United States Patent

Sikes

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[45] **Aug. 15, 1972**

[54] **PLATE CONNECTED STRUCTURAL MEMBER CONSTRUCTION FOR BUILDING WALLS**

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[22] Filed: **Jan. 19, 1971**

[21] Appl. No.: **107,799**

Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 697,672, Jan. 15, 1968, abandoned, Continuation-in-part of Ser. No. 882,995, Dec. 8, 1969.

[52] **U.S. Cl.** **52/250,** 52/272, 52/481, 287/189.36

[51] **Int. Cl.**.....**E04b 1/348,** E04b 1/40

[58] **Field of Search**.....52/250, 252, 272, 481, 242; 287/189.36, 189.36 D, 209.26

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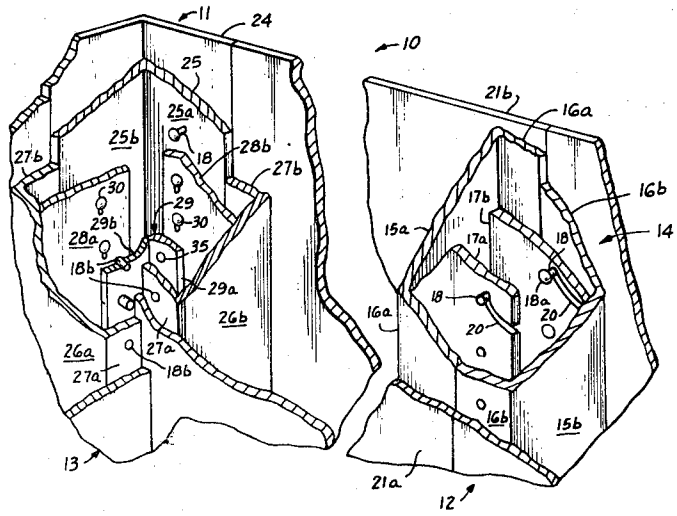
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Primary Examiner—Frank L. Abbott
Assistant Examiner—James L. Ridgill, Jr.

[57] **ABSTRACT**

The invention discloses channel members, as the broadest common element, with various adaptions made with relation to, or in the channel members whereby other members may be latchable engaged therewith, as the channels are in place in wall constructions, whereby the channels may segregate building corner or wall section spaces to receive reenforcing concrete therein. A first presented form of the invention relied upon slots and pins in respective interfitting members to segregate the corner or wall spaces into which the reenforcing concrete was poured. In a later presented form of the invention reliance was made upon inter-fitting teeth, with flexibility of tooth engagement being accomplished by making one tooth forming member of plastic with enough resilience to give amply to permit teeth interfitment. In a preferred form of the invention, now presented the members to be interfitted provide respectively vertically disposed holes in one member, as the channel, to receive therethrough latch providing extensions which are spring urged into latching position after passing through the aforesaid holes.

