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Improved Structure Room Divider Connector

BACKGROUND OF THE INVENTION

The invention here offers a kind of improved structure room divider connector, specifically referring to a room divider connector that consists of a protruding insertion tab inserted into the slot of the room divider, and inside the room divider is a conjoining insertion tab. Furthermore, there is a threaded shaft inserted through the protruding insertion tab and the conjoining insertion tab that is tightened to fasten together two or more room divider sections.

The structural technology of conventional room divider connectors have had numerous disadvantages. In the past structural technology of room divider connectors (as indicated in FIG. 1, FIG. 2, FIG. 3, FIG. 4, FIG. 5, FIG. 6 and FIG. 7), the protruding insertion tab of each room divider connector had to be fastened by screws into two holes via a connector strip, wherein an upper, center and lower connector was required to conjoin two room divider sections, entailing the tightening of 12 screws to complete the conjoining operation, which was a complicated process that was far from being practical. Another shortcoming was that if floor was uneven in contour during the conjoining of two to four room divider



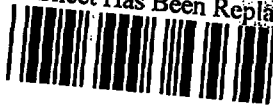
sections, it would be impossible to align the screw holes, a serious disadvantage that made completion of the installation impossible. As indicated in FIG. 4, a conventional product capable of conjoining two room divider sections into a straight-line configuration is shown, wherein the protruding insertion tabs (101) of the connector component (100) are separately inserted into the slot of the room divider sections (14) and there are two screw holes (13) in each connector component (100) and a connector strip. As indicated in FIG. 5, an L-shaped conventional product capable of conjoining two room divider sections in a 90-degree configuration is illustrated, wherein the protruding insertion tabs (111) of the connector component (110) are separately inserted into the slot of the room divider sections (14) and there are two screw holes (13) and a connector strip at the end of the protruding insertion tabs (111) for fastening purposes. As indicated in FIG. 6, a three-way conventional product capable of conjoining three room divider sections is shown, wherein the protruding insertion tab (121) of the connector component (120) are separately inserted into the slots of the room divider section (14) and on each of the three ends are two screw holes (13) and an connecting strip for fastening purposes. As indicated in FIG. 7, a dual L-shape and 90-degree angle conventional room divider connector component (110) product is shown, wherein the



bolt (15) through the aforesaid connector component (110) is secured with a nut (16) to form a connector component capable of conjoining four room divider components; the protruding insertion tabs (111) of the connector component (110) are separately inserted into the slot of the room divider sections (14) and there are two screw holes (12) and a connector strip at each end for fastening purposes. Based on the foregoing description of the conventional technology, room divider connectors of the past required many screws for fastening resulting in a complicated manual procedure that made it very difficult or impossible to complete assembly on uneven floors (especially in the case of the four-way connector indicated in FIG. 7). The shortcomings of the aforementioned conventional products await improvement.

In view of the aforementioned difficulties and disadvantages of conventional methods, the inventor of the invention herein has conducted intensive research and development, built three prototypes, added appropriate improvements and finally succeeded in developing a kind of improved structure room divider connector that overcomes all the problems of the conventional product.

The objective of the invention herein is to surpass the limitations of the aforementioned shortcomings with a innovative structure to enable the availability of a room divider connector of



a structural design that simplifies and makes more durable the process of conjoining room divider sections into integrated units.

The major advantage of the invention herein is to provide a kind of improved structure room divider connector that mainly consists of a protruding insertion tab inserted into the slots of the room divider sections, and in the center of each side of the aforesaid protruding insertion tab is a clamp tab; furthermore, there is an Allen-head screw in a countersunk hole inserted through a conjoining insertion tab and the aforesaid protruding insertion tab, and then tightened to conjoin two or more room divider sections.

To enable the examination committee personnel to acquire a full understanding of the structural innovations and functional advantages of the invention herein, the following drawings and detailed description of the preferred embodiments of the invention herein are attached below.



BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is an isometric drawing of a connector component of a conventional product utilized for conjoining two room divider sections into a straight-line configuration.

