



US 20060096201A1

(19) **United States**(12) **Patent Application Publication**
Daudet(10) **Pub. No.: US 2006/0096201 A1**(43) **Pub. Date: May 11, 2006**(54) **BUILDING CONSTRUCTION COMPONENTS****Publication Classification**(76) Inventor: **Larry Randall Daudet**, Chesterton, IN
(US)

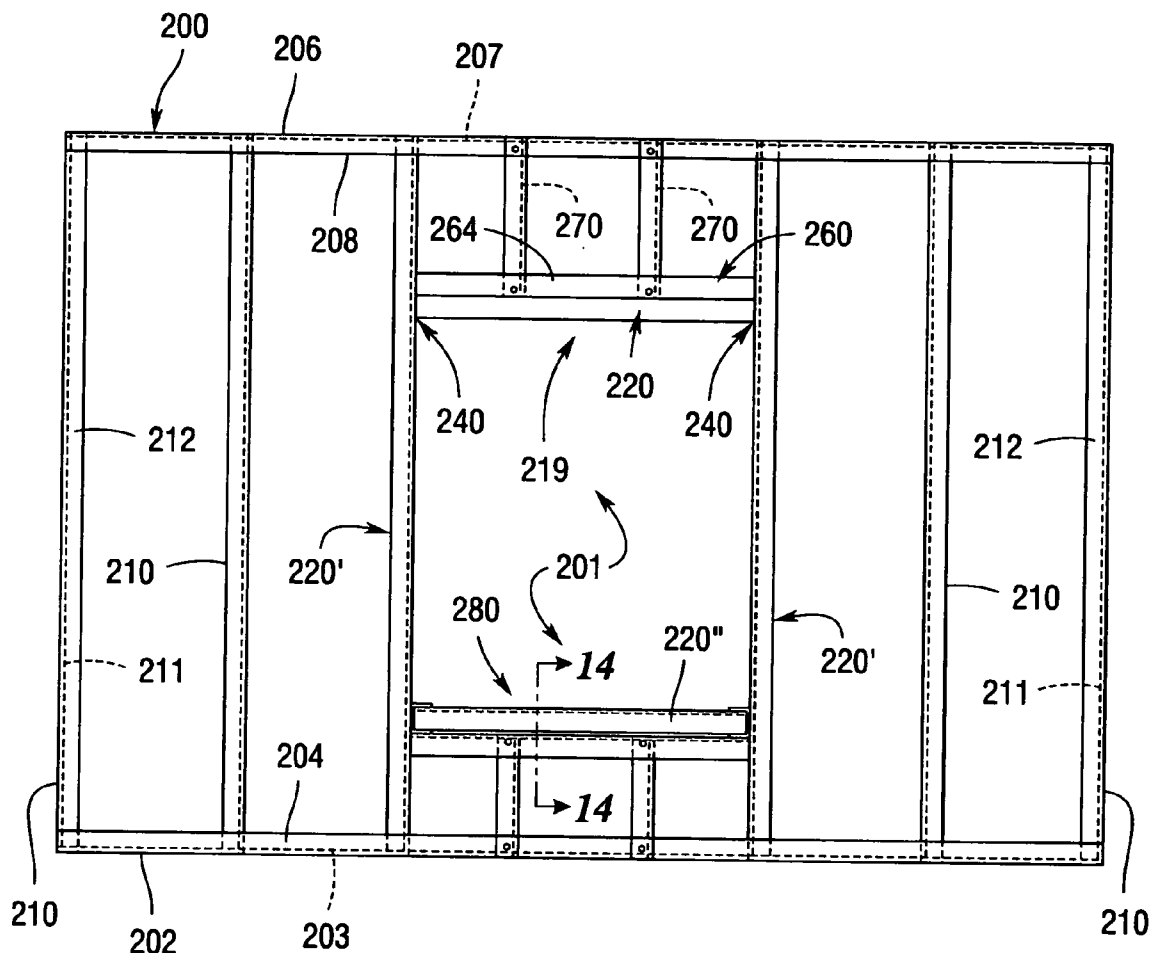
Correspondence Address:

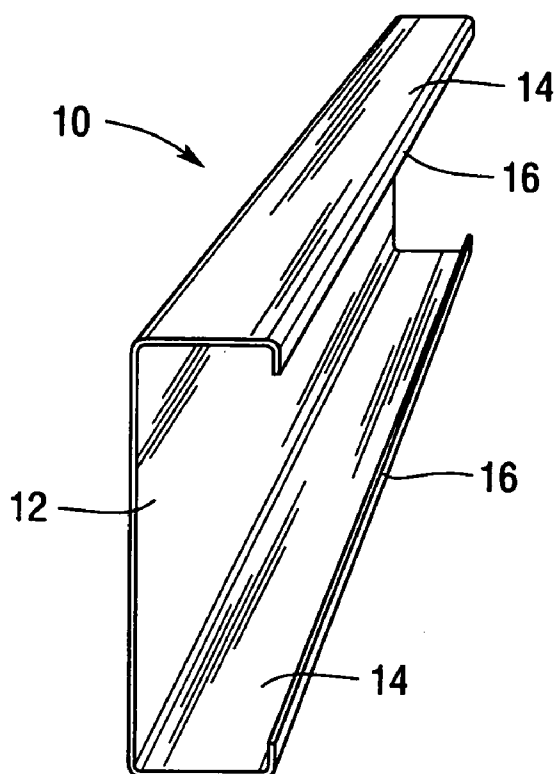
**KIRKPATRICK & LOCKHART NICHOLSON
GRAHAM LLP
535 SMITHFIELD STREET
PITTSBURGH, PA 15222 (US)**(51) **Int. Cl.****E04B 1/00** (2006.01)**E04B 5/00** (2006.01)(52) **U.S. Cl.** **52/272**

(57)

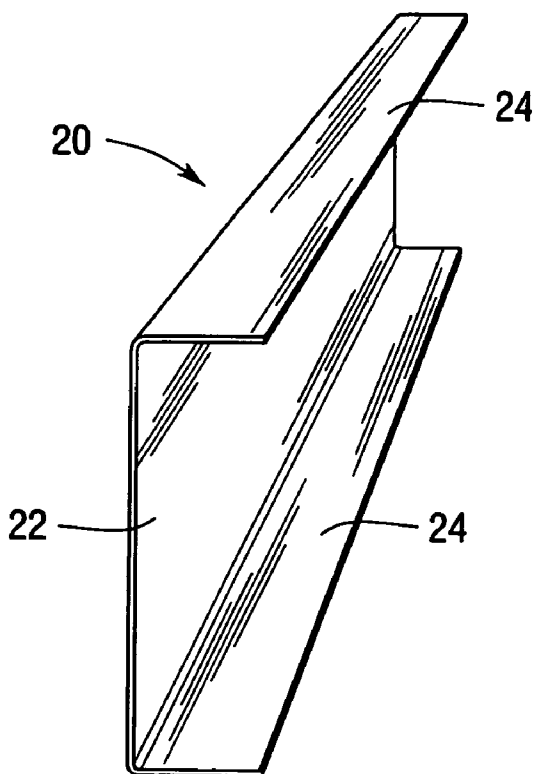
ABSTRACT

A header and jamb stud arrangement that employs connectors for affixing the header assemblies to the jamb studs. The connector may comprise a connection plate that may be provided with a locator tab for locating the plate relative to the header assembly and the jamb stud. The connection plate may be provided with a collection of differently shaped holes which each correspond to a fastener. By installing fasteners through all of one shape of hole, a first load capacity can be achieved. By installing fasteners through other shapes of fastener holes, other load capacities may be achieved. Different embodiments of header assemblies are also disclosed.

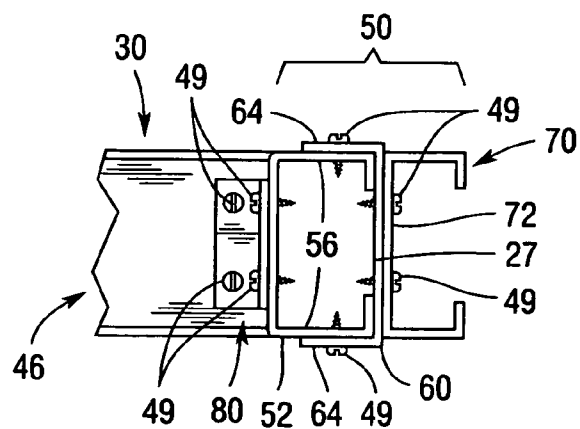
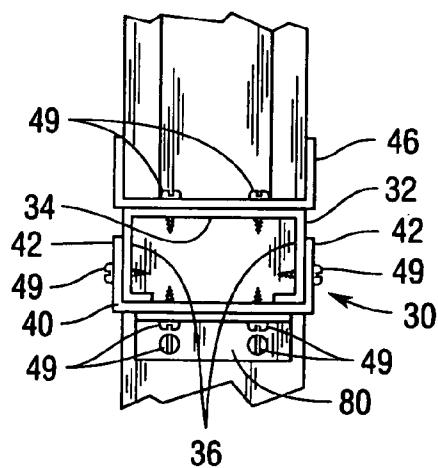
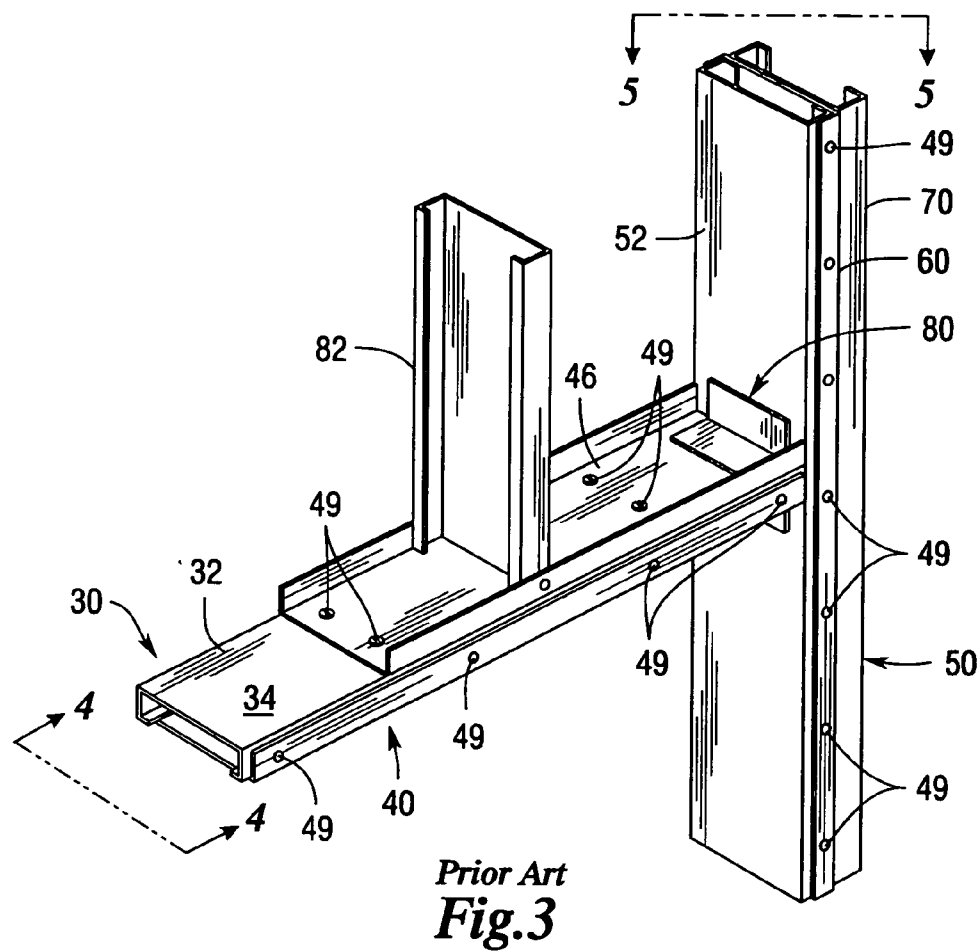
(21) Appl. No.: **11/093,804**(22) Filed: **Mar. 30, 2005****Related U.S. Application Data**(63) Continuation-in-part of application No. 10/981,868,
filed on Nov. 5, 2004.

