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(54) **MODULAR PARTITION SYSTEM**

(57) A system consisting of wooden elements that comprises modular panels (1), essentially consisting of two parallel sheets (11) with longitudinal and transverse spacer battens (12, 13, 14, 15) disposed therebetween, said battens (12, 13, 14) being inserted into the edge of the sheets at the top and the bottom thereof and on one side, while part of the corresponding batten (15) projects out from the remaining side in order to be joined by means

of a tongue and groove joint, to at least one adjacent lateral panel (1), a door pre-frame (2), multiple auxilliary stacked panels (4,5) and/or a window pre-frame (3). The system includes a vertical batten (71) which is positioned against the wall (6) with the adjacent positioning of the first panel (1), a pre-frame (2,3) and/or auxilliary panels (4,5), and also battens (72) anchored to the ground, for fixing of successive panels (1, 5), using a tongue and groove joint.

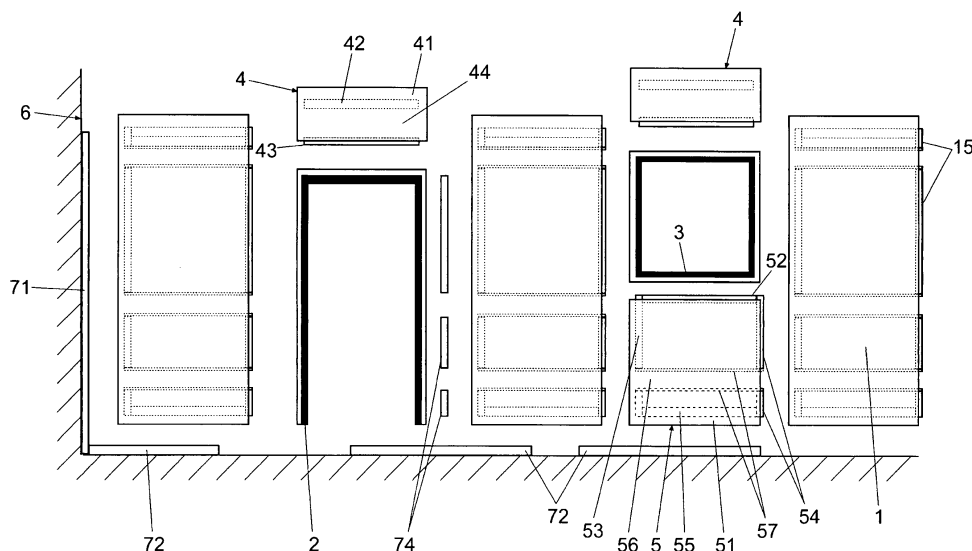


Fig. 1

Description

Object of the invention

[0001] This invention refers to a modular partition system for execution of internal construction elements, such as walls, doors and windows.

Background of the invention

[0002] Nowadays the use of partition systems and other means of separation of rooms in buildings of different type is widespread in comparison with the traditional system of brick and cement partition walls. The majority of these systems are intended for modular installation in order to speed up the realization of the works and to improve the cleanness of the installation.

[0003] For instance, there exists a system of cardboard and plaster multilaminate fixed to the walls and the ceiling by means of a structure of metallic profiles while the joints are covered with strips of plastered paper in order to smooth the wall and apply paint finish. Though this system is much quicker than the traditional method, it requires customized construction with participation of specialized staff that could execute the metallic structure and cut the panels in an adequate way to adapt them to different spaces to be covered.

[0004] Other systems are also known that use wooden panels as constructive element and that also require previous customized construction of a metallic or wooden frame over which the panels or sheets are fixed by means of adequate hooks. The process of forming of partition wall is cleaner with this system but it requires participation of experienced staff for construction of a frame with adequate resistance and for installation of support elements necessary for fixation of wooden panels or sheets.

[0005] The above mentioned systems, apart from being cumbersome, require considerable time from the moment of reception of assignment till the completion of works.

Description of the invention

[0006] The modular partition system being the object of this invention has several technical characteristics aimed at allowing for quick and easy installation of any type of partition and division of a space, including those with pre-frames for doors and windows, without obligatory participation of specialized staff, due to its modular nature.

[0007] For this purpose, according to the invention, the system comprises modular panels essentially consisting of two parallel sheets with longitudinal and transverse spacer battens disposed therebetween, said battens being inserted into the edge of the sheets at the top and the bottom thereof and on one side, while part of the corresponding batten projects out from the remaining side in order to be joined by means of a tongue and

groove joint, to at least one adjacent lateral panel, a door pre-frame, multiple auxiliary stacked panels and/or a window pre-frame. The system includes at least one vertical batten which is positioned against the wall with the adjacent positioning of the first panel, and battens anchored to the ground for fitting with use of a tongue and groove joint and for fixing of successive panels using a tongue and groove joint.

[0008] The panels have internal channels or cable ducts at different heights for passage of electrical installation cables, placing of junction boxes, sockets and switches. These cable ducts are delimited by two thin parallel boards situated between two hollows of vertical battens. In this way, electrical installations can be easily extended inside the panel avoiding the work that would be necessary to make electrical channel cutters and then hide them by means of plastering or operations requiring large amount of work.

