

Specification

Partition device

[Technical Field]

[0001] The present invention relates to a partition device, which includes a frame assembly and panels installed in rectangular frames formed of the frame assembly.

[Background Art]

[0002] Conventionally, the following panel apparatus has been known. Specifically, the panel apparatus includes: a hollow back panel device coupled to a back surface of a main body case such as a cabinet; and a partition panel device continuously provided to a side surface of the hollow back panel device. The panel apparatus includes a wiring channel formed therein (see Patent document 1). The following partition panel has also been known. Specifically, in the partition panel, a pair of panels are attached to both front and back sides of a rectangular frame. In this case, the pair of panels are formed in such a manner that outer peripheral corner edge portions of panel base materials are bit and held by holding portions formed in outer end portions in a forward and back direction of an outer frame material, respectively (see Patent document 2). Still further, there is known a partition panel formed through attaching a panel between pillars provided upright between a ceiling and a floor (see Patent document 3).

[Patent document 1] Japanese Patent No. 3706299

[Patent document 2] Japanese Patent Application Laid-open No. 2004-316192

[Patent document 3] Japanese Patent Application Laid-open No. 2004-211392

[Disclosure of the Invention]

[Problems to be solved by the invention]

[0003] Conventionally, there is known a partition device for partitioning a space, in particular, a room space such as an office. Further, as the above-mentioned partition device, there is provided a partition device including a space for wiring in an inside of the partition device for the purpose of hiding wiring and the like during installation of an electronic device or the like, to thereby keep external appearance thereof.

[0004] However, when being increased in size, for example, being set to extend from a floor up to a ceiling, the above-mentioned partition device is needed to use a frame assembly for ensuring strength thereof for the purpose of ensuring desired strength. Therefore, there are problems in that free wiring is difficult because a wiring space inside the partition device is divided by the frame assembly, and in that the external appearance thereof is deteriorated because a part of the wiring must be exposed to the outside of the partition device, and the like.

[0005] The present invention has been made in view of the above-mentioned problems, and it is an object of the present invention to increase, in a partition device using a frame assembly, a degree of freedom (flexibility) for wiring inside the partition device.

[Means for solving the Problems]

[0006] In order to solve the above-mentioned problems, the present invention enables to increase a degree of freedom (flexibility) for wiring inside a partition device in such a manner that a frame assembly is provided with a wiring hole portion.

[0007] Specifically, according to the present invention, there is provided a partition device, including: a frame assembly which forms a plurality of rectangular

frames with a plurality of vertical frame members provided to be substantially vertical to a floor and with a plurality of lateral frame members for connecting the plurality of vertical frame members; and panels which are respectively installed from both of a front side and a back side of the plurality of rectangular frames with respect to the plurality of rectangular frames formed of the frame assembly, in which the frame assembly includes wiring hole portions for mutually communicating inner spaces, of a plurality of inner spaces, being adjacent to each other through an intermediation of the frame assembly, the plurality of inner spaces being formed by the plurality of rectangular frames and the panels and enabling wiring therein.

[0008] The partition device according to the present invention is a partition device using the frame assembly, and the plurality of inner spaces each used as the wiring space are partitioned by the plurality of vertical frame members (pillars or the like) or the plurality of lateral frame members (lateral plate for panel attachment or the like). In this case, the partition device according to the present invention allows performing wiring over the plurality of inner spaces partitioned by the frame assembly in such a manner that the frame assembly is provided with the wiring hole portions. Further, in order to communicate the plurality of inner spaces, each of the wiring hole portions is provided at a position facing the inner space formed of the rectangular frames and the panel, in the frame assembly.

[0009] Note that, in the conventional partition device, in order to prevent falling of the panels, the front and back panel for ensuring the wiring space are fixed by use of a fastener such as a screw or a bolt.

Therefore, during layout change, in order to access the wiring in the inside of the partition device, complicated work such as removal of the fasteners is generally required.

[0010] With this regard, in the partition device according to the present invention, each of the panels includes: an engaging portion provided in a vicinity of an upper end of the panel; and a fitting portion provided in a vicinity of a lower end of the panel, and each of the plurality of lateral frame members includes: a portion to be engaged for causing the engaging portion to be engaged in a direction of restricting the panel from being detached to a front direction of the partition device and of allowing the panel to be detached to a deep direction or a lower direction of the partition device when the panel is installed with respect to a rectangular frame, which includes an upper side formed of the lateral frame member, of the plurality of rectangular frames; and a portion to be fitted for causing the fitting portion to be fitted in a direction of allowing the panel to be detached to the front direction when the panel is installed with respect to a rectangular frame, which includes a lower side formed of the lateral frame member, of the plurality of rectangular frames.

