

[54] **COMPOSITE PANEL FASTENING DEVICE
HAVING INTERLOCK FEATURE**

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[58] Field of Search **52/588, 586, 584,
52/582, 580, 265, 731, 285, 293, 282**

[56]

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[57]

ABSTRACT

A fastening device for fastening together a pair of elongate planar boards in parallel spaced relation to form a composite panel has interlock means defined thereon. The interlock means enables the fastening device to be directly interlocked with an identical fastening device of another composite panel so that the two panels may be locked together in adjoining relation.

26 Claims, 6 Drawing Figures

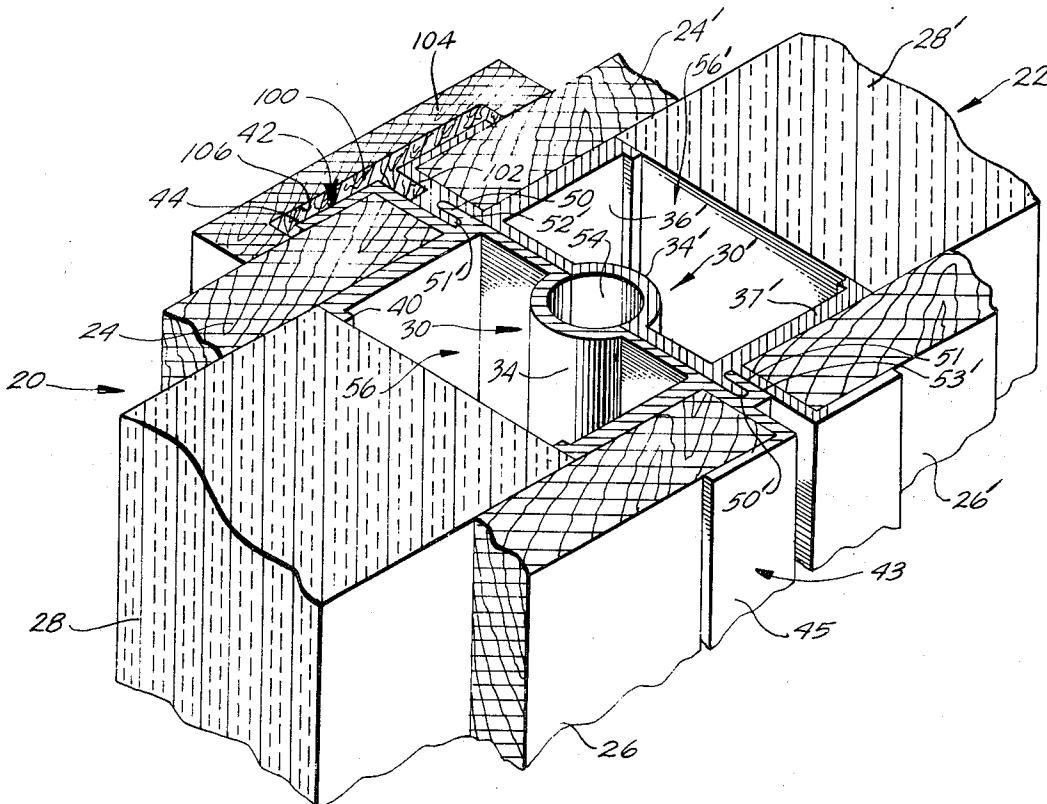


FIG. 1

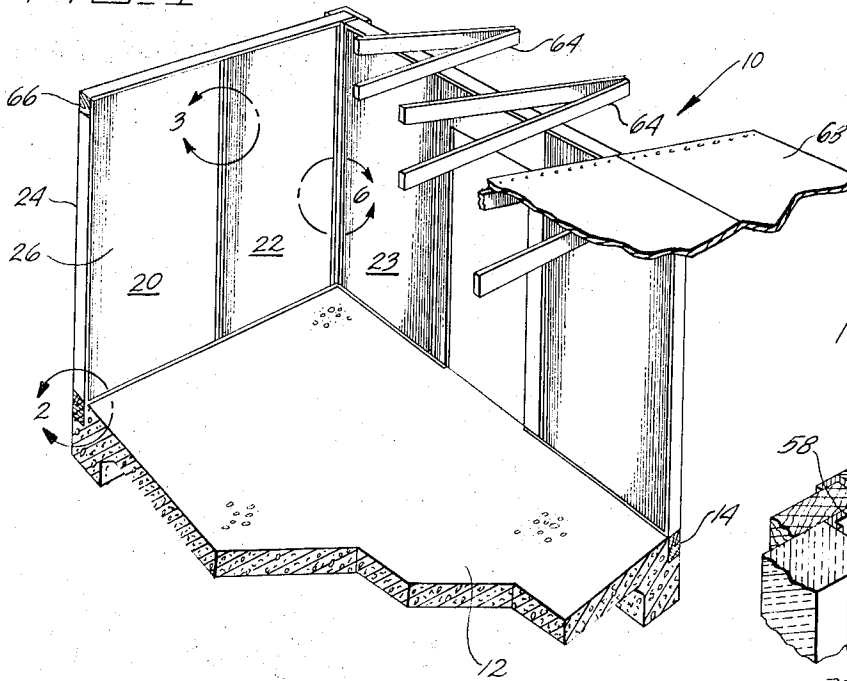


FIG. 5

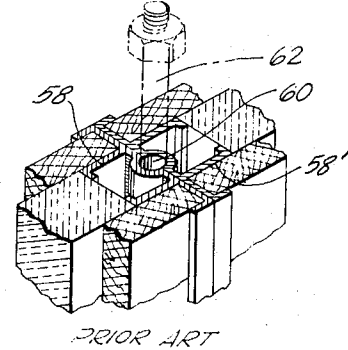
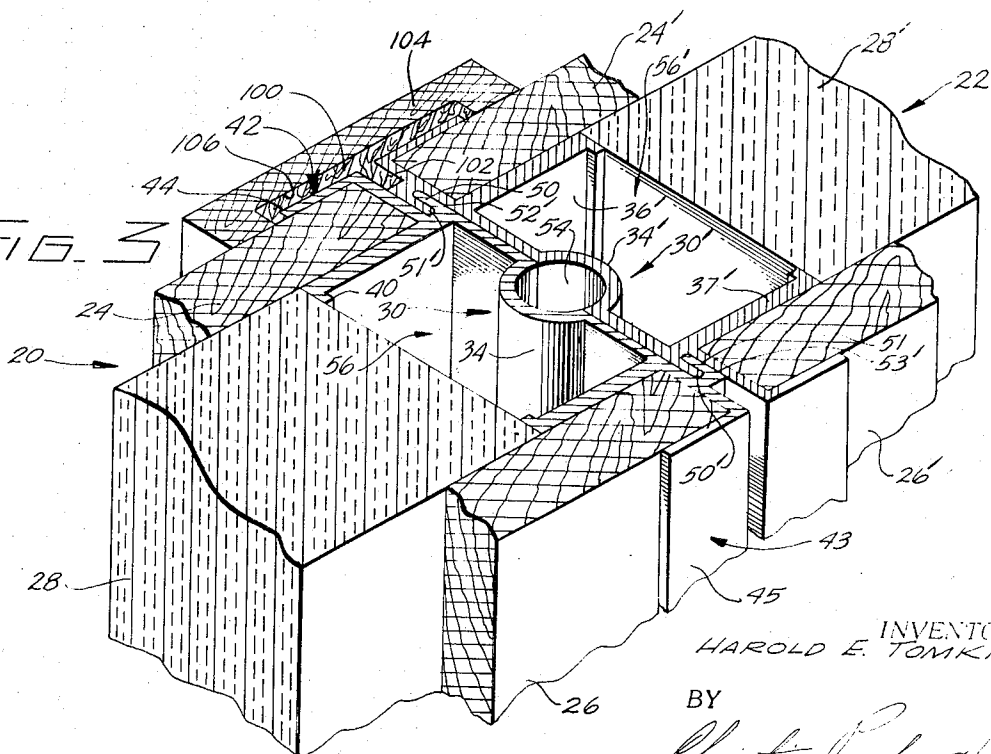


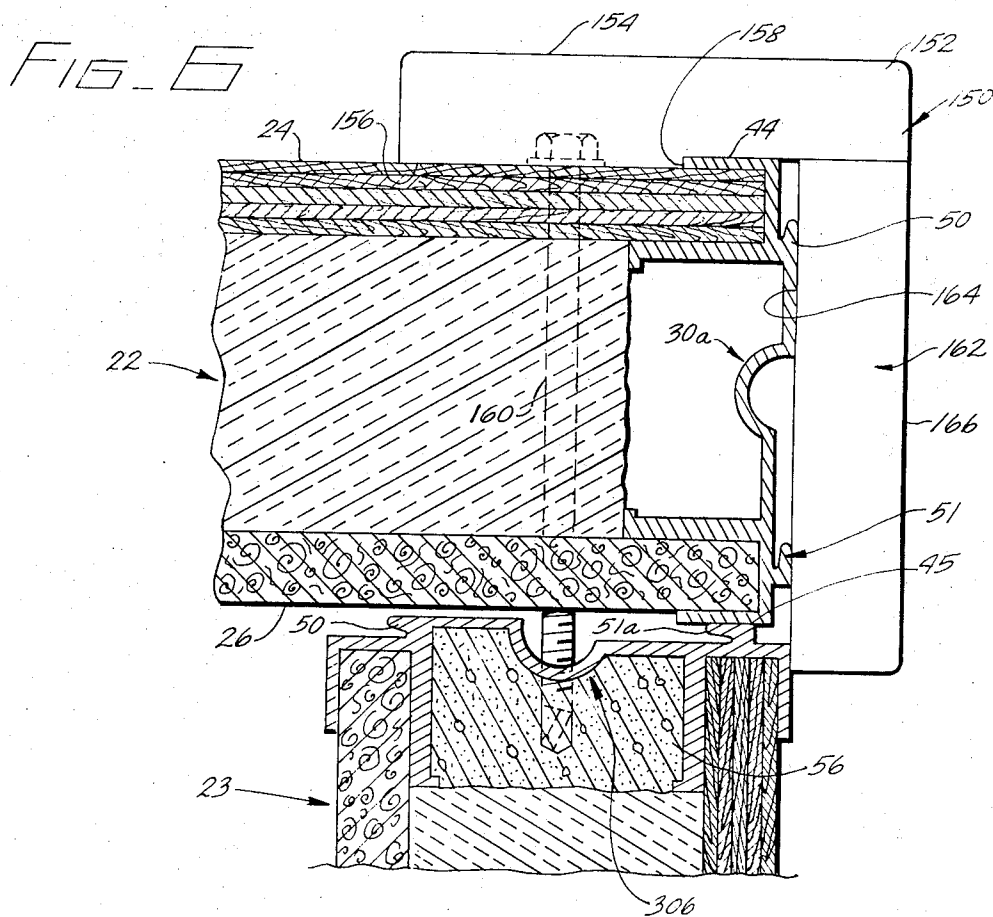
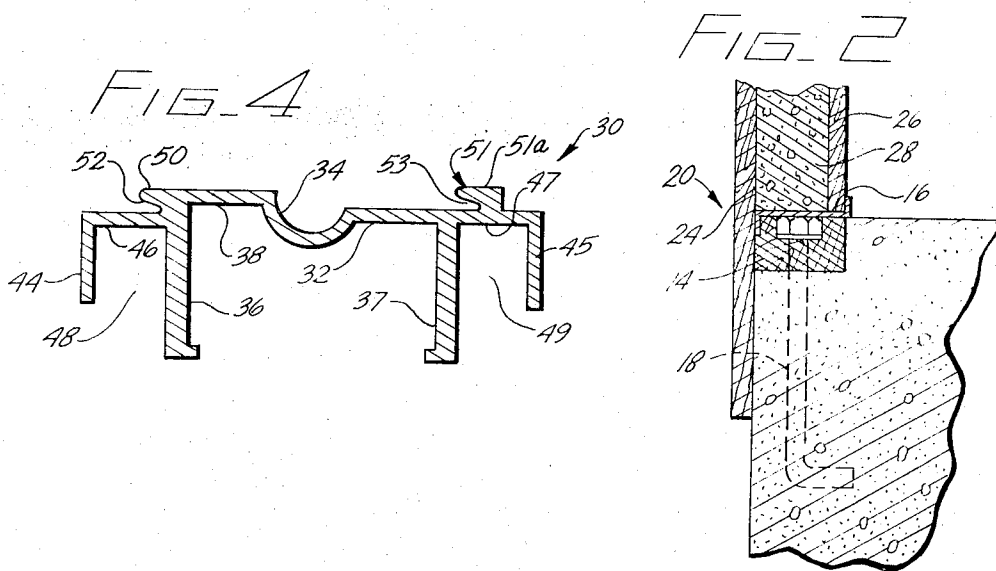
FIG. 3