5 Figure 2 is an isometric drawing of an L-shaped 90-degree angle 5 connector component of a conventional product.

Figure 3 is an isometric drawing of a T-shaped three-way connector component of a conventional product.

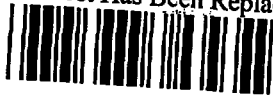
Figure 4 is an orthographic structural drawing of the connector 10 component (see FIG. 1) of a conventional product utilized for 10 conjoining two room divider sections into a straight-line configuration.

Figure 5 is an orthographic structural drawing of the L-shaped 90-degree angle connector component (see FIG. 2) of a conventional 15 product. 15

Figure 6 is an orthographic structural drawing of the three-way connector component (see FIG. 3) for conjoining room divider sections of a conventional product.

Figure 7 is an orthographic structural drawing of two L-shaped 20 connector components (see FIG. 2) fastened together to form a single 20 four-way connector component.

Figure 8 is an isometric drawing of the two-way connector



component of the invention herein utilized for conjoining two room divider sections into a straight-line configuration.

Figure 9 is an isometric drawing of another variation of the two-way connector component of the invention herein utilized for conjoining two room divider sections into a straight-line configuration.

Figure 10 is an isometric drawing of the triangular-shaped two-way connector component of the invention herein utilized for conjoining two room divider sections into a 90-degree configuration.

Figure 11 is an isometric drawing of the T-shaped three-way connector component of the invention herein utilized for conjoining three room divider sections.

Figure 12 is an isometric drawing of the cross-shaped four-way connector component of the invention herein utilized for conjoining four room divider sections.

Figure 13 is an orthographic structural drawing of the two-way connector component (see FIG. 8) of the invention herein utilized for conjoining two room divider sections into a straight-line configuration.

Figure 14 is an orthographic structural drawing of the other variation of the two-way connector component (see FIG. 9) of the invention herein utilized for conjoining two room divider sections



into a straight-line configuration.

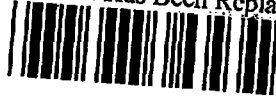
Figure 15 is an orthographic structural drawing of the triangular-shaped two-way connector component (see FIG. 10) of the invention herein utilized for conjoining two room divider sections.

5 Figure 16 is an orthographic structural drawing of the T-shaped 5 three-way connector component (see FIG. 11) of the invention herein utilized for conjoining three room divider sections.

Figure 17 is an orthographic structural drawing of the cross-shaped four-way connector component of the invention herein 10 utilized for conjoining four room divider sections. 10

COMPONENTS OF THE DRAWINGS

(100) Connector	(101) Protruding insertion tab	
(102) Screw hole	(110) Connector	
(111) Protruding Insertion tab	(112) Screw hole	
15 (113) Screw hole	(120) Connector	15
(121) Protruding insertion tab	(122) Screw hole	
(13) Threaded shaft	(14) Room divider section	
(15) Bolt	(16) Nut	
(20) Connector of invention herein.	(201) Insertion tab	
20 (200) Protruding insertion tab.	(202) Clamp tab	20
(203) Insertion slot seat	(21) Connector of invention herein.	



	(210) Protruding insertion tab	(211) Conjoining insertion tab	
	(212) Clamp tab	(213) Hook support	
	(214) Insertion slot seat	(22) Connector of invention herein.	
	(220) Protruding insertion tab	(221) Conjoining insertion tab	
5	(222) Clamp tab	(223) Hook support	5
	(224) Insertion slot seat	(3) Connector of invention herein.	
	(30) Protruding insertion tab	(301) Threaded hole	
	(31) Insertion tab	(311) Counter-sunk hole	
	(32) Clamp tab	(33) Hook support	
10	(34) Insertion slot seat	(40) Protruding insertion tab	10
	(401) Screw hole	(41) Conjoining insertion tab	
	(411) Counter-sunk hole	(42) Clamp tab	
	(43) Insertion slot seat	(5) Allen-head screw	
	(8) Cover plate	(7) Room divider section	
15	(4) Connector of invention herein.		15