[0011] In this case, an engaging structure provided by the engaging portion and the portion to be engaged allows the panel to be detached to the deep direction or the lower direction, and a fitting structure provided by the fitting portion and the portion to be fitted allows the panel to be detached to the front direction. Therefore, in the partition device according to the present invention, when the panel is detached, the panel can not be detached only by causing the panel to move to a single direction. The

panel can be detached by performing a process including two steps for detachment as follows. Specifically, for example, fitting is first released by pulling the panel to the front direction, and then engagement is released by pulling the panel downward.

[0012] That is, according to the partition device according to the present invention, unlike the partition device having an attachment structure in which the panel can be detached only by moving to a signal direction, it is possible to prevent falling of the panel without the fastener such as the screw or the bolt.

[0013] Further, the fastener such as the screw or the bolt is unnecessary, and hence the panel may be installed to be attachable and detachable with respect to the rectangular frame only by an attachment and detachment structure using the engaging portion and the fitting portion of the panel, and the portion to be engaged and the portion to be fitted of the frame assembly. Thus, it is possible to provide the partition device allowing easy access to inside wiring without taking a lot of time and effort for removing the fastener even in a case where a need of changing the wiring in an inside of the partition device arises.

[Effects of the invention]

[0014] According to the present invention, it is possible to increase, in the partition device using the frame assembly, the degree of freedom (flexibility) for wiring inside the partition device.

[Brief Description of the Drawings]

[0015] [FIG. 1] A view illustrating a structure of an entire of a partition device 1 according to an embodiment.

[FIG. 2] A view illustrating a structure of the partition device 1 in a state in which panels 8 are removed

in the embodiment.

[FIG. 3] An enlarged view illustrating vicinities of fixing portions in a state in which lateral plates 6, 7 according to the embodiment are fixed to a pillar 3.

[FIG. 4] A top view and a sectional view of a first lateral plate according to the embodiment.

[FIG. 5] A top view and a sectional view of a second lateral plate according to the embodiment.

[FIG. 6] A view illustrating a structure of a lateral-plate-fixing metal fitting in the embodiment.

[FIG. 7] A perspective view of a panel according to the embodiment, as seen from a back side thereof.

[FIG. 8] A view illustrating how to assemble a frame assembly in the embodiment.

[FIG. 9] A view illustrating how to attach the panels to the partition device according to the embodiment.

[FIG. 10] A sectional view illustrating how to attach each of the panels to the partition device according to the embodiment.

[FIG. 11] A sectional view illustrating a relation between a first lateral panel and the panels in a state in which the panels are attached to the frame assembly in the embodiment.

[FIG. 12] A sectional view illustrating a relation between second lateral panels and the panels in a state in which the panels are attached to the frame assembly in the embodiment.

[FIG. 13] A view illustrating a structure of a tray according to the embodiment.

[FIG. 14] A view illustrating how to fix the tray to a beam in the embodiment.

[FIG. 15] A view illustrating a state in which the tray is fixed to the beam over the pillar in the

embodiment.

[FIG. 16] A view illustrating a state in which trays in the embodiment are installed in an inside of a corner formed of two partition devices placed to form a right angle with respect to each other.

[FIG. 17] A view illustrating a state in which trays in the embodiment are installed in an outside of a corner formed of two partition devices placed to form a right angle with respect to each other.

[Best mode of Carrying out the Invention]

[0016] An embodiment of a partition device according to the present invention is described with reference to the drawings.

[0017] FIG. 1 is a view illustrating a structure of an entire of a partition device 1 according to this embodiment. Further, FIG. 2 is a view illustrating a structure of the partition device 1 in a state in which panels 8 are removed in this embodiment. The partition device 1 includes: a frame assembly 2 constituted of pillars 3, a beam 4, a base 5, first lateral plates 6, second lateral plates 7, lateral-plate-fixing metal fittings 9 (see FIG. 8), and the like; and the panels 8 attached from a front and a back thereof to each of rectangular frames formed by the frame assembly 2, respectively.