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COMPOSITE PANEL FASTENING DEVICE HAVING INTERLOCK FEATURE

BACKGROUND OF THE INVENTION

Recently, the building construction industry has been turning to pre-manufacturing. This is especially true today in the field of housing wherein so-called "prefab" houses may be constructed with minimal labor time and thus substantially reduced cost.

One type of pre-manufacturing system for buildings and the like employs the use of modular composite wall panels which may be set up at the construction site in a relatively short period of time. Each panel has an outer layer of plywood board and an inner layer particle board clamped on either side of an insulation material, such as polystyrene foam or the like. Each panel is preferably four feet by eight feet so that a conventional eight foot wall may be constructed. A fastening device, in the form of a metallic extrusion, is placed along the edges of each panel and is shaped to clamp the inner and outer boards together in parallel spaced relation on either side of the insulation material.

Each metallic extrusion is preferably made of aluminum and is formed with a web having a continuous one-half circle indentation centered on its back. The panel side of the web has four flanges, each flange engaging a distinct side of one of the plywood boards. The flanges are in two pairs with those of each pair spaced apart a distance equal to the width of an associated inner or outer board. Thus, each board is received between its associated flanges and is held parallel and apart from the other board by the distance between the inner-most flanges of each pair. The insulation material is disposed between the inner and outer boards.

When two composite panels are erected side-by-side, the backs of the webs of the juxtaposed extrusions provide a continuous vertical tubular passage into which a tie-down bolt is inserted. These bolts are provided with a hook at the lower end which extends down into a pocket defined in the concrete foundation wall wherein it is held fast by appropriate securing means embedded into the foundation. The upper end of the tie-down bolts extends through a top plate disposed across each of the composite panels and through a beam of the truss wherein it is tightened against the beam.

The particular system above described shall be hereinafter referred to as the "Double TT" system. It is presently being used by the assignees of the present invention under the trademark "MYERS BROS. DOUBLE TT" and a more complete description thereof may be obtained from the "International Conference of Building Officials," Research Committee Recommendation, Report No. 2230, Jan., 1970.

The "Double TT" system provides a unique concept in modular building construction. The modular composite panels may be delivered pre-assembled to a construction site wherein a concrete foundation or the like has been laid. The panels are then erected side-by-side and adjacent panels are affixed to each other by means of the tie-down bolt which extends through the tubular passages between the webs of the extrusions and through a hole in the top plate. The bolt may then be bolted to appropriate truss members resting above the top plate. Selected panels may be fabricated with an opening therein to serve as a door or window. Once all the panel are connected, and appropriate corners formed, the walls of the building are defined. The ceil-

ing may then be put on and a desired flooring installed. Each composite panel may have any desired exterior surface capable of being affixed to plywood board. Similarly, the interior may be of any selected surface capable of being affixed to a particle board. Quite frequently, the exterior is shingled and the interior is wood paneling or just regular flat or enamel paint.

An important aspect of the "Double TT" system is the speed with which a building may be constructed using its modular components. A good deal of the time spent in accordance with the "Double TT" system in assembling the building and getting it up evolves around proper setting up and employment of the tie-bolts so that each adjacent pair of panels would remain joined to each other. It would be desirable if this "relatively" time consuming chore could be eliminated altogether to even further reduce labor time and corresponding costs.

SUMMARY OF THE INVENTION

The present invention is directed primarily to an improved extrusion for use in a "Double TT" construction system. The extrusion contains an interlock feature which enables juxtaposed extrusions on adjacent composite panels to be directly locked together without the need for the tie-down bolts or the like. This saves a substantial amount of assembly time thereby further expediting completion of the building.

Generally speaking, the invention is directed to a fastening device for fastening together a pair of elongate planar boards in parallel spaced relation to form a composite panel wherein the improvement comprises interlock means defined on the fastening device. The interlock means enables the device to be directly and intimately interlocked with an identical fastening device off another panel so that the two panels may be locked together in adjoining relation to form a segment of a wall or the like.

