

[54] MODULAR PARTITION ARRANGEMENT

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[51] Int. Cl. E04b 2/74

[58] Field of Search 52/243, 238, 239, 282, 52/281, 63, 106, 241, 726, 242; 256/24, 25, 65, 73; 160/135

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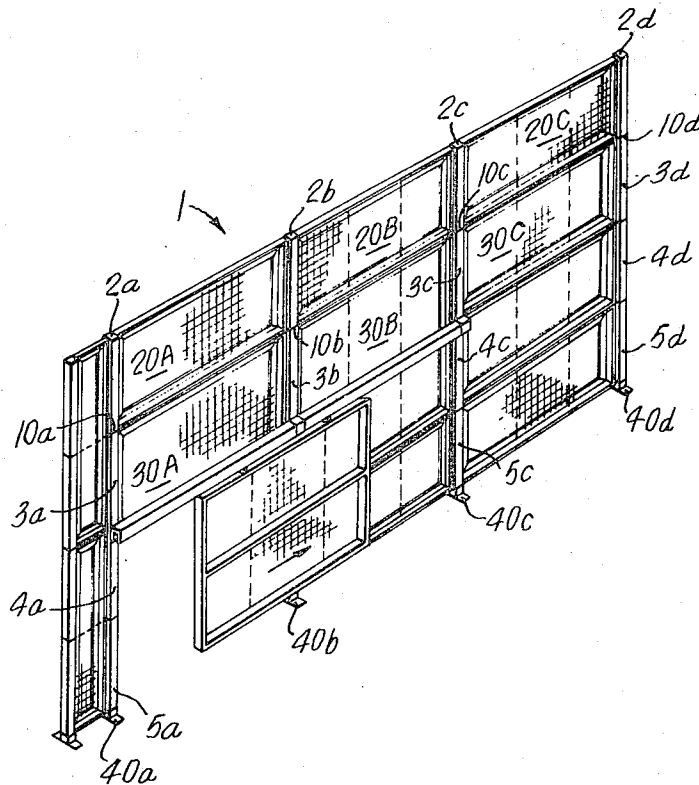
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[57] ABSTRACT

The invention relates to a modular system for building partition arrangements and to the modules used in building the arrangement. The invention is particularly applicable to wire mesh partition arrangements. The modules used comprise standard sized panel members, sleeve-like posts whose length corresponds to the height of the panel members, and resilient inserts which are received in the posts. The system is built up by attaching the posts together, using inserts between posts and inserted in two adjacent posts, to form columns. Panel members are then secured to the posts between columns to form the walls of the arrangements. Base members, consisting of a plate and a post, are used to anchor the arrangements to the floor, and base inserts, comprising an insert mounted on a base plate, will secure the arrangement to the ceiling.

