

[54] BUILDING PANEL CONSTRUCTION SYSTEM

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[73] Assignee: Perfect Module Systems, Inc., Mt. Clemens, Mich.

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[21] Appl. No.: 91,083

[52] U.S. Cl. .... 52/714, 52/122, 52/211, 52/481, 52/242

[51] Int. Cl. .... E04b 2/28

[58] Field of Search ..... 52/496, 499, 481, 238, 52/241, 712-715, 718, 735, 738, 359-363, 354, 356, 461, 463, 464, 468; 287/189.35, 189.36 R; 55/36; 24/73 B; 248/221

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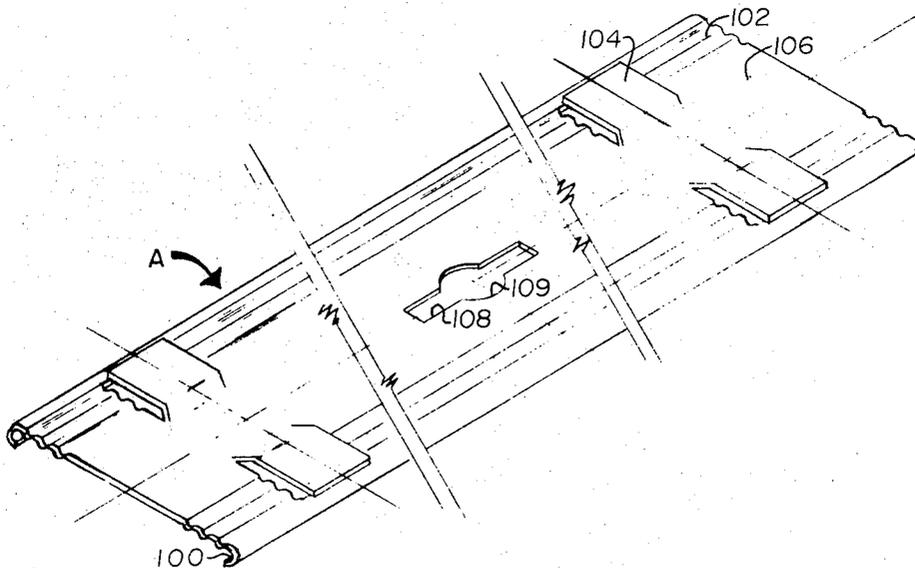
Primary Examiner—John E. Murtagh

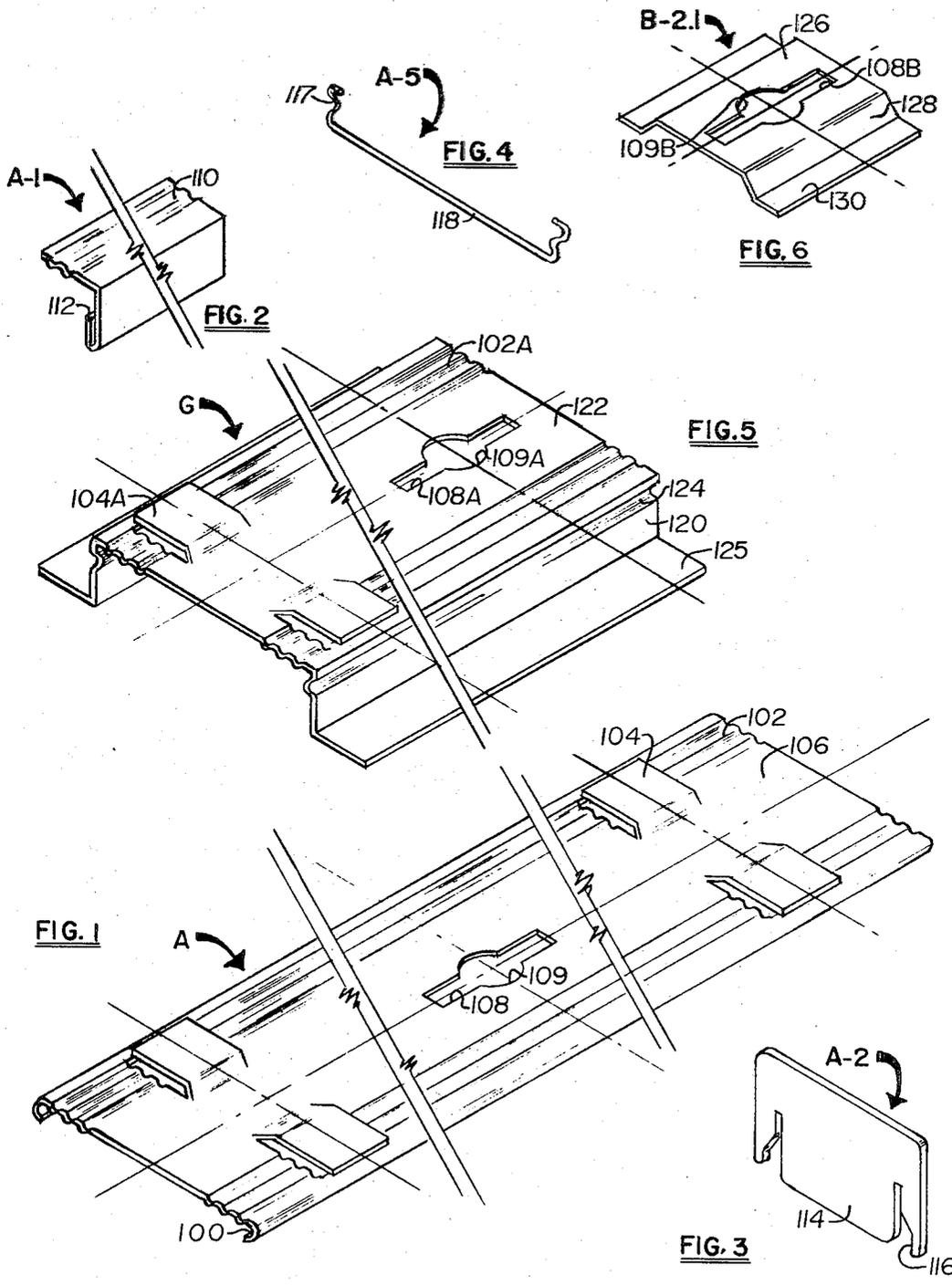
Attorney, Agent, or Firm—Weiner, Basile and Weintraub

[57] ABSTRACT

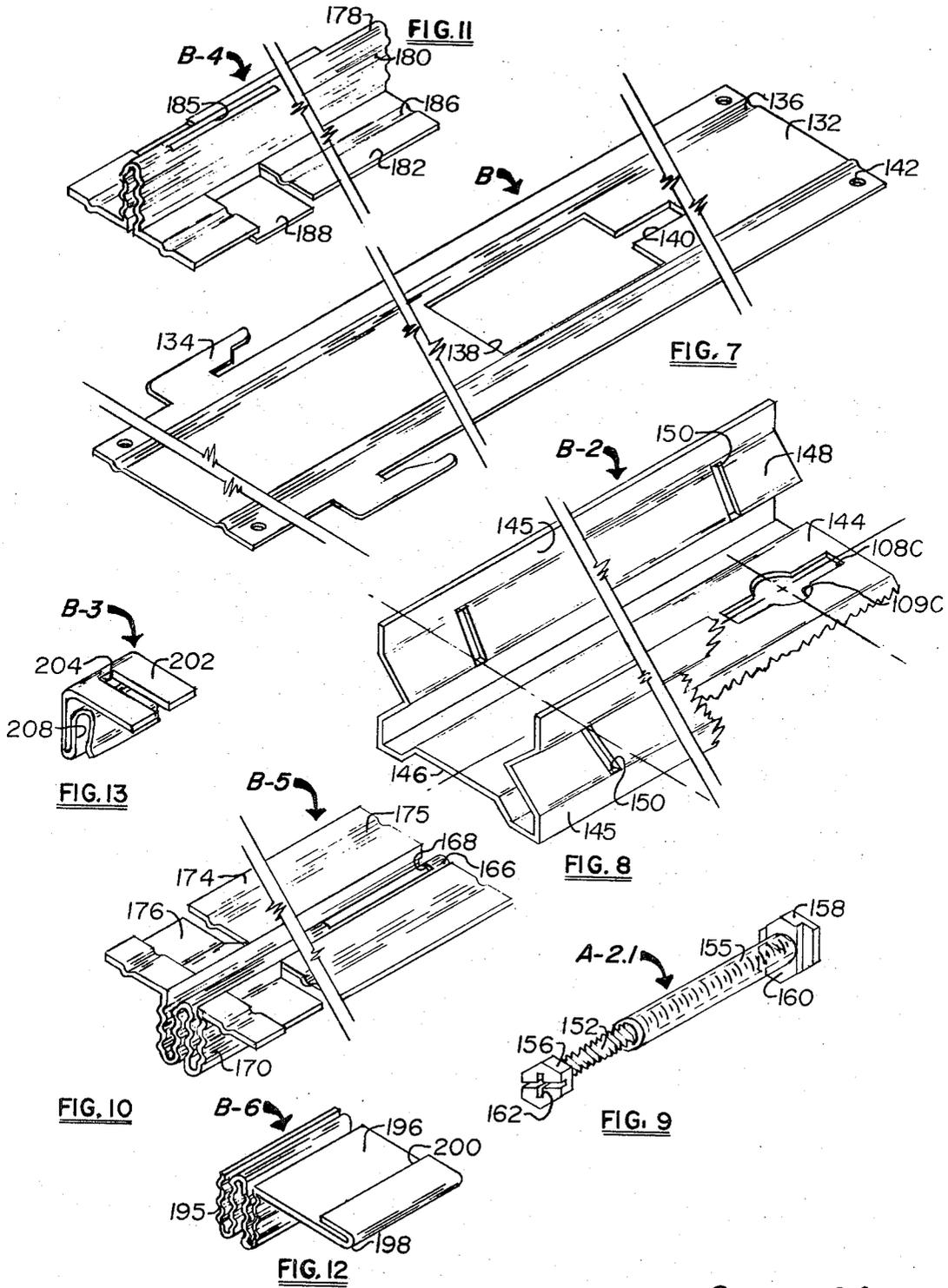
A building panel construction system is disclosed comprising, inter alia, two panels of equal panel thickness forming said panel construction, each panel having at least one tongue on each of opposite sides thereof, said panels forming via cooperating tongues thereon, a recessed joint between adjacent ends thereof, said joint extending end to end of said panels and recessed behind a face of said panel construction, said joint having a width equal to the panel thickness of said panel construction so that the centerline of said panel construction stays centered on module lines, said panel construction including a joint cover member disposed in said joint, a retainer member disposed in said joint and having snap lock retention means thereon for joining said joint cover member to said panel construction, at least two of said tongues disposed in said joint serving as means for fastening said panels together.

6 Claims, 111 Drawing Figures





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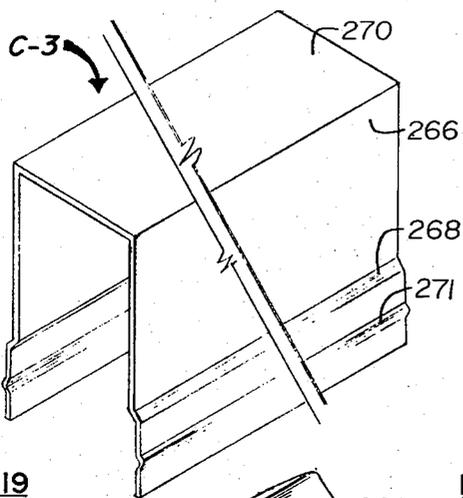


FIG. 19

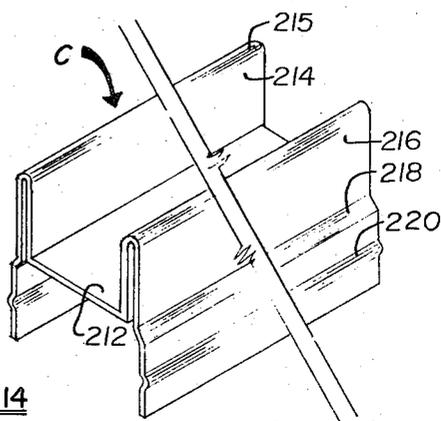


FIG. 14

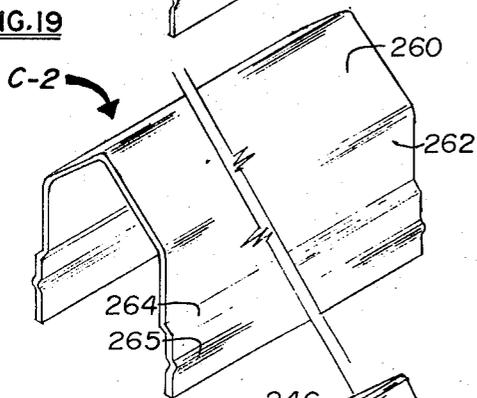


FIG. 18

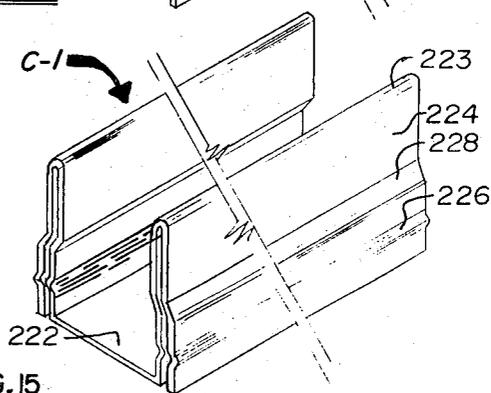


FIG. 15

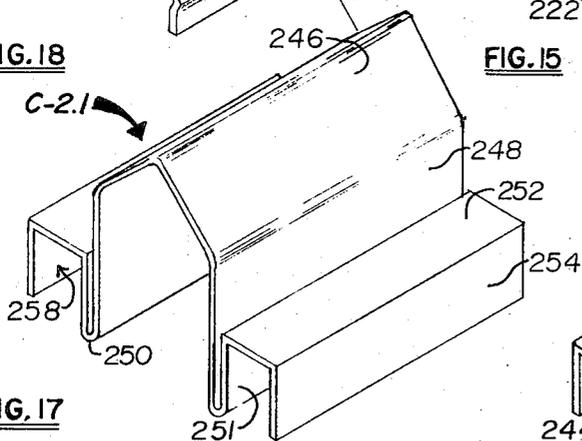


FIG. 17

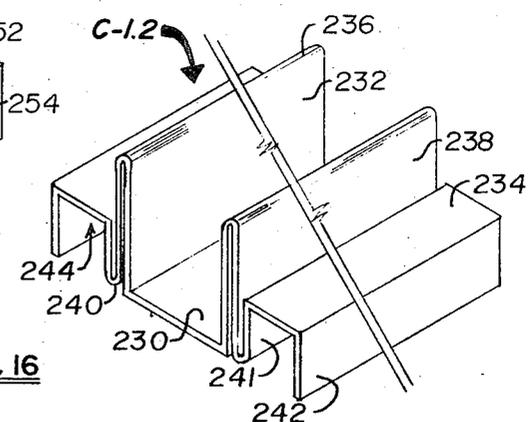
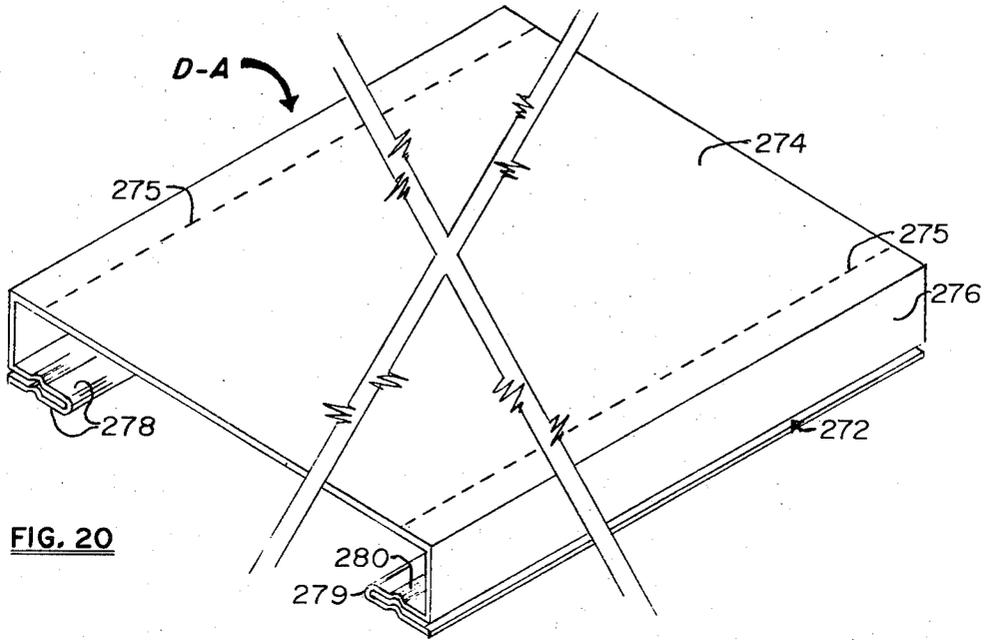


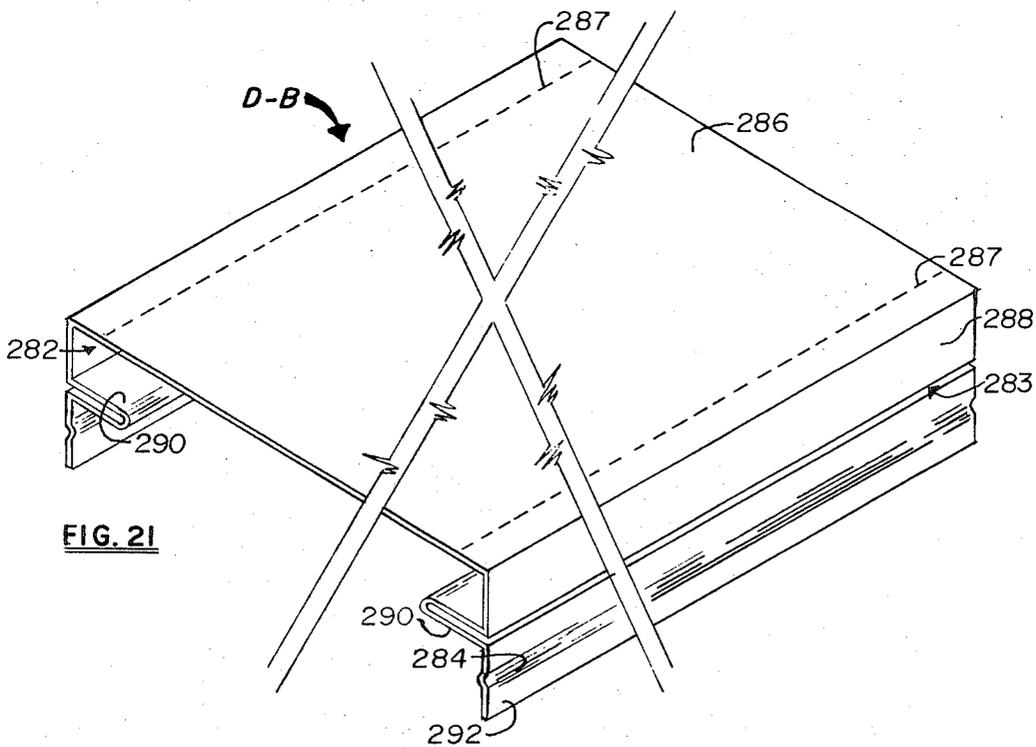
FIG. 16

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**FIG. 20**



**FIG. 21**

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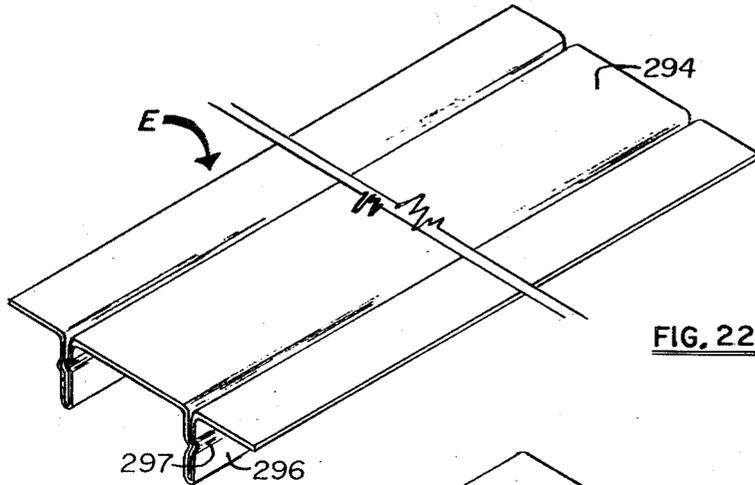


