bars located in it.

[0017] The purpose of the invention is to eliminate the defects of the prior art, provide a new range of showcases, with consideration of their lighting, and to facilitate their implementation, storage and assembly.

[0018] According to the invention, the showcase, especially for stores, contains a module with two post-like legs of a rectangular cross-section and a rear wall removably attached to the legs using a shaped connector, wherein the rear wall is made of a metal sheet with impressions, wherein the impressions form mutually parallel portions of the front surface and portions of the rear surface connected by means of skew sections, and the rear wall at the connection site between the components of the front surface and skew sections in the vicinity of its side edge is provided with horizontal slots in which is a link is seated formed as a flat element, passing through at least two adjacent horizontal slots and having, at the exterior side in relation to the rear wall, shaped detents to connect with post-like legs. At least at one side of the rear wall, horizontal slots, along a part of their length, at the side opposite to the legs, have a channel which receives a power strip by means of which electric power is supplied.

[0019] Preferably, the rear wall at the side opposite to the side near which, on its side part, it is equipped with horizontal slots, on vertical portions of the front surface and on vertical portions of rear surface, has shaped detents formed as hooks connectable to the recesses of the post-like legs.

[0020] Preferably, the channel is wider than the slot.

[0021] Preferably, in the horizontal view, the dimensions of the channel are equal to the transverse dimensions of the power strip.

[0022] Preferably, the power strip is a plastic profile of a shape similar to a shape of a C-profile and it is equipped with two current bars embedded in recesses in the C-profile arms, wherein the current bars cooperate with a current trolley.

[0023] Preferably, the current trolley has a rotating flattened handle transiting into the side arms with contacts coupled with the current bars of the power strip at any location, and the contacts are fitted with electrical wires supplying electrical energy to a receiver.

[0024] Preferably, the post-like legs, in their front walls, are equipped with mounting holes.

[0025] Preferably, the showcase is formed of at least two modules set next to each other, wherein the adjacent modules have a common post-like leg.

[0026] Preferably, the rear wall is formed of panels arranged one above the other in an overlaying arrangement.

[0027] Preferably, the post-like legs are fitted at the bottom with extension arms and a bottom shelf extending between the extension arms.

[0028] The subject of the invention is illustrated in embodiments in the drawing, where fig. 1 is a perspective exploded view of the essential elements of the basic showcase; fig. 2 is a perspective view of a portion of a rear wall connected using a link with a post-like leg; fig. 3 is a perspective view of a portion of the rear wall connected using a link with a post-like leg with a power strip installed therein; fig. 4 is another view of a portion of the rear wall connected using a link with a post-like leg with a power strip installed therein; fig. 5 is a view of a portion of the rear wall with a power strip and a current trolley before connection to the power strip; and fig. 6 is a view of a portion of the rear wall with a power strip and a current trolley after connection to the power strip.

[0029] The terms right, left, front, rear and the like as used in the description of the embodiments of the invention relate to the element sides typically located during the use of the showcase.

[0030] As shown in fig. 1, in an embodiment of the invention, a module 1 of a showcase, especially for stores, contains two post-like legs 2, a rear wall 3 and a link 9 enabling connection of the rear wall 3 with the post-like legs 2. In the embodiment according to the invention, the module 1 is additionally equipped with an extension arm 23, on which a bottom shelf 24 may be installed.

[0031] The post-like legs 2 are made of steel sheet, though in other embodiments, they may be formed of different materials, such as an aluminium sheet. In the cross-section, as shown in fig. 2, fig. 3, and fig. 4, the

post-like legs 2 have a rectangular shape. Their front and rear walls are provided with mounting holes 16 which receive shelves or shelf brackets (not shown), which may be horizontal or, for better exposure of goods, tilted at a small angle. Both side walls of the post-like legs 2, facing the rear wall, are equipped with two rows of recesses 11 formed as vertical slots used to mount the rear wall 3.

[0032] The rear wall 3 is made, in this embodiment of the invention, of panels 15 which, in order to form the rear wall 3, are arranged one above the other. In other embodiments of the invention, these panels 15 may overlap with the upper and lower edges.

