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Costruba

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[54] **SUPPORT STRUCTURE FOR SHELVING**

[75] Inventor: **Peter Costruba,** Pico Rivera, Calif.

[73] Assignee: **Angeles Metal Trim Co.,** Los Angeles, Calif.

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[21] Appl. No.: **446,742**

Related U.S. Application Data

[62] Division of Ser. No. 292,093, Sept. 25, 1972, Pat. No. 3,848,364, which is a division of Ser. No. 48, Jan. 2, 1970, Pat. No. 3,714,748.

[52] **U.S. Cl.** **52/36;** 52/720; 52/731; 248/243

[51] **Int. Cl.²** **A47F 5/00**

[58] **Field of Search** 52/36, 720, 729, 730, 464, 52/710, 731; 248/243

[56] **References Cited**

UNITED STATES PATENTS

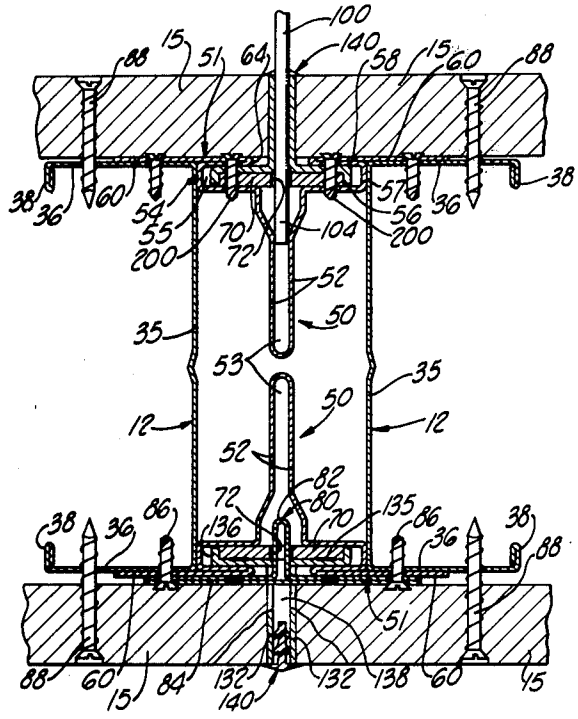
1,253,764	1/1918	Zahner	52/720
1,893,480	1/1933	Mitchell	52/710
2,691,502	10/1954	Jones	52/36
2,845,154	7/1958	Duffield	52/464
2,994,413	4/1961	Levy	52/36
3,394,507	7/1968	Doke	52/730
3,407,547	10/1968	Doke et al.	52/729
3,492,766	2/1970	Andrews	52/36
3,509,669	5/1970	Plemeng	52/36
3,562,970	2/1971	Schwartz	52/729
3,570,198	3/1971	Ruhnke	52/729

Primary Examiner—Ernest R. Purser
Assistant Examiner—Henry Raduazo
Attorney, Agent, or Firm—Reed C. Lawlor

[57] **ABSTRACT**

A pair of upstanding channeled studs are positioned vertically between an overlying horizontal cap and a horizontal floor track positioned beneath and parallel to the cap. The studs have main webs spaced apart to receive a pair of elongated upstanding substantially T-shaped interlock members which are secured in opposed substantially parallel relationship between the webs of the studs. Each interlock member has reversely folded portions to provide shallow spaced channels for adjustably receiving a vertical slotted bar and the inner ends of shelf brackets and clips. Each interlock member has a vertical inward passage behind the spaced channels for the reception of the inner ends of shelf brackets. An elongated slotted bar having a vertical row of slots is disposed in the vertical channels. Elongated stabilizing flanges extend outwardly from each slotted bar along each side of the row of slots to stabilize shelf brackets when positioned in the slots. T-shaped clips are inserted into slots near the upper and lower ends of the slotted bar and are secured to the interlock member so that the slotted bar is adjustably anchored in the interlock member. The inner ends of the shelf brackets are inserted between the stabilizing flanges through the slots, and into the vertical passages in the respective interlock members. T-shaped concealing members are inserted vertically between the stabilizing flanges and between adjacent shelf brackets in order to conceal from view the recess that exists between the stabilizing flanges and the junction between the stabilizing flanges and adjacent sheets of wallboard.