FIG. 22

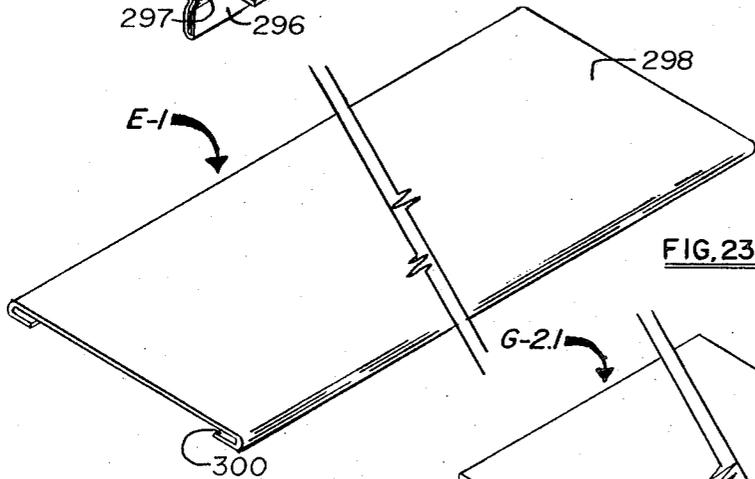


FIG. 23

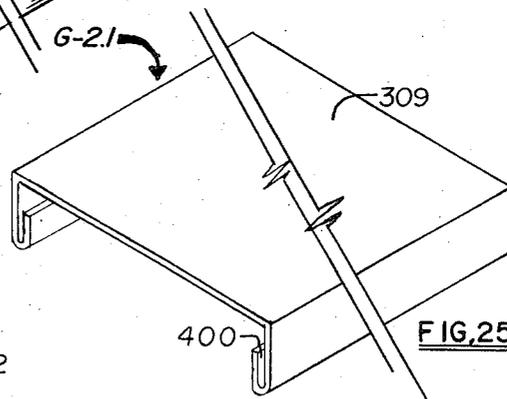


FIG. 25

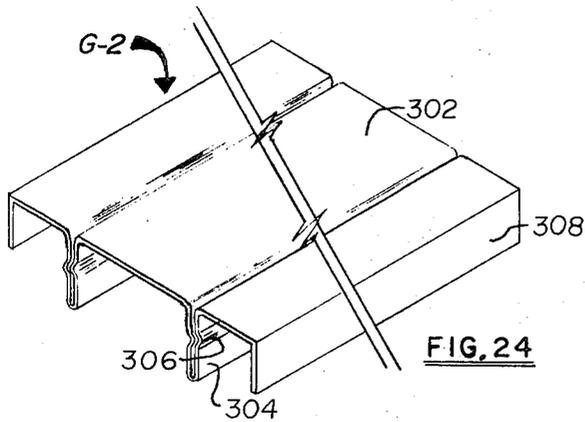
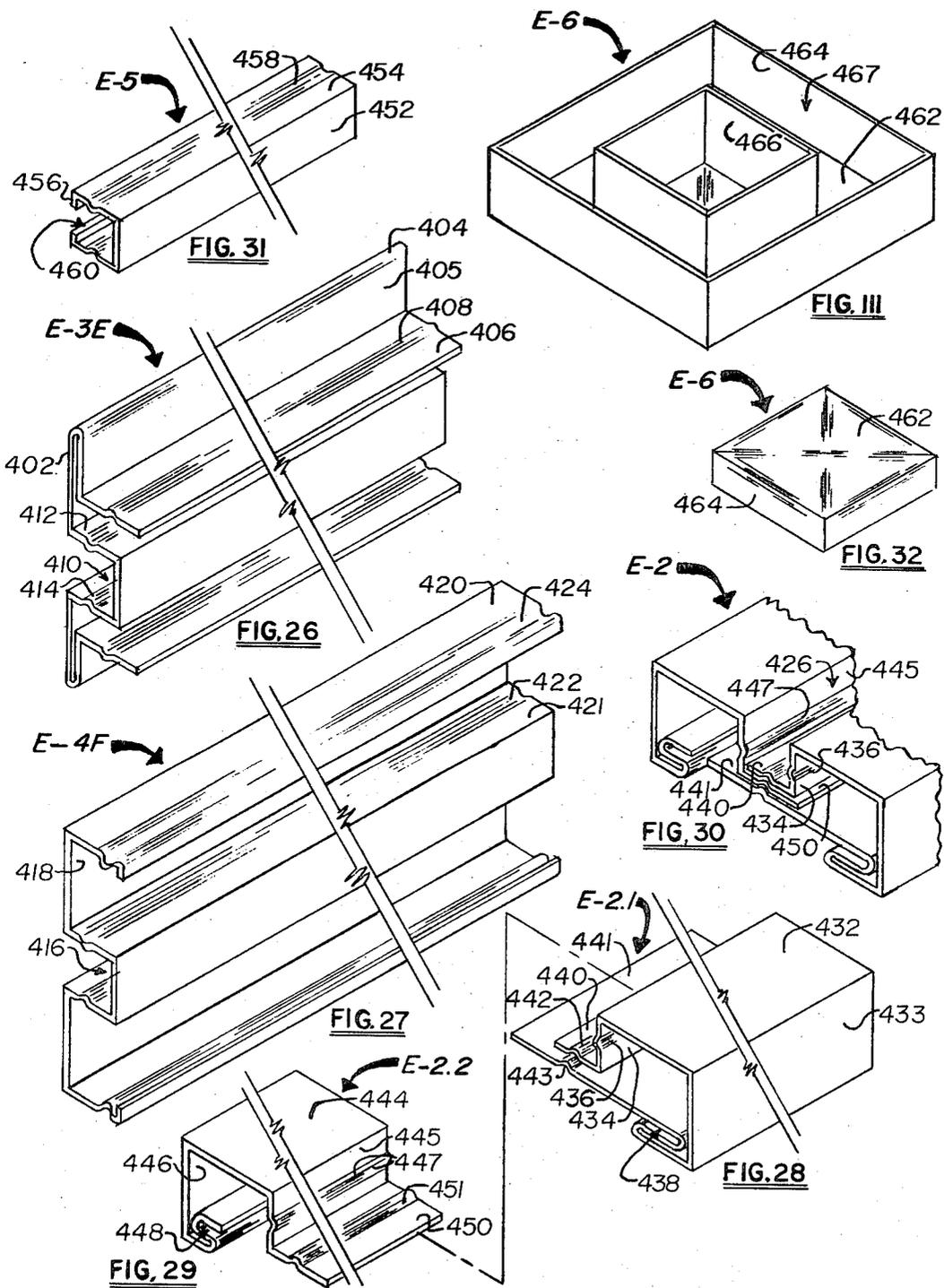


FIG. 24

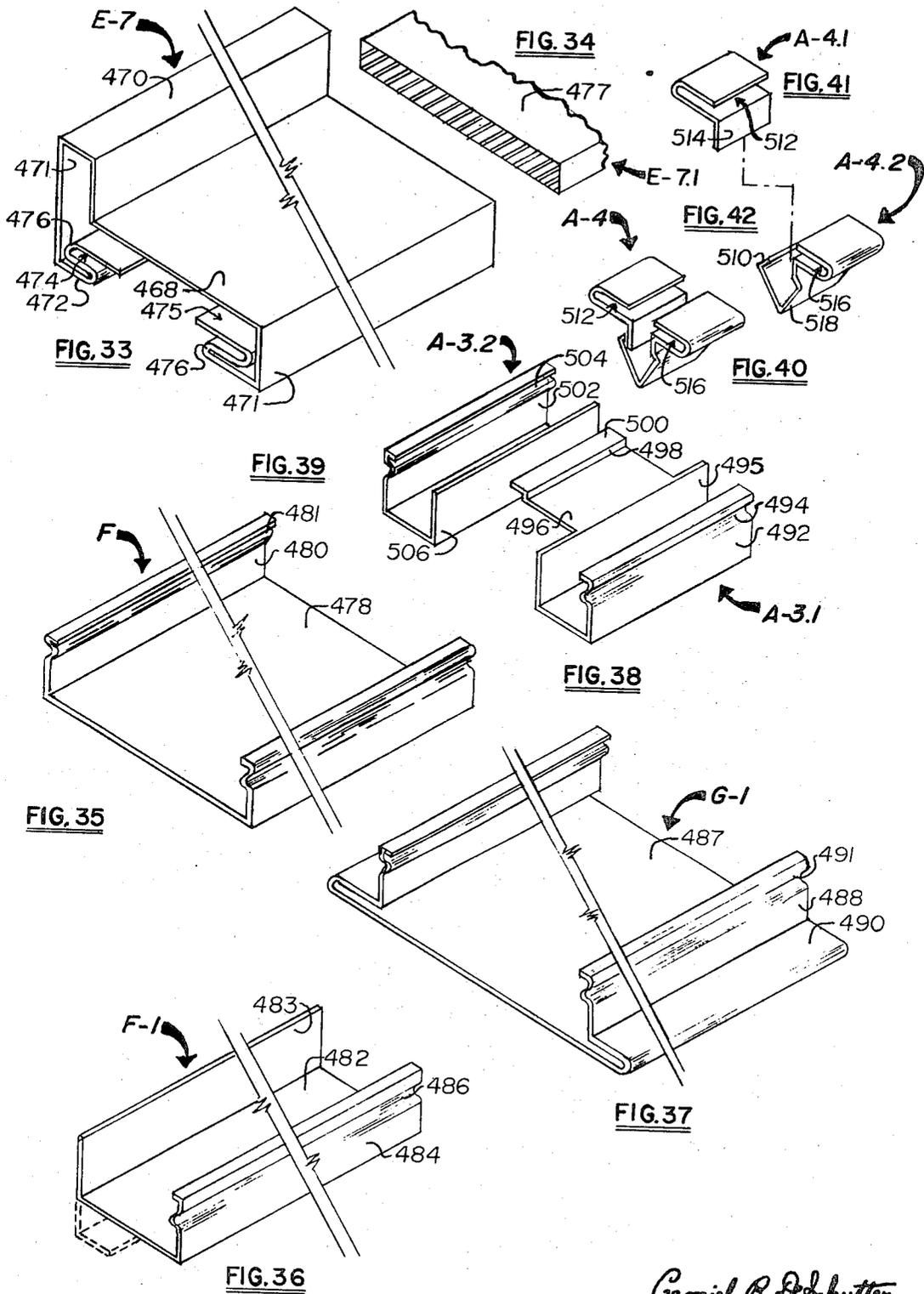
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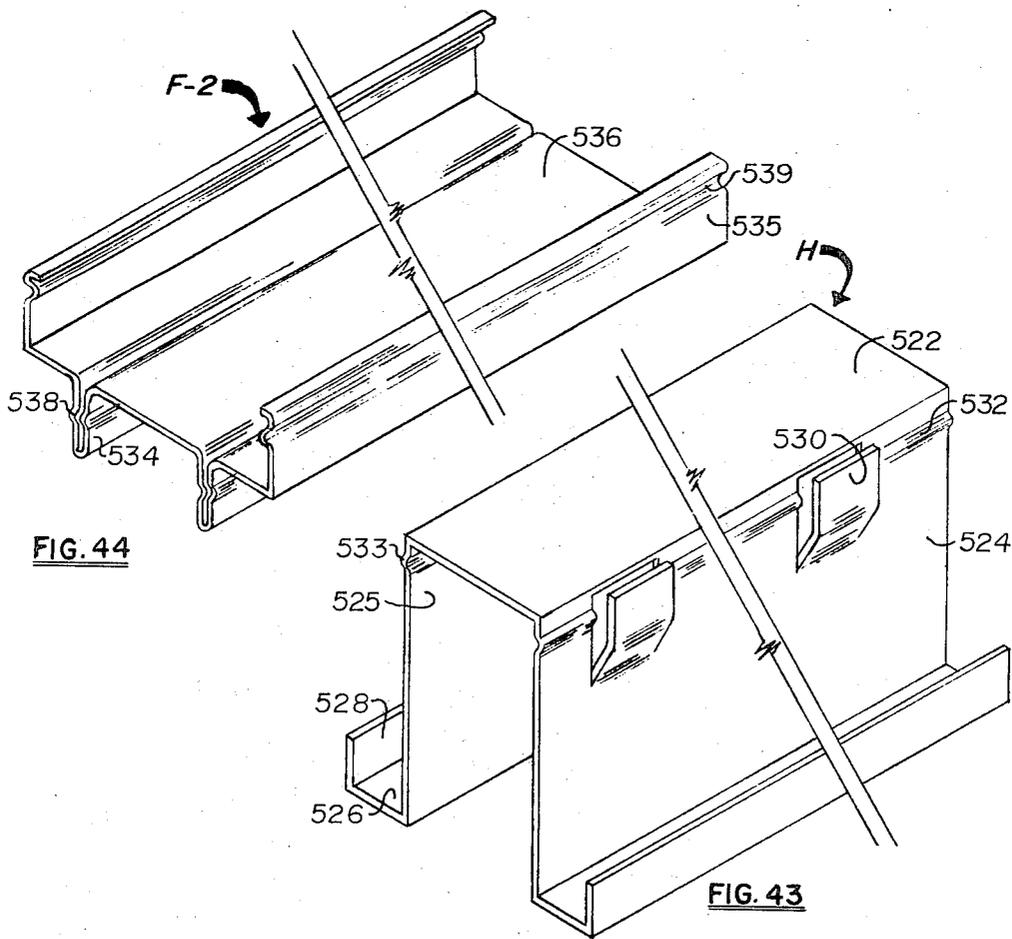
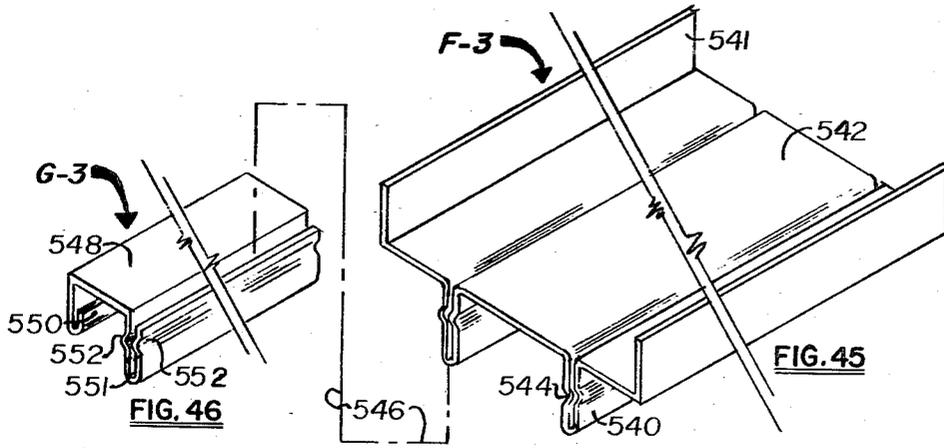