7 Claims, 7 Drawing Figures



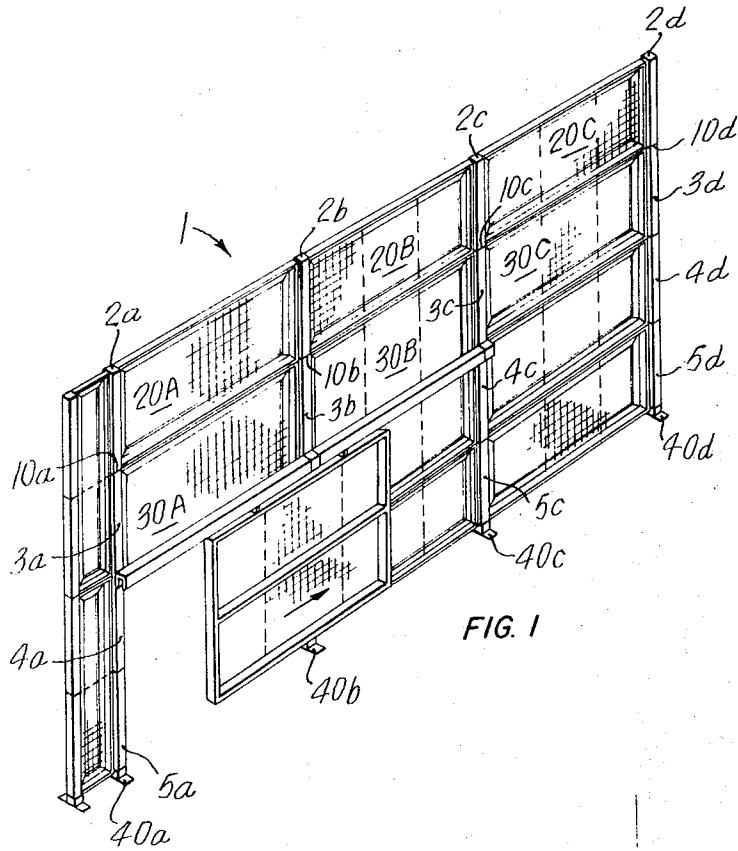


FIG. 1

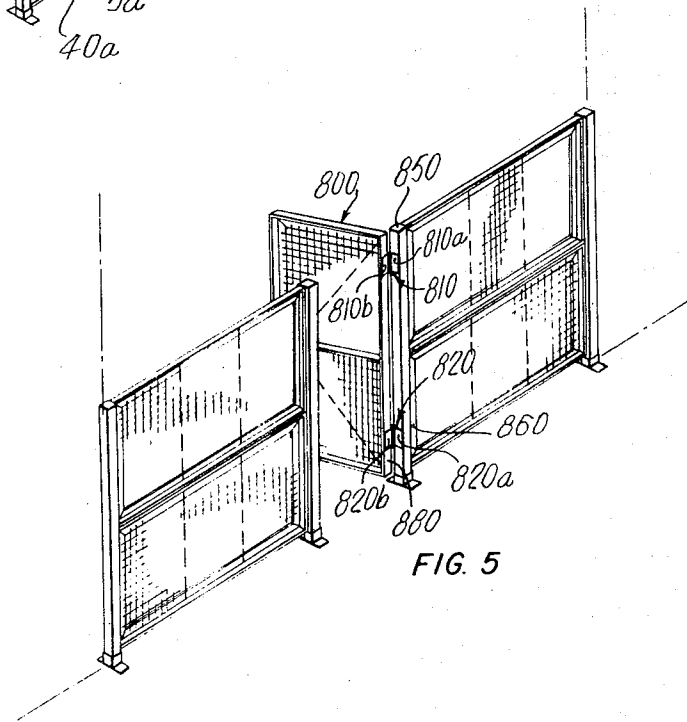


FIG. 5

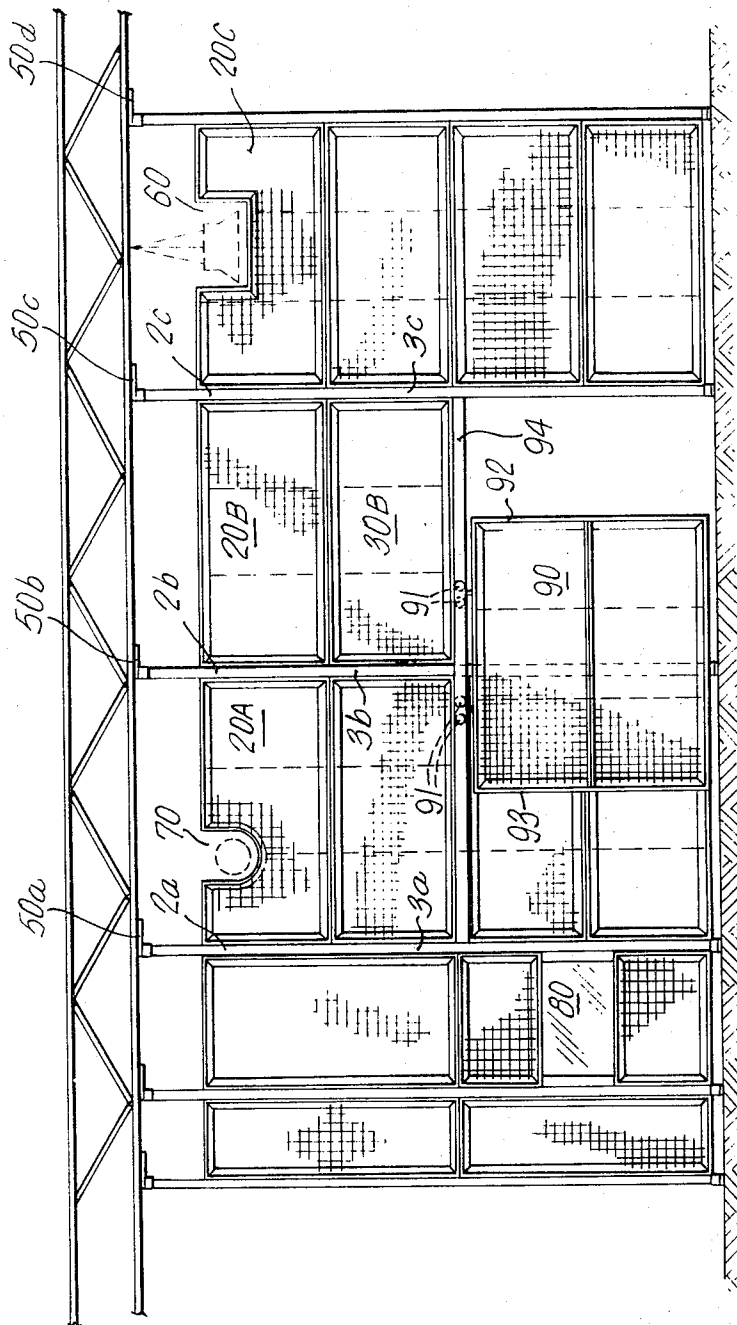


FIG. 2

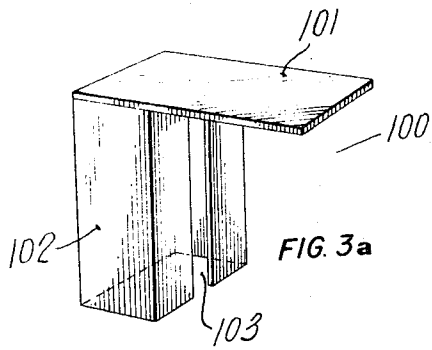


FIG. 3a

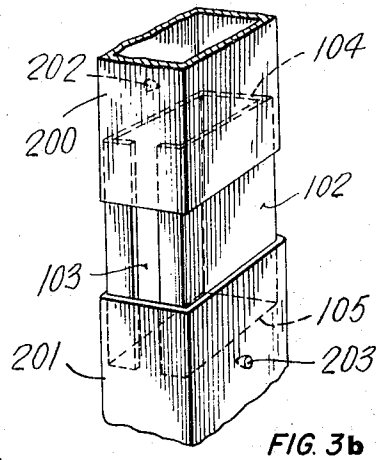


FIG. 3b

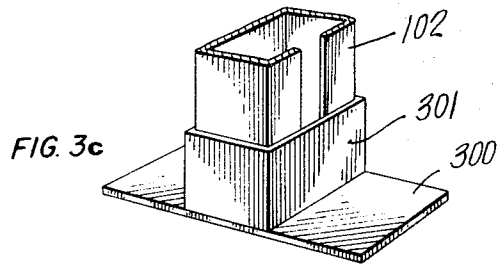


FIG. 3c

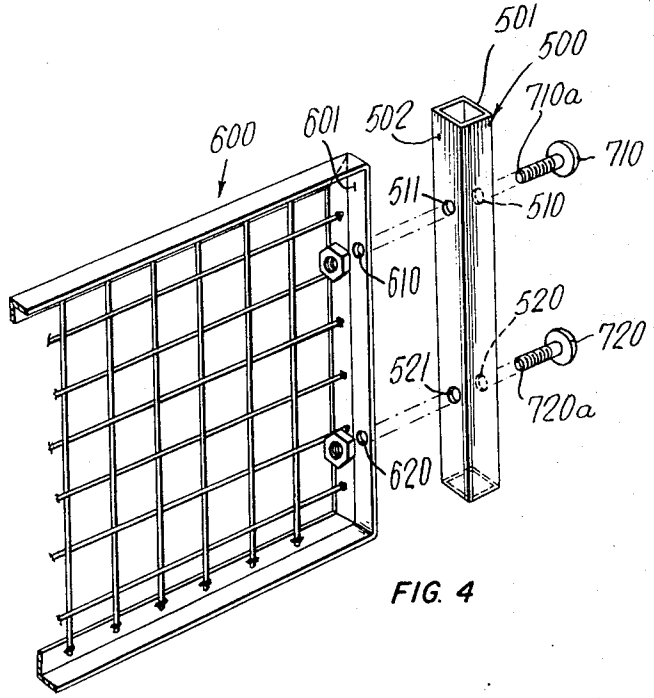


FIG. 4

MODULAR PARTITION ARRANGEMENT

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to a modular system for building partition arrangements and to the modules used in building the arrangement. More specifically, this invention relates to a modular system for building wire mesh partition arrangements and to the modules used in building the arrangement.

