

Feb. 25, 1969

J. W. METELNICK
PANEL WALL STRUCTURE

3,429,090

Filed May 27, 1966

Sheet 1 of 2

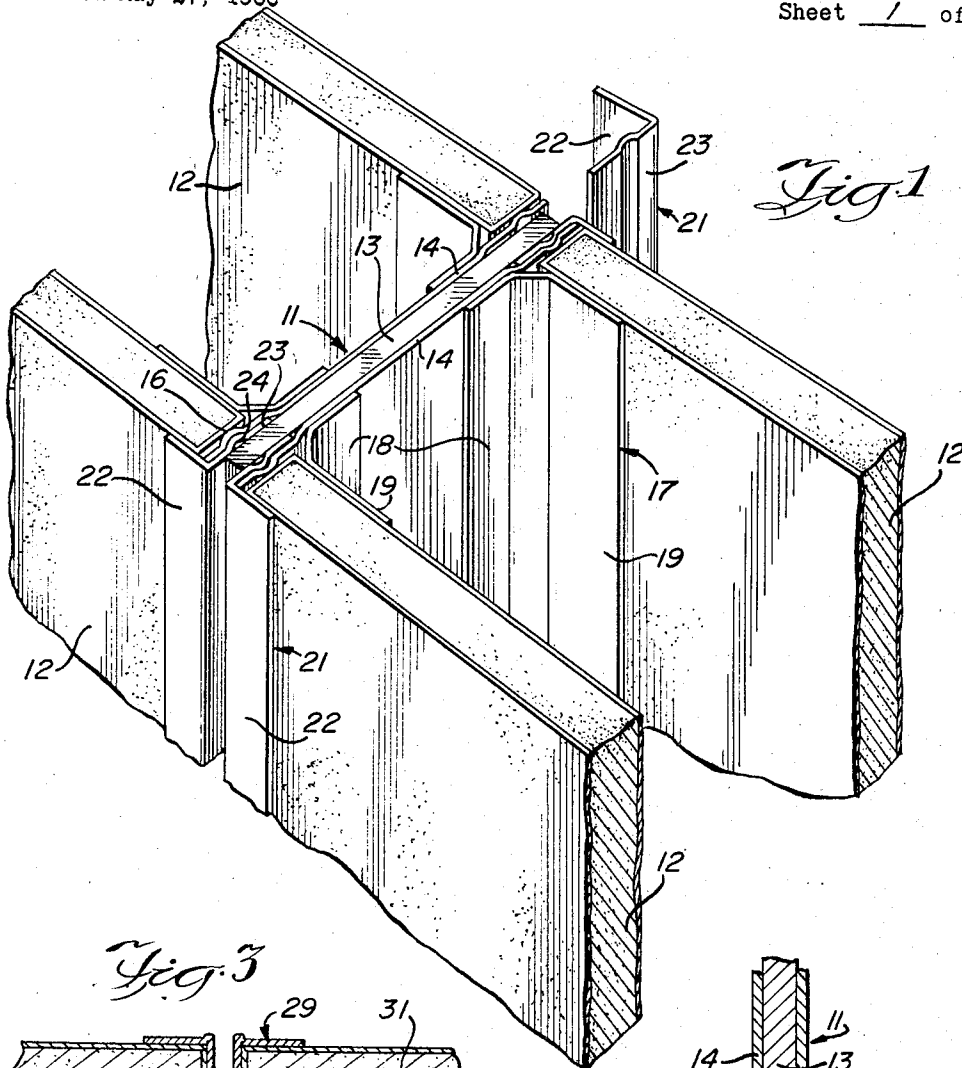


Fig. 1

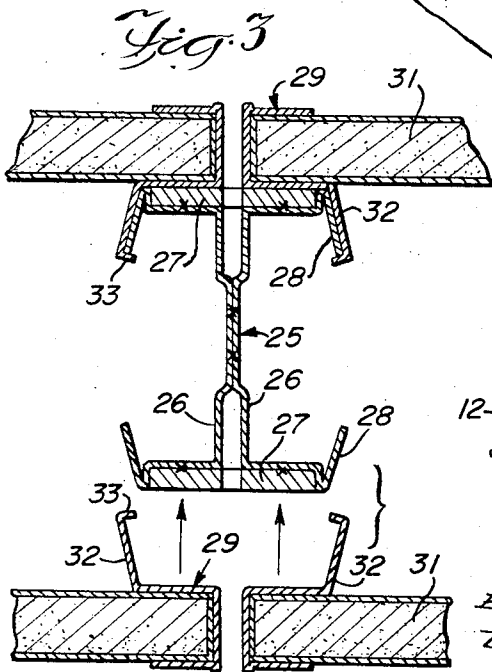


Fig. 3

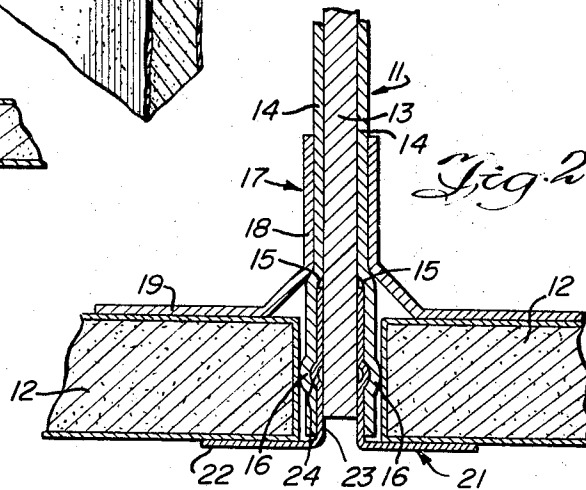


Fig. 2

INVENTOR
John W. Metelnick
By
Dressler, Goldsmith, Clement & Gordon
ATTORNEYS

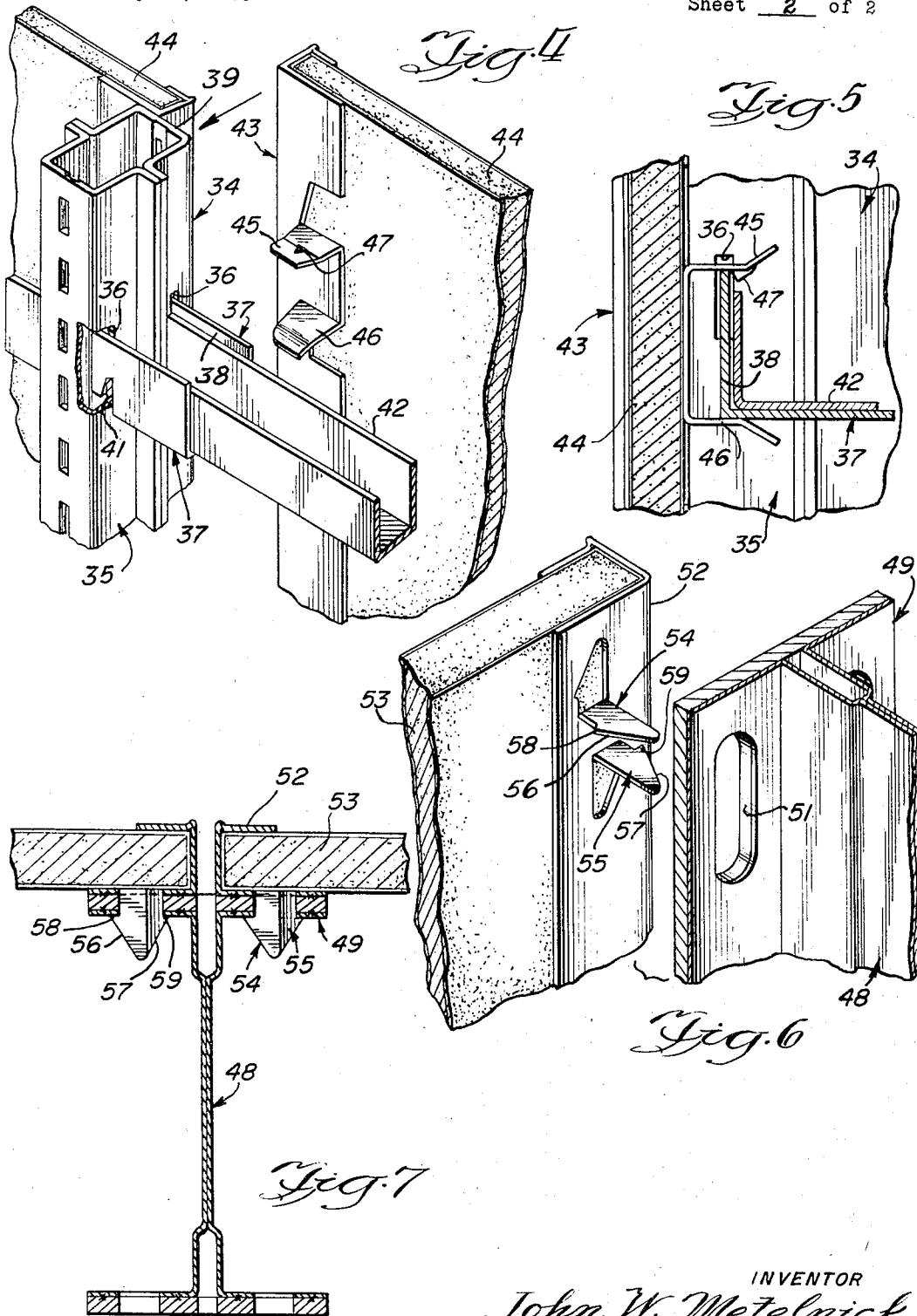
Feb. 25, 1969

J. W. METELNICK
PANEL WALL STRUCTURE

3,429,090

Filed May 27, 1966

Sheet 2 of 2



INVENTOR
John W. Metelnick
By *Dressler, Goldsmith, Clement & Gordon*
ATTORNEYS

1

3,429,090

PANEL WALL STRUCTURE

John W. Metelnick, Evanston, Ill., assignor to Garco Corporation, a corporation of Illinois
Filed May 27, 1966, Ser. No. 553,503

U.S. CI 52-481

3 Claims

Int. Cl. E04b 2/76, 2/28; E04c 2/46

ABSTRACT OF THE DISCLOSURE