9 Claims, 18 Drawing Figures



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SHEET 1 OF 3

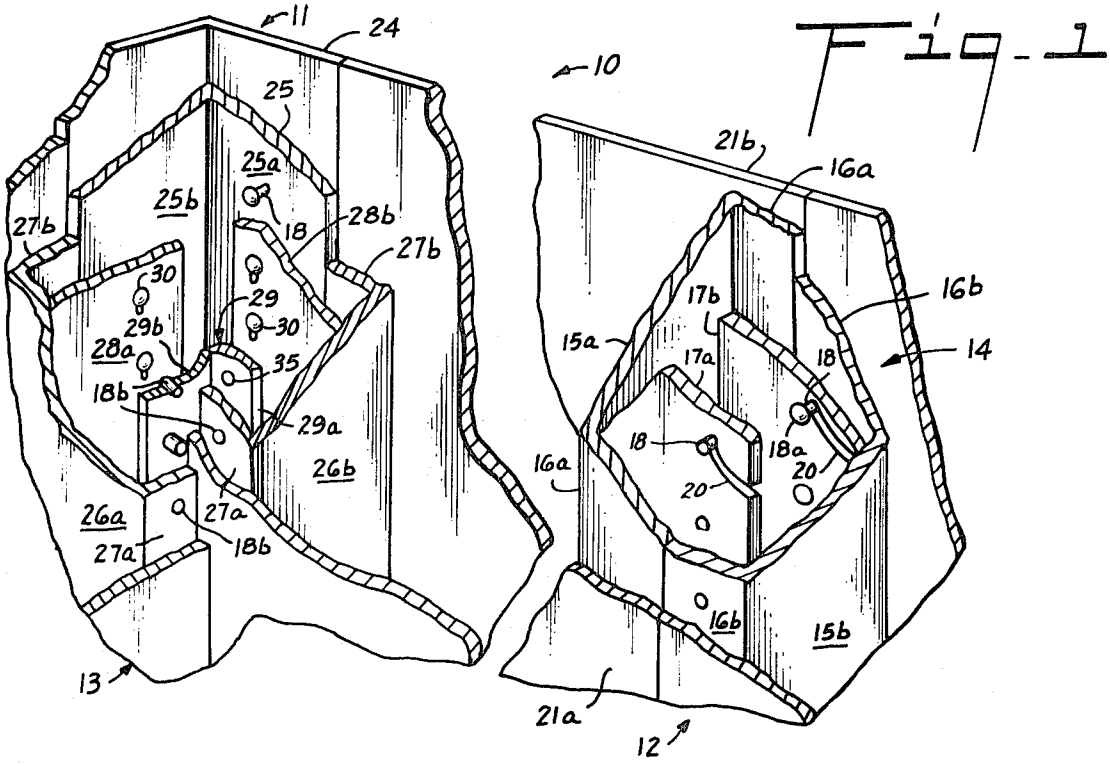


Fig. 1

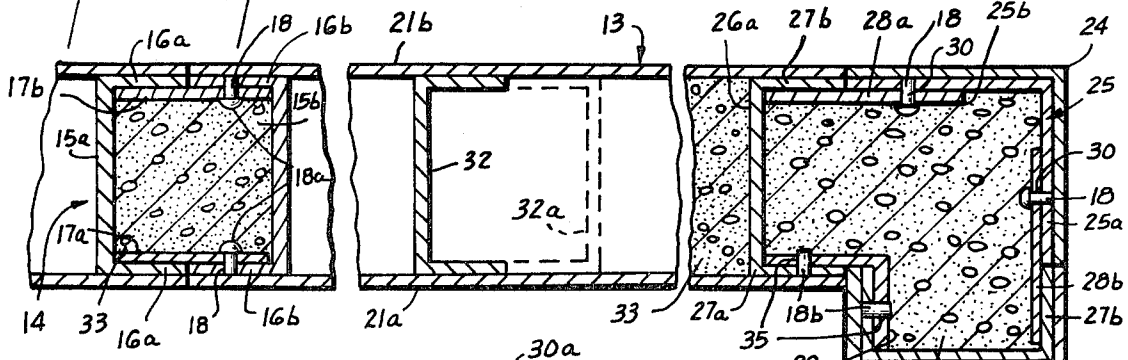


Fig. 2

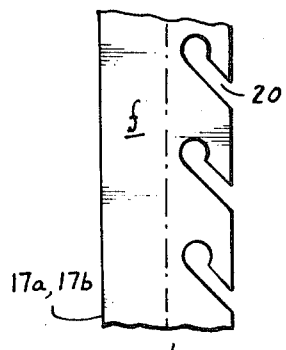


Fig. 3

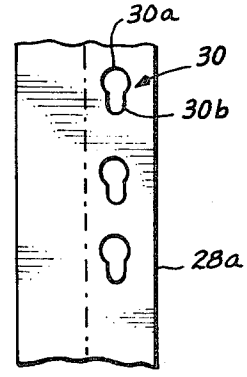


Fig. 4

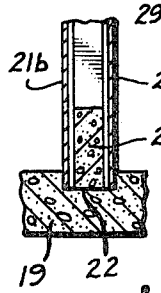


Fig. 5

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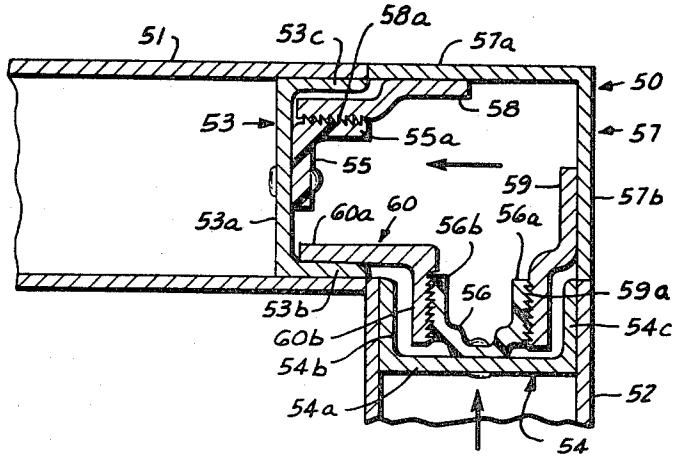


