



US 20150020470A1

(19) **United States**
(12) **Patent Application Publication**
HARRINGTON et al.

(10) **Pub. No.: US 2015/0020470 A1**
(43) **Pub. Date: Jan. 22, 2015**

(54) **MODULAR WALLING SYSTEMS**

Publication Classification

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(51) **Int. Cl.**
E04B 2/74 (2006.01)
E04B 2/72 (2006.01)
(52) **U.S. Cl.**
CPC *E04B 2/7448* (2013.01); *E04B 2/72*
(2013.01)
USPC *52/582.1*; *52/745.1*

(21) Appl. No.: **14/506,042**

(22) Filed: **Oct. 3, 2014**

(57) **ABSTRACT**

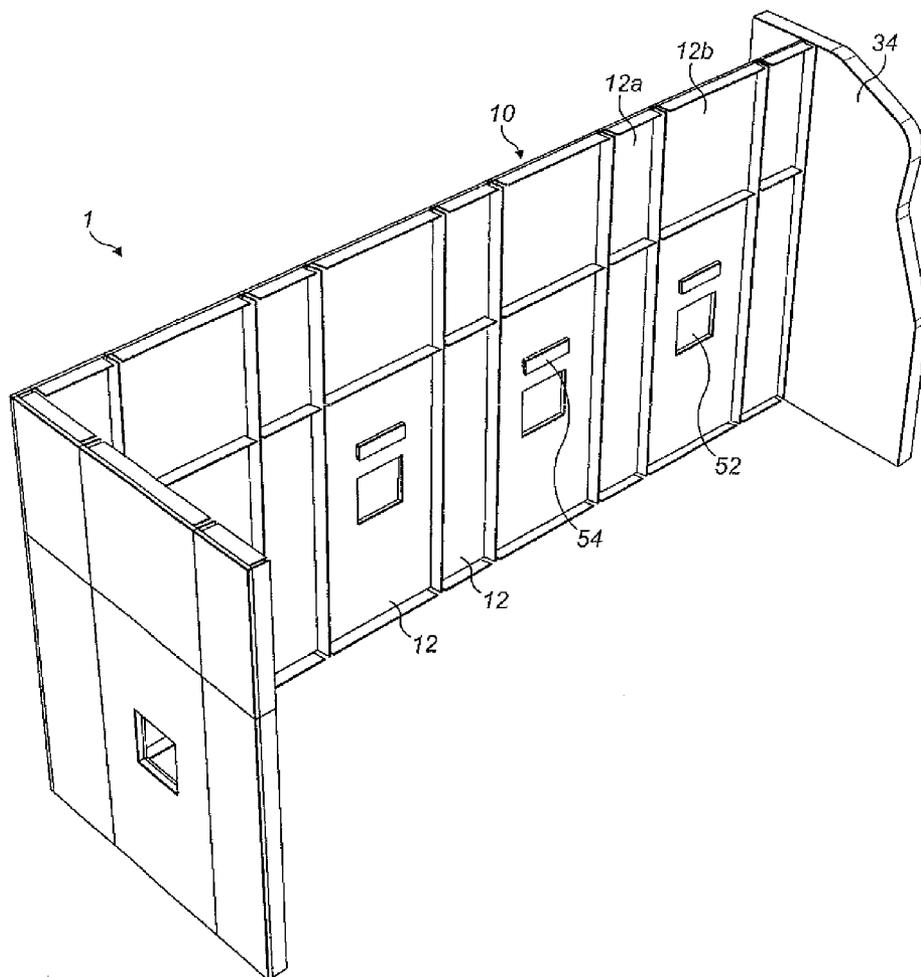
Related U.S. Application Data

(63) Continuation of application No. 13/234,753, filed on
Sep. 16, 2011, now abandoned.

Foreign Application Priority Data

Sep. 24, 2010 (GB) 1016051.3
Mar. 1, 2011 (GB) 1103471.7

A system for the modular construction of partitions, the system comprising a plurality of modules, each module comprising a security panel and a frame, the security panel being attached to one or more surface of the frame, the frame comprising at least one box shaped profile, each profile being adapted for connection to an adjacent profile of an adjacent module or to a structural building member.