A plurality of wall panels are supported in upright position by resilient interengagement with a support assembly so that a wall may be set up or taken down easily without nails or screws, and the wall panels may be used again in constructing a new wall. Each wall panel is positioned adjacent the support assembly, and a vertically disposed strip adapted to bear against one surface of the wall panel adjacent one edge thereof is snapped into engagement with a complementary part on the support assembly.

This invention relates to a panel wall structure, and is particularly concerned with a vertically disposed support assembly and a panel retaining strip having resilient interengageable parts that enable a wall panel to be snapped into place and held without screws or nails.

The structure of the present invention is particularly advantageous in connection with walls in which the adjacent edges of adjoining panels are spaced a short distance apart to provide access to a vertical support assembly on which a plurality of brackets or other load bearing members are mounted. Access to such vertical support assembly is desirable because the brackets are frequently moved from one position to another to permit rearrangement of the shelves supported by the brackets. However, it should be understood that the bracket support structure is not part of this invention, and that the invention is not limited to walls in which the panels are spaced from each other.

It has heretofore been customary, in the construction of walls of the type with which the present invention is concerned, to nail the panels to wood studs or to screw them to thin gauge steel floor and ceiling runners. The nail head or screw depressions are then filled, taped and finished to provide an attractive appearance for the wall.