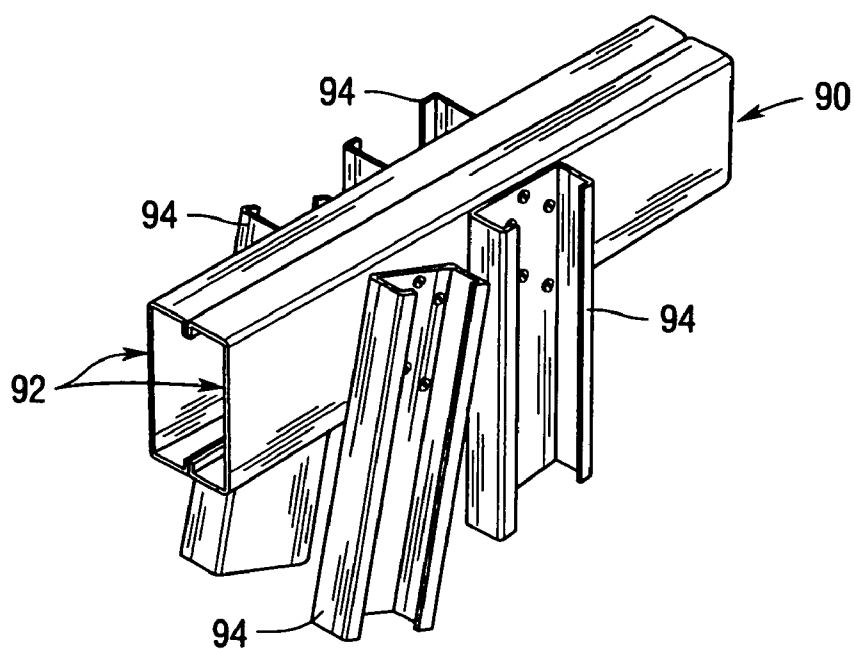


Prior Art
Fig. 1

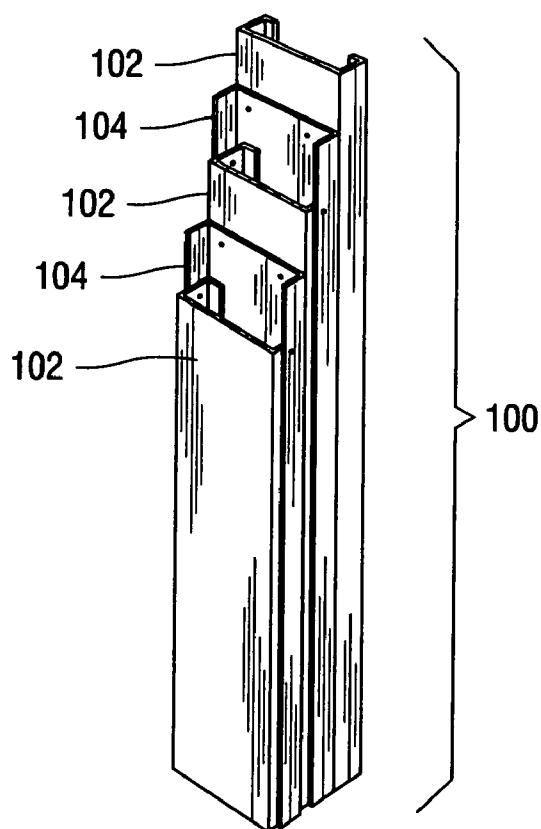


Prior Art
Fig. 2

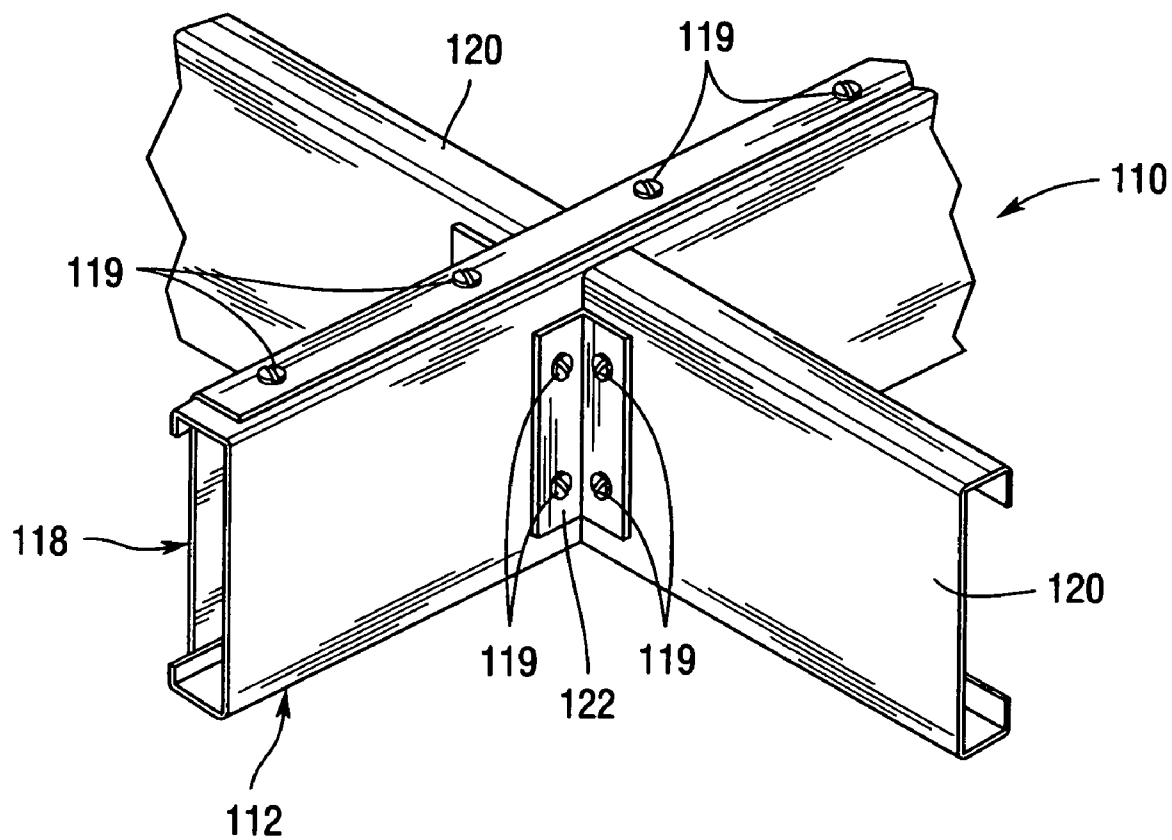




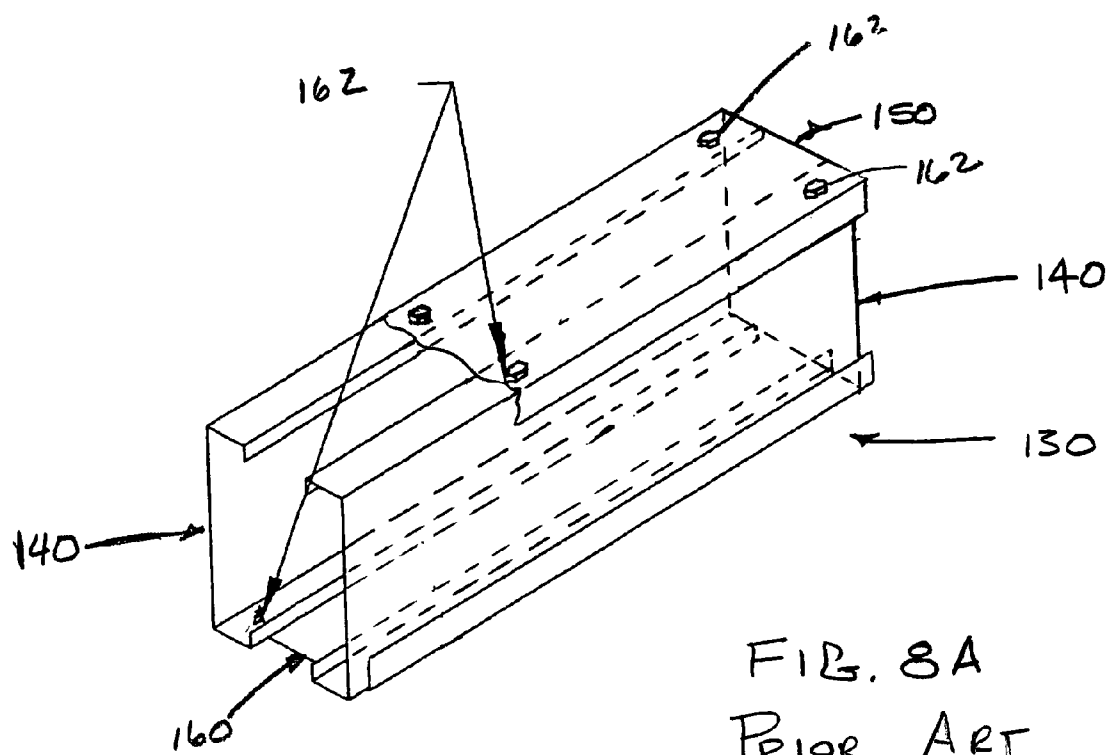
Prior Art
Fig. 6



Prior Art
Fig. 7



Prior Art
Fig.8



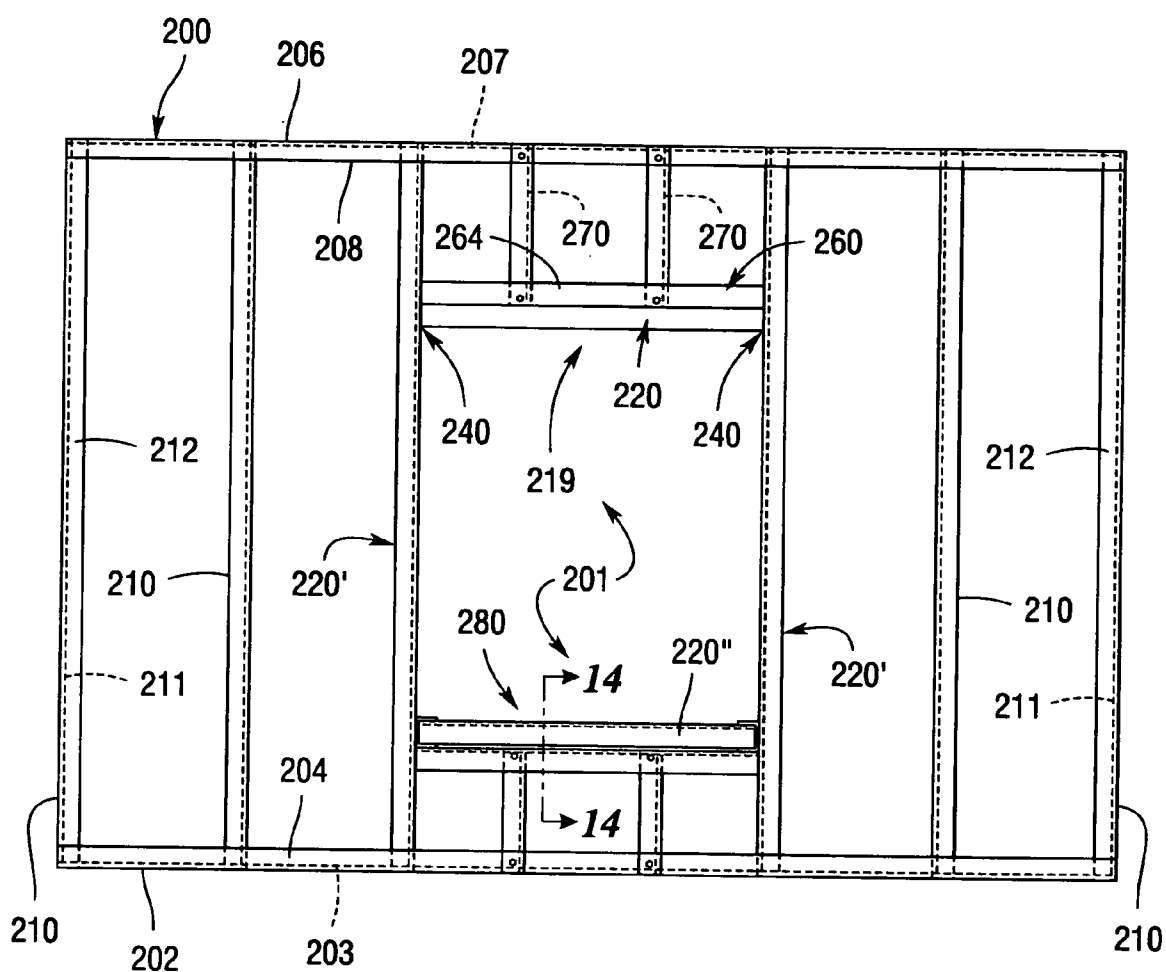


Fig.9

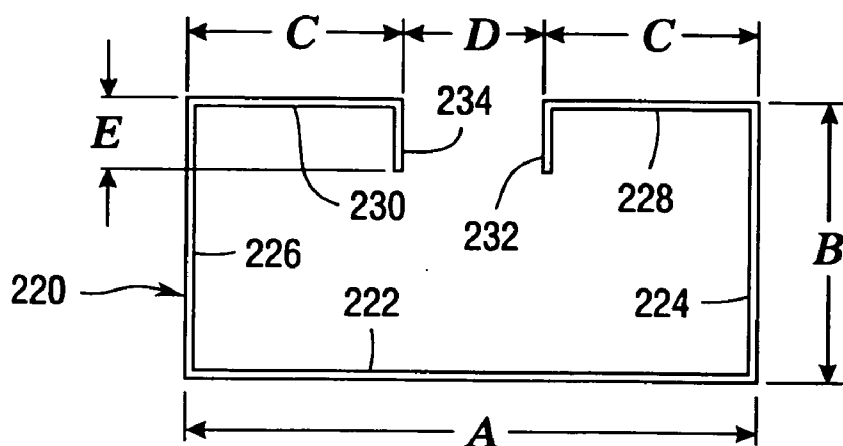


Fig. 10

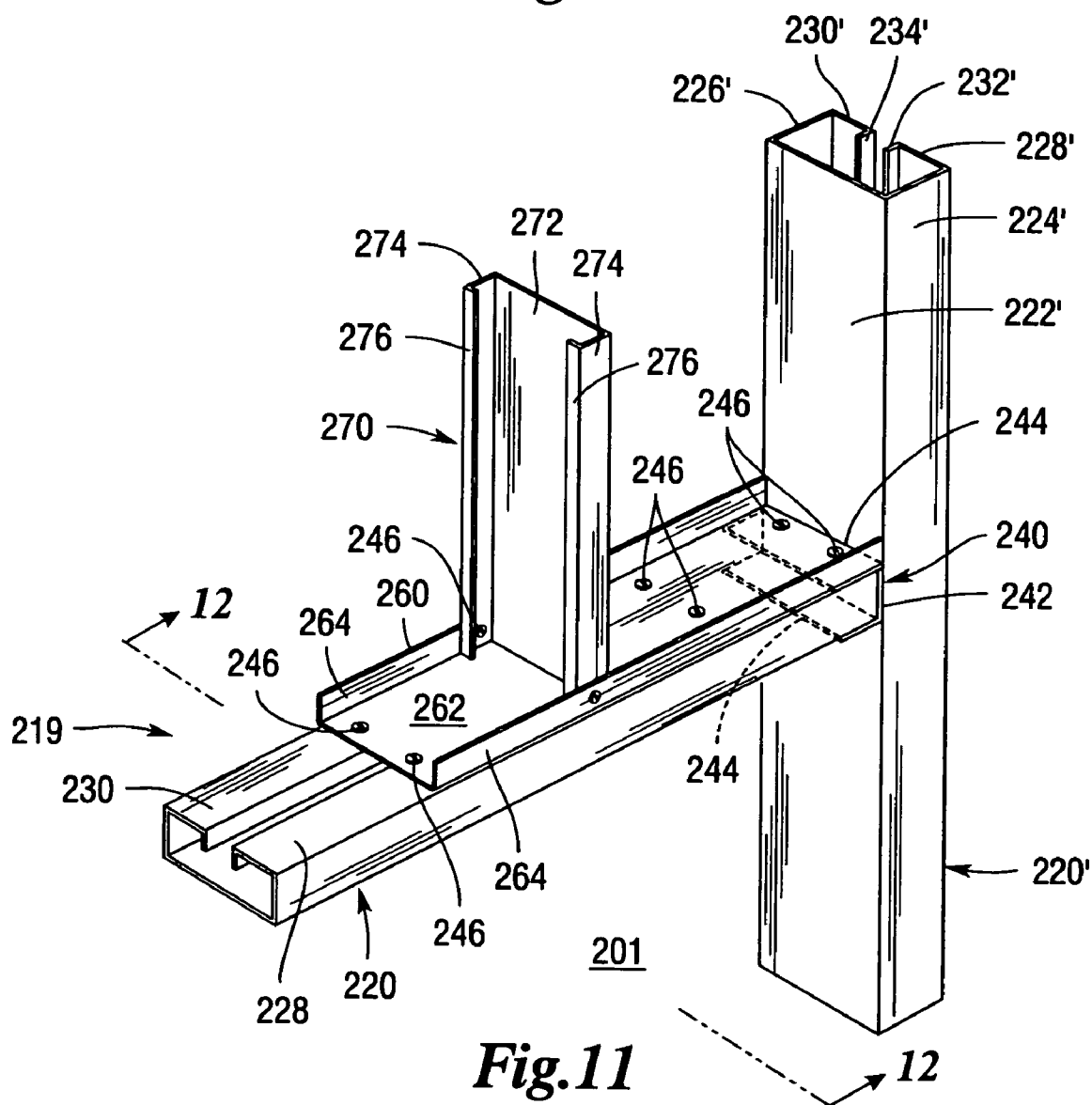
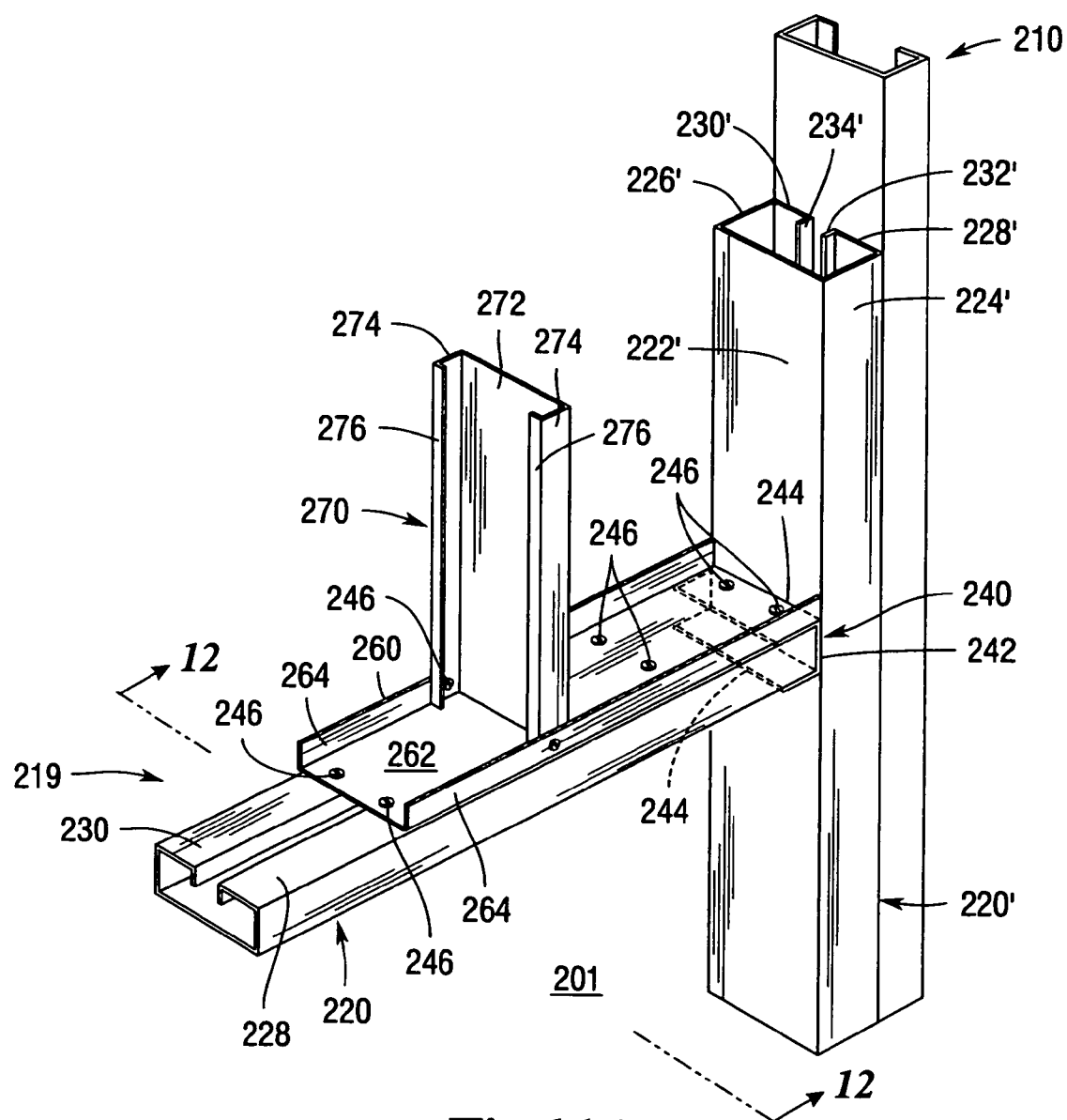


Fig. 11



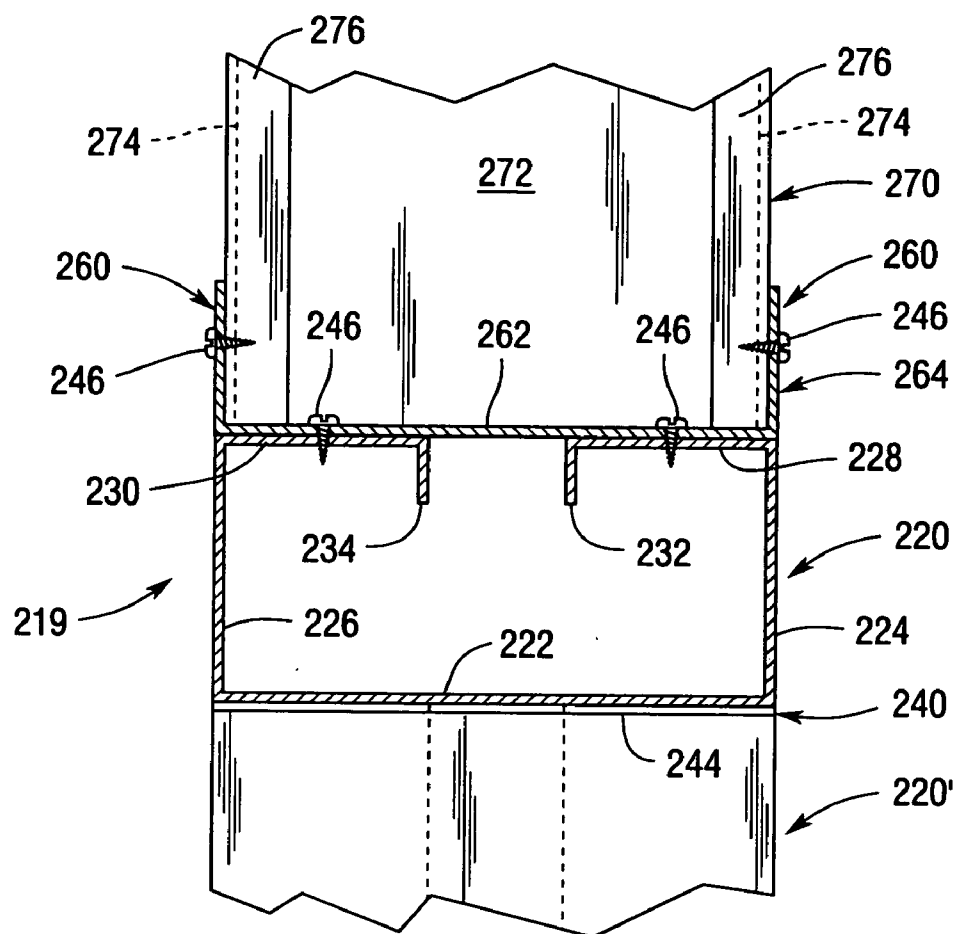


Fig.12

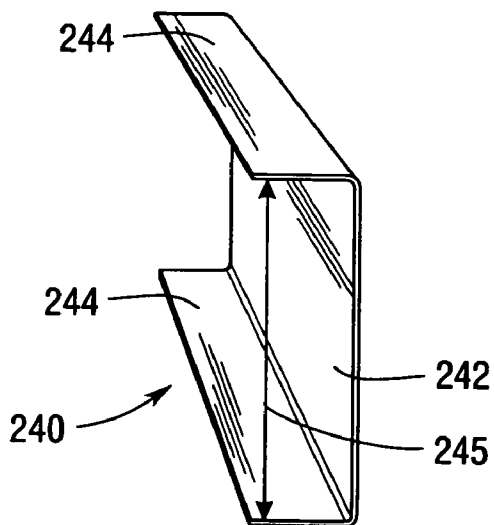


Fig.13

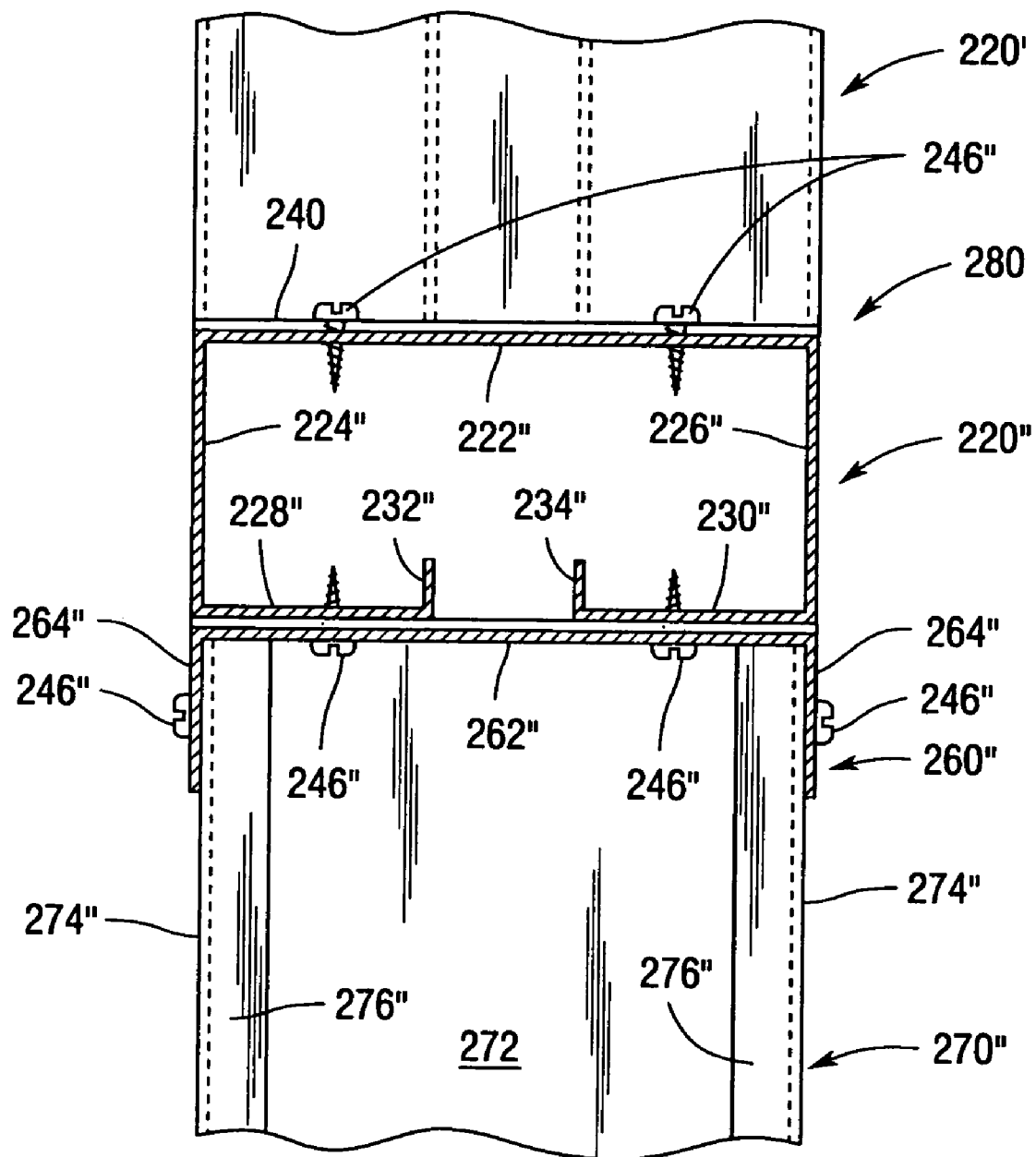
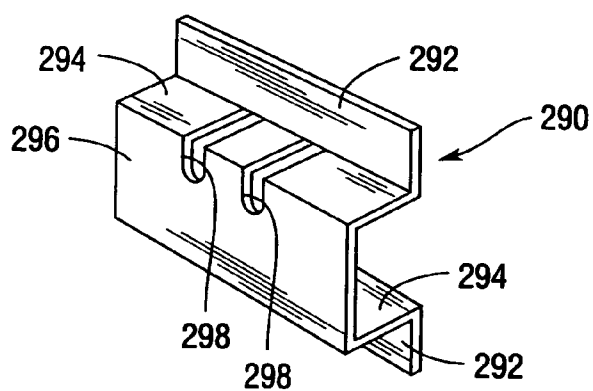
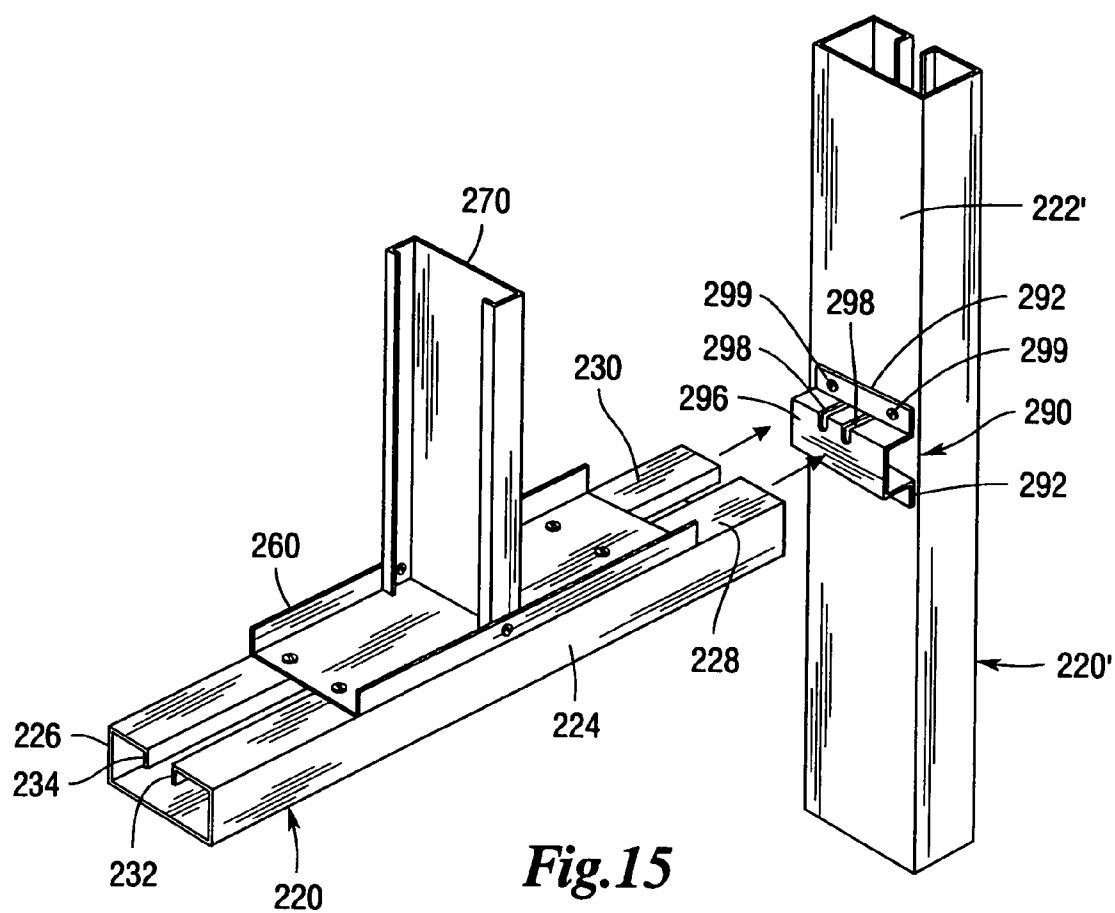