2. Description of the Prior Art

In accordance with the present state of the art, wire mesh partition systems for any facility must be made to order to fit the size and shape of the facility. Measurements of the facility are taken, and the system parts are manufactured at a factory and shipped to the facility for assembly. Installation of such systems leads to great difficulty in, for example, matching the parts correctly and handling large parts or sections. Because of these difficulties, it is normally necessary to have personnel from the factory available at the installation site at undetermined intervals, and two or three people are needed to perform the installation.

The partition arrangements so built are not easily transposed from one location to another as they are designed specifically for one location. In addition, because of the requirement of the presence of factory personnel, it is not economically feasible to provide such facilities outside of a fifty-mile radius from the factory.

SUMMARY OF THE INVENTION

In accordance with the invention, a modular system for building partition arrangements comprises a first sleeve-like post having an internal shape of internal dimensions, a second sleeve-like post having an internal shape of internal dimensions corresponding substantially to the internal shape and dimensions of said first sleeve-like post, and a resilient insert member having an external shape corresponding substantially to the internal shape of said first and second sleeve-like posts, and external dimensions slightly in excess of the internal dimensions of said first and second sleeve-like posts, said insert member being adapted to be inserted in one end of each of said sleeve-like posts at different ends of said insert whereby to join together said sleeve-like posts.

The system further comprises a panel member adapted to be secured at one edge of one of said sleeve-like posts.

Preferably, said internal and external shapes comprise box-like shapes.

Preferably again, said insert comprises a box-like shape having four walls, one of said walls comprising a longitudinal slot along the entire length thereof.

In accordance with a feature of the invention, the interiors of said first and second sleeve-like posts each comprise a protrusion, each protrusion adapted to engage a different end of said insert member.

A module for a system in accordance with the invention comprises a sleeve-like post having an internal shape of internal dimensions and a panel member adapted to be secured at an edge thereof. Preferably, the panel member comprises a wire mesh panel member.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention will be better understood by an examination of the following description together with the accompanying drawings, in which:

FIG. 1 illustrates one partition arrangement assembled with modules in accordance with the invention;

FIG. 2 illustrates a second partition arrangement assembled with modules in accordance with the invention;

FIGS. 3a, 3b and 3c illustrate three elements of the inventive system;

FIG. 4 shows how a panel is secured to a sleeve-like post; and

FIG. 5 illustrates a third partition arrangement assembled with modules in accordance with the invention.

Similar reference numerals refer to similar parts in all drawings.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring now to FIG. 1, a partition arrangement indicated generally at 1, consists of a multiplicity of sleeve-like posts 2a to 2d, 3a to 3d, 4, 5, etc., at the different levels indicated by the 2, 3, 4 and 5 of the reference numerals indicating the sleeve-like posts. The posts are hollow, pipe-like members and are preferably box-like in cross-section. Sleeve-like post 2a is connected to post 3a, 2b to 3b, and 2c to 3c, etc. at the joints 10a, 10b, 10c, etc. as will be described below.

Panel members 20A, 20B and 20C are contained between two posts 2a, 2b, and 2b, 2c, and 2c, 2d respectively and are secured at two ends thereof to the posts as will be described below.

Base members 40a, 40b, 40c and 40d are mounted on the floor. A detailed description of these members will be given below. Posts of the 5 series are mounted on the base plates.

Preferably, the panels are of standard sizes, e.g., 8.0 feet \times 4.0 feet or 8.0 feet \times 3.0 feet or 8.0 feet \times 2.0 feet. The post length will also be standard and will correspond to the height of the panels, e.g., 4.0 feet, 3.0 feet and 2.0 feet respectively.

In FIG. 2, the arrangement is supported at the ceiling by base inserts 50a, 50b, 50c and 50d. The base inserts will be described with reference to FIG. 3. In addition, the arrangement contains openings 60 and 70 for a light fixture and a pipe respectively. A window 80 is also included in the arrangement to illustrate the versatility of the arrangement using the modular system. The openings and windows are also preferably of standard sizes.

A sliding door 90 includes rollers 91 and roller track 94. The roller track can be mounted on the adjacent posts 3b and 3c in the same way that the panels are mounted on the posts. Alternatively, the roller track could be made as a part of or integral with the panel member 30B.