[0009] To pass the cables from one cable duct to other inside the same panel, two hollows are made in at least one of the sheets of the panel, affecting one of the boards, so that it is possible to pass the cables or the electric conduct in a longitudinal way through the hole, and the holes are later covered with a manhole cover, a switch or a socket, for instance.

[0010] The system comprises the use of auxiliary battens for connection of two panels, pre-frames, auxiliary stacked panels or similar by their adjacent lateral sides configured as recess or female. These battens are situated in one of the females to define in this way a projecting portion in which the adjacent element is fitted. In this way the installation is not conditioned by panels situated in a certain direction of male-female fitting, in this case the said fitting can be easily reverted for convenience.

[0011] The use of an auxiliary panel has been foreseen for installation of a door or window pre-frame to complete existing height of the said pre-frame till the ceiling. The auxiliary panel comprises, between two sheets, an upper transverse batten inserted into the edge of the sheets and a lower batten protruding from the edge of the sheets in order to form a channel or a cable duct therebetween that would be adjacent to the upper cable ducts of the lateral panels. In this way this cable duct of the auxiliary panel also allows for passage of electrical conducts over the door.

[0012] The system comprises special panels in order to facilitate the installation of windows without any need to cut any panel. The set used for this purpose is constituted by the window pre-frame, the aforementioned upper auxiliary panel and a lower supporting panel, all of them stacked, instead of an entire panel and its form of fitting. In an alternative realization a window pre-frame of a larger width can have two or more associated upper panels and corresponding lower supporting panels.

[0013] The lower auxiliary panel comprises, between two sheets, an upper transverse batten projecting from the edge of the sheets, on one side a batten inserted or projecting from the edge of the sheets, on other side a

batten inserted or projecting from the edge of the sheets and a lower batten inserted into the edge of the sheets.

[0014] Between lateral battens there is at least one cable duct between two horizontal boards, this auxiliary panels forms the lower supporting part of a window pre-frame.

[0015] To connect two or three partition walls on a corner it is foreseen to use squares that fasten the longitudinal battens or the recess of the pre-frame, if this is the case. These squares are fastened by screws, for instance, and covered with a corner cover or a cover. If the corner implies the convergence of panels of three partition walls, the central panel converges with a protruding batten and the other lateral panels are coupled closely. If the panel of central partition wall converges with a recess or non protruding batten, it is possible to couple an auxiliary batten to complement it for installation of squares for both sides. The remaining hollow is covered, for instance, with a flat cover.

[0016] The fitting of the projecting batten with a main panel, pre-frame or auxiliary panel is facilitated by means of chamfering or rounding of its protruding edges. Besides, this projecting batten projects from the lateral side of the sheets to a distance equivalent to the width of the said sheet, thus facilitating the aforementioned corner fitting. All these battens for separation of panels and auxiliary battens have the same width, thus defining a constant separation between the said sheets in a uniform way between the panels.

[0017] The main panels, the auxiliary panels and the pre-frame are connected therebetween by fastening means, such as tal como screws, nails, clips or similar, inserted in front and rear sides of the partition wall formed in this way.

[0018] The fitting of the panels and their fixation on vertical battens positioned against the wall at the beginning of the partition wall and the battens anchored to the ground are normally sufficient to secure the stability of the partition wall. The partition wall can be reinforced by means of fastening of upper parts of panels and modules with screws or nails and a batten situated in the upper recess of these elements.

[0019] All the panels and pre-frames can be prepared with pre-paint finish or priming and final finish is done when the partition wall is mounted. It is also possible for the panels and pre-frames to come with the paint finish or final plating.

[0020] For their adjustment and finishing, the partition walls can be finished off by means of plinths in order to hide the lower junction with the floor or the lateral junctions with existing walls.

Description of the figures.

[0021] To complement the description that has been made and in order to facilitate the understanding of the characteristics of the invention, a set of drawings is included in this descriptive memory, which, being of illus-

trative and not limiting nature, show the following:

- Figure 1 shows an assembling elevation view of a section of partition wall executed according to the system of the invention.
- Figure 2 shows an elevation view of the aforementioned section of partition wall.
- Figure 3 shows an elevation view of a panel sectioned by a medium plane.
- Figure 4 shows a profile view of a panel.
- Figure 5 shows a plan view of a panel.
- Figure 6 shows a detailed plan view of installation of two panels in corner.
- Figure 7 shows a detailed plan view of installation of three panels converging in corner.
- Figure 8 shows a detailed plan view of installation of four panels converging in corner.
- Figure 9 shows a detailed view of passage of a cable from one cable duct to other inside a panel.
- Figure 10 shows an assembling elevation view of a window pre-frame situated over two auxiliary supporting panels, which do not have lateral projecting fitting batten.