In walls constructed in accordance with the present invention, the appearance of the panels is not marred by nail head or screws, and the necessity of refinishing the panels is eliminated. The resilient interengagement of the panel retaining members enables the wall to be constructed much faster than when the panels are nailed or screwed into place, and also facilitates dismantling of the wall and permits all of the panels to be used again in constructing a new wall.

Suitable structure by means of which the above mentioned and other advantages of the invention are attained is described in the following specification, taken in conjunction with the accompanying drawings showing several preferred illustrative embodiments of the invention, in which:

FIGURE 1 is a fragmentary perspective view of a wall structure embodying the invention;

FIGURE 2 is a fragmentary cross-sectional view of the structure shown in FIGURE 1;

FIGURE 3 is an exploded fragmentary cross-sectional view of another embodiment of the invention;

FIGURE 4 is an exploded fragmentary perspective view of another embodiment of the invention;

FIGURE 5 is a fragmentary vertical sectional view of the structure of FIGURE 4 showing a panel retaining strip secured to a vertical support assembly;

2

FIGURE 6 is a fragmentary exploded perspective view of another embodiment of the invention; and

FIGURE 7 is a fragmentary cross-sectional view of the structure of FIGURE 6 with the panels secured to the vertical support assembly.

For convenience, each embodiment of the invention hereinafter disclosed will be described by reference to a single wall construction, but it will be understood that a double wall construction may be used with any of the structures disclosed. Where a double wall construction is desired, the wall holding structure is duplicated at opposite sides of the vertical support assembly.

The wall structure generally comprises a vertically disposed support assembly and a plurality of wall panels, each of which has one edge secured to the support assembly by means resiliently interengaged with the support assembly. The means adapted to engage the support assembly comprises a vertically disposed strip adapted to bear against one surface of the wall panel adjacent one edge thereof and to be snapped into engagement with a complementary part on the support assembly.

The bottom edge of the wall structure may be mounted on any suitable base member, or on a floor. In either case, the bottom edge of the wall panels may fit into a channel member fixed to the floor or base member, or may be held by suitable molding strips separated so as to receive the bottom edge of the wall panels therebetween.

In some embodiments of the invention, the wall panels may be removed by simply prying the vertically disposed strip out of engagement with the support assembly, but in some embodiments the wall structure should be considered as a permanent installation.

In the embodiment of the invention illustrated in FIGURES 1 and 2, the wall structure comprises a vertically disposed support assembly 11 and wall panels 12 secured adjacent one end of the support assembly. The walls extend in opposite directions at right angles to the plane of the vertical support assembly. The adjacent edges of adjoining panels may abut each other, but preferably are spaced apart to provide space for securing load bearing brackets to the support assembly.

The vertically disposed support assembly 11 comprises a center core member 13 having a thin sheet 14 of resilient metal welded to each side of the core member. The outer edge portion of each sheet 14 is free of any weldment and is bent outwardly from the core member 13 to provide an offset 15, so that the resilience of the outer edge portion of the sheet 14 can be utilized in a manner hereinafter described. The resilient outer edge portion of the sheet 14 has a longitudinal rib 16 extending laterally from the plane of the vertically disposed support assembly. An angle backing member 17 has one side 18 welded to the sheet 14 rearwardly of the offset 15, and another side 19 extending at right angles to the plane of the sheet 14. The side 19 is spaced rearwardly of the outer edge of the sheet 14 a distance equal to the thickness of the wall panel 12 and provides a firm support against which one edge portion of the wall panel is pressed during the assembly of the wall.

The wall panel 12 is pressed against the side 19 of the backing member by a vertically disposed strip 21 in the form of an angle having one leg 22 parallel to the side 19 of the backing member 17 and one leg 23 extending at right angles thereto. The offset 15 in the sheet 14 spaces the resilient outer edge portion of the sheet 14 from the adjacent surface of the core 13 a distance substantially equal to the thickness of the leg 23, whereby the leg 23 may be inserted between the outer edge portion of the sheet 14 and the core 13.