Fig.14



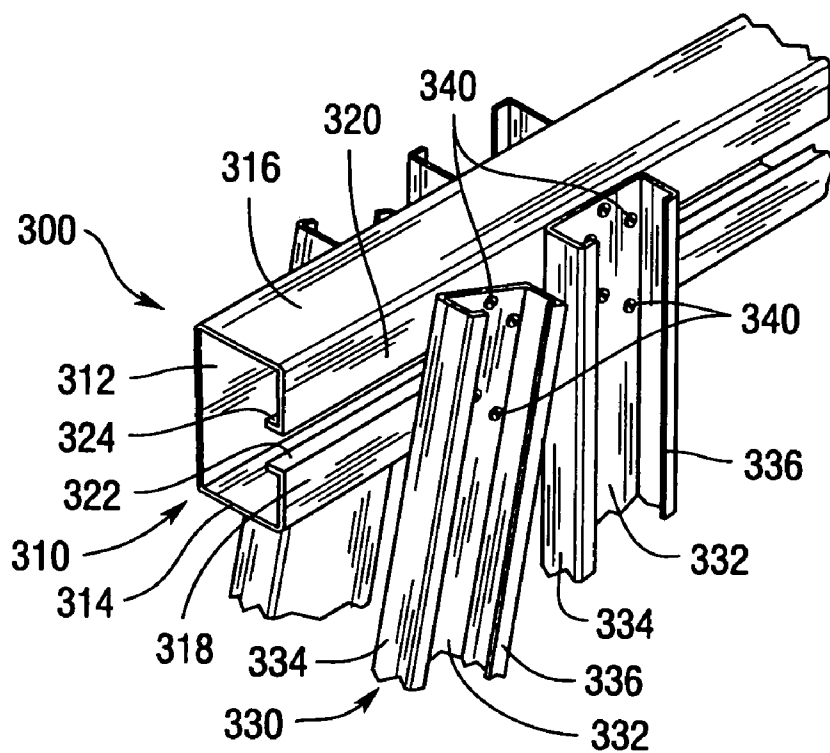


Fig.17

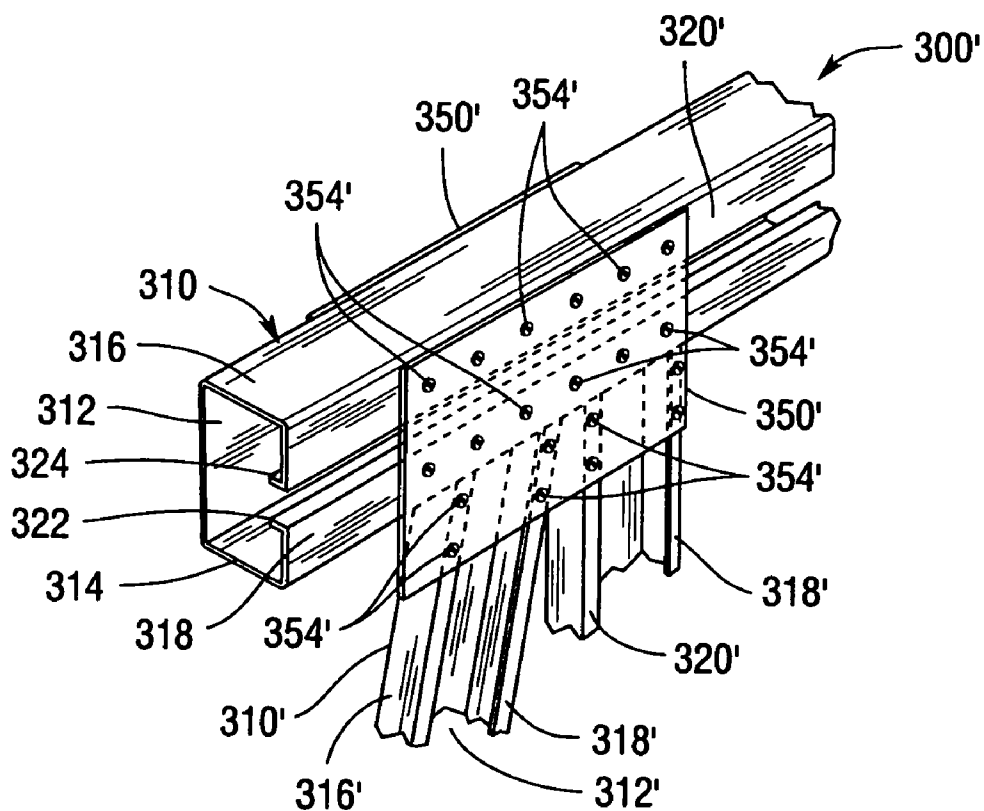


Fig.18

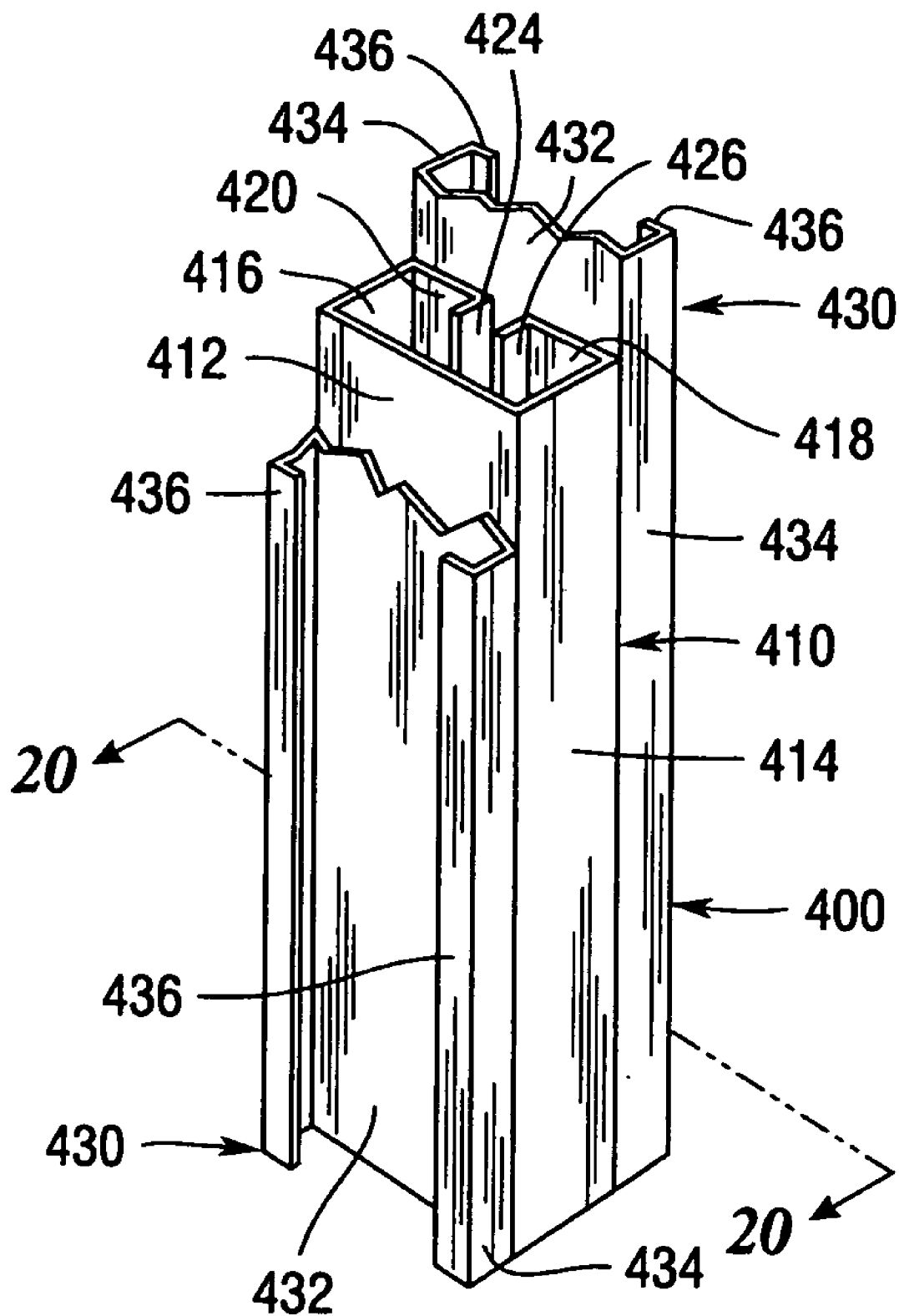


Fig.19

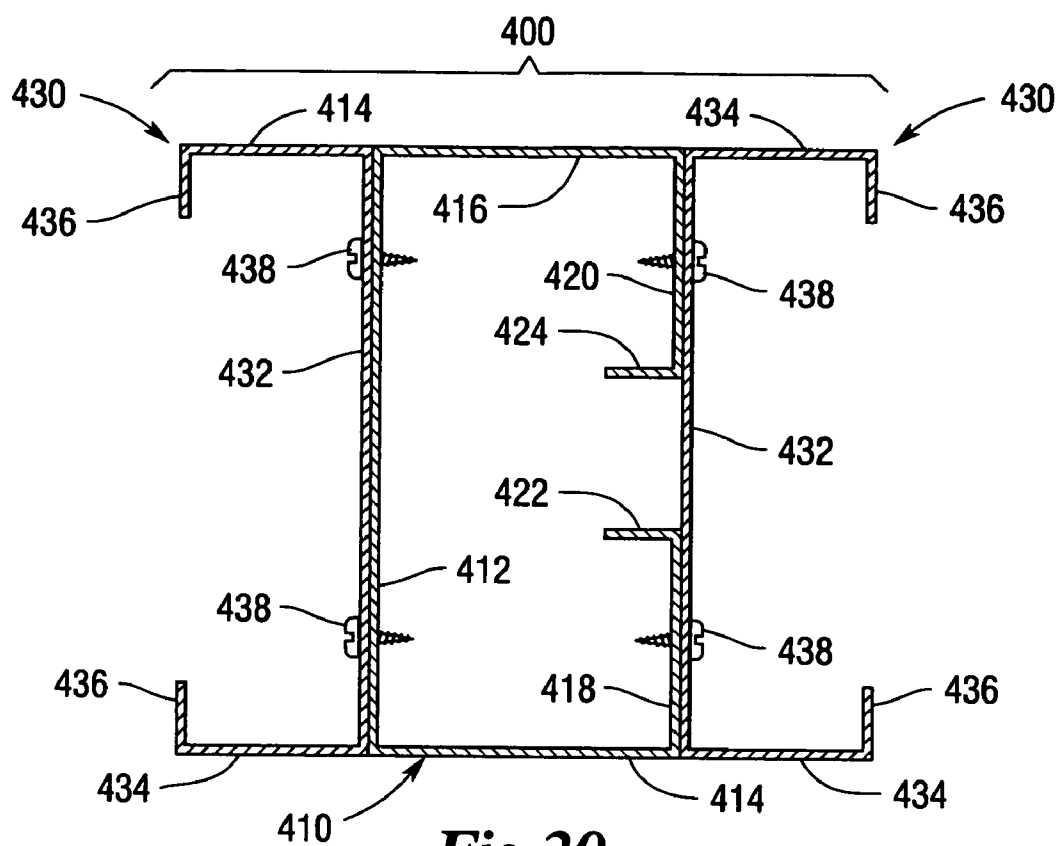


Fig. 20

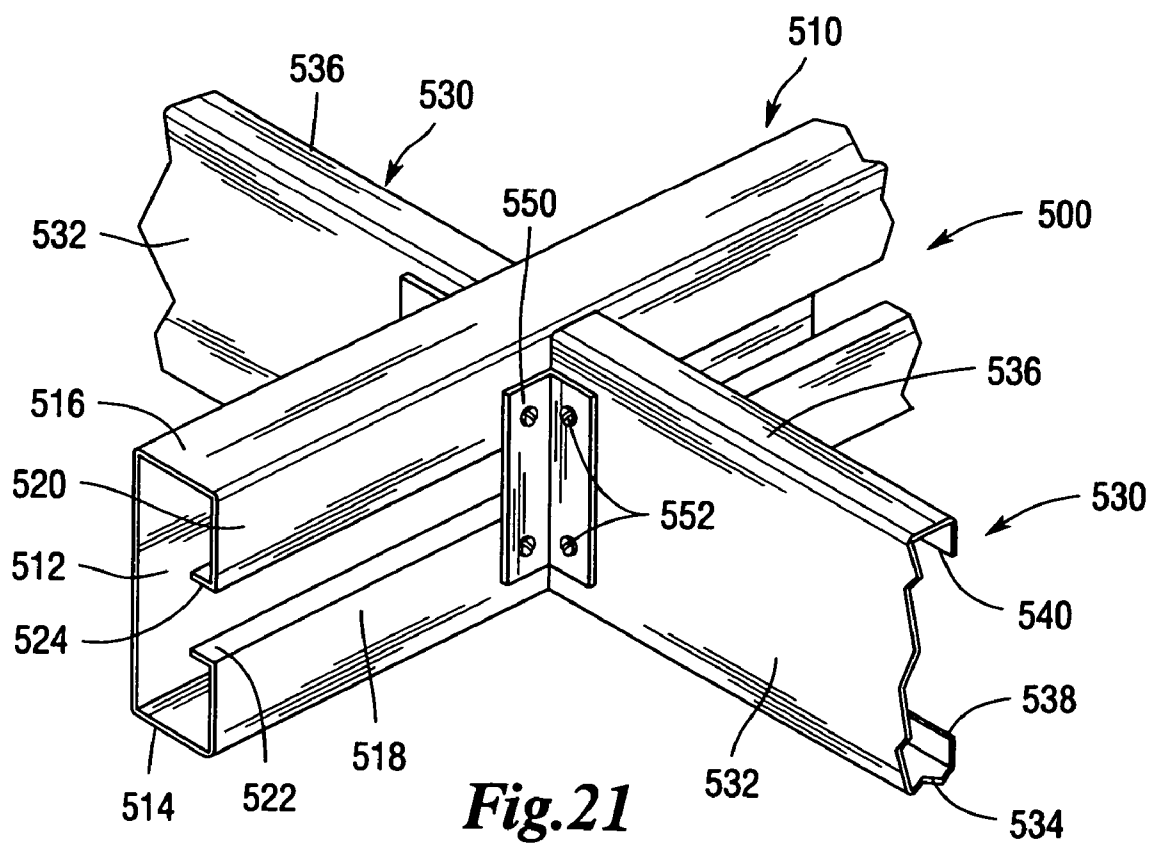


Fig. 21

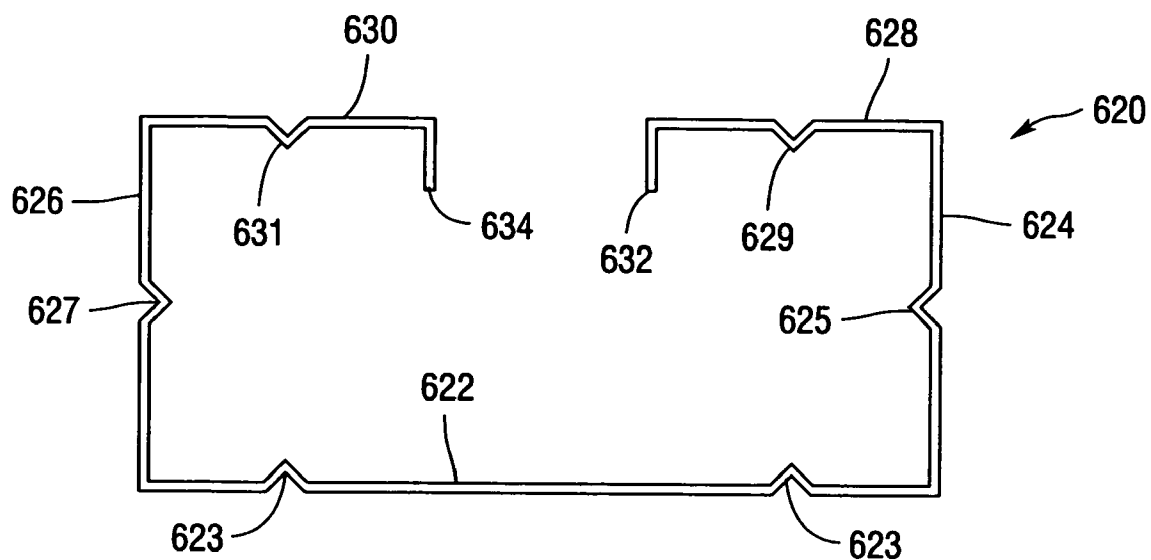


Fig.22

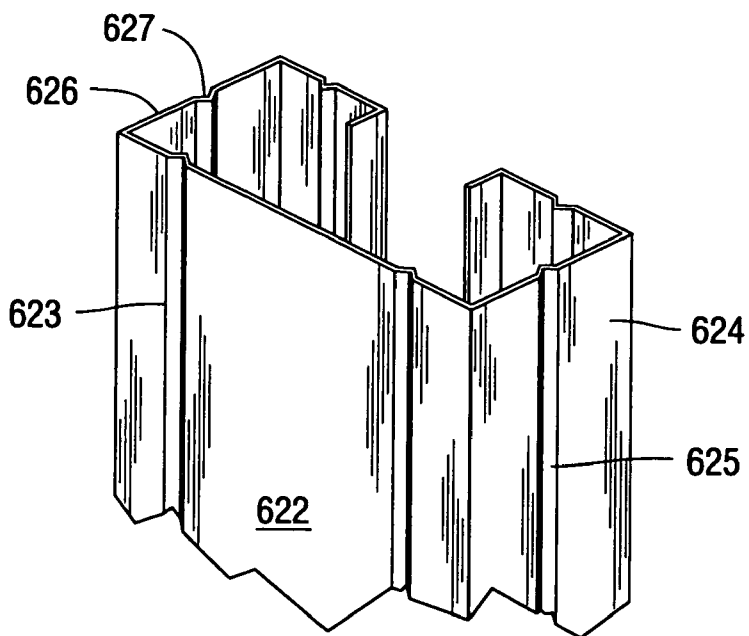


Fig.23

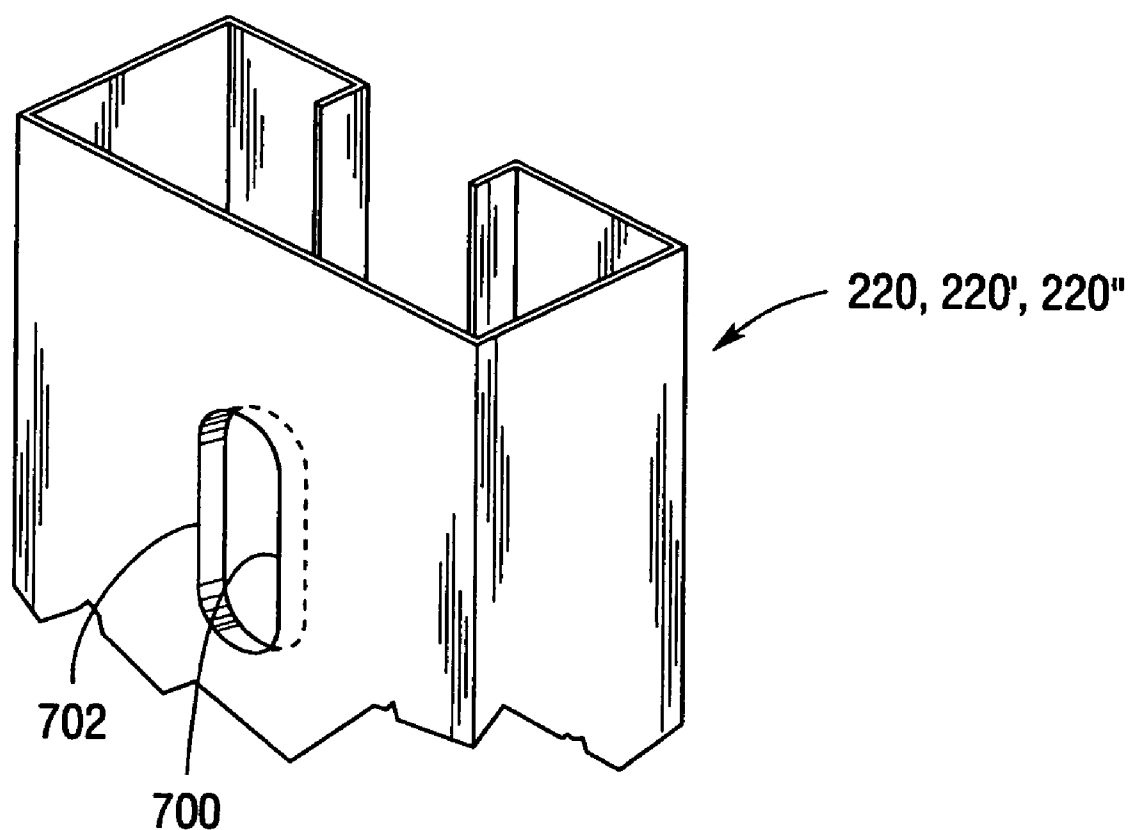


Fig.24

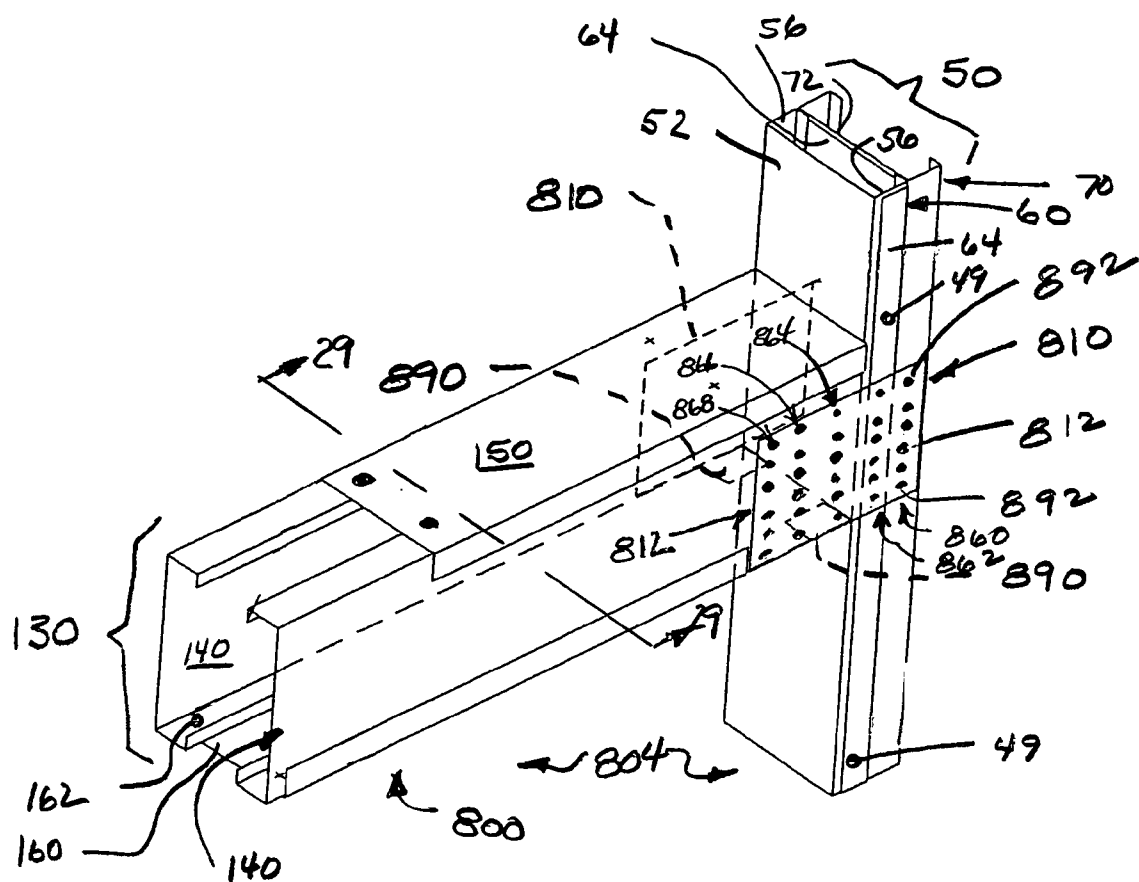


FIG. 25

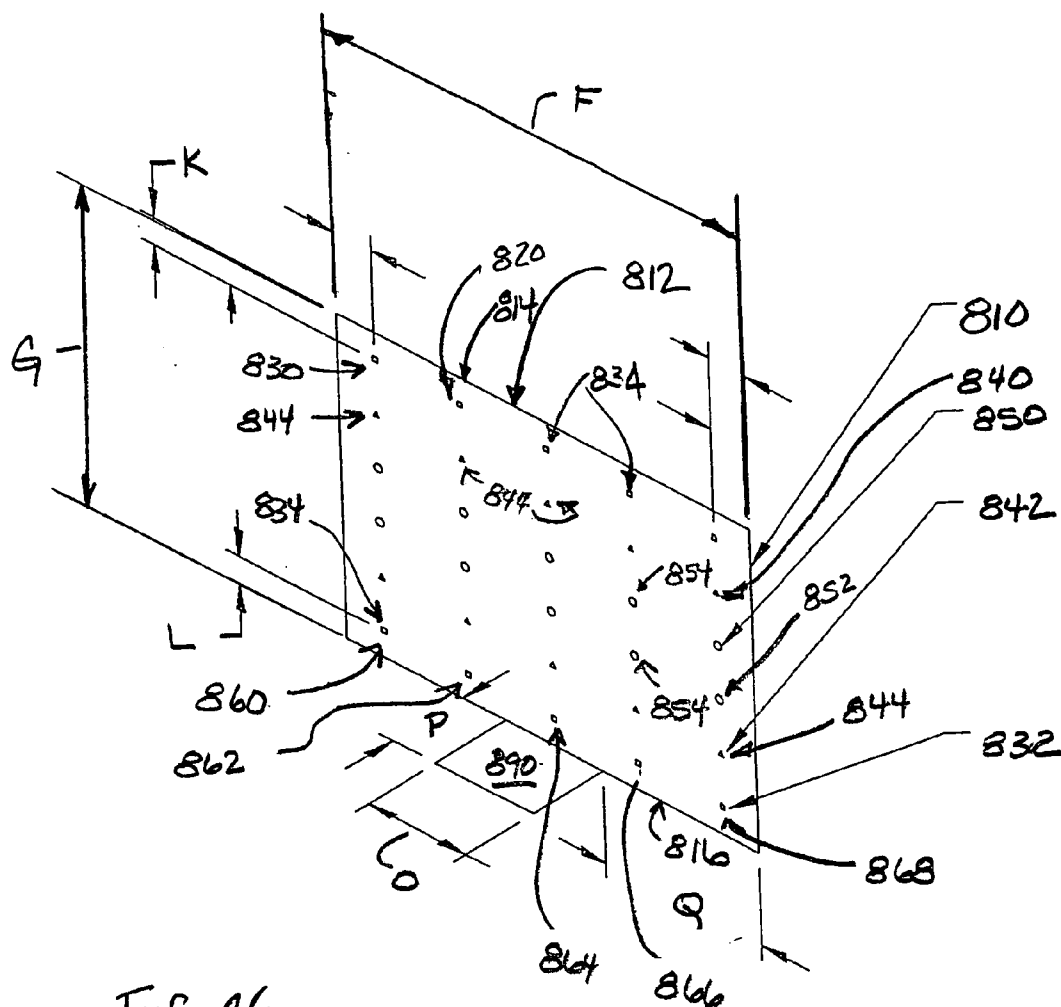


FIG. 26

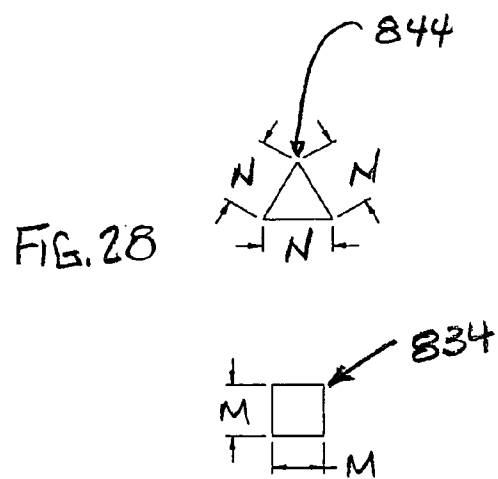
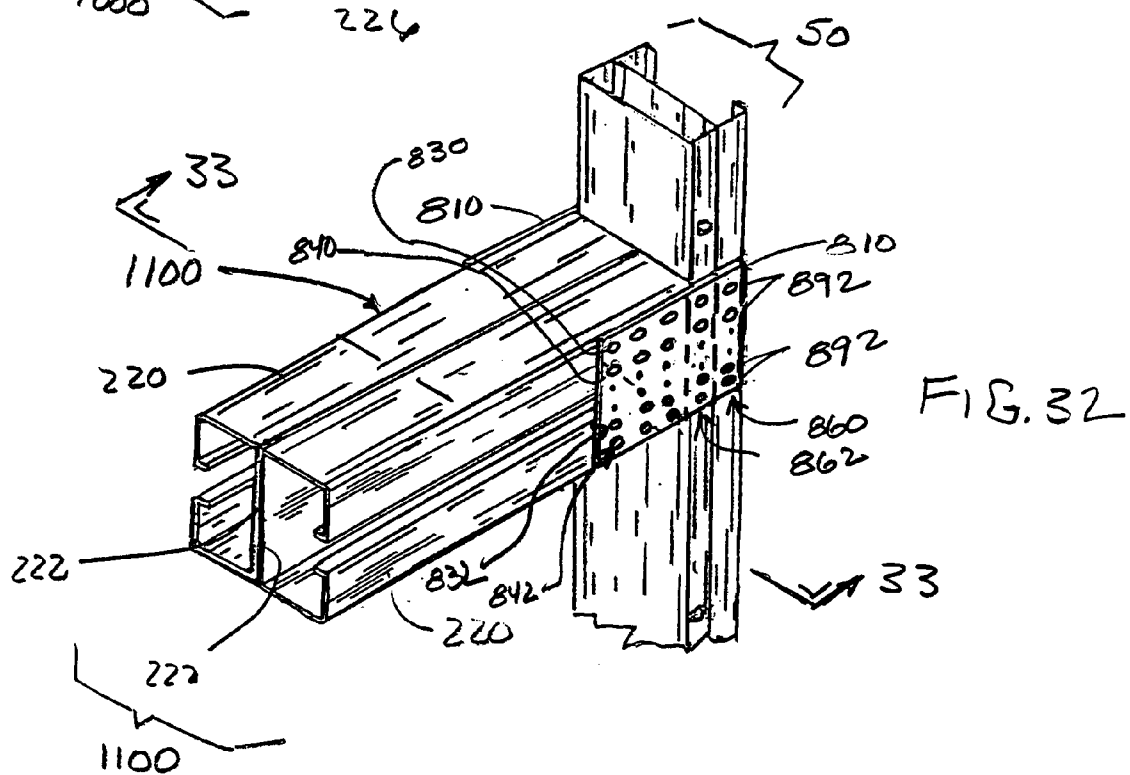
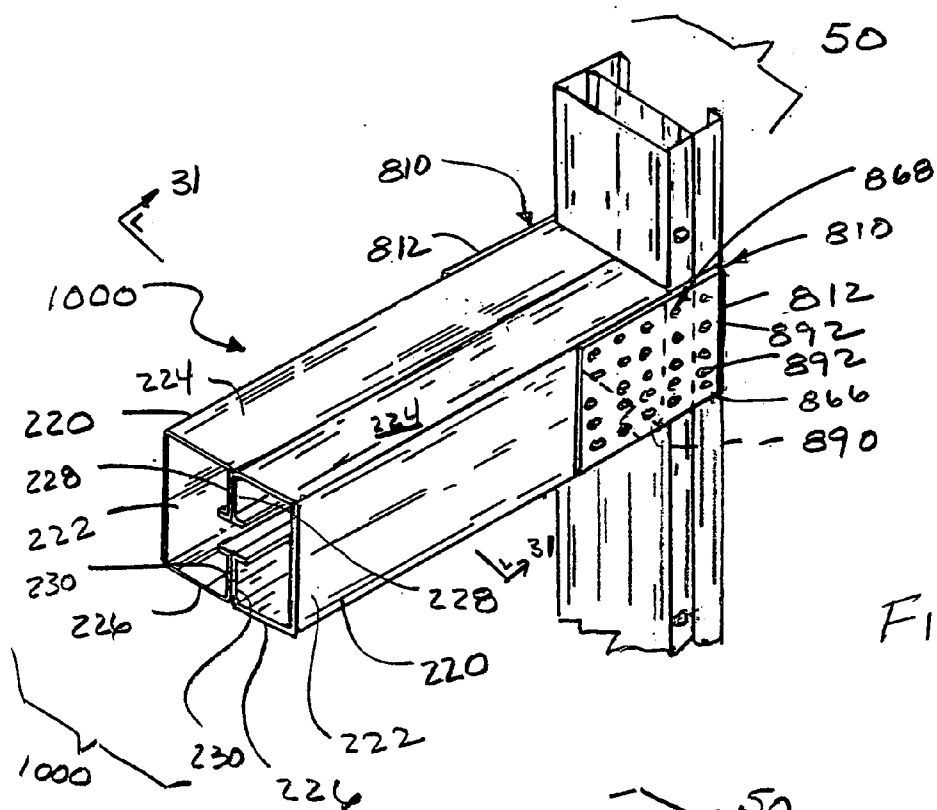