Fig. 6

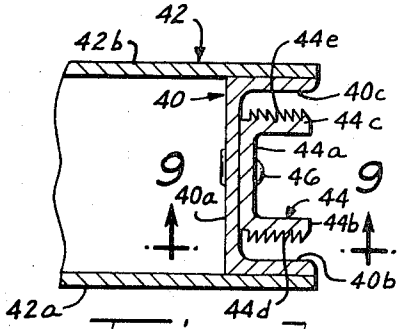


Fig. 7

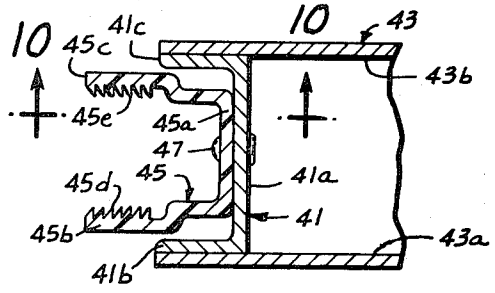


Fig. 8

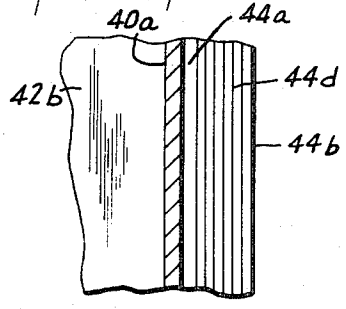


Fig. 9

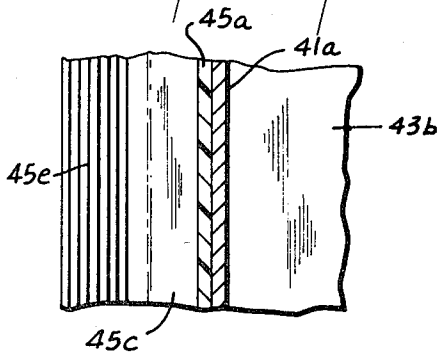


Fig. 10

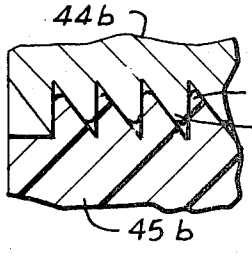


Fig. 11

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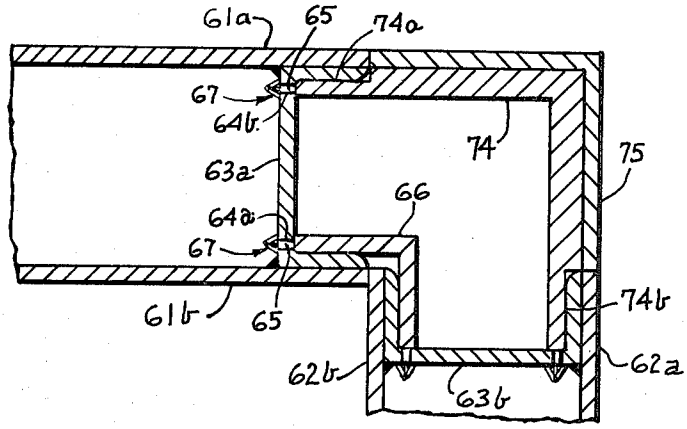


Fig-12

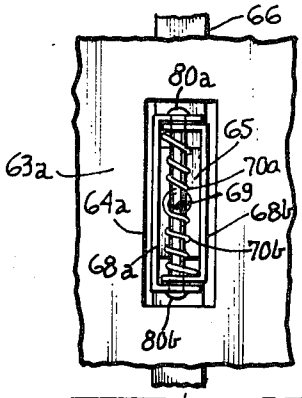


Fig-17

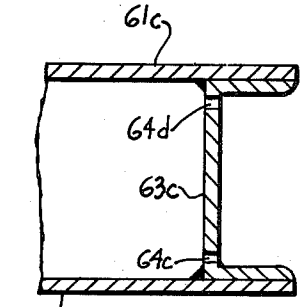


Fig-13

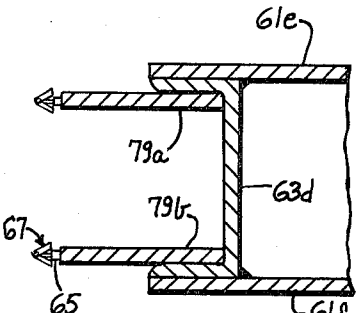


Fig-14

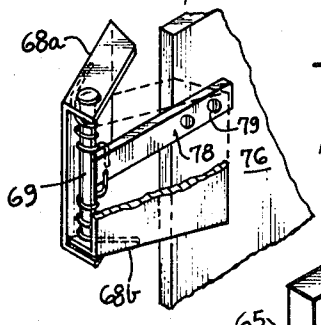


Fig-18

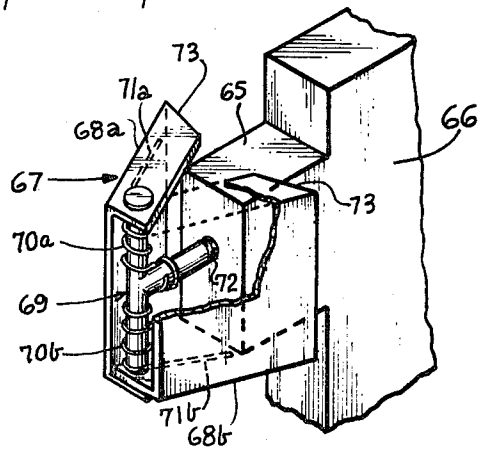


Fig-16

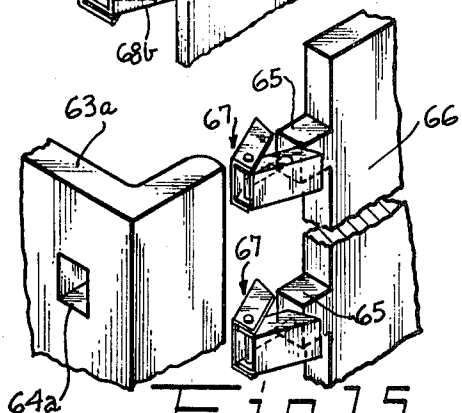


Fig-15

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PLATE CONNECTED STRUCTURAL MEMBER CONSTRUCTION FOR BUILDING WALLS

CROSS-REFERENCE TO RELATED APPLICATION

This application is a continuation-in-part of applicant's application, Ser. No. 697,672 filed on Jan. 15, 1968, now abandoned; and is also a continuation-in-part of applicant's copending application, Ser. No. 882,995, filed Dec. 8, 1969.