It will, of course, be understood that the door could be made to slide up and down instead of across. In this case, roller tracks would be mounted on the posts 2b, 3b and 2c, 3c. The rollers would be mounted on the sides 92 and 93 of the door 90 for engagement with the roller tracks.

Elements of the system are illustrated in FIG. 3. FIG. 3a shows a base insert member which comprises a plate

member **101** and a resilient insert **102**. In the preferred embodiment, the insert comprises a box-like member with a longitudinal slot **103** along the full length of the box-like member. The slot is the means by which the resiliency in the insert is provided as this provides an area of give to permit the insert to be forced into a post whose internal dimensions are somewhat smaller than the external dimensions of the insert. After the insert has been placed in such a post, the slot will open up and so retain the insert in the post in tight-fitting engagement.

FIG. 3*b* illustrates an insert which would be utilized at joints **10a**, **10b**, etc., of FIG. 1 or similar such joints. The insert **102** again comprises a slot **103**; however, it is not mounted on a plate as is the FIG. 3*a* embodiment. The insert receives post **200** over its end **104** and post **201** over its end **105**. The posts will preferably contain internal protrusions **202** and **203** respectively which will engage with the ends **104** and **105** respectively of the insert **102** and so prevent the insert from further entering into the posts **200** and **201** respectively.

Although the insert is preferably a box-like member, it is within the scope of the invention to use other shapes for the insert, for example, cylindrical or triangular shapes. Of course, the internal shape of the sleeve-like posts will have to conform to the external shape of the insert as is obvious. Irregular shapes are also within the scope of the invention.

The base member of FIG. 3*c* comprises a base plate **300** and a sleeve member **301**. The sleeve member is adapted to receive an insert **102** as is clearly shown in the Figure.

By means of these elements, it is possible to anchor an arrangement to the floor (base member), to the ceiling (base insert) and to connect one post to another (insert). It will, of course, be apparent that the system could be anchored to the ceiling with the base member of FIG. 3*c*, and that the base insert could be used on the floor as a corner post where the added support of the two ended plate of the base member is not needed. In use as a corner post, the plate **101** would be aligned with one of the two walls forming the corner.

Again, these are not the only elements possible in accordance with the invention. Thus, it would be possible to have a plate perpendicular to plate **101** in FIG. 3*a* to provide added support at the corners, if required. Or, the plate **300** could be modified to take the shape of a cross with four retaining ends. The above elements and modifications are only examples and are not exhaustive of the possibilities potentially available in accordance with the invention.

FIG. 4 illustrates how a panel member is secured to a post. The post **500** comprises openings **510** and **520** in wall **501** thereof and openings **511** and **521** in wall **502** thereof. The openings **510** and **511** are aligned with one another as well as with opening **610** in wall **601** of the panel member **600**. Openings **520** and **521** are similarly aligned with one another as well as with opening **620** in wall **601** of panel member **600**. Screw **710** is adapted to be received by and to pass through the openings **510**, **511** and **610**, and screw **720** is similarly adapted to be received by and to pass through openings **520**, **521** and **620**. When the screw has been inserted through the respective openings, the post and the panel member are brought together and a nut or other means is fastened to the ends **710a** and **720a** of

screws **710** and **720** respectively to thereby secure the panel to the post.

Although one structure has been described for securing the panel to the post, it will be apparent that other means could be employed in accordance with the invention. Thus, both the panels and posts could comprise aligned snap-in means which would secure them to each other. Or, screw members could be integral with the panel walls or the post walls, and the integral screws could be aligned with openings in the walls of the opposite members. It is merely necessary that means for securing the panel members to the posts be provided in order to practice the invention.

FIG. 5 shows how a swinging door **800** would be installed in accordance with the teachings of the invention. Hinges **810** and **820** comprise sides **810a**, **810b** and **820a**, **820b** respectively. The sides **810a** and **820a** of the hinges may be secured through openings similar to openings **510**, **511** and **520**, **521** in the posts **850** and **860**. The sides **810a** and **820b** could be secured by screws through openings similar to openings **610** and **620** in door panel wall **880**. The door could be made a swing-out door by merely reversing the hinges. Or, the door could be made to swing on its left side instead of its right side as shown, as the posts on the left-hand side also contain openings for receiving securing screws, and both walls of the door could be made with openings, or the door could be turned over so that its openings would be on the left-hand wall instead of the right-hand wall as shown. It can thus be seen that a great deal of versatility is provided insofar as the side on which the door will swing and the direction in which it will swing are concerned.