DETAILED DESCRIPTION OF THE INVENTION

As indicated in FIG. 8 and FIG. 13, the protruding insertion tab (200) and the conjoining insertion tab (201) of the room divider connector (20) of the invention herein are inserted into the slots of the room divider section (7), furthermore, the conjoining insertion tab (201) is inserted into the inner end of the room divider section (7) and rotated 90 degrees with respect to the protruding insertion tab to form a cross-like juxtaposition and, as clearly indicated in FIG. 13, the conjoining tab (201) is inserted through to the inner sides of the two room divider sections, therefore, the invention herein only requires a hexagonal-head bolt (5) to firmly conjoin two room divider sections into a single unit.

As indicated in FIG. 9, another variation of the room divider connector (21) of the invention herein that can conjoin two room divider sections is shown and, as indicated in FIG. 14, the aforesaid variation of the room divider connector (21) is in the shape of a rectangular box with oblong solid protruding insertion tabs (210) in the front and rear, and each of the outer ends of the protruding insertion tabs (210) is a conjoining insertion tab (211); on the inside of the insertion tabs (211) are insertion slot seats (214) and at each end of the insertion slot seats (214) are



clamps tabs (212); furthermore, there is an Allen-head screw (5) in between that is inserted through and fastens together the conjoining insertion tab (211) and the protruding insertion tab (210). A conjoining insertion tab (211) is screw fastened to the outer end of each protruding insertion tab (210) on the aforesaid room divider connector (21), and the conjoining insertion tab (211) and the protruding insertion tab (210) are inserted into the holes of the room divider sections (7), furthermore, the conjoining insertion tab (211) is inserted through to the inner side of the room divider section (7) and rotated 90 degrees with respect to the protruding insertion tab (10) to form a cross-like juxtaposition, thereby utilizing the clamp tab (212) of the conjoining insertion tab (211), wherein the Allen-head screw (5) is turned to attain the objective of tightening the clamp tab (212) against the room divider section (7); furthermore, there is a hook support (213) angled inward on the two sides of the conjoining insertion tab (210) and the hook supports (213) are utilized to fasten cover plates (8) that serve to decorate and beautify the room divider. (The aforesaid room divider and cover plate are conventional products and shall not be described further since they are not within the scope of the invention herein.)

As indicated in FIG. 10, another variation of the room divider



connector (22) of the invention herein for conjoining two room divider sections at a 90-degree angle is shown and the aforesaid room divider connector (22) is triangular in shape and, furthermore, has oblong solid protruding insertion tabs (220) on two sides and, one side of the aforesaid protruding insertion tabs (220) is a hook support (223) that is angled inwards, additionally, there is an oblong solid conjoining insertion tab (221) on each end of the protruding insertion tabs (220) and on each of the inner sides of the protruding insertion tabs (220) is an insertion slot seat (224) and on each end of the protruding insertion tabs (220) is a clamp tab (222); furthermore, there is an Allen-head screw (5) inserted through and fastening together the conjoining insertion tab (221) and the protruding insertion tab (220). As indicated in FIG. 15, a conjoining insertion tab (221) of the aforesaid room divider connector (22) of the invention herein is screw fastened to each end of the protruding insertion tab (220), with the aforesaid conjoining insertion tab (221) and the protruding insertion tab (220) being inserted into the slot of the room divider section (7); furthermore, the conjoining insertion tab (221) is inserted into the room divider section (7) up to the inner side and rotated 90 degrees with respect to the protruding insertion tab (220) to form a cross-like juxtaposition, thereby utilizing the clamp tab (212) of the



conjoining insertion tab (221), wherein the Allen-head screw (5) is turned to attain the objective of tightening the clamp tab (222) against the room divider section (7); furthermore, there is a hook support (213) angled inward on the two sides of the conjoining insertion tab (220) and the hook supports (213) are utilized to fasten arced cover plates (8) that serve to decorate and beautify the room divider.