BRIEF DESCRIPTION OF THE DRAWING

These and other aspects and advantages of this invention are more clearly described with reference to the accompanying drawing wherein:

FIG. 1 is a perspective view, partly broken away, of a modular building embodying the principles of this invention;

FIG. 2 is a cross-sectional view of the building of FIG. 1 taken along line 2;

FIG. 3 is a perspective section view of the building of FIG. 1 showing a pair of composite panels locked together by an improved fastening device of this invention, the view is taken along line 3 of FIG. 1;

FIG. 4 is a cross-sectional view of a fastening device according to this invention;

FIG. 5 is a perspective section view of a prior art fastening device; and

FIG. 6 is a cross-sectional view of the building of FIG. 1 taken along line 6.

DESCRIPTION OF THE PREFERRED EMBODIMENT

A portion of a modular building 10 fabricated in accordance with a "Double TT" system is shown in FIG. 1. For purposes of illustration, building 10 is shown having a concrete slab foundation 12, although buildings having conventional flooring systems are also within the contemplation of this invention. Foundation

12 is formed by pouring concrete into a mold onto which is affixed a wooden sill block 14. The concrete is poured to a level co-planar with an upper surface 16 of the sill block. In the preferred embodiment, sill 14 has a 2 inch \times 4 inch cross-section and includes an anchor bolt 18 (FIG. 2) embedded into the foundation so that the sill is secured thereto.

The walls of building 10 are defined by a plurality of adjoining composite panels. For purposes of illustration, a pair of panels 20 and 22, shown in FIG. 1, are viewed more closely in FIG. 3. With reference to that Figure, each of panels 20 and 22 is preferably three inches thick and is defined by a pair of outer and inner planar boards 24 and 26, respectively, which are spaced apart in parallel relationship. Preferably, outer board 24 is plywood and inner board 26 is particle board. Each board is $\frac{1}{2}$ -inch thick. Insulation material, such as a two-inch thick polystyrene foam board 28, is sandwiched between boards 24 and 26. Alternatively, the insulation material may be polyurethane or any other similar type light weight insulation.

The plywood, insulation and particle boards of each composite panel are clamped together by a pair of fastening devices located at either end of the panel. Each fastening device is an aluminum extrusion 30 having a cross-section as shown in FIG. 4, although various modifications thereto are contemplated within the scope of this invention.

As shown in FIGS. 1 and 2, inner particle board 26 is the same length as outer board 24, but is vertically shifted therefrom so that board 26 is higher than board 24 by about $5\frac{1}{2}$ inches. This allows the lower end of outer board 24 to be force-nailed into sill board 14 as discussed above. Additionally, inner board 26 may be force-nailed into another elongate wooden top plank 66 (preferably of three-inch \times six-inch cross-section). Plank 66 serves as a base to which truss members 64 may be secured by nailing or the like. Once the truss members are in place, a desired roof 68 may be installed by known techniques.

Referring now more particularly to FIG. 4, extrusion 30 includes a web 32 having a semi-circular indentation 34 defined thereon with the center of the circle offset from the web. Thus, the extreme left side of indentation 34 is higher than the extreme right side. This offsetting is done to facilitate interlocking as described below. A pair of inner flanges 36 and 37 extend from a side 38 of web 32 in parallel spaced relation. Side 38 includes the convex portion of indentation 34. Each of flanges 36 and 47 has an inwardly extending elongate lip 40 and 41, respectively, which is designed to define a stop against which insulation board 28 will rest (see FIG. 3).

A pair of elongate outer flanges portions 42 and 43 are further defined on extrusion 30. Flanges 42 and 43 are each right-angled and have segments 44 and 45, respectively, extending in the same direction as flanges 36 and 37. Preferably, outer flanges 42 and 43 are shorter than flanges 36 and 37. This relationship, although desired, is not essential to the invention. Flange segments 44 and 45 themselves extend from planar segments 46 and 47, respectively. Segments 46 extend outwardly from flanges 36 and 37 in a direction parallel therewith so that flange segments 44 and 45 are each parallel with each other. A pair of elongate U-shaped cavities 48 and 49 are thus defined between flanges 36 and 44 and flanges 37 and 45, respectively. Cavities 48 and 49 are dimensioned so as to closely and fittingly ac-

commodate an end of a respective one of boards 22 and 26.

An important aspect of this invention is the provision of an interlock means on each extrusion 30 to enable adjacent extrusions, and thus adjacent composite panels 22, to be locked and joined together to form a portion of the wall of a building. In the preferred embodiment, the interlock means is in the form of a pair of elongate fingers 50 and 51 extending ultimately in the same direction.

Finger 50 is in the form of a planar extension of web 34 which extends outwardly from the web in a direction parallel to flange segment 46. The length of finger 50 is preferably one-half that of segment 46. A recess 52 is defined between finger 50 and segment 46 and is designed to accommodate a complementary finger on an identical adjacent extrusion 30' (FIG. 3). Finger 51 extends from segment 47 of flange 45 and has a main segment 51a parallel to segment 47 and equal in length to finger 50. A recess 53 is defined between finger 51 and flange segment 47 and is designed to accommodate a complementary finger on extrusion 30'. It is preferred that fingers 50 and 51 (specifically, segment 51a) not only extend in the same direction, but they should be aligned as well. It is for these reasons that indentation 34 must, of necessity, be offset in the manner shown in FIG. 4.