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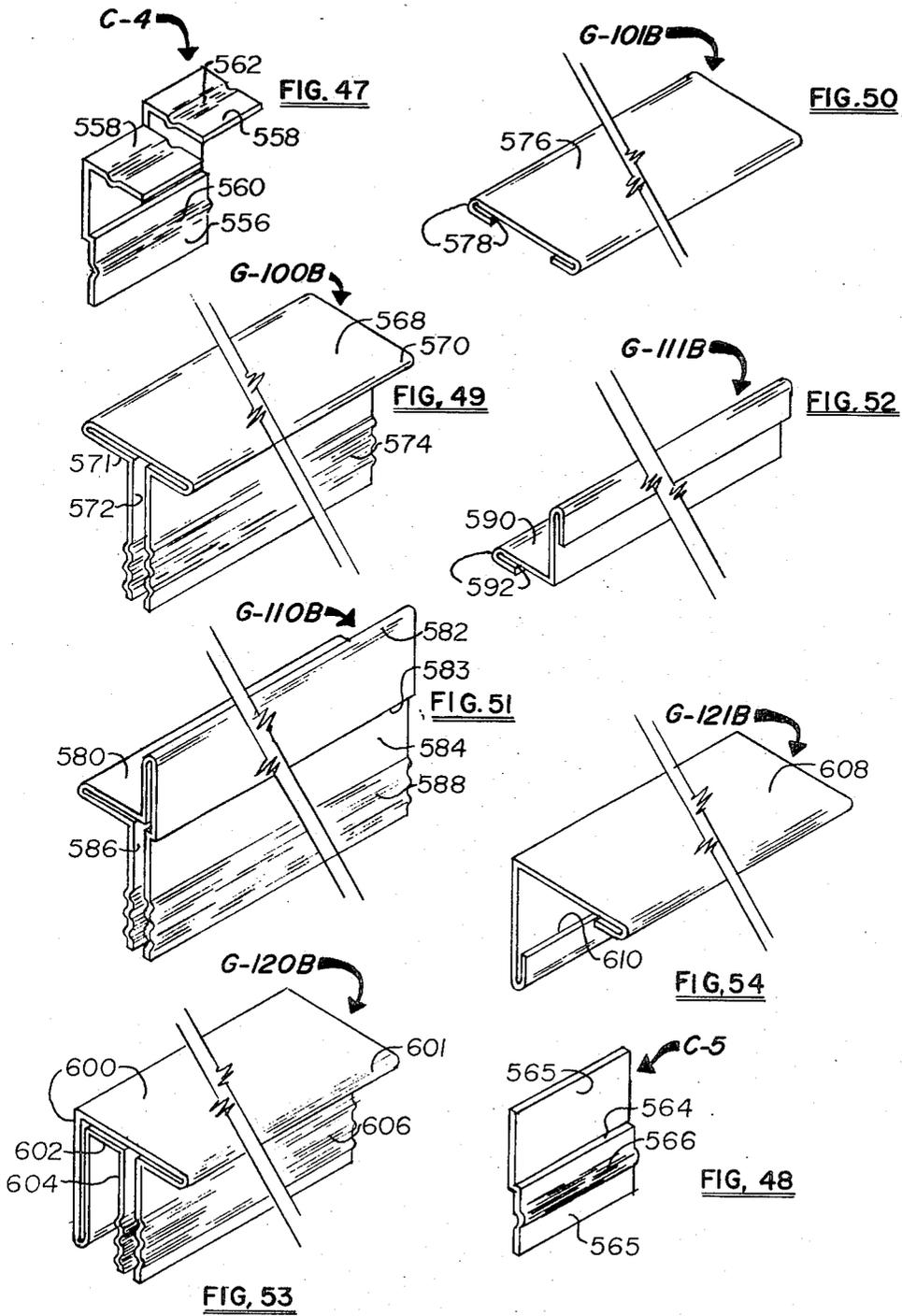
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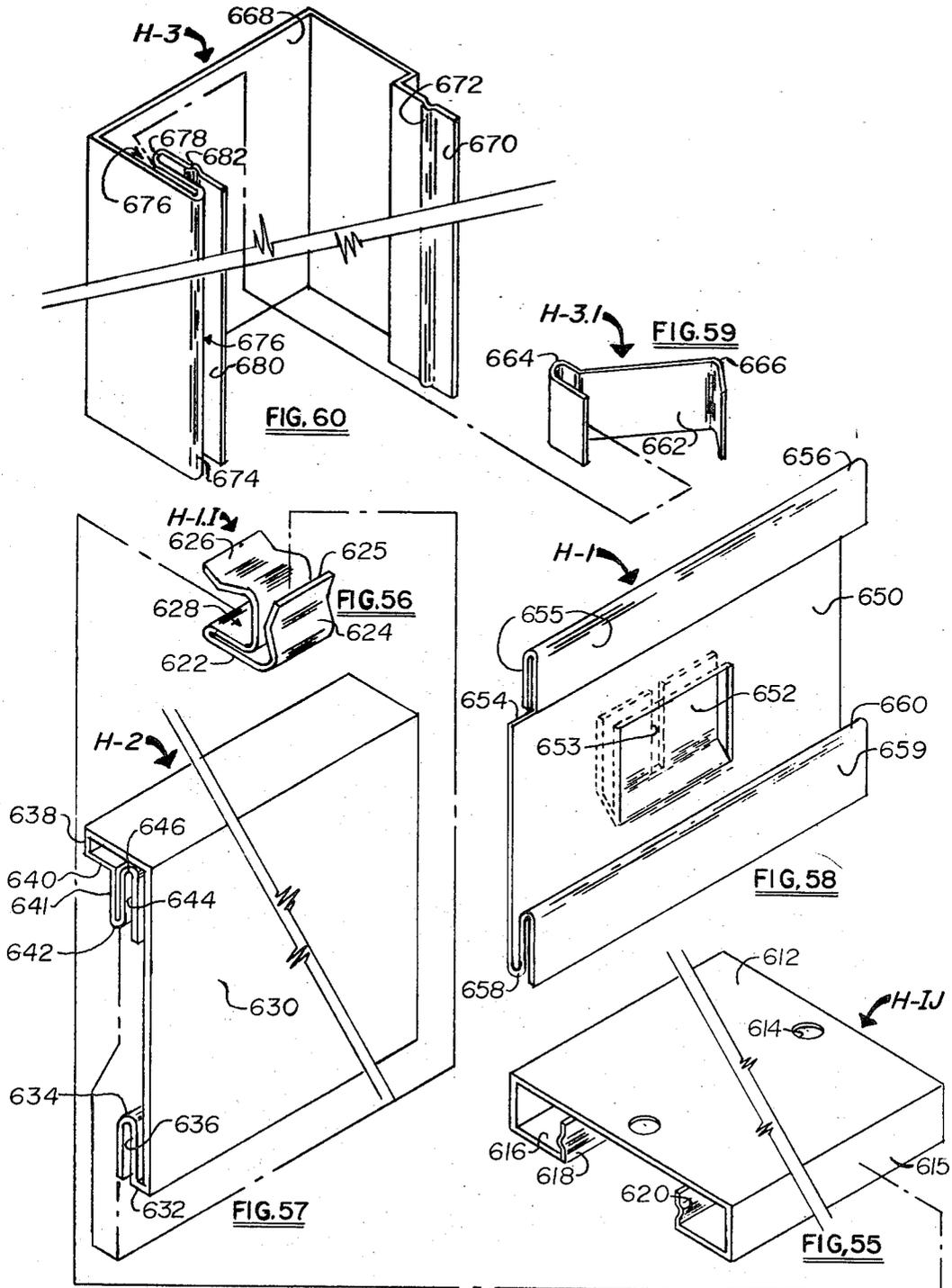
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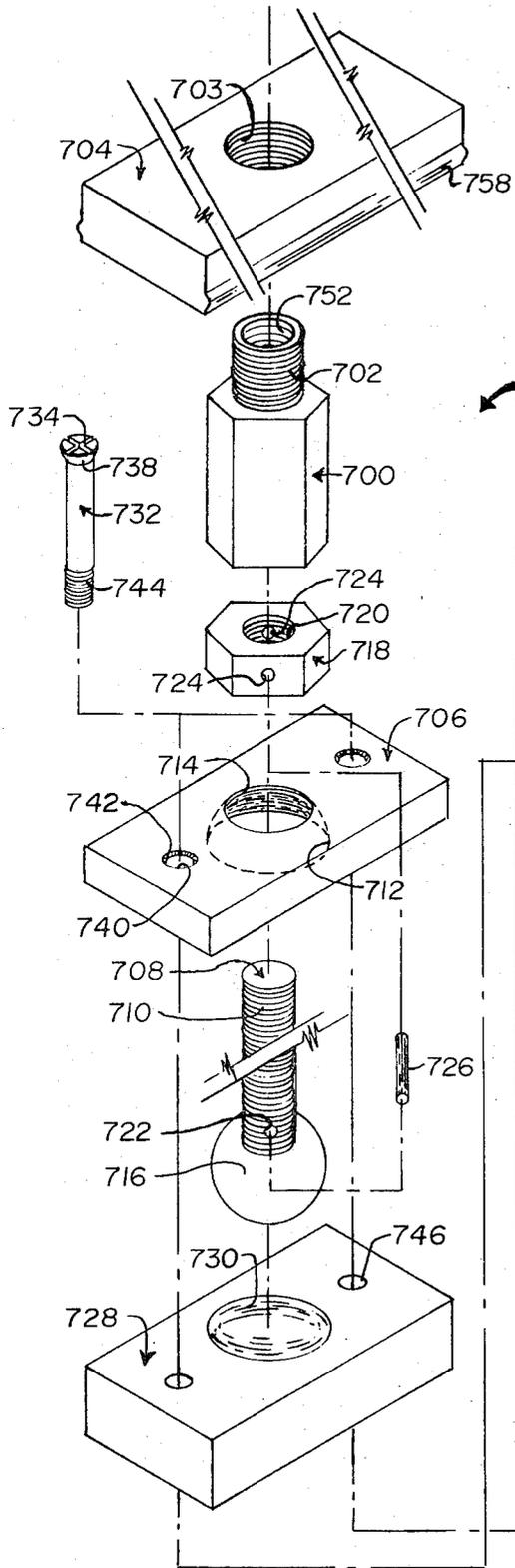
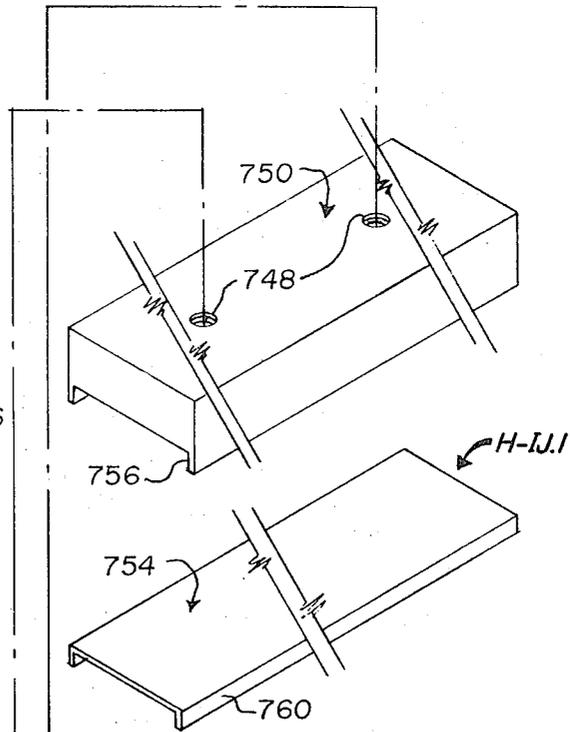
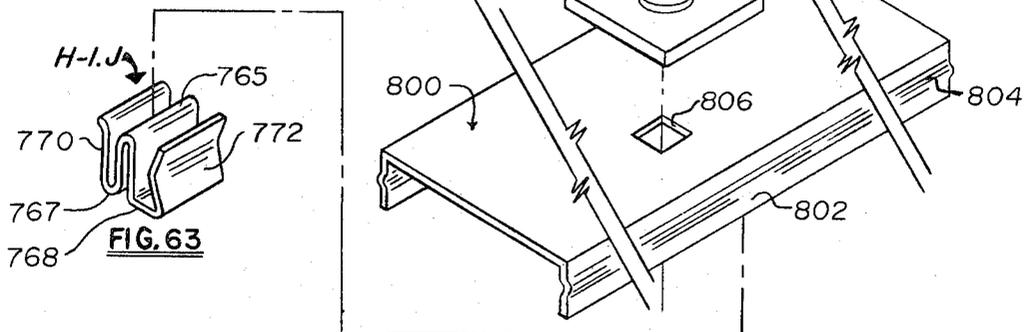
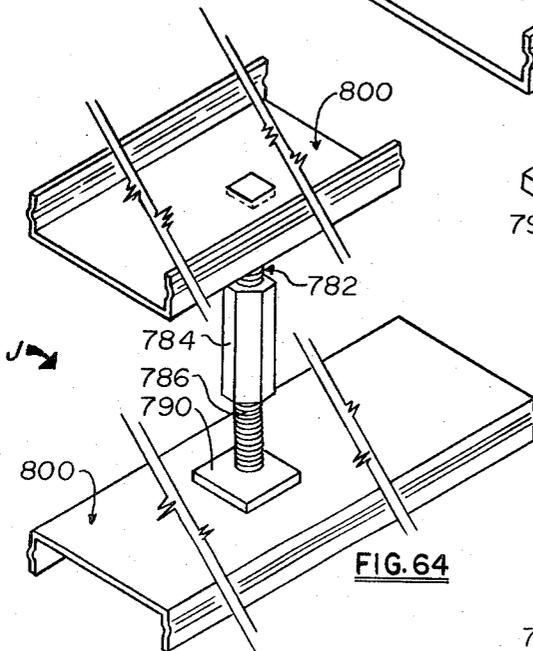
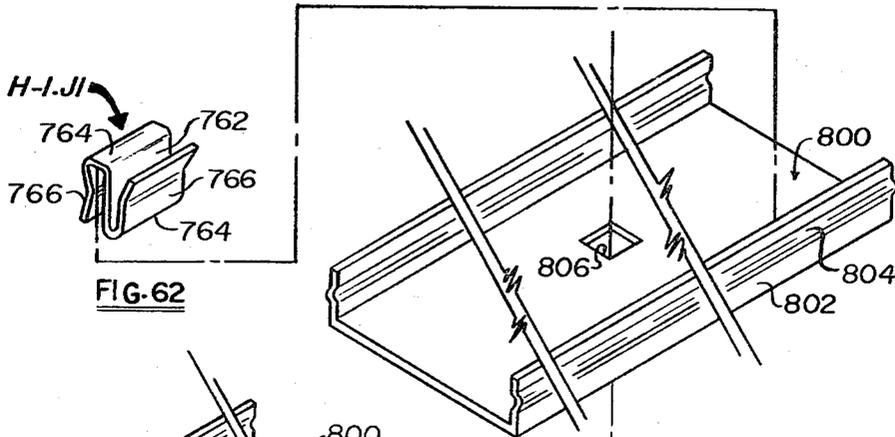


FIG. 6I



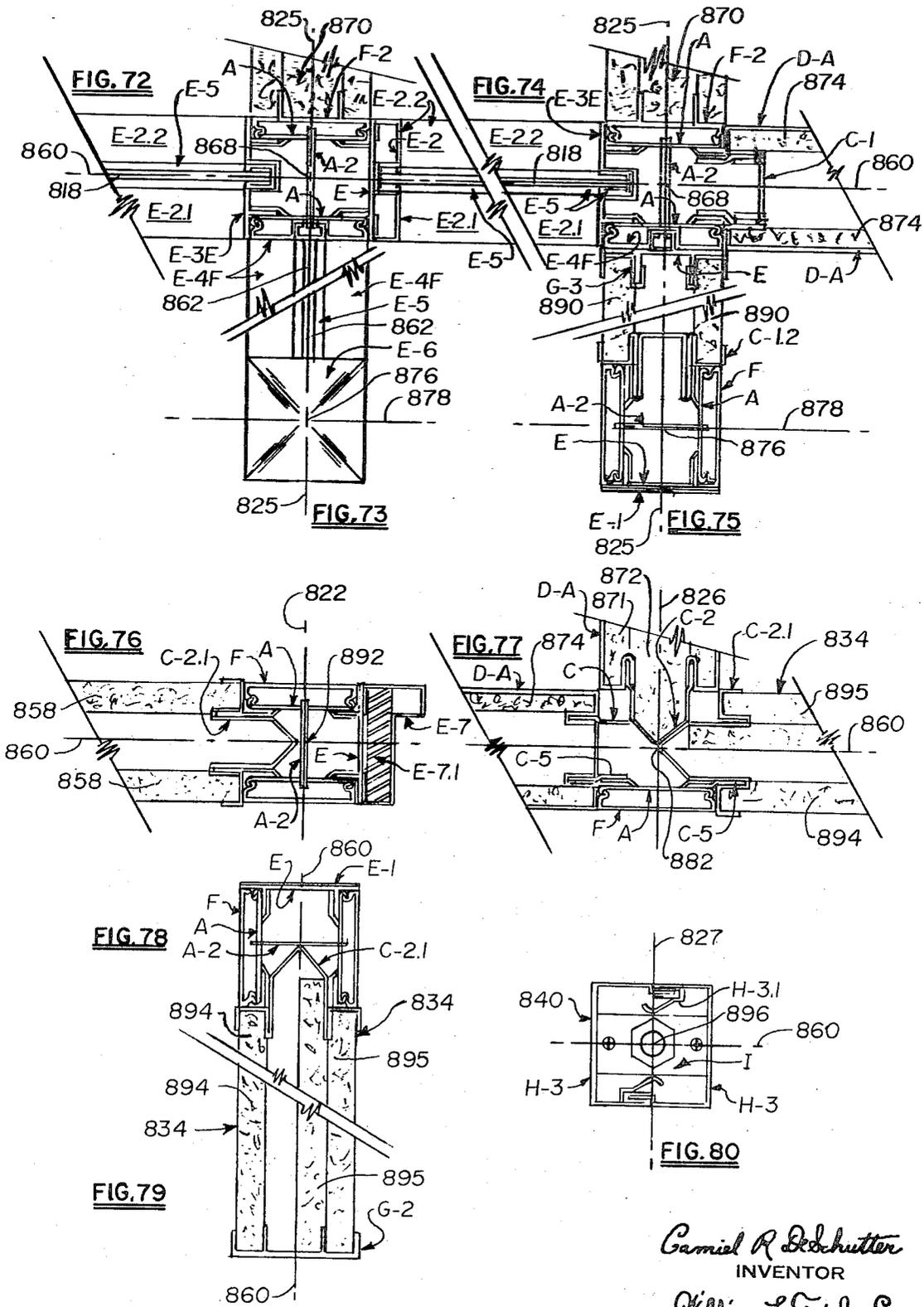
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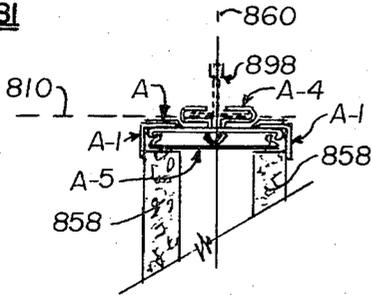
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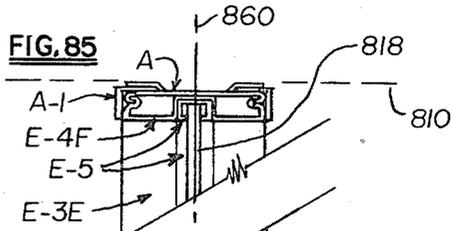


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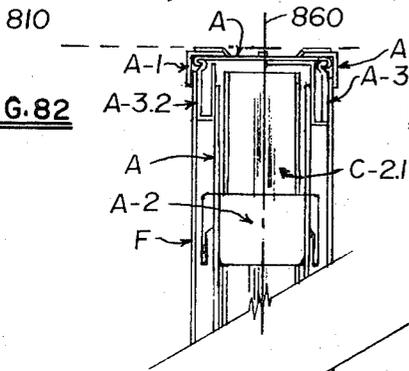
**FIG. 81**



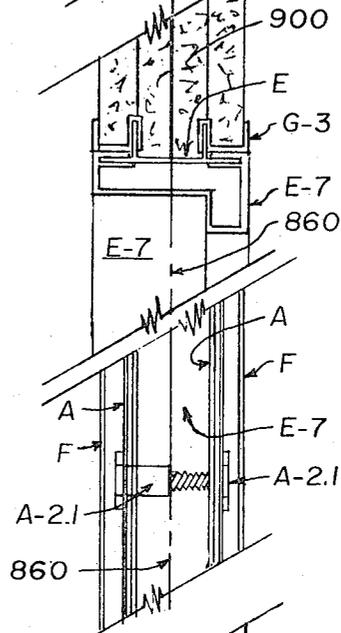
**FIG. 85**



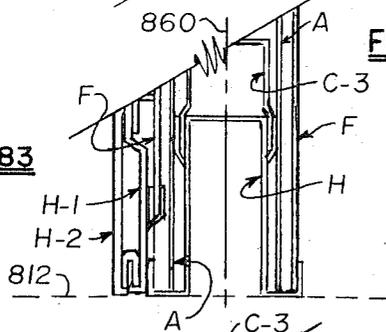
**FIG. 82**



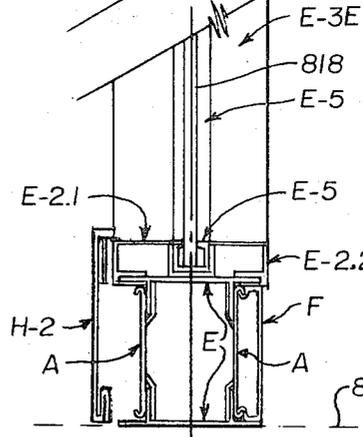
**FIG. 86**



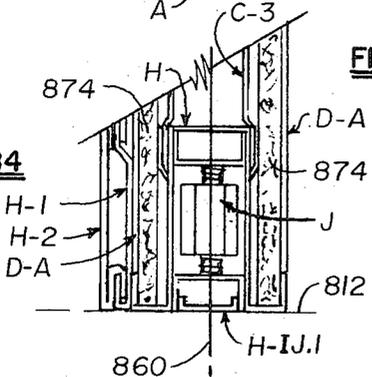
**FIG. 83**



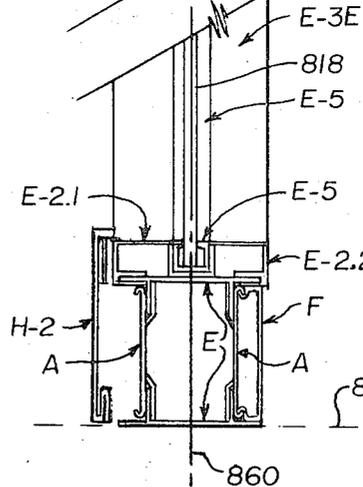
**FIG. 87**



**FIG. 84**



**FIG. 88**



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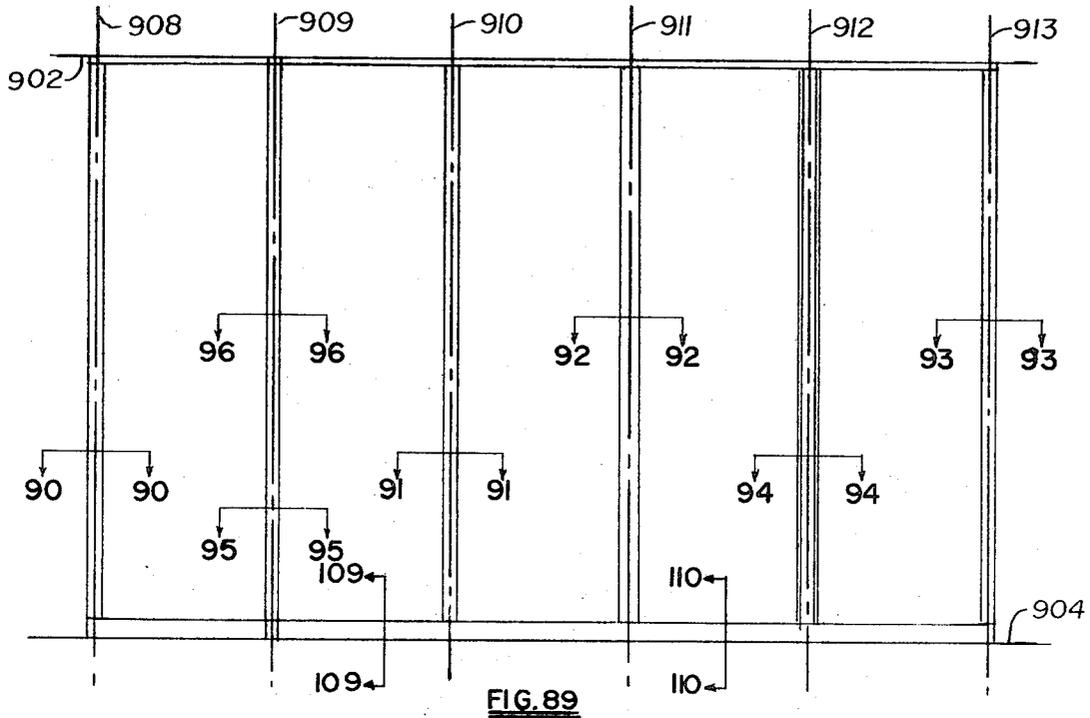