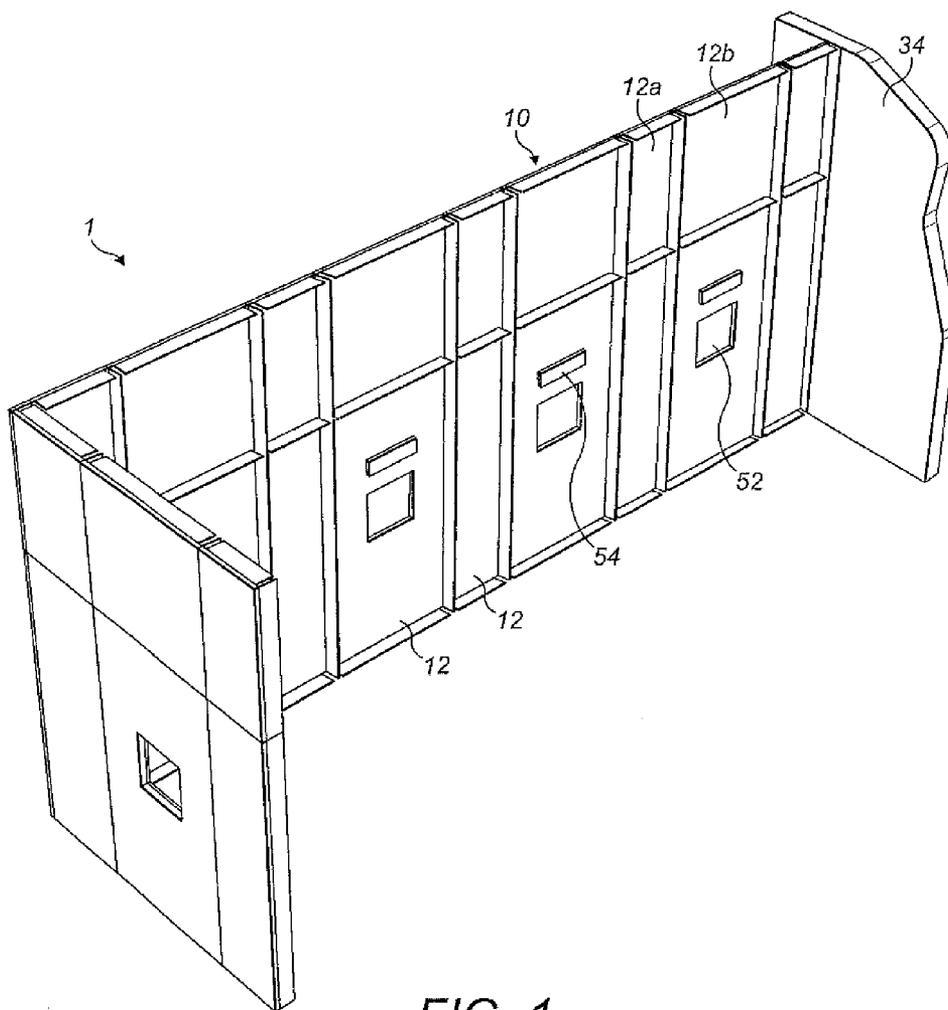


FIG. 1

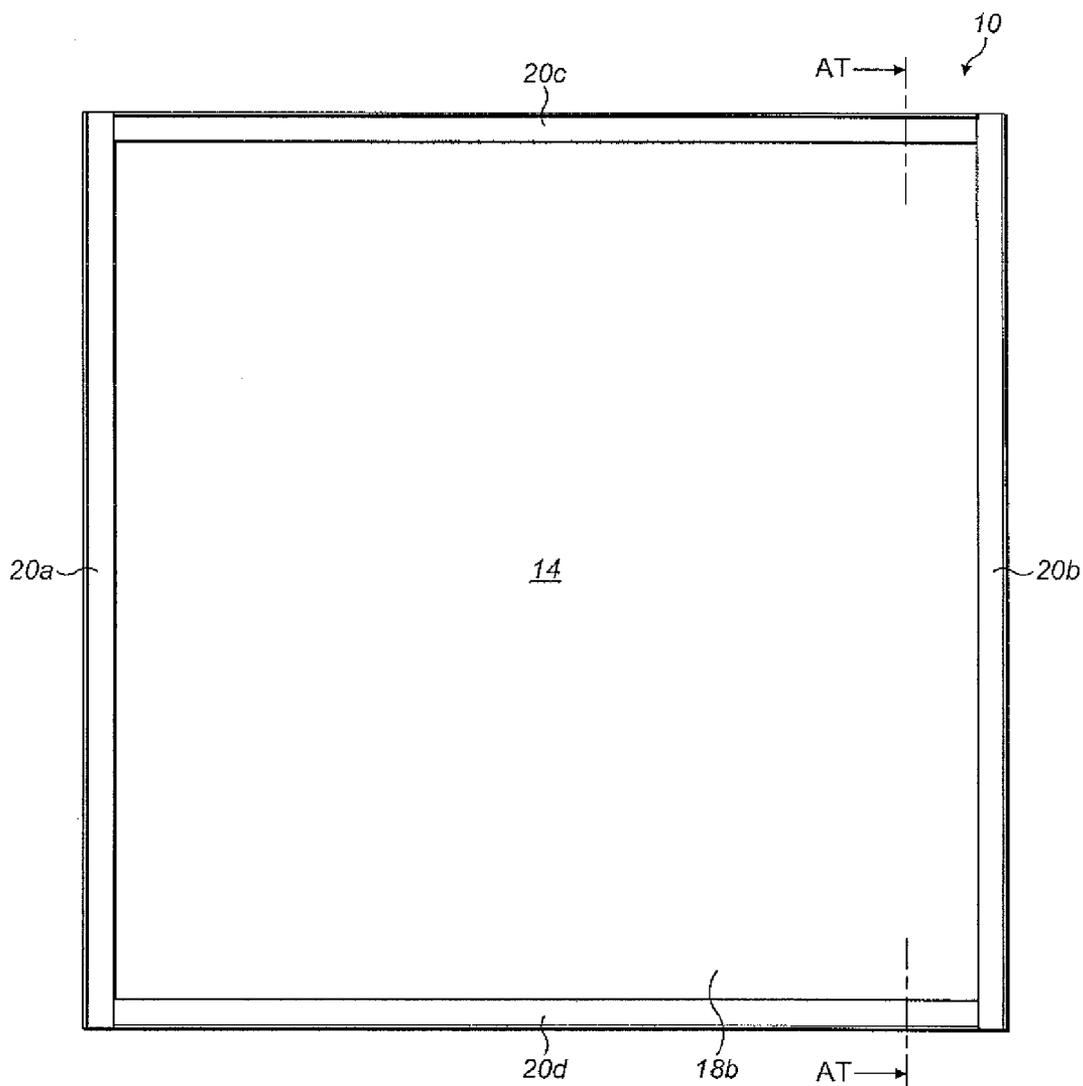


FIG. 2

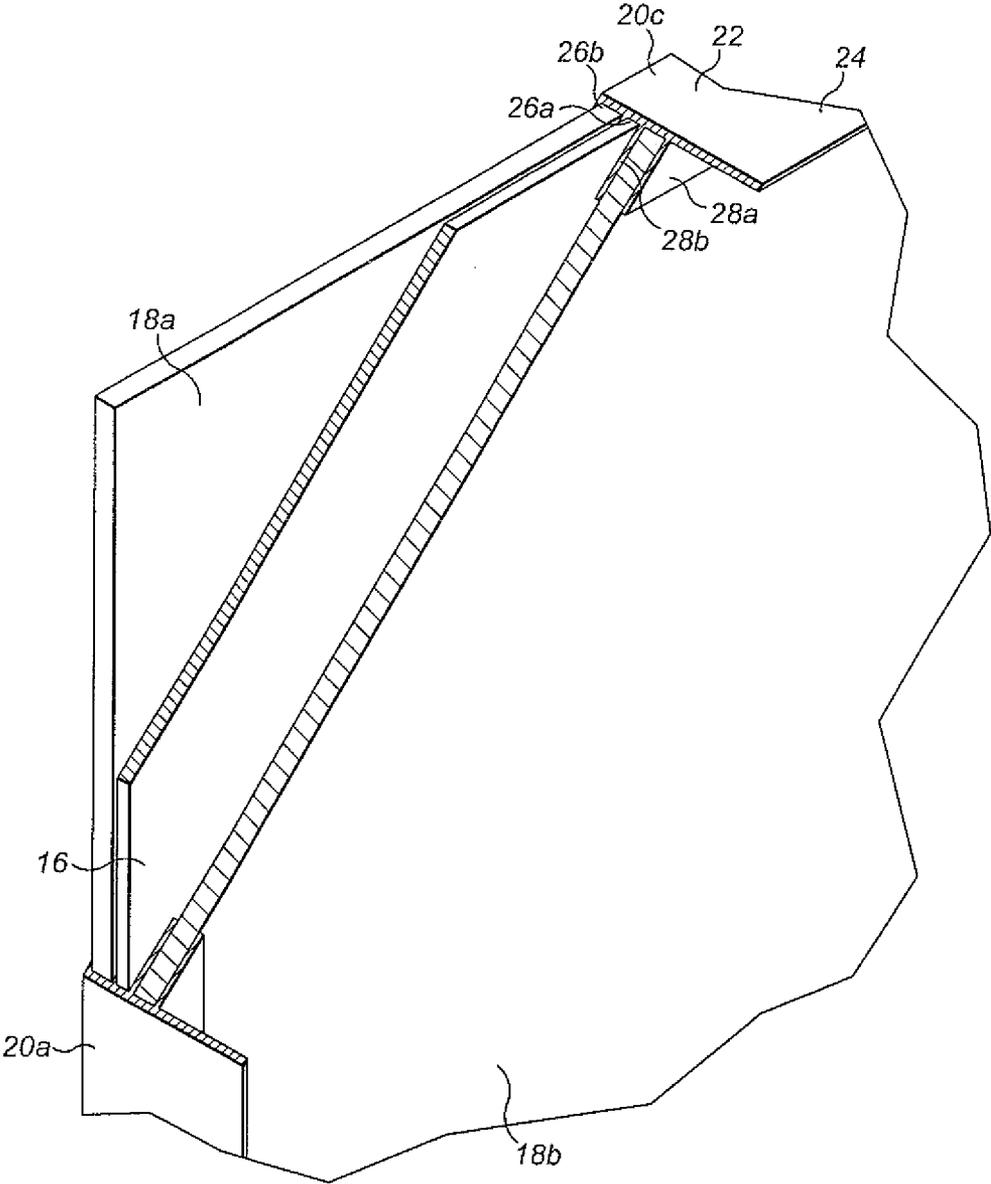


FIG. 3

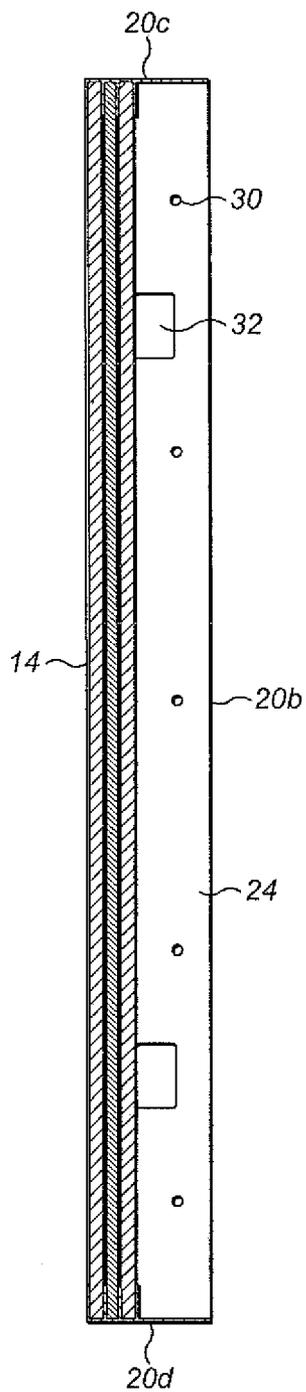


FIG. 4

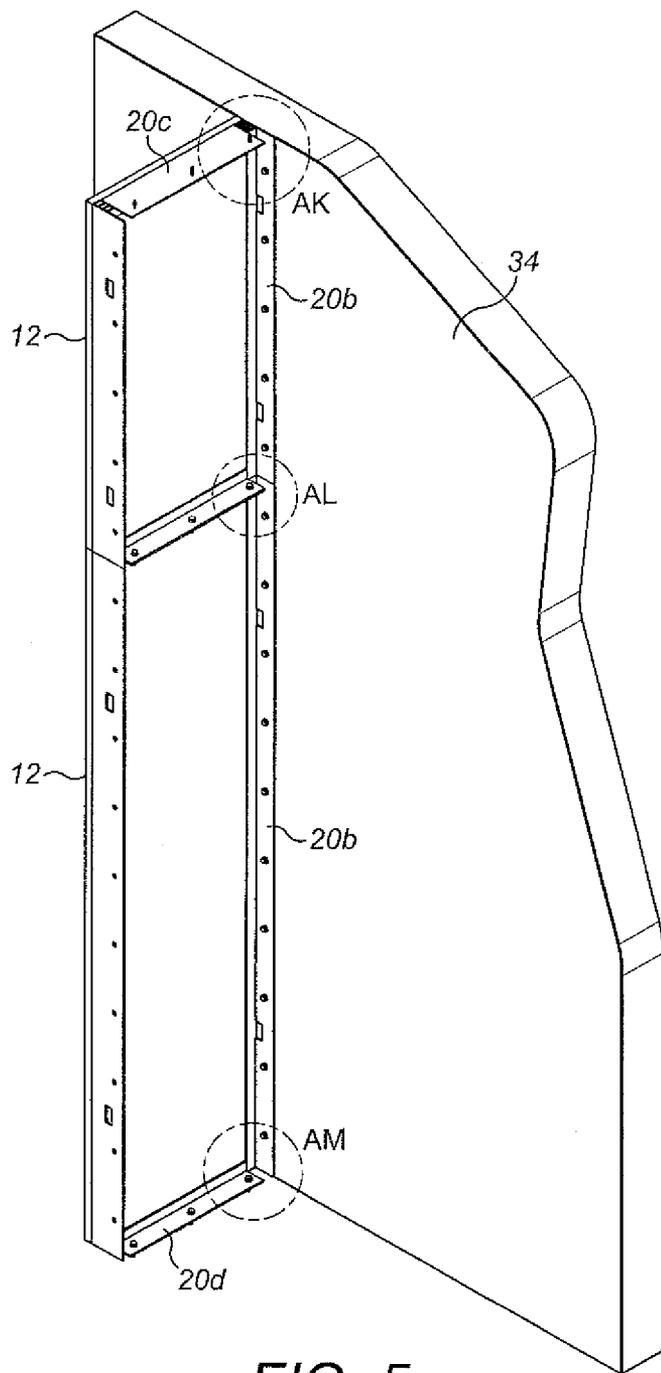


FIG. 5

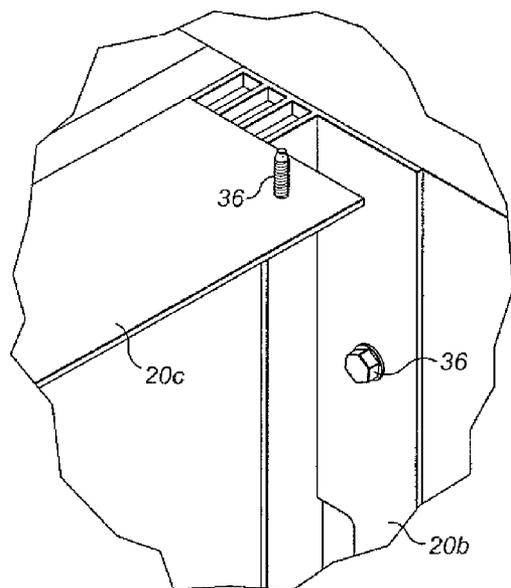


FIG. 6

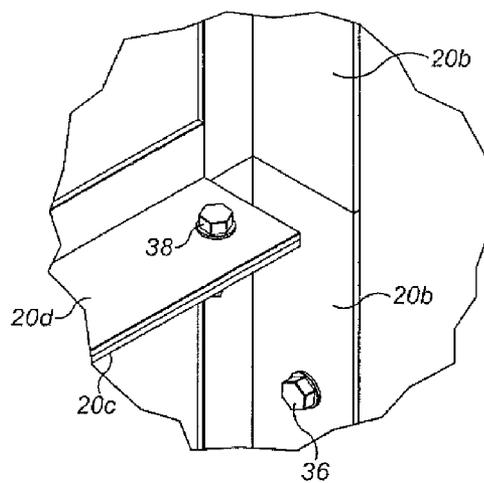


FIG. 7

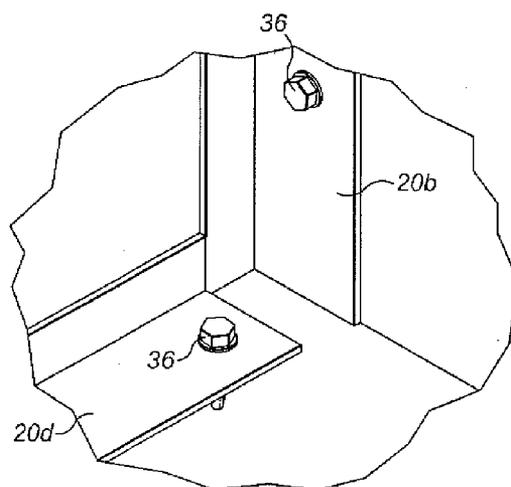


FIG. 8

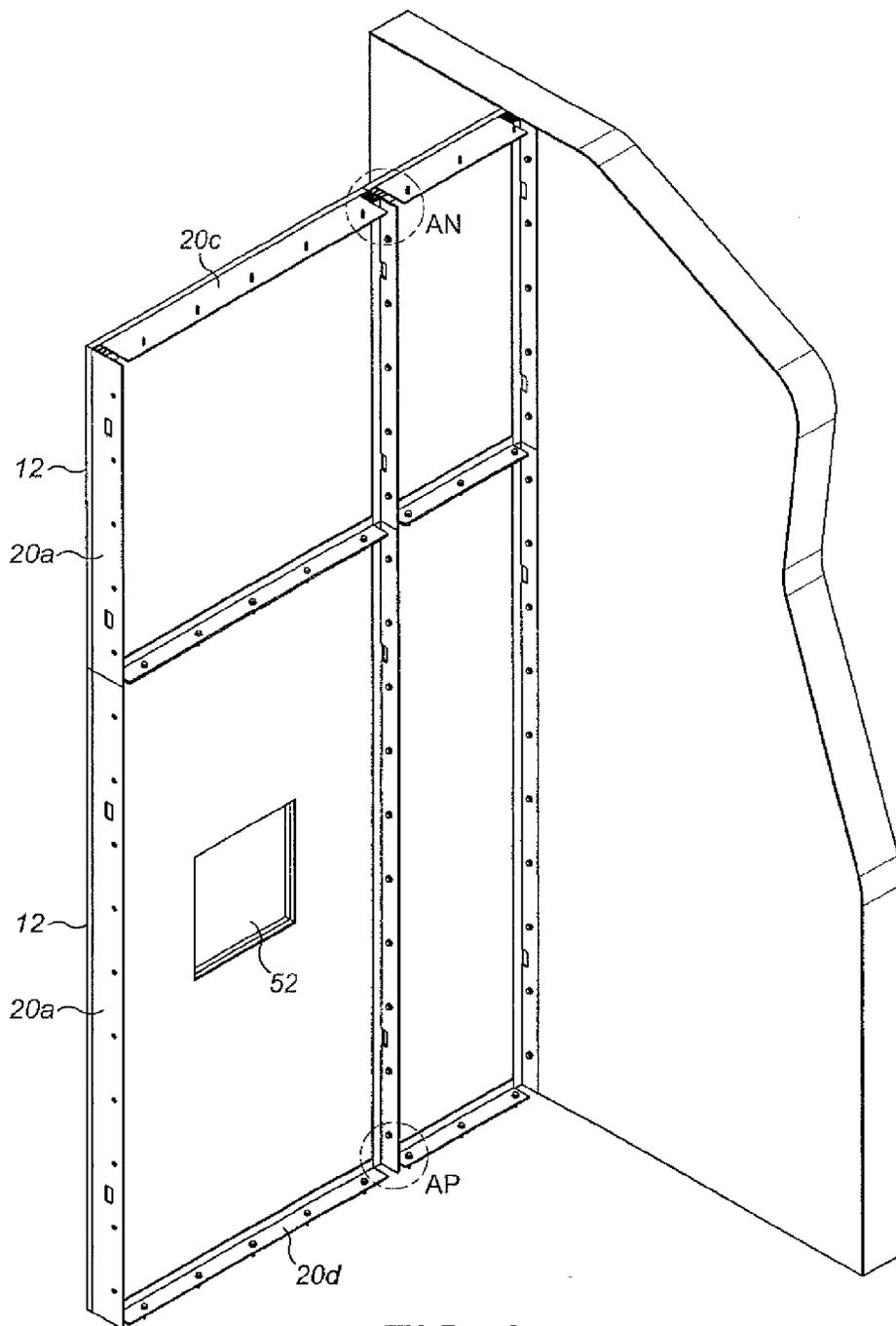


FIG. 9

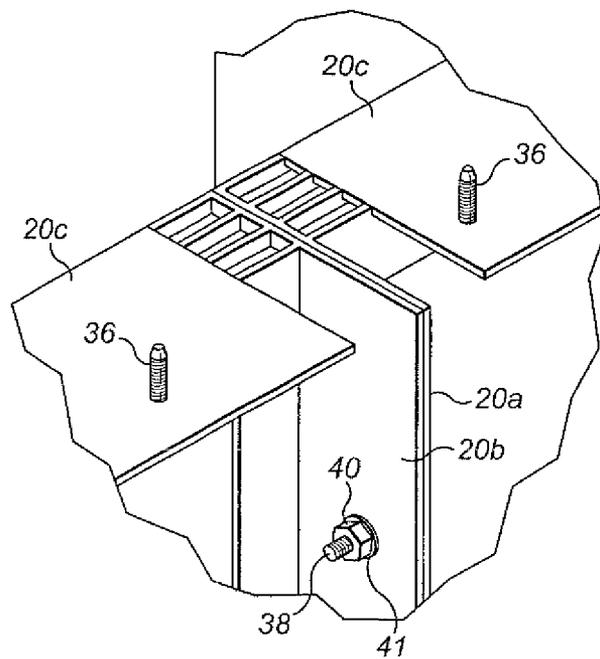


FIG. 10

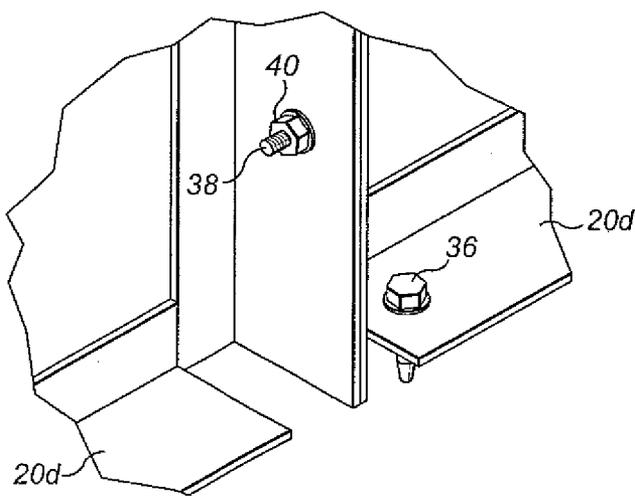


FIG. 11

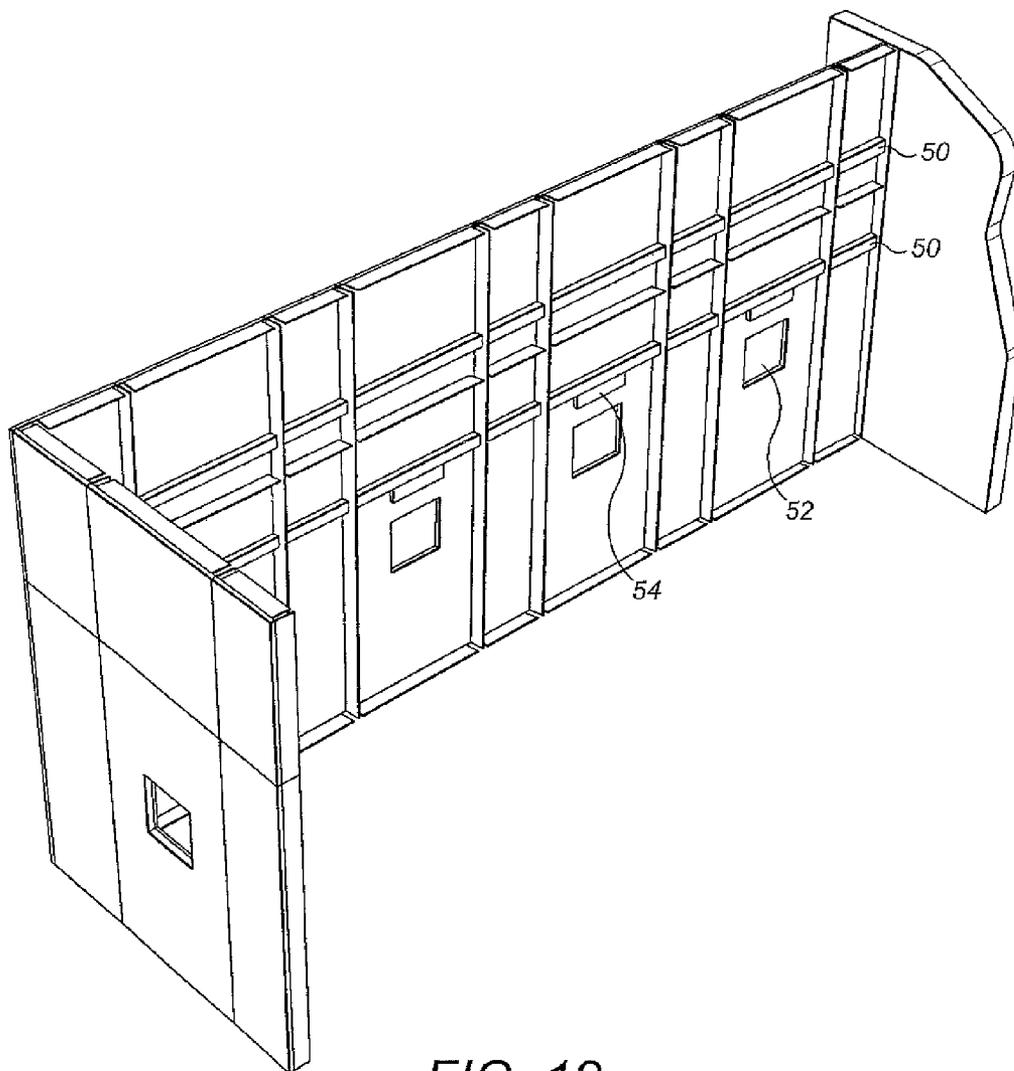


FIG. 12

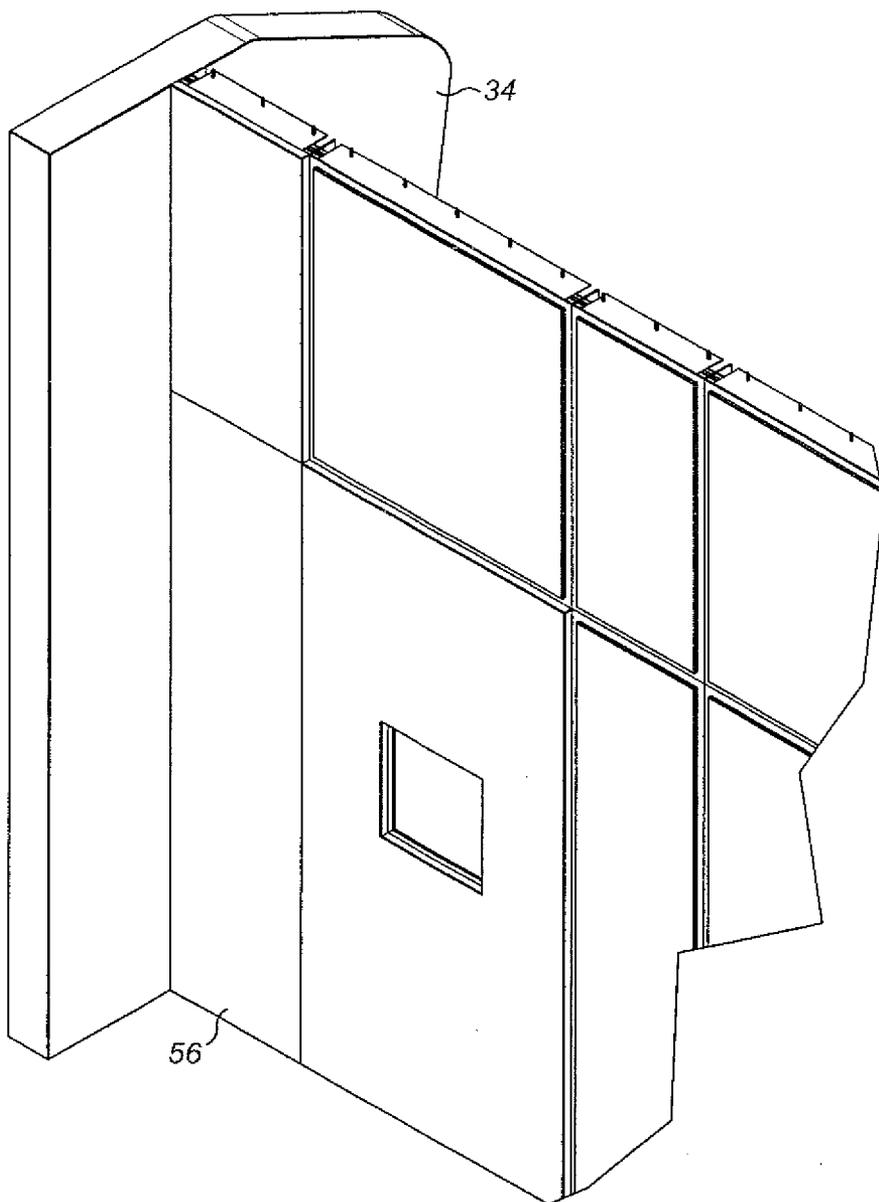


FIG. 13

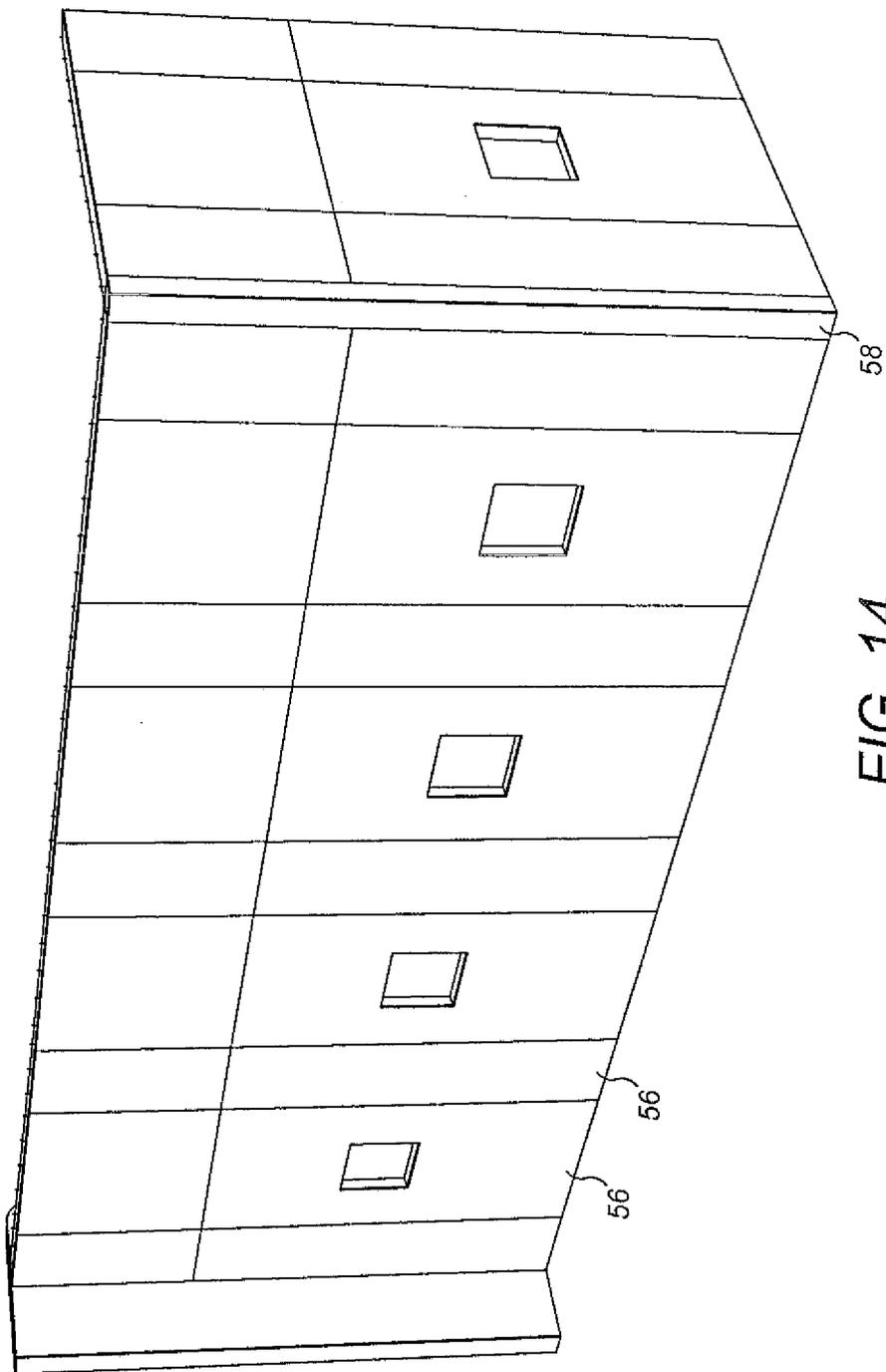


FIG. 14

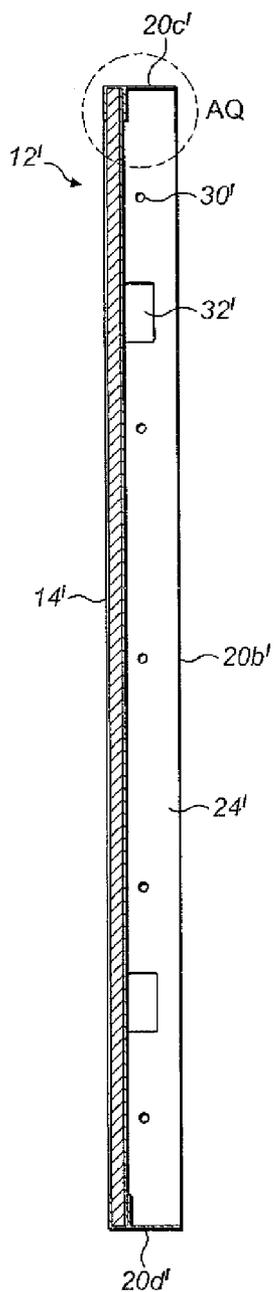


FIG. 15

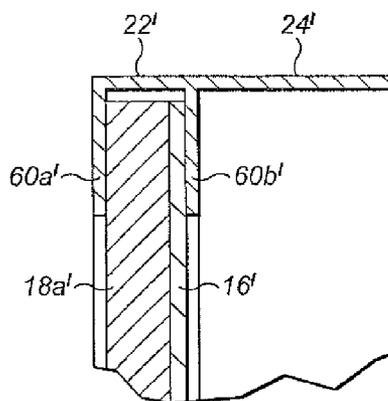


FIG. 16

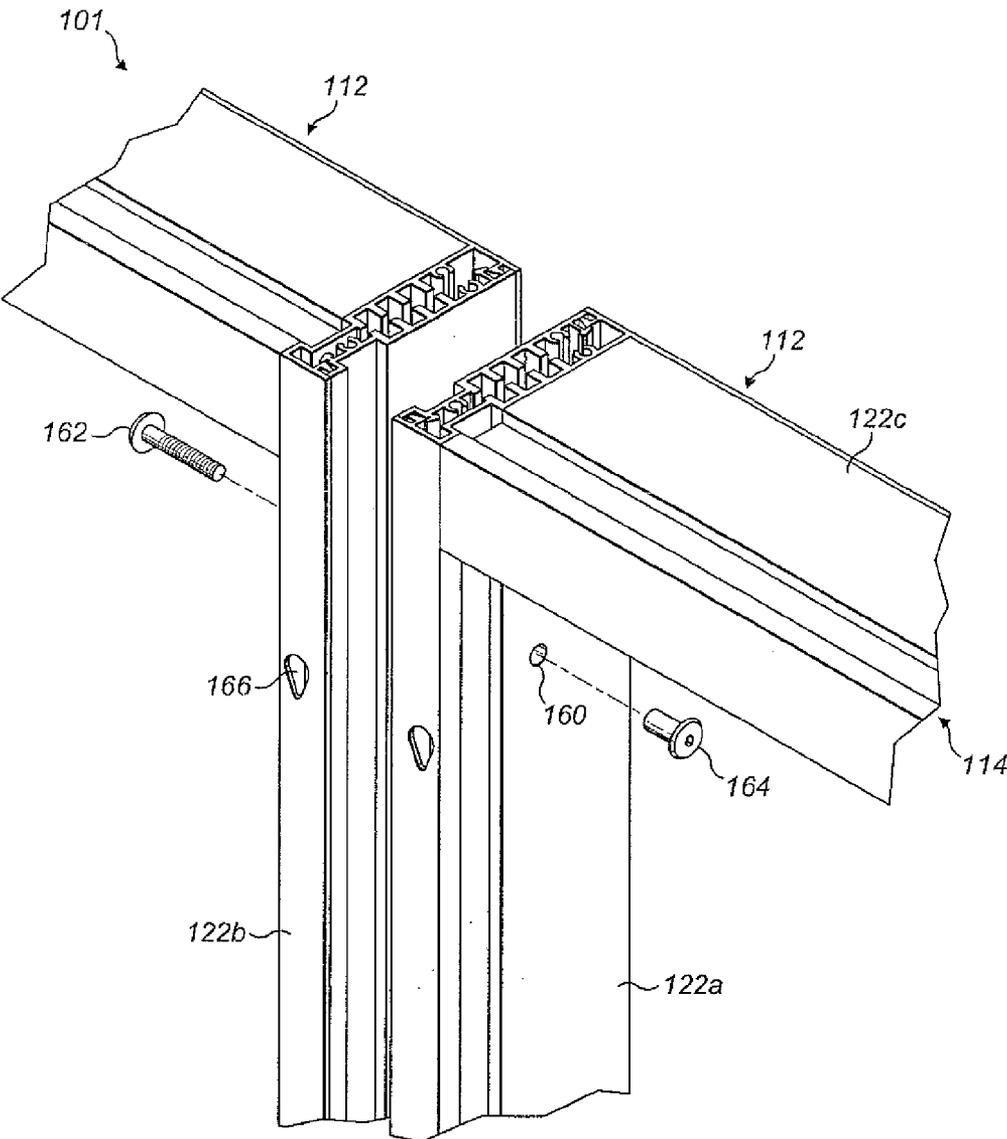


FIG. 17

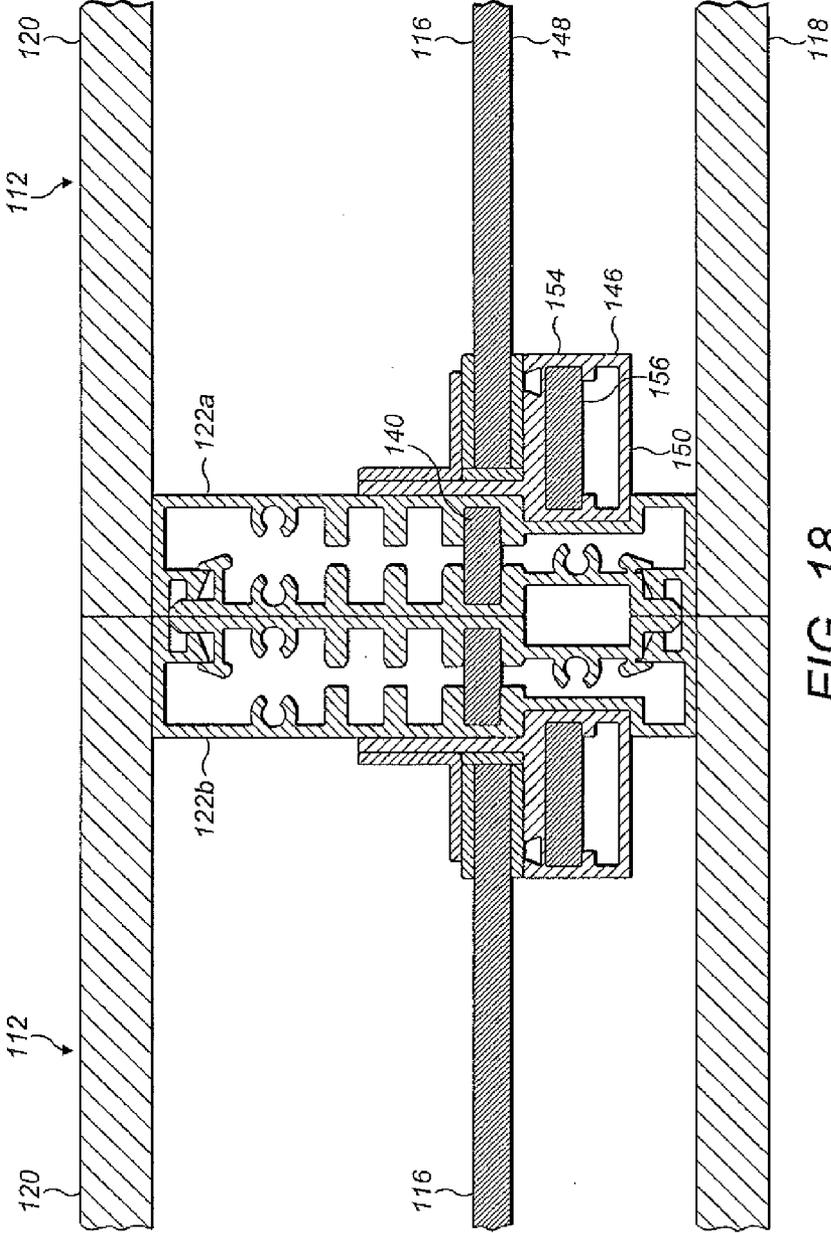


FIG. 18

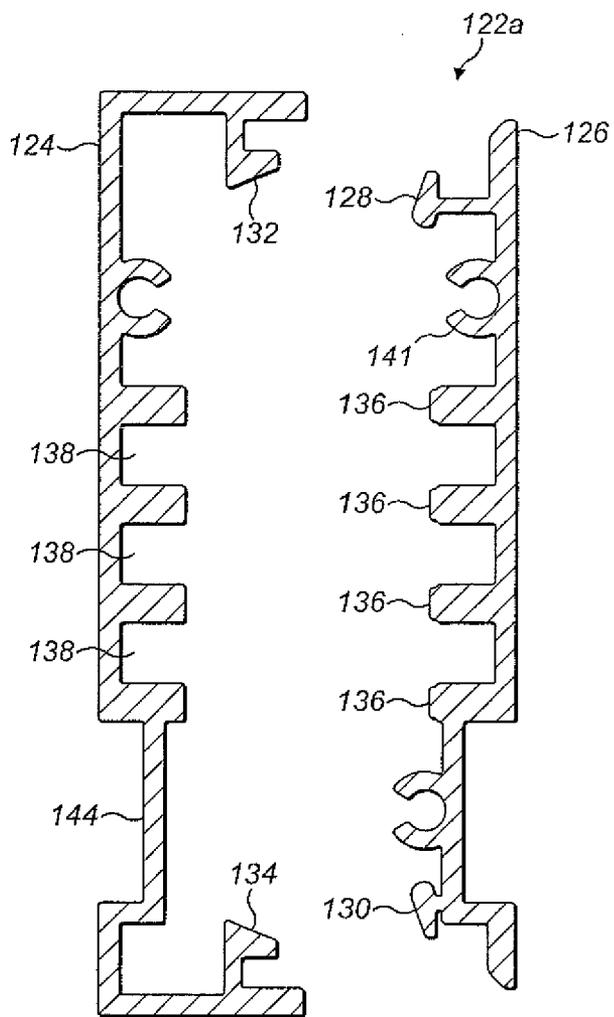


FIG. 19

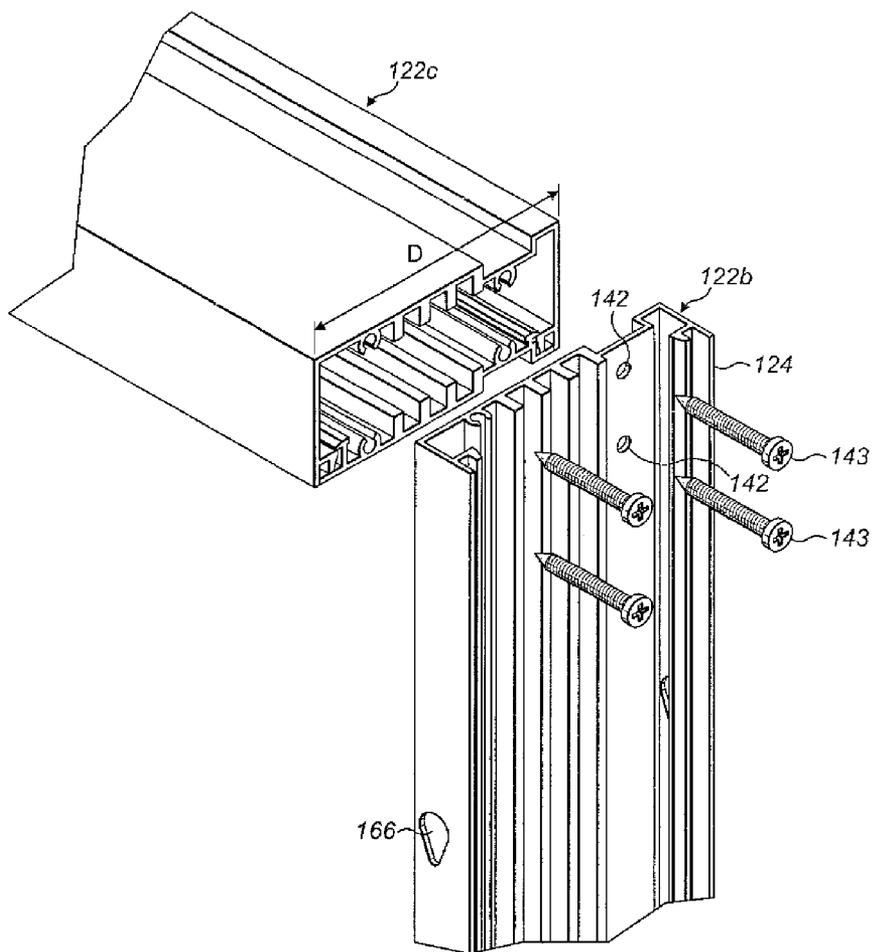


FIG. 20

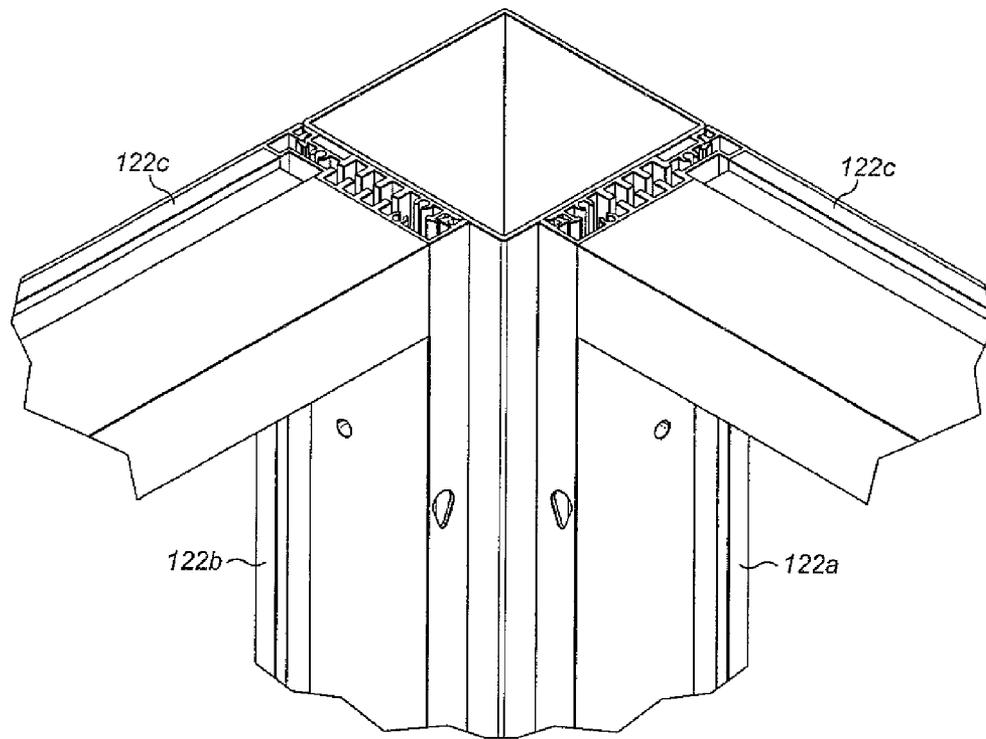


FIG. 21

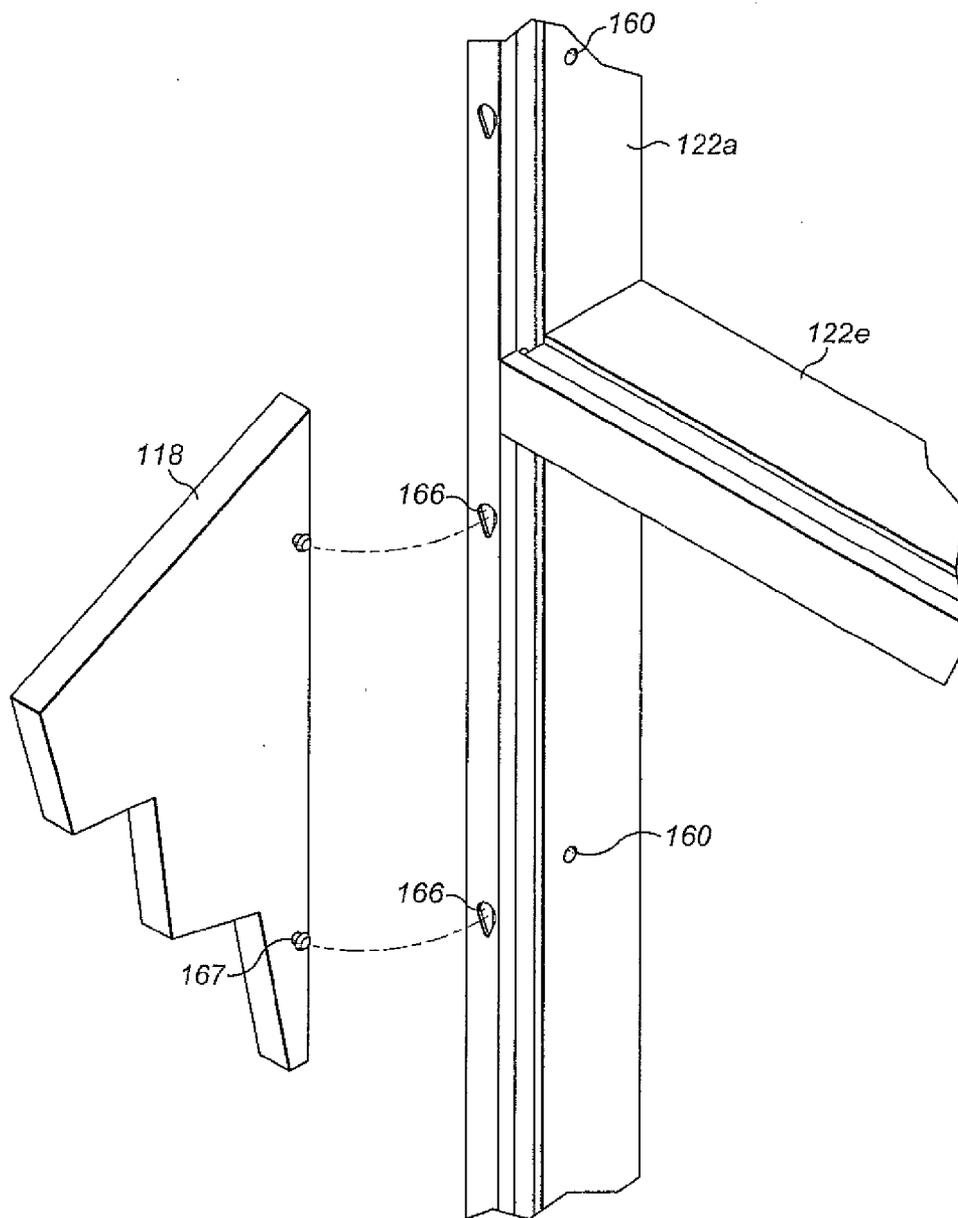


FIG. 22

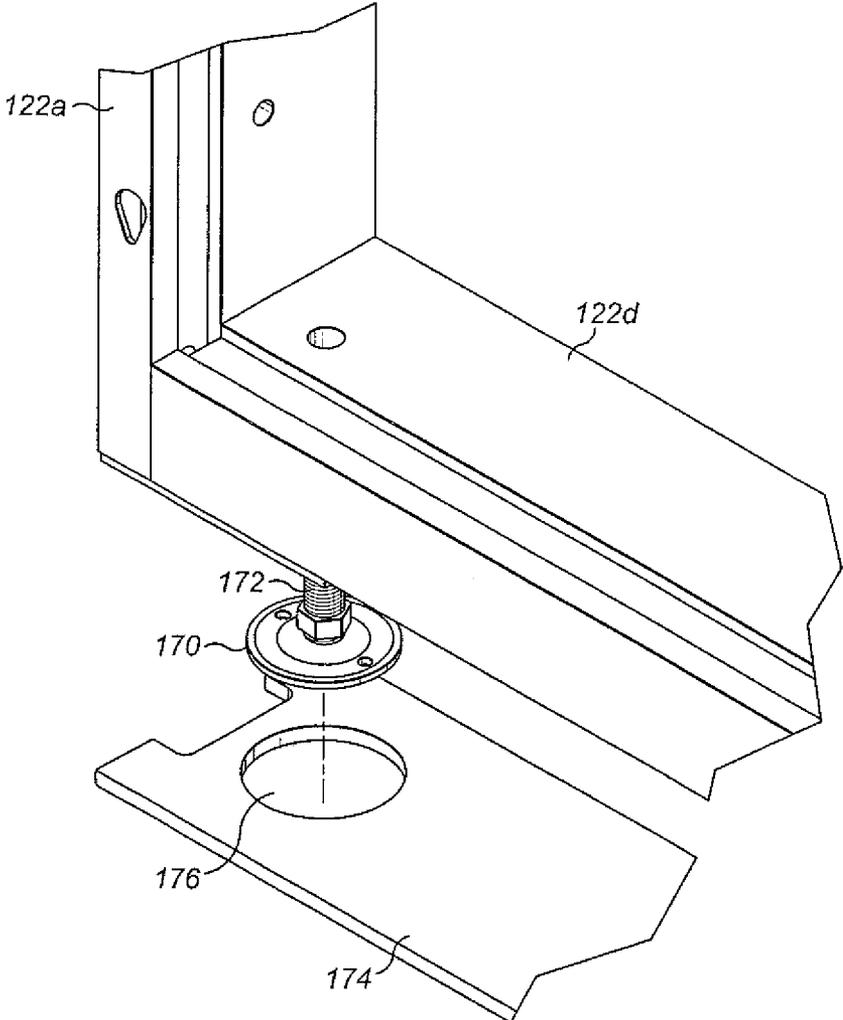


FIG. 23

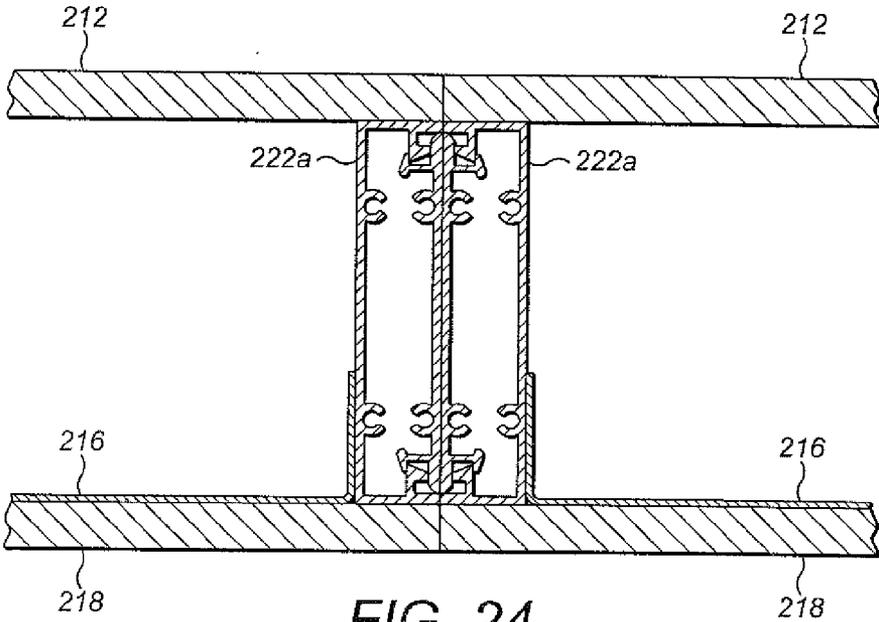


FIG. 24

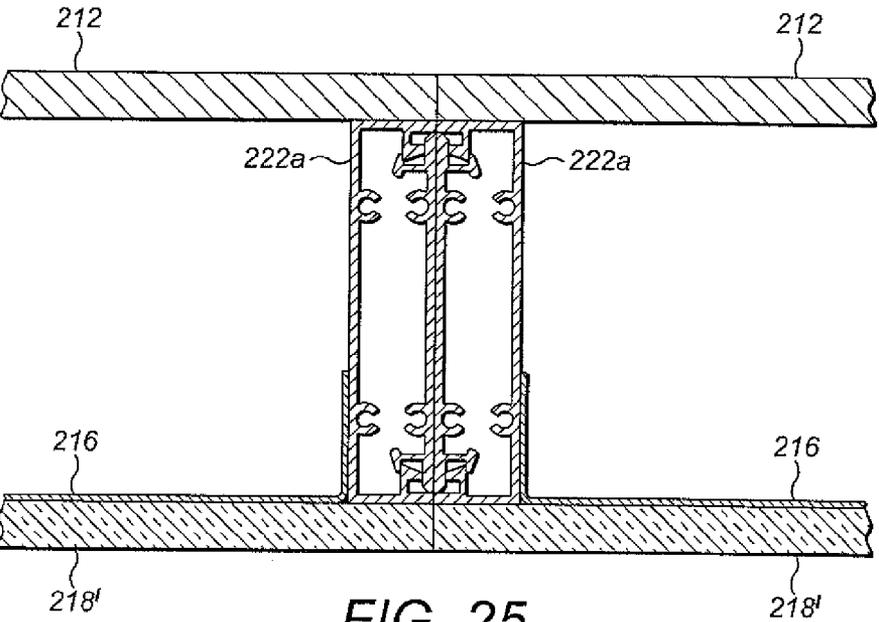


FIG. 25

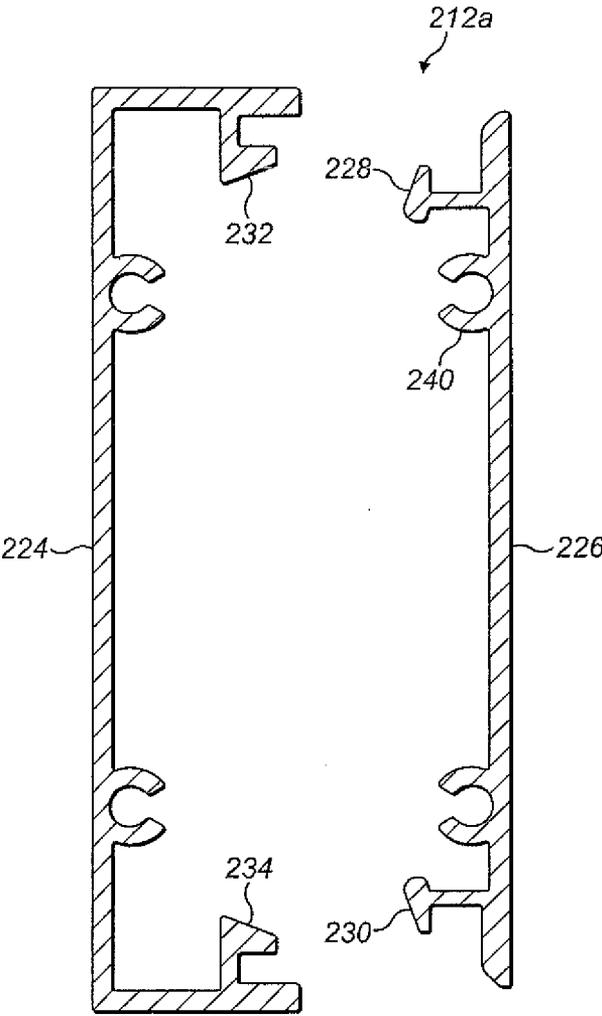


FIG. 26

MODULAR WALLING SYSTEMS

CROSS-REFERENCE TO THE RELATED APPLICATIONS