Adjacent composite panels 22 are joined together by placing them edge-to-edge with their respective extrusions back-to-back and spaced slightly offset from each other in a lateral direction. With reference to FIG. 3, one of the panels is moved laterally relative to the other panel until the extrusions are brought into alignment. As this is done, finger 51' of extrusion 30' is slipped into recess 52 of extrusion 30. Simultaneously, finger 50' is slipped into recess 53 of extrusion 30. Correspondingly, fingers 50 and 51 are positioned within similar recesses 52' and 53' of extrusion 30'. With the two extrusions so abuttingly aligned, they are completely interlocked and cannot be moved apart.

It is desirable to improve the aesthetic appearance of the outer boards of the interlocked panels. More specifically, it is desirable to make the area of adjoined extrusions more pleasing to the eye. This may be accomplished by numerous procedures. For instance, a T-shaped elongate dado 100 may be inserted into a corresponding U-shaped cavity 102 defined between the interlocked extrusions. A wooden batt 104 having a rectangular-shaped recess 106 conforming to the dimensions of dado 100, is placed over dado 100 with the latter received in recess 106. Batt 104 is wide enough to also abut the outer plywood boards 24 and 24' of the adjoined panels 20 and 22. The batt is then nailed to both these panels by nails not shown. Batt 104, therefore, serves not only to improve the appearance of the exterior wall of a building, but additionally serves to strengthen and further secure the interlock between adjoining wall panels.

The back-to-back indentations 34 and 34' of extrusions 30 and 30' combine to form a circular tubular passage 54. Furthermore, stops 40 on the inner flanges of each extrusion define substantially rectangular passages 56 and 56'. By way of example, passage 56 is bounded in the front by web 32 of extrusion 30, on the sides by flanges 36 and 37, and in the back by an end of insulative board 28. Passages 56 and 56' may be employed as conduits for electric wiring and the like.

Tubular passage 54 may also be used for wiring, but is preferably left free thereof. By themselves, indentations 34 and 34', defining passage 54, add structural strength and soundness to their respective extrusions. Passage 54 may, however, be functionally used to receive a tie-down bolt of the type shown in FIG. 5 for added strength and stability of adjoined walls. Such a bolt may be further used to aid in securing the truss members to the walls. It must be emphasized, however, that an important aspect of this invention is the ability to decrease assembly time by eliminating the need for such tie-down bolts. Thus, use of tie-down bolts is not part of this invention and is only desirable when an unusually strong bond of adjacent composite panels is desired. Such may be true in geographical areas prone to earthquakes and other similar natural occurrences.

A typical prior art extrusion fastening device as used in known "Double TT" systems is shown in FIG. 5. A pair of aluminum extrusions 58 and 58' are placed in back-to-back relation. Basically, extrusions 58 and 58' are very similar to extrusions 30 and 31, except that no interlock means (such as finger 50 and 51) are included. The center of the semi-circular indentations are therefore in the plane of the web of each extrusion. The semi-circles need not be offset. Adjacent panels are joined together by fastening together juxtaposed extrusions in back-to-back relation. A top plate (not shown, but described in the aforementioned Report of the International Conference of Building Officials) fits over the tops of the adjacent panels and has a hole therein aligned with a tubular passage 60 defined between the indentations. A tie-down bolt 62 is received through passage 60 and the hole in the top plate. The lower end (not shown) of the bolt is secured within the foundation by known techniques. The bolt is positioned through a truss member 64 (shown in FIG. 1) where it is tightened down thereon thereby securing the truss to the adjoining composite panels and securing the panels together.

As explained above, it is relatively tedious to set up and employ the tie-down bolts. It is for this reason that composite joining, in accordance with this invention, is preferably performed without tie-down bolts and solely by interlock means (fingers 50 and 51) defined on the forming an integral part of each extrusion.

The manner of forming windows and doors in particular composite panel does not form part of the present invention. A general description thereof, however, may be found in the above-referenced report. The manner of forming corners on a building such as building 10 with the improved interlocking extrusion of this invention differs substantially from the prior art "Double TT" system, as described in the above-referenced report and is now described with reference to FIG. 6.

Referring now to FIGS. 1 and 6, composite panels 22 and 23 may be joined together in perpendicular relationship to form a corner of building 10. More specifically, segment 51a of finger 51 on extrusion 30a (the extrusion opposite extrusion 30 shown in FIG. 3 fastening together the boards of panel 23) is placed flush against flange 45 of extrusion 30 (an extrusion fastening together the boards of panel 22). This places signals 22 and 23 in overall perpendicular relationship.

The panels are maintained and secured in perpendicular relationship by using an elongate L-shaped wooden batt 150. One segment 152 of batt 150 has a planar outer surface 154 and a stepped inner surface

156. More specifically, a step 158 is defined on surface 156 and is adapted to receive flange 44 of the extrusion 30 of panel 22. Step 158 is recessed a distance equal to the width of flange 44 so that surface 156 completely abuts plywood board 24 of panel 22.

A self-tapping screw 160 is driven through segment 152 of batt 150, plywood board 24 of panel 22, and the insulation board 28 and particle board 26 of such panel. The screw is also driven through the semi-circular indentation on the web of extrusion 30b and into a rigid substance, such as concrete, pre-poured through passage 56 of extrusion 30b. Another segment 162 of batt 150 has a pair of planar parallel surfaces 164 and 166. Surface 164 is mounted flush against fingers 50 and 51 of extrusion 30a. A very secure corner to building 10 is thus formed in a simple and expedient manner.