FIG. 89

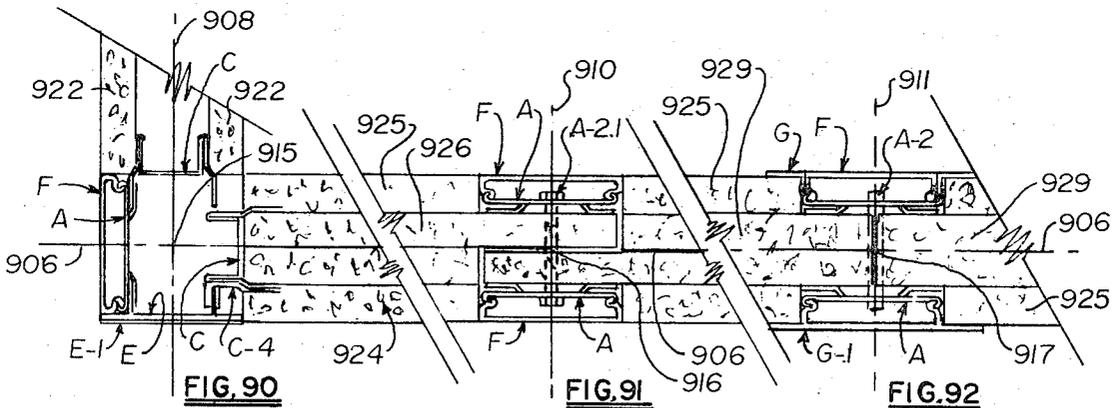


FIG. 90

FIG. 91

FIG. 92

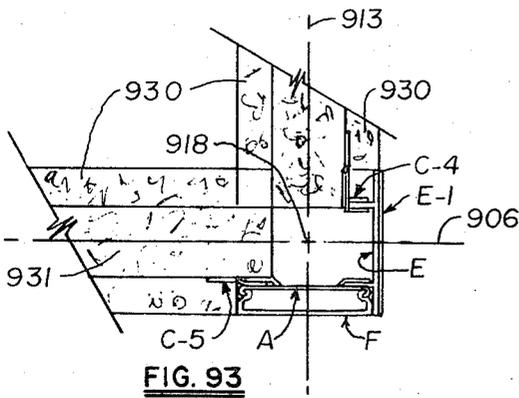


FIG. 93

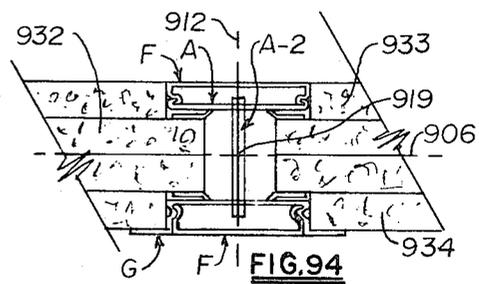
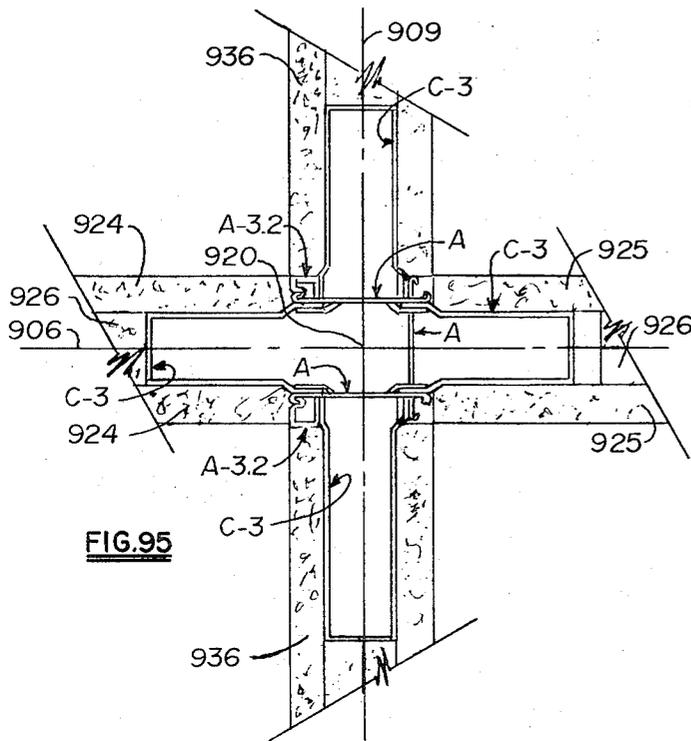


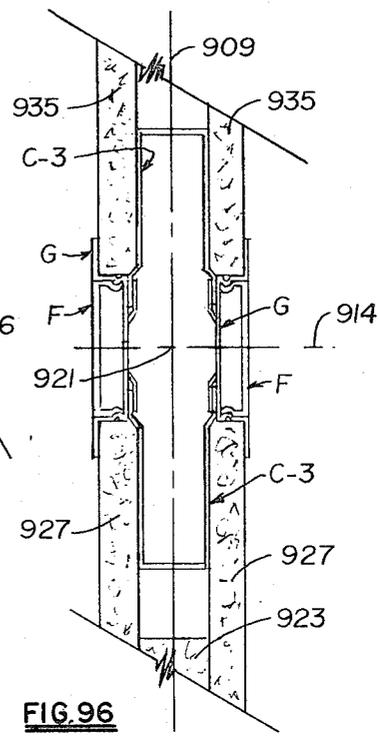
FIG. 94

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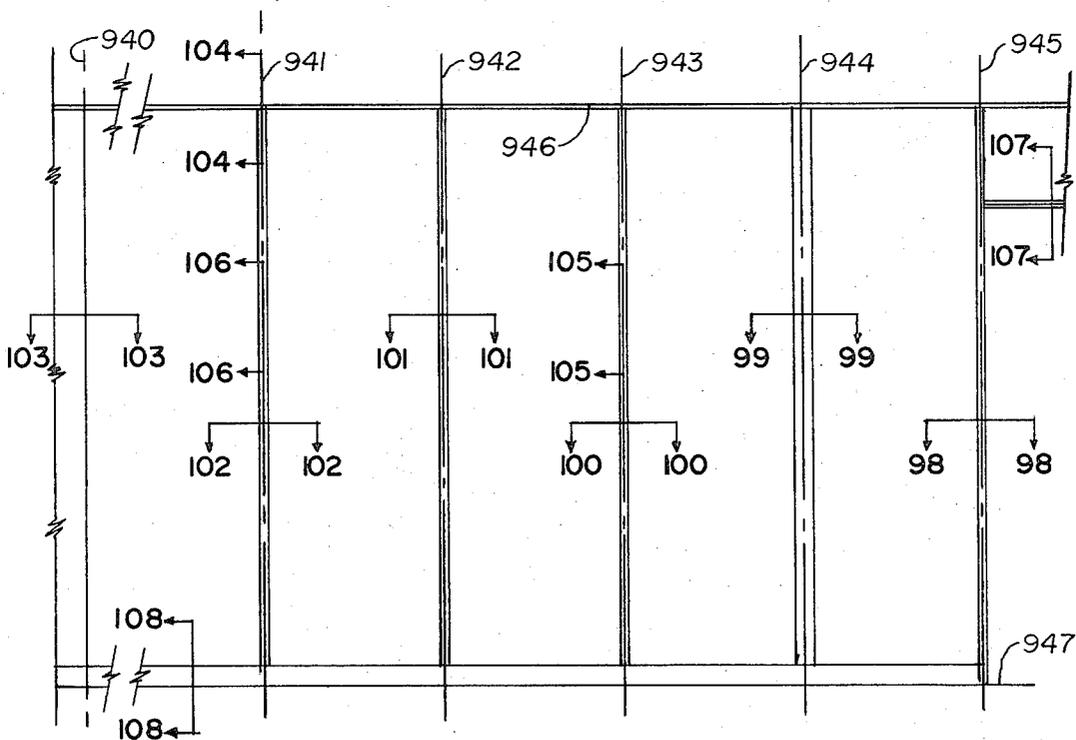
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**FIG. 95**



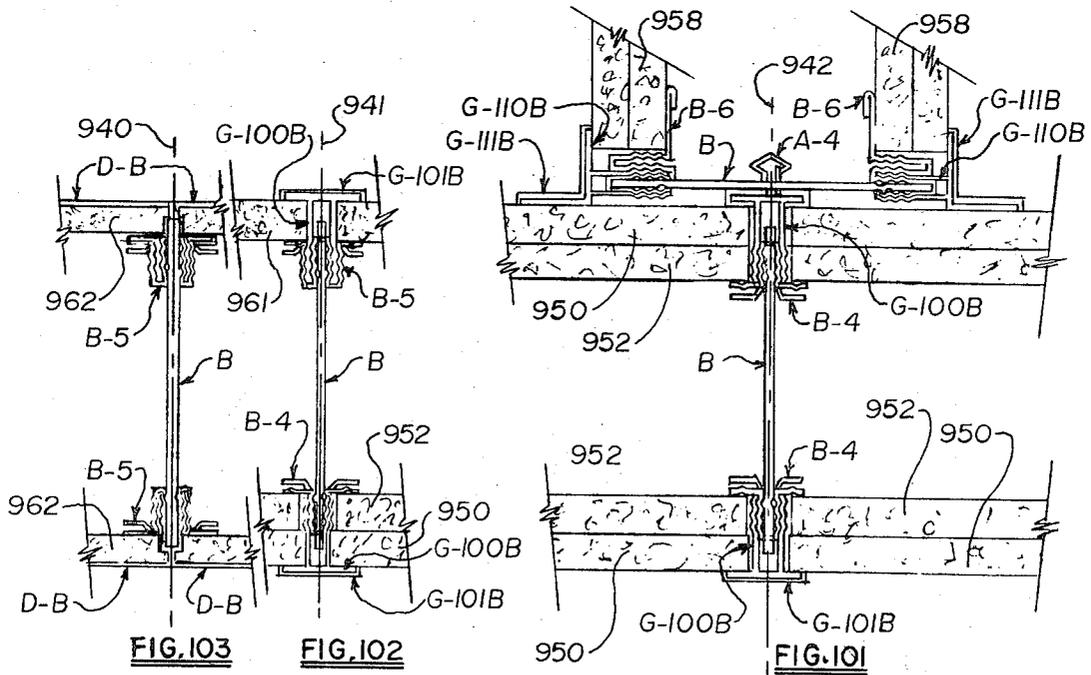
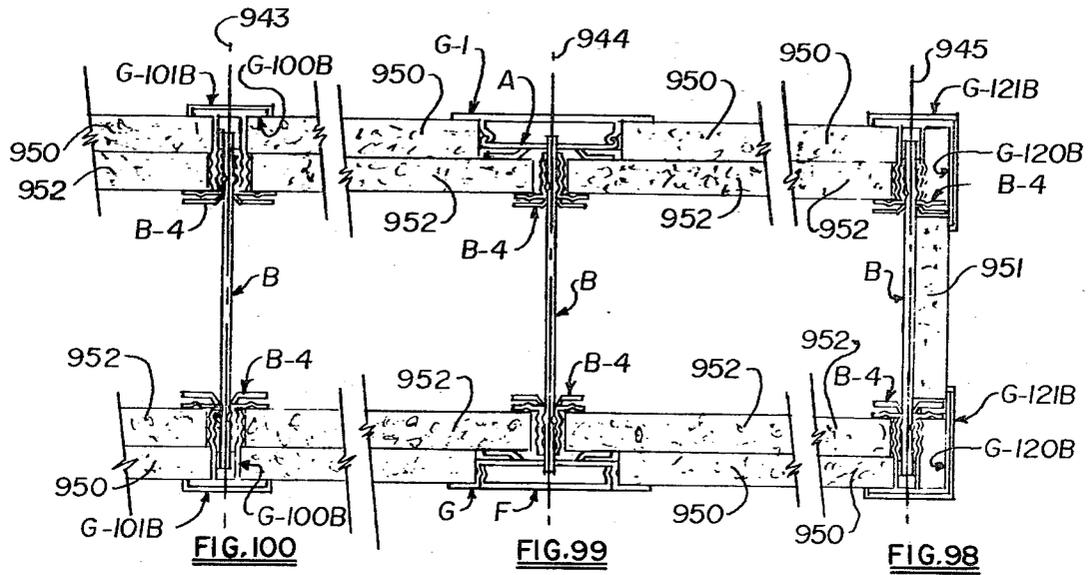
**FIG. 96**



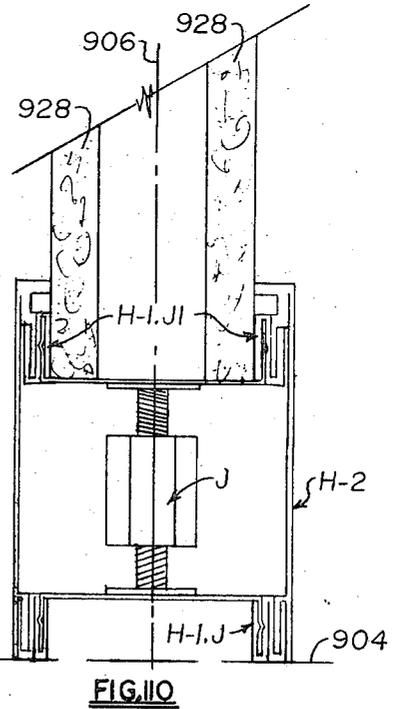
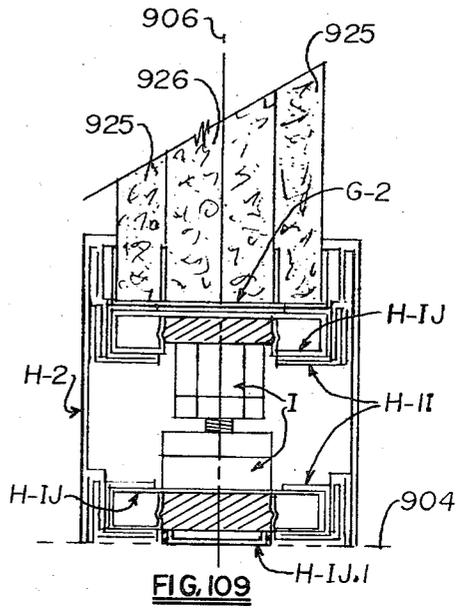
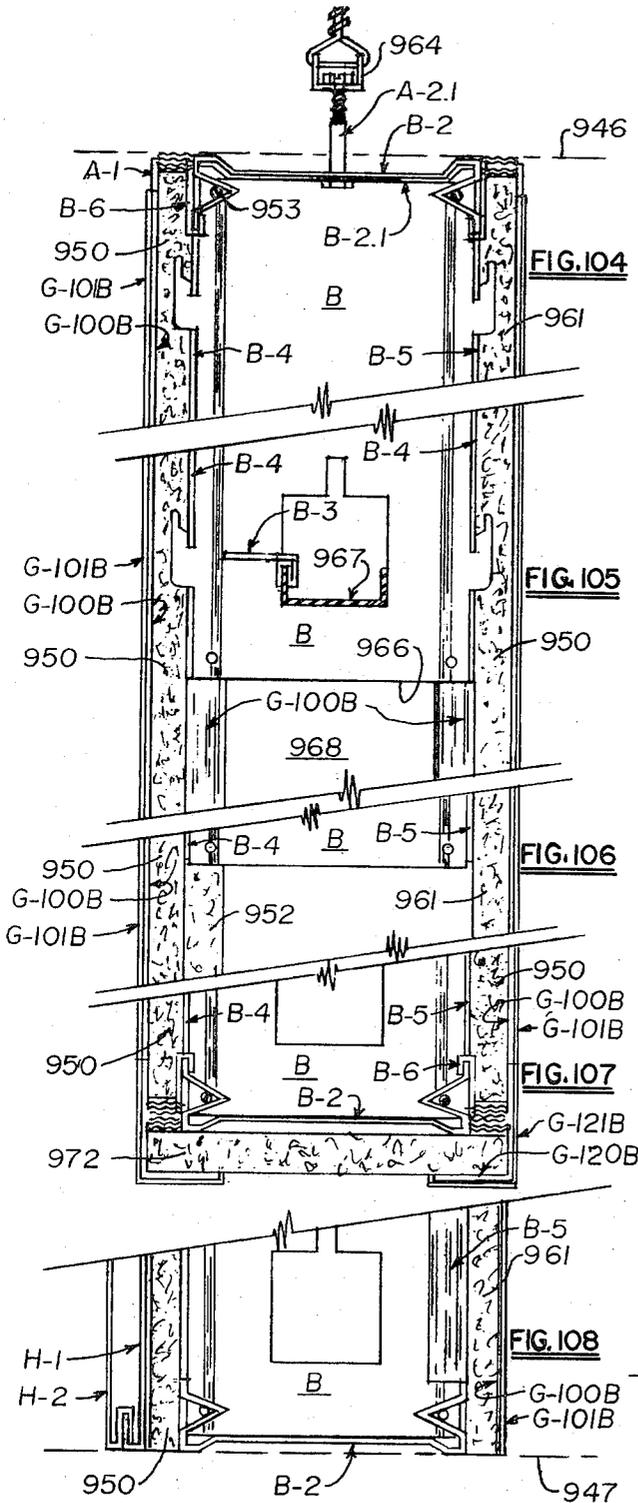
**FIG. 97**

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**BUILDING PANEL CONSTRUCTION SYSTEM**

My invention relates to a building panel construction system.