[0001] This application is a continuation application of U.S. patent application Ser. No. 13/234,753, filed Sep. 16, 2011, which claims priority to Great Britain Patent Application No. GB1016051.3, filed Sep. 24, 2010, and Great Britain Patent Application No. GB1103471.7, filed Mar. 1, 2011, the entire contents of which are incorporated herein by reference.

FIELD OF THE INVENTION

[0002] The present invention relates to a system for the modular construction of partitions and a module for use therein.

BACKGROUND TO THE INVENTION

[0003] Modular partition walling is known. It enables partition walls to be constructed quickly and easily. However, it is an aim of the present invention to provide an improved system for erecting a partition wall.

[0004] Furthermore in some environments, such as banks, building societies and court houses, conventional partition walls are not strong enough to provide the required security. Partition walls may need to be fire-resistant, bullet-resistant, blast-resistant or attack-resistant or a combination thereof. It is therefore a further aim of the invention to provide a system for the modular construction of partition walls that has improved strength.

[0005] Accordingly it is an aim of the present invention to address at least one disadvantage associated with the prior art whether described herein or elsewhere.

SUMMARY OF THE INVENTION

[0006] According to the present invention there is provided a system for the modular construction of walling and a module for use therein along with a method of installing adapted to allow a cladding panel to be installed on at least one face. The