[0033] The rear wall 3 is made of a metal plate with regular impressions 4 formed as corrugations, wherein the impressions 4 form parallel portions of the front surface 5 and portions of the rear surface 6 connected by means of skew sections 7. It is clear that, in other embodiments according to the invention, the rear wall 3 does not have to comprise corrugations across its whole surface. As mentioned above, the metal plate of the rear wall 3, made of a steel sheet, can be divided into panels 15 arranged one above the other. Such embodiment of the rear wall 3 contributes to simplification of the production process of the elements, as well as to improving storage and transport of such elements.

[0034] As shown in fig. 2, the rear wall 3, at the front surface 5 and at the rear surface 6, near its side edge, is equipped with channels 80 transiting into horizontal slots 8. In the assembled showcase a link 9 is installed in the horizontal slots 8, formed as a spatially shaped element, the link 9 passing through at least two adjacent channels 80 and shifted towards the horizontal slots 8.

[0035] A link 9, formed as a flat element, passing through at least two adjacent horizontal slots 8, has shaped detents 10 at the side external in relation to the rear wall 3. The shaped detents 10 are used to fix the rear wall 3 to the post-like legs 2. In order to do so, the shaped detents 10 are installed, during the showcase assembly, in the recesses 11 , provided in the post-like legs at their side walls facing the rear wall 3.

[0036] From their side external in relation to the rear wall 3, the link 9 is equipped with shaped detents 10. The shaped detents 10 of the links 9 are used to connect the link 9 in the recesses 11 made in the side walls of the post-like legs 2, during the showcase assembly.

[0037] In an embodiment of the invention shown in fig. 2 and fig. 4, a channel 80 is wider than a slot 8 and it corresponds to the width of a power strip 13 so that the dimensions of the channel 80 are equal to the transverse dimensions of the power strip 13. The width of the slot 8 corresponds to the thickness of a link 9 being a substantially flat element. In other embodiments of the invention, the width of the channel can be equal to the width of the slot 8.

[0038] The power strip 13 is a plastic profile similar in shape to a C-profile, as shown in fig. 3, fig. 4, fig. 5 and fig. 6. The power strip 13 is equipped with two current bars 14 passing into cavities formed in the C-profile arms of the power strip 13 profile.

[0039] A current trolley 17 cooperates with these current bars 14 positioned in the power strip 13 profile. The current trolley 17 has a rotating flattened handle 18 transiting into side arms 19 with contacts 20 coupled with the current bars 14 of the power strip 13 at any location thereof, and the contacts 20 are fitted with electrical wires 21 supplying electrical energy to a receiver 22. The receiver 22 is positioned under a showcase shelf and it is constituted by a source of light to illuminate a space between the shelves.

[0040] The post-like legs 2, in their front walls, are equipped with mounting holes 16, which receive the showcase elements, especially shelves.

[0041] In an embodiment of the invention presented in the drawing, the post-like legs 2 are fitted at their bottom part with extension arms 23 and with a bottom shelf 24 extending between the extension arms 23.

[0042] In an embodiment of the invention presented in fig. 1 the rear wall 3, on a side edge, at a side opposite to the side with holes 8, on portions of a front surface 5 and portions of a rear surface 6, is equipped with shaped holders 12 formed as hooks fixable in recesses 11 of post-like legs 2 during a showcase assembly.

[0043] In another embodiment of the invention (not shown), both sides of a rear wall 3, near their side edges, have holes 8, in which links 9 are installed with shaped detents 15 used to fix the links 9 to post-like legs 2 during assembly of a showcase.

Claims

1. A showcase, especially for stores, including a module (1) with two post-like legs (2) of a rectangular cross-section and a rear wall (3) removably installed to the legs (2) using a shaped link, where the rear wall (3) is a metal plate with impressions (4), where the impressions (4) form mutually parallel portions of a front surface (5) and portions of the rear surface (6) connected by means of skew sections (7), and the rear wall (3), at the connection site of the elements of the front surface (5) and the skew sections (7), near its side edge, is equipped with horizontal slots (8), in which a link (9) is installed formed as a flat element passing through at least two adjacent horizontal slots (8) and having shaped detents (10) at the external side in relation to the rear side (3), to connect with post-like legs (2), **characterised in that** at least at one side of the rear wall (3), the horizontal slots (8), along a part of their length, at the side opposite to the leg (2), have a channel (80) which receives a power strip (13) which supplies electrical energy.