Preferred embodiment of the invention

[0022] As it can be observed on the aforementioned figures, a fragment of partition wall constructed with the modular system comprises modular panels (1), a door pre-frame (2), a window pre-frame (3) and auxiliary panels (4, 5) for the constitution of a section of partition wall beginning from a wall (6). For this purpose, a vertical batten (71) is attached to the wall and next to it several battens (72) are fixed to the ground for anchoring of the aforementioned elements. The panels and pre-frames (1, 2, 3, 4, 5) are fixed therebetween by a tongue and groove joint, placement of fastening means (8), such as screws, on front and rear side of the partition wall and optionally of one or several upper battens (73) anchored to the ceiling and situated in the upper recess of the panels (1, 4).

[0023] A general panel (1) comprises two lateral sheets (11) of the same size, with longitudinal and transverse battens (12, 13, 14, 15) disposed therebetween for separation of the said sheets (11), said battens (12, 13, 14) being inserted into the edge of the sheets (11) at the top and the bottom thereof and on one lateral side. The corresponding batten (15), partially projecting, is situated on the remaining lateral side. The lower recess of the panel (1) fits in the aforementioned battens (72) anchored to the ground and the lateral recess of the panel (1) allows its fitting on the lateral batten (71) of the wall (6), on the projecting battens (15) of other panel (1) or adjacent panels (4, 5) or similar.

[0024] The longitudinal corners of the aforementioned lateral projecting battens (15) are chamfered or rounded in order to facilitate their installation by means of a tongue and groove joint. The projecting section of the said batten

(15) is equivalent to the width of the lateral sheet (11).

[0025] The general panel (1) has transverse channels or cable ducts (16) at three different heights, and each of the said cable ducts (16) is configured by two thin parallel boards (17) situated between two hollows of the vertical battens (13, 15).

[0026] For installation of a door, the constructed partition wall has a pre-frame (2) whose recess in female of a lateral is fixed to the projecting batten (15) of an adjacent panel (1). In turn, the pre-frame (2) has on the adjacent lateral an auxiliary batten (74) situated in the recess in female and configuring a projection for close coupling of the adjacent panel (1) on this side. The pre-frame (2) is complemented on the upper part by means of the auxiliary panel (4). This auxiliary panel (4) is constituted by two equal sheets (41), and an upper transverse batten (42) is situated between them, inserted into the edge of the sheets (41), and a lower batten (43) projected from the edge of the sheets (41) for coupling to the fitting of the door pre-frame (2). Both battens (42, 43) form a channel or cable duct (44) extension of the upper cable duct (16) of the adjacent panel (1).

[0027] For installation of a window it is foreseen to use a window pre-frame (3) situated on at least one auxiliary supporting panel (5), and over the pre-frame (3) there is at least one auxiliary panel (4) equivalent to the auxiliary panel (4) existing over the door pre-frame (2), and the stacking of the elements configures the space of one or several general panels (1).

[0028] The auxiliary supporting panel (5) of the window pre-frame (3) is constituted by two sheets (51), an upper transverse projecting batten (52) is situated between them for coupling to the window pre-frame (3), on one side a batten (53) inserted into the edge of the sheets (51), on other side a batten (54) projecting from the edge of the sheets (51) and a lower batten (55) inserted into the edge of the sheets (51) for coupling to the battens (72) fixed to the ground. Between the lateral battens (53, 54) there is at least one cable duct (56) constituted by two horizontal boards (57) between two hollows of the aforementioned lateral battens (53, 54).

[0029] Figure 6 shows the coupling of two panels (1) corresponding to two partition walls that converge in corner, and the edge of the sheet (11) of a panel (1) is supported by the fitting formed by the sheet (11) and the projecting batten (15) of other panel, this connection is reinforced by means of squares (9) situated between lateral battens (13, 15) of both panels (1). The projecting corner is covered with a corner cover (75).

[0030] Figure 7 shows the coupling of three panels (1) corresponding to three converging partition walls, where the central panel (1) converges with the protruding batten (15), and the two adjacent panels (1) converge with their lateral sides equipped with recesses, each of both panels (1) having one edge of sheet (11) supported by the fitting formed by the sheet (11) and the protruding batten (15) of the central panel (1). The central panel (1) is secured to each of adjacent lateral panels (1) by means of a set

of bolted squares (9). The hollow existing in front of the central panel (1) is hidden by a flat cover (76).

[0031] Figure 8 shows the coupling of four panels (1) in corner or crossing between two perpendicular partition walls. The coupling is equal to that described in the case of coupling of three panels (1), and the fourth panel (1) is coupled, instead of the cover (76), to the projecting batten (15) inserted in the said intermediate hollow.

[0032] Figure 9 shows the passage of cables and electric conducts (10) between two cable ducts (16) of a panel (1) by means of perforation of a hole (18) in one of the sheets (11) at the height of each cable duct (16), affecting one of the thin boards (17) respectively in order to define a passage of the said conducts (10).

[0033] The panels and pre-frames (1, 2, 3, 4, 5) can have a superficial finish of pre-paint, priming or painting or other final finish. The lower and/or upper joints of partition walls can be hidden by longitudinal plinths (not shown).

[0034] Having sufficiently described the nature of the invention and also an example of its preferred embodiment, it is herewith stated, for whatever purposes might be appropriate, that the materials, form, size and layout of the described elements can be modified, on condition that it will not lead to an alteration of the essential characteristics of the invention claimed below.