Profiles being further adapted to be interconnected to adjacent modules or a structure of a building via removable fixings. Advantageously, the method therefore includes removing the fastening connecting one module to adjacent modules or structure of the building and replacing the module with a module having a different configuration. The method may further comprise re-using the removed module in a second partition wall. Advantageously, there is therefore provided a adaptable and quick method of installing a partition wall.

[0007] Preferably, in a particularly exemplary embodiment, the cladding panels are hung on the frame of each module using hidden fixings. The hidden fixings may include co-operating male and female features. For instance, in the exemplary embodiments, self centre recesses and male protrusions are used. Here, the male protrusion includes a hooked portion such as a bulbous head that passes through an aperture of the recess at one location but does not pass through the aperture at another location. Preferably, the aperture of the self centre recesses narrows from the first location toward the second. Consequently the panels are centred. In the exemplary embodiments, the first location is above the second so that the weight of the cladding panel acts to urge the cladding panel towards the second location. Also, it is beneficial to reduce any bending moment on the fixings by providing a

plurality of co-operating fixtures in the direction of movement from the first location to the second.

[0008] In one exemplary embodiment, each module includes a cladding panel on a front face and a back face. Suitably, the removable fixings are hidden behind the cladding panels. Here the fixings secure through sides of the frames. The method in this instance includes removing a cladding panel in order to access the removable fixings.

[0009] According to one aspect there is provided a system for the modular construction of partitions, the system comprising a plurality of modules, each module comprising a panel and at least one profile, each profile being attached to an edge of the panel and being adapted for connection to an adjacent profile of an adjacent module or to a structural building member.

[0010] Preferably the panel comprises a security layer. Preferably the security layer is a metal mesh. Alternatively the security layer may be a continuous layer. The security layer may comprise specialist steels, aluminium alloys and other non ferrous material, glass reinforced plastic, polycarbonate, carbon fibre or ballistic steel sheet material.

[0011] Preferably each said profile comprises a panel fixing portion and a module fixing portion, the panel fixing portion comprising a pair of projections extending along the length of the profile and clamping the security layer there between.

[0012] Preferably the panel further comprises one outer layer located on one side of the security layer. Each said profile may comprise a panel fixing portion and a module fixing portion, the panel fixing portion comprising a pair of projections extending along the length of the profile and clamping the outer layer and the security layer there between

[0013] Preferably the panel further comprises two outer layers, each outer layer being located on a respective side of the security layer. The outer layer may comprise plywood, MDF, Sterling board, recycled composite material or glass reinforced plastic.

[0014] Preferably each said profile comprises a panel fixing portion and a module fixing portion. The panel fixing portion may comprise two pairs of projections extending along the length of the profile, each pair of projections clamping a said outer layer there between. The security layer may be clamped in the space formed between the two pairs of projections.

[0015] Preferably the projections are provided with serrations to clamp the respective outer layer.

[0016] Preferably the module fixing portion comprises a flat plate extending at 90 degrees to the plane of the panel.

[0017] Preferably the plate has a plurality of holes, each hole being adapted to receive a fixing means.

[0018] Preferably the plate has one or more slots, the or each slot being adapted to receiving trunking.

[0019] According to a further aspect there is provided a module for use in a system as herein described, each module comprising a panel and at least one profile, each profile being attached to an edge of the panel and being adapted for connection to an adjacent profile of an adjacent module or to a structural building member.