FIG. 28

FIG. 27



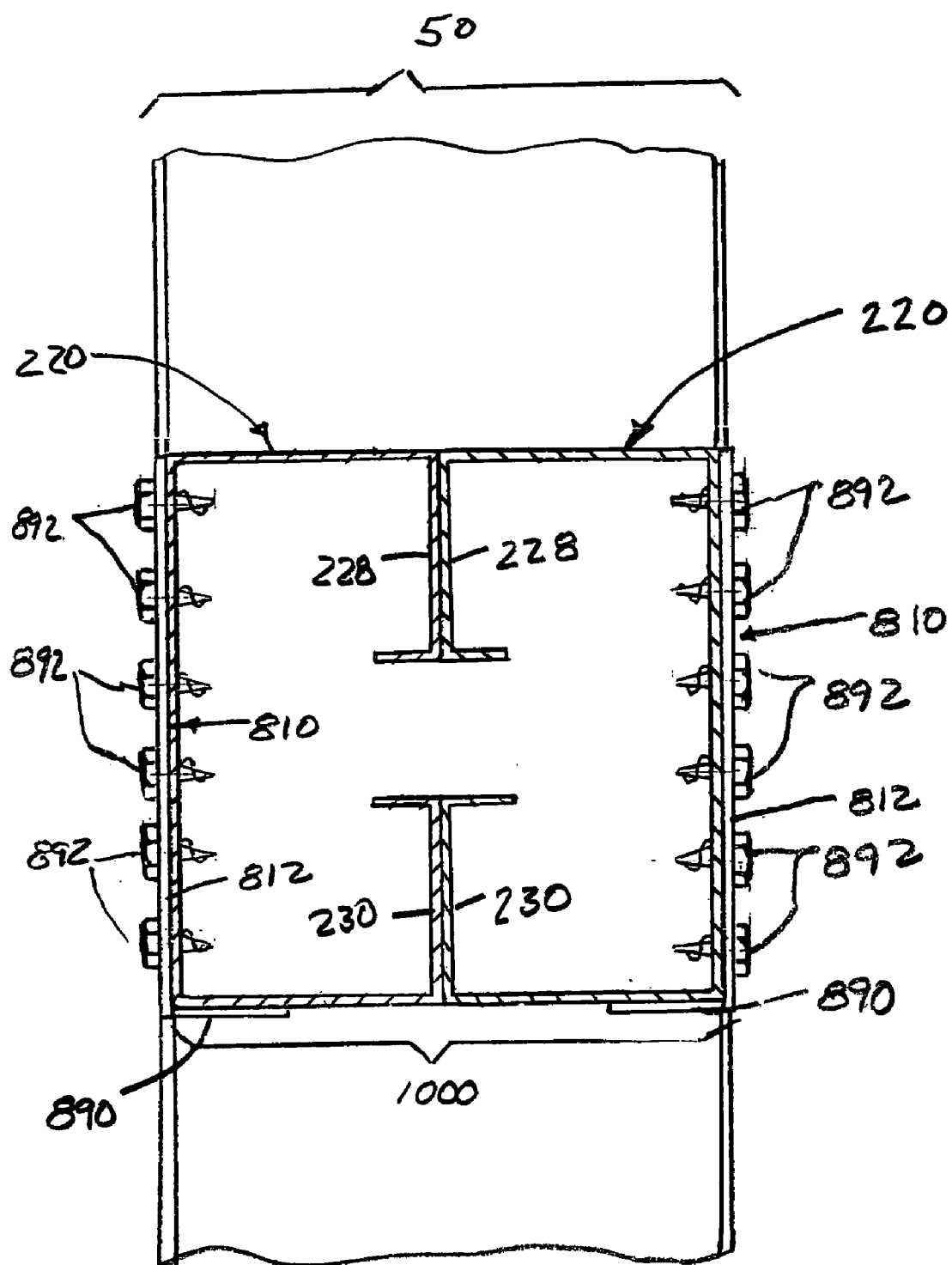


FIG. 31

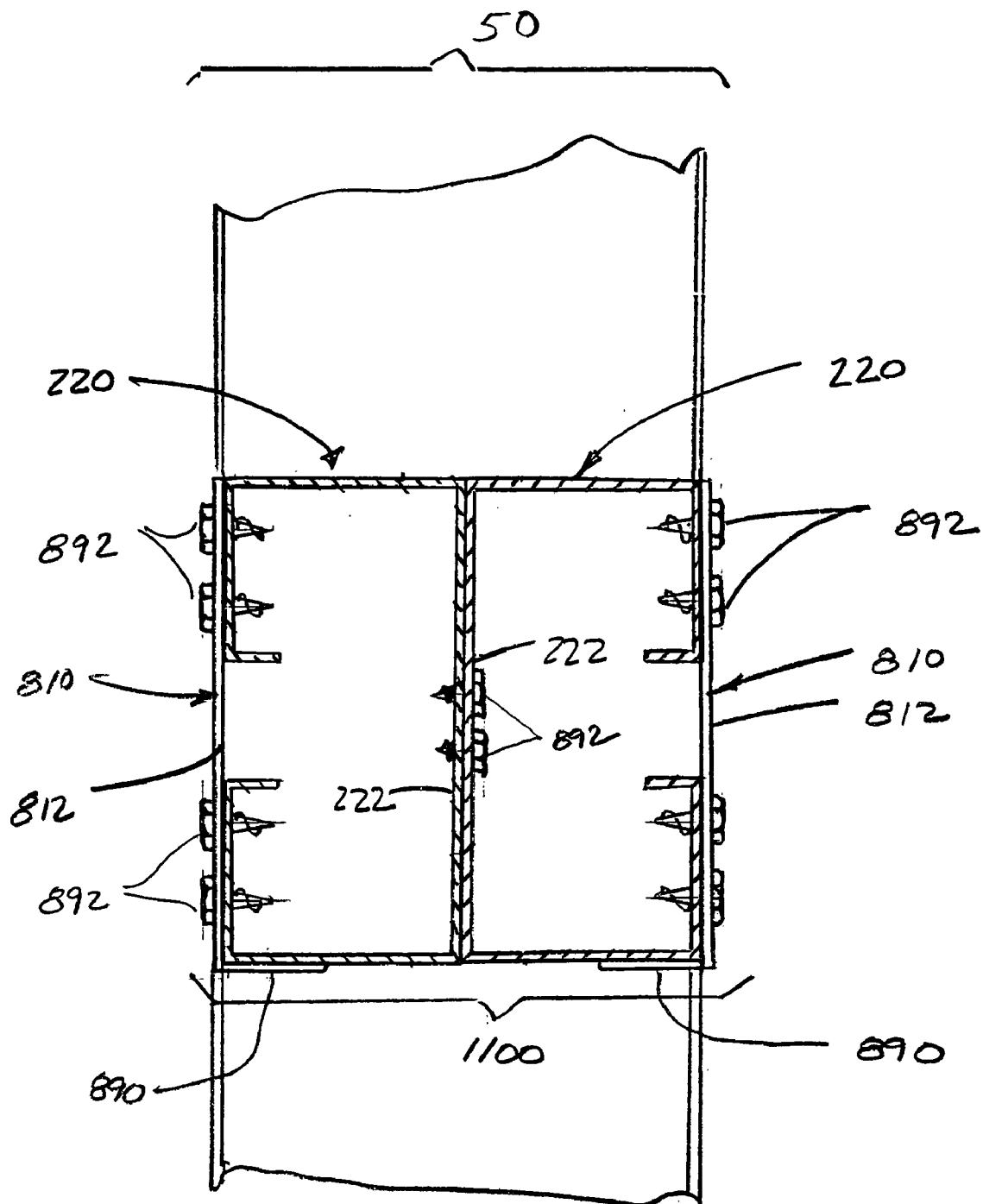


FIG. 33

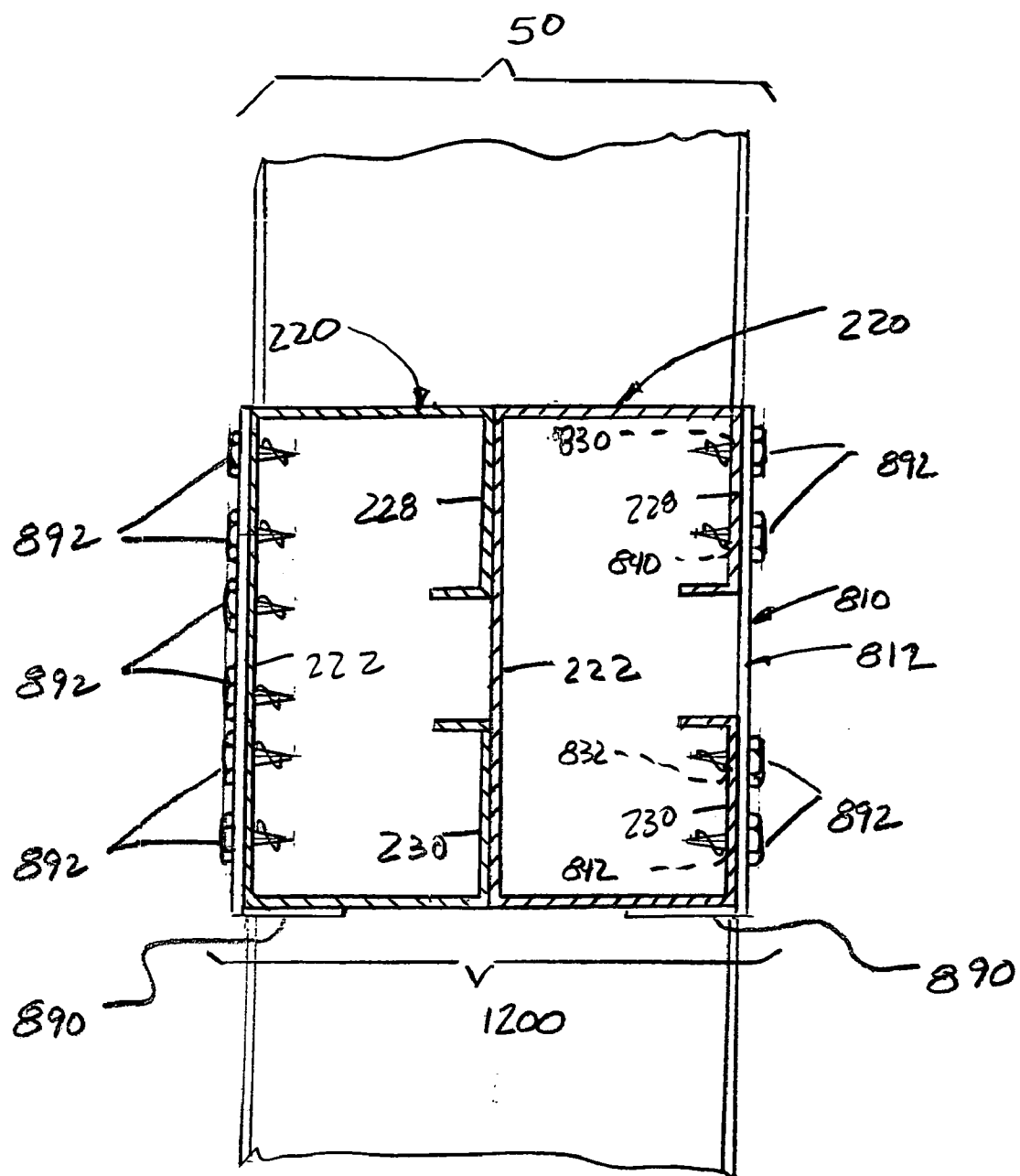


FIG. 35

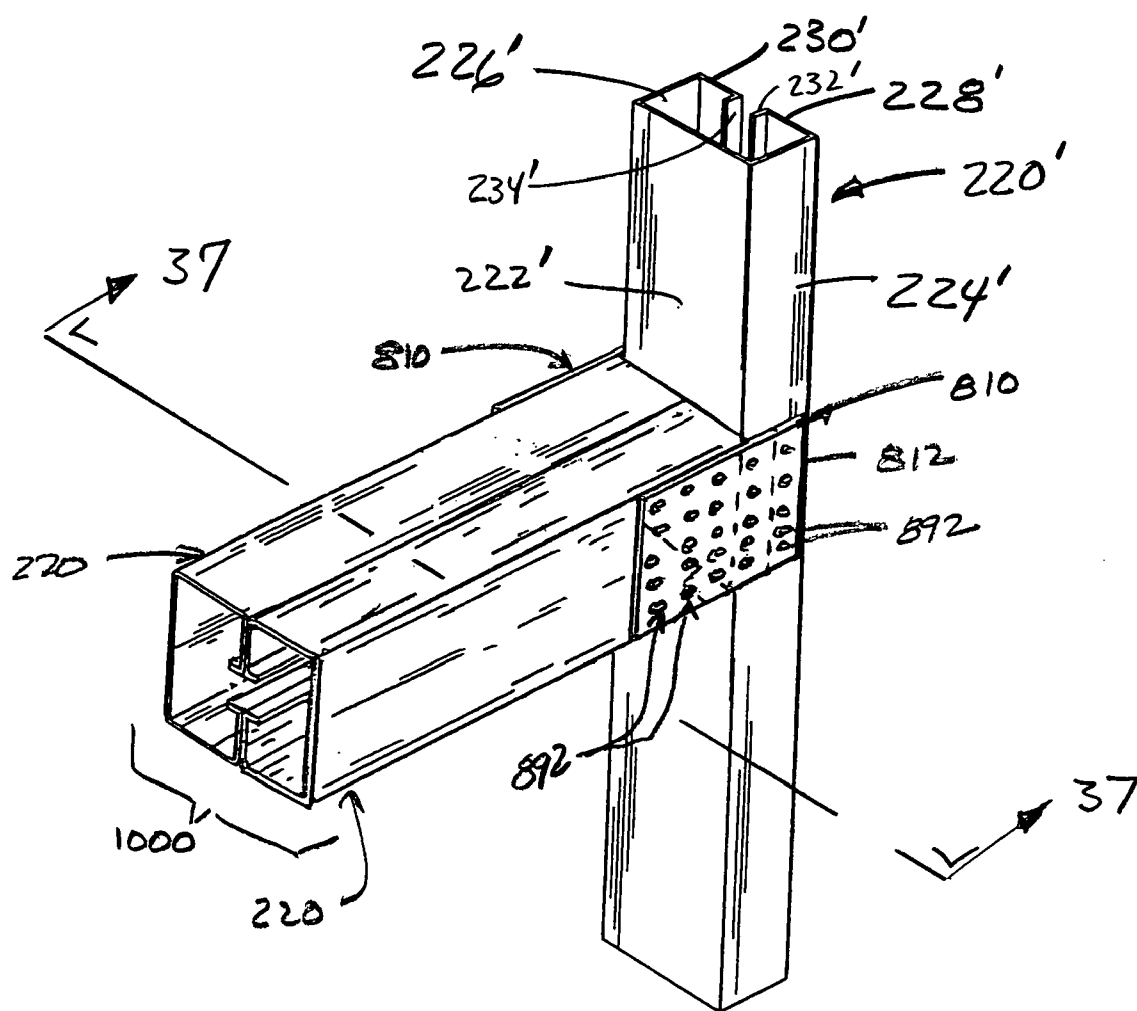
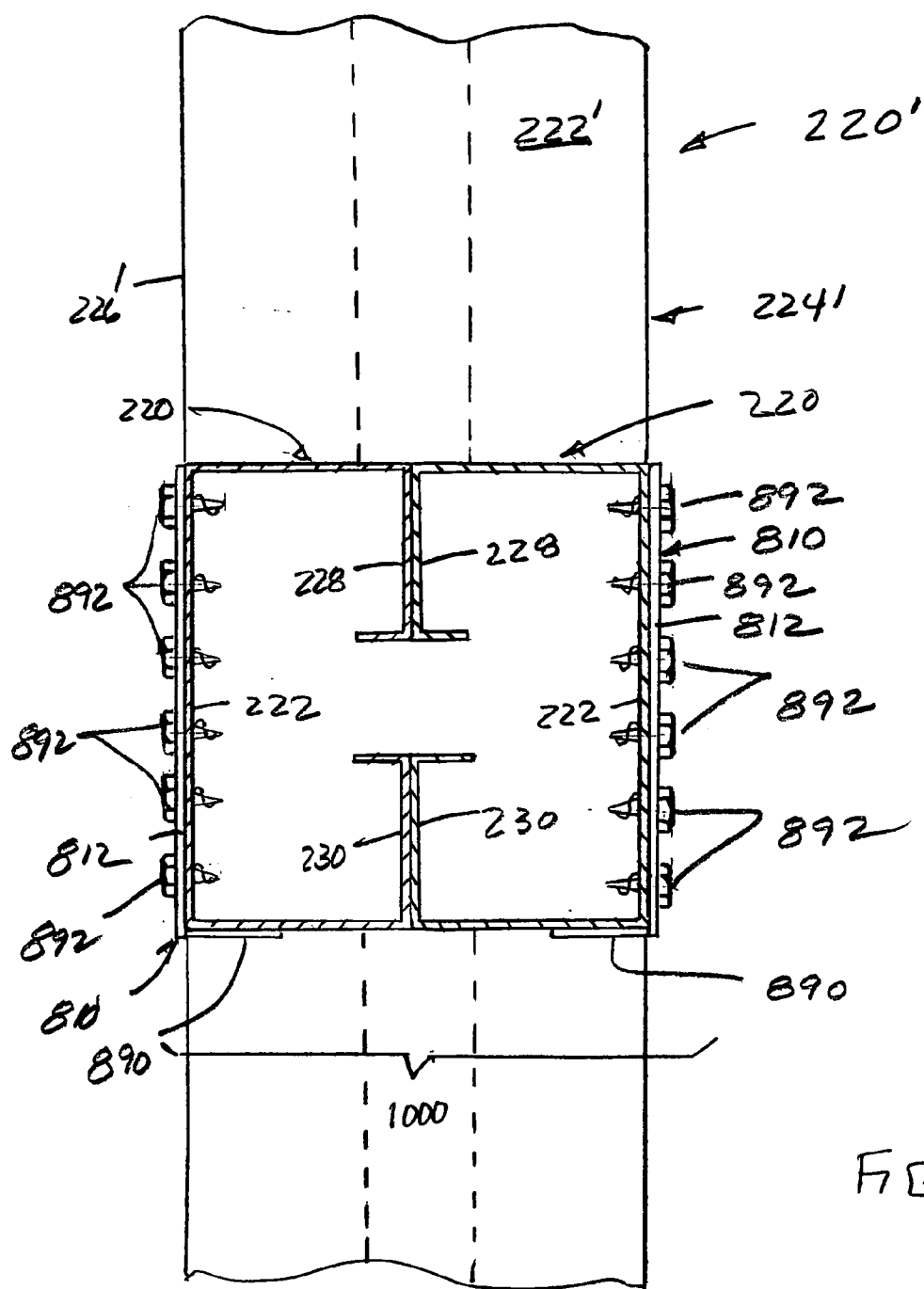


FIG. 36



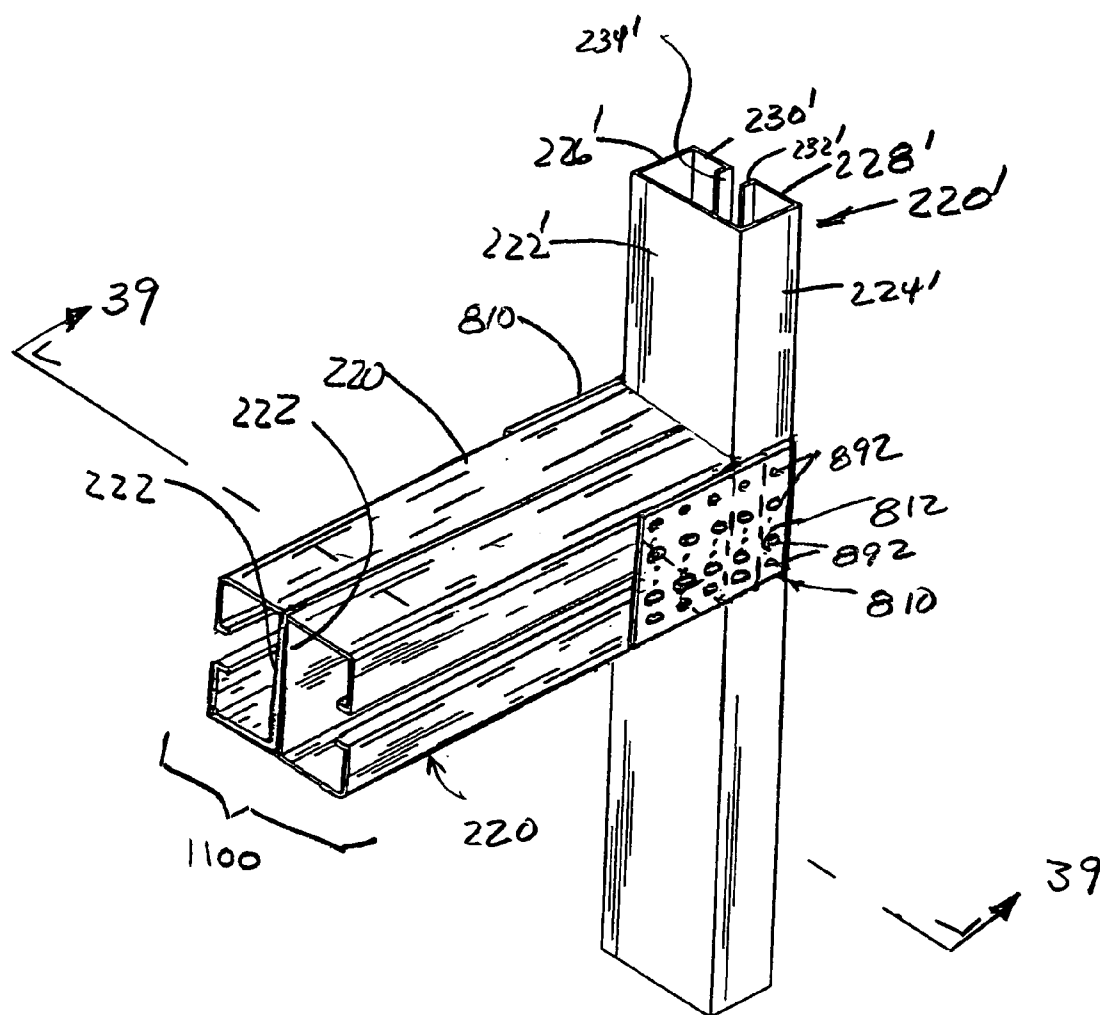


FIG. 38

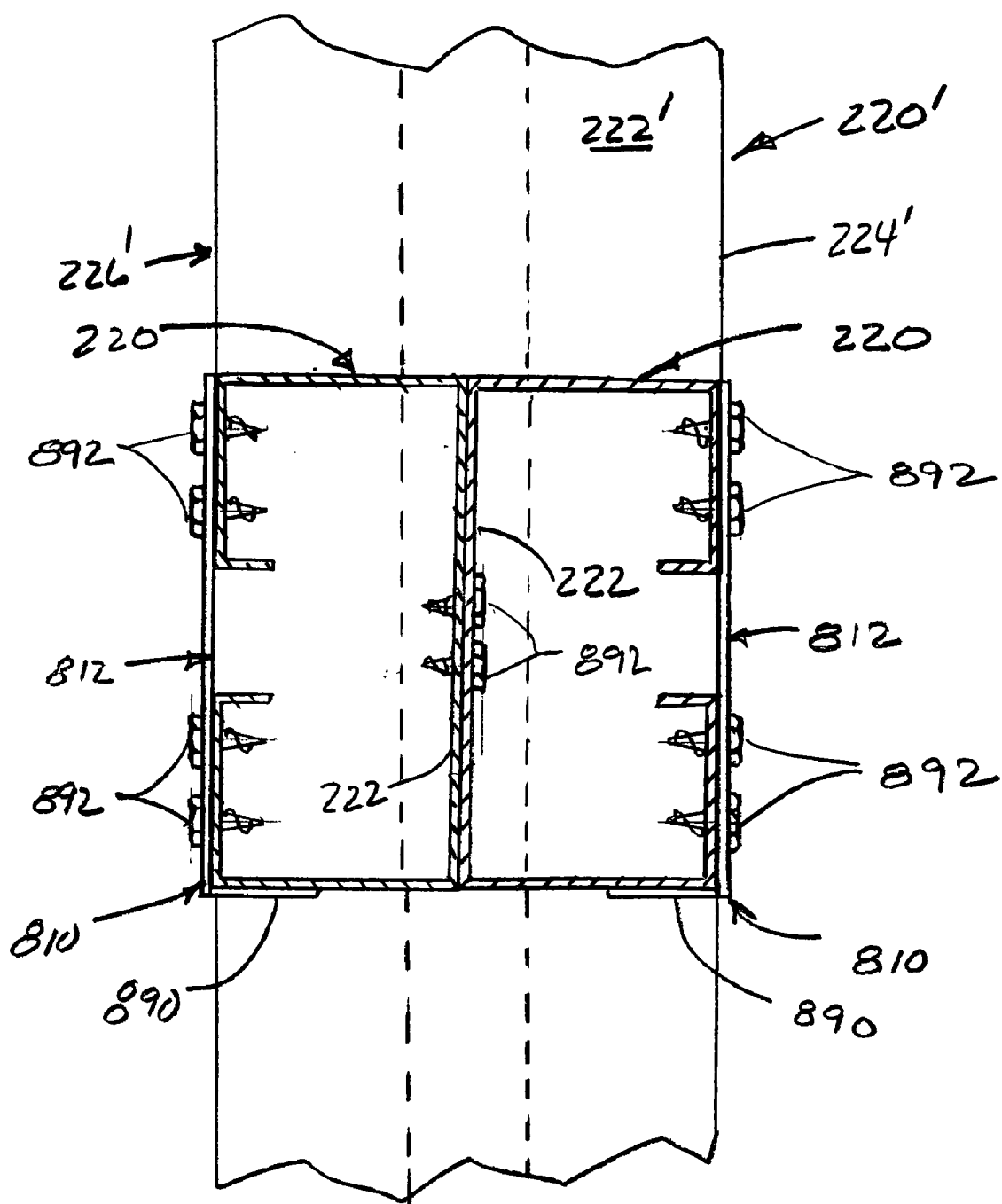
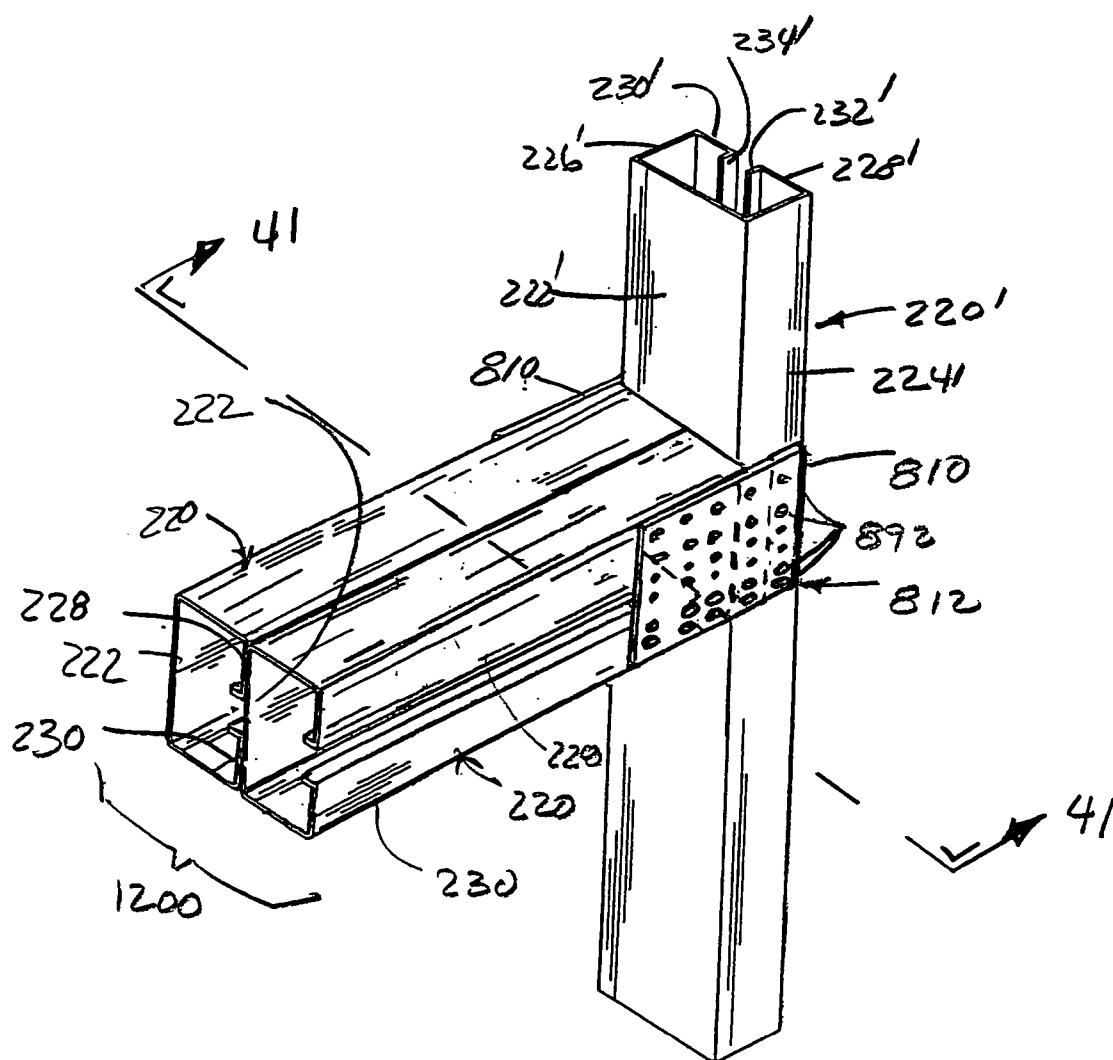


FIG. 39



F1G. 40

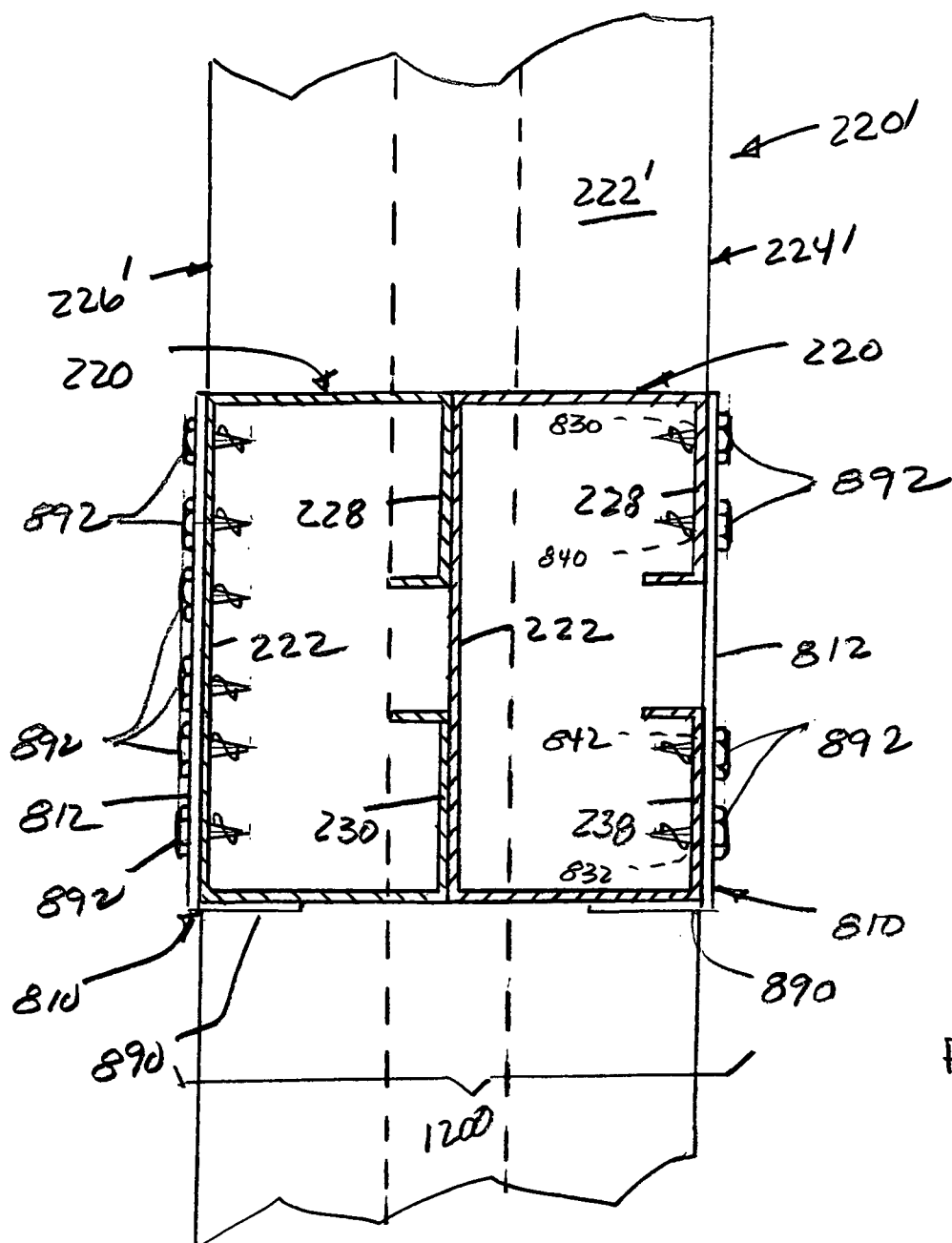


FIG. 41

BUILDING CONSTRUCTION COMPONENTS

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application is a continuation-in-part application of U.S. patent application Ser. No. 10/981,868, entitled Building Construction Components, filed Nov. 5, 2004, the disclosure of which is herein incorporated by reference.

BACKGROUND OF THE INVENTION

[0002] 1. Field of the Invention

[0003] The invention relates to building construction components and, more particularly, to building construction components fabricated from metal such as headers, sills, trusses, girders and support posts.

[0004] 2. Description of the Invention Background

[0005] Traditionally, the material of choice for new residential and commercial building framing construction has been wood. However, over the years, the rising costs of lumber and labor required to install wood framing components have placed the dream of owning a newly constructed home out of the economic reach of many families. Likewise such increasing costs have contributed to the slowing of the development and advancement of urban renewal plans in many cities. Other problems such as the susceptibility to fire and insect damage, rotting, etc. are commonly associated with wood building products.

[0006] In view of the foregoing problems and shortcomings of wood construction, steel is rapidly gaining acceptance among homebuilders and homeowners alike due to its cost effectiveness, dimensional stability, noncombustibility, insect resistance, durability, high strength-to-weight ratio and recycleability. These advantages have long been recognized by the commercial construction industry wherein steel has been the material of choice for several decades.