The leg 23 has a longitudinal rib 24 extending laterally from the plane of the leg 23. When the strip 21 is pressed into position with the leg 23 between the outer edge por-

3

tion of the sheet 14 and the core 13, the rib 24 forces the outer edge portion of the sheet 14 away from the core 13 until the leg 22 engages the outer surface of the wall panel 12. At this point the rib 24 is located in register with the rib 16, and the resilient outer edge portion of the sheet 14 snaps back into its initial position with the ribs 24 and 16 resiliently interengaged. The rib 24 is dimensioned to fit within the concave side of the rib 16.

The core member 13 exerts a backing pressure against the leg 23 to hold it and the outer edge portion of the sheet 14 interlocked against accidental displacement. The resilient interengagement between the vertically disposed strip 21 and the vertically disposed support assembly 11 retains the wall panel 12 in upright position. Although each wall panel is firmly held in place, the wall structure may be readily dismantled by prying the vertically disposed strip 21 from its engagement with the support assembly.

In the embodiment of the invention illustrated in FIGURE 3, a vertically disposed support assembly 25 comprises two resilient metal sheets 26 welded together along their longitudinal center and having a backing support 27 secured thereto at the outer edge of the support member in any suitable manner. A leg 28 extends laterally from each side of the support assembly rearwardly of the backing support 27.

A vertically disposed strip 29 is adapted to engage one edge of a wall panel 31 and has a resilient leg 32 adapted to fit against the leg 28. A lip 33 projects from the leg 32 so as to engage the leg 28 when the wall panel 31 is pushed toward the backing support 27. The engagement of the lip 33 with the leg 28 moves the leg 32 outwardly until the lip 33 clears the free edge of the leg 28. The resilience of the leg 32 then causes it to snap into juxtaposition with the leg 28, with the lip 33 extending around the free edge of the leg 28 to hold the wall panel 31 in upright position.

In the embodiment of FIGURES 4 and 5, a vertically disposed support assembly 34 comprises a tubular member 35 having aligned slots 36 in opposite walls thereof. A channel 37 mounted in the slots 36 extends laterally from the support assembly and has one wall 38 spaced rearwardly of the front 39 of said tubular member. The underside of the channel 37 is notched, as indicated at 41, to interlock with the wall portions of the tubular member defining the lower edges of the slots 36. A horizontal stretcher 42 may be fitted in the channel 37 to provide a more rigid wall structure, but the use of such stretchers is not essential to the invention.

A vertically disposed strip 43 is channel-shaped to fit around one edge of a wall panel 44 and has a pair of resilient ears 45 and 46 projecting therefrom. The ears 45 and 46 are struck from the strip 43 and are spaced vertically to enable the wall 38 of channel 37 to fit therebetween. The outer ends of the ears are oppositely flared to facilitate interengagement of the ears with the wall 38. The upper ear 45 has a detent 47 adapted to snap over the top of the wall 38, thereby retaining the wall panel 44 against accidental displacement.

In the embodiment of FIGURES 6 and 7, a vertically disposed support assembly 48 has a backing support 49 extending laterally from one longitudinal edge thereof. The laterally projecting backing support has an elongated aperture 51 extending therethrough. A vertically disposed strip 52 is channel-shaped to fit around one edge of a wall panel 53 and has a pair of vertically spaced ears 54 and 55 struck from its back portion. The ears 54 and 55 are parallel to each other and are each of less width than the width of the aperture 51. The ears 54 and 55 are offset slightly and have oppositely disposed inclined edges 56 and 57, respectively. The edge 56 terminates in a projection 58 and the edge 57 terminates in a similar projection 59. The ears 54 and 55 are so positioned that the linear distance between the outer ends of the projec-

4

tions 58 and 59 is slightly greater than the width of the aperture 51.