2. The showcase according to claim 1, **characterised in that** the rear wall (3), at the side opposite to the side near which, on its side part, it is equipped with

horizontal slots (8), on vertical portions of the front surface (5) and on vertical portions of the rear surface (6), has shaped detents (12) formed as hooks connectable to the recesses (11) of the post-like legs (2).

3. The showcase according to claim 1, **characterised in that** the channel (80) is wider than the slot (8).

4. The showcase according to claim 1, **characterised in that,** in a horizontal view, the dimensions of the channel (80) are equal to the transverse dimensions of the power strip.

5. The showcase according to claim 1, **characterised in that** the power strip (13) is a plastic profile of shape similar to the shape of a C-profile and it is equipped with two current bars (14) installed in the recesses in the arms of the C-profile, wherein the current bars (14) cooperate with the current trolley (17).

6. The showcase according to claim 5, **characterised in that** the current trolley (17) has a rotating flattened handle (18) transiting into side arms (19) with contacts (20) coupled with the current bars (14) of the power strip at any location, and the contacts (20) are fitted with electrical wires (21) supplying electrical energy to a receiver (22).

7. The showcase according to claim 1, **characterised in that** the post-like legs (2), in their front walls, are equipped with mounting holes (16).

8. The showcase according to claim 1, **characterised in that** the showcase is formed of at least two modules (1) set next to each other, wherein the adjacent modules (10) have a common post-like leg (2).

9. The showcase according to claim 1, **characterised in that** the rear wall (3) is formed of panels (15) arranged one above the other in an overlaying arrangement.

10. The showcase according to claim 1, **characterised in that** the post-like legs (2) are fitted at the bottom with extension arms (23) and with a bottom shelf (24) extending between the extension arms (23).