Claims

1. Modular partition system, of the type that consists of wooden elements, **characterized by** the fact that it comprises modular panels (1), essentially consisting of two parallel sheets (11) with longitudinal and transverse spacer battens (12, 13, 14, 15) disposed therebetween, said battens (12, 13, 14) being inserted into the edge of the sheets (11) at the top and the bottom thereof and on one side, while part of the corresponding batten (15) projects out from the remaining side in order to be joined by means of a tongue and groove joint, to at least one adjacent lateral panel (1), a door pre-frame (2), multiple auxiliary stacked panels (4, 5) and/or a window pre-frame (3), the system also includes a vertical batten (71) which is positioned against the wall (6) with the adjacent positioning of the first panel (1), a pre-frame (2, 3) and/or auxiliary panels (4, 5), and also battens (72) anchored to the ground, for support and fixing of inferior edges of successive panels (1, 5), also using a tongue and groove joint.
2. System according to claim 1, **characterized by** the fact that the panels (1) have vertical channels or cable ducts (16) at different heights, and the said cable ducts (16) are constituted by two parallel thin boards (17) situated between two hollows of vertical battens (13, 15).

3. System according to claim 1, **characterized by** the fact that it comprises auxiliary battens (74) for connection of two panels (1), pre-frames (2,3), auxiliary stacked panels (4,5) or similar, by their adjacent lateral sides, configured as female. 5
4. System according to any of the claims 1, 2 and 3, **characterized by** the fact that it comprises an auxiliary panel (4) having between two sheets (41) an upper transverse batten (42) being inserted into the edge of the sheets (41), and a lower batten (43) that projects from the edge of the sheets (41), for coupling to the fitting of door or window pre-frame (2,3), thus forming a channel or cable duct (44) therebetween (42, 43). 10 15
5. System according to any of the claims 1 and 2, **characterized by** the fact that it comprises an auxiliary panel (5) having between two sheets (51) an upper transverse batten (52) that project from the edge of the sheets (51), on one side a batten (53) that is inserted or projects from the edge of the sheets (51), on the other side a batten (54) that is inserted or projects from the edge of the sheets (51) and a lower batten (55) that is inserted into the edge of the sheets (51), having between lateral battens (53, 54) at least one cable duct (56) between two horizontal boards (57), this auxiliary panel forms (5) the lower part of support of a window pre-frame (3). 20 25 30
6. System according to claim 1, **characterized by** the fact that it comprises squares (9) for connection of two or more panels (1, 4, 5) and/or pre-frames (2, 3) in corner, being these squares (9) covered by a corner (75) or cover (76). 35
7. System according to claim 1, **characterized by** the fact that the corners of projected battens are chamfered or rounded in order to make the installation easier. 40
8. System according to any of previous claims, **characterized by** the fact that all the battens (12, 13, 14, 15, 42, 43, 52, 53, 54, 55, 71, 72, 73, 74) have the same width, thus defining a constant separation between the sheets (11, 41, 51) which allows for their anchoring by a tongue and groove joint. 45
9. System according to any of previous claims, **characterized by** the fact that the projected batten (15, 43, 53, 54, 74) protrudes from the lateral side of the sheet or pre-frame (11, 2, 3, 41, 51) to a distance equivalent to the width of the said sheet. 50
10. System according to claim 1, **characterized by** the fact that it comprises fastening means (8), such as screws, nails, clips or similar inserted in front and rear sides of the panels, pre-frames and auxiliary panels (1, 2, 3, 4, 5) for fastening of different elements of partition system therebetween. 55

