United States Patent

Schwartz

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[54] **METAL STUDDING AND ADJUSTABLE SHELF CARRIER**

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[21] Appl. No.: **74,005**

Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 826,427, May 21, 1969, Pat. No. 3,562,970.

[52] **U.S. Cl.** **52/36,** 52/732

[51] **Int. Cl.** **A47b 57/06,** E04c 3/32

[58] **Field of Search** 52/36, 730, 732

[56] **References Cited**

UNITED STATES PATENTS

3,492,766	2/1970	Andrews	52/36
2,233,719	3/1941	Vanderveld	52/36
1,826,133	10/1931	Hatch	52/732
3,394,507	7/1968	Doke	52/730
3,562,970	2/1971	Schwartz	52/732

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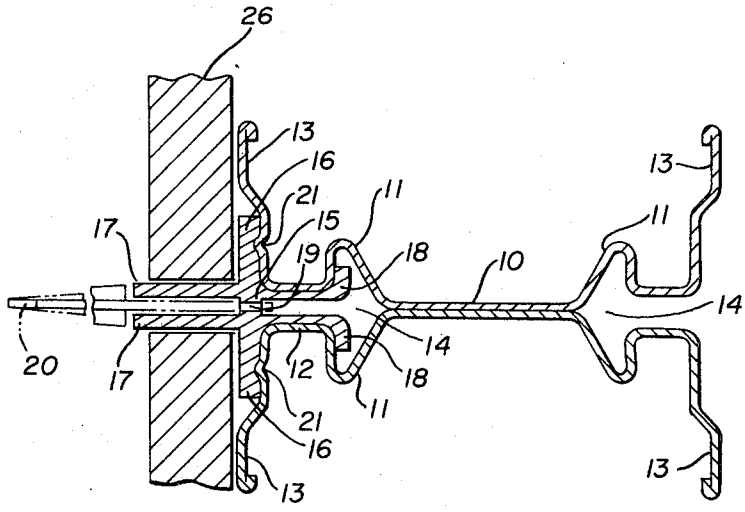
[57] **ABSTRACT**

A metal studding having a web portion with spaced apart sections therein and oppositely disposed flanges on said spaced apart sections and oppositely disposed longitudinally extending channels formed in said spaced apart sections together with an elongated metal member slidably engageable against said flanges and partially within said channels so as to be adjustable thereof, the metal member having a configuration providing for the reception and attachment of an elongated shelf supporting arm, portions of the flanges being distorted into the area of the metal member so as to hold the same in adjusted position in the metal studding.

3 Claims, 5 Drawing Figures



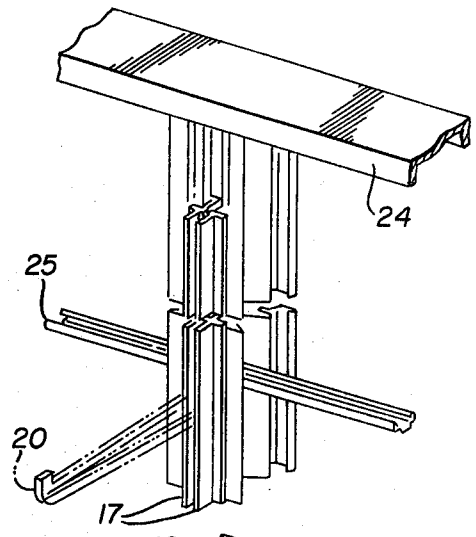
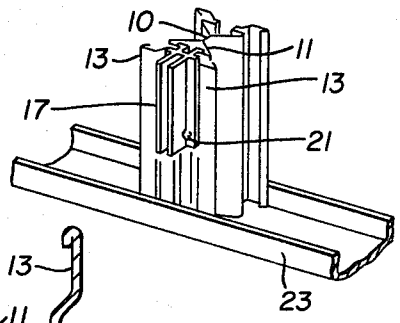


FIG. 1