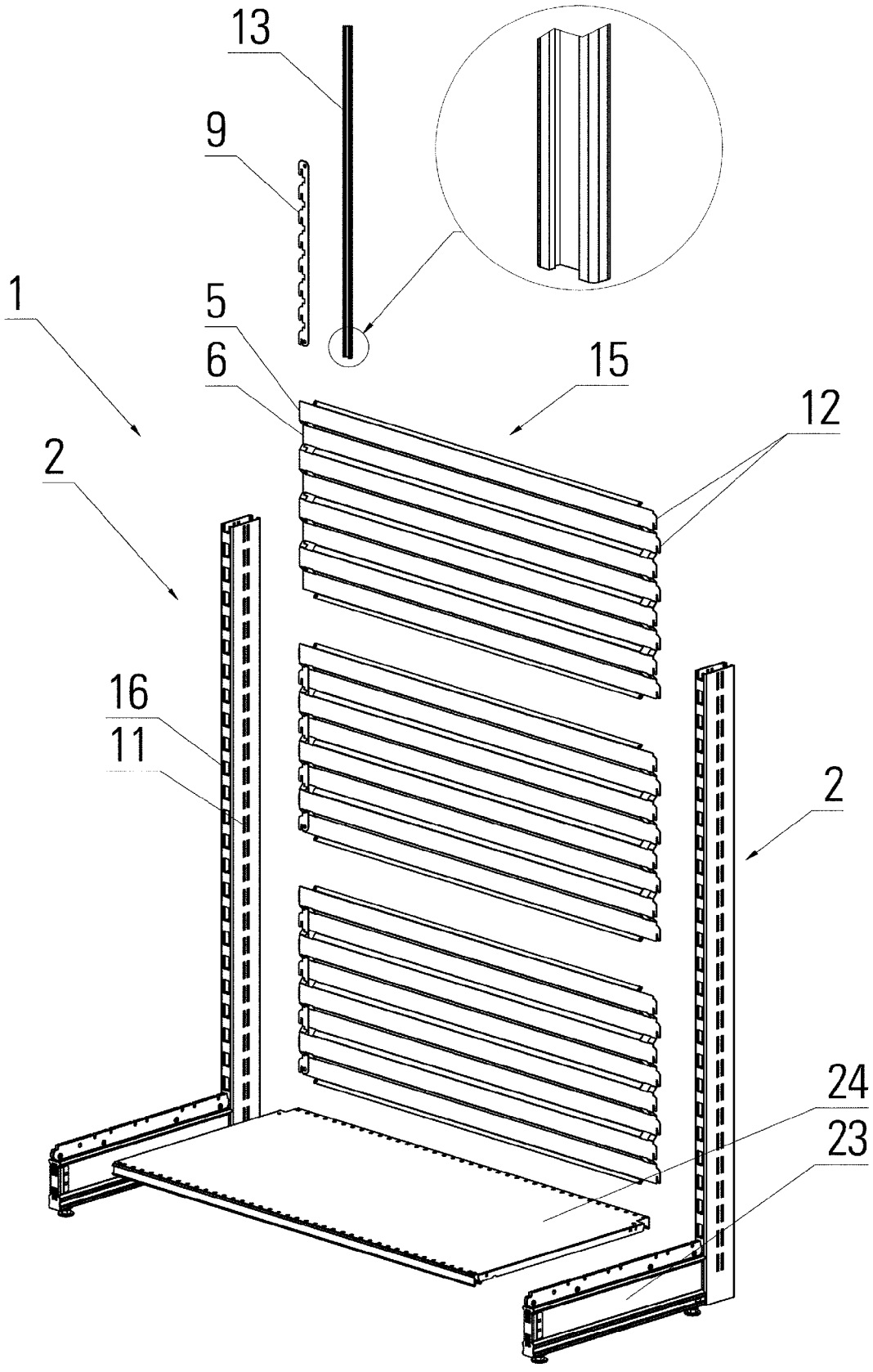

Fig. 1

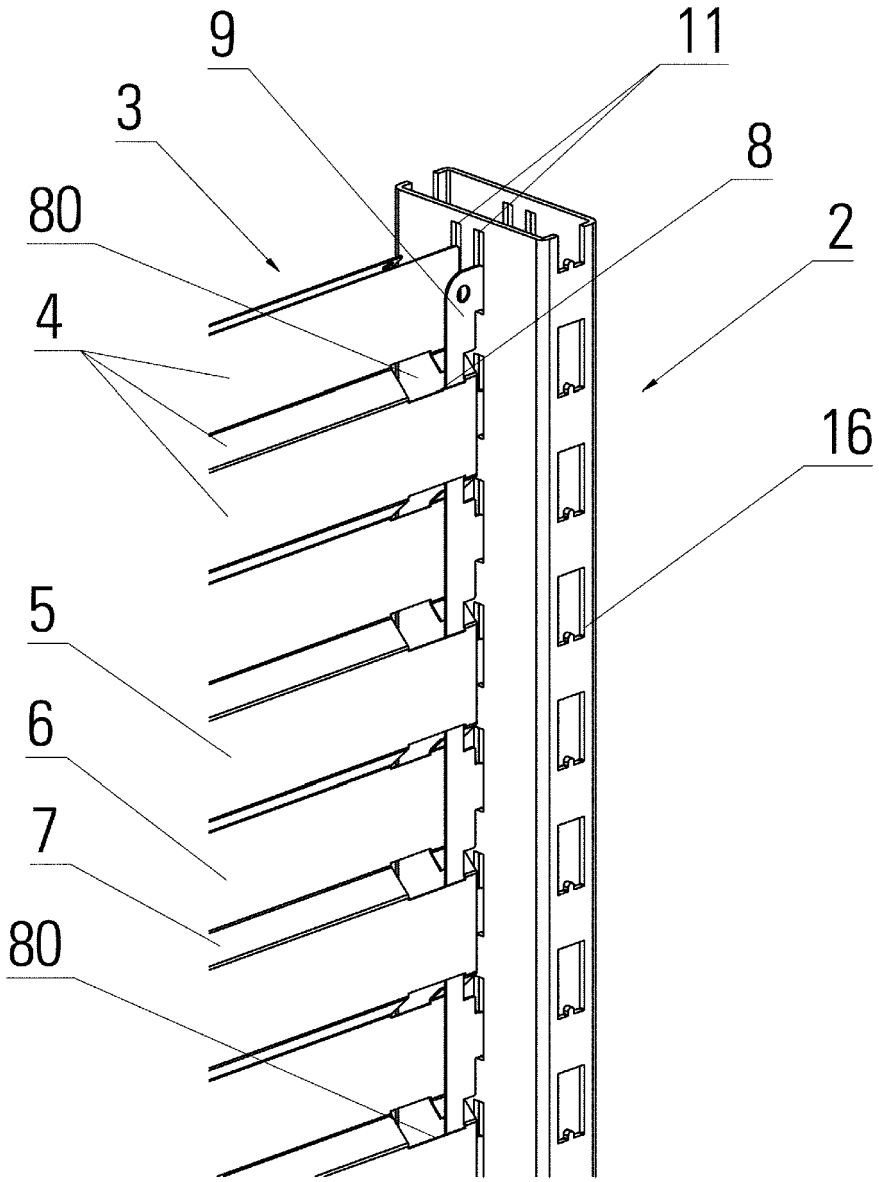

Fig. 2

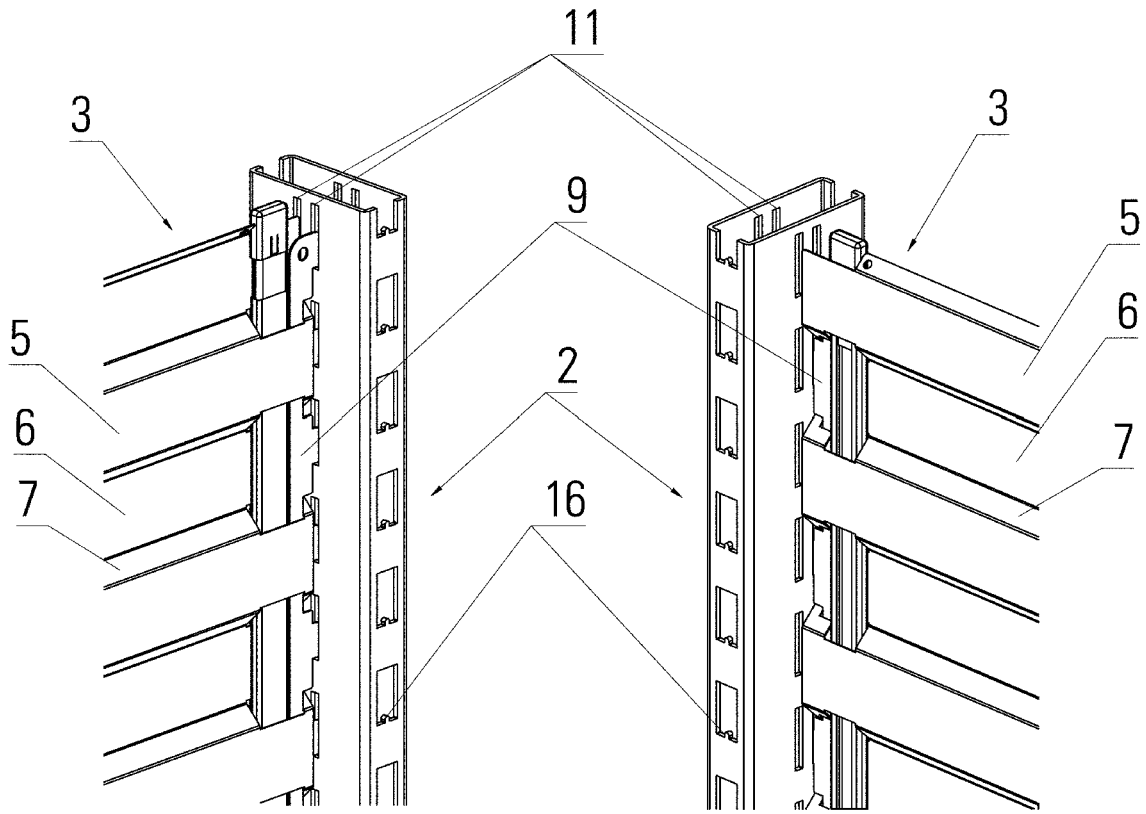

Fig. 3

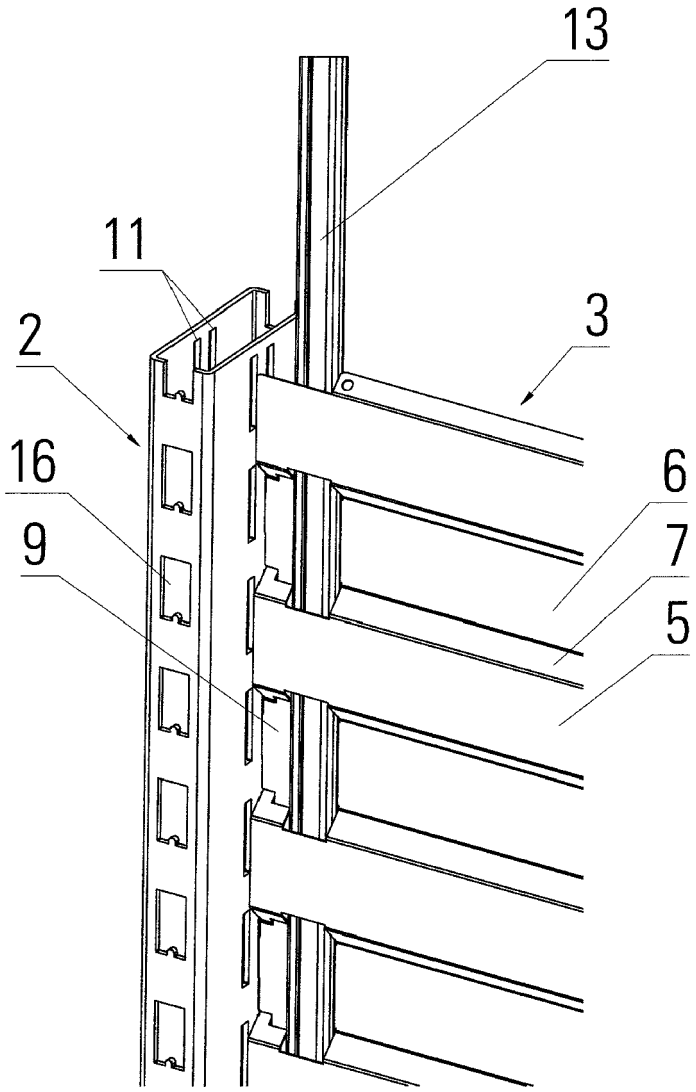

Fig. 4

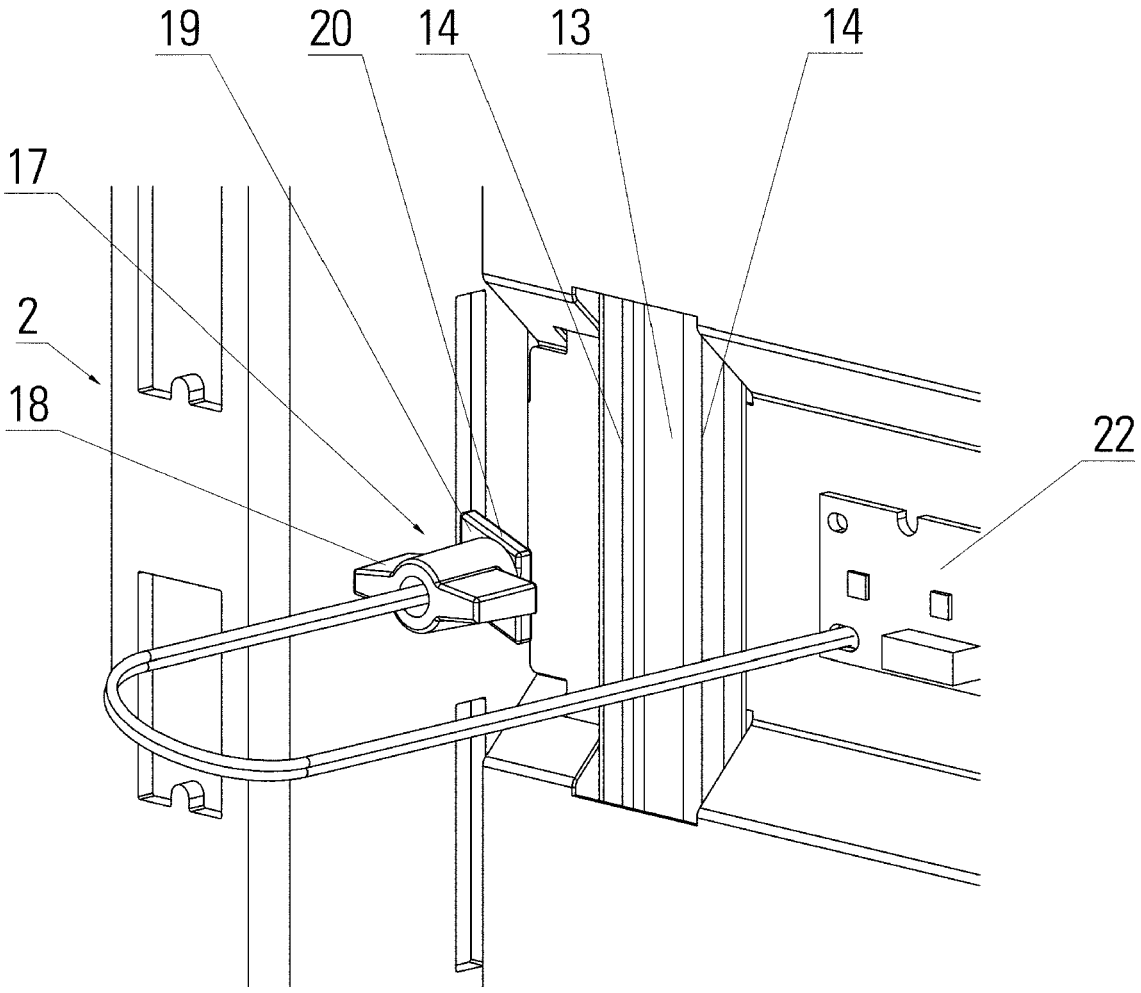

Fig. 5

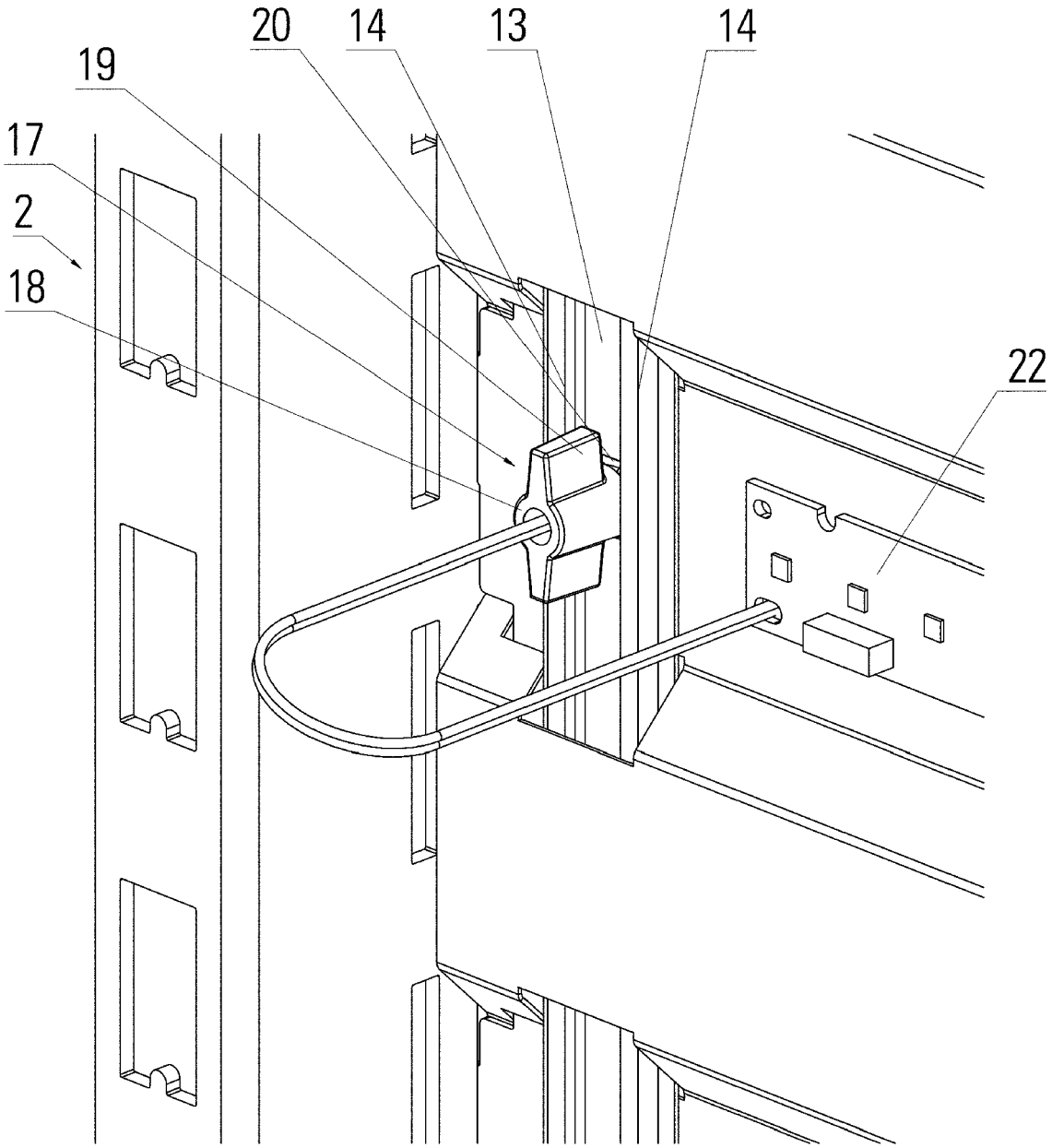

Fig. 6

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EUROPEAN SEARCH REPORT