As indicated in FIG. 11, a three-way variation of the room divider connector (3) of the invention herein is shown, and the aforesaid room divider connector (3) is T-shaped in form, furthermore, there is an oblong solid protruding insertion tab (30) on each of the three sides, and on each of the upper and left ends of the aforesaid room divider connector (3) is a hook support (33) that is angled inward, additionally, there is an oblong solid conjoining insertion tab (31) on the outer end of the protruding insertion tab (30) and on each the inner side of the aforesaid conjoining insertion tabs (31) is an insertion slot seat (34), with a clamp tab (32) on each of the two ends of the insertion slot seat (34); furthermore, there is Allen-head screw inside the conjoining insertion tab (31) that is inserted through and fastens together the conjoining insertion tab (31) and the protruding insertion tab (30); as indicated in FIG. 16, the conjoining



insertion tab (31) is screw fastened to the outer edge of each protruding insertion tab (30) on the three ends of the aforesaid room divider connector (3), and the aforesaid conjoining insertion tab (31) and the protruding insertion tab (30) are inserted into the slot of the room divider section (7), furthermore, the conjoining insertion tab (31) is inserted up to the inner side of the room divider section (7) and rotated 90 degrees with respect to the protruding insertion tab (31) to form a cross-like juxtaposition, thereby utilizing the clamp tab (32) of the conjoining insertion tab (31), wherein the Allen-head screw (5) is turned to attain the objective of tightening the clamp tab (32) against the room divider section (7); furthermore, on the upper and left ends of the aforesaid room divider connector (3) is a hook support (33) that is angled inward and the aforesaid hook supports (33) are utilized to fasten cover plates (8) that serve to decorate and beautify the room divider.

As indicated in FIG. 12, a four-way variation of the room divider connector (4) of the invention herein is shown, and the aforesaid room divider connector (4) is in the shape of a box-like enclosure with oblong solid protruding insertion tabs (40) on each of the four sides, and on each end of the aforesaid protruding insertion tabs (40) is an oblong solid conjoining insertion



tab (41), and on the inner sides of the conjoining insertion
tabs (41) are insertion slot seats (43), and on each of the two ends
of the insertion slot seats (43) is a clamp tab (42); furthermore,
there is an Allen-head screw (5) inside the conjoining insertion
5 tab (41) that is inserted through and fastens together the 5
conjoining insertion tab (41) and the protruding insertion tab (40).
As indicated in FIG. 17, there is a conjoining insertion tab (41)
screw fastened to the protruding insertion tab (40) on each side of
the aforesaid room divider connector (4) and the aforesaid
10 conjoining insertion tab (41) and protruding insertion tab (40) are 10
inserted into the room divider section (7), with the conjoining
insertion tab (41) inserted up to the inner side of the room divider
section (7) and rotated 90 degrees with respect to the protruding
insertion tab (40) to form a cross-like juxtaposition, thereby
15 utilizing the clamp tab (42) of the conjoining insertion tab (41), 15
wherein the Allen-head screw (5) is turned to attain the objective
of tightening the clamp tab (42) against the room divider
section (7).

The innovation of the invention herein is constituted by the
20 aforementioned conjoining insertion tab and the aforementioned 20
protruding insertion tab, inside of which is an Allen-head screw
inserted through and fastening together the aforesaid conjoining



insertion tab and protruding insertion tab, utilizing the insertion of the conjoining insertion tab and the protruding insertion tab into the slot of the room divider section and then rotated to tighten the conjoining insertion tab onto the threaded shaft, 5 thereby enabling the clamp tab of the conjoining insertion tab to be 5 fastened against the room divider section and effect securing the conjoining insertion tab to the room divider section.

Based on the foregoing description, the design of the invention herein has more advantages than the conventional product and are 10 listed as follows: 10

The conjoining procedures of conventional room divider connectors are complicated and requires the utilization of a large number of screws to conjoin room divider sections together. Furthermore, it is difficult to align the screw holes if the floor 15 is not level and may even result in the impossibility of completing 15 a portion or the entire conjoining process. However, the invention herein utilizes an Allen-head screw to fasten together the conjoining insertion tab and the protruding insertion tab to attain the objective of enabling the rapid and uniform conjoining of room 20 divider sections, and which provides a greater degree of 20 progressiveness and practicality.