[0007] Regardless of whether a building comprises a multistory commercial structure or a single story residence, C-shaped metal studs and tracks are commonly used in their construction. FIG. 1 illustrates a conventional C-shaped metal stud 10 that has a web 12 and a pair of flanges 14. A lip 16 is also formed on the end of each flange 14 to further strengthen the stud. Such studs 10 are commonly fabricated from cold-formed steel utilizing conventional rollforming techniques. Similarly, the conventional tracks 20 that are employed by the building trades each have a web 22 and a pair of flanges 24. The tracks 20 are similar in construction as the C-shaped studs, but lack the lips that are commonly formed on the ends of the stud flanges. See FIG. 2.

[0008] In most construction applications, walls are constructed by attaching a series of C-shaped studs between a top track and a bottom track. The bottom track is usually attached to the floor structure by screws or other fasteners and the top track is usually attached to the ceiling joists. The ends of the studs are inserted into the top and bottom tracks and are attached thereto by screws, welds, etc. After the wall frame is constructed, then the desired wallboard material is attached to the flanges of the studs and tracks utilizing screws or other fasteners to complete the wall assembly.

[0009] In those walls that require door and/or window openings to be framed therein, a header is constructed to transfer loads occurring above the opening to the vertically extending studs adjacent the opening. The studs that define the vertical boundaries of the opening are often referred to as the "jamb" studs. FIGS. 3-5 illustrate one prior header and jamb stud arrangement that is formed utilizing conventional C-shaped studs and tracks. As can be seen in FIGS. 3 and 4, the header 30 is formed by attaching a first C-shaped stud 32 to a track 40 such that the flanges 36 of the stud 32 are received between the flanges 42 of the track 40. A second upwardly facing piece of track 46 is then attached to the web 34 of the first stud 32. Such header 30 is commonly fabricated by attaching these components together with fasteners such as screws 49 or the like. The use of such screws, however, creates undesirable buildups which can lead to drywall finishing problems. In the alternative, the components may be welded together which adds to assembly time and expense.