What has been described, therefore, is a fastening device for fastening together a pair of elongate planar boards in parallel spaced relation to form a composite panel. The device is characterized by including interlock means thereon to enable the device to be directly interlocked with an identical fastening device of another composite panel. Panels adjoined in the above manner may form the walls of a building. The invention, however, is not limited to the building construction industry, but may be used in any environment wherein a pair of composite panels are desired to be locked together in adjoining relation.

Thus, although the invention has been described with respect to a specifically disclosed embodiment, it is not to be so limited. Rather, the scope of the invention is to be defined in accordance with the following claims.

What is claimed is:

1. A fastening device adapted for attachment to the vertical ends of a pair of first and second vertically disposed planar wall boards mounted in parallel spaced relation to form a composite wall panel having a vertical end thereof capable of being interlocked with a complementary end of a second composite panel so the two panels may form part of an easily assembled and disassembled partition system, the fastening device comprising:

an elongated transverse web continuous for a major portion of the length of the vertical end of the wall panel and having a first portion and a second portion,

a pair of elongated planar first flanges integral with the first portion of the web and extending laterally away therefrom in the same general direction as substantially parallel spaced relation, the first flanges being substantially continuous for the length of the web and being spaced apart by a distance substantially equal to the width of the first wall board so that the first flanges can be releasably engaged with the vertical end of the first wall board in a snug frictional fit,

a pair of second flanges integral with the second portion of the web and extending laterally away therefrom in substantially parallel spaced relation and in the same general direction as the first flanges, the second flanges being substantially continuous for the length of the web and being spaced apart by a distance substantially equal to the width of the second wall board so that the second flanges can be releasably engaged with the vertical end of the second wall board in a snug frictional fit, whereby the

two pairs of flanges hold the first and second wall boards in a fixed, parallel spaced apart relation, an elongated first ridge integral with the first portion of the web and extending ultimately in a direction generally parallel to the web and spaced apart therefrom to form an elongated first recess between the first ridge and the web, and an elongated second ridge integral with the second portion of the web at a location spaced laterally from the first ridge and extending ultimately in the same direction as the first ridge and generally parallel to the web, the second ridge being spaced from the web to form an elongated second recess between the second ridge and the web, the first and second ridges being shaped and being spaced apart sufficiently to be releasably interlocked in a snug frictional fit with corresponding first and second recesses of an identical fastening device at the complementary end of the second composite panel to hold the first and second composite wall panels in a fixed position relative to each other,

the first portion of the web being substantially longer than that portion of the first ridge which extends parallel to the web, the second portion of the web being substantially longer than that portion of the second ridge which extends parallel to the web, the first and second portions of the webs extending in the same general direction so that the first and second portions of the web are in continuous juxtaposition with identical first and second portions, respectively, of said identical fastening device and so that the web of the fastening device provides means for guiding movement of the first and second ridges of the fastening device laterally into engagement with the first and second recesses of said identical fastening device,

the plane of the second portion of the web being offset from the plane of the first portion thereof so that the first portion of the web of one fastening device comes into contact with the second portion of the web of the other fastening device to interrupt relative lateral movement of the two fastening devices away from their interlocked position.

2. A fastening device according to claim 1 in which the pair of first flanges are slidable longitudinally relative to the first wall board, and the pair of second flanges are slidable longitudinally relative to the second wall board.

3. A fastening device according to claim 1 in which the first and second ridges are substantially coplanar, and the first and second recesses are substantially coplanar.

4. A fastening device according to claim 1 in which the web has an intermediate portion between the first portion and the second portion, and in which the fastening device further includes an indentation formed in the intermediate portion of the web to cooperate with a corresponding indentation in the web of the other fastening device to form an elongated vertically disposed passageway between the edges of the two composite wall panels.

5. A fastening device adapted for attachment to the vertical ends of a pair of first and second vertically disposed planar wall boards mounted in parallel spaced relation to form a composite wall panel having a vertical end thereof capable of being interlocked with a complementary end of a second composite wall panel

so the two panels may form part of an easily assembled and idissembled partition system, the fastening device comprising

an elongated transverse web having a first portion and a second portion,

a pair of elongated planar first flanges integral with the first portion of the web and extending laterally away therefrom in the same general direction, the first flanges being spaced apart by a distance substantially equal to the width of the first wall board so the first flanges can be releasably engaged with the vertical end of the first wall board in a snug frictional fit,

a pair of second flanges integral with the second portion of the web and extending laterally away therefrom in the same general direction as the first flanges, the second flanges being spaced apart by a distance substantially equal to the width of the second wall board so that the second flanges can be releasably engaged with the vertical end of the second wall board in a snug frictional fit, whereby the two pairs of flanges hold the first and second wall boards in a fixed, parallel, spaced apart relation, an elongated first ridge integral with the first portion of the web and extending ultimately in a direction generally parallel to the web and spaced apart therefrom to form an elongated first recess between the first ridge and the web, and

an elongated second ridge integral with the second portion of the web at a location spaced laterally from the first ridge and extending ultimately in the same direction as the first ridge and generally parallel to the web, the second ridge being spaced from the web to form an elongated second recess between the second ridge and the web, the first and second ridges being shaped to be releasably interlocked in a snug frictional fit with corresponding first and second recesses of an identical fastening device at the complementary end of the second composite panel,

the first portion of the web being substantially longer than the portion of the first ridge which extends parallel to the web, and the second portion of the web being substantially longer than that portion of the second ridge which extends parallel to the web, the first and second portions of the web extending in the same general direction so that the first and second portions of the web are in continuous juxtaposition with identical first and second portions, respectively, of said identical fastening device and so that the web of the fastening device provides means for guiding movement of the first and second ridges of the fastening device laterally into engagement with the first and second recesses of said identical fastening device,

the plane of the second portion of the web being offset from the plane of the first portion thereof so that the first portion of the web of one fastening device comes into contact with the second portion of the web of the other fastening device to interrupt relative lateral movement of the two fastening devices away from their interlocked position.