The principal object of my invention is the provision of a building panel construction system which includes a joint construction such that it stays centered on module lines without requiring cutting of panels and irrespective of the frequency of occurrence of intersecting panel construction and in which the panels are interchangeable with each other and in which each panel is positionally interchangeable front to back, end to end and side to side. Said panel construction system includes a chase construction which can be either horizontal or vertical and without interruption by transverse propping components or the like and still be 100 percent accessible without requiring skilled tradesmen, but only a person with common skills using a simple screw driver and/or mallet. Moreover, such chase construction with my panel construction system is so enclosed that electrical wiring passing therethrough need not be metal sheathed or enclosed in conduit. My panel construction system can provide partitions which are demountable and moveable and still obtain a two hour fire rating. My panel construction system is a total partition system for both dividing walls and veneer walls including door and glazing fittings and cornice rails, landscape partitions, open and/or closed base partitions, and full or partial height partitions and passageways in which panels will be both walls and ceilings capable of receiving fire ratings independent of building construction. My panel construction system includes leveling mechanisms by which all slope floors can be accommodated without requiring components outside my panel construction system. The aforementioned advantages and versatility of my panel construction system can be realized even though the panel board or the like is purchased at local building supply houses provided my trim and retainer components are employed. The foregoing object and advantages of my invention will become apparent during the course of the following description, taken in conjunction with the accompanying drawings, in which:

FIG. 1 is a perspective view of a retainer member used in the building panel construction system;

FIG. 2 is a perspective view of a right angle cover plate;

FIG. 3 is a perspective view of a fastening plate;

FIG. 4 is a perspective view of a wire clip;

FIG. 5 is a perspective view of a second retainer component of my building panel construction system;

FIG. 6 is a perspective view of a reinforcement and retaining clip;

FIG. 7 is a perspective view of a chase spacer member;

FIG. 8 is a partially sectioned perspective view of a chase spacer track member;

FIG. 9 is a perspective view of a fastening component;

FIG. 10 is a perspective view of another retainer member used in my building construction system;

FIG. 11 is a perspective view of another example of a chase spacer member used in my system;

FIG. 12 is a perspective view of a panel retainer clip;

FIG. 13 is a perspective view of a chase spacer fastener clip;

FIG. 14 is a perspective view of a tongue chase building panel component;

FIG. 15 is a perspective view of another example of a tongue chase building panel component;

FIG. 16 is a perspective view of a third example of a tongue chase building panel component;

FIG. 17 is a perspective view of a tongue panel component;

FIG. 18 is a perspective view of another example of a tongue panel component;

FIG. 19 is a perspective view of a U-shaped chase panel component;

FIG. 20 is a partially broken perspective view of a panel;

FIG. 21 is a partially broken perspective view of another example of a panel;

FIG. 22 is a perspective view of a terminal cap component;

FIG. 23 is a perspective view of a flat cover plate;

FIG. 24 is a perspective view of a terminal cap component;

FIG. 25 is a perspective view of a U-shaped cover plate;

FIG. 26 is a perspective view of a glazing cover plate component;

FIG. 27 is a perspective view of a glazing joint cover component;

FIG. 28 is a perspective view of a female element of a glazing rail component;

FIG. 29 is a perspective view of a male element of a glazing rail component;

FIG. 30 is a fragmentary perspective view of a glazing rail component;

FIG. 31 is a perspective view of a longitudinal glazing cavity component;

FIG. 32 is a perspective view of a cap;

FIG. 111 is a perspective view of the back side of the cap illustrated in FIG. 32;

FIG. 33 is a perspective view of a door buck wall component;

FIG. 34 is a fragmentary view of a reinforcing bar;

FIG. 35 is a perspective view of a joint cover;

FIG. 36 is a perspective view of a joint cover member;

FIG. 37 is a perspective view of a joint cover;

FIG. 38 is a perspective view of one element of a two member fastening component;

FIG. 39 is a perspective view of a second element of a two member fastening component;

FIG. 40 is a perspective view of a two member fastening component;

FIG. 41 is a perspective view of a fastening clip member;

FIG. 42 is a perspective view of a second fastening clip member;

FIG. 43 is a perspective view of a panel spacer and retainer member;

FIG. 44 is a perspective view of a cap and joint cover;

FIG. 45 is a perspective view of another example of a cap and joint cover;

FIG. 46 is a perspective view of a panel holding component;

FIG. 47 is a perspective view of a fastening retention clip;

FIG. 48 is a perspective view of the retainer retention clip;

FIG. 49 is a perspective view of a joint cover member;

FIG. 50 is a perspective view of a cover plate facing;

FIG. 51 is a perspective view of a joint cover;

FIG. 52 is a perspective view of a cover plate facing;

FIG. 53 is a perspective view of a joint cover;

FIG. 54 is a perspective view of a cover plate facing;

FIG. 55 is a perspective view of a base extension plate;

FIG. 56 is a perspective view of a base fastener clip;

FIG. 57 is a perspective view of a longitudinal base;

FIG. 58 is a perspective view of a base clip;

FIG. 59 is a perspective view of a cover clip;

FIG. 60 is a perspective view of a cover component;

FIG. 61 is an exploded perspective view of a self-leveling mechanism;

FIG. 62 is a perspective view of a fastening clip member;

FIG. 63 is a perspective view of another fastening clip member;

FIG. 64 is a perspective view of a second leveling mechanism;

FIG. 65 is an exploded perspective view of the leveling mechanism illustrated in FIG. 64;

FIG. 66 is a plan elevational view of a panel constructed in accordance with the principles of the present invention;

FIG. 67 is a cross-sectional view taken along line 67—67 of FIG. 66;

FIG. 68 is a cross-sectional view taken along line 68—68 of FIG. 66;

FIG. 69 is a cross-sectional view taken along line 69—69 of FIG. 66;

FIG. 70 is a cross-sectional view taken along line 70—70 of FIG. 66;

FIG. 71 is a cross-sectional view taken along line 71—71 of FIG. 66;

FIG. 72 is a cross-sectional view taken along line 72—72 of FIG. 66;

FIG. 73 is a cross-sectional view taken along line 73—73 of FIG. 66;

FIG. 74 is a cross-sectional view taken along line 74—74 of FIG. 66;

FIG. 75 is a cross-sectional view taken along line 75—75 of FIG. 66;

FIG. 76 is a cross-sectional view taken along line 76—76 of FIG. 66;

FIG. 77 is a cross-sectional view taken along line 77—77 of FIG. 66;

FIG. 78 is a cross-sectional view taken along line 78—78 of FIG. 66;

FIG. 79 is a cross-sectional view taken along line 79—79 of FIG. 66;

FIG. 80 is a cross-sectional view taken along line 80—80 of FIG. 66;

FIG. 81 is a cross-sectional view taken along line 81—81 of FIG. 66;

FIG. 82 is a cross-sectional view taken along line 82—82 of FIG. 66;

FIG. 83 is a cross-sectional view taken along line 83—83 of FIG. 66;

FIG. 84 is a cross-sectional view taken along line 84—84 of FIG. 66;

FIG. 85 is a cross-sectional view taken along line 85—85 of FIG. 66;

FIG. 86 is a cross-sectional view taken along line 86—86 of FIG. 66;

FIG. 87 is a cross-sectional view taken along line 87—87 of FIG. 66;

FIG. 88 is a cross-sectional view taken along line 88—88 of FIG. 66;

FIG. 89 is a plan elevational view of another example of the present invention;

FIG. 90 is a cross-sectional view taken along line 90—90 of FIG. 89;

FIG. 91 is a cross-sectional view taken along line 91—91 of FIG. 89;

FIG. 92 is a cross-sectional view taken along line 92—92 of FIG. 89;

FIG. 93 is a cross-sectional view taken along line 93—93 of FIG. 89;

FIG. 94 is a cross-sectional view taken along line 94—94 of FIG. 89;

FIG. 95 is a cross-sectional view taken along line 95—95 of FIG. 89;

FIG. 96 is a cross-sectional view taken along line 96—96 of FIG. 89;

FIG. 97 is a plan elevational view of a third example of the present invention;

FIG. 98 is a cross-sectional view taken along line 98—98 of FIG. 97;

FIG. 99 is a cross-sectional view taken along line 99—99 of FIG. 97;

FIG. 100 is a cross-sectional view taken along line 100—100 of FIG. 97;

FIG. 101 is a cross-sectional view taken along line 101—101 of FIG. 97;

FIG. 102 is a cross-sectional view taken along line 102—102 of FIG. 97;

FIG. 103 is a cross-sectional view taken along line 103—103 of FIG. 97;

FIG. 104 is a cross-sectional view taken along line 104—104 of FIG. 97;

FIG. 105 is a cross-sectional view taken along line 105—105 of FIG. 97;

FIG. 106 is a cross-sectional view taken along line 106—106 of FIG. 97;

FIG. 107 is a cross-sectional view taken along line 107—107 of FIG. 97;

FIG. 108 is a cross-sectional view taken along line 108—108 of FIG. 97;

FIG. 109 is a cross-sectional view taken along line 109—109 of FIG. 89; and

FIG. 110 is a cross-sectional view taken along line 110—110 of FIG. 89.

Referring to the drawings in greater detail:

A designates a retainer component, shown in FIG. 1, being of U-shape, having barrel shaped longitudinal retention means 100 on the side thereof and giving rigidity thereto. Said retainer A has secondary longitudinal retention means 102 thereon consisting of three longitudinal protuberant retention means, thus also giving rigidity to said retainer. Said retainer A has spaced apart tabs 104 punched out from one face of the base wall 106 which are offset and parallel thereto forming third retention means on said retainer. Said retainer A also has spaced apart slots 108 with circular holes 109 in the center of said slots 108. Said slots 108 with holes 109 are knocked out and/or punched out along longitudinal centerlines of said retainer base wall 106 for fourth retention means thereon.

A-1 designates a right angle cover plate, shown in FIG. 2, having two longitudinal protuberant retention means 110 on one leg thereof. Said angle cover A-1

has the opposite leg bent in an inwardly U-shaped holding means 112. The means 110 and 112 thus give additional rigidity to said angular cover plate A-1.

A-2 designates a snap-lock sliding fastening plate, shown in FIG. 3, having a face 114. Said plate A-2 has protruding hook-tupe retention means 116 on at least one side thereof.

A-5 designates a wire clip, shown in FIG. 4, with S-shaped ends 117 forming retention means thereon. Said wire clip A-5 with its face 118 retains sound batts, gaskets and wires in said building panel construction system.

G designates a retainer component, shown in FIG. 5, having said longitudinal retention means 102A, said spaced apart tabs 104A and said slots 108A with said circular holes 109A. Thus its one face 122 is similar to the one face 106 of A shown in FIG. 1. Said retainer G in addition thereto also has right angle longitudinal wing portions 120 on opposite sides thereof projecting from the face 122 of said retainer G. Said wing portions 120 have inwardly protuberant retention means 124 thereon. Said retainer wings 120 have right angle longitudinal wings 125 extending outwardly therefrom, thus forming a longitudinal panel retention means thereon.

B-2.1 designates a reinforcement and retaining clip, shown in FIG. 6. Said clip has a body 126 and oblique angular side walls 128. Said side walls 128 have outboard wing portions 130 thereon. Said body 126 has slots 108B with circular holes 109B therein similar to those in building components A shown in FIG. 1 and G shown in FIG. 5.

B designates a chase spacer member, shown in FIG. 7, having a body 132 which has protruding hook-type retention means 134 equally spaced on at least one side thereof. Said chase member B thus affords longitudinal retention means on at least one side thereon. Said chase spacer member B has protuberant longitudinal retention means 136 on at least one side of body 132. Said chase member has at least one knock-out 138 in the said body 132 and said knock-out 138 is evenly spaced longitudinally in the body 132. Said knock-out 138 affords pass-through for building components. Said knock-out 138 has at least one of its ends formed with a central slotted means 140 similar to 108 in FIG. 1. Said body 132 has holes 142 on at least one corner of said chase member B.

B-2 designates a chase spacer track member, shown in FIG. 8, being of U-shape having a back wall 144 and side walls 145. Said back wall 144 has a wide longitudinal cavity 146 for rigidity, for creating compression in the side walls 145 and for retaining gaskets and the like. Said back wall 144 has equally spaced slots 108C with circular holes 109C in the center of said slots 108C which are punched out on the longitudinal centerline of said back wall 144. Said back wall 144 has side walls 145 at right angles thereto having longitudinal protuberant retention means 148 on at least one of said walls 145. Said longitudinal retention means 148 has evenly spaced slots 150 therein perpendicular to the back wall 144.

A-2.1 designates a two-part fastening component, shown in FIG. 9, with parts 152 and 155 having oppositely disposed hexagonal heads 156 and 158 on threaded male 152 and female 155 shank portions, respectively. Said shank portions 152 and 155 threadably engage for changing the length of said fastening means A-2.1. One of said heads 158 has an anti-rotational bar

160 formed on the shank face thereof which is capable of entering slots 108 on said aforementioned building components. One of said heads 156 has right angled intersecting slots 162 formed in the non-shank face thereof for receiving either a straight-ended or an X-ended screw driver, and the shank face thereof is flat.

B-5 designates a retainer member, shown in FIG. 10, having four spaced apart walls forming three U-shaped retention slots which include secondary retention means in the form of three longitudinal protuberant retention means 170 formed in at least one of said spaced apart walls. A center back wall 166 has slots 168 evenly spaced therein forming fourth retention means on said member B-5. At least one of the two outermost walls has a right angle bend thereon forming a free-end wing portion 174 serving as a fifth retention means on said member B-5. Said retainer member B-5 has protuberant longitudinal retention means 175 on at least one free end wing portion 174 and evenly spaced tabs 176 therein forming secondary retention means on said free end wing portions 174.

B-4 designates a chase spacer member, shown in FIG. 11, having two spaced apart walls forming a U-shaped retention slot which includes secondary retention means in the form of three longitudinal protuberant retention means 180 formed in at least one of said spaced apart walls. Said member B-4 has arms extending outwardly at right angles and forming free end winged portions 182 on at least one side thereof. A center back wall 178 has evenly spaced slots 185 therein forming second retention means on said member B-4. Said retainer member B-4 has longitudinal protuberant retention means 186 on at least one free end wing portion 182 and has evenly spaced tabs 188 thereon forming secondary retention means on said free end wing portion 182.

B-6 designates a panel retainer clip, shown in FIG. 12, having four spaced apart walls forming three U-shaped retention slots which include secondary retention means in the form of three longitudinal protuberant retention means 195 formed in at least one of said spaced apart walls. At least one of said outermost walls has a right angle bend forming a wing portion 196 which serves as panel retention means. The free end of said wing portion 196 is U-shaped, as at 198, thus providing secondary clip retention means 200 thereon.

B-3 designates a chase spacer fastener clip, shown in FIG. 13, having three spaced apart walls forming a U-shaped retention slot 208. A free end 202 of one of said spaced apart walls projects at right angles to said slot 208 and is provided with an inwardly extending slot 204 which serves as a fastening means.

C designates a tongue chase building panel component, shown in FIG. 14, of longitudinal H-shape. A middle wall 212 of said member C has longitudinal arms 214 at right angles and extending outwardly from said middle wall 212. Said arms 214 are reversely bent in U-shape 215 forming arms 216. Said arms 216 are offset outwardly, as at 218, and have longitudinal protuberant retention means 220 thereon.

C-1 designates a tongue chase building panel component, shown in FIG. 15, having a longitudinal face wall 222 and U-bent 223 longitudinal side walls 224 at right angles to said longitudinal face wall 222. Said walls 224 have longitudinal protuberant retention means 226 thereon. Said retention means 226 form panel retention means on said member C-1. The outermost walls

224 have an offset 228 between the U-bend 223 and the retention means 226.

C-1.2 designates a tongue chase building panel component, shown in FIG. 16, being a longitudinal panel end component. Said component C-1.2 is of longitudinal U-shape having a longitudinal face wall 230, side walls 232 and longitudinal wing portions 234. At least one of said side walls 232 is U-bent 236 forming a second side wall 238. Said second side wall 238 is U-bent 240 forming a third side wall 241. Said third side wall 241 has a right angle bend forming wing portions 234. Said wing portions 234 have right angle bends forming wall portions 242 providing panel retention means 244.

C-2.1 designates a tongue panel component, shown in FIG. 17, having a V-shaped longitudinal face wall 246 and side walls 248. At least one of said side walls 248 has an out-turned U-bend 250 forming a second wall 251 parallel to first side wall 248. Said second side wall 251 has a right angle bend forming wing portions 252 extending outward. Said wing portions 252 have right angle bends forming side wall 254. Said wing portions 252 and side walls 251 and 254 form panel retention means 258 thereon.

C-2 designates a tongue panel component, shown in FIG. 18, having V-shaped longitudinal face walls 260 and side walls 262. Said side walls 262 have an offset 264 with longitudinal protuberant retention means 265 thereon.

C-3 designates a longitudinal U-shaped chase building panel component, shown in FIG. 19, having arms 266 that are offset 268 and a back wall 270. Said arms 266 have longitudinal protuberant retention means 271 thereon.

D-A designates a panel, shown in FIG. 20, having retention means 272 thereon. Said panel D has a body 274 having ends bent at right angles forming sides 276 thereon. Said sides 276 have right angle bends forming spaced apart back walls 278 being U-shape 279 and having longitudinal protuberant retention means 280 thereon. Said body 274 when cut at the dotted lines 275 forms two ends which serve as panel holding components.

D-B designates a panel, shown in FIG. 21, having three retention means 282, 283 and 284 thereon. Said panel D-B has a wall 286 having ends bent at right angles forming side walls 288. Said side walls 288 have a right angle bend and are U-shaped forming spaced apart inboard arms 290. First retention means 282 is disposed between said inboard arms 290 and the back face of said wall 286. Second retention means 283 is provided via the slot between the inboard arms 290. One of said inboard arms 290 has a right angle bend forming free ends 292 which have longitudinal protuberant retention means 284 thereon, being said third retention means. Said body 286 when cut at the dotted lines 287 forms two ends which serve as panel holding components.

E designates a terminal cap component, shown in FIG. 22, having a terminal plate 294 and spaced apart longitudinal retention means in the form of arms 296 projecting from one face of said plate 294. Each said retention means 296 has longitudinal protuberant retention means 297 thereon between said plate 294 and the free end of said arms 296.

E-1 designates a flat cover plate, shown in FIG. 23, for said terminal cap component E, shown in FIG. 22, comprising a longitudinal terminal plate 298. Said plate

298 has inboard U-shaped ends providing a slotted longitudinal retention means 300 thereon. Said flat cover plate E is constructed to be slid on the terminal plate 294 of terminal cap E and retained thereon by retention means 300.

G-2 designates a terminal cap component, shown in FIG. 24, which has a terminal plate 302 and spaced apart longitudinal retention means 304 projecting from one face of said plate 302. Each said retention means 304 has longitudinal protuberant retention means 306 thereon between said plate 302 and the free end of said retention means 304. The component G-2 has right angle wing portions 308 on opposite sides thereof projecting in the same direction as said retention means 304.

G-2.1 designates a U-shaped cover plate, shown in FIG. 25, for the terminal cap component G-2, shown in FIG. 24, comprising a terminal cover plate 309 having U-shaped longitudinal retention means 400 at right angles on opposite sides thereof. Said cover plate G-2.1 is constructed to be slid on the terminal plates 302 and 308 of said terminal cap component G-2 and retained by said cover plate retention means 400.

E-3E designates a glazing cover plate component, shown in FIG. 26, which have longitudinal face walls 402 and longitudinal U-shaped ends 404. The said U-shaped ends 404 form a back wall 405 running parallel to the said face wall 402 and has right angle bends forming longitudinal arms 406 thereon. The said arms 406 have at least one longitudinal protuberant retention means 408 thereon. A longitudinal U-shaped cavity 410 is centrally formed between said face wall 402. The said U-shaped cavity 410 has two spaced apart longitudinal side walls 412 which have at least one longitudinal protuberant retention means 414 thereon.

E-4F designates a glazing joint cover component, shown in FIG. 27, which has a longitudinal U-shaped cavity 416 centrally formed between face walls 418. Longitudinal arms 420 are joined to the face walls 418 and extend in the same direction as the said U-shaped cavity 416. The said U-shaped cavity has two spaced apart walls 421 which have at least one longitudinal protuberant retention means 422 thereon. At least one of the said arms 420 has longitudinal protuberant retention means 424 on the free end thereof.

E-2.1 designates a female element, shown in FIG. 28, of a two member glazing rail component E-2, shown in FIG. 30. The said female element E-2.1 has a face wall 432 and side walls 433 and 434, one wall 434 of which has longitudinal protuberant retention means 436 thereon. The other said side wall 433 has a right angle bend and a double U-bend which forms a retention means 438. Said female element E-2.1 has two spaced apart free ends 440 and 441 with longitudinal protuberant retention means 442 and 443, respectively, thereon. Said free ends 440 and 441 form a slot for insertion of a male element E-2.2, shown in FIG. 29.