When the wall panel 53 is pushed into engagement with the backing support 49 with the ears 54 and 55 aligned with the aperture 51, the edge 56 of the ear 54 engages one edge of the backing support defining one longitudinal edge of the aperture, and the edge 57 of the ear 55 engages the opposite edge of the aperture. Each ear is forced laterally inwardly until its projection clears the slot 51 and then snaps back to its initial position, whereby the projections 58 and 59 interlock with the back side of the backing support to retain the wall panel 53 in vertical position.

Although a few preferred embodiments of the invention have been described in considerable detail, it will be understood that the description thereof is intended to be illustrative, rather than restrictive, as many details of construction may be modified or changed without departing from the spirit or scope of the invention. Accordingly, it is not desired to be restricted to the exact structure disclosed.

What is claimed is:

1. A panel wall structure comprising a pair of wall panels and panel retaining means, said panel retaining means comprising a pair of vertically disposed angle strips each having one leg engaging one surface of each of said wall panels and a second leg having a longitudinally extending rib therein, a vertically disposed support assembly comprising a center core member, a resilient sheet secured to opposite surfaces of said core member and an angle member secured to each of said sheets, each of said angle members having one side perpendicular to the plane of its sheet in spaced relationship to its outer edge and engaging the opposite surface of each of said wall panels, and a longitudinally extending rib in each of said sheets between its outer edge and said one side of said angle member secured thereto, said last mentioned ribs being interengaged with said first mentioned ribs to resiliently hold said panels in predetermined relationship to said assembly.

2. A wall panel retaining structure comprising a vertically disposed support assembly and a vertically disposed strip, said assembly and said strip having interengageable means extending laterally therefrom, one of said means comprising a backing support having apertures therein and said other means comprising a pair of vertically spaced ears projecting perpendicularly from said one surface of said strip and adapted to project through said aperture, each of said ears having a projection on one edge thereof whereby said ears are adapted to interlock with opposite edges of said backing support defining said structure, said ears being resilient whereby said assembly and said strip may be resiliently interengaged in predetermined upright relationship, said strip having one surface juxtaposed against one surface of a wall panel and said support assembly being positioned, when interengaged with said strip, to provide backing support for the opposite surface of a wall panel engaged by said strip, whereby said support assembly and said strip cooperate to retain a wall panel in upright position.

3. A wall panel retaining structure comprising a vertically disposed support assembly and a vertically disposed strip, said support assembly including a core member and an angle backing member having one side spaced from the outer edge of said assembly for engagement with the rear surface of a wall panel, the outer edge portion of said support assembly being resilient and being spaced from the adjacent surface of said core member, said strip having one surface juxtaposed against one surface of a wall panel and said support assembly being positioned, when interengaged with said strip, to provide backing support for the opposite surface of a wall panel engaged by said strip, said assembly and said strip having interengageable means extending laterally therefrom, one of said means being resilient whereby said assembly and said strip may

5

be resiliently interengaged in predetermined upright relationship, said means extending laterally from said assembly comprising a longitudinal rib in said outer edge portion of said assembly, said vertically disposed strip comprising an angle having one leg parallel to said side and a leg at right angles thereto, said second mentioned leg being positioned between said core member and said outer edge portion of said assembly, said other means comprising a longitudinal rib in said second mentioned leg, whereby said support assembly and said strip cooperate to retain a wall panel in upright position.

References Cited

UNITED STATES PATENTS

1,937,186 11/1933 Barrett ----- 52—396 X

6

2,059,483 11/1936 Parsons ----- 52—489
2,202,568 5/1940 Worden ----- 52—387
2,314,238 3/1943 Ohlis ----- 52—477 X
2,966,967 1/1961 Levy et al. ----- 52—36
3,320,710 5/1967 Byssing ----- 52—481

FOREIGN PATENTS

445,476 4/1936 Great Britain.

10 ALFRED C. PERHAM, *Primary Examiner.*

U.S. Cl. X.R.

52—476, 488, 489, 495