6. A fastening device according to claim 5 in which the pair of first flanges are slidable longitudinally relative to the first wall board, with the pair of second flanges being slidable longitudinally relative to the second wall board.

7. A fastening device according to claim 5 in which the web includes an intermediate portion between the first portion and the second portion, and in which the fastening device further includes an indentation formed in the intermediate portion of the web to cooperate with a corresponding indentation in the web of the other fastening device to form an elongated vertically disposed passageway between the two composite wall panels.

8. Apparatus for forming a vertically disposed partition system comprising

a first composite wall panel having a pair of outwardly extending elongated first ends extending in parallel spaced relation along a vertical edge of the wall panel, a second composite wall panel having a pair of elongated second ends extending in parallel spaced relation along a vertical edge of the second wall panel, the first and second wall panels being aligned edge-to-edge in a common vertical plane,

a first fastening device releasably engaged with the first ends of the first composite wall panel and adapted to be releasably interlocked with an identical second fastening device releasably engaged with the second ends of the second composite wall panel to hold the two wall panels in a fixed relation forming a portion of the partition system, the first fastening device comprising

an elongated transverse web continuous for a major portion of the length of the vertical edge of the first wall panel and having a first portion and a second portion,

a pair of elongated planar first flanges integral with the first portion of the web and extending laterally away therefrom in the same general direction in substantially parallel spaced relation, the first flanges being substantially continuous for the length of the web and being spaced apart by a distance substantially equal to the width of one first end of the first wall panel so that the pair of first flanges can be releasably engaged with said one first end in a snug frictional fit,

a pair of elongated planar second flanges integral with the second portion of the web and extending laterally away therefrom in substantially parallel spaced relation and in the same general direction as the first flanges, the second flanges being substantially continuous for the length of the web and being spaced apart by a distance substantially equal to the width of the other first end of the first wall panel so that the second pair of flanges can be releasably engaged with said other first end in a snug frictional fit,

the second fastening device being identical to the first fastening device but being engaged with its corresponding wall panel so as to be complementary to the first fastening device, the second fastening device including

a pair of corresponding first flanges shaped so they can be releasably engaged with one second end of the second wall panel,

a pair of corresponding second flanges shaped so they can be releasably engaged with the other second end of the second wall panel,

an elongated first ridge integral with the first portion of the web thereof and extending ultimately in a direction generally parallel to the web and spaced

apart therefrom to form an elongated first recess between the first ridge and the web, and

an elongated second ridge integral with the second portion of the web at a location spaced laterally from the first ridge and extending ultimately in the same general direction as the first ridge and generally parallel to the web, the second ridge being spaced apart from the web to form an elongated second recess between the second ridge and the web, the first and second ridges being shaped to be releasably interlocked in a snug frictional fit with corresponding first and second recesses of said second fastening device, with the first and second recesses being shaped to be releasably interlocked in a snug frictional fit with corresponding first and second ridges of the second fastening device,

the first portion of each web being substantially longer than that portion of its corresponding first ridge which extends parallel to the web, the second portion of each web also being substantially longer than that portion of its corresponding second ridge which extends parallel to the web, the first and second portions of each web extending in the same general direction so the web of the first fastening device is in continuous juxtaposition with the web of the second fastening device and so that the web of the first fastening device provides means for guiding movement of the first and second ridges of the fastening device laterally into engagement with the first and second recesses of the second fastening device,

the plane of the second portion of the web of each fastening device being offset from the plane of the first portion thereof so that the first portion of the web of the first fastening device comes into contact with the second portion of the web of the second fastening device to interrupt relative lateral movement of the two fastening devices away from their interlocked position.

9. A partition system according to claim 8 in which the vertical ends of each composite wall panel are formed by a pair of laterally spaced apart and parallel wall boards.

10. A partition system according to claim 9 including a layer of insulation material disposed between the wall boards of each composite wall panel.

11. A partition system according to claim 10 in which each layer of insulation defines a vertical edge spaced from the web of the fastening device associated with the wall boards between which the insulation is disposed, the spacing between the insulation and the web forming an elongated vertically extending passageway for electrical apparatus and the like.

12. A partition system according to claim 11 in which the innermost first flange and second flange of each fastening device includes a corresponding inwardly extending elongated lip at the end thereof, the lips of the flanges being in a common plane and in juxtaposition with the vertical edge of the insulation layer.

13. A partition system according to claim 8 in which the first and second ridges are substantially coplanar, and the first and second recesses are substantially coplanar.

14. A partition system according to claim 8 in which each web has a respective intermediate portion between the first portion and the second portion, and in which each fastening device further includes a respec-

tive indentation formed in the intermediate portion of the web to cooperate with a corresponding indentation in the web of the other fastening device to form an elongated vertically disposed passageway between the edges of the two composite wall panels.

15. A partition system according to claim 8 in which each composite wall panel is mounted on a foundation, the composite wall panels being disposed along a corner of the foundation defined by the intersection of a horizontal surface and a vertical edge of said foundation, each wall panel being mounted so that the innermost wall board of the wall panel rests on the horizontal surface of the foundation and the outermost wall board overlaps the corner of the foundation and has an inner vertical facing thereof abutting against the vertical edge of the foundation, the overlapping portion of the wall board being fastened to the foundation to hold the wall panel in a fixed upright position thereon.

16. A partition system according to claim 15 in which both wall boards are longer than their associated interlocking fastening members, and further including a horizontally disposed elongated top plate above the outermost wall board, and in which the top plate has an inner vertical facing which is overlapped by the top portion of the innermost wall board.