Said male element E-2.2 has a face wall 444 and side walls 445 and 446, one wall 445 of which has longitudinal protuberant retention means 447 thereon. The other said side wall 446 has a right angle bend and a double U-bend which forms a U-shaped retention means 448. Said male element E-2.2 has a free end 450 with longitudinal protuberant retention means 451 thereon. Said free end 450 is constructed for insertion into the slot of the female element E-2.1.

E-2 designates said two member glazing rail component, shown in FIG. 30, which has as one of its elements the female element E-2.1 and as the other the male element E-2.2. The male element E-2.2 has its free end 450 with its retention means 451 disposed in the slot of the female spaced apart free ends 440 and 441 with their retention means 442 and 443 engaged with said retention means 451. The opposite walls 434 and 445 form a cavity 426 after formation of the component E-2 as aforementioned, in which said longitudinal protuberant retention means 436 and 447 operate.

E-5 designates a longitudinal glazing cavity component, shown in FIG. 31, which has a back wall 452 and spaced apart side walls 454 with inboard arms 456 at right angles thereto. The said side walls 454 have longitudinal protuberant retention means 458 which serve to retain the cavity component E-5 in said cavities 410, 416 and 426 of the other glazing components E-3E, E-4F and E-2, respectively. The retention means 458 is centrally formed in respect to the side walls 454. The retention means 414 and 422 are centrally formed in respect to the cavities 410 and 416, respectively. Also the retention means 436 and 447 are centrally formed in respect to the cavity 426. This is so that the component E-5 is reversible in respect to the position in which it may be held in said cavities 410, 416 and 426. In one such position the component E-5 serves as a glazing cavity filler element and in the other such position it constitutes a glazing retention means 460 via the aforementioned arms 456.

E-6 designates a terminus cap, shown in FIGS. 32 and 111, for a pillar joint isometric section (a collective of components referred to later in reference to FIG. 73 when their ends terminate in isolation). The terminus cap E-6 has a low silhouette pyramidal face wall 462 with rounded edges on all eight of the solid angles formed thereby. On the back face of the aforementioned face wall 462 there are four interior walls 466 forming a box-like structure which with the walls 464 serves as an annular cavity retention means 467.

E-7 designates a door buck wall component, shown in FIG. 33, which has a plate wall 468 with a hump 470 formed therein serving as a door stop. Opposite side walls 471 of said plate wall 468 are intumed, as at 472, and formed with two U-bends, one of which 476 constitutes longitudinal retention means 474. Said door buck wall component has a cavity 475 formed therein between said U-bends 476 and the inside face of said plate wall 468 for receiving a metal reinforcing bar E-7.1, shown in FIG. 34.

E-7.1 designates a reinforcing bar, shown in FIG. 34, which acts as a reinforcement and attachment for hardware when disposed in the cavity 475 of the door buck E-7 by having one of its faces, as at 477, drilled and tapped with said door buck plate wall 468. When the bar E-7.1 is bent at a right angle to the face 477 and the straight portion thereof disposed in the cavity 475 of said door buck E-7, the right angled bent portion acts as reinforcement and/or attachment of the door buck E-7 to building construction.

F designates a joint cover, shown in FIG. 35, being of longitudinal U-shape and has a base wall 478 from which arms 480 extend at right angles on opposite sides thereof. Said arms 480 have inward longitudinal protuberant retention means 481 thereon.

F-1 designates a joint cover member, shown in FIG. 36, being of longitudinal U-shape and has a base wall

482 from which arms 483 and 484 extend at right angles on opposite sides thereof. One of said arms 484 has inward longitudinal protuberant retention means 486 thereon. When the arm 483 is U-shaped and is doubly bent in the opposite direction, as indicated by the dotted lines, said component F-1 can serve as a panel holding component.

G-1 designates a joint cover, shown in FIG. 37, which has a face wall 487 which extends past arms 488 and has U-shaped extensions forming wing portions 490 on at least one of its said sides. The aforementioned arms 488 have inward longitudinal protuberant retention means 491 thereon.

A-3.1 designates one element, shown in FIG. 38, of a two member fastening component which has at least one of its walls 492 with longitudinal protuberant retention means 494 thereon. The other said wall 495 is out-turned forming a free end 496 which is offset 498 near its termination, thus providing retention means 500.

A-3.2 designates the other element of said two member fastening component which co-acts with the element A-3.1 or is an individual component when used separately. At least one of the walls 502 of said component A-3.2 has a longitudinal protuberant retention means 504 thereon. The other said side wall 506 is slightly flared outwardly away from said wall 502 to keep said component A-3.2 in tension. Said two member fastening component made up of the union of said elements A-3.1 and A-3.2 would be as depicted in both FIGS. 38 and 39 by adding to said perspective view a typical building panel in the cavity formed between the spaced apart walls 495 and 506. In holding a building panel, the component A-3.1 is installed first and one side of the building panel is placed against the same and thereafter the component A-3.2 is snapped in place against the other side of said building panel.

A-4 designates a two member fastening component, shown in FIG. 40, consisting of a female fastening clip element A-4.2, shown in FIG. 42, together with a male fastening clip element A-4.1, shown in FIG. 41, which have their upper ends U-shaped for co-acting first U-shaped retention means 512 and 516, respectively.

A-4.1 designates one of said fastening clip members being a male element, shown in FIG. 41, which has its upper end U-shaped forming retention means 512 and its lower end bent at a right angle becoming an arm portion 514 thus forming a male retention means thereon.

A-4.2 designates the other of said fastening clip members being a female element, shown in FIG. 42, which has its upper end U-shaped forming retention means 516 and its lower end bent at a right angle becoming a V-shaped arm portion 518 which has an angled end 510 thereon. The component A-4.1 is first engaged via its U-shaped retention means 512 on one side of a building component and thereafter the component A-4.2 is engaged via its U-shaped retention means 516 on the opposite side of the same building component and then snapped into engagement via its lower end 518 with the lower end 514 to hold the male element A-4.1 on said building component.

H designates a longitudinal panel spacer and retainer member, shown in FIG. 43, which is U-shaped and has a back wall 522 and two side walls 524 and 525. Said side walls 524 and 525 have arms 526 at right angles and extending outwardly therefrom which provide lon-

itudinal panel retention means 528. Said side wall 524 near back wall junction has evenly spaced tabs 530 punched out, offset and parallel thereto. The said side walls 524 and 525 in the same area of the tabs 530 have longitudinal protuberant retention means 532 and 533, respectively.

F-2 designates a combination terminal cap and joint cover, shown in FIG. 44, which has a plate wall 536 and U-shaped wing portions 534 projecting in one direction from one face of the plate wall 536. The said wing portions 534 have longitudinal protuberant retention means 538 thereon whereby said component F-2 performs retention functions in said one direction. Wing portions 535 project in an opposite direction from the opposite face of the plate wall 536 and are provided with longitudinal protuberant retention means 539 whereby said component F-2 also performs retention functions in said opposite direction.

F-3 designates a combination terminal cap and joint cover, shown in FIG. 45, which has a plate wall 542 and U-shaped wing portions 540 projecting in one direction from one face of the plate face wall 542. At least one of said wing portions 540 has longitudinal protuberant retention means 544 thereon. Wing portions 541 project in an opposite direction from the opposite face of the plate wall 542 and perform retention functions in said opposite direction.

G-3 designates a panel holding component, shown in FIG. 46, for snapping on to the retention means of various terminal cap wall components such as the retention means 544 on the component F-3 (shown by a dash-dot line 546). Said panel holding component has a plate wall 548 which has a U-shaped longitudinal retention means 550 formed on the lower end of one right angled side wall thereof and a U-shaped longitudinal retention means 551 formed on the lower end of the opposite right angled side wall thereof. Said U-shaped retention means 551 is provided with longitudinal protuberant retention means 552 on each of its spaced apart walls.

C-4 designates a fastening retention clip, shown in FIG. 47, which has a back wall 556 and two vertically spaced apart side arms 558 at right angles thereto. The back wall 556 has longitudinal protuberant retention means 560 on at least one of its free ends which forms clip retention means thereon. The spaced apart side arms 558 have longitudinal protuberant retention means 562 thereon. The said arms 558 with retention means 562 thereon form joint cover and/or cover plate retention means.

C-5 designates a retainer retention clip, shown in FIG. 48, which has an offset 564 on a plate wall 565 and at least one of its ends has longitudinal protuberant retention means 566 thereon.

G-100B designates a joint cover member, shown in FIG. 49, which has panel holding means. The joint cover member G-100B has a longitudinal face 568 which is U-shaped 570 on its sides and returns inwardly forming back walls 571. Said back walls 571 have right angle bends forming longitudinal arms 572, each of which has at least two longitudinal protuberant retention means 574 thereon.

G-101B designates a cover plate facing, shown in FIG. 50, which has a face wall 576 which has its ends U-shaped 578 forming retention means thereon. The cover retention means 578 is designed to be slid on said

U-shaped ends 570 of the building panel component G-100B.

G-110B designates a joint cover, shown in FIG. 51, which has a face wall 580 with a right angle bend at its center and U-shaped 582 at its ends. One wall forming one said U-shape end 582 is offset, as at 583, and forms a longitudinal arm 584. Another wall forming the other U-shape end 582 is bent at a right angle and forms a longitudinal arm 586. Both said arms 584 and 586 have longitudinal protuberant retention means 588 thereon.

G-111B designates a cover plate facing, shown in FIG. 52, which has a face wall 590 with its opposite ends U-shaped 592 forming retention means thereon. Said cover retention means 590 is designed to be slid on said U-shaped ends 582 of the building panel component G-110B.

G-120B designates a joint cover, shown in FIG. 53, which has a right angle longitudinal face wall 600 with its sides U-shaped 601 forming an inside facing 602. The inside facing 602 returns parallel to the first mentioned angle face wall 600 and has right angle bends forming arms 604 outboard from one side of angle face 600. Each of said arms 604 has at least two longitudinal protuberant retention means 606 thereon.

G-121B designates a cover plate facing, shown in FIG. 54, which has a face wall 608 with its ends U-shaped 610 forming retention means thereon. Said cover plate facing G-121B via its retention means 610 is designed to be slid onto said U-shaped ends 601 of the building panel component G-120B.

H-IJ designates a base mechanism extension plate, shown in FIG. 55, which has a face wall 612 with two holes 614 aligned with fasteners of self-leveling mechanism shown in FIG. 61. Said face wall 612 has right angle side walls 615 which have inboard parallel spaced apart returning back face walls 616. Said back walls 616 have inturned returning walls 618 having longitudinal protuberant retention means 620 thereon.

H-1. I designates a base fastener clip, shown in FIG. 56, which is U-shaped and has spaced apart base walls 622 and side walls 624 and 626. One of said walls 624 is shorter and outwardly flared forming first retention means 625 thereon. The other said wall 626 is U-bent and returns parallel to the upper base wall 622 and is upwardly flared forming second retention means 628 thereon.

H-2 designates a longitudinal base, shown in FIG. 57, which has a plurality of longitudinal retention means behind a longitudinal face plate 630. One side of said face plate is doubly U-bent 632 and 634 forming spaced apart back walls forming first longitudinal female retention means 636 thereon. The opposite side of said face plate 630 has a right angled side wall which terminates in three U-bends 638, 642 and 646 forming right angled walls 640 and 641 which serve as gasket recipient means and spaced apart back walls forming second longitudinal female retention means 644 thereon.

H-1 designates a base clip, shown in FIG. 58, which has a body portion 650 having a tab 652 punched out with a slot 653 therein and offset parallel thereto forming retention means thereon. Said body portion 650 at one side thereof has a longitudinal offset 654 forming offset spaced apart walls 655 which form a U-shaped bend 656 forming first longitudinal male retention means thereon. The opposite side of said body portion 650 is doubly U-bent 658 and 660 forming spaced

apart walls 659 forming second longitudinal male retention means thereon.

H-3.1 designates a pillar cover clip, shown in FIG. 59, which has a body portion 662 having one of its ends U-shaped 664 forming snap-on retention means. The opposite end of said arm 662 has an angular bend 666 for applying tension to its opposite U-shaped end 664.

H-3 designates a pillar cover component, shown in FIG. 60, which is longitudinal U-shaped having a face wall 668 and side walls at right angles thereto. One of said side walls has a longitudinal offset bend forming a wall 670 serving as male retention means having longitudinal protuberant retention means 672 thereon. The other of said side walls is doubly U-bent 674 and 678 forming spaced apart walls forming longitudinal female retention means 676 on one wall of which are formed longitudinal protuberant retention means 682. Two of said longitudinal pillar components H-3 snapped together form a complete pillar cover.

I designates a self-leveling mechanism, shown in FIG. 61, comprising a longitudinal hex member 700 having a male threaded portion 702 threadably engaged with a threaded aperture 703 of a solid block top base member 704 having non-flexible longitudinal protuberant means 758 thereon. Said hex member 700 has an internally threaded aperture 752 extending end to end therethrough. A solid block intermediate base member 706 has a polished and hardened annular spherical cavity 712 formed inwardly from its bottom face of a size to mate with the spherical head 716 of a shaft member 708. Said base member 706 has a central aperture 714 therein larger than the threaded shank 710 of said shaft member 708. Said shaft member 708 has a through aperture 722 through its threaded shank portion 710. A hex nut 718 has female threads 720 for threadably engaging said threaded shank 710 and a through aperture 724 therein. A pin member 726 is inserted into said apertures 722 and 724 when these are aligned for locking the nut 718 onto said shaft member 708. A solid block bottom base member 728 has a polished and hardened spherical cavity 730 formed inwardly from its top face of a size to mate with the spherical head 716. A fastener 732 has right angled intersecting slots 734 formed in a conical head 738 for sinking itself into counter sinking means 742 provided in the upper ends of unthreaded aperture 740 in the intermediate base member 706. Said fasteners 732 are inserted through unthreaded apertures 740 and 746 and threadably engage threaded apertures 748 via the male threads 744 on the free ends of said fasteners 732. Said threaded male shank 710 is inserted in the hex end of hex member 700 and threadably engaged with female threads 752 in hex member 700. Said threaded shank 710 can be made in sections which can be snapped off in the field for varying the effective length of said threaded shank 710. A retainer component 754, which is also designated H-1.J.1, is adapted to rest upon the floor either directly or through self-gripping means retained between sides 760 and is capable of being snapped between sides 756 provided in the bottom wall of base member 750. The aforementioned members, shown in FIG. 61, assembled together form an anytime height adjustable universal joint panel support for which adjustment is available before, during and after installation.

H-1.J.1 designates a fastening clip member, shown in FIG. 62, which has a center wall 762 having U-bends 764 at each of its ends which form oppositely extending

arms 766 having their free ends flared outwardly at oblique angles. Slots formed by said arms 766 spaced apart from the center wall 762 forming oppositely acting female retention means on said clip member H-1.J.1.

H-1.J designates a fastening clip member, shown in FIG. 63, which is composed of three U-bends 765, 767 and 768. Said clip member H-1.J has four spaced apart walls, the outermost ones 770 and 772 of which have their free ends flared outwardly. Slots formed by said arms 770 and 772 form female retention means which act in the same direction.

J designates a leveling mechanism, shown in FIGS. 64 and 65, comprising two longitudinal U-shaped channels 800 with threaded shaft members 782 and 786 and a tubular hex member 784. One of said threaded shaft members 782 has a right-handed threaded shank which is threadably engaged with a corresponding right-handed threaded female portion of said tubular hex member 784. The other said threaded shaft member 786 has a left-handed threaded shank which is threadably engaged with the corresponding left-handed threaded female portion of said tubular hex member 784. Each of said shaft members 782 and 786 has its head end squared 788. A retainer plate 790 having a square aperture 791 matching the square end 788 of each of said shaft members 782 and 786 is placed on the squared end 788 of each of said shaft members 782 and 786. Each said channel 800 has side walls 802 with longitudinal protuberant retention means 804 thereon and evenly axially spaced aligned square apertures 806 for engaging said square ends 788. The said aforementioned assembly of said members 782, 784, 786 and 790 have their square ends 788 on opposite ends thereof inserted into at least one pair of vertically aligned square apertures 806. The aforementioned members, shown in FIGS. 64 and 65, form an anytime height adjustable panel support. Each said channel 800 may have crosswise stamp impressions bisecting the portions between said apertures 806 to facilitate snapping said channel 800 into segments as needed in the field for various installations in a building panel system.

FIG. 66 shows in elevation a panel construction which is disposed between and along a ceiling line 810, a floor line 812, and a wall line 814. Said panel construction comprises a door opening 816, glass areas 818 and open areas 820. Said panel construction is centered on a modular line 860 shown as a broken singular line in FIGS. 68, 69, 71, 72, 74, 76-88. Said elevational panel construction shows modular lines depicted by broken lines 822, 824, 825, 826 and 827. Wall line 814 is also a modular line and the panel construction shown in FIGS. 67 and 68 is furred on said wall or modular line 814. On said modular line 825 there are two abutting panel constructions in opposite directions and at right angles to said elevational panel construction, the forward one of said abutting panel constructions being depicted by a half wall line 830 and the rearward one being a full height panel construction. Half walls shown, respectively, in FIGS. 69, 70 and 72-75 rise to said half wall line 830. Said half walls shown in FIGS. 69, 70, 72 and 73 have a glass portion shown from the half wall line 830 to the partial wall line 832. On said modular line 826 there is a rearward full wall at a right angle to said elevation wall as shown in FIGS. 71 and 77. Said elevation wall between modular lines 826 and 827 has a quarter wall 834 with open spaces 820 above

and below the same. Said quarter wall 834 is supported at one of its ends with a post section 840 as shown in FIG. 80.

FIG. 67 has the same wall line 814 as in FIG. 66. I am furring said furred wall with laminated building panels 842, via cooperating tongues 846 recessed behind a finished face 848 of said panels 842. Said tongues 846 are spaced apart and opposite each other forming an open joint 850 therein. Said joint 850 is equal to the tongue and panel thickness, respectively, of a similar type panel construction (not shown) which may be joined at right angles to said furred wall to stay centered on module lines. Said retainer A, shown in FIG. 1, is disposed in said joint 850 retaining said panels 842 via cooperating tongues 846. Said retainer A is shown secured to a wall, a conventional fastener 854 thus furring said wall with said building panels 842. Said fastener 854 retains said retainer A via slotted and circular holes 108 and 109, respectively. Said joint cover F, shown in FIG. 35, is snap-locked via the arms 480 with retention means 481 thereon to said joint retainer A via the retention means 100 thereon. Furring a wall as depicted in FIG. 67, has, inter-alia, a uniqueness in that it facilitates furring with a building panel construction system that is likened to hanging pictures on a wall and moving furniture or replacing the same insofar as this building panel construction system is that pliable to a fixed position fastener, such as the fastener 854. Said fastener 854 may be used to directly fasten, in lieu of the retainer A, the reinforcement and retaining clip B-2.1, shown in FIG. 6, by means of the uppermost slotted retention means 108B thereon. Said fasteners A-2 would then be employed to bridge the retainer A and the retainer clip B-2.1 by inserting the male hook type retention means 116 thereon into the female slotted means 108B in the retainer clip B-2.1 and in the female slotted means 108 in the retainer A. In lieu of the fastener A-2, the fastener A-2.1 may be employed to bridge the retainer A and the retainer clip B-2.1 by having its hexagonal head 158 inserted through the circular hole 109B of B-2.1 retainer clip and said anti-rotational bar 160 moved downwardly into the slotted retention means 108B of said retainer clip B-2.1. The hexagonal head 156 of said fastener A-2.1 is inserted first through the circular slotted means 109 and moved downwardly into said slotted means 108 of said retainer A.