CLAIMS

What is claimed:

1. A kind of improved structure room divider connector, the design of which includes:

5 A connector;

5

A protruding insertion tab of oblong shape with a threaded hole and the aforesaid protruding insertion tab is inserted into the slots of the room divider sections;

A conjoining insertion tab of oblong shape with one flat side
10 and the other side having an insertion slot seat inside, and inside 10
the aforesaid conjoining insertion tab is countersunk hole,
furthermore, there is an Allen-head screw inserted through and
fastening together the aforesaid protruding insertion tab and the
aforesaid conjoining insertion tab, and there is clamp tab on each
15 of the two sides of insertion slot seat of the aforesaid conjoining 15
insertion tab;

An Allen-head screw that is inserted through and fastens
together the aforesaid protruding insertion tab and the aforesaid
conjoining insertion tab;



In summation of the foregoing description, the invention herein is an improvement of conventional product shortcomings and, in terms of application, is the first innovation of its kind within this respective product category. Furthermore, the practical functions of the invention herein can be fully realized and unquestionably exhibits "originality" and the disclosure of the structure enables the attainment of the aforementioned objectives of the invention herein, as well as compliance with condition of "practicality" stipulated for the granting of patent rights. Therefore, the invention herein is hereby submitted in application for patent rights in lawful accordance with the condition of "innovation" in order that examination may be conducted and the commensurate patent right granted.



The aforementioned improved structure room divider connector of the invention herein consists of the aforementioned protruding insertion tab and the aforementioned conjoining insertion tab which are inserted into the slots of the room divider sections, wherein
5 the aforesaid conjoining insertion tab is inserted up to the inner 5 sides of the room divider sections and then rotated 90 degrees with respect to the aforementioned protruding insertion tab to form a cross-like configuration, thereby utilizing the clamp tab of the aforesaid conjoining insertion tab, wherein the aforesaid Allen-head
10 screw is turned to attain the objective of tightening the aforesaid 10 clamp tab against the room divider section and thus result in an improved structural method of utilizing screw-type fasteners to conjoin room divider sections together.

2. As mentioned in Claim 1 of the improved structure room
15 divider connector invention herein, the room divider connector of 15 the invention herein can be in the form of oblong solid that can be utilized as a two-way connector that conjoins room divider sections within the same plane and which have oblong protruding insertion tabs on the front and rear.



3. As mentioned in Claim 1 of the improved structure room divider connector invention herein, the room divider connector of the invention herein can be in the form of oblong solid that can be utilized as a two-way connector that conjoins room divider sections at a greater distance apart, wherein there is an oblong protruding insertion tab on the front and rear, and on the two sides of the aforementioned protruding insertion tabs are hook supports angled inward.

4. As mentioned in Claim 1 of the improved structure room divider connector invention herein, the room divider connector of the invention herein can be triangular in form and utilized to conjoin two room divider sections at a 90-degree angle, with the two sides having oblong protruding insertion tabs and on each side of the aforesaid protruding insertion tabs is a hook support angled inward.

5. As mentioned in Claim 1 of the improved structure room divider connector invention herein, the room divider connector of the invention herein can be T-shaped and utilized to conjoin three room divider sections in a T-shaped configuration, and on three sides of the aforesaid room divider connector are oblong conjoining



insertion tabs, furthermore, at the U-shaped openings at the two ends of the aforesaid room divider connector are hook supports angled inward.

6. As mentioned in Claim 1 of the improved structure room
5 divider connector invention herein, the room divider connector of 5
the invention herein can be in the form of a rectangle and utilize
to conjoin four room divider sections in cross-shaped configuration
and on each of the four sides of the aforesaid room divider
connector is an oblong protruding insertion tab.