The system components are preferably made of metal, such as steel, but it is also possible to practice the invention using a strong and durable synthetic material. Synthetic material could be especially useful for the inserts, in which case it may be possible to use solid inserts.

An arrangement using the modules may be built up as follows:

In the area where the partition is to be located, the outline of the partition is first laid out with chalk marks on the floor. Base member locations are marked off at intervals, for center to center location of the base members, corresponding to the width of the panel members, plus the width of one post. Thus, if the panel member is 8.0 feet \times 4.0 feet and the posts are 1 inch, then the distance between centers of the base members would be 8 feet 1 inch. Locations are also marked for base members for filler panels and doors. Holes are then drilled in the floor at the base member locations and plugged, if the floors are concrete, with lead plugs. The base members are then placed in position and secured, but not tightly, to the floor with screws. Inserts and posts are now used to build up columns at each base member location. Base inserts may be used to anchor the columns to the ceiling. Standard sized panels are now secured to the posts between each two adjacent posts, with filler panels, windows and doors being installed as required. After the system is entirely assembled, the screws in the base members and base inserts are fastened tightly.

It can be seen that, with the inventive system, because all panels and posts are of standard sizes, it is not necessary to build arrangements designed specifically to fit any facility. Rather, any facility can be fitted with

the standard sized parts. In addition, any height can be accommodated by using the base inserts as extension members. Further, as only relatively small parts are being handled, moved or placed at any time, e.g., panels are or can be of the order of 8.0 feet x 4.0 feet, the entire system can be assembled by only one person. Because of the ease of assembly, factory personnel are not required, and because of the standard sizes, convenient and economic shipping arrangements can be made. In addition, it is a simple matter to take the arrangement apart and use the same standard items to build an arrangement for a different sized or shaped facility.

Although several embodiments have been described above, this was for the purpose of illustrating, but not limiting, the invention. Various modifications which will come readily to the mind of one skilled in the art are within the scope of the invention as defined in the appended claims.

I claim:

- 1. A partition arrangement built from modules; said modules comprising sleeve-like posts having substantially identical internal shapes of substantially identical internal dimensions; wire mesh panel members, each panel member being enclosed by a frame member, each panel member being adapted to be secured to an edge of said sleeve-like posts at an edge of a frame member thereof; said sleeve-like posts being of a predetermined standard length; said panel members being of a predetermined standard height and width; the length of each of said posts corresponding to the height of said panel members; and resilient insert members having an external shape corresponding substantially to the internal shape of said sleeve-like posts, and external dimensions slightly in excess of the internal dimensions of said sleeve-like posts; said inserts being adapted to be inserted in one end of two sleeve-like posts at opposing ends of said inserts whereby to join together said sleeve-like posts;

base members comprising a sleeve-like member mounted on a base plate, said base plate being adapted to be anchored to a floor surface;

said arrangement comprising:

- a plurality of base members anchored to said floor surface on a line forming an outline of said arrangement, the distance between two adjacent base members corresponding substantially to the width of said panel members;
- a column extending upwardly from each said base member, said columns each comprising a plurality of the sleeve-like posts joined together by said resilient inserts, each said column being joined to its corresponding base member by one of said inserts;

and panel members between adjacent sets of sleeve-like posts, said panel members being secured to the edges of said adjacent posts.

2. A system as defined in claim 1, wherein said insert comprises a box-like shape having four walls, one of said walls comprising a longitudinal slot along the entire length thereof.

3. A system as defined in claim 2, wherein the internal shapes of said sleeve-like posts comprise box-like shapes, and wherein each sleeve-like post comprises a protrusion at the interior thereof, said protrusion being adapted to engage the end of the insert inserted in said post.

4. A module as defined in claim 1, wherein said panel member is secured to said sleeve-like post by a screw and nut arrangement.

5. An arrangement as defined in claim 1, and further comprising a plurality of base inserts, said base inserts comprising inserts mounted on base plates adapted to be anchored to a ceiling surface;

each said column being terminated by a base insert anchored to said ceiling surface.

6. An arrangement as defined in claim 5, and further comprising window means.

7. An arrangement as defined in claim 5, and further comprising door means.

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