BACKGROUND AND OBJECTS OF THE INVENTION

This invention relates to novel and efficient methods and structures for use in erecting the walls of buildings. Though not limited thereto, the present invention is particularly useful in interconnecting prefabricated wall panels.

One object of the invention is to provide new and improved columnar structures for supporting the wall sheaths forming the two sides of a building wall.

Another object of the invention is to provide new and improved columnar structures for forming the corners at the meeting places of pairs of building walls running in different directions.

Other and further objects will be apparent when the specification herein is considered in connection with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

The drawings previously presented and repeated herein are described:

FIG. **1** is an isometric view of a corner construction which also shows a columnar construction spaced from the corner and spacing wall sheath sections transversely apart;

FIG. **2** is a plan view of a corner construction, as shown in FIG. **1**, the figure also showing a columnar construction spaced to the left of the corner construction and corresponding in construction with the columnar construction shown to the right of the corner construction in FIG. **1**;

FIG. **3** is a fragmentary elevational view of a connector plate as used to connect columnar channels in FIGS. **1** and **2**;

FIG. **4** is a fragmentary elevational view of a connector plate as used to connect corner members to a corner angle, as shown in FIGS. **1** and **2**;

FIG. **5** is an elevational cross-sectional view through a portion of one of the walls shown in FIGS. **1** and **2**;

FIG. **6** is a cross-sectional plan view of a modified embodiment of corner construction;

FIGS. **7** and **8** are cross-sectional plan views of the adjacent ends of wall panels which are to be connected to one another, such views showing a modified embodiment of structure for interconnecting the wall panels;

FIG. **9** is a elevational view taken along section line **9-9** of FIG. **7**;

FIG. **10** is an elevational view taken along section line **10-10** of FIG. **8**; and

FIG. **11** is an enlarged fragmentary view showing in greater detail the interlocking of the interconnecting structures of FIGS. **7** and **8**.

The drawings presented herein for the first time to disclose a preferred form of the invention, are described as follows:

FIG. **12** is a plan view of corner construction showing to small scale the latching members of this form of the invention as urged to latched position after having been passed through holes in respective channels;

FIG. **13** is a fragmentary view through a wall section, including a channel providing latch receiving notches therein;

FIG. **14** is a fragmentary view through a wall section, including a channel including plates therewith equipped with latches shown in small scale, and for purpose of passing through the holes shown in the channel of FIG. **13**;

FIG. **15** is an isometric view, including latches of the type shown to small scale in FIGS. **12** and **14**, a section of latch receiving channel being included;

FIG. **16** is a larger scale isometric view of a latch of the type shown in FIGS. **12**, **14** and **15**;

FIG. **17** is a view of a channel web portion with hole therein, with a latch of the type shown in FIGS. **12**, **14**, **15** and **16**, being shown contracted in passage through the hole; and

FIG. **18** is an isometric view of a variation of the latch shown in the hereinabove described figures, adapted for installation on thin wall structures.

DESCRIPTION OF THE ILLUSTRATED EMBODIMENTS

Referring now in detail to the drawings of structures now pending, in which like reference numerals are applied to like elements in the various views, a building construction **10** is shown in FIGS. **1** and **2** in which a corner construction **11** is shown and also wall panel constructions **12** and **13** extending from the corner **11** at right angles to each other. An intermediate column and wall sheath spacer construction **14** is shown at the right of the corner **11** in FIG. **1** and to the left of the corner **11** in FIG. **2**, which is illustrative of the columnar construction comprising an important portion of this invention.

In detail, a column **14** is shown as comprising upstanding channels **15***a*, **15***b* with respective pairs of channel flanges **16***a*, **16***b* in outer edge face abutment. Outer and inner upstanding connector plates **17***a*, **17***b* are shown disposed against the inner faces of the outer channel flanges **16***a* and **16***b* and against the inner faces of the inner channel flanges **16***a* and **16***b*, with the flanges **16***b* being provided with latch bolts or rivets **18** with heads **18***a* disposed at a spaced distance inwardly from the inner faces of the respective channel flanges **16***b*, such spaced distance being a distance slightly greater than the thickness of the plates **17***a* and **17***b*.

In fabrication, the channel **15***b* is first placed in proper upright position on a conventional runner or slab **19**, as shown in FIG. **5**, with the bolts or rivets **18** vertically spaced along flanges **16***b* at predetermined distances apart. Then the channel **15***a* (with the left outer faces of the connector plates **17***a* and **17***b* secured to the respective inner faces of the channel flanges **16***a*, as by gluing, welding, bolting, or by any appropriate means) is maneuvered to latch the connector plates **17***a* and **17***b*, having therein the appropriately spaced latching slots **20** shown in FIG. **3** over the aforesaid bolts or rivets **18** which extend inwardly from the flanges **16***b*.