[0010] Likewise, the jamb studs 50 are each commonly formed by attaching a C-shaped stud 52 to another piece of track 60 such that the flanges 56 of the stud 52 are received between the flanges 64 of the track 60 and then attaching the web 72 of another stud 70 to the web 64 of the track 60. These components are also commonly coupled together with screws 49 which can lead to drywall finishing problems. In the alternative, they may be welded together to form the jamb stud 50. Such assembly approach requires additional skilled labor. These combinations of components have been found to provide the jamb stud with a sufficient amount of strength to receive the loads from the header without failing or buckling.

[0011] To complete the header assembly, the header 30 is then attached to each jamb stud 50 by corresponding L-shaped clips 80. The clips 80 are welded or screwed to each jamb stud 50. In addition, sections of studs 82 are attached between the track 60 and the section of upper track (not shown) to which the upper ends of the jamb studs 50 are attached. Such stud segments 82 are often referred to in the industry as "cripple studs" and further transfer loads from the upper structures to the header.

[0012] FIG. 6 illustrates a prior truss chord 90 that is fabricated utilizing conventional C-shaped studs. By way of background, trusses are used to form the support frame for a roof or, in some applications, are used to form the support for an upper floor. The upper and lower portions of the truss are known as the "chords" and the members that extend between the chords are called "webs". As can be seen in FIG. 6, a typical method employed to form a truss chord 90 is to weld two C-shaped studs 92 together as shown. The truss webs are formed from other pieces of C-shaped studs 94 that are fastened to the chord 90 by screws, bolts etc. This arrangement, however, is labor intensive because studs have to be welded together to form the necessary chords.

[0013] Conventional C-shaped studs and tracks are also used to form support posts for supporting loads from the structures located above the posts. FIG. 7 illustrates a prior method of constructing a support post. As can be seen in that Figure, a total of 3 C-shaped studs 102 and two tracks 104 are employed. The studs 102 and tracks 104 may be connected together by a collection of screws or by welding.

Both fastening methods, however, are time consuming and attribute to higher labor costs associated with their fabrication.

[0014] Floors are also constructed utilizing components that are somewhat identical to C-shaped studs and tracks utilized to form the wall frames for the structure. However, the tracks and C-shaped members used to form the floor structure can be larger than those like-shaped components used to form wall structures. The floor of a structure is commonly formed from a series of C-shaped members that span the distance between support structures or support walls. These C-shaped members are commonly referred to as floor joists. The ends of the joists are coupled to tracks referred to as joist rims that are either supported on a wall or other structure by one of their flanges or have their webs attached to the wall or structure. The joists are commonly attached to the joist rims by conventional L-shaped clips or by tabs that are integrally formed in the web of the joist rim.

[0015] In those instances wherein the span is too long or loading conditions require it, beams known as girders are employed. The girders serve as points of attachments for the ends of adjacent floor joists as shown in FIG. 8. In the past, many floor girders 110 were fabricated utilizing a conventional stud 112 nested in a conventional track 118. The flanges of the track 118 and stud 112 were attached together utilizing screws 119 or welds. The floor joists 120 were then attached to the girder 110 by means of L-shaped clips 122 and screws. Such approach required extra labor to assemble the girders. In addition, when screws are used to assemble the girder, the screws cause the flooring material to be raised up or bulge in the area around each screw head.

[0016] FIG. 8A illustrates a prior method of constructing a load bearing header arrangement. As can be seen in that Figure, the header 130 was formed from two conventional studs or C-shaped members 140 that were retained in spaced-apart relationship relative to each other between a piece of upper track 150 and a piece of lower track 160. The pieces are held together by a collection of screws 162 or by welding. Both fastening methods, however, are undesirably time consuming.

[0017] Thus, as can be appreciated from the forgoing discussion, a variety of different components utilized in constructing residential and commercial buildings from steel are fabricated from conventional C-shaped studs and tracks. While the use of such components affords a host of advantages over the use of wood beams and the like, the added labor and materials required to fabricate such components undesirably lead to increased construction costs.

SUMMARY

[0018] In accordance with one embodiment of the present invention, there is provided a header assembly that includes a first header stud that comprises a substantially planar first header web and a first header flange that protrudes from the substantially planar first header web. A second header flange protrudes from the substantially planar first header web and is spaced from the first header flange. A first header leg protrudes from the first header flange and is substantially parallel to the substantially planar first header web. A second header leg protrudes from the second header flange and is substantially parallel to the substantially planar first header web and is substantially coplanar with the first header leg. A

first header return is provided on an end of the first header leg and a second header return is provided on an end of the second header leg. This embodiment of the present invention also includes another header stud that includes another substantially planar header web and another first header flange that protrudes from the another substantially planar header web. Another second header flange protrudes from the another substantially planar header web and is spaced from the another first header flange. Another first header leg protrudes from the another first header flange and is substantially parallel to the another substantially planar header web. Another second header leg protrudes from the another second header flange and is substantially parallel to the another substantially planar header web and is substantially coplanar with the another first header leg. This embodiment further includes another first header return on another end of the another first header leg and another second header return on another end of the another second header leg. The another header stud is retained in abutting contact with the first header stud to form a header assembly.

[0019] Yet another embodiment of the present invention is directed to a connector for coupling an end of a header assembly to a jamb stud that is oriented adjacent thereto. In one embodiment, the connector comprises a substantially planar connection plate sized to span between the end of the header assembly and the jamb stud. A plurality of first fastener holes are provided through the connection plate. The first fastener holes each have a first shape. A plurality of second fastener holes are provided through the connection plate. Each of the second fastener holes has a second shape that differs from the first shape. A locator tab protrudes from the substantially planar connection plate such that when the locator tab is brought into abutting contact with the jamb stud, a portion of the end of the header assembly is coextensive with a first portion of the connection plate and a portion of the jamb stud is coextensive with a second portion of the connection plate such that at least one first fastener hole and at least one second fastener hole are each adjacent to the coextensive end of the header assembly and at least one other first fastener hole and at least one other second fastener hole are adjacent to the coextensive portion of the jamb stud.

[0020] Another embodiment of the present invention comprises a header and jamb stud arrangement that includes a pair of jamb studs spaced from each other and a header assembly that extends between the jamb studs to define an opening therebetween. The header assembly comprises a substantially planar first header web and a first header flange that protrudes from the substantially planar first header web. A second header flange protrudes from the substantially planar first header web and is spaced from the first header flange. A first header leg protrudes from the first header flange and is substantially parallel to the substantially planar first header web. A second header leg protrudes from the second header flange and is substantially parallel to the substantially planar first header web and is substantially coplanar with the first header leg. A first header return is provided on an end of the first header leg and a second header return is provided on an end of the second header leg. This embodiment of the present invention further comprises another header stud that includes another substantially planar header web and another first header flange that protrudes from the another substantially planar header web. Another second header flange protrudes from the another substan-

tially planar header web and is spaced from the another first header flange. Another first header leg protrudes from the another first header flange and is substantially parallel to the another substantially planar header web. Another second header leg protrudes from the another second header flange and is substantially parallel to the another substantially planar header web and is substantially coplanar with the another first header leg. Another first header return is provided on another end of said another first header leg and another second header return is provided on another end of the another second header leg. The another header stud is in abutting contact with the first header stud to form a header assembly. A first connector arrangement is provided for connecting one end of the header assembly to one of the jamb studs and a second connector arrangement is provided for connecting another end of the header assembly to the other one of said jamb studs.

[0021] Another embodiment of the present invention comprises a header and jamb stud arrangement that includes a pair of jamb studs spaced from each other and a header assembly that extends between the pair of spaced jamb studs to define an opening between the jamb studs. A first connector arrangement for connecting one end of said header assembly to one of said jamb studs is provided. In one embodiment, the first connector arrangement comprises a pair of first connectors wherein at least one first connector comprises a substantially planar first connection plate sized to span between the end of the header assembly and the jamb stud. A plurality of first fastener holes are provided through the first connection plate wherein the first fastener holes each have a first shape. This embodiment further includes a plurality of second fastener holes through the first connection plate, wherein each of the second fastener holes has a second shape that differs from the first shape. A first locator tab protrudes from the substantially planar first connection plate such that when the locator tab is brought into abutting contact with the jamb stud, a portion of the end of the header assembly is coextensive with a first portion of the first connection plate and a portion of the jamb stud is coextensive with a second portion of the first connection plate such that it least one first fastener hole and at least one second fastener hole are each adjacent to the coextensive end of the header assembly and at least one other first fastener hole and at least one other second fastener hole are adjacent to the coextensive portion of the jamb stud. A second connector arrangement is provided for connecting another end of the header assembly to the other one of said jamb studs.

BRIEF DESCRIPTION OF THE DRAWINGS

[0022] In the accompanying Figures, there are shown present embodiments of the invention wherein like reference numerals are employed to designate like parts and wherein:

[0023] **FIG. 1** is a perspective view of a prior art C-shaped stud;

[0024] **FIG. 2** is a perspective view of a prior art track;

[0025] **FIG. 3** is a partial perspective view of a prior header and jamb stud arrangement;

[0026] **FIG. 4** is a partial end view of the prior header arrangement depicted in **FIG. 3**;

[0027] **FIG. 5** is a partial end of the prior jamb stud arrangement depicted in **FIG. 3**;

[0028] **FIG. 6** is a partial perspective view of a prior truss chord assembly;

[0029] **FIG. 7** is a partial perspective view of a prior art post arrangement;

[0030] **FIG. 8** is a partial perspective view of a prior floor girder and floor joist arrangement;

[0031] **FIG. 8A** is a perspective view of a portion of a prior header assembly;

[0032] **FIG. 9** is an elevational view of a wall frame that employs a header embodiment, a sill embodiment and a jamb stud embodiment of the present invention;

[0033] **FIG. 10** is an end view of a stud embodiment of the present invention;

[0034] **FIG. 11** is a perspective view of a portion of a header and jamb stud embodiment of the present invention;

[0035] **FIG. 11 A** is a perspective view of the header and jamb stud embodiment depicted in **FIG. 11** with a conventional stud attached to the jamb stud;

[0036] **FIG. 12** is a partial cross-section view of the header and jamb stud embodiment of the **FIG. 11** taken along line 12-12 in **FIG. 11**;

[0037] **FIG. 13** is a perspective view of one embodiment of an attachment clip of the present invention;

[0038] **FIG. 14** is a partial cross-sectional view of the sill and jamb stud embodiment of **FIG. 9** taken along line 14-14 in **FIG. 9**;

[0039] **FIG. 15** is a partial perspective view of another header and jamb stud embodiment of the present invention;

[0040] **FIG. 16** is a perspective view of another attachment clip of the present invention;

[0041] **FIG. 17** is a perspective view of a portion of a truss chord embodiment of the present invention;

[0042] **FIG. 18** is a perspective view of a portion of a truss embodiment of the present invention;

[0043] **FIG. 19** is a perspective view of a portion of a support post of the present invention;

[0044] **FIG. 20** is a portion of a cross-sectional view of the support post embodiment of **FIG. 19** taken along line 20-20 in **FIG. 19**;

[0045] **FIG. 21** is a perspective view of a portion of a floor girder embodiment of the present invention;

[0046] **FIG. 22** is an end view of another stud embodiment of the present invention;

[0047] **FIG. 23** is a perspective view of a portion of the stud of **FIG. 22**;

[0048] **FIG. 24** is a perspective view of a portion of other stud embodiments of the present invention;

[0049] **FIG. 25** is a perspective view of a portion of a conventional header assembly attached to a portion of a conventional jamb stud assembly utilizing a pair of connection plates of one embodiment of the present invention;

[0050] **FIG. 26** is a perspective view of one embodiment of a connection plate of the present invention;

[0051] FIG. 27 is a plan view of a squared-shaped hole through the connection plate depicted in FIG. 26;

[0052] FIG. 28 is a plan view of a triangular-shaped hole through the connector plate of FIG. 26;

[0053] FIG. 29 is a cross-sectional view of the header assembly and jamb stud arrangement depicted in FIG. 25 taken along lines 29-29 in FIG. 25;

[0054] FIG. 30 is a perspective view of a portion of one embodiment of a header assembly of the present invention attached to a portion of a conventional jamb stud assembly utilizing a pair of connection plates of one embodiment of the present invention;

[0055] FIG. 31 is a cross-sectional view of the header assembly depicted in FIG. 30 taken along line 31-31 in FIG. 30;

[0056] FIG. 32 is a perspective view of a portion of one embodiment of another header assembly of the present invention attached to a portion of a conventional jamb stud assembly utilizing a pair of connection plates of one embodiment of the present invention;

[0057] FIG. 33 is a cross-sectional view of the header assembly depicted in FIG. 32 taken along line 33-33 in FIG. 32;

[0058] FIG. 34 is a perspective view of a portion of one embodiment of another header assembly of the present invention attached to a portion of a conventional jamb stud assembly utilizing a pair of connection plates of one embodiment of the present invention;

[0059] FIG. 35 is a cross-sectional view of the header assembly depicted in FIG. 34 taken along line 35-35 in FIG. 34;

[0060] FIG. 36 is a perspective view of a portion of one embodiment of a header assembly of the present invention attached to a portion of a jamb stud of the present invention utilizing a pair of connection plates of one embodiment of the present invention;

[0061] FIG. 37 is a cross-sectional view of the header assembly depicted in FIG. 36 taken along line 37-37 in FIG. 36;

[0062] FIG. 38 is a perspective view of a portion of one embodiment of another header assembly of the present invention attached to a portion of a jamb stud of the present invention utilizing a pair of connection plates of one embodiment of the present invention;

[0063] FIG. 39 is a cross-sectional view of the header assembly depicted in FIG. 38 taken along line 39-39 in FIG. 38;

[0064] FIG. 40 is a perspective view of a portion of one embodiment of another header assembly of the present invention attached to a portion of a jamb stud of the present invention utilizing a pair of connection plates of one embodiment of the present invention; and

[0065] FIG. 41 is a cross-sectional view of the header assembly depicted in FIG. 40 taken along line 41-41 in FIG. 40.

DETAILED DESCRIPTION OF THE INVENTION

[0066] Referring now to the drawings for the purposes of illustrating the present embodiments of the invention only and not for the purposes of limiting the same, FIGS. 9, 11 and 12 illustrate one embodiment of a header assembly 219 of the present invention utilized to form a window opening 201 in a wall frame structure 200. As can be seen in FIG. 9, the wall frame structure 200 may be fabricated from a lower track 202 and an upper track 206. The lower track has a web 203 and a pair of upstanding flanges 204. Similarly, the upper track 206 has a web 207 and a pair of flanges 208. A plurality of studs 210 are connected between the lower track 202 and the upper track 206 utilizing screws or other suitable fastening methods. The studs 210 are conventional in nature and have a web 211, a pair of flanges 212 and a lip formed on the end of each flange 212.

[0067] In this embodiment, the header assembly 219 is formed from a uniquely shaped header stud 220, an embodiment of which is depicted in FIG. 10. As can be seen in FIG. 10, stud 220 includes a substantially planar header web 222, a first header flange 224 and a second header flange 226. The first and second header flanges (224, 226) protrude outwardly from the substantially planar header web 222. A first header leg 228 protrudes from the first header flange 224 such that the first header leg 228 is substantially parallel to the substantially planar header web 222. Likewise, a second header leg 230 protrudes from the second header flange 226 such that it is substantially parallel to the substantially planar header web 222. A first header return 232 protrudes from the first header leg 228 and a second header return 234 protrudes from the second header leg 230.

[0068] In one embodiment, the stud 220 is rollformed from steel sheet by utilizing conventional rollforming methods and equipment. For example, the stud 220 may be fabricated from 12, 14, 16, 18, 20, etc. gage steel or other metal or material. Although the size of the stud 220 and the material from which it is formed may vary depending upon the application and loading conditions, in one embodiment for example, the web 222 may be made in various widths of, for example, 3 $\frac{5}{8}$ inches, 6 inches and eight inches (distance "A"). The first and second flanges (224, 226) may be fabricated with a variety of different heights ranging from, for example, 2 inches-3.5 inches (distance "B"). The widths of the first and second legs (228, 230) of a stud that has a web width of 3 $\frac{5}{8}$ inches may be 1 $\frac{1}{16}$ inches (distance "C"). Thus in this embodiment, the distance between the ends of the first and second legs (228, 230) is 1 $\frac{1}{2}$ inches (distance "D"). The widths of the first and second legs (228, 230) of a stud that has a web width of six inches would be, for example, 2 $\frac{1}{4}$ inches. The widths of the first and second legs (228, 230) of a stud that has a web width of eight inches would be, for example, 3 $\frac{1}{4}$ inches. In various embodiments, the length of each return portion (232, 234) may be $\frac{3}{4}$ inches (distance "E"). It will be appreciated, however, that other sizes of stud 220 could be used depending upon the specific application.

[0069] In the embodiment depicted in FIGS. 9 and 11, a header stud 220 is used to form the header assembly 219 and studs 220' are used to form the jamb studs which form the vertical boundaries of the opening 201. Studs 220' are identical to studs 220 and are identified herein with the ""

symbol to distinguish between the use of a stud **220** as a header and as a jamb stud. For example, each jamb stud **220'** has a substantially planar jamb stud web **222'**, a first jamb stud flange **224'** and a second jamb stud flange **226'** that protrude from the jamb stud web **222'**. A first jamb stud leg **228'** is attached or otherwise formed on the first jamb stud flange **224'** and a second jamb stud leg **230'** is formed on or attached to the second jamb stud flange **226'**. A first jamb stud return **232'** is formed on the end of the first jamb stud leg **228'** and a second jamb stud return **234'** is formed on the end of the second jamb stud leg **230'**. See **FIG. 11**. In this embodiment, the stud **220** is interposed between the jamb studs **220** and may be quickly coupled to the jamb studs **220'** by connector clips **240**.

[0070] As can be seen in **FIG. 13**, in this embodiment, on connector clip embodiment has a clip web **242** and a pair of clip flanges **244** protruding from the clip web **242**. The clip flanges **244** define a header-receiving space **245** therebetween. The clip web **242** of the clip **240** is fastened to the jamb stud web **222'** of the corresponding jamb stud **220'** by appropriately sized fasteners such as sheet metal screws or the like and one end of the header stud **220** is inserted between the clip flanges **242** as shown in **FIG. 11**. Each end of the header stud **220** is attached to the clip **240** utilizing threaded fasteners **246** such as sheet metal screws or the like. However, header stud **220** could be welded to the clip **240**.

[0071] As shown in **FIG. 11**, in this embodiment, a header track **260** is supported on and attached to the first and second legs (**228**, **230**) of the header stud **220**. Header track **260** has a header track web **262** and a pair of upstanding header track flanges **264**. The web **262** of the header track **260** is attached to the first and second header legs (**228**, **230**) of the header stud **220** by fasteners **246** which may comprise conventional sheet metal screws or the like. In addition, pieces of studs **270**, which may be conventional in nature, may be attached to the track header **260** and the upper track **206**. Stud **270** may each have a web **272**, pair of flanges **274** and a return **276** formed on the end of each flange **274**. The flanges **274** of the studs **270** are attached to the header flanges **264** and the upper track flanges **208** by fasteners such as sheet metal screws or the like. Studs **270** serve as the cripple studs for the header arrangement. For window or door openings that require additional support due to their width, an additional conventional stud **210** could be attached to the jamb stud **220'** as shown in **FIG. 11A**.

[0072] As can also be seen in **FIGS. 9 and 14**, sill studs **220"** may be used to form a windowsill designated as **280**. Sill studs **220"** are identical to header studs **220** and are identified herein with the " symbol to distinguish between the use of a stud **220** as a header and as a sill stud. For example, each sill stud **220"** has a substantially planar jamb stud web **222"**, a first sill stud flange **224"** and a second sill stud flange **226"** that protrude from the sill stud web **222"**. See **FIG. 14**. A first sill stud leg **228"** is attached or otherwise formed on the first sill stud flange **224"** and a second sill stud leg **230"** is formed on or attached to the second sill stud flange **226"**. A first sill stud return **232"** is formed on the end of the first sill stud leg **228"** and a second sill stud return **234"** is formed on the end of the second jamb stud leg **230'**.

[0073] In this embodiment, the sill stud **220"** is oriented with the flanges **224"** and **226"** extending toward the lower

track **202** and is coupled to the jamb studs **220'** by connector clips **240** in the manner described above. Also in this embodiment, a sill track **260"** is supported on and attached to the first and second legs (**228"**, **230"**) of the sill stud **220"**. Sill track **260"** has a sill track web **262"** and a pair of upstanding sill track flanges **264"**. The sill track web **262"** of the sill track **260"** is attached to the first and second sill track legs (**228"**, **230"**) of the sill stud **220"** by fasteners **246"** which may comprise conventional sheet metal screws or the like. In addition, pieces of studs **270"**, which may be conventional in nature, may be attached to the sill track **260"** and the lower track **202**. Stud **270"** may each have a web **272"**, pair of flanges **274"** and a return **276"** formed on the end of each flange **274"**. The flanges **274"** of the studs **270"** are attached to the sill track flanges **264"** and the lower track flanges **208** by fasteners **246"** such as sheet metal screws or the like. Studs **270"** serve as the cripple studs for the sill **280**.

[0074] Such header, jamb stud and sill arrangements of the present invention require less labor and material to assemble than the prior header configurations. It will also be appreciated, however, that the uniquely shaped studs **220**, **220'**, **220"** could be used in a variety of other applications and combinations. For example, the header studs **220'** and the sill studs **220"** could be used to form headers and sills, respectively as described above in connection with conventional jamb stud arrangements. Likewise, the studs **220'** could be used to form jamb studs that are used in connection with conventional header and sill assemblies. Thus, it will be appreciated that the header studs **220** and/or sill studs **220"** do not have to be used in connection with jamb studs **220'** if use of other jamb stud arrangements is more preferable and visa-versa. It will be also appreciated that the studs (**220**, **220'**, **220"**) could be used in connection with wood studs and wood framing assemblies.

[0075] In another header assembly embodiment of the present invention, a connector clip **290** of the type illustrated in **FIGS. 15 and 16** is employed. As can be seen in **FIG. 16**, the connector clip **290** has a pair of clip attachment tabs **292** and a raised central portion **296**. The clip attachment tabs **292** are substantially coplanar with each other. The central portion **296** is substantially parallel to the clip attachment tabs **292** and is attached thereto by a pair of clip legs **294**. The clip attachment tabs **292** are attached to the jamb stud web **222'** of the jamb stud **220'** by fasteners **299** such as sheet metal screws and the end of the header stud **220** is inserted over the central portion **296** such that the central portion **296** is received in the area between the first and second header flanges (**224**, **226**) and the first and header second legs (**228**, **230**). As can be seen in **FIGS. 15 and 16**, a pair of return-receiving slots **298** are provided in a portion of the central portion **296** and one of the clip legs **294** for receiving the first and second header returns (**232**, **234**) when the ends of the header stud **220** is inserted over the raised central portion **286**. The header stud **220** is then attached to the connector clip **290** by conventional fasteners such as such metal screws or the like. The header stud **220** could also be attached to the connector by welding or other fastener arrangements. Such connector clip arrangement may provide further torsional stability to the header stud **220** when installed in this manner. Connector **290** could also be used to attach the sill studs **220"** to the jamb studs **220'** in the above-described manners.