FIG. 68 has the same wall line 814 and laminated building panels 842 with said tongue 846 in FIG. 67. Said retainer E, shown in FIG. 22, has its terminal plate 294 with its arms 296 fastened to said face of wall line 814 with a conventional fastener 856. Said retainer A, shown in FIG. 1, is cut along its longitudinal center line. One half of retainer A has a fastening component A-3.2, shown in FIG. 39, snapped onto its retention means 100 via snap-lock means 504 on component A-3.2. Component A-3.2 has right angled walls each equal to the thickness of a layer of said laminated panel 842. Said assembly of aforementioned half or retainer A and component A-3.2 is disposed in part of a joint formed in part via panel 842, tongue 846 and said arms 296 on terminal plate E. Another half of retainer A is snap-locked via retention means 102 and tabs 104 thereon onto arms 296 and retention means 297 on terminal cap E. A panel is made with two sheets of conventional construction material 858 by means of C-2.1 tongue panel component, shown in FIG. 17. Said sheet material 858 has its edges inserted in retention means

258 on opposite sides of said tongue panel component C-2.1 thus comprising a building panel. Said tongue panel component C-2.1 is disposed between the two half sections of retainer A. Clip C-5, shown in FIG. 48, may be employed to add stabilization to retainer A, component A-3.2 and tongue C-2.1 by inserting retention means 566 of clip C-5 into spaced apart retention means 102 and 104 on retainer A. The opposite end of clip C-5 would be disposed between a wall of tongue C-2.1 and panel 858. The terminal plate E does not have to be fastened down with fasteners 856 as shown. On the average type partitions, terminal plate E would only be secured to top and bottom tracks. In using the aforementioned system, as in FIG. 68, you have the following advantages, inter-alia; one can employ common building materials on the market along with my building components for fabricating; it facilitates a simple fabrication that gives one uniform building panels that are interchangeable and still stay on modular lines such as depicted by 814 and 860; dependent on materials used, one can obtain fire protection and sound ratings and have clear non-obstructed race-ways within each panel.

FIG. 69 shows the intersection designated 868, at right angles to each other, of modular lines 825 and 860, glass area 818 and 862 between half wall line 830 and partial wall line 832 as shown in FIG. 66. The forward abutting wall is the E-4F horizontal glazing building component, shown in FIG. 27, which is horizontally disposed between modular lines 860 and 878 and has its exposed face line, the uppermost part of a joint box section, and is at the partial wall line 832 as shown in FIG. 66. Glazing component E-4F has snap-locked into its cavity 416, via retention means 422, the glazing cavity filler component E-5, shown in FIG. 31, via its retention means 458. The glass 862 is held in place by framing the same with glazing filler E-5, shown in FIG. 31, and holding said filler E-5 on glass 862 with its retention means 456. Said glazing component E-4F may be snapped into retention means 100 of retainer A. Two of said retainers A are disposed spaced apart and back to back behind said component E-4F. The two retainers A have disposed on opposite sides thereof via their tabs 104 and retention means 102 two terminal caps E via the latter's retention means 296 and 297. The terminal cap E has the cover plate E-1, shown in FIG. 23, slid on said E terminal plate 294 by means of cover plate E-1 retention means 300. This then makes a horizontal joint box section out of two retainers A, two terminal caps E with two cover plates E-1, and glazing component E-4F. Said horizontal joint box section abuts a similar pillar joint box section that runs full height vertical and is centered on intercentral point 868. Said vertical pillar joint box section is constructed similar to said horizontal joint box section and has two retainers A, one of which has vertical glazing component E-4F and glazing filler E-5 snap-locked into said retention means as described for said horizontal joint box section. The other said retainer A has a combination terminal cap and joint cover component F-2, shown in FIG. 44, snap-locked into its retention means 100. Said component F-2 has one pair of wing portions 534 disposed in seam lines of a laminated building panel 870. Laminated building panel 870 is composed of four layers of standard materials. Said retainers A, on one side, are held and spaced apart with glazing component E-3E, shown in FIG. 26, via arms 406 and

retention means 408 thereon snap-locked between said retainer A snap-lock means 102 and tabs 104. Glazing component E-3E has disposed in its U-shaped cavity 410 the glazing filler E-5. Glazing cavity filler E-5 has its retention means 458 snap-locked into retention means 414 of glazing component E-3E. Said glazing cavity filler E-5 has glass 818 disposed in its retention means as aforementioned. The opposite side of said retainers A are spaced apart by means of side walls 224 on U-shaped tongue member C-1, shown in FIG. 15. Said tongue side walls 224 are held against said tabs 104 of retainer A by fasteners A-2, shown in FIG. 3. Said fastener A-2 has its face 114 inter-centered between the two retainers A equally spaced retention slots 108 with circular holes 109 opposite and aligned with each other. Said fasteners A-2 having their protruding hook type retention means 116 inserted in retention means 108 and 109 of retainers A and slid downwardly into lowermost slotted means 108. Sliding said fastener A-2 downward so that its apex of said 116 retention means seats itself snugly on said retainer A base wall 106 is the lock position of said fastener A-2. This aforementioned fabricates a pillar joint box section post that is centered on the intercentral 868 between ceiling line 810 and floor line 812. Said tongue C-1 allows fabrication of an end of a building panel by incorporating two D-A panels, shown in FIG. 20, with their retention means 272 engaged with tongue C-1 retention means 226 on opposite sides thereof. Said D-A panels having a back-up material 874 against back of its face wall 274 and in its cavities formed by face wall 274 and back walls 278. Fabrication of a system as depicted in FIG. 69 has, inter-alia, advantages in that it facilitates a pillar joint box section that can have any one of its faces changed singly or totally, dependent on the revision required, for alteration, additions or deletions thereto. Said pillar joint box section and its interlocked members permit 100 percent accessibility or removability to all parts without damage or loss to any part providing their properties prior to change are completely transferable, all things being relative. Said pillar joint box section also provides raceways both horizontal and vertical.

FIG. 70 shows intercentral 876 of modular line 825 and 878 which has centered on it a pillar joint box section terminal. Said pillar terminal is the pillar terminal for said forward abutting wall shown in FIG. 70. Said pillar terminal has two spaced apart retainers A, a glazing component E-3E with glazing cavity filler E-5, fasteners A-2, a terminal cap E, shown in FIG. 22, with cover plate E-1, shown in FIG. 23. Said cover plate E-1 is slid over terminal cap E terminal plate 294 and held on with retention means 300 of said cover plate. Said terminal cap E has its spaced apart arms 296 with retention means 297 disposed between retention means 102 and tabs 104 of one side of the two spaced apart retainers A. Said retainers A, via retention means 100, have joint cover members F, shown in FIG. 35, snap-locked via their retention means 481. Said system, shown in FIG. 70, has same similar advantages and uniqueness as the system shown in FIG. 69.

FIG. 71 shows intercentral 882 of modular lines 826 and 860 which has centered on it a pillar joint box section between the ceiling line 810 and the floor line 812. Said pillar joint box section has two tongues C and C-2 at right angles to each other. One of said tongues C-2, shown in FIG. 18, is centered on modular line 826 and

is the end of a metal faced solid laminated building panel composed of three layers of building construction material, outboard layers 871 and a middle layer 872. Said three layer building panel is fabricated and laminated via two metal panels D-A, shown in FIG. 20, via their retention means 272 and the retention means 265 on the tongue C-2. Said retention means 280 of panel D-A is snap-locked with said retention means 265 of said tongue C-2. Two clips C-4, shown in FIG. 47, have their free ends with retention means 560 inserted and snap-locked one into each of said slots 272 on the two panels D-A. Each said clip C-4 has its arms 558 with retention means 562 thereon projecting away from the center of said tongue C-2. One of said U-shapes 215 on the other said tongue C, shown in FIG. 14, is inserted between the arms 558 on one of the clips C-4. Said tongue C is inserted into a two layer 874 building panel via two metal panels D-A as described for the tongue C-2. One of said metal panels D-A has, via its retention means 272, clips C-5, shown in FIG. 48, snap-locked into engagement therewith via the retention means 566 on said clips C-5. Said clips C-5 are inserted into one side of the retainer A via the retention means 102 and 104 of said retainer A. Said retainer A has a joint cover F, shown in FIG. 35, snap-locked into retainers A retention means 100 via retention means 481 on said joint cover F. A terminal cap E, shown in FIG. 22, with a terminal cap cover plate E-1, shown in FIG. 23, carried thereon as aforementioned has one of its arms 296 and retention means 297 inserted into retainers A snap-lock means 102 and 104 and the other inserted and snap-locked into the spaced apart arms 558 and retention means 562 on one of the aforementioned clips C-4. Said system, shown in FIG. 71, has similar advantages and uniqueness as the system shown in FIG. 69.

FIG. 72 is a continuation at an uppermost point of pillar joint box section and intersecting fabrications on intercentral 868. A terminal cap E, shown in FIG. 22, is disposed on one side of aforementioned pillar joint box section and has its arms 296 with retention means 297 engaged in retainer A retention means 102 and 104. Said terminal cap E has a glazing component E-2, shown in FIG. 28, retained thereon which is snap-locked on opposite sides of the terminal plate 294 via retention means 438 and 448 on said female and male components E-2.1 and E-2.2. The glass and glazing components E-5, shown in FIG. 31, are disposed and retained via the cavity 426 in said glazing component E-2. Fabrication of a pillar joint box section utilizing the system shown in FIG. 72 has advantages in that it facilitates the removal and/or rearrangement of the glazing, or similar type material, without disruption to the whole system. Said system may be dismantled, removed or replaced with very simple tooling as, for example, an ordinary letter opener.

FIG. 73 is identical to FIG. 70 except that the pillar joint box section terminal on intercentral 876 is capped with said terminus cap E-6, shown in FIGS. 32 and 111, which has all four sides of said pillar and the components thereof locked in the cavity 467 in which case the walls 464 and 466 perform a retention function in lieu of retainer A-2. Said cap E-6 gives said pillar joint box sections a finished termination and top face.

FIG. 74 is a continuation at a lower point of pillar joint box section and intersecting fabrications on intercentral 868 as aforementioned. In FIG. 74 said glazing

component E-5, shown in FIG. 31, is inserted in its reverse position via its arms 456 in the cavity 416 of glazing component E-4F, shown in FIG. 27. The terminal cap E, shown in FIG. 22, has its plate 294 disposed against the glazing component E-4F and has panel holding components G-3, shown in FIG. 46, snapped on its spaced apart arms 296 and retention means 297 via G-3 component retention means 551. The said component G-3 holds said building panels 890 on one end thereof.

FIG. 75 is a continuation at a lowermost point of pillar joint box section terminal on intercentral 876. In FIG. 75 the two panels 890 are received in the panel retention means 244 of the panel tongue and chase spacer member C-1.2, shown in FIG. 16. The tongue C-1.2 has its side walls 238 disposed between tabs 104 on spaced apart retainers A.

FIG. 76 is taken on the modular lines 860 and 822 and shows a pillar joint box section on intercentral 892 which has the door buck E-7, shown in FIG. 33, with the bar E-7.1, shown in FIG. 34, disposed in it as aforementioned. The door buck E-7 is retained with its retention means 474 slid over the opposite side of the terminal plate 294 of terminal cap E, shown in FIG. 22. The said terminal cap E has its arms 296 disposed between snap-lock retention means 102 and 104 of spaced apart retainers A. Opposite ends of retainers A have their tabs 104 pressed against walls 248 of tongue panel component C-2.1, shown in FIG. 17. Said retainers A are held in compression by snap-lock sliding fastening plates A-2, FIG. 3, which are disposed in circular 109, slotted 108 apertures of both said retainers A. The said tongue C-2.1 has spaced apart panels 858 disposed in its panel retention means 258. Two joint covers F, shown in FIG. 35, are snap-locked via their retention means 481 into the two retainers A via their snap-lock retention means 100. Said pillar joint box section, shown in FIG. 76, utilizes multi-purpose components for mounting door closure hardware and doors for providing ingress and egress from opposite sides of the panel wall.

FIG. 77 is a continuation at a lower point of the pillar joint box section on intercentral 882 and shows the transition that accommodates the said outboard quarter wall 834. The said wall 834 includes the vertically disposed tongue panel component C-2.1, shown in FIG. 17, which has in its retention means 258 two spaced apart panels 894 and 895, one of which, 895, is doubled which makes an unbalanced wall adding to its sound and fire ratings. The tongue panel component C-2.1 has in its U-slot between walls 248 and 251 the end 565 of the retainer clip C-5, shown in FIG. 48, to engage a side of the retainer A. Said joint box section, shown in FIG. 77, utilizes multi-purpose components to incorporate a free standing wall which also has the same versatility as full size panels.

FIG. 78 shows a joint box section at the upper end of quarter wall 834 centered on the modular line 860. Two retainers A are disposed on opposite sides of and have one set of their tabs 104 against the wall 248 of a tongue panel component C-2.1. A terminal cap component E, shown in FIG. 22, has the flat cover plate E-1 disposed on it as aforementioned. Said terminal cap E arms 296 are disposed between tabs 104 and retention means 102 of spaced apart retainers A. Said two joint covers F, shown in FIG. 35, have their retention means 481 snap-locked into retention means 100

of said spaced apart retainers A. The fastening plate A-2, shown in FIG. 3, bridges said retainers A via apertures 108 and 109 as aforementioned. The joint box section, shown in FIG. 78, provides an easy and 100 percent accessible horizontal chase by merely snapping out terminal cap E.

FIG. 79 shows a terminal cap component G-2, shown in FIG. 24, at the lower end of quarter wall 834 which seals and finishes off the bottom of said quarter wall 834 by engaging onto said panels with its retention means 304 and wing portions 308.

FIG. 80 shows a section which is cut through above the nut 718 of the post section 840 on the intercentral 896. Said post section 840 supports one end of said quarter wall 834 by virtue of terminal cap component G-2 resting upon the top base member 704 of self-leveling mechanism I shown in FIG. 61. To finish off aesthetically and to house said assembly I, a pair of pillar cover components H-3, shown in FIG. 60, are mutually interlocked as aforementioned. Pillar cover clips H-3.1, shown in FIG. 59, have their ends 664 engaged in the interior female retention means 676 of pillar cover component H-3 and their ends 666 pressed against the bottom members 706 and 728. By employing a self-gripping material in the cavity of said component H-IJ.1 no fasteners are needed and said post section 840 is vertically adjustable and self-leveling and is always 100 percent accessible for servicing.

FIG. 81 shows a building component Tee 898 (not included in my system) centered on module line 860 to which a plurality of axially spaced apart fastening components A-4, shown in FIGS. 40-42, are attached as aforementioned. Said component A is snap-locked to said component A-4 via component A a circular 109 and slotted 108 apertures and component A-4 retention means 518. The wire clip A-5, FIG. 4, via its retention means 117 is attached to the retainer A via retention means 100 in the latter. The top outside edges of the panels 858 are finished off, sealed and partially retained with the retention means 110 of the cover plate A-1, FIG. 2, inserted between the tabs 104 and the retention means 102 of retainer A.

FIG. 82 shows the uppermost part of the pillar joint box section on the intercentral 892 in which a plurality of axially spaced apart retainers are horizontally hung between joint box sections from the Tee 898 as in FIG. 81. At each pillar joint box section a retainer clip A-3.1 via its retention means 500 is inserted into apertures 108-109 of the retainer A and via its retention means 484 is snapped onto the retention means 100 of retainer A. The tongue C-2.1, FIG. 17, with a pair of vertical retainers A disposed on opposite sides of it is placed against the clip A-3.1, FIG. 38, and fastener plates A-2, FIG. 3, hold the two retainers A against said tongue C-2.1. The wall 506 of the clip A-3.2, FIG. 39, is placed against one of the retainers A and the retention means 504 is snapped into the retention means 100 of the first mentioned horizontal retainer A. The joint covers F, FIG. 35, are snapped into said vertical joint retainers A via the retention means 100 thereon. The cover plates A-1 are then snapped into place as described in FIG. 81.

FIG. 83 shows the lowermost part of the pillar joint box section on intercentral 892 through floor line 812 in which the member H, FIG. 43, engages the bottom edges of the panels 858 in the retention means 528 of component H. On the top of said component H a U-

shaped chase building component C-3, FIG. 19, is placed via retention means 271 and tabs 530. Components H and C-3 provide two separate and enclosed horizontal chases and with the terminal cap E (see FIG. 76) hold spaced apart the two retainers A. Said retainers A are under compression from the fastener component A-2 and press against opposite sides of the component H as they do against the tongue C-2.1 as shown in FIG. 76. Said joint covers F, FIG. 35, are snapped into retainers A and have their lower ends inserted into the retention means 526 of the component H. The joint cover F on the right hand side of said FIG. 83 runs to floor line 812. The other said joint cover F stops short of the floor line 812 and is engaged with the female slot formed by the tab 652 of said base clip H-1, FIG. 58, to retain said base clip H-1. The base H-2, FIG. 57, is in turn retained by said base clip H-1.

FIG. 84 shows the lowermost part of a panel section through the floor line 812 between the modular lines 825 and 826 in which the leveling mechanism J, FIGS. 64 and 65, supports the member H, FIG. 43. The retainer component H-IJ.1 is inverted and made fast to the floor to hold the leveling mechanism J stationary. The panels 874 with panel faces C-A, FIG. 20, are engaged with the component H as described in FIG. 83.

FIG. 85 shows a cross-section through the ceiling line 810 between the modular line 824 and 825 in which retainers A are horizontally hung from the Tee 898 as described in FIG. 82. Said retainer A has snapped into its retention means 100 the glazing component E-4F, FIG. 27, with the glazing filler E-5, FIG. 31, in turn snapped into the cavity 416. Said glazing filler E-5 retains the uppermost portion of the glass 818. The glazing component E-3E can be seen in the background on opposite sides of the panel of glass 818.

FIG. 86 shows the door buck E-7, FIG. 33, as a header and on the terminal cap E, FIG. 22. The said terminal cap E has disposed on its arms 296 the panel cap components G-3, FIG. 46, which in turn has disposed therebetween a panel 900. Said panel 900 is composed in this case of four individual and standard sheet building materials, the inner two of which are held between the arms 296 and the outer two of which are held in retention means 500. FIG. 86 illustrates how standard sheet materials can be held and formed in a solid panel via use of my system's multi-purpose building components.

FIG. 87 shows a mid-portion of the pillar joint box section on an intercentral formed by the modular lines 824 and 860 in which the fasteners A-2.1, FIG. 9, are employed to adjustably hold the two vertical retainers A via the heads 156 and 158 disposed in the slotted apertures 108. Each fastener A-2.1 has its male and female shanks 152 and 155, respectively, disposed in the slotted apertures 108 of opposite retainers A. The head 156 is constructed to pass through the circular aperture 109 of its respective retainer A while the head 158 may be so constructed or may be made larger than said aperture 109 so that the retainer A-2.1 will serve as a handle for pulling its respective retainer A. The bar 160 is disposed in the slotted aperture 108 of its respective retainer A to prevent rotation of the head 158 while the flat shank face of the head 156 is disposed against the wall 106 of its respective retainer A permitting rotation of said head 156.

FIG. 88 shows a cross-section through the floor line 812 between the modular lines 824 and 825 in which

the glazing filler component E-5, FIG. 31, is disposed in the cavity 426 of the two part glazing component E-2, FIG. 30. Said FIG. 88 also shows a horizontal joint box section employing two retainers A which have disposed on opposite sides thereof two terminal caps E, FIG. 22, with their arms 296 engaged in tabs 104 and retention means 102. Said glazing component E-2, FIG. 30, is engaged via the retention means 438 and 448 thereon with one of said terminal plates via the terminal plate 294 on the latter. The other said component E is resting on the floor line 812. In the instance a joint cover F is used as a base on one side of the panel section and engaged in the retention means 100 of one of the retainers A. On the other side of the panel section is the base H-2 attached to the base clips H-1 as described in FIG. 83.