[0018] Each of the pillars 3 has a length extending from a floor to the beam 4 arranged on the ceiling. The pillars 3 are stably provided upright in such a manner that the pillars 3 connected to the base 5 arranged on the floor and to the beam 4 arranged on the ceiling. That is, the partition device 1 according to this embodiment is a partition device partitioning a room space without gaps in a height direction thereof because the partition device has

a height extending from the floor up to the ceiling. It should be noted that the height of the partition device 1 may extend from the floor up to a front of the ceiling, and it is preferred that the height of the partition device 1 be appropriately determined depending on implementations thereof.

[0019] Further, the second lateral plates 7 and the first lateral plates 6 are connected between the pillars 3, respectively. As a result, strength of the entire of the partition device 1 is enhanced. In this case, the first lateral plates 6 are lateral plates each fixed at a position away from the beam 4 and the base 5, and the second lateral plates 7 are lateral plates each fixed at a position held in contact with a lower surface of the beam 4 or a position held in contact with an upper surface of the base 5.

[0020] FIG. 3 is an enlarged view illustrating a vicinities of fixing portions in a state in which the lateral plates 6, 7 according to this embodiment are fixed to the pillars 3. Further, FIG. 4 is a top view and a sectional view of one of the first lateral plates 6 according to this embodiment. The first lateral plate 6 includes, along a longitudinal direction thereof in vicinity of outer edge portions thereof, portions to be engaged 61 and portions to be fitted 62 for attaching the panels 8. Each of the portions to be engaged 61 extends in a lower surface of one of the outer edge portions of the lateral plate in the longitudinal direction of the first lateral plates 6. Each of the portions to be engaged 61 has such a shape that an end of the portion to be engaged 61 is bent from an outer edge side toward a center side, that is, toward a deep direction under a state in which the first lateral plate 6 is installed in the frame assembly 2.

[0021] Further, each of portions to be fitted 62 includes: a wall-like member 62a provided upright to the upper surface in vicinity of an outer edge of the lateral plate to extend in the longitudinal direction of the first lateral plates 6; two side walls 62b being opposed to each other and extending from the member 62a toward the outer edge side. That is, the portion to be fitted 62 is formed into a groove shape including the wall-like member 62a serving as a bottom and the side walls 62b serving as inner walls. Further, in the inner walls of the portion to be fitted 62, there are provided protrusions 62c for pressing claw-like members 82b of fitting portions 82, to be described later, so as to cause the claw-like members 82b to be elastically deformed.

[0022] FIG. 5 is a top view and a sectional view of one of the second lateral plates 7 according to this embodiment. Similarly to the first lateral plate 6, the second lateral plate 7 includes, along a longitudinal direction thereof in vicinity of outer edge portions thereof, portions to be engaged 71 and portions to be fitted 72 for attaching the panels 8. It should be noted that the second lateral plate 7 is different, in that each of the portions to be engaged 71 and each of the portions to be fitted 72 are provided on the same surface side, from the first lateral plates 6 in which each of the portions to be engaged 61 and each of portions to be fitted 62 are provided on surfaces opposite to each other.

[0023] Similarly to the first lateral plate 6, each of the portions to be engaged 71 is a member extending in one of the outer edge portions of the lateral plate in the longitudinal direction of the second lateral plates 7. Each of the portions to be engaged 71 has such a shape that an end of the portion to be engaged 71 is bent from an

outer edge side toward a center side, that is, toward a deep direction under a state in which the second lateral plate 7 is installed in the frame assembly 2. Further, each of portions to be fitted 72 is formed into a groove shape including: wall-like member 72a serving as a bottom provided upright in vicinity of an outer edge of the lateral plate to extend in the longitudinal direction of the second lateral plate 7; and two side walls 72b serving as inner walls being opposed to each other and extending toward the outer edge side. Further, in the inner walls of the portion to be fitted 72, there are provided protrusions 72c for pressing the claw-like members 82b of the fitting portions 82, to be described later, so as to cause the claw-like members 82b to be elastically deformed.