4 Claims, 6 Drawing Figures



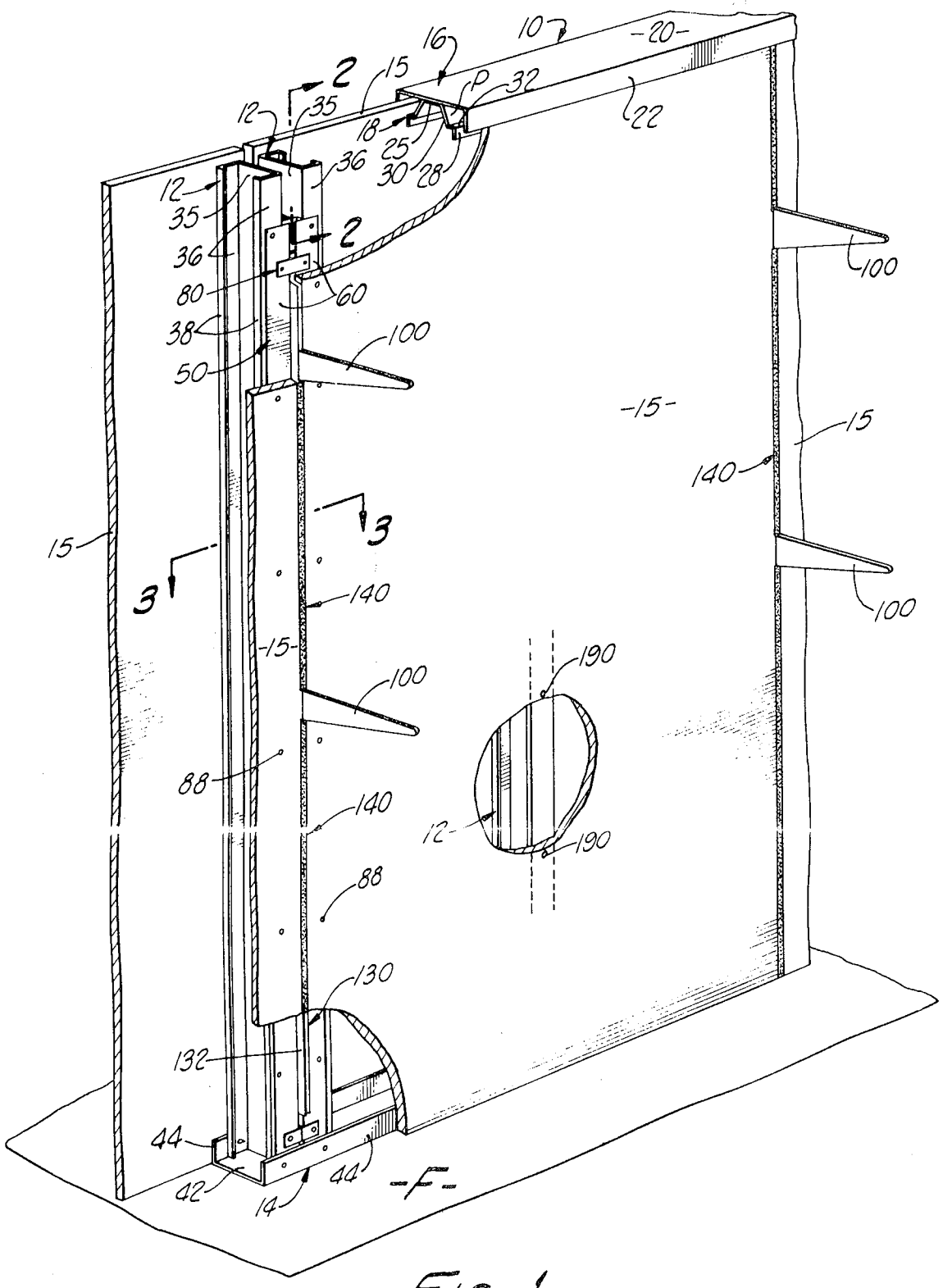

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FIG. 1.

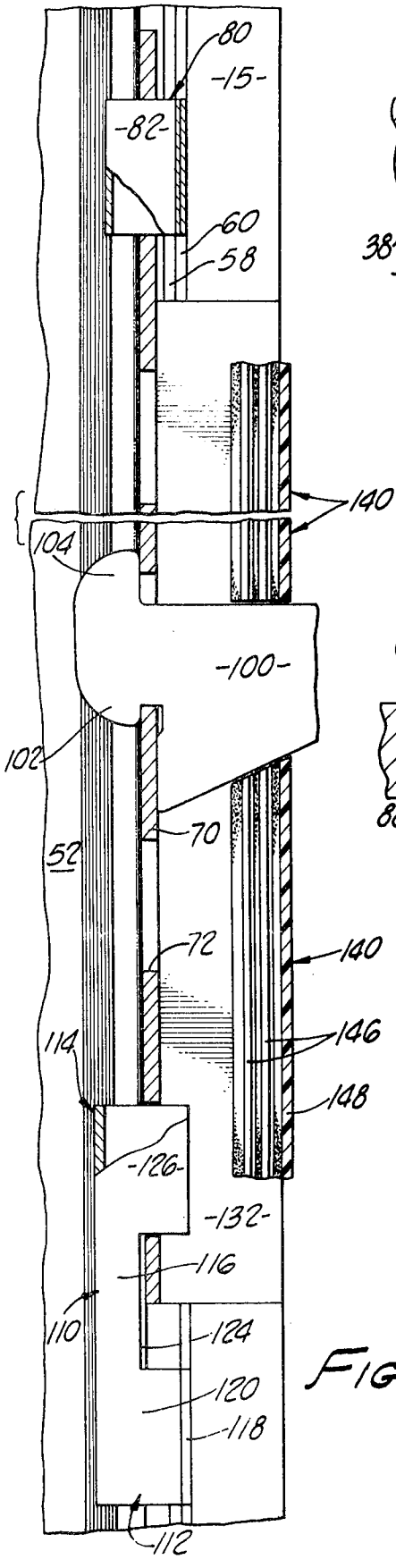

FIG. 2.

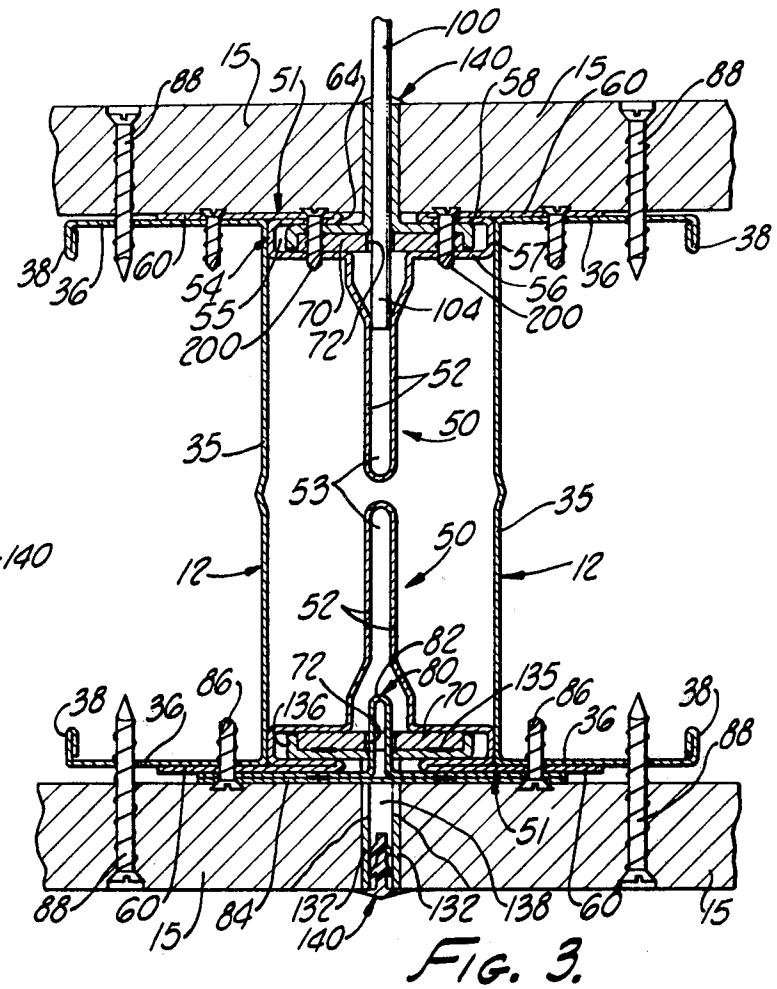

FIG. 3.