FIG. 89 shows in elevation a panel construction which is disposed between and along a ceiling line 902 and a floor line 904. Said panel construction is centered on a modular line 906 shown as a broken line in FIGS. 90-95. Said elevation panel construction shows modular lines depicted by broken lines 908-913 which form intercentrals 915-921. Rearward walls are centered on modular lines 908 and 913. An intersecting wall is centered on modular line 909 and a rearward portion thereof is shown in FIG. 96 containing a modular line 914 parallel to modular line 906. The pillar joint box sections on intercentrals 915-919 and 921, shown in FIGS. 90-94 and 96, respectively, can also be ceiling joint constructions through the ceiling line 902 at any of said modular lines 908-913.

FIG. 90 shows a pillar joint box section that has panels 922 and 924 at right angles to each other. Both said panels 922 and 924 have the tongue component C, FIG. 14, inserted into the ends of the respective panels in opposite directions. The rearward panels 922, which may be made of standard building materials, have to be held fast in spaced apart relationship by the use of my multi-purpose components so that they can receive and retain the U-bends 215 of the tongue component C. The other said panel 924 is formed of four layers of standard materials laminated together between which layers the retention means 220 of the tongue component C is inserted. The clip C-4, FIG. 47, is held via retention means 560 and 220 between the face panel of the panel 924 and the respective tongue of component C. The retainer A is engaged with the other tongue component C of said panel 922 via retention means 102, 104 of retainer A and retention means 220 of component C. The opposite side of said retainer A has its retention means 102, 104 engaging on arm 296 of the terminal cap E, the other arm of which is disposed in the clip C-4 retention means 562. The terminal cap cover E-1 is disposed on the terminal plate of said terminal cap E as before described. The joint cover F is then snapped onto said retainer A retention means 100 via retention means 481. The two said panels 922 and 924 may be of solid or partially hollow type building material dependent upon usage or results required.

FIG. 91 is taken on modular lines 906 and 910 and shows a pillar joint box section on intercentral 916 in which two panels are made up of four layers each and have two core layers 926 and two outside face layers 925. One of said core layers extends beyond the other said core layer and beyond the two face layers 925 so as to form a tongue on each said panel. The tongue width (the extension of said one core layer along the

modular line 906) is equal to the width of the joint (which is equal to the width of the components A and F) in this case. Said tongue width and said joint width are each equal to the panel thickness (from the outside faces of the panels 925 measured along the modular line 910). The panels 925 and 926 may be laminated in a variety of ways to suit the particular results desired, e.g., tongues may be fabricated so that they can slip in and out of the core by laminating the core (either a semi-solid or semi-hollow core) to the two face layers. The core may be hollow by laminating the tongues to the two face layers or the core may be semi-hollow by laminating two stuck to the two face layers. After lamination the mating panel is reversably placed so that the two tongues are back to back and their face strikes off a flush plane. Two retainers A are disposed in the joint formed by the two mating tongues on opposite side thereof. The fasteners A-2.1 hold the retainers A in said joint via said circular and slotted apertures 108, 109 of retainer A. The joint covers F are retained in said joint via retention means 100 on the retainer A.

FIG. 92 is taken on modular lines 911 and 906 and shows a pillar joint box section on intercentral 917 in which the tongue ends of two panels are made up of three layers 925 and 929 each of standard building materials if so desired. The tongue core layer 929 is longer than the face layers 925 thus forming tongues each having a width (the extension of the core layer 929 along the modular line 906) equal to one half of the width of the joint. Said panels have hollow cores as shown in FIG. 110. Said joint always having a width equal to that of the panel thickness. The panels in this case do not have to be prelaminated by virtue of the retainers G, FIG. 5, on one side of the panel construction and on the other side thereof the retainer A and the joint cover G-1, FIG. 37, both of which components G and G-1 have their respective wing portions disposed against the facing of the panels 925. The fasteners A-2 are then placed through apertures 108, 109 and 108A, 109A of said joint retainers A and G and fastened thereagainst. The joint cover F is snapped into the retainer G and the joint cover G-1 is snapped into the retainer A.

FIG. 93 is taken on modular lines 906 and 913 and shows a pillar joint box section on intercentral 918 in which the two panels are made up of four layers 930 and 931 each of standard building materials if so desired. The core layers 931 are longer than the face layers 930 thus forming tongues each having a width (the extension of the core layers 931 along the modular line 906) equal to one quarter of the width of the joint. Said panels are at right angles to each other and must be prelaminated before being installed. Component clips C-5 and C-4 are disposed between the outside face layer 930 and the outside core layer 931. The clip C-5 has its one end engaged between the tab 104 and retention means 102 of a retainer A. The opposite tab 104 and retention means 102 of said retainer A has disposed in it the arm 296 of said terminal cap E, the opposite arm 296 of which is disposed in the retention means 558 and 562 of the clip C-4. The terminal cap component E has the terminal cap cover plate E-1 carried thereon. The retainer A has the joint cover F snap into its retention means 100.

FIG. 94 is taken on the modular lines 906 and 912 and shows a pillar joint box section on intercentral 919 in which the building panels can be of mixed type as before described and the core 932 may be solid or made

up of a double layer. The inside face layer 933 must be prelaminated to the core 932 while the opposite outside face layer 934 does not have to be prelaminated because of the retention wings of the retainer G. The tongues on said panels have a width (the extension of the core 932 along the modular line 906) equal to one quarter of the panel joint width. The retainer A is disposed on one side of the joint and the retainer G on the opposite side thereof and may retain panels 933 depending upon whether they are or are not laminated to the core 932. The two said retainers G and A are fastened together by their fastener A-2 as aforementioned. The joint covers F are then snap-locked into the retainers G and A, respectively.

FIG. 95 is taken on modular lines 909 and 906 and shows a pillar joint box section on intercentral 920 in which the panels must be prelaminated with slots between the two face layers 936 to receive the U-shaped case building panel component C-3. The two C-3 components on the modular line 906 have, via their retention means 271, sections of spaced apart retainers A engaged therewith via the retainer A tabs 104 and retention means 102. The other two C-3 components on the modular line 909 have, via their retention means 271, on one side thereof sections of retainers A engaged therewith via tabs 104 and retention means 102 on the latter. Said two spaced apart retainers A on the left hand side thereof have disposed on their retention means 100 the element A-3.2, FIG. 39, against which is pressed the opposite retention means 271 of component C-3.

FIG. 96 is taken on the modular lines 914 and 909 and shows a pillar joint box section on intercentral 921 in which semi-solid panels are held with the U-shaped chase member C-3. Said C-3 retention means 271 are first partially snapped into tab 104A and retention means 102A of spaced apart retainers G and then the panels 927 on one side and 935 on the other side are inserted between wing portions of the retainers G and the walls of C-3 which drives the whole assembly toward the center of the joint to complete the snap-locking of the members C-3 and G. The joint covers F are then snapped into retention means 124 of retainer G.

FIG. 109 shows the lowermost part of a panel section through the floor line 904 between modular lines 909 and 910 in which the said retainer H-IJ.1, FIG. 61, is fastened to said floor line 904 with its arms 760 projecting upwardly for retaining the self-leveling mechanism I, FIG. 61, on which the panels 925 and 926 are supported. A pair of extension plates H-IJ, FIG. 55, are retained on said self-leveling mechanism I, one on top of the top base 704 via retention means 620 and 758 and the other on top of the bottom base 750. Fasteners 732 extend through the apertures 614 and threadably engage with the base member 750. The terminal cap component G-2, FIG. 24, which has its upper arms 304 projecting between the panels 925 and 926, rests upon the upper plate H-IJ. At least two base fastener clips H-1.I, FIG. 56, are then snapped via their retention means 628 to both the upper and lower plates H-IJ, at least one of each side thereof as aforementioned. Two base members H-2, FIG. 57, are fastened to the base clips H-1.I, one on each side of the module line 906. The wall 624 of the lower base clip H-1.I is engaged in the retention means 636 and the wall 624 of the upper base clip H-1.I is engaged in the retention means 644.

FIG. 110 shows the lowermost part of a section through the floor line 904 between the modular lines 911 and 912 in which the leveling mechanism J, FIGS. 64 and 65, is used to support the panels 924 and 933 the lower ends of which rest in the upper base member 800. Said base clips H-1.J, FIG. 63, are snap-locked to the lower base member 800 and said base clips H-1.J1, FIG. 62, are snap-locked to the upper base member 800 in accordance with the dash dotted indicating lines extending between FIG. 65 and each of FIGS. 62 and 63. Said leveling mechanism J with said base clips assembled thereon is placed on the floor line 904 and then the building panel is placed in the upper base member 800. Two base members H-2, FIG. 57, are fastened to the upper and lower base clips H-1.J1 and H-1.J, respectively, one on each side of the module line 906. The wall 772 of the lower base clip H-1.J is engaged in the retention means 636 and the wall 766 of the upper base clip H-1.J1 is engaged in the retention means 644.

FIG. 97 shows in elevation a chase panel construction which is disposed between and along a ceiling line 946 and a floor line 947. Said chase panel construction, while not intended to be centered on module lines, is adapted to be used in conjunction with the perfect modular systems shown in FIGS. 66 and 89 to form a complete and unique building panel construction system and at the same time to accommodate large main line runs of electrical, plumbing, heating, cooling and other mechanical service equipment for the particular building in which the total system is to be employed. Said chase panel construction, however, is intended to be centered on one of two sets of perpendicular module lines while said perfect module system shown in FIGS. 66 and 89 are, of course, centered on both sets of perpendicular module lines.

FIG. 98 is taken on a modular line 945 and shows a pillar joint section in which the chase spacer member B, FIG. 7, is disposed on said module line 945. Said chase spacer member B has via hook 134 and protuberant 136 retention means two chase spacer members B-4, FIG. 11, engaged via their apertures 185 and female slot with retention means 180 thereon. Two joint covers G-102B, FIG. 53, are snap-locked via their retention means 606 onto said chase spacer members B-4 via their external retention means 180. Against the wing portions 182 of the said members B-4 are two spaced apart double layer panels, the face panels of which are 950 and the back-up panels of which are 952. Against one side of the component B is a single layer panel 951. Holding the panels 950, 952 and 951 in place are said two joint covers G-102B and its facing G-121B, FIG. 54, slid onto it. The joint section shown in FIG. 98 provides a means and method to finish off a wall end on a large chase panel construction.

FIG. 99 is taken on a modular line 944 and shows a pillar joint section in which a chase spacer B is centered on the module line 944 and has two chase spacers B-4 engaged on opposite sides thereof as described in FIG. 98. Against the wings of the member B-4 are the rear back-up panels 952 and against the wings of the retainers G, FIG. 2, and the joint cover G-1, FIG. 37, are the facing panels 950. The said facing panels 950 are cut shorter to provide space for the joint retainers A and G. The said retainer A and the member B-4 holds the tongue portion of the rearward back up panels 952. The joint cover G-1 is snapped into retention means

100 of the retainer A and serves to retain the rearward facing panel 950. On the opposite side of the chase spacer B the retainer G and the member B-4 hold both the panels 952 and 950. Both the retainers A and G are snapped onto the B chase spacer via the hook snap-lock means 134 on said member B and via aperture means 108, 109 and 108A, 109A, respectively, on said retainers A and G. The joint cover F is then snapped into said G retainer via retention means 124 on the latter.

FIG. 100 is taken on the modular line 943 and shows a pillar joint section in which the chase spacer member B is centered on the module line 943 and has the two chase spacer members B-4 engaged on opposite sides thereof as aforementioned in FIG. 98. On the opposite sides of the members B-4 and against the wing portions 182 thereof are two double layer panels of building materials the face panels of which are 950 and the back-up panels of which are 952. Holding said panels 950 and 952 in place against said wing portions 182 are the two joint cover members G-100B, FIG. 49, with its facing G-101B carried thereon via the retention means 574 on G-100B snap-locked on said chase spacer B-4 via exterior retention means 180.

FIG. 101 shows a pillar joint section which is the same as that shown in FIG. 100 except that it is on the module line 942 and that on the rearward side thereof in lieu of the facing component G-101B there is a rearwardly extending wall which comprises the fastener clips A-4, FIG. 40, engaged via the retention means 512 and 516 on the U-bends 570 of the joint cover member G-100B, FIG. 49. Snap-locked onto said clips A-4 is the chase spacer B, FIG. 7, via its slotted aperture 140 thereon. Said chase spacer B has disposed in both its retention means 134 and 136 the reversible panel retainer clips B-6, FIG. 12, via retention means 195 on the outside female retention means of the latter. Said joint covers G-110B, FIG. 51, are engaged via their retention means 588 with the retention means 195 and with the intermediate female retention means on the retainer clips B-6. Said double panels 958 are held between the wall 196 of the retainer clips B-6 and the facing member G-111B, FIG. 52, which is slidably engaged on said joint cover 110B.

FIG. 102 shows a pillar joint section which is similar to that shown in FIG. 100 except that it is on the module line 941 and that its rearward side has a single panel construction 961 and the chase spacer member B-5, FIG. 10, is engaged via its slotted apertures 168 and its center female retention means on the said chase spacer member B via the chase spacer member B hooks 134 and retention means 136. Said joint cover G-100B, FIG. 49, with the plate facing 101B, FIG. 50, thereon is engaged with said chase spacer member B-5 via its retention means 574 disposed on the two outside female slots with retention means 170 on said chase spacer member B-5. Said panels 961 are held between the wings 174 of the member B-5 and the joint cover member G-100B.

FIG. 103 is taken on a modular line 940 and shows a pillar joint section in which the chase spacer member B, FIG. 7, is disposed on said modular line 940. Said chase spacer member B has two chase spacer members B-5, FIG. 10, engaged on opposite sides thereof as aforementioned in FIG. 102. Two spaced apart panels D-B, FIG. 21, have filler panels 962 disposed in retention means 282 and its walls 290 disposed against the

wing portions 174 of said B-5 chase spacer member. One wall 292 with retention means 284 of each of the two panels D-B are engaged and snap-locked into spaced apart female retention means of said member B-5 on opposite sides of chase spacer member B.

FIG. 104 shows a hanger and U-shaped building components 964 (not included in my system) just above ceiling line 946 and on modular line 941. Perpendicular to modular line 941 a plurality of axially spaced apart fastening components A-2.1, FIG. 9, are attached via apertures in the U-shaped member 964 through which the male shank portion 152 can pass and be retained thereon by the flat face of the hexagonal head 156. Space chaser track member B-2, FIG. 8, has disposed against its back wall the reinforcement and retaining clip, B-2.1, FIG. 6, both of which have their slotted 108C-108B and circular 109C-109B apertures, respectively, aligned. Said fastening component A-2.1 has its female shank portion 155 passing through said circular apertures and then threadably and adjustably engaging its mating male shank portion 152. Said fastening component A-2.1 then has its anti-rotational bar 160 slid into said slotted apertures with its hex head 158 disposed against the body 126 and retaining said components B-2.1 and B-2, respectively. The space chaser member B, FIG. 7, via pins and/or rods 953 disposed in its holes 142, which are accessible on exterior side of wall 145 via slotted apertures 150 on retention means 148, respectively, are suspended from said suspended chase spacer track member B-2. On opposite walls 145 on said track member B-2 a plurality of retainer clips B-6, FIG. 12, are disposed via their retention means 200 so that the female retention means 195 are outboard in respect to space chaser track member B-2. Two angle cover plates A-1, FIG. 2, are disposed on opposite sides of said track member B-2 via their retention means 110 engaged in centrally located female retention means of said retainer clips B-6. The panels 961 and 950 with joint covers G-100B with their facing G-101B are disposed as aforementioned in FIG. 102.

FIG. 105 shows a vertical view of a pillar joint section which is similar to that shown in FIG. 104 except that it is on module line 943 and at a midpoint just above the horizontal sectional view of FIG. 100 which is taken on the same modular line. The channels 967 (not included in my system) rest on the bottom portion of a plurality of centrally aligned apertures 138 of the chase spacer members B, FIG. 7, which are suspended from ceiling line 946 as aforementioned in FIG. 104. Fastener clips B-3, FIG. 13, have their retention means 204 engaged on the body 132 of member B at the sides of said apertures 138 and with their retention means 208 snap-locked to the upward extending arms of said channel 967. Said chase spacer member B is discontinued at 966 and thus affords a horizontal chase 968. The aforementioned apertures 138 for the channel 967 have multi-purpose advantages such as alignment and stiffening of said panel construction, availability for hanging of conduits and also provides 100 percent accessible raceways.

FIG. 106 shows a pillar joint section which is the same as that shown in FIG. 105 except that it is centered on module line 941 and that it shows the discontinuance of chase spacers B-5, FIG. 10, and B-4, FIG. 11, as shown in FIG. 102 taken on the same modular line 941 and pillar joint section as aforementioned in

FIGS. 102 and 104. This is to show, in part, some of the 100 percent accessible chase fabrication in that all members may be omitted between the panels 950, 952 and 961 and their respective joint cover members on opposite sides thereof.

FIG. 107 shows the chase spacer track member B-2, FIG. 8, having retainer clips B-6, FIG. 12, disposed on it, suspended by chase spacer B, FIG. 7, in the same manner that B was suspended in the aforementioned vice versa construction in FIG. 104. Two joint covers G-120B, FIG. 53, are snap-locked via their retention means 606 into said retainer clips B-6 via their retainer means 195. Disposed against the exterior of space chaser track member B-2 and held by the joint covers G-120B and their facing G-121B are the two panels 950 and the panel 972 as described in FIG. 98. A self-contained and suspended header construction is thus formed.

FIG. 108 shows a section which is similar to that shown in FIG. 104 except that it is between modular lines and reveals the same fabrication that is aforementioned in pillar joint sections on modular line 941, except that the chase spacer track member B-2 is not suspended but rather rests on the floor line 947. The pins and/or rods 953, as described in FIG. 104, may be used in FIG. 108 to suspend the track member B-2 or to lock B-2 to B or for weight-bearing to transfer some of the compression to suspension. On the other hand, the pins and/or rods in FIG. 108 may be omitted entirely. The base clip H-1, FIG. 58, is disposed on the face portion of the panel 950 via joint cover G-100B, FIG. 49, arms 572 inserted in the slot 653 and its facing plate being inserted between the tab 652 and the body 650 of said base clip member H-1. The base member H-2, FIG. 57, is disposed on said base clip H-1 as aforementioned.

What I claim is:

1. In a wall panel system having a plurality of building components connected at a wall joint, a retainer member for joining said panel components at said wall joint, said retainer member comprising a longitudinal member having a U-shaped cross section, the base of said U-shaped member having longitudinally extending surface deformations on the opposite sides of said base adjacent the legs of said U-shaped retainer member;

a plurality of longitudinally spaced tab means carried by said base on said opposite sides thereof and traversing said longitudinally extending surface deformations, said tab means and said deformations cooperating to form a compressive snap lock means therein between to receive and hold portions of said wall panel building components on said opposite sides of said retainer member, said member legs having opposing surface deformations formed on the inner sides of said legs to define second snap lock means thereinbetween for receiving and holding a second building component of said wall panel system.

2. The wall panel system defined in claim 1, wherein said tab means are disposed above said first mentioned base surface deformations and define an opening on said opposite sides of said base to receive said portions of said wall panel building components, said tab means being punched out section of said base.

3. The wall system defined in claim 1, wherein said retainer member further comprising longitudinally spaced slots extending through said base to permit the

passage therethrough of a coupling means for fastening said retainer member to a second building component.

4. The wall system defined in claim 1, wherein each of said longitudinal base deformations on each side of said base comprises a plurality of parallel protrusions extending along the longitudinal length of said base, said tab means being punched out portion of said base.

5. The wall system defined in claim 1, wherein said second snap lock means formed on said member legs are outwardly formed protrusions on each leg and extending the full longitudinal length of said base.

6. The wall system defined in claim 1, wherein each

of said longitudinal base deformations on each side of said base comprises a plurality of parallel protrusions extending along the longitudinal length of said base, said tab means being punched out portion of said base, said second snap lock means formed on said member legs being outwardly formed protrusions on each leg and extending the full longitudinal length of said base, said retainer member further comprising longitudinally spaced slots extending through said base to permit the passage therethrough of a coupling means for fastening said retainer member to a second retainer member.

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