With the opposed or abutting channels **15***a* and **15***b* thus positioned and latched together, the inner wall

sheaths 21*a* and outer wall sheaths 21*b* are caterminous with and disposed against and secured to the outer faces of the channel flanges 16*a* and 16*b* of spaced apart aligned columns 14 whereby the wall sheaths 21*a* and 21*b* are properly longitudinally aligned and transversely spaced apart. As shown in cross-section in FIG. 5, a wall construction 12 or 13, comprised of wall sheaths 21*a* and 21*b*, thus spaced apart, fits at bottom into rectangularly cross-sectioned groove means 22 in a concrete slab or runner 19, concrete 23 having been poured to a depth between the wall sheaths or within the column 14 to anchor a wall 12 or 13 to the base or slab 19.

The corner construction 11, as shown in FIGS. 1 and 2, includes an outer corner angle member 24 which may be of the same construction material as the walls 21*a* and 21*b*, or of any suitable light material. Then inwardly of the angle member 24, in the finally assembled views of FIGS. 1 and 2, a structural angle 25 is shown, such angle 25 have appropriately, vertically spaced apart bolts or rivets 18 which extend inwardly from the inner faces of the angle legs 25*a* and 25*b* . Angle 25 is secured to angle member 24 by gluing, welding, or the like. Also, the corner construction 11 includes a channel 26*a* across the wall construction 12 at ninety degrees to the wall construction 13. Each of the channels 26*a* and 26*b* has vertically spaced apart inwardly extending studs 18*b* mounted on the flange 27*a* thereof.

A connector plate 28*a* is shown in FIGS. 1 and 2 as having its left, outer face disposed against and secured to the inner face of the flange 27*b* of the channel 26*a*, such connector plate having vertically spaced apart slots 30 in the right-hand side thereof. As indicated in FIG. 4, the slots 30 each have an enlarged upper portion 30*a* and a smaller, lower portion 30*b*, for purposes to be hereinbelow described. Also, a second connector plate 28*b* is shown in FIGS. 1 and 2 as having its right, outer face disposed against and secured to the inner face of the flange 27*b* of the channel 26*b*, such plate having vertically spaced apart slots 30, as hereinabove described, in the left-hand side thereof as viewed in FIG. 1. A further angle 29 is shown in FIGS. 1 and 2 as having holes 35 vertically spaced apart in both legs 29*a* and 29*b* thereof.

The assembly of the corner construction 11 is accomplished first by disposing channels 26*a* and 26*b* in upright positions in the relative plan positions indicated in FIG. 1 and best visualized from FIG. 2. Then the inner angle 29 is placed in proximity to the respective inner flanges 27*a* of the channels 26*a* and 26*b* and in a manner such that the the oversized holes 35 receive the studs 18*b* therein. Next, with the connector plates 28*a* and 28*b* in established contact with the channel flanges 27*b* of the respective channels 26*a* and 26*b*, the angle 25 is moved toward the position shown in FIG. 1. As best visualized in FIG. 2, the bolt heads 18*a* are passed through the larger, uppermost portions 30*a* of the slots 30 in the connector plates 28*a* and 28*b* and then lowered into the smaller, lower portions 30*b* thereof.

As indicated in FIG. 2, spacer members 32 (and 32*a* if desired) may be located intermediate the column structures 14 or between the corner column structure 11 and the nearest such column structure 14.

After the corner structure 11 and the wall structures 12 and 13 have been assembled and erected, the centers of the column structures 14 (the regions enclosed by each pair of channel members 15*a* and 15*b*) and the center of the corner column structure 11 (the region enclosed by channel members 26*a* and 26*b* and angle member 25) are preferably filled with a filler material such as concrete. Such concrete is indicated by reference numeral 33 in FIG. 2. After the concrete hardens, it seals the joint defined by the structural members forming the column structures. Such concrete also provides a weight bearing columnar structure for supporting the next floor level or the roof or the like of the building.

The column structures 11 and 14 are particularly useful for interconnecting prefabricated wall panels. Considering, for example, the column structure 14 shown in FIG. 2, the wall panel structure connected to the channel 15*a* can be prefabricated at a factory location with the channel 15*a* and connector plates 17*a* and 17*b* mounted in the left-hand end thereof. In a similar manner, the wall panel structure connected to the right-hand channel 15*b* can be prefabricated at the factory with the channel 15*b* and latch bolts 18 mounted in the left-hand end thereof. Thereafter, when the wall panels arrive at the building site, they can be quickly connected together by lowering the wall panel having the connector plates 17*a* and 17*b* so as to cause the latch bolts 18 to move upwardly into the latching slots 20 in such connector plates 17*a* and 17*b* . After the concrete is poured into the center space intermediate the channels 15*a* and 15*b* and allowed to harden, a relatively permanent connection of the wall panels is obtained.