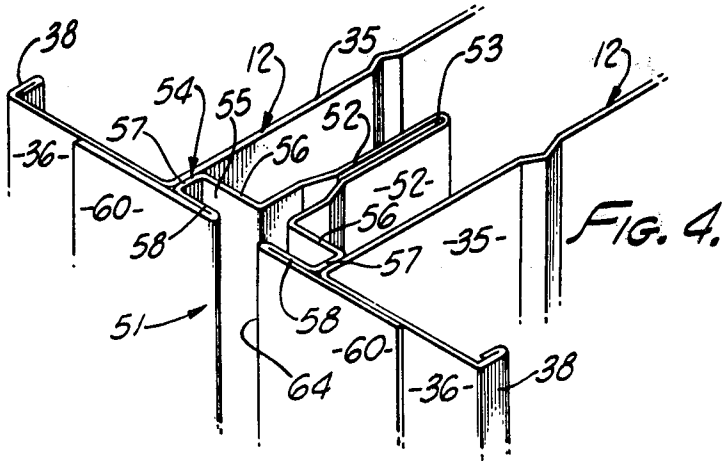

FIG. 4.

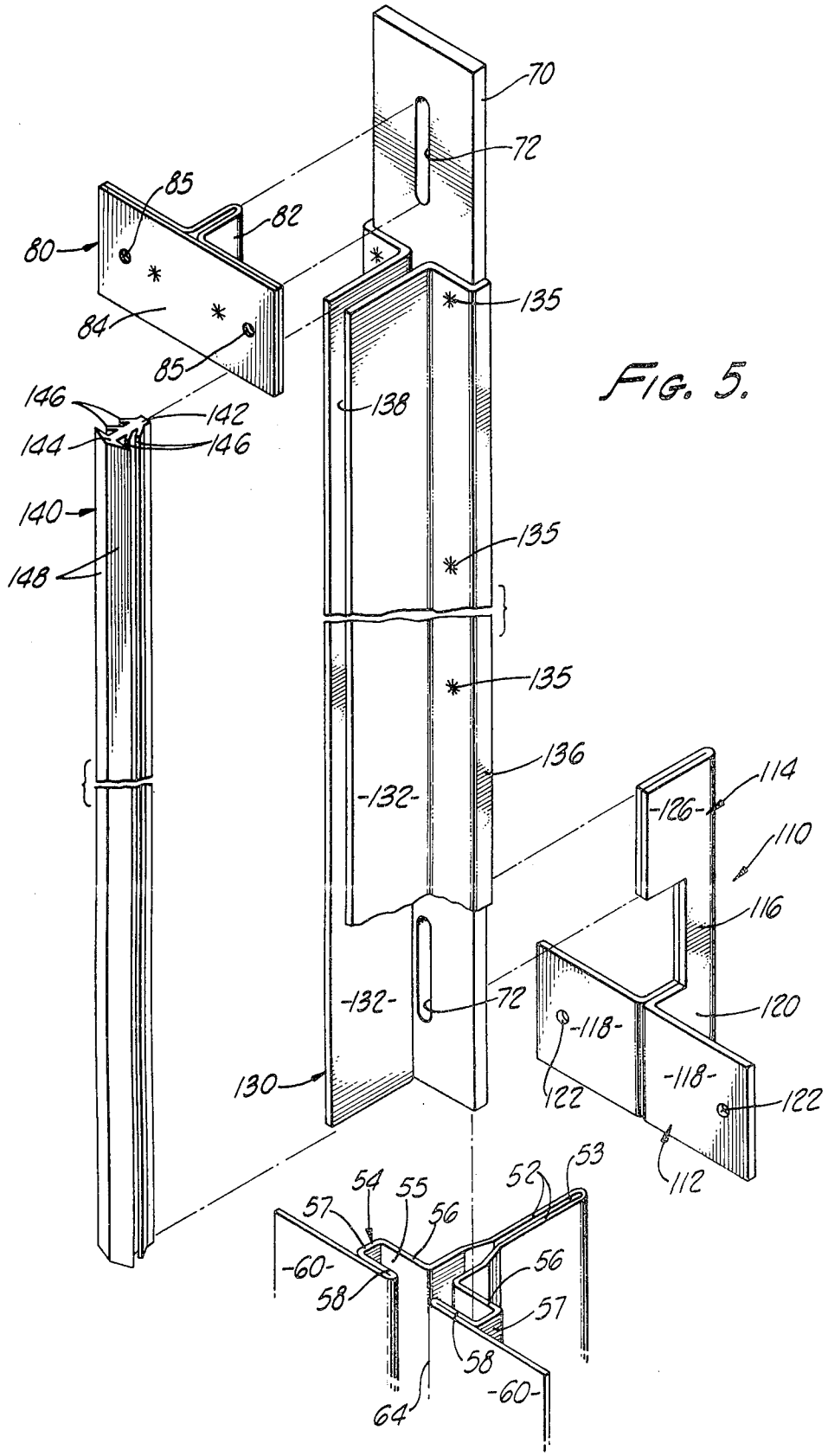
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FIG. 5.