[0020] The present invention includes any combination of the herein referred to features or limitations.

[0021] According to one aspect there is provided a system for the modular construction of partitions, the system comprising a plurality of modules, each module comprising a security panel and a frame, the security panel being attached to one or more surface of the frame, the frame comprising at

least one box shaped profile, each profile being adapted for connection to an adjacent profile of an adjacent module or to a structural building member.

[0022] Preferably the security panel is attached within the frame.

[0023] Preferably the security panel comprises a security layer. The security layer may be a metal mesh. Alternatively the security layer may be a continuous layer. The security layer may comprise specialist steels, aluminium alloys and other non ferrous material, glass reinforced plastic, polycarbonate, carbon fibre or ballistic steel sheet material.

[0024] The module may be an anti-ballistic module or an anti-bandit module.

[0025] Preferably the at least one profile comprises a base and a cover. The cover may be a snap fit on the base.

[0026] The at least one profile may have an external recess for receiving the security panel. The security panel may comprise a connection means for securing the security panel in the frame. Preferably the security layer extends substantially parallel with the plane of the front of the module. The connection means may be a connection frame in which the security layer is secured.

[0027] Alternatively the security layer may be attached directly to at least one surface of the frame. The security layer may be attached to the frame by means of screws or straps.

[0028] The at least one profile may have internal ribs for receiving a profile security insert extending substantially parallel with the plane of the front of the module. The connection means may comprise a connection security insert extending substantially parallel with the plane of the front of the module. Preferably the connection security insert overlaps the security layer and the profile security insert.

[0029] Preferably the module further comprises a front cladding layer. The module may also comprise a rear cladding layer. The front and/or rear cladding layer(s) may be decorative. The front and/or rear cladding layer(s) may comprise plywood, MDF, Sterling board, recycled composite material or glass reinforced plastic.

[0030] Preferably the at least one profile has a plurality of holes, each hole being adapted to receive a fixing means for mounting the front or rear cladding. The holes may be key-hole shaped for receiving a head of a fixing, such as a screw, pre-mounted on the cladding. Alternatively, the recesses may be arranged on the cladding and the fixings arranged on the profile.

[0031] The at least one profile may be provided with slots adapted to allow trunking to pass there through.

[0032] Preferably the bottom profile of each module may be adapted to receive at least one foot. Preferably each foot is adjustable. A transom may be provided on the bottom profile having screw holes, each screw hole being adapted to receive the treaded shaft of a said foot.

[0033] According to a further aspect there is provided a module for use in a system as herein described, each module comprising a security panel and a frame, the security panel being attached to one or more surfaces of the frame, the frame comprising at least one box shaped profile, each profile being adapted for connection to an adjacent profile of an adjacent module or to a structural building member.

[0034] The present invention includes any combination of the herein referred to features or limitations.

BRIEF DESCRIPTION OF THE DRAWINGS

[0035] For a better understanding of the invention, and to show how embodiments of the same may be carried into effect, reference will now be made, by way of example, to the accompanying diagrammatic drawings in which:

[0036] FIG. 1 shows a partition wall comprising modules according to a first embodiment;

[0037] FIG. 2 shows a front view of a module according to the first embodiment;

[0038] FIG. 3 shows an exploded view of a corner of a module according to the first embodiment;

[0039] FIG. 4 shows a cross-section through the line AT of FIG. 2 according to the first embodiment;

[0040] FIG. 5 shows two modules according to the first embodiment fixed in position on a wall;

[0041] FIG. 6 shows an enlarged view of area AK of FIG. 5;

[0042] FIG. 7 shows an enlarged view of area AL of FIG. 5;

[0043] FIG. 8 shows an enlarged view of area AM of FIG. 5;

[0044] FIG. 9 shows the arrangement of FIG. 5 with two additional modules attached to the first two modules;

[0045] FIG. 10 shows an enlarged view of area AN of FIG. 9;

[0046] FIG. 11 shows an enlarged view of area AP of FIG. 9;

[0047] FIG. 12 shows the partition wall of FIG. 1 with trunking installed;

[0048] FIG. 13 shows a partition of the partition wall of FIG. 1 with a number of cladding panels attached;

[0049] FIG. 14 shows the partition wall of FIG. 1 with cladding panels attached;

[0050] FIG. 15 shows a cross-section through a module according to a second embodiment;

[0051] FIG. 16 shows an enlarged view of a partition of area AQ of FIG. 15;

[0052] FIG. 17 is a partial perspective view of two modules to be attached to each other according to a third embodiment;

[0053] FIG. 18 is a partial cross-sectional view of the modules of FIG. 17 when attached to each other;

[0054] FIG. 19 is a partial cross-section through a profile of a module of FIG. 17;

[0055] FIG. 20 is a partial perspective view of the frame of a module of FIG. 17;

[0056] FIG. 21 is a partial perspective view of the two modules of FIG. 17 attached to each other by a corner profile;

[0057] FIG. 22 is a partial perspective view of a module according to a fourth embodiment.

[0058] FIG. 23 is a partial perspective view of a module according to a fifth embodiment.

[0059] FIG. 24 is a partial cross-sectional view of two modules according to a sixth embodiment;

[0060] FIG. 25 is a partial cross-sectional view of two modules according to a seventh embodiment; and

[0061] FIG. 26 is partial cross-section through a profile of a module of FIGS. 24 and 25.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0062] Referring to FIG. 1, a modular walling system 1 is provided. The modular walling system forms a partition wall 10 from two or more modules 12. According to an exemplary embodiment, there is provided a method of using the modular walling system to install a partition wall 10. The method

comprises installing a first module **12a** and then installing a second module **12b** by connecting the first and second modules using releasable or detachable fixings such as bolts. Advantageously, the formed partition wall is therefore provided with interchangeable and reusable modules. The adaptability of the partition wall is therefore improved. For instance, in a particular exemplary application, the modular walling system is adapted to provide a partition wall within a bank or other financial institution such as a building society, post office or even other point of sale applications. To exemplify the adaptability, one example is used. The partition **10** may be formed with a number of cut out partitions **52** for mounting, for example, cash machines to be accessible therethrough. Should the need arise to change a location of a cash machine or to replace a cash machine with a manned till, for instance, the method comprises removing module **12a** and replacing it with a new module having an alternative configuration. Because the modules are detachably connected at their periphery, the module can be swapped without affecting the adjacent modules **12**. Advantageously, this allows a partition wall to be installed in a matter of hours rather than a matter of days.

[0063] In order to be interchanged, the adjacent modules are only connected at the detachable fixings. Consequently, one or both faces of the partition **10** are formed from a plurality of separate faces. That is, the partition face is not plastered as with traditional partitions. Rather, each module **12** includes a cladding panel **18** that combine to form the face of the partition **10**. the modules may be clad on one or both sides.

[0064] It is preferable for the detachable fixings to be contained within the partition. If only clad on one side, the fixing can easily remain visible. However, when clad on both sides, although the fixings may secure protrusions that extend outward from the cladding panel, it is preferable for the removable fixings to be behind the cladding panel so as to avoid a snagging point. Consequently, it is preferable if at least one side of the module includes a removable cladding panel. Here, the method comprises removing the cladding panel from a module to access the removable fixings, removing the fixings to interchange the module, replacing the fixings and re-installing the removable cladding panel or replacement cladding panel.

[0065] The modular walling system will now be described in more detail with reference to exemplary partitions **10** and modules **12**.

[0066] FIG. 1 shows an exemplary partition **10** constructed using a modular walling system. The partition **10** may be fire-resistant, bullet-resistant, blast-resistant, attack-resistant or a combination thereof. The partition **10** comprises a plurality of modules **12** which are connected together as will be described below.

[0067] FIGS. 2 and 3 show details of modules adapted to provide ballistic protection. Each module **12** comprises a frame **14**, a security panel **16**, a front cladding panel **18** and a rear cladding panel **20**. Each frame **14** comprises four profiles **22a-d**.

[0068] Each module **12** comprises a panel **14** and four profiles **20a-d**. Each panel **14** comprises an inner layer **16** and two outer layers **18a** and **18b**. The inner layer **16** is a security layer in the form of a security mesh. However, the security layer **16** is not limited to security meshes and may be a solid sheet of material. The security layer **16** may comprise any suitable material capable of providing the required security protection, such as specialist steels, aluminium alloys and

other non ferrous material, glass reinforced plastic, polycarbonate, carbon fibre and ballistic steel sheet material. The outer layers **18a** and **18b** are preferably attack rated and comprise a material such as plywood, MDF, Stirling board, recycled composite material and glass reinforced plastic. The choice of material for both the inner layer **16** and the outer layers **18a** and **18b** will depend on whether, for example, the partition is required to be fire-resistant, bullet-resistant, blast-resistant, attack-resistant or a combination thereof.

[0069] Each profile **20a-d** extends along a respective edge of the panel as shown in FIG. 2. Each profile **20a-d** has a panel fixing partition **22** and a module fixing partition **24** as shown in FIG. 3. The panel fixing partition **22** comprises two pairs of serrated projections **26a** and **26b**, **28a** and **28b** running along the length of the respective profile **20a-d**. Each pair of serrated projections **26a** and **26b**, **28a** and **28b** is adapted to receive an outer layer **18a** or **18b** of the module **12** respectively. The serrations are shaped to enable easy insertion of the outer layer **18a** and **18b**, and also to hold the outer panels **18a** and **18b** securely in place by biting into the outer panel when the outer layer **18a** or **18b** is pulled in a direction away from the respective profile **20a-d**. The security layer **16** is accommodated in the space between the two pairs of serrated projections **26**, **28**.

[0070] The module fixing partition **24** is shown in FIG. 4 and comprises a flat plate extending at 90 degrees to the plane of the panel **14**. The plate has a plurality of holes **30**, each hole for receiving a fixing means (described later). The plate of profiles **20a** and **20b** also has slots **32**, each slot **32** for receiving trunking for electrical cables, optical cables and the like.

[0071] Although the plate of the module fixing partition **24** is shown with holes **30** for receiving fixing means, it may be provided with any suitable means to enable the respective profile **20a-d** to be attached to an adjacent module **12** or a structural building member such as a wall, a floor, a ceiling or the like. Alternatively the plate may be fixed to the adjacent module **12**, without the need for any such attachment means. Also it is not always required to provide slots **32** for receiving trunking. Thus, it may be desirable for the plate to be left blank.

[0072] FIG. 5 shows the first two modules **12** of a partition fixed in position on a wall **34**. As can be seen in detail in FIGS. 6-8, the respective profiles **20b** are attached to the wall **34** by fixing means in the form of bolts **36** inserted through the holes **30**. Likewise, the profile **20c** of the upper module is attached to the ceiling (not shown) by means of bolts **36** inserted through the holes **30**, and the profile **20d** of the lower module is attached to the floor (not shown) by means of bolts **36** inserted through the holes **30**. The two modules **12** are held together by fixing means in the form of bolts **38** inserted through each of the adjacent holes **30** in the profile **20d** of the upper module **12** and the profile **20c** of the lower module **12**, each bolt **38** being fastened by means of a nut **40** and washer **41** (not shown).

[0073] FIG. 9 shows the next two modules of the partition fixed in position to the first two modules. As can be seen in detail in FIGS. 10 and 11, the upper two modules **12** and lower two modules **12** are respectively held together by means of bolts **38** inserted through each of the adjacent holes **30** in the profile **20b** of the left hand module and the profile **20a** of the right hand module **12**, each bolt **38** being fastened by means of a nut **40** and washer **41**. The upper and lower modules **12** are held together by means of bolts **38** inserted through each of the adjacent holes **30** in the profile **20d** of the upper module

12 and the profile **20c** of the lower module **12**, each bolt **28** being fastened by means of nut **40**. The profile **20c** of the upper module is attached to the ceiling (not shown) by means of bolts **36** inserted through the holes **30**, and the profile **20d** of the lower module is attached to the floor (not shown) by means of bolts **36** inserted through the holes **30**.