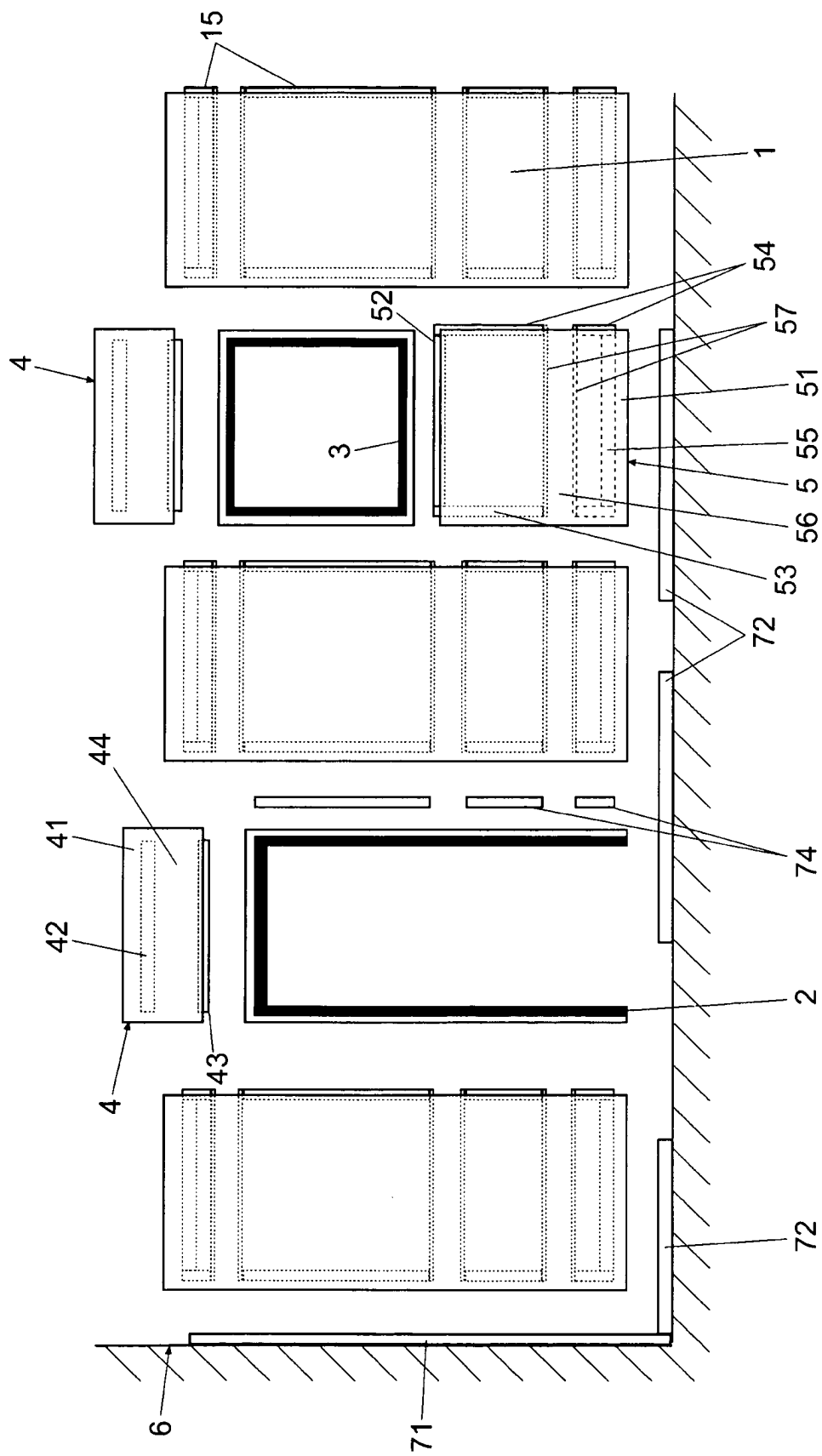


Fig. 1

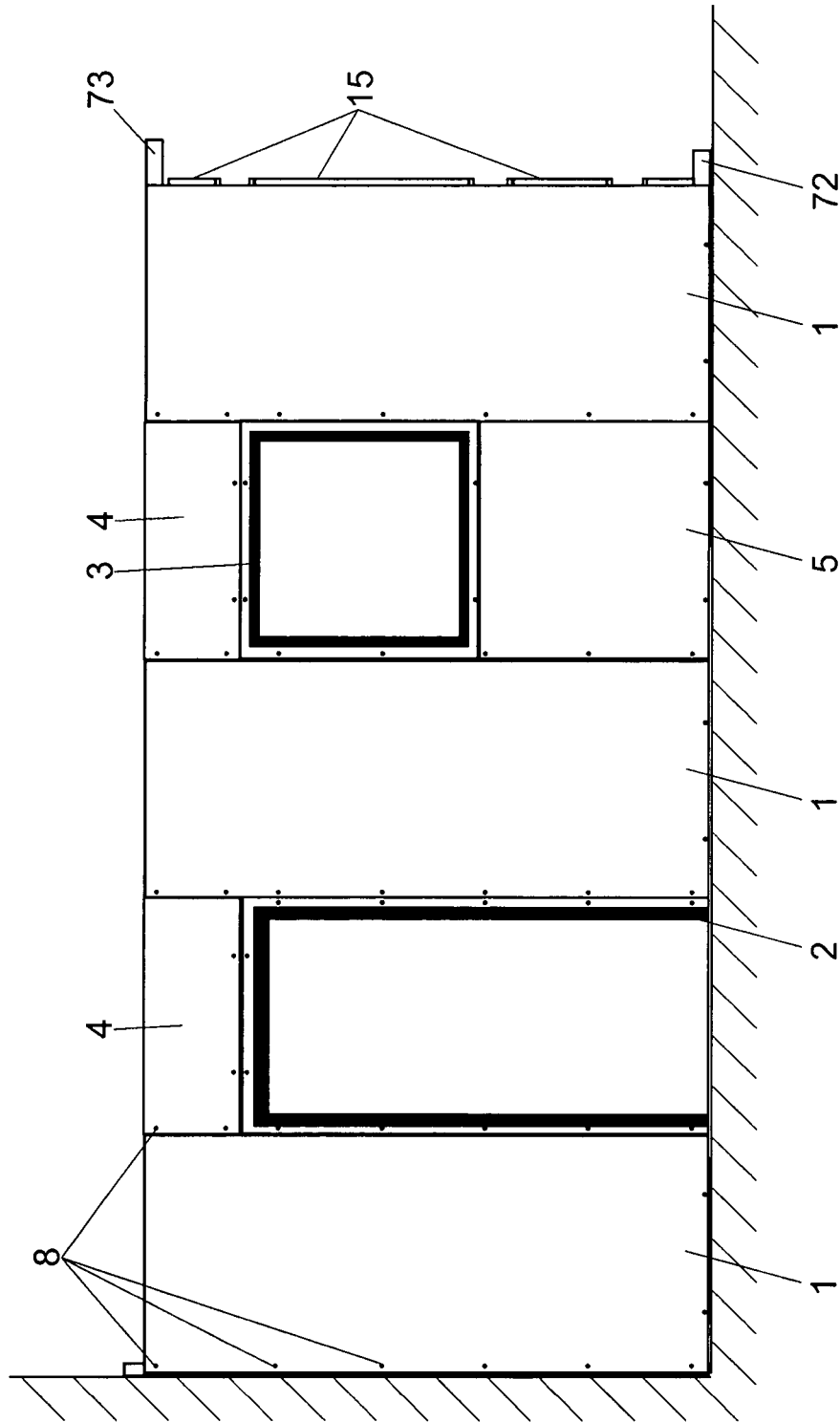


Fig. 2

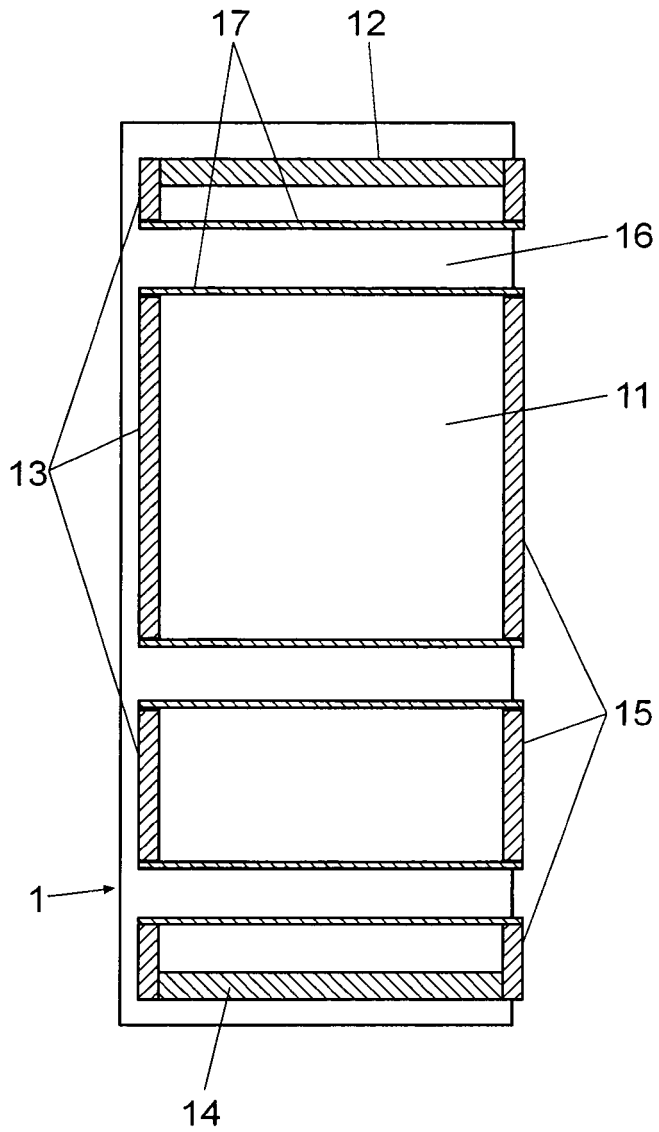


Fig. 3

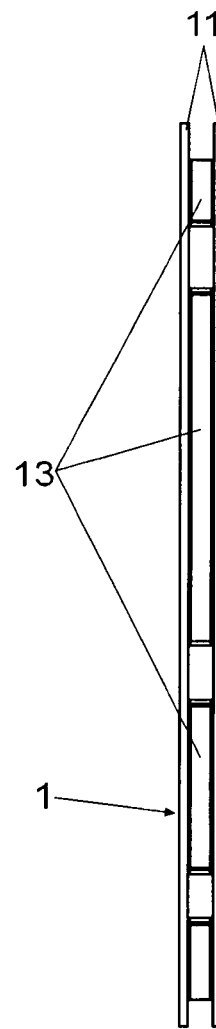


Fig. 4

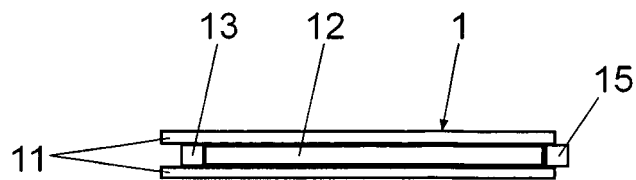


Fig. 5

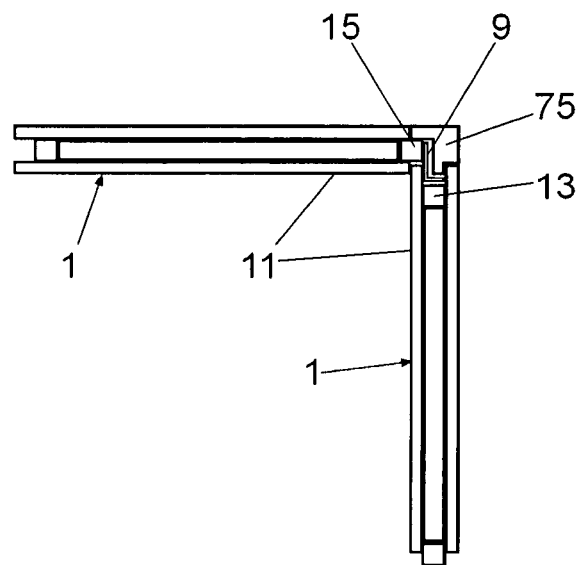


Fig. 6

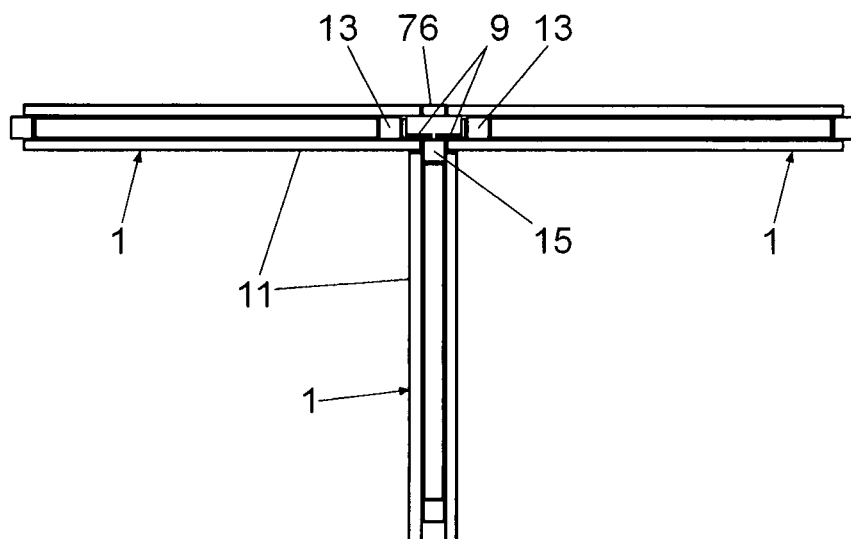


Fig. 7

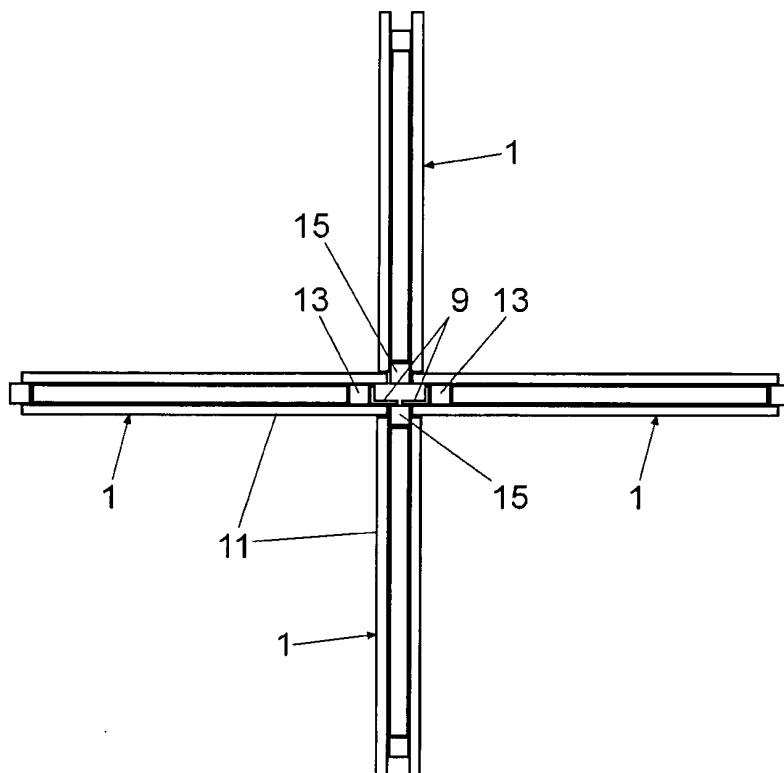


Fig. 8

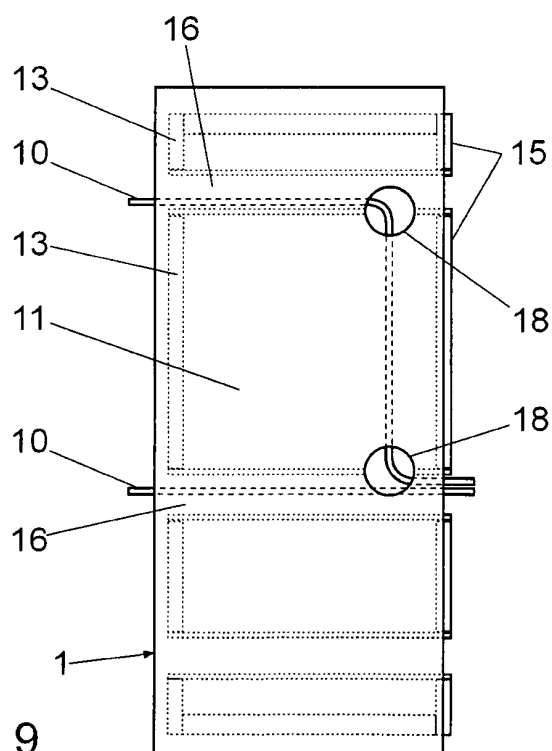


Fig. 9

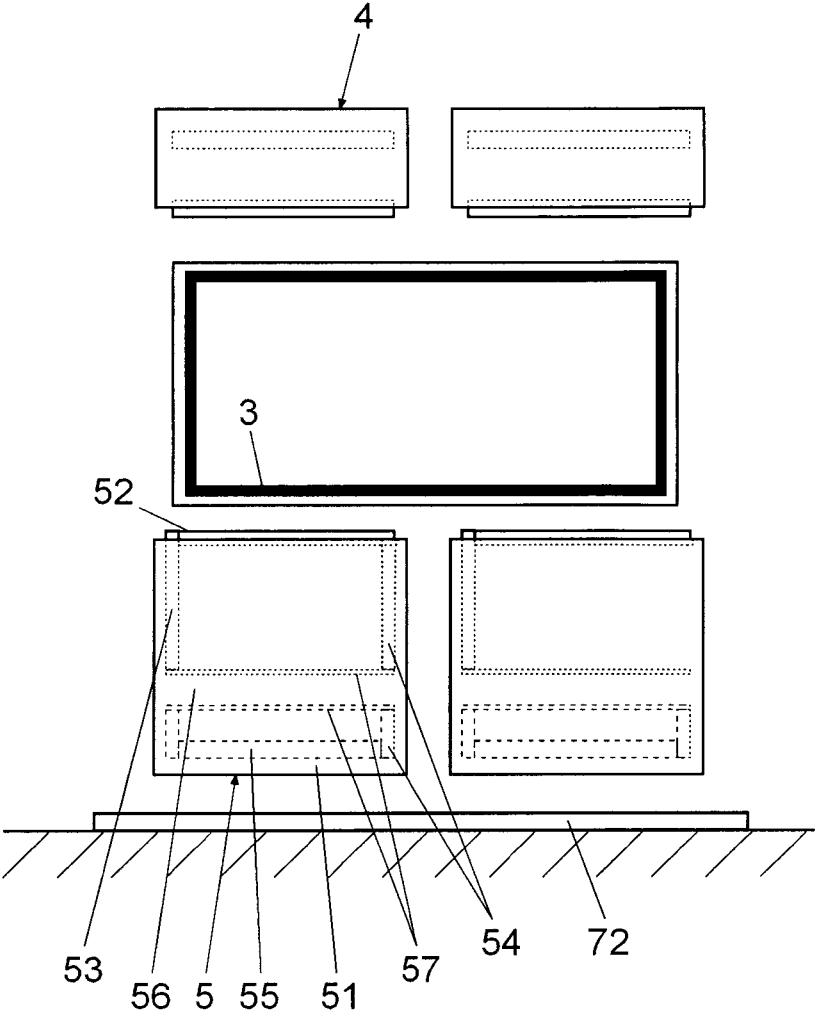


Fig. 10

INTERNATIONAL SEARCH REPORT

International application No.