Referring now to FIGS. 6–11, there will be described modified forms of construction for the corner and non-corner column structures. Considering first FIGS. 7 and 8, there is shown in a disengaged or disconnected manner the two parts which, when connected together, form a structural column which is located at an intermediate point in a building wall. This column structure includes first and second upstanding structural members 40 and 41. Member 40 is a structural channel member having a web 40*a*, an inner flange 40*b*, and an outer flange 40*c*. The second structural member 41 is also a structural channel member having a web 41*a*, an inner flange 41*b*, and an outer flange 41*c* . Channel member 40 is mounted in the right-hand end of a wall panel 42 having wall sheaths 42*a* and 42*b* . The second channel member 41, on the other hand, is mounted in the left-hand end of a wall panel 43 having wall sheaths 43*a* and 43*b* . When the wall panels 42 and 43 are connected together, the inner flanges 40*b* and 41*b* abut one another. Similarly, the outer flanges 40*c* and 41*c* likewise abut one another.

The column construction of FIGS. 7 and 8 further includes first connector means 44 mounted on the first structural channel member 40 between the flanges 40*b* and 40*c* thereof. This connector means or connector 44 is a generally U-shaped channel member having a web 44*a* secured to the web 40*a* of the channel 40 and having a pair of legs 44*b* and 44*c* which constitute ribbed elements which extend toward the second structural channel member 41. The ribs are provided by cutting series of longitudinally extending notches in the outer surfaces of the legs 44*b* and 44*c* . The notches or ribs on leg 44*b* are indicated at 44*d* . The notches or ribs on leg

44c are indicated at 44e . As can be seen from the elevational type view of FIG. 9, these ribs 44d and 44e run at right angles to the direction of extension of the legs 44b and 44c .

The column structure of FIGS. 7 and 8 also includes second connector means 45 mounted on the second structural channel member 41 between the flanges 41b and 41c thereof. This second connection means or connector 45 is also a generally or approximately U-shaped channel member. As such, the connector 45 includes a web 45a which is secured to the web 41a of the structural channel 41 and a pair of legs 45b and 45c which constitute ribbed elements which extend toward the first structural channel 40. The ribs are indicated at 45d and 45e . These ribs 45d and 45e are formed by cutting series of longitudinally extending notches in the inner surfaces of the legs 45b and 45c . These notches or ribs 45d and 45e run at right angles to the direction of extension of the legs 45b and 45c .

The second connector 45 is sized so that the legs 45b and 45c thereof will fit snugly over the legs 44b and 44c of the first connector 44. This enables the ribs 45d and 45e to lock in place intermediate the ribs 44d and 44e, respectively, of the first connector 44. This locked condition is shown for a portion of the ribs 44d and 45d in the fragmentary view of FIG. 11. The second connector 45 is of a resilient construction for enabling the ribs 45d and 45e thereof to slide over and then lock in place intermediate the ribs 44d and 44e of the first connector 44. In a preferred embodiment, the first connector 44 is made of metal and the second connector 45 is made of a resilient plastic material.

Connector 44 is secured to the structural channel 40 by a series of vertically spaced apart bolts or rivets 46. The second connector 45 is similarly secured to the second structural channel 41 by a series of vertically spaced apart bolts or rivets 47.

Considering now the modified corner column construction of FIG. 6, such construction is generally indicated at 50 and is used for forming a corner joint between a pair of wall panels 51 and 52 extending at right angles to one another. The corner structure 50 includes a first upstanding structural channel member 53 mounted in the end of the wall panel 51 and having a web 53a and a pair of flanges 53b and 53c which extend in the direction of the corner of the wall structure. The corner structure 50 also includes a second structural channel member 54 mounted in the end of the second wall panel 52 and having a web 54a and a pair of flanges 54b and 54c which extends in the direction of the desired corner joint. Secured to the first structural channel 53 is first connector 55 in the form of an angle member having a ribbed or notched leg 55a extending in the direction of the common corner location. Secured to the second structural channel 54 is a second connector 56 in the form of a channel-shaped member having ribbed or notched legs 56a and 56b which extend in the direction of the common corner location.

The corner structure 50 further includes an upstanding structure angle member 57 having legs 57a and 57b which adjoin the outer flanges 53c and 54c of the channels 54 and 54, respectively. Secured to the leg 57a is a ribbed element 58 in the form of a bent plate which extends the vertical length of the angle 57. The ribs or notches 58a of the element 58 engage the ribs or notches on the connector 55 in an overlapping and interlocking manner. Secured to the other leg 57b of the angle 57 is a second ribbed element 59 in the form of a bent plate which runs the vertical length of the angle 57. The longitudinally extending ribs or notches 59a of the bent plate 59 engage the ribs or notches on the outer surface of the leg 56a of the second connector 56 in an overlapping and interlocking manner.

The corner structure 50 also includes an inner angle member 60, having one leg 60a secured to the inner flange 53b of the first structural channel 53. The other leg 60b of the angle member 60 includes a ribbed or notched portion for engaging the ribs or notches on the leg 56b of the connector 56.

In a preferred embodiment of the invention, the connectors 55 and 56 are constructed of a resilient plastic material. These connectors 55 and 56 are secured to their respective structural channels 53 and 54 by means of bolts, rivets, or any other suitable securing mechanism or agent.

The corner structure 50 is assembled by first positioning the outer angle 57 so that the ribs 58a engage the ribs or connector leg 55a and then moving the second well panel 52 into position such that the connector 56 is inserted between the bent plate 59 and the inner angle member 60.