[0024] The second lateral plate 7 when provided on a side of the beam 4 and the second lateral plate 7 when provided on a side of the base 5 are placed to be upside down with respect to each other. When the second lateral plate 7 is provided on the side of the beam 4, surfaces thereof on which the portions to be engaged 71 and the portions to be fitted 72 are provided are used as lower surfaces, and the portions to be fitted 72 are not used. When the second lateral plate 7 is provided on the side of the base 5, surfaces thereof on which the portions to be engaged 71 and the portions to be fitted 72 are provided are used as upper surfaces, and the portions to be engaged 71 are not used.

[0025] Further, the first lateral plate 6 includes wiring hole portions 63 in vicinities of end portions in a longitudinal direction thereof and in vicinity of a center in a lateral direction thereof (see FIG. 4). Further, the second lateral plate 7 includes wiring hole portions 73 in vicinities of end portions in a longitudinal direction

thereof and at positions other than a center in a lateral direction thereof (see FIG. 5). That is because the second lateral plate 7 is fixed to a position held in contact with the beam 4 or the base 5, and hence, if the hole portions are provided at positions in the center in the lateral direction thereof, the hole portions are closed by the beam 4 or the base 5. Note that, the wiring hole portions 63 and 73 are provided at positions facing a wiring space in an inside of the partition device 1 under a state in which the panels 8 are installed.

[0026] The lateral plates 6, 7 include the above-mentioned wiring hole portions 63, 73, and hence wiring spaces in insides of the rectangular frames divided by the lateral plates 6, 7 are communicated to each other. Thus, wiring not limited in each of the rectangular frames divided by the lateral plates 6, 7 is allowed. That is, according to the partition device 1 of this embodiment, it is possible to perform wiring over the plurality of wiring spaces divided by the lateral plates 6, 7. With this, even when the large partition device 1 where the plurality rectangular frames are needed is placed, it is possible to perform wiring only in the inside of the partition device 1 without withdrawing wiring to the outside thereof, and hence it is possible to keep external appearance thereof in good state.

[0027] FIG. 6 is a view illustrating a structure of one of the lateral-plate-fixing metal fittings 9 in this embodiment. The lateral-plate-fixing metal fitting 9 includes: a pillar-side fixing portion 91 including a bolt hole 93 through which the pillar-side fixing portion 91 is fixed to the pillar 3 with a bolt; and a lateral-plate supporting portion 92 forming a right angle with respect to the pillar-side fixing portion 91 and including a bolt hole

94 through which the lateral-plate supporting portion 92 is fixed to the lateral plate 6, 7 with a bolt. That is, the lateral-plate-fixing metal fitting 9 is shaped into an L-shape as a whole. In this case, the pillar-side fixing portion 91 is fixed with a bolt to an arbitrary position in a fixing groove extending in a longitudinal direction of a side surface of the pillar 3, to thereby fix the lateral-plate-fixing metal fitting 9 at an arbitrary height to the pillar 3 provided upright to the lateral-plate-fixing metal fitting 9. Further, the lateral-plate supporting portion 92 is fixed with a bolt while the lateral plate 6, 7 is disposed on an upper surface thereof, to thereby support the lateral plate 6, 7.

[0028] FIG. 7 is a perspective view of one of the panels 8 according to this embodiment, as seen from a back side thereof. The panel 8 includes an engaging portion 81 and the fitting portions 82, which are provided in portions thereof invisible from the outside under a state in which the panel 8 is installed in the frame assembly 2. The engaging portion 81 is provided in a panel 8 upper end surface and in vicinity of a panel 8 back surface, and is a member (metal plate subjected to bending in this embodiment) extending in a width direction of the panel 8. Further, the engaging portion 81 has such a shape that an end thereof is bent toward a front surface direction thereof, that is, toward a front direction in a state in which the panel 8 is installed in the frame assembly 2.

[0029] Further, the fitting portions 82 are a plurality of protrusion-like members provided in a panel 8 back surface and in vicinity of a panel 8 lower end. Further, each of the fitting portions 82 includes the claw-like members 82b which are inserted into the portion to be fitted 62, 72 of the lateral plate 6, 7 so as to be

elastically deformed, to thereby press the inner walls 62b or 72b of the portion to be fitted 62, 72 (see FIG. 10). In an outside of each of the claw-like members 82b extending from the panel 8, there is provided a protrusion 82c for causing the claw-like member 82b to be elastically deformed in such a manner that the protrusion 82c is pressed by one of the protrusions 62c or 72c provided in one of the inner walls of one of the portions to be fitted 62 or 72. The claw-like members 82b are returned from elastic deformation when the protrusions 82c climb over the protrusions 62c or 72c, respectively (it should be noted that the claw-like members 82b may not be entirely returned). Then, when the protrusions 82c are received on a deep side with respect to the protrusions 62c or 72c, fitting is completed.