PCT/ES 2007/000361

A. CLASSIFICATION OF SUBJECT MATTER

see extra sheet

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)

E04B2/+, E04C2/+

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)

CIBEPAT,EPODOC,PAJ,WPI

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y	WO 9520711 A1 (RAMIREZ PETER B) 03.08.1995, the whole document.	1,2,8,10 3-7,9
Y	US 4720948 A (HENLEYHAROLD B; NORBERG KENNETH L; DEVINE JOHN P) 26.01.1988, the whole document.	3-5
Y	DE 19615447 A1 (ZOLLER HARALD) 28.11.1996, abstract and figures.	6,7,9
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A	ES 255059 U (CONSTRUCCIONES RIOGON S.A.) 01.03.1982, figures.	1-3,8-10

☐ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents:

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document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other documents, such combination being obvious to a person skilled in the art

"&"

document member of the same patent family

Date of the actual completion of the international search

14.November.2007 (14.11.2007)

Date of mailing of the international search report

(16/11/2007)

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Form PCT/ISA/210 (second sheet) (April 2007)

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/ ES 2007/000361

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Form PCT/ISA/210 (patent family annex) (April 2007)

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International application No.

PCT/ ES 2007/000361

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E04B 2/74 (2006.01)

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E04C 2/52 (2006.01)

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