Application Number
EP 17 19 4739

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	FR 2 799 941 A1 (HERMES METAL [FR]) 27 April 2001 (2001-04-27) * the whole document *	1-10	INV. A47B96/14
A	EP 2 886 021 A1 (JUVEMA AG [CH]) 24 June 2015 (2015-06-24) * the whole document *	1	
A	US 2015/092397 A1 (LIU IVAN [TW]) 2 April 2015 (2015-04-02) * the whole document *	1	
A	US 2015/036326 A1 (MACIULEWICZ PETER SCOTT [US]) 5 February 2015 (2015-02-05) * the whole document *	1	

TECHNICAL FIELDS SEARCHED (IPC)

A47B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	24 January 2018	Kohler, Pierre

CATEGORY OF CITED DOCUMENTS

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24-01-2018

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
FR 2799941 A1	27-04-2001	NONE	
EP 2886021 A1	24-06-2015	CA 2933724 A1	25-06-2015
		DE 102013114289 A1	18-06-2015
		DK 2886021 T3	01-05-2017
		EP 2886021 A1	24-06-2015
		ES 2626045 T3	21-07-2017
		US 2016316939 A1	03-11-2016
		WO 2015091557 A1	25-06-2015
US 2015092397 A1	02-04-2015	JP 2015071027 A	16-04-2015
		TW 201513811 A	16-04-2015
		US 2015092397 A1	02-04-2015
US 2015036326 A1	05-02-2015	NONE	

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REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- WO 2010031746 A **[0008]**
- FR 2799941 **[0009]**
- EP 2695543 A **[0010]**
- PL 410953 **[0011]**
- US 4949487 A **[0016]**