17. A partition system according to claim 15 including a bearing plate disposed between the horizontal surface of the foundation and the bottom of the composite wall panel, the bearing plate including an upwardly projecting elongated lip abutting against and extending along the bottom of the inner vertical facing of the innermost wall board.

18. A partition system according to claim 17 in which the foundation means includes a sill plate at said corner of the foundation, the sill plate defining said horizontal surface and said vertical edge, the bottom portion of the outermost wall board being fastened against the vertical edge of the sill plate.

19. A partition system according to claim 18 in which the sill plate is a wood beam, and the bearing plate is made of metal.

20. Apparatus for forming a vertically disposed partition system to be mounted along the corner of a foundation having a horizontal surface which intersects a vertical edge of the foundation to form a corner thereof, the partition system comprising:

a composite wall panel to be mounted in a vertical position along the edge of the foundation, the composite wall panel including a longitudinally extending load-bearing outer panel having an inner and an outer vertical facing and a top edge and a longitudinally extending inner panel having an inner and an outer vertical facing, the inner panel being spaced from the outer panel, the inner and outer panels defining first and second outwardly extending elongated ends, respectively, extending in parallel spaced relation along a vertical edge of the composite wall panel,

an elongated fastening device releasably engaged with the first and second ends of the composite wall panel and adapted to be releasably interlocked with an identical fastening device on a complementary end of an adjoining wall panel aligned edge-to-edge with the composite wall panel in a common vertical plane to form an easily assembled and disassembled partition system, the fastening device comprising

an elongated transverse web having a first portion and a second portion,

a pair of elongated planar first flanges integral with the first portion of the web and extending laterally away therefrom in the same general direction, the first flanges being spaced apart by a distance substantially equal to the width of the first ends of the composite wall panel so the first flanges can be releasably engaged with said first end in a snug frictional fit,

a pair of elongated second flanges integral with the second portion of the web and extending laterally away therefrom in the same general direction, the second flanges being spaced apart by a distance substantially equal to the width of the second end of the composite wall panel so the second flanges can be releasably engaged with said second end in a snug frictional fit,

an elongated first ridge integral with the first portion of the web and extending ultimately in a direction generally parallel to the web and spaced apart therefrom to form an elongated first recess between the ridge and the web,

an elongated second ridge integral with the second portion of the web and extending ultimately in the same general direction as the first ridge and generally parallel to the web, the second ridge being spaced from the web to form an elongated second recess between the second ridge and the web,

the first and second ridges being shaped to be releasably interlocked in a snug fit with corresponding first and second recesses of said identical fastening device at the complementary end of said adjoining wall panel,

the load-bearing outer panel being positioned to overlap the corner of the foundation such that the inner vertical facing of the outer panel abuts against said vertical edge of the foundation, whereby fastening of the overlapping portion of the outer panel to the foundation holds the composite wall panel in a fixed upright position on the foundation,

the inner panel resting on the horizontal surface of the foundation and being of such length that it extends above the top edge of the outer panel, and an elongated top plate resting on the top edge of the outer panel and abutting against the outer vertical facing of the inner panel so that the portion of the inner panel which overlaps the top plate provides lateral support for the top plate, whereby fastening of the overlapping portion of the inner panel to the top plate holds the top plate in a fixed position above the composite wall panel.

21. A partition system according to claim 20 including a layer of insulation between the inner and outer panels.

22. A partition system according to claim 20 including a bearing plate disposed between the horizontal surface of the foundation and the bottom of the composite wall panel, the bearing plate including an upwardly projecting elongated lip abutting against and extending along the bottom of the inner vertical facing of the inner panel.

23. A partition system according to claim 22 in which the foundation includes a sill plate at the corner of the foundation, the sill plate defining said horizontal surface and said vertical edge, the bottom portion of the

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outermost wall board being fastened against the vertical edge of the sill plate.

24. A partition system according to claim 23 in which the sill plate is a wood beam, and the bearing plate is made of metal.

25. A partition system according to claim 20 in which the web of the fastening device has an intermediate portion between the first portion and second portion thereof, and in which the fastening device further includes an indentation formed in the intermediate portion of the web to cooperate with a corresponding indentation in the web of the identical fastening device at the complementary end of the adjoining composite panel to form an elongated vertically disposed passageway between the two composite wall panels.

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26. A partition system according to claim 20 in which the first portion of the web is substantially longer than that portion of the first ridge which extends parallel to the web, and in which the second portion of the web is substantially longer than that portion of the second ridge which extends parallel to the web, and in which the first and second portions of the web extend in the same general direction so that the web of the fastening device is in continuous juxtaposition with the web of said identical fastening device so that the web of one fastening device provides means for guiding movement of the first and second ridges of the fastening device laterally into engagement with the first and second recesses of the other fastening device.

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UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,780,481 Dated December 25, 1973

Inventor(s) HAROLD E. TOMKINS

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Col. 2, line 1,	"by"	should read	-- be --
line 36,	"off"	should read	-- of --
Col. 3, line 50,	"47"	should read	-- 37 --
Col. 5, line 22,	"finger"	should read	-- fingers --
line 44,	"the"	should read	-- and --
line 62,	"signals"	should read	-- panels --
Col. 6, line 50,	"as"	should read	-- in --
Claim 1			
Col. 8, line 8,	"way"	should read	-- away --
Claim 5			

Signed and sealed this 9th day of April 1974.

(SEAL)
Attest:

EDWARD M. FLETCHER, JR.
Attesting Officer

C. MARSHALL DANN
Commissioner of Patents