After the various well panels have been erected and various column structure connectors have been interconnected, the interiors or centers of the various FIG. 6–11 type column structures are filled with an appropriate load sustaining material such as concrete.

If desired, some of the teeth forming the ribs on any one or more of connectors 44, 45, 55, and 56 and members 58, 59, and 60 may be of a rounded character instead of a pointed character. Considering connector 44, for example, the outer tips of all but the right-hand most ones of the teeth 44d and 44e may be rounded off, the right-hand most tooth in each set continuing to have a pointed tip as shown.

In a now preferred, and newly presented form of the invention, a corner construction is first presented in FIG. 12, with parallel wall sections or plates 61a, 61b extending at right angles to parallel extending wall sections or plates 62a, 62b, the inner side face of the end portion of the plate 62b abutting across the end or edge surface of the inner plate 61b . A light channel 63a is shown affixed between the ends of the parallel plates 61a, 61b, thus with flanges in abutment with the inner, end surface portions of the respective plates 61a, 61b, and a corresponding light channel 63b is shown affixed between the ends of the parallel plates 62a, 62b, thus with flanges in abutment with the inner, end surface portions of the respective plates 62a, 62b.

The channels 63a, 63b, have vertically spaced apart, rectangular shaped holes 64a, 64b, provided therein, correspondingly as indicated in FIG. 17, with the holes 64a to receive therethrough latch carrying lugs 65, provided correspondingly vertically spaced apart along the outer edges of a corner inner angle 66, the angle 66 being moved into the open corner on a course of substantially 45° , whereby the inner faces of the inner flanges of the respective channels 63a, 63b, guide the angle into the position shown in FIG. 12, as the latches 67 carried by the angle lugs 65 are passed through the holes 64a, the latches 67 then latching as will be hereinbelow described.

In detail each latch **67** comprises two opposed channel sections **68***a*, **68***b*, with the channel **68***b* having a web shorter than the web of the channel section **68***a* by at least two flange thickness, whereby the channels may fit one within the other in folded position, FIG. **17**. The channels are drilled through at their ends outermost from the angle **66** which provides the lugs **65**. The drilled through flanges of the latch channels **68***a*, **68***b*. are then fitted to receive the opposed ends of a tee member **69** therethrough, vertically opposed springs **70***a*, **70***b*, having inner ends anchored to the central leg of the tee member **69**, with the coils of the springs **70***a*, **70***b*, being wound respectively upwardly and downwardly about the respective upper and lower parts of the tee cross-member, and with the respective upper and lower ends of the springs **70***a*, **70***b*, extending substantially perpendicularly from the cross-member parts to form torsion spring urging members **71***a*, **71***b*, against the inner surfaces of the respective inner faces of the webs of the channel sections **68***a*, **68***b*, near the respective flanges thereof.

The inner end **72** of the central leg of the tee member **69** is threaded for a pre-determined length to be threadedly received into a threaded bore provided centrally into the outer face of the lug **65**, FIG. **16**. Thus each latch **67** may be threadably engaged by means of its tee member **69** to a pre-determined depth in its respective lug or carrier **65**. Thus when a lug **65** carrying its latch **67**, folded to pass through its respective channel hole **64***a* or **64***b*, passes through the hole, the torsion spring ends **71***a*, **71***b*, urge their respective latch channels **68***a*, **68***b* outwardly, so that the beveled ends **73** of the latch channels may latch in flush abutment with the outer face of the respective wall channels **63***a* or **63***b*.

A specially constructed angle **74**, FIG. **12**, provides lugs **65** that carry corresponding latches **67**, passed through holes **64***b* in the respective channels **63***a*, **63***b*, the lugs and holes being of size and provided at elevations in the respective angle **66** and end channel **63***a*, **63***b*, in correspondence with the respective lugs **65** of the angle **66** and with the respective channel holes **64***a*. This angle **74** has the outer thickness of the inner portions of its legs **74***a*, **74***b*, relieved for the thickness and width of the respective wall end channels **63***a*, **63***b*, and the inner faces of the flanges of these respective channels **63***a*, **63***b*, serve to guide the special angle **74** as it is brought into the corner on substantially a 45° course, to enclose the corner space that is later to be filled, as with concrete. Finally, as indicated in FIG. **12**, a corner angle **75** may be installed upon the inner corner angle **74** to complete the corner flush with the wall plates **61***a*, **62***a*. Optionally, the corner angles **74** and **75** may be provided as an integrated structure.

As a variation of the latch forms shown in FIGS. **12–17**, a latch is shown in FIG. **18** in which the member that ordinarily would provide the projection or lug to threadably receive the central member of the tee, is a thin plate **76**, whereby the central member of the tee **77** is a thin bar **78** that may be connected to the plate **76**, as by rivets or screws **79**. In this case the width of the holes or openings through the channel members which are to receive this type of latches therethrough must be just slightly greater than the thickness of the plate **76** plus the thickness of the bar **78**, plus two latch channel web thicknesses, the notch or hole height and all other features of the latch construction being the same as for the latch hereinabove described in relation to FIGS. **12–17**.