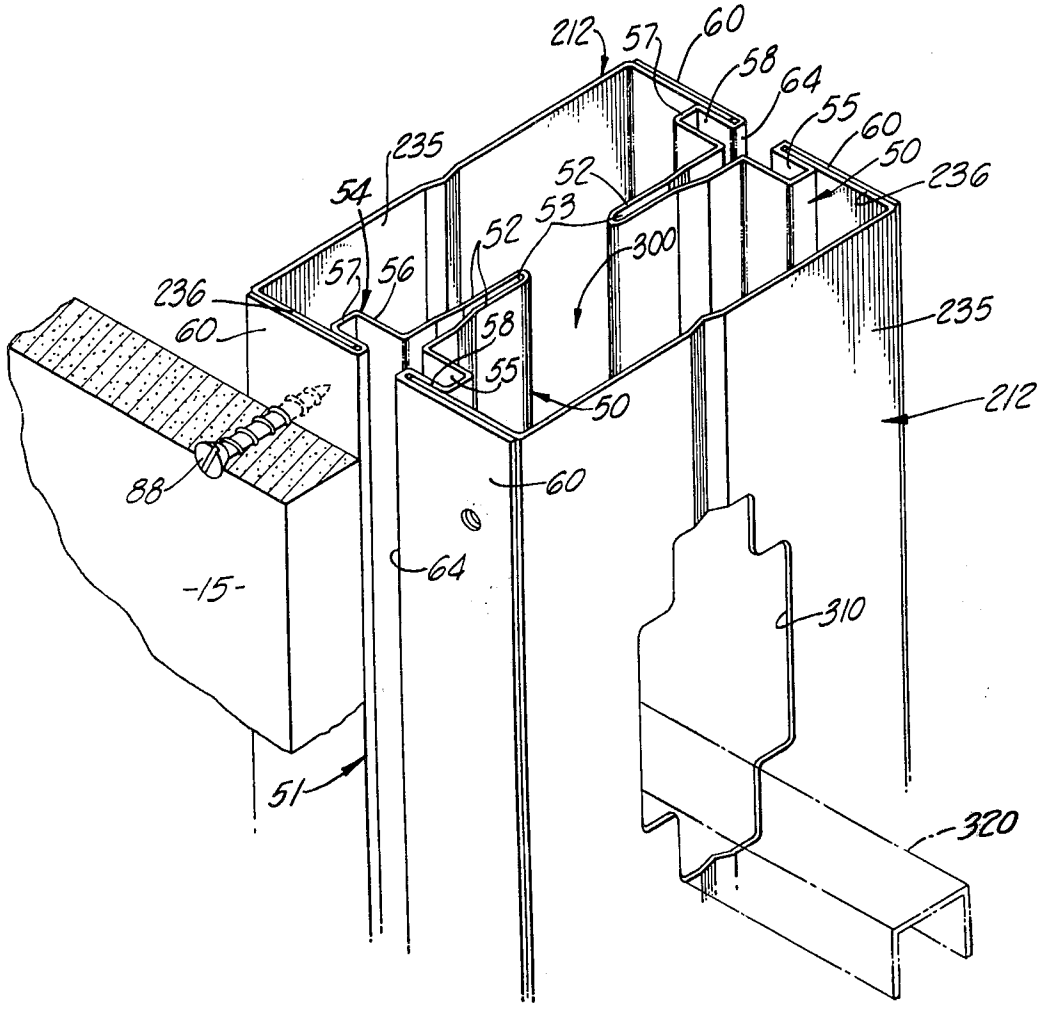
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FIG. 6.

SUPPORT STRUCTURE FOR SHELVING

CROSS REFERENCE TO RELATED APPLICATIONS

This is a division of application Ser. No. 292,093 filed Sept. 25, 1972 now U.S. Pat. No. 3,848,364, which is a division of application Ser. No. 48 filed Jan. 2, 1970 and now U.S. Pat. No. 3,714,748.

BACKGROUND OF THE INVENTION

This invention relates to structures for interior walls of buildings and the like, and more especially to metal structures particularly adapted for use as part of partition walls in buildings, such as large merchandising establishments where merchandise is desirably displayed on shelves carried by supporting brackets and the interior walls.

The particular object of the invention is to provide an efficient, durable, and comparatively inexpensive upstanding wall stud construction which may carry wall material, such as wallboard and the like, and support brackets to support shelving in properly adjusted position. A further object is to provide a separately saleable interlock member for use with various types of wall construction.

SUMMARY OF THE INVENTION

This invention provides a wall structure to which sheets of wall material may be anchored. In this invention, a pair of elongated upstanding channeled stud members, having their main webs spaced apart, are disposed in opposed substantially parallel relationship. An elongated upstanding interlock member, having therein shallow elongated vertical channels extending longitudinally of the interlock member and adapted to receive a support bar therein and having an elongated vertical passage behind said vertical channels, is rigidly secured between the stud main webs. An elongated support bar, having a slot communicating with the inward vertical passage, is positioned in the vertical channels. Anchoring means secure the support bar in the vertical channel.

BRIEF DESCRIPTION OF THE DRAWINGS

The presently preferred form of the invention is disclosed in the accompanying drawings wherein:

FIG. 1 is a partly sectional perspective view showing one embodiment of this invention in assembled form;

FIG. 2 is a partly sectional elevational view taken along the line 2—2 of FIG. 1;

FIG. 3 is a sectional plan view taken along the line 3—3 of FIG. 1 showing two embodiments of the invention;

FIG. 4 is a partly sectional enlarged perspective view of one embodiment of this invention;

FIG. 5 is an exploded partly sectional perspective view of one embodiment of this invention;

FIG. 6 is a partly sectional enlarged perspective view of another embodiment of this invention.

DESCRIPTION OF ONE EMBODIMENT

With reference to the construction shown in FIG. 1, a dual element cap 10 is illustrated in operative position at the top of a drywall partition which employs studs 12 above which the cap 10 is disposed and in line with which the inner element thereof is placed. The lower ends of the studs 12 are mounted on the floor track 14. The lower ends of the wallboards 15 are positioned in contact with the floor track 14.

The cap 10, the studs 12, and the floor track 14 may all be of various configurations and made of various materials as will become apparent, but the best embodiment of these elements now known is shown and described herein. Also, the invention will be described herein primarily in connection with drywall construction, but it will be apparent that various other types of partition wall materials may be employed in this invention.

Cap 10, studs 12, and floor track 14 are preferably constructed of metal, such as sheet steel and the like. Cap 10 includes two elements of which one element 16 is an overlying cap member and the other is an inner dependent cap member 18 positioned to span the upper ends of the various metal studs 12 used along the wall.

More particularly, the upper cap element 16 is in the form of an elongated downwardly facing channel member which includes elongated main wall or web 20 and relatively narrow flanges 22 depending downwardly from the side edges of the web 20 and extending lengthwise thereof. The inner dependent cap element 18 includes a longitudinally extending web 25 disposed in parallel relation with the web 20 and integrally or rigidly secured thereto. Depending from the edge portion of the web 25 are longitudinally directed flanges 28 extending appreciably below flanges 22 of the cap element 16. The flanges 28 snugly engage the outer sides of the metal studs 12 when in operative position. The upper edges of the flanges 28 are integrally joined by ledges 32 to sloping connector walls 30 which extend inwardly as they extend upward. The sloping connector walls are integrally joined to the edges of the web 25. Such a cap structure is described and claimed in U.S. Pat. No. 3,397,495.

The studs 12 employed in this wall structure are typically in the form of C-shaped channels formed of 26 gauge steel, or about 0.022 inch in thickness, and having approximately a 1-by-4 inch overall cross-section. Metal studs 12 include a vertically extending wall or main web 35, laterally directed vertical flanges 36 integral with the edges of the web 35 and constituting the sides of the studs, and turned-in stiffening flanges 38 which are relatively narrow.

In the assembled partition wall, pairs of the studs 12 are employed periodically along the partition wall between the floor track 14 and the cap 10. The web 35 of each stud 12 is arranged back-to-back in opposed spaced relationship with respect to the corresponding web 35 of the other stud 12 of the pair. Interlock members 50, presently to be more fully described, are secured betweeen the spaced webs 35 (see FIGS. 3 and 4) to form a complete stud and interlock assembly. Such stud assemblies may be produced in the shop or in the manufacturing plant in any appropriate length and then moved onto the job for final wall assembly. Slotted bars 70 and clips 80 and 110 may also be temporarily installed on the interlock members 50 at this time and later properly adjusted and rigidly secured. The lower ends of the studs 12 are rested on the bottom wall 42 of the floor track 14. At the sides of the bottom wall 42, upstanding flanges 44 are integrally provided and extend longitudinally of the length of the bottom wall 42 being generally coextensive with the longitudinal extension of the dual cap 10 in a horizontal direction.

The flanges 36 of the studs 12 are disposed outwardly in opposed relationship and bear against the inner surfaces of the flanges 44 of the floor track 14 and the inner surfaces of the flanges 28 of the cap 10. The stud flanges 36 are secured to the floor track flanges 44 and the cap flanges 28 by nailing or the like.

The bottom wall 42 is secured to the floor F by nails or the like. In addition, it is usual to provide further stability to the partition structure by securing either the studs 12 at opposite ends of the partition wall assembly to structural members or by securing the cap 10 to the ceiling or both. This may be done by nailing, welding, or the like.

When the interlock and stud assembly of this invention is positioned between the floor track 14 and dual cap 10, the upper end of a section of wallboard 15 of appropriate length is introduced into a tapered pocket P (FIG. 1) which is provided between the flange 22 of the upper element 16 and the flange 28 and a sloping wall 30 of the inner element 18. As will be noted, the upper part of the pocket P is much wider than the vertical passageway provided between the flanges 22 and 28. Thus, the top of the wallboard 15 may be readily introduced upward into the pocket P by merely moving the lower end of the wallboard 15 outwardly to dispose the board at an angle, inserting the top of the wallboard 15 into the pocket P, and then swinging the lower end of the wallboard 15 into position adjacent to the stud 12 and interlock member 50 and allowing the lower end of the wallboard to slide downwardly onto the floor F. With the wallboard in this position, it is held vertically by the cap element 10 and is maintained in the horizontal direction between stabilizing flanges 132 and by screws 88 securing it to the stud flanges 36, as is shown in FIGS. 1 and 3. A wall structure employing such a cap is described and claimed in U.S. Pat. No. 3,397,495.

An important aspect of the wall construction of this invention is that provision be made in the stud and interlock assembly for the mounting of shelf brackets or other supports. In the present construction this is accomplished through the medium of a pair of upstanding elongated T- or V-shaped interlock members 50 which are secured between the webs 35 of the pair of studs 12 (FIGS. 3 and 4). An upstanding narrow plate or slotted bar 70 is mounted in shallow vertical channels 55 formed by the flanges 51 of each interlock member 50. Each slotted bar 70 is preferably flat and provided along its vertical median line with vertically disposed equally spaced slots 72 for reception of the inner ends of brackets 100. The slots 72 are preferably all of the same size. These bars are conveniently formed from elongated steel stock of about three-thirty-seconds inch or one-eighth inch in thickness and have considerable load supporting ability adequate for the purposes here required.

As is shown in FIGS. 1, 3, 4, and 5, the stem of each T-shaped interlock member is U-shaped and comprises a pair of substantially parallel legs 52. Opposed outstanding folded flanges 51, having reversely folded portions 54 and outwardly extending portions 60, are formed integrally with the outer vertical edges of the legs 52 of each T-shaped interlock member 50 to form the head of the T. Each reversely folded portion 54 is reversely bent to provide a vertical channel 55. With this arrangement, each reversely folded portion 54 provides an inner vertical wall 56, a vertical connecting wall 57, and a re-entrant opposing vertical wall 58. Such a construction is readily reproducible from steel sheeting having a thickness of about 0.022 inch.

Re-entrant wall 58 leads to a position somewhat short of the projection of the legs 52 of the interlock member at which position flange 51 is again reversely bent to form an outer wall or outwardly extending portion 60. Thus, there is provided between the outwardly extending portions 60 an elongated vertical entryway 64 sufficiently wide to allow the inner end of a bracket 100 to pass into a slotted bar 70. As is also seen in FIGS. 1, 3, and 5, the two opposing vertical U-shaped channels 55 provide a sufficiently wide slot or runway for the reception of a slotted bar 70. The legs 52 of the interlock member 50 behind the bar 70 are laterally offset to provide a U-shaped pocket or elongated vertical passage 53 into which the inner portion of the shelf bracket 100 enters to contact legs 52 after being passed through a corresponding slot 72 in the slotted bar 70. The contact between the legs 52 and the inner portion of the shelf brackets 100 stabilizes the shelf brackets 100 against lateral swaying at their outer shelf-supporting ends.

The closed end of the "U" of the passage 53 constitutes the portion of the interlock member which is spaced farthest from the flanges 51 in a horizontal plane. The closed end provides an extremity of the interlock member and not secured to any other member.

The pair of interlock members 50 are secured between the main webs 35 of the studs 12 in opposed spaced relationship by securing means 86, such as screws, rivets, or the like, passing through the outwardly extending interlock portions 60 and the stud flanges 36. The interlock members 50 are disposed in parallel relationship with the entryways 64 facing outwardly for the reception of the inner end portions of shelf brackets 100 or other supports.

The entryway 64 serves two purposes. One purpose is to provide for the insertion of anchoring clips 80 and 110, as best illustrated in FIGS. 2 and 5, which are employed to anchor the slotted bar 70 in adjusted position. The other purpose is to permit the installation of inner ends of shelf supporting brackets 100 as indicated in FIGS. 1, 2, and 3. The inner or rearward end of the bracket 100, which is to be tipped to an angular position for installation, is insertable in any one of the slots 72 of the slotted bar 70 and may include both an upper retention tongue 104 to engage behind the rear wall of the bar 70 above the respective slot 72 and also a lower retention tongue 102 that engages behind the rear wall of the bar 70 below the respective slot 72 when a bracket 100 settles into operative position. In order to accommodate this inner tongue section of the bracket 100 when installed in its operative position, the lateral legs 52 of the T-shaped interlock member 50 are desirably spaced in relationship to each other by vertical passage 53 to snugly receive such inner end portions of the bracket 100 and thereby limit or prevent swinging movement of the outer end of the respective bracket 100.

An important feature of one embodiment of this invention resides in the employment of clips as anchoring means for securing the slotted bar 70 in adjusted relationship to the interlock member 50. The two clips 80 and 110 and their use are best shown in FIGS. 2 and 4. Either clip may be employed exclusively in this embodiment of the invention or both types of clips may be employed together.

Clip **80** is generally T-shaped and includes a stem portion **82,** which is double walled, and a head portion or cross-element **84,** which is also double walled. The function of the stem **82** in each instance is to pass through entryway **64** and to enter one of the slots **72** in the slotted bar **70,** other than a slot carrying a bracket **100,** and to engage such slot **72** snugly enough to hold the bar **70** in adjusted position. Also, the stem **82** yieldably fits its slot **72** so that it snaps into position and is thereby retained within the slot by friction while the bar **70** is being adjusted. The function of the crosshead **84** in each instance is to fixedly engage the outwardly extending flange portion **60** of the interlock member **50.** Such fixed attachment may be effected through the medium of self-threading screws **86** (FIG. 3) or the like. Screws **86** are introduced through holes **85** in the head portion of each clip **80,** through the outwardly extending flange portions **60** of the interlock member, and through the flanges **36** of the studs **12.** Thus, the screws **86** serve to maintain the clips **80,** and thus the slotted bar **70,** and the interlock member **50** in position relative to the studs **12.** Such a clip and wall structure is described and claimed in U.S. Pat. No. 3,407,547.

Also important in this respect is the employment on the slotted bar **70** of a stabilizing angle bar **130,** shown in FIG. **5,** at each side of the row of slots **72** of the slotted bar **70.** These angle bars **130** include outstanding longitudinally extending flange blades or plates **132** integrally connected with transversely disposed elongated attachment plates **134** rigidly attached by means of spot welds **135** to corresponding outer faces of the slotted bar **70.** Desirably, the edges of the attachment plates **134** are rearwardly directed around the edge portions of the slotted bar **70,** as indicated at **136** to facilitate both stability and manufacture which, of course, adds somewhat to the effective width of the slotted bar **70.** A structure employing such a stabilizing angle bar is described and claimed in U.S. Pat. application Ser. No. 703,213.

The important functions of the angle bar stabilizer **130** are to stabilize shelf brackets **100** against lateral swaying at their outer shelf supporting ends and to provide good abutment walls for the adjacent wallboards **15** whereby to protect the vertical edges of such wallboards. The recess **138** between adjacent stabilizing flanges **132** is provided in order to allow access of the inner ends of shelf brackets **100** to slots **72** and to allow the key **126** of the clip **110** to pass through slots **72.**

With respect to use of the slotted bars **10** and their stabilizing angle flange members **130,** it is necessary that these bars with their stabilizers **130,** which are also reinforcements, be adjustable vertically along the interlock members **50** within the channels **55** in order that the slots **72** may be vertically adjusted in order to position shelf brackets **100** and their shelves in exactly level relationships.

It is possible, if required, to have the ends of each bar **70,** or at least one end thereof, extend somewhat beyond respective ends of the angle stabilizers **130,** and then to employ clips **80** to enter slots **72** of such bars, which slots are thereby exposed. The clips **80** are then secured to the outwardly extending flange portions **60** of the interlock members **50** as has been previously described. However, it has been common practice to have one or both ends of the assembled slotted bars **70** and their stabilizing angle members **130** arranged so that the ends of the bar **70** and the adjacent respective end of the stabilizers **130** are cut exactly flush with one another as is shown at the bottom of FIG. **5.** This facilitates manufacture and assembly to the extent that much of the preparatory work may be done at the factory or, if required to be cut to order on the job by hand, they can be more conveniently cut flush as by sawing or by employment of other appropriate metal cutters. Also, such a construction supports much heavier shear loads on walls so constructed in addition to facilitating manufacture and assembly in the plant and facilitating construction and assembly on the job.

Consequently, in accordance with this improvement, at least one end of each slotted bar **70** and its angle stabilizers **130** attached thereto are terminated at positions which are substantially flush with one another. Assembly of such a slotted bar and stabilizer arrangement on an upstanding interlock member **50** in channels **55,** where the stabilizer portions **132, 134,** and **136** are employed, requires employment of a special clip **110** that can be attached to a slotted bar **70** of the described arrangement. Clip **110** allows the bar **70** to be set in any adjustably predetermined location and then accurately anchored in such adjusted position by any suitable or convenient means, such as by self-threading screws, spot welding, or the like.

The clip **110,** which may be employed either by itself or in conjunction with clip **80,** is shown in FIG. **5.** This clip is generally T-shaped in two respects, i.e., in plan view and in elevation view. Thus, clips of the type **110** appear to be of T-shape when viewed along a vertical axis and also when viewed along a certain horizontal axis. The clip **110** includes two interconnected portions **112** and **114,** the portion **112** constituting the head of the T and the portion **114** being integrally connected by intervening portion **116** to provide the stem or tongue of the T. This clip **110,** like the clips **80,** is formed of metal of substantially the same quality as the stud members **12,** such as gauge cold-rolled steel of about 0.0478 inch in thickness, or may be even formed of a somewhat heavier gauge. The head portion of the clip **110** is provided with two relatively narrow laterally disposed wings **118** which are arranged at right angles to the stem provided by the parts **114** and **116** and a stem extension **120,** such wings **118** being disposed in substantially the same plane. These wings **118,** when positioned in operative relation, lie in front of major portions of the adjacent parts of the outstanding flange portions **60** of the interlock member, and their extreme edge portions will lie beyond the channels **55** of the interlock member **50.** When thus properly positioned in operative relationship, the wings **118** are rigidly affixed to the outwardly extending flange portions **60** by means of selfthreading screws **86** (FIG. 3) which, if desired, may be passed through two holes **122** in wings **118.**

The stem of the clip **110** is in the form of the connected parts **114, 116,** and **120,** which extend longitudinally behind and beyond the head portion **112** and the wings **118.** As is seen in FIG. **5,** the stem structure **114, 116,** and **120** is incut at its middle section, as indicated at **124,** so as to yield at its extremity opposite from the head **112** a comparative shallow tongue member or key **126.**

For convenience of construction and installation, the length of the key member **126,** the length of the incut portion **124,** and the longitudinal dimension of the wings **118** and the portion **120** of the stem beyond the incut **124** are equal. In addition, the slots **72** in the bar

70 are also of the same dimension and are spaced from one another by this same dimension. Thus, the tongue or key 126 will neatly enter a slot 72 and the incut 124 will neatly accommodate the portion of the bar 70 between two slots. A wall structure employing such a clip is described and claimed in U.S. Pat. application Ser. No. 703,213.

In the usual practice of utilizing the clip 110, the key 126 will be passed into a slot 72 somewhat closer to the end of the bar 70 than a slot length or the length of the incut 124. Thus, with an assembled bar 70 partly installed in the end of the interlock member 50, the key 124 may be introduced into the respective slot 72 above the end of the slotted bar 70 as is indicated in FIG. 5. This will bring the wings 118 into position such that when the slotted bar 24 and the clip 110 are pushed longitudinally upwards into the channels 55, the folded portions 114, 116, and 120 of the stem will be disposed longitudinally in the vertical passageway 53 behind the slotted bar 70 and the wings 118 will lie in front of the outwardly extending flange portions 60 of the interlock member 50 and below the end of the slotted bar 70. When the exact vertical position of the slots 72 to accommodate the brackets 100 is established, the anchor screws 86 are installed to maintain the parts in fixed relationship. Similarly, the wallboards 15 may be secured to the stud flanges 36 by longer screws 88, as is shown in FIGS. 1 and 3. The vertical edges of the wallboards are positioned adjacent to the stabilizing so that their vertical edges are spaced from the slots 72 in order to allow access of the inner ends of shelf brackets 100 to the entryway 64 and the slots 72.

A T-shaped decorative strip or concealing member 140, shown best in FIG. 5, is employed to conceal the stabilizing flanges 132, the recess 138, and the slots 72 from view. It also conceals the junction between sheets of wallboard 15 and the stabilizing flanges 132. Concealing member 140 is preferably constructed of a material, such as stiff plastic or the like, which is flexible compared with the steel sheeting material comprising the clips 80. The concealing member 140 includes a stem portion 142 and a head portion 144. The stem portion 142 is a narrow elongated strip which is adapted to enter the recess 138 between the stabilizing flanges 132. The stem 142 has gripping elements formed integrally on its two opposed faces. These elements are in the form of a series of narrow ridges or ribs 146 which extend vertically and in parallel lines the length of the stem 142. These ridges 146 have cross sections in the form of barbs that point toward the head 144 so that at once the concealing member stem 142 is inserted into the slot 138, the ridges 146 lock the stem 142 in the recess 138.

The concealing member head 144 includes two elongated curved wings 148 formed integrally with the end of the stem 142. The wings 148 are curved slightly inwards towards the stem 142 and are sufficiently wide to span the width of the gap 138 and the thickness of the stabilizing flanges 132 in order to mate snugly with the wallboards 15 at a point beyond the junction between the wallboards 15 and the stabilizing flanges 132. After the brackets 100 are placed in position, the concealing members 140 are inserted betweeen the stabilizing flanges 132 in the remaining portions of the recess 138 between the shelf brackets 100.

As is shown in FIG. 1, the previously described stud and interlock member assemblies are employed at spaced positions along a partition wall or the like in order to form a complete wall. Partition wall material 15 may be placed on either or both sides of the studs 12. In addition, intermediate studs or stiffening members spaced between the studs 12 may be employed to help brace the entire structure (FIG. 1). It has been found helpful to secure the wallboard to the flanges of such intermediate studs by means of screws 190 or the like, in order to secure the partition walls to these intermediate studs and thus provide a more stable or stiff overall structure.

DESCRIPTION OF ALTERNATIVE EMBODIMENTS

In another embodiment of this invention, one of the interlock members 50 may be omitted between each pair of studs 12 and the wallboard 15 placed on only one side of the studs 12. In this alternative embodiment of the invention, the studs 12 are positioned at their vertical edges opposite from the remaining interlock member 50 by screws or the like securing the flanges 36 of the studs 12 to the floor track 14 and cap 10.

In another embodiment of the invention, shown in the upper one-half of FIG. 3, a structure is provided which is identical to the first embodiment previously described except for the omission of clips 80 and 110. Instead of clips 80 and 110, screws 200 or the like are employed to position the slotted bar 70 in adjusted relationship to the interlock member 50. Such screws 200 are driven through the outwardly extending flange portions 60 and wall portions 56 and 57 of the interlock member, and simultaneously through the slotted bar 70 and the stabilizer attachment plates 134.

In another embodiment of the invention, shown in FIG. 6, a structure is provided which is similar to those previously described except that the orientation of the studs 12 is reversed so that the studs face each other, that is, so that the concave sides of the studs face each other. With the studs 212 of this embodiment of the invention positioned facing each other, the vertical flanges 236 are inserted between the reversely folded and outwardly extending flange portions of the interlock members. This arrangement provides a more rigid structure than those previously described. Additionally, an assembly which is less expensive and which is more easily constructed than those previously described is thereby provided.

More particularly, studs 212 are typically in the form of C-shaped channels, as previouly described, except that the turned-in stiffening flanges 38 have been eliminated. The metal studs 212 include a vertical extending wall or main web 235, and laterally directed vertical flanges 236 integral with the edges of the web 235 and constituting the sides of the studs.

In the assembled partition wall, each stud 212 of a pair is arranged facing the corresponding stud 212 of the pair and the web 235 of each stud 212 is arranged in opposed spaced relationship with respect to the corresponding web 235 of the other stud 212 of the pair. The interlock members 50 are secured between the spaced webs 235 to form a complete stud and interlock assembly by inserting the vertical flanges 236 of the studs 212 between the respective opposing vertical walls 58 of the reversely folded portions 54 and the outwardly extending portions 60 of the outstanding folded flanges 51.

Since the vertical walls 58 and the corresponding outwardly extending portions 60 are initially either in contact with each other or in close proximity to each

other, the insertion of the flange **236** therebetween will cause frictional engagement between the flange **236** and the respective vertical wall **58** and outwardly extending portion **60.** In such an arrangement, the interlock member **50** will be held or supported on the flanges **236** by frictional engagement with the opposing vertical wall **58** and outwardly extending portion **60.**

The reversal of the orientation of the studs **212** has the further advantage of terminating the outer extremity of the flange **236** at approximately the same position as the termination of the outwardly extending portion **60.** This eliminates the gap between the wallboard **15** and stud flange **236** which occurs in the other embodiments of this invention previously described (see FIG. **3**). The elimination of this gap reduces the tendency of the section of the wallboard **15** to bow away from the interlock member **50** at the stabilizing flanges **132** due to the compressive force formerly placed upon the wallboard **15** by the screws **88.**

It will be clear that the screws **86,** shown in the upper portion of FIG. **3,** are not necessary in this embodiment for the purpose of securing the interlock member **50** to the studs **212.** Due to the coincident termination of the flanges **236** and the outwardly extending portions **60,** the screws **88** now serve the double function of securing both the wallboard **15** and the interlock member **50** to the studs **212.** However, when clips are employed, as in the lower portion of FIG. **3,** it becomes necessary to employ the screws **86** in order to secure the clips to the interlock member **50.**

This alternative embodiment of the invention also facilitates construction of the stud and interlock assembly by allowing the interlock member **50** to be temporarily suspended from the studs **212** by the aforementioned frictional engagement with the flanges **236** of the studs while the screws **88** are being driven to provide for securing the flange **236** of the stud **212** to the outwardly extending portion **60** of the interlock member **50.** In the other embodiments of this invention previously discussed, it is necessary to manually or otherwise hold the interlock member **50** in place against the studs **12** while the screws **86** are being driven through the outwardly extending portion **60** and the flanges **36** in order to secure the interlock members **50** in place on the studs **12.**

In this embodiment of the invention, the legs **52** of the stems of the interlock member **50** are shorter than those previously described and shown in FIGS. **3** and **4.** A larger gap **300,** shown in FIG. **6,** is thus provided between the adjacent ends of the legs **52.** This gap is of sufficient width to allow the passage of a structural member **320** between the adjacent ends of the legs in a direction perpendicular to the plane of the webs **235** of the studs **212.** Such a structural member **320** is therefore enabled to pass unobstructed through apertures or knockouts **310** in the stud webs **235** and between the interlock members **50,** as shown in phantom in FIG. **6.**

This alternative embodiment of the invention may be used with either one or two interlock members between each pair of studs **212,** as previously described. Also, this alternative embodiment of the invention may be used either with or without clips, as previously described and as shown in FIG. **3.**

While certain forms of the invention have been herein disclosed, it may be seen that other forms may be produced which may constitute other embodiments of this invention within the scope of the appended claims.

The invention claimed is:

1. A device adapted to be attached to a pair of elongated C-shaped studs having their main webs spaced from one another for adjustably receiving a support bar between said webs, comprising:

an elongated upstanding interlock member adapted to be positioned generally in alignment with the studs between their spaced main webs and having flanges for attaching said member to each of said studs, said interlock member defining a shallow vertical channel extending longitudinally of said interlock member adapted to be located in the space between said webs to adjustably receive a support bar therein, said interlock member further defining an inward elongated vertical passage behind said vertical channel; said flanges being oriented in directions transverse to the direction of elongation of said vertical passage and having portions which extend beyond said vertical channel for receiving fasteners adapted to fasten said interlock members to said studs at positions exterior of said vertical channel;

said passage having a U-shaped closed end extending longitudinally of said interlock member, said closed end forming one extremity of said interlock member;

an elongated support bar positioned in said vertical channel having a slot communicating with said inward vertical passage; and

anchoring means adapted to anchor said support bar in said vertical channel.

2. A device adapted to be attached to a pair of elongated substantially parallel C-shaped studs having their main webs disposed in spaced substantially parallel relation to one another for adjustably receiving a slotted bar and for holding shelf brackets in the region between the spaced webs of the studs, said device comprising:

an elongated interlock member adapted to be positioned generally in alignment with the studs in the region between their spaced main webs, the cross-section of said elongated member being substantially T-shaped comprising a U-shaped double-legged stem and a pair of opposed outstanding flanges formed integrally with the edges of the legs of said stem;

said double-legged stem terminating at the closed end of the "U," said closed end forming the portion of the interlock member spaced farthest from said flanges;

said pair of flanges having reversely folded portions providing shallow spaced vertical channels extending longitudinally of said interlock member and opposing each other to adjustably receive a vertical slotted bar therebetween, the reversely folded portions being opposed and providing between them a vertical entryway into said channels;

said pair of flanges having outwardly extending portions adapted to receive fasteners for fastening said interlock member to the studs at positions exterior of said vertical channels;

vertical inward portions of said T-shaped interlock member providing between said legs an inward vertical passage behind the entryway for reception of inner ends of shelf brackets;

an elongated slotted bar vertically disposed in said vertical channels between said reversely folded flange portions and adjustable therein, said slotted

bar having a row of slots therethrough communicating with said inward vertical passage and with said vertical entryway for reception and positioning of inner ends of shelf brackets;

anchoring means adapted to extend through said slotted bar and adapted to be secured to the outwardly extending portions of the flanges of said interlock member for adjustably holding said slotted bar in a vertical position relative to said vertical channels;

an elongated stabilizing flange extending outwardly along from said slotted bar at each side of said row of slots, said flanges being spaced to admit shelf brackets to said slots and to stabilize said brackets; and

T-shaped elongated concealing means insertable vertically between said stabilizing flanges for concealing from view said entryway.

3. A device for adjustably receiving a slotted bar as defined in claim **2** wherein said anchoring means comprises:

a first T-shaped clip adapted to be secured to the upper end of said slotted bar, said clip having a head portion and a stem portion, the head portion having flanges secured to said outwardly extending portions of said interlock flanges, and said stem portion projecting through an adjacent slot in the upper end of said slotted bar; and

a second clip which is in part T-shaped, said second clip being adapted to engage the lower end of said slotted bar, the head of the T having flanges secured to said outwardly extending portions of said interlock flanges below the lower end of said slotted bar, the stem of the T being insertable into said vertical passage and including a key portion movable along said passage with the key portion being spaced vertically from the T head and engaging in anchoring relation within an adjacent slot near the lower end of said slotted bar thereby anchoring said slotted bar to said interlock member.

4. A device as defined in claim **3** wherein at least one end of said slotted bar and the adjacent ends of said stabilizing flanges terminate in positions substantially flush with one another.

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