[0074] The remaining modules of the partition are fixed in place to the ceiling, floor in a corresponding manner. Corners and junctions may be provided with appropriately shaped box sections or angle connectors to which the modules are attached.

[0075] FIG. 12 shows the partition of FIG. 1 with trunking **50** installed horizontally through the slots **32**. FIGS. 1 and 12 also show that some of the lower modules **12** are provided with cut-out partitions **52** in the panels **14** to accommodate equipment, such as a cash machine. Some of the lower modules **12** have also been provided with power and data modules

[0076] FIG. 13 shows a number of cladding panels **56** having been applied to the front of respective modules **12**, i.e. adjacent the outer layer **18a** of the panel **14** of the module **12**. Each cladding panel **56** is attached to its respective module by suitable fastening means from the rear. The fastening means could be attack rated. The fastening means may be angle or rear fixings, for example, screws through the security layer **16**, Z channels etc. The cladding panels **56** are applied to the whole of the partition **10** as shown in FIG. 14, to give it a more attractive appearance. The surface of the cladding panels **56** is prefinished to suit customer requirements. Some of the cladding panels **56** are provided with a cut-out partition **58** to match the cut-out partition **52** in the adjacent module **12**. Importantly, the cladding panels do not require plastering or other finishes being applied.

[0077] FIGS. 15 and 16 show the construction of a module **12'** according to a second exemplary embodiment. It is the same as the module **12** of the first embodiment, except as will now be described. All features that are the same as in the first embodiment will be referred to using the suffix "'".

[0078] Panel **14'** comprises a security panel **16'** and one outer panel **18a'**. The panel fixing partition **22'** comprises a pair of projections **60a** and **60b** running along the length of the respective profile **20a'-d'**. The pair of projections **60a** and **60b** is adapted to receive the security layer **16'** and the outer layer **18a'** of the module **12**.

[0079] The panel may also simply comprise a security layer, i.e. no outer panels. In this case the panel fixing partition may comprise a pair of projections running along the length of the respective profile which are adapted to receive the security layer.

[0080] The modules of the present invention may be provided in any size or shape. Although the modules described above are all rectangular, they may also be, for example, square or triangular. A range of modules of different sizes and shapes may be used in any one partition according to the requirements of the location.

[0081] Furthermore, the panel fixing partition may comprise any suitable panel fixing means and the module fixing partition may comprise any suitable module fixing means.

[0082] Referring to FIGS. 17 to 26, a particularly exemplary embodiment is shown. Here, the modular walling system **101** is formed from a plurality of modules **112**. Each module is formed from a frame **114** that bounds each module to form a periphery. In the exemplary embodiments described herein, square or rectangular modules are described having four profiles **122a-122d** along each side. However, other

shaped modules are envisaged having more or fewer profiles **122** required to form the module periphery. Each module may include a security panel **116** as herein described, though this is not essential. The security panel **116** is sealed to an inner edge of the frame **114**. One or both sides are then clad with cladding panels. A front cladding panel **118** and rear cladding panel **120** for instance. Advantageously, the method comprises assembling the pre-installed frames by interconnecting adjacent frames with releasable fasteners such as bolts **162**, **164**. Thus the method entails removing the fasteners of one module **112** to replace or swap or reconfigure the partition wall **101**. Importantly, it is not necessary to finish a front or rear face of the partition with plaster or the like. In the previous embodiments, cladding panels were applied to a front side only. However, it is often desirable to apply a finish to both side. Consequently, a hidden fastening technique is required. As will be described herein, suitably the hidden fastening technique comprises female features that co-operate with male features, for instance holes **166** that cooperate with fastening on the back of the cladding panels to hang the cladding panels to the frame.

[0083] FIG. 17 shows a cross-section through profile **122a**, which is identical to the cross section through profile **122b**. The cross-sections through profiles **122c** and **122d** are slightly different as the width **W** is larger than for profiles **122a** and **122b**. The profiles **122a-d** comprise a base **124** and a cover **126**. The base **124** and the cover **126** together form a box profile. The base **124** is connected to the cover **126** by means of a snap fit connection. The snap fit connection is provided by resilient latches **128** and **30** on the cover **126** engaging with locking projections **132** and **134** on the base **124**. The profiles **122a-d** may be made of aluminium.

[0084] The base **124** and the cover **126** are each provided with a number of ribs **136**. The ribs **36** enhance the stiffness of the longer walls of the profile **122a**, and also provide slots **38** each for receiving a security insert **140** as illustrated in FIG. 18. The security insert **40** preferably extends along the full length of the profile **122a**.

[0085] The base **124** and the cover **126** are each provided with a number of screw receptacles **141** and a number of screw holes **142**. As shown in FIG. 20, screws **143** are inserted through the screw holes **142** of the profile **122b** and into the screw receptacles of profile **122c** to hold the two profiles together.

[0086] The base **124** and the cover **126** are each provided with a panel connection recess **144** for receiving a side of a connection frame **146** as will be described below.

[0087] The security panel **16** comprises a security sheet **148** and the connection frame **146**. The security sheet **48** provides the main ballistic security for the module **112**. The security sheet **148** may comprise any suitable material capable of providing the required ballistic security protection, such as ballistic steel sheet material. The connection frame **146** comprises means **150** for holding the edges of the security layer **148**, means **152** for attaching the connection frame **146** to the profile **122a-d** and means **154** for receiving a security insert **156**. Together security layer **148** and security inserts **140** and **156** provide the required security over the entire area of the module **112**.

[0088] Modules **112** may be attached to each other or to a structural building member such as a wall, a floor, a ceiling or the like. Alternatively a single profile **122a-d** of a module **112** may be bolted directly to a structural member, such as a wall **157**, ceiling or floor. Corners and junctions may be provided

with appropriately shaped box sections, as shown in FIG. 21, or angle connectors to which the modules are attached.

[0089] The front cladding panel 118 and the rear cladding panel 120 may both be decorative. The front cladding panel 118 and the rear cladding panel 120 may be attack rated and comprise a material such as plywood, MDF, Stirling board, recycled composite material and glass reinforced plastic. The choice of material for both the front cladding panel 118 and a rear cladding panel 120 will depend on whether, for example, the partition is required to be fire-resistant, bullet-resistant, blast-resistant, attack-resistant or a combination thereof. The rear cladding panel 120 is optional.

[0090] FIG. 22 shows how a cladding panel 18 is applied to the front of a module 112. The cladding panel 18 is attached to the module 112 by suitable fastening means. The fastening means are preferably attack rated. The fastening means may be screws 167 pre-mounted on the cladding and extending through keyhole shaped holes 166 to lock behind the narrow partition of the holes 166.

[0091] The embodiment of FIG. 22 also shows how a cross profile 122e may be attached to a frame to give additional strength and rigidity to the frame and support to the cladding.

[0092] The cladding panels 118 are applied to the whole of the partition 110 as shown in FIG. 1, to give it a more attractive appearance. The surface of the cladding panels 118 is prefinished to suit customer requirements.

[0093] FIG. 23 shows an arrangement in which the lower modules in a partition are provided with adjustable feet 70. A transom (not shown) may be provided on the profile 122d having screw holes, each screw hole being adapted to receive a threaded shaft 172 of a said foot 170. A plate 174 having recesses 176 may be attached to the floor to locate the feet 170.

[0094] FIGS. 24 and 25 show details of modules 212 adapted to provide anti-bandit protection. They are the same as the module 112 of the previous embodiment, except for the internal details of the profiles and the location of the security panel as will now be described. All features that are the same as in the first embodiment will be referred to using the prefix "2".

[0095] Each module 212 comprises a frame 214, a security panel 216, a front cladding panel 118 and a rear cladding panel 220. Each frame 214 comprises four profiles 222a-d.

[0096] FIG. 26 shows a cross-section through profile 222a. Profile 222a comprises a base 224 and a cover 226. The base 224 and the cover 226 do not have the ribs or the panel connection recess of the ballistic module of the first embodiment. The base 224 is provided with an additional screw receptacle 241. The security panel 216 is a security sheet, for example in the form of a mesh or a continuous sheet of material, attached directly to the profile 222a by means of screw or straps. The security layer 216 may comprise any suitable material capable of providing the required security protection, such as specialist steels, aluminium alloys and other non ferrous material, glass reinforced plastic, polycarbonate, carbon fibre and ballistic steel sheet material.

[0097] FIG. 25 shows the modules 212 having non-glazed cladding panels 218, whilst FIG. 26 shows the modules having glazed cladding panels 218'.

[0098] The profiles may be provided with slots (not shown) to enable trunking for electrical cables, optical cables and the like to extend across with width W. FIG. 1 also shows that some of the lower modules 12 are provided with cut-out partitions 52 to accommodate equipment, such as a cash

machine. Some of the lower modules 12 have also been provided with power and data modules 54.

[0099] The exemplary modules herein described may be provided in any size or shape. Although the modules described above are all rectangular, they may also be, for example, square or triangular. A range of modules of different sizes and shapes may be used in any one partition according to the requirements of the location.

[0100] The use of box section profiles provide strengths and rigidity to the frame of the modules and support to the cladding. The use of the profiles in combination with the security panels results in partition walling having improved anti-bandit and/or anti-ballistic properties.

[0101] Although preferred embodiment(s) of the present invention have been shown and described, it will be appreciated by those skilled in the art that changes may be made without departing from the scope of the invention as defined in the claims.

1. A method of using a system for the modular construction of a partition wall, the method comprising:

- a) arranging a first of a plurality of modules adjacent to the structure of a building or adjacent module;
- b) securing the first module to the adjacent structure or module using removable fixings;
- c) repeating steps a) and b) for a second and each remaining module of the plurality of modules;
- d) hanging a cladding panel to one face of each module so as to provide a finished wall.

2. The method of claim 1, wherein the method comprises removing one of the plurality of modules by removing the removable fixings securing said module, and replacing said module with a replacement module having a different configuration including replacing the removable fixing to secure the replacement module in place.

3. The method of claim 2, wherein the method includes reusing the removed module in a second partition wall.

4. The method of claim 1, wherein the method comprises hanging a cladding panel on both sides of each module.

5. The method of claim 4, wherein the step of removing a module comprises removing a cladding panel from at least one side in order to access the removable fixings.

6. The method of claim 1, wherein the step of arranging each module adjacent to a structure or adjacent module includes the step of adjusting the height of said module by adjusting at least one foot.

7. The method of claim 1, wherein the step of hanging a cladding panel comprises engaging a male feature with a female feature and moving the cladding panel in a first direction in order to cause the male feature and female feature to move relative to each other and from a first position in which the male and female features are not engaged to a second position where the male and female features are arranged to secure the cladding panel to the module.

8. The method of claim 1, wherein the method comprises removing a cladding panel and replacing it with a replacement cladding panel having a different configuration.

9. The method of claim 8, wherein the method comprises reusing the removed cladding panel in a second partition wall.

10. A system for the modular construction of a partition wall, the system comprising a plurality of modules, each module being bounded about an edge by a frame, wherein the frame is adapted to hang at least one cladding panel on a front

or back of the module and the frame being adapted to be secured to an adjacent module or structure of a building via removable fixings.

11. The system of claim **10**, wherein the frame of each module is adapted to receive a security layer.

12. The system of claim **10**, wherein the frame includes one of a male or female feature and the cladding panel includes the other of the male or female member, wherein the male and female features are adapted such that moving the cladding panel in a first direction causes the male feature and female feature to move relative to each other and from a first position in which the male and female features are not engaged to a second position where the male and female features are arranged to secure the cladding panel to the module.

13. The system of claim **10**, wherein the female feature includes a self centre feature.

14. The system of claim **10**, wherein each module includes adjustable feet.

15. A module for use in the system of claim **10**, the module being bounded about an edge by a frame, wherein the frame is adapted to hang at least one cladding panel on a front or back of the module and the frame being adapted to be secured to an adjacent module or structure of a building via removable fixings.

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