[0076] **FIG. 17** illustrates a unique and novel truss chord arrangement **300** of one embodiment of the present invention. In this embodiment, a chord stud **310**, which is essentially identical in construction as the header stud **220**, is employed to form the truss chord. The chord stud **310** has a substantially planar chord web **312** and a first chord flange **314** and a second chord flange **316** protruding therefrom. A first chord leg **318** protrudes from the first chord flange **314** and a second chord leg **320** protrudes from the second chord flange **316**. A first chord return **322** is formed on the end of the first chord leg **318** and a second chord return **324** is formed on the end of the second chord leg **320**. Pieces of studs **330** which are conventional in nature are attached to the first and second chord legs (**314**, **316**) and the chord web **312** of the chord stud **310** utilizing fasteners **340** such as sheet metal screws. The studs **330** each have a web **332**, a pair of flanges **334** and a lip **336** formed on the end of each flange **334**. These studs **330** form the webs of the truss. Such arrangement eliminates labor required to weld two pieces of stud together to form the truss chord.

[0077] **FIG. 18** illustrates another truss assembly **300'** of the present invention. In this embodiment, the truss webs are formed from truss studs **310'** which are each essentially identical in construction as the chord stud **310**. Each truss stud **310'** has a substantially planar chord web **312'** and a first chord flange **314'** and a second chord flange **316'** protruding therefrom. A first chord leg **318'** protrudes from the first chord flange **314'** and a second chord leg **320'** protrudes from the second chord flange **316'**. A first chord return **322'** is formed on the end of the first chord leg **318'** and a second chord return **324'** is formed on the end of the second chord leg **320'**. In this embodiment, the truss studs **310''** are attached to the chord stud **310** by one or more gusset plates **350'** and fasteners **354'** such as sheet metal screws. The gusset plates **350'** may be fabricated from steel or other suitable material.

[0078] **FIGS. 19 and 20** illustrate a support post **400** embodiment of the present invention that is formed utilizing a post stud **410** which is identical to the header stud **220** described above. The post stud **410** has a substantially planar post stud web **412** and a first post stud flange **414** and a second post stud flange **416** protruding from the post stud web **412**. A first post stud leg **418** protrudes from the first post stud flange **414** and a second post stud leg **420** protrudes from the second post stud flange **416**. A first post stud return **422** is formed on the end of the first post stud leg **418** and a second post stud return **424** is formed on the end of the second post stud leg **420**. See **FIG. 19**.

[0079] In this embodiment, the post stud **410** is used in connection with two studs **430**. The studs **430** each have a web **432** and two flanges **434**. A lip **436** is formed on the end of each flange **434**. The post **400** is formed by attaching the web **432** of one of the studs **430** to the post stud **412** of the post stud **410** with fasteners **438** such as sheet metal screws or the like and the web **432** of the other stud **430** is attached to the first and second post stud legs (**418**, **420**) of the post stud **410** by sheet metal screws **438** or the like. I have discovered that such arrangement provides an equivalent amount of structural support as prior post arrangements that employ three conventional studs and two pieces of conventional track. Thus, this embodiment of the present invention reduces the amount of material needed and also the amount of labor needed to assemble it when compared

to prior post assemblies. It will be appreciated, however, that the post stud **410** may also be used in connection with one stud **430** or more than two studs **430** without departing from the spirit and scope of the present invention.

[0080] The unique and novel studs of the present invention may also be used as a floor girder **502** in a floor system **500**. More particularly and with reference to **FIG. 21**, a single girder stud **510** serves as a floor girder for attaching conventional floor joists **520** thereto. The girder stud **510** is identical in construction when compared to the header stud **220** described above. In one embodiment, the girder stud **510** has a substantially planar girder web **512** and a first girder flange **514** and a second girder flange **516** protruding from the girder web **512**. A first girder leg **518** protrudes from the first girder flange **514** and a second girder leg **520** protrudes from the second girder flange **516**. A first girder return **522** is formed on the end of the first girder leg **518** and a second girder return **524** is formed on the end of the second girder leg **520**.

[0081] The floor joists **530** may have a joist web **532** and a first joist flange **534** and a second joist flange **536**. A first joist lip **538** is formed on the end of the first joist flange **534** and a second joist lip **540** is formed on the end of the second joist flange **536**. One series of joists **530** are attached to the first and second girder legs (**518**, **520**) of the girder stud **510** by conventional L-shaped clips **550** and sheet metal screws **552** or the like. The joists **530** protruding from the other side of the girder stud **510** are attached to the girder web **512** of the girder stud **510** by L-shaped clips **550** and fasteners **552**. Such improved arrangement eliminates the need to assemble the girder from a conventional stud and track and the labor associated with making such girder. It will be further appreciated that the girder of the present invention may find utility in non-floor applications without departing from the spirit and scope of the present invention.

[0082] **FIGS. 22 and 23** illustrate an alternative stud embodiment **620** of the present invention. Stud **620** includes a web **622**, a first flange **624** and a second flange **626**. The first and second flanges (**624**, **626**) protrude outwardly from the web **622**. A first leg **628** protrudes from the first flange **624** such that the first leg **628** is substantially parallel to the web **622**. Likewise, a second leg **630** protrudes from the second flange **626** such that it is substantially parallel to the web **622**. A first return **632** protrudes from the first leg **628** and a second header return **634** protrudes from the second header leg **630**. See **FIG. 22**.

[0083] In one embodiment, the stud **620** is rollformed from steel sheet by utilizing conventional rollforming methods and equipment. For example, the stud **620** may be fabricated from 12, 14, 16, 18, 20, etc. gage steel or other metal or material. In this embodiment, the stud **620** may further include a series of stiffener ribs. More particularly and with reference to **FIG. 22**, the web **622** may have one or more web stiffener ribs **623** therein. Web stiffener ribs **623** may continuously extend the entire length of the web **622** or they may, for example, be provided in an intermittent manner along the web **622**. Similarly, flange stiffener ribs may be provided in the flanges **624** and/or **626**. For example, at least one first flange stiffener rib **625** may be provided in the first flange **624**. The first flange stiffener rib **625** may continuously extend the entire length of the first flange **624** or it may be intermittently provided therein. At least one

second flange stiffener rib 627 may be provided in the second flange 626. The second flange stiffener rib 627 may extend the entire length of the second flange 626 or it may be intermittently provided therein. In addition, at least one first leg stiffener rib 629 may be provided in the first leg 628. The first leg stiffener rib 629 may continuously extend the entire length of the first leg 628 or it may be intermittently provided therein. At least one second leg stiffener rib 631 may be provided in the second leg 630. The second leg stiffener rib 631 may extend the entire length of the second leg 630 or it may be intermittently provided therein. Various stud embodiments may include one or more web stiffener ribs, flange stiffener ribs and leg stiffener ribs or any combination thereof depending upon the specific application. For example, one embodiment may only include at least one stiffener rib in the web of the stud. Another embodiment may only include at least one stiffener rib in each flange. Another embodiment may include at least one stiffener rib in each of the legs. Still another embodiment may include at least one stiffener rib in the flanges, but not in the web. Another embodiment may include at least one stiffener rib in each leg, but nowhere else in the stud. Another embodiment may include at least one stiffener rib in each leg and at least one stiffener rib in the web, but not in the flanges. The present disclosure is meant to encompass all permutations and combinations of stiffener ribs without departing from the spirit and scope of the present invention.

[0084] In yet another embodiment, one or more access holes 700 may be provided through the webs of studs 220, 220', 220", 620 disclosed herein. See FIG. 24. The access holes may be formed in the webs of the respective studs such that a flange 702 extends around the perimeter of the hole 700. Studs containing such holes could be used in any of the above-described embodiments to form, for example, headers, sills, jamb studs, truss chords, posts, and girders.

[0085] FIG. 25 illustrates a portion of a lintel arrangement 800 that is spaced between conventional jamb studs 50 of the type and construction described above to form the top of a door or window opening 804. As was described above, the jamb studs 50 are each commonly formed by attaching a C-shaped stud 52 to another piece of track 60 such that the flanges 56 of the stud 52 are received between the flanges 64 of the track 60 and then attaching the web 72 of another stud 70 to the web 64 of the track 60. These components are also commonly coupled together with screws 49 or, in the alternative, they may be welded together to form the jamb stud 50. This embodiment employs unique and novel connectors 810 to fasten a conventional header 130 of the type and construction depicted in FIG. 8A to the jamb studs 50.

[0086] As described above, the conventional header 130 is formed from two conventional studs or C-shaped members 140 that are retained in spaced-apart relationship relative to each other between a piece of upper track 150 and a piece of lower track 160. The pieces are held together by a collection of screws 162 or by welding.

[0087] One embodiment of the unique and novel connectors 810 of the present invention is depicted in FIG. 26. As can be seen in that Figure, the connector 810 comprises a substantially planar connection plate 812 that is fabricated from suitable material that is capable of withstanding the anticipated loading conditions in accordance with the relevant building codes and design requirements. For example,

the connection plate 812 may be fabricated from 12, 14 or 16 gauge metal or other suitable material. In one embodiment, the connection plate 812 is substantially rectangular in shape. For example, in the embodiment depicted in FIG. 26, the plate 812 may be approximately 8.5 inches long (distance "F") and approximately 6 inches high (distance "G"). However, other plate sizes may be employed.

[0088] The connection plate 812 may be provided with a collection of fastener holes collectively designated as 820. In one embodiment, the holes 820 may all have the same dimensions and shape. For example, the holes 820 may all be round and sized to accommodate the appropriate size of fastener. In alternative embodiments. If different sizes of fasteners are desirable, the holes may have like shapes by have different sizes to accommodate different sizes of fasteners.

[0089] In the embodiment depicted in FIG. 26, however, a unique and novel fastener hole arrangement is employed. In one embodiment, at least two different shapes of holes are employed. In the embodiment depicted in FIG. 26, for example, three different shapes of holes are employed. As can be seen in FIG. 26, two rows 830, 832 of linearly aligned first holes 834 are provided through the connection plate 812. Row 830 of first holes 834 is adjacent the upper edge 814 of the connection plate 812. In this embodiment, the distance from the upper edge 814 to the centerlines of the holes 834 in row 830 is approximately 0.5 inches (distance "K"). Row 832 of first holes 834 is adjacent the lower edge 816 of the connection plate 812. In this embodiment, the distance from the lower edge 816 to the centerlines of the first holes 834 in the row 832 is approximately 0.5 inches (distance "L"). As can be seen in FIGS. 26 and 27, the first holes 834 are square-shaped. The square-shaped first holes 834 are sized to accommodate the desired fasteners that are to be installed through those holes. For example, the square-shaped first holes 834 may be approximately $\frac{3}{32}$ inch square (distance "M" in FIG. 27) to accommodate No. 10-16 screws. However other sizes and types of fasteners may be employed.

[0090] Also in this embodiment, a collection of second holes 844 are provided through connection plate 812. Second holes 844 each have a second shape that differs from the shape of the first holes 834. More particularly in this embodiment, rows 840, 842 of linearly aligned second holes 844 are provided through the connection plate 812 in the locations shown in FIG. 26. That is, row 840 is adjacent to the row 830 and row 842 is adjacent to row 832. In this embodiment, the centerlines of the second holes 844 in the row 840 are spaced approximately 1.0 inches from the centerlines of the first holes 834 in the row 830. Likewise, the centerlines of the second holes 844 in the row 842 are approximately 1.0 inches from the centerlines of the first holes 834 in row 832. In this embodiment, the second holes 844 are triangular-shaped and sized to accommodate the desired fasteners. In one embodiment, the sides of the second holes 844 may be approximately $\frac{1}{8}$ inch long (distance "N" in FIG. 28) to accommodate No. 10-16 screws. However other types and sizes of fasteners may be employed.

[0091] As can also be seen in FIG. 26, in this embodiment, two rows 850, 852 of linearly aligned third holes 854 are provided through the connection plate 812. The shape of

each of the third holes **854** differs from the “first” shape of each of the first holes **834** and the “second” shape of second holes **844**. In this embodiment, the centerline of the linearly aligned third holes **854** in row **850** is spaced approximately 1.0 inch from the centerline of linearly aligned second holes **844** in row **840**. Likewise, the centerline of the linearly aligned third holes **854** in row **852** is approximately 1.0 inch from the centerline of the linearly aligned second holes **844** in row **842** and also approximately 1.0 inch from the centerline of the linearly aligned third holes **854** in row **850**. The third holes **854** in this embodiment are round and sized to accommodate the desired fasteners. In one embodiment, for example, the third holes **854** are approximately $\frac{5}{32}$ inches in diameter and may accommodate No. 10-16 screws. However, other types and sizes of fasteners may be employed.

[0092] In this embodiment, the first holes **834**, second holes **844** and third holes **854** are further aligned to form a

a third load capacity may be achieved for the connection. By filling only all of the first and second holes **834**, **844** with appropriately sized fasteners corresponding to those holes, a fourth predetermined load capacity may be achieved. By filling only all of the first and third holes **834**, **854** with appropriately sized fasteners corresponding to those holes, a fifth predetermined load capacity may be achieved. By filling only all of the second and third holes **844**, **854** with appropriately sized fasteners corresponding to those holes, a sixth predetermined load capacity for the connection may be achieved. By filling all of the first, second and third holes **834**, **844**, **854** with corresponding fasteners, a seventh predetermined load capacity for the connection may be achieved.

[0094] The following chart provides an example of the loading characteristics that may be achieved using conventional connectors:

Connector	Framing		10 Screws		20 Screws		30 Screws	
	Gauge (Mils)	Framing Fy (ksi)	Jamb Capacity	Header Capacity	Jamb Capacity	Header Capacity	Jamb Capacity	Header Capacity
H436	20 (33)	33	561	307	1121	507	1361	637
Using	18 (43)	33	832	455	1361	753	1361	945
#12-16	16 (54)	33	832	455	1361	753	1361	945
Screws		50	832	455	1361	753	1361	945
	14 (68)	33	832	455	1361	753	1361	945
		50	832	455	1361	753	1361	945
	12 (97)	33	832	455	1361	753	1361	945
		50	832	455	1361	753	1361	945
H546	20 (33)	33	561	307	1121	507	1682	637
Using	18 (43)	33	832	455	1664	753	2496	945
#10-16	16 (54)	33	1172	641	2345	1061	2634	1332
Screws		50	1682	919	2634	1522	2634	1910
	14 (68)	33	1655	905	2634	1498	2634	1880
		50	1682	919	2634	1522	2634	1910
	12 (97)	33	1682	919	2634	1522	2634	1910
		50	1682	919	2634	1522	2634	1910
H686	20 (33)	33	630	344	1260	570	1890	716
Using	18 (43)	33	935	511	1870	846	2805	1062
$\frac{1}{4}$ "-14	16 (54)	33	1318	720	2635	1193	3821	1497
Screws		50	1997	1091	3821	1807	3821	2268
	14 (68)	33	1860	1017	3720	1684	3821	2113
		50	2818	1541	3821	2551	3821	3201
	12 (97)	33	2818	1541	3821	2551	3821	3201
		50	2818	1541	3821	2551	3821	3201

first column of linearly aligned holes designated as first column **860**, a second column of linearly aligned holes designated as second column **862**, a third column of linearly aligned holes designated as third column **864**, a fourth column of linearly aligned holes designated as fourth column **866** and a fifth column of linearly holes designated as fifth column **868**.

[0093] Each particular hole shape has a load capacity associated with it. That is, by filling all of the first holes **834** with appropriately sized fasteners that correspond to those holes, a first predetermined load capacity for the connection may be attained. By filling all of the second holes **844** with appropriately sized fasteners that correspond to those holes, a second predetermined load capacity for the connection may be achieved. By filling all of the third holes **854** with appropriately sized fasteners that correspond to those holes,

[0095] The skilled artisan will appreciate that the unique and novel fastener hole arrangement of the connection plate embodiment of the present invention may be adapted to assist the installer in quickly attaining the desired load capacity when coupling a header **130** to a jamb stud **50**. By locating the holes in the necessary locations and providing the installer with information indicating: (i) the type and size of fastener associated with each shape of hole and (ii) an indication of the load capacity attainable by employing fasteners through particular shapes of holes, the installer will be able to quickly achieve a connection that will have the desired load capacity characteristics. It will be further appreciated that particular shapes and orientations of the fastener holes depicted in **FIG. 26** are merely illustrative of one embodiment of the connection plate of the present invention. The numbers, locations and particular shapes of holes may

vary with the size of the plate employed and the load capacity required. For example, the rows of square holes may be provided where the rows of round holes are located and the rows of round holes may be provided where the rows of square holes are located, etc. Thus, the scope of protection afforded to the connection plate of the present invention should not be limited to the particular shape and arrangements of holes depicted in **FIGS. 26-28** and described above. A myriad of different shapes, sizes and arrangements of holes are contemplated.

[0096] To aid in the quick positioning of the connection plate **812** such that it properly spans between the jamb stud **50** and the header **130** and the fastener holes are oriented in desired positions to facilitate fastening of the plate **812** in the desired position, a locator tab **890** is formed on the lower parametrical edge **816** of the connection plate **812**. In one embodiment, the locator tab **890** is substantially planar and substantially rectangular in shape and protrudes outward from the connection plate such that it is substantially perpendicular thereto. For example, the locator tab **890** may be approximately 2 inches long (distance "O") and approximately 1.5 inches wide (distance "P"). For use in connection with conventional jamb stud assemblies, the locator tab **890** may be located approximately 3.25 inches from the end of the connection plate **812** (distance "Q").

[0097] **FIGS. 25 and 29**, illustrate use of one embodiment of the connector **810** of the present invention to connect a conventional header **130** to a conventional jamb stud **50**. As can be seen in those Figures, the installer places the locator tab **890** under the header **130** and moves it into abutting contact with the jamb stud **50**. The locator tab **890** serves to position the connector **810** such that the first and second columns **860**, **862** of holes are aligned to permit fasteners **892** to be installed through the holes of those columns and into the jamb stud **50**. Likewise, the columns **864**, **866**, **868** of holes are located to permit fastener to be inserted there-through into the header **130**. The reader will appreciate that two connectors **810** may be employed to attach one end of the header **130** to the corresponding jamb stud **50**. Thus, four connectors **810** may be employed to attach the ends of the header **130** to two spaced jamb studs **50** to form a window, door or other opening. Such unique and novel arrangement of the connector **810** enables the connector **810** to be used on either side and either end of the header for attachment purposes. This is can be a very useful advantage when compared with other types of connector arrangements employed to connector headers to jamb studs. Such connector arrangements require different connectors for connecting left and right ends of the header to the jamb stud. This undesirable feature requires the installer to have both types of connectors on hand during the construction process. Whereas, when using the connector **810** of the present invention, only one type of connector is required.

[0098] The connector **810** of the present invention may also be effectively used in connection with header studs **220** of the type and construction described above. In particular and with reference to **FIGS. 30 and 31**, a header assembly embodiment **1000** of the present invention is depicted for use in connection with a conventional jamb stud **50**. In this embodiment, header assembly **1000** includes a pair of header studs **220** that are arranged such that the first leg **228** of one header stud **220** is in abutting contact with the first leg **228** of the other header stud **220**. Likewise, the second leg

230 of the one header stud **220** is in abutting contact with the second leg **230** of the other header stud **220** as shown in **FIGS. 30 and 31**.

[0099] A pair of connector plates **810** is used on each end of the header assembly **1000** to attach one end of the header assembly **1000** to the corresponding jamb stud **50**. Fasteners **892** such as 10-16 screws, etc. are inserted through the holes in the connector plate **812** of the connectors **810**. **FIGS. 30 and 31** illustrate use of fasteners **892** through all of the holes in the connector plate **812**. The reader will appreciate that the number and types of fasteners **892** employed may vary depending upon the load capacity desired and the corresponding hole shapes that must be filled with a corresponding fastener **892**. The locator tab **890**, when abutted against the jamb stud **50**, serves to locate the columns **866** and **868** of holes through the connector plate **812** along the jamb stud **50** for attachment of the plate **812** thereto. The header studs **220** in this embodiment may or may not be attached to each other by other fasteners (screws) or by welding. In those embodiments wherein the header studs **220** are not independently attached to each other, they are simply sandwiched together at their respective ends between the corresponding pairs of connectors **810**.

[0100] **FIGS. 32 and 33** illustrate the use of the connector plates **810** of the subject invention in connection with an alternative header assembly **1100** of the present invention which also employs a pair of header studs **220** of the type and construction described above. In this embodiment, the web **222** of one of the header studs **220** is in abutting contact with the web **222** of the other header stud **220** as shown in **FIG. 32**. In one embodiment, the webs **222** may be interconnected by fasteners such as screws **892** or the like. See **FIG. 33**.

[0101] A pair of connector plates **810** is used on each end of the header assembly **1100** to attach the header assembly **1100** to the corresponding jamb stud **50**. Fasteners **892** such as 10-16 screws, etc. are inserted through the holes in the connector plate **812** of the connectors **810**. **FIG. 32** illustrates use of fasteners **892** through all of the holes in the upper two rows **830**, **840** of holes and the lower two rows **832**, **842** of holes in the connector plate **812**. The reader will appreciate that the number and types of fasteners **892** employed may vary depending upon the load capacity desired and the corresponding hole shapes that must be filled with a corresponding fastener **892**. The locator tab **890** when abutted against the jamb stud **50** serves to locate the columns **866** and **868** along the jamb stud **50** for attachment of the plate **812** thereto. The header studs **220** in this embodiment may or may not be attached to each other by other fasteners (screws) or by welding. In those embodiments wherein the header studs **220** are not attached to each other, they are simply sandwiched together at their respective ends between the corresponding pairs of connectors **810**.

[0102] **FIGS. 34 and 35** illustrate the use of the connector plates **810** of the subject invention in connection with an alternative header assembly **1200** of the present invention which also employs a pair of header studs **220** of the type and construction described above. In this embodiment, the first leg **228** and the second leg **230** of one of the header studs **22** are in abutting contact with the web **222** of the other header stud **220** as shown in **FIGS. 34 and 35**.

[0103] A pair of connector plates **810** is used on each end of the header assembly **1200** to attach the header assembly

1200 to the corresponding jamb stud **50**. Fasteners **892** such as 10-16 screws, etc. are inserted through the holes in the connector plate **812** of the connectors **810**. **FIG. 35** illustrates use of fasteners **892** through all of the holes in the connection plate **812** that is abutted against the web **222** of one of the header studs **220**. That Figure also illustrates fasteners **892** through all of the holes in the upper two rows **830, 840** of holes and the lower two rows **832, 842** of holes in the connector plate **812** that is abutted against the first leg **228** and the second leg **230** of the other header stud **220**. The reader will appreciate that the number and types of fasteners **892** employed may vary depending upon the load capacity desired and the corresponding hole shapes that must be filled with a corresponding fastener **892**. The locator tab **890**, when abutted against the jamb stud **50**, serves to locate the columns **866** and **868** along the jamb stud **50** for attachment of the plate **812** thereto. The header studs **220** in this embodiment may or may not be attached to each other by other fasteners (screws) or by welding. In those embodiments wherein the header studs **220** are not attached to each other, they are simply sandwiched together at their respective ends between the corresponding pairs of connectors **810**.