[0030] Next, a process of assembling the partition device 1 according to this embodiment is described. FIG. 8 is a view illustrating how to assemble the frame assembly 2 in this embodiment. In this embodiment, first, the pillars 3, the beam 4, and the base 5 are placed between the floor and the ceiling in a room. Then, a height at which each of the lateral plates 6, 7 are fixed to the pillars 3 is determined. After that, with the bolts and the lateral-plate-fixing metal fittings 9, the lateral plates 6, 7 are fixed to the pillars 3. In this manner, the frame assembly 2 is completed (see FIG. 2).

[0031] In the assembled frame assembly 2, the panels 8 are installed. FIG. 9 is a perspective view illustrating how to attach the panels to the partition device 1 according to this embodiment. Further, FIG. 10 is a sectional view illustrating how to attach the panels to the partition device 1 according to this embodiment. At first, a worker holds the panel 8 so that the width direction of

the panel 8 is parallel to the longitudinal direction (that is, width direction of the frame assembly 2) of one of the lateral plates 6, 7 (first lateral plate 6 in the drawing). Then, under the above-mentioned state, the panel 8 is tilted in such a manner that a lower portion of the panel is situated on the front side of the partition device 1 with respect to an upper portion thereof. Then, under the above-mentioned state, an upper end of the panel 8 is oriented to a lower surface of the one of the lateral plates 6, 7, and then the engaging portion 81 and one of the portions to be engaged 61 or 71 are engaged to each other. The engaging portion 81 has such a shape that an end thereof is curved to the front side, and the one of the portions to be engaged 61 or 71 has such a shape that an end thereof is curved toward the deep side. Therefore, under a state in which the engaging portion 81 and the one of the portions to be engaged 61 or 71 are engaged to each other, the upper end of the panel 8 can not be detached toward a front direction of the partition device 1.

[0032] Subsequently, the worker causes the lower end of the panels 8 to be moved to the lateral plates 6, 7 in the following manner. Specifically, while engagement is kept between the engaging portion 81 and the one of the portions to be engaged 61 or 71, the panel 8 is caused to rotate about the engaging portion 81 extending to a longitudinal direction of the upper end of the panel 8. Then, the fitting portions 82 are inserted into one of the portions to be fitted 62 or 72. At this time, the protrusions 82c of the claw-like members 82b are pressed by the protrusions 62c or 72c provided portions to be fitted 62, 72, respectively. In this manner, the claw-like members 82b are elastically deformed. From a state in which the claw-like members 82b are elastically deformed,

the fitting portions 82 are further pressed into the one of the portions to be fitted 62 or 72. In this manner, the protrusions 82c climb over the protrusions 62c or 72c, and the claw-like members 82b are returned from elastic deformation.

[0033] Thus, fitting between the fitting portions 82 and the one of the portions to be fitted 62 or 72 is completed, and the panel 8 is attached to the frame assembly 2. Under a state in which fitting is completed, the protrusions 82c of the claw-like members 82b are received at a deeper side with respect to the protrusions 62c or 72c provided to the one of the portions to be fitted 62 or 72. Therefore, as long as the protrusions 82c are not pulled with a predetermined force or more with which the protrusions 82c is allowed to climb over the protrusions 62c, the fitting portions 82 is not pulled out from the one of the portions to be fitted 62 or 72. That is, as long as not pulled with the predetermined force or more, the panel 8 does not fall down. When the worker repeats the similar work to the number of the panels 8 provided to the frame assembly 2, to thereby complete the partition device 1 (see FIG. 1).

[0034] FIG. 11 is a sectional view illustrating a relation between the first lateral plate 6 and the panels 8 in a state in which the panels 8 are attached to the frame assembly 2 in this embodiment. The engaging portions 81 are engaged to the portions to be engaged 61, 71, and hence upper portions of the panels 8 are prevented from falling down to a front direction. Further, the fitting portions 82 are fitted to the portions to be fitted 62, 72 and hence lower portions of the panels 8 can not be detached as long as not pulled with the predetermined force or more to the front direction.