Making reference now to FIGS. **13** and **14**, the operation of the form of the invention herein described with relation to FIGS. **12–17**, is indicated as employed to close off a section or columnar space along a wall indicated as comprised of the plates **61***c*, **61***d*, with a light channel **63***c* shown affixed between the end portions of the plates **61***c*, **61***d*, facing outwardly, and correspondingly having vertically aligned holes **64***c*, **64***d* therein.

In this case a section of the wall to be adjoined in abutment with the wall defined by and between the plates **61***c*, **61***d*, is indicated as comprised of plates **61***e*, **61***f*, with end portions having a channel **63***d* therein-between the plate end portions, the channel **63***d* facing outwardly, with the channel **63***d* providing latches **67** for the lugs **65** provided by plates **79***a*, **79***b* which are affixed to the inner faces of the flanges of the aforesaid channel **63***d*.

Thus with the latches **67** assembled to the projections or lugs **65**, the ends **80***a*, **80***b* may be peened to complete the latch assembly correspondingly as in the case of the latches hereinabove described with relation to FIGS. **12** and **15–17**, inclusive, also in the case of the latch **67***a*, FIGS. **13** and **14**. Thus, when the wall section **61***e*, **61***f*, is brought with the plate end faces thereof to abut the end faces of the respective plates **61***c*, **61***d*, the latches **67** pass through the respective holes therefor and are spring urged latched to latch the respective wall sections **61***c*, **61***d*, and **61***e*, **61***f*, together to provide a space thereinbetween into which concrete can be poured to provide a columnar reenforcing structure along the walls, and entirely concealed therewithin.

While there have been described what are at present considered to be preferred embodiments of this invention, it will be obvious to those skilled in the art that various changes and modifications may be made therein without departing from the invention, and it is, therefore, intended to cover all such changes and modifications as fall within the true spirit and scope of the invention.

I claim:

1. A structural member construction for building walls comprising first and second upstanding wall panels each including spaced apart, parallel, coterminously extending wall sheaths with end portions separated by respective spacer channels with flanges outermost and coterminous with said end portions whereby in assembly the wall sheath and channel flange end faces may meet in abutment, one of said spacer channels having flange extension plates with one edge face of each extension plate in fixed abutment with a respective channel web and with said extension plates in sideward abutment with inner surface of respective channel flanges, the other of said spacer channels having vertically spaced apart holes in its web just inwardly of its flanges, lugs provided to extend from the respective extension plates leading edge faces opposite the channel web abutting edge faces, and in vertically spaced correspondence with the holes in the opposed channel web, whereby when said wall panel sheath and channel flanges are assembled in respective end face abutment the extension plate leading edge faces from

which said lugs extend is just short of the hole providing channel web and said lugs extend into the respective holes with which they correspond in elevation, said lugs having pivoted latch means on their outer extending portions, tension spring biasing said latch means outwardly, said latch means yieldably contracted outwardly by said spring on passing to pass through said holes, and extended through said to latch against the surface of the holes channel web opposite the surface thereof adjacent said extension plates leading edge faces.

2. A construction as claimed in claim 1 in which said structural member provided space comprises holes vertically spaced apart through said channel webs to have latch lugs driven therethrough after which said structural members carry said latching lugs in upwardly extending slots in said structural members, whereby said latching lugs extend through said plate means in latching position.

3. Two constructions as claimed in claim 1, which are disposed at 90° to each other whereby with inner plates in end abutment, the defined columnar space is for a building corner.

4. A construction as claimed in claim 1 in which said structural member provided space comprises holes vertically spaced apart through channel webs, and in which said latching means is projected in contracted position through said holes for spring urged expansion thereafter to latch against the outer surface of said channel webs.

5. A construction as claimed in claim 5, in which said latch comprises a tee with central member extending from a lug on a plate means associated member, with the tee cross-member passing through opposed inter-fitting latching channels spring urged expanded by spring included torsion members.

6. A construction as claimed in claim 5, in which said latch comprises a tee with central member comprising a thin bar extending from a thin plate means associated member whereby hole width is slightly greater than thin bar plus thin plate plus two channel web widths of latch channels in opposition through the flanges of which the cross-member of said tee passes, with said latching channels being spring urged expanded by spring included torsion members.

7. A construction as claimed in claim 5, in which said latch comprises a tee with central member threadable for a predetermined distance into a lug on a plate means associated member, whereby with the tee cross-member latching springs expanded to urge inter-fitting latching channels on the tee cross-member expanded, the beveled ends of the latching channel flanges are in latching abutment with channel web.

8. A construction as claimed in claim 5, in which said spring urge expansion of said latching means is effected by an upper spring including a coil anchored around the central member of a tee which extends from a lug on plate means associated with a plate, the upper spring extending upwardly around the cross-member of said tee, said spring urged expansion of said latching means being oppositely effected by a lower spring including a coil anchored around said central member and extending downwardly around the cross-member of said tee.

9. A construction as claimed in claim 5, in duplicate, whereby the two constructions are disposed at 90° to each other, whereby with inner plates in end abutment, the defined columnar space is for a building corner.

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