[0104] **FIGS. 36 and 37** illustrate use of an embodiment of the connector plates **810** of the present invention to connect an end of a header assembly **1000** of the type and construction described above to a jamb stud **220'** embodiment of the present invention. As can be seen in those Figures, the header assembly **1000** includes a pair of header studs **220** that are arranged such that the first leg **228** of one header stud **220** is in abutting contact with the first leg **228** of the other header stud **220**. Likewise, the second leg **230** of the one header stud **220** is in abutting contact with the second leg **230** of the other header stud **220**. As was described above, an embodiment of the jamb stud **220'** has a substantially planar jamb stud web **222'**, a first jamb stud flange **224'** and a second jamb stud flange **226'** that protrude from the jamb stud web **222'**. A first jamb stud leg **228'** is attached or otherwise formed on the first jamb stud flange **224'** and a second jamb stud leg **230'** is formed on or attached to the second jamb stud flange **226'**. A first jamb stud return **232'** is formed on the end of the first jamb stud leg **228'** and a second jamb stud return **234'** is formed on the end of the second jamb stud leg **230'**.

[0105] A pair of connector plates **810** is used on each end of the header assembly **1000** to attach one end of the header assembly **1000** to the corresponding jamb stud **220'**. Fasteners **892** such as 10-16 screws, etc. are inserted through the holes in the connector plate **812** of the connectors **810**. **FIGS. 30 and 31** illustrate use of fasteners **892** through all of the holes in the connector plate **812**. The reader will appreciate that the number and types of fasteners **892** employed may vary depending upon the load capacity desired and the corresponding hole shapes that must be filled with a corresponding fastener **892**. The locator tab **890** when abutted against the web **222'** of the jamb stud **220'** serves to locate the columns **866** and **868** of holes through the connector plate **812** along one of the corresponding the flanges **224', 226'** (whatever the case may be) of the jamb stud **220'** for attachment of the plate **812** thereto. The header studs **220** in this embodiment may or may not be attached to each other by other fasteners (screws) or by welding. In those embodiments wherein the header studs **220** are not

attached to each other, they are simply sandwiched together at their respective ends between the corresponding pairs of connectors **810**.

[0106] **FIGS. 38 and 39** illustrate use of an embodiment of the connector plates **810** of the present invention to connect an end of a header assembly **1100** of the type and construction described above to a jamb stud **220'** embodiment of the present invention. As can be seen in those Figures, the header assembly **1100** includes a pair of header studs **220** that are arranged such that the web **222** of one header stud **220** is in abutting contact with the web **222** of the other header stud **220**. As was described above, an embodiment of the jamb stud **220'** has a substantially planar jamb stud web **222'**, a first jamb stud flange **224'** and a second jamb stud flange **226'** that protrude from the jamb stud web **222'**. A first jamb stud leg **228'** is attached or otherwise formed on the first jamb stud flange **224'** and a second jamb stud leg **230'** is formed on or attached to the second jamb stud flange **226'**. A first jamb stud return **232'** is formed on the end of the first jamb stud leg **228'** and a second jamb stud return **234'** is formed on the end of the second jamb stud leg **230'**.

[0107] A pair of connector plates **810** is used on each end of the header assembly **1100** to attach one end of the header assembly **1100** to the corresponding jamb stud **220'**. Fasteners **892** such as 10-16 screws, etc. are inserted through the holes in the connector plate **812** of the connectors **810**.

[0108] **FIGS. 38 and 39** illustrate use of fasteners **892** through all of the holes in the upper two rows and lower two rows of holes in the connector plate **812**. The reader will appreciate that the number and types of fasteners **892** employed may vary depending upon the load capacity desired and the corresponding hole shapes that must be filled with a corresponding fastener **892**. The locator tab **890** when abutted against the web **222'** of the jamb stud **220'** serves to locate the columns **866** and **868** of holes through the connector plate **812** along one of the corresponding the flanges **224', 226'** (whatever the case may be) of the jamb stud **220'** for attachment of the plate **812** thereto. The header studs **220** in this embodiment may or may not be attached to each other by other fasteners (screws) or by welding. In those embodiments wherein the header studs **220** are not attached to each other, they are simply sandwiched together at their respective ends between the corresponding pairs of connectors **810**.

[0109] **FIGS. 40 and 41** illustrate use of an embodiment of the connector plates **810** of the present invention to connect an end of a header assembly **1200** of the type and construction described above to a jamb stud **220'** embodiment of the present invention. As can be seen in those Figures, the header assembly **1200** includes a pair of header studs **220** that are arranged such that the first leg **228** and the second leg **230** of one header stud is in abutting contact with the web **222** of the other header stud **220**. As was described above, an embodiment of the jamb stud **220'** has a substantially planar jamb stud web **222'**, a first jamb stud flange **224'** and a second jamb stud flange **226'** that protrude from the jamb stud web **222'**. A first jamb stud leg **228'** is attached or otherwise formed on the first jamb stud flange **224'** and a second jamb stud leg **230'** is formed on or attached to the second jamb stud flange **226'**. A first jamb stud return **232'**

is formed on the end of the first jamb stud leg **228'** and a second jamb stud return **234'** is formed on the end of the second jamb stud leg **230'**.

[0110] A pair of connector plates **810** is used on each end of the header assembly **1200** to attach one end of the header assembly **1200** to the corresponding jamb stud **220'**. Fasteners **892** such as 10-16 screws, etc. are inserted through the holes in the connector plate **812** of the connectors **810**.

[0111] FIG. 41 illustrates use of fasteners **892** through all of the holes in the connection plate **812** that is abutted against the web **222** of one of the header studs **220**. That Figure also illustrates fasteners **892** through all of the holes in the upper two rows and lower two rows of holes in the connector plate **812** that is abutted against the first leg **228** and the second leg **230** of the other header stud **220**. The reader will appreciate that the number and types of fasteners **892** employed may vary depending upon the load capacity desired and the corresponding hole shapes that must be filled with a corresponding fastener **892**. The locator tab **890** when abutted against the web **222'** of the jamb stud **220'** serves to locate the columns **866** and **868** of holes through the connector plate **812** along one of the corresponding the flanges **224'**, **226'** (whatever the case may be) of the jamb stud **220'** for attachment of the plate **812** thereto. The header studs **220** in this embodiment may or may not be attached to each other by other fasteners (screws) or by welding. In those embodiments wherein the header studs **220** are not attached to each other, they are simply sandwiched together at their respective ends between the corresponding pairs of connectors **810**.

[0112] The reader will appreciate that a variety of other connectors could also be employed to couple the various header assemblies **1000**, **1100**, **1200** described above to convention jamb stud assemblies **50** or to jamb studs **220'** of the types described herein without departing from the spirit and scope of the present invention.

[0113] As can be appreciated from the foregoing description, the unique and novel header assemblies and connection plates of the present invention may have a variety of advantages over prior header arrangements and connectors. The unique and novel connector of the present invention eliminates the need for "left" and "right" connectors for attaching header assemblies to jamb studs or when connecting other types of components. In addition, the unique fastener hole arrangement employed in such connector plates enables the installer to easily attain the desired load capacity for the connection. The reader will also appreciate the connectors of the subject invention may be employed with conventional headers and jamb studs. It will be further appreciated that the connectors of the present invention may also be used to connect wooden header arrangements to wood jamb studs or, if desired, to connect a metal header assembly to a wooden jamb stud or a wooden header to a metal jamb stud. The various embodiments of the subject invention depicted in FIGS. 30-41 may also be constructed utilizing studs **620** of the type and construction described above.

[0114] The present invention also addresses the problems associated with fabricating headers from metal or the like. The unique and novel header assemblies of the present invention may be quickly assembled together without the need to employ several pieces of studs and track and

fasteners to couple them together. In applications wherein it is desirable to install insulation inside of the header assemblies, the installer should find it easier to install insulation in at least some of the header assemblies of the present invention when compared to installing insulation in prior header arrangements.

[0115] The invention which is intended to be protected is not to be construed as limited to the particular embodiments disclosed. The embodiments are therefore to be regarded as illustrative rather than restrictive. Variations and changes may be made by others without departing from the spirit of the present invention. Accordingly, it is expressly intended that all such equivalents, variations and changes which fall within the spirit and scope of the present invention as defined in the claims be embraced thereby.

What is claimed is:

1. A header assembly comprising:

a first header stud comprising:

a substantially planar first header web;

a first header flange protruding from said substantially planar first header web;

a second header flange protruding from said substantially planar first header web and being spaced from said first header flange;

a first header leg protruding from said first header flange and being substantially parallel to said substantially planar first header web;

a second header leg protruding from said second header flange and being substantially parallel to said substantially planar first header web and substantially coplanar with said first header leg;

a first header return on an end of said first header leg; and

a second header return on an end of said second header leg;

another header stud comprising:

another substantially planar header web;

another first header flange protruding from said another substantially planar header web;

another second header flange protruding from said another substantially planar header web and being spaced from said another first header flange;

another first header leg protruding from said another first header flange and being substantially parallel to said another substantially planar header web;

another second header leg protruding from said another second header flange and being substantially parallel to said another substantially planar header web and substantially coplanar with said another first header leg,

another first header return on another end of said another first header leg; and

another second header return on another end of said another second header leg, said another header

stud retained in abutting contact with said first header stud to form a header assembly.

2. The header assembly of claim 1 wherein said first header leg abuts said another first header leg and wherein said second header leg abuts said another second header leg.

3. The header assembly of claim 1 wherein said first header web abuts said another header web.

4. The header assembly of claim 1 wherein said first and second header legs abut said another header web.

5. The header assembly of claim 2 wherein said first header stud is welded to said another header stud.

6. The header assembly of claim 3 wherein said first header stud is welded to said second header stud.

7. The header assembly of claim 4 wherein said first header stud is welded to said second header stud.

8. The header assembly of claim 1 wherein at least one of said first header stud and said another header stud has at least one stiffener rib formed therein.

9. The header assembly of claim 8 wherein at least one said stiffener rib extends for an entire length of at least one of said first header stud or said another header stud.

10. The header assembly of claim 8 wherein at least one said stiffener rib extends intermittently along an entire length of at least one of said first header stud or said another header stud.

11. The header assembly of claim 1 further comprising at least one opening through at least one of said first header stud and said another header stud.

12. The header assembly of claim 11 wherein at least one said opening has a perimeter and further comprising a flange formed around said perimeter.

13. A connector for coupling an end of a header assembly to a jamb stud oriented adjacent thereto, the connector comprising:

- a substantially planar connection plate sized to span between the end of the header assembly and the jamb stud;

- a plurality of first fastener holes through said connection plate wherein said first fastener holes each have a first shape;

- a plurality of second fastener holes through said connection plate, wherein each of said second fastener holes has a second shape that differs from said first shape; and

- a locator tab protruding from said substantially planar connection plate such that when the locator tab is brought into abutting contact with the jamb stud, a portion of the end of the header assembly is coextensive with a first portion of the connection plate and a portion of the jamb stud is coextensive with a second portion of the connection plate such that at least one first fastener hole and at least one second fastener hole are each adjacent to the coextensive end of the header assembly and at least one other first fastener hole and at least one other second fastener hole are adjacent to the coextensive portion of the jamb stud.

14. The connector of claim 13 wherein said locator tab protrudes from a parametric edge of the connection plate.

15. The connector of claim 13 further comprising at least one other plurality of fastener holes through said connection plate, each said another plurality of fastener holes having another shape that differs from said first and second shapes.

16. The connector of claim 13 further comprising a plurality of third fastener holes having a third shape that differs from said first and second shapes.

17. The connector of claim 16 wherein said first holes are substantially square-shaped and wherein said second holes are substantially triangular-shaped and wherein said third holes are substantially round.

18. The connector of claim 13 wherein said first holes are linearly aligned in at least one first row and wherein said second holes are linearly aligned in at least one second row.

19. The connector of claim 16 wherein said first holes are linearly aligned in at least one first row and wherein said second holes are linearly aligned in at least one second row and wherein said third holes are linearly aligned in at least one third row.

20. The connector of claim 13 wherein said first holes are associated with a first fastener such that when corresponding first fasteners are installed through all of said first holes adjacent to the coextensive end of the header assembly and other first fasteners are installed through all of said first holes adjacent to the portion of the jamb stud, the connector has a first load capacity.

21. The connector of claim 13 wherein said second holes are associated with a second fastener such that when corresponding second fasteners are installed through all of said second holes adjacent to the coextensive end of the header assembly and other second holes are installed through all of said second holes adjacent to the portion of the jamb stud, the connector has a second load capacity.

22. The connector of claim 21 wherein, when corresponding first fasteners are installed through all of said first holes adjacent to the coextensive end of the header assembly and other first fasteners are installed through all of said first holes adjacent to the portion of the jamb stud and when corresponding second fasteners are installed through all of said second holes adjacent to the coextensive end of the header assembly and other second holes are installed through all of said second holes adjacent to the portion of the jamb stud, the connector has a third load capacity.

23. The connector of claim 16 wherein each of said first fastener holes has a first fastener associated therewith and wherein each of said second fastener holes has a second fastener associated therewith and wherein each of said third fastener holes has a third fastener associated therewith and wherein when corresponding first fasteners are installed through all of said first holes adjacent to the coextensive end of the header assembly and other first fasteners are installed through all of said first holes adjacent to the portion of the jamb stud and when corresponding second fasteners are installed through all of said second holes adjacent to the coextensive end of the header assembly and other second holes are installed through all of said second holes adjacent to the portion of the jamb stud, the connector has a third load capacity.

24. The connector of claim 23 wherein, when corresponding first fasteners are installed through all of said first holes adjacent to the coextensive end of the header assembly and other first fasteners are installed through all of said first holes adjacent to the portion of the jamb stud and when corresponding third fasteners are installed through all of said third holes adjacent to the coextensive end of the header assembly and other third holes are installed through all of said third holes adjacent to the portion of the jamb stud, the connector has a fourth load capacity.

25. The connector of claim 24 wherein, when corresponding second fasteners are installed through all of said second holes adjacent to the coextensive end of the header assembly and other second fasteners are installed through all of said second holes adjacent to the portion of the jamb stud and when corresponding third fasteners are installed through all of said third holes adjacent to the coextensive end of the header assembly and other third holes are installed through all of said third holes adjacent to the portion of the jamb stud, the connector has a fifth load capacity.

26. The connector of claim 19 wherein said first, second and third holes are also arranged to form a plurality of columns of holes through said connection plate such that at least one said first hole, at least one said second hole and at least one said third hole are in at least one common said column of holes.

27. The connector of claim 17 wherein said connector plate comprises:

- at least two first rows of said first holes through said connection plate;

- at least two second rows of said second holes through said connection plate; and

- at least two third rows of said third holes through said connection plate.

28. A header and jamb stud arrangement, comprising:

- a pair of jamb studs spaced from each other;

- a header assembly extending between said pair of spaced jamb studs to define an opening between the jamb studs, said header assembly comprising:

- a first header stud comprising:

- a substantially planar first header web;

- a first header flange protruding from said substantially planar first header web;

- a second header flange protruding from said substantially planar first header web and being spaced from said first header flange;

- a first header leg protruding from said first header flange and being substantially parallel to said substantially planar first header web;

- a second header leg protruding from said second header flange and being substantially parallel to said substantially planar first header web and substantially coplanar with said first header leg;

- a first header return on an end of said first header leg; and

- a second header return on an end of said second header leg;

- another header stud comprising:

- another substantially planar header web;

- another first header flange protruding from said another substantially planar header web;

- another second header flange protruding from said another substantially planar header web and being spaced from said another first header flange;

- another first header leg protruding from said another first header flange and being substantially parallel to said another substantially planar header web;

- another second header leg protruding from said another second header flange and being substantially parallel to said another substantially planar header web and substantially coplanar with said another first header leg, another first header return on another end of said another first header leg; and

- another second header return on another end of said another second header leg, said another header stud in abutting contact with said first header stud to form a header assembly;

- a first connector arrangement for connecting one end of said header assembly to one of said jamb studs; and

- a second connector arrangement for connecting another end of said header assembly to the other one of said jamb studs.

29. The header and jamb stud arrangement of claim 28 wherein said first header stud and said second header stud are fastened together independently of said first and second connector arrangements.

30. The header and jamb stud arrangement of claim 28 wherein said first connector arrangement comprises:

- a pair of first connectors wherein at least one said first connector comprises:

- a substantially planar first connection plate sized to span between the end of the header assembly and the jamb stud;

- a plurality of first fastener holes through said first connection plate wherein said first fastener holes each have a first shape;

- a plurality of second fastener holes through said first connection plate, wherein each of said second fastener holes has a second shape that differs from said first shape; and

- a first locator tab protruding from said substantially planar first connection plate such that when the locator tab is brought into abutting contact with the jamb stud, a portion of the end of the header assembly is coextensive with a first portion of the first connection plate and a portion of the jamb stud is coextensive with a second portion of the first connection plate such that it least one first fastener hole and at least one second fastener hole are each adjacent to the coextensive end of the header assembly and at least one other first fastener hole and at least one other second fastener hole are adjacent to the coextensive portion of the jamb stud.

31. The header and jamb stud arrangement of claim 30 wherein at least one of said first connection plates has at least one other plurality of fastener holes through said connection plate, each said another plurality of fastener holes having another shape that differs from said first and second shapes.

32. The header and jamb stud arrangement of claim 30 wherein said second connector arrangement comprises:

- a pair of second connectors wherein at least one said second connector comprises:

- a substantially planar second connection plate sized to span between another end of the header assembly and the other jamb stud;
- a plurality of primary fastener holes through said second connection plate wherein said primary fastener holes each have a primary shape;
- a plurality of secondary fastener holes through said second connection plate, wherein each of said secondary fastener holes has a secondary shape that differs from said primary shape; and

a second locator tab protruding from said substantially planar second connection plate such that when the second locator tab is brought into abutting contact with the other jamb stud, a portion of the other end of the header assembly is coextensive with a primary portion of the second connection plate and a portion of the other jamb stud is coextensive with a secondary portion of the second connection plate such that at least one primary fastener hole and at least one secondary fastener hole are each adjacent to the coextensive other end of the header assembly and at least one other primary fastener hole and at least one other secondary fastener hole are adjacent to the coextensive portion of the other jamb stud.

33. The header and jamb stud arrangement of claim 32 wherein at least one of said second connection plates has at least one other plurality of fastener holes through said second connection plate, each said another plurality of fastener holes having another shape that differs from said primary and secondary shapes.

34. The header and jamb stud arrangement of claim 28 wherein at least one of said jamb studs comprise:

- a substantially planar jamb stud web;
- a first jamb stud flange protruding from said substantially planar jamb stud web;
- a second jamb stud flange protruding from said substantially planar jamb stud web and being spaced from said first jamb stud flange;
- a first jamb stud leg protruding from said first jamb stud flange and being substantially parallel to said substantially planar jamb stud web;
- a second jamb stud leg protruding from said second jamb stud flange and being substantially parallel to said substantially planar jamb stud web;
- a first jamb stud return on an end of said first jamb stud leg; and
- a second jamb stud return on an end of said second jamb stud leg.

35. The header and jamb stud arrangement of claim 28 wherein at least one of said jamb studs comprise:

- a first stud having a first web and a pair of first flanges protruding therefrom;
- a second piece of track having a second web and pair of flanges protruding therefrom, said first stud being oriented relative to said second piece of track such that said first flanges are received between said second flanges; and

a third stud having a third web and a pair of third flanges protruding therefrom;

said third web in abutting contact with said second web.

36. The header and jamb stud arrangement of claim 28 wherein said first header leg abuts said another first header leg and wherein said second header leg abuts said another second header leg.

37. The header and jamb stud arrangement of claim 28 wherein said first header web abuts said another first header web.

38. The header and jamb stud arrangement of claim 28 wherein said first and second header legs abut said another header web.

39. A header and jamb stud arrangement comprising:

- a pair of jamb studs spaced from each other;
- a header assembly extending between said pair of spaced jamb studs to define an opening between the jamb studs;
- a first connector arrangement for connecting one end of said header assembly to one of said jamb studs, said first connector arrangement comprises a pair of first connectors wherein at least one said first connector comprises:
 - a substantially planar first connection plate sized to span between the end of the header assembly and the jamb stud;
 - a plurality of first fastener holes through said first connection plate wherein said first fastener holes each have a first shape;
 - a plurality of second fastener holes through said first connection plate, wherein each of said second fastener holes has a second shape that differs from said first shape; and
 - a first locator tab protruding from said substantially planar first connection plate such that when the locator tab is brought into abutting contact with the jamb stud, a portion of the end of the header assembly is coextensive with a first portion of the first connection plate and a portion of the jamb stud is coextensive with a second portion of the first connection plate such that at least one first fastener hole and at least one second fastener hole are each adjacent to the coextensive end of the header assembly and at least one other first fastener hole and at least one other second fastener hole are adjacent to the coextensive portion of the jamb stud; and

a second connector arrangement for connecting another end of said header assembly to the other one of said jamb studs.

40. The header and jamb stud arrangement of claim 39 wherein at least one of said connection plates has at least one other plurality of fastener holes through said connection plate, each said another plurality of fastener holes having another shape that differs from said first and second shapes.

41. The header and jamb stud arrangement of claim 39 wherein said second connector arrangement comprises:

- a pair of second connectors wherein at least one said second connector comprises:

a substantially planar second connection plate sized to span between another end of the header assembly and the other jamb stud;

a plurality of primary fastener holes through said second connection plate wherein said primary fastener holes each have a primary shape;

a plurality of secondary fastener holes through said second connection plate, wherein each of said secondary fastener holes has a secondary shape that differs from said primary shape; and

a second locator tab protruding from said substantially planar second connection plate such that when the second locator tab is brought into abutting contact with the other jamb stud, a portion of the other end of the header assembly is coextensive with a primary portion of the second connection plate and a portion of the other jamb stud is coextensive with a secondary portion of the second connection plate such that at least one primary fastener hole and at least one secondary fastener hole are each adjacent to the coextensive other end of the header assembly and at least one other primary fastener hole and at least one other secondary fastener hole are adjacent to the coextensive portion of the other jamb stud.

42. The header and jamb stud arrangement of claim 41 wherein at least one of said second connection plates has at least one other plurality of fastener holes through said second connection plate, each said another plurality of fastener holes having another shape that differs from said primary and secondary shapes.

43. The header and jamb stud arrangement of claim 39 wherein at least one of said jamb studs comprise:

- a substantially planar jamb stud web;
- a first jamb stud flange protruding from said substantially planar jamb stud web;

- a second jamb stud flange protruding from said substantially planar jamb stud web and being spaced from said first jamb stud flange;
- a first jamb stud leg protruding from said first jamb stud flange and being substantially parallel to said substantially planar jamb stud web;
- a second jamb stud leg protruding from said second jamb stud flange and being substantially parallel to said substantially planar jamb stud web;
- a first jamb stud return on an end of said first jamb stud leg; and
- a second jamb stud return on an end of said second jamb stud leg.

44. The header and jamb stud arrangement of claim 39 wherein at least one of said jamb studs comprise:

- a first stud having a first web and a pair of first flanges protruding therefrom;
- a second piece of track having a second web and pair of flanges protruding therefrom, said first stud being oriented relative to said second piece of track such that said first flanges are received between said second flanges; and
- a third stud having a third web and a pair of third flanges protruding therefrom;

said third web in abutting contact with said second web.

45. The header and jamb stud arrangement of claim 39 wherein said header assembly comprises a pair of C-shaped studs retained in spaced apart relationship between upper and lower track members.

* * * * *