[0035] FIG. 12 is a sectional view illustrating a relation between the second lateral plates 7 and the panels 8 in a state in which the panels 8 are attached to the frame assembly 2 in this embodiment. A view illustrated on the upper side of FIG. 12 illustrates a relation between the second lateral plate 7 and the panels 8, which are provided on a side of the beam 4. A view illustrated on the lower side of FIG. 12 illustrates a relation between the second lateral plate 7 and the panels 8, which are provided on a side of the base 5. The second lateral plate 7 when provided on the side of the beam 4 and the second lateral plate 7 when provided on the side of the base 5 are placed to be upside down with respect to each other. Further, when the second lateral plate 7 is provided on the side of the beam 4, only the portions to be engaged 71 are used, and when the second lateral plate 7 is provided on the side of the beam 5, only the portions to be engaged 72 are used.

[0036] Note that, it is possible to easily detach the panels 8, which has been provided by the above-mentioned process, by a reverse process to the assembling process. That is, the worker pulls a lower portion of each of the panels 8 toward the front, to thereby pull out the fitting portions 82 from one of the portions to be fitted 62 or 72 (see FIG. 10). Next, the upper portion of the panel 8 is caused to move to a lower direction or the deep direction, to thereby detach the engaging portion 81 from the one of the portions to be engaged 61 or 71. In this case, in order to easily pull the lower portion of the panel 8 to the front, a handle fixed to the lower portion of the panel 8 with a suction cup or the like during working may be mounted on the lower portion of the panel 8. Otherwise, in any portion of the lower portion of the panel 8, there may

be previously provided a certain handle portion.

[0037] With provision of an attachment and detachment structure including engaging mechanism and fitting mechanism, as long as a intended detachment operation is not performed, it is possible to prevent the falling of the panel 8. Further, in a case where the panel 8 is needed to be detached, it is possible to easily detach the panel 8 without the need to remove a fastener such as a screw or a bolt. That is, according to the partition device 1 of this embodiment, it is possible to easily access the wiring in an inside of the apparatus while achieving strength required for the partition device 1. In addition, in the partition device 1 according to this embodiment, the panels 8, which is easy to be attached and detached from both front and back sides, are provided. Therefore, depending on the needs, it is possible to access the inside wiring from the front or the back of the partition device 1.

[0038] Next, description is made of a tray 10 for wiring for the purpose of performing wiring while keeping external appearance of the partition device 1 in good state. FIG. 13 is a view illustrating a structure of the tray 10 according to this embodiment. The tray 10 is a member to be attached to the beam 4 of the partition device 1. The tray 10 includes: a bottom portion 101 of a groove on which the wiring is disposed; and wall portions 102, 103 respectively provided at a front end and a rear end of the bottom portion 101 to be substantially perpendicular to the bottom portion 101. With the bottom portion 101 and the wall portions 102, 103, it is possible to perform wiring while causing the wiring to be invisible from below under a state in which tray 10 is attached to the beam 4. In addition, the tray 10 includes hooks 104 and bolt holes 105, which are provided in the wall portion 103. The hooks

104 engage the tray 10 to the beam 4 in such a manner that the hooks 104 are hooked to a groove 41 (see FIG. 12) provided in a longitudinal direction of a side surface of the beam 4.

[0039] FIG. 14 is a sectional view illustrating how to fix the tray 10 to the beam 4 in this embodiment. The worker aligns, under a state in which the hooks 104 are hooked to the groove 41 of the beam 4, a position of bolt holes of fixtures 106 previously arranged in an inside of the groove 41 and a position of the bolt holes 105 of the tray 10. Then, under the above-mentioned state, the hooks 104 are fastened with bolts, to thereby fix the tray 10 at a predetermined position in the beam 4.

[0040] Further, two or more partition devices 1 according to this embodiment may be placed through the pillar(s) 3 in a lateral direction thereof. FIG. 15 is a view illustrating how to attach a tray 10b to the beam 4 over one of the pillars 3 in this embodiment. The tray 10b basically has a groove shape including: a bottom portion 101 on which the wiring is disposed; and wall portions 102, 103 respectively provided at a front end and a rear end of the bottom portion 101. However, as illustrated in FIG. 15, in a case where a structure (pillar 3 in an example of FIG. 15) contributing as an obstacle in attaching the tray 10b, it is possible that a cutout corresponding to a shape of the structure contributing as the obstacle be provided in the tray 10, which allows wiring to be performed over the structure contributing as the obstacle. In this embodiment, the pillar 3 having a cross-shaped section, and hence the tray 10b is provided with a cutout 107 corresponding to a convex shape in the section of the pillar 3.

[0041] In addition, when two or more partition devices

1 according to this embodiment are placed, a pillar 3 including connection portions for the beam 4 in four directions may be used to place two partition devices 1 to form a right angle with respect to each other. FIG. 16 is a view illustrating a state in which a tray 10c in this embodiment is installed in an inside of a corner formed by two partition devices 1 placed to form a right angle with respect to each other. FIG. 17 is a view illustrating a state in which a tray 10d in this embodiment is installed in an outside of a corner formed by the two partition devices 1 placed to form a right angle with respect to each other.

[0042] In a case of installing the tray 10c in the inside of the corner, the following tray 10c is used. Specifically, the tray 10c has a shape obtained by cutting a corner thereof so that the wall portions 103 facing the beam 4 are longer than the wall portions 102 not facing the beam 4. In a case of installing the tray 10d in the outside of the corner, the following tray 10d is used. Specifically, the tray 10d has a shape obtained formed by cutting a corner thereof so that the wall portions 103 facing the beam 4 are shorter than the wall portions 102 not facing the beam 4. It should be noted that in a case of the partition device 1 in this embodiment, the pillar 3 has a cross-shaped section, and hence the tray 10d installed in the outside of the corner is needed to further include cutouts 108 each corresponding to a shape of the pillar 3. Note that, in a case where the tray is provided in the inside of the corner or in the outside of the corner, there may be used a tray having an L shape conformed with an angle of the corner in advance.

[0043] According to this embodiment, the tray 10, 10b, 10c, 10d, the wiring spaces in an inside of the partition

device, and the wiring hole portions 63, 73 of the lateral plates 6, 7 are used, and hence, in the partition device 1, it is possible to freely perform wiring in any directions, that is, from front to back and from side to side. Further, in the pillars 3 and the beam 4 used in this embodiment, there may be placed electronic devices such as flat panel displays or the like by use of grooves provided in a longitudinal direction thereof. Even in a case where an electronic device is placed in the pillars 3 or the beam 4, it is possible to make a presentation space or the like using the partition device 1 while preventing any wiring from the electronic device from being exposed to the outside. In addition, in this embodiment, in a case where wiring is performed in a lateral direction of the two or more partition devices 1 over the pillar 3, the tray 10b, 10c, 10d placed in the beam 4 is used. However, wiring in the lateral direction may be allowed in such a manner that wiring holes are provided in the pillar 3.

Claims

[1] A partition device, comprising:

a frame assembly which forms a plurality of rectangular frames with a plurality of vertical frame members provided to be substantially vertical to a floor and with a plurality of lateral frame members for connecting the plurality of vertical frame members; and

panels which are respectively installed from both of a front side and a back side of the plurality of rectangular frames with respect to the plurality of rectangular frames formed of the frame assembly,

wherein the frame assembly includes wiring hole portions for mutually communicating inner spaces, of a plurality of inner spaces, being adjacent to each other through an intermediation of the frame assembly, the plurality of inner spaces being formed by the plurality of rectangular frames and the panels and enabling wiring therein.

[2] A partition device according to claim 1, wherein:

each of the panels comprises:

an engaging portion provided in a vicinity of an upper end of the panel; and

a fitting portion provided in a vicinity of a lower end of the panel; and

each of the plurality of lateral frame members comprises:

a portion to be engaged for causing the engaging portion to be engaged in a direction of restricting the panel from being detached to a front direction of the partition device and of allowing the panel to be detached to a deep direction or a lower direction of the partition device when the panel is installed with respect to a rectangular frame, which includes an upper

side formed of the lateral frame member, of the plurality of rectangular frames; and

a portion to be fitted for causing the fitting portion to be fitted in a direction of allowing the panel to be detached to the front direction when the panel is installed with respect to a rectangular frame, which includes a lower side formed of the lateral frame member, of the plurality of rectangular frames.

[3] A partition device according to claim 2,

wherein the panel is installed to be attachable and detachable with respect to the rectangular frame only by an attachment and detachment structure using the engaging portion and the fitting portion of the panel, and the portion to be engaged and the portion to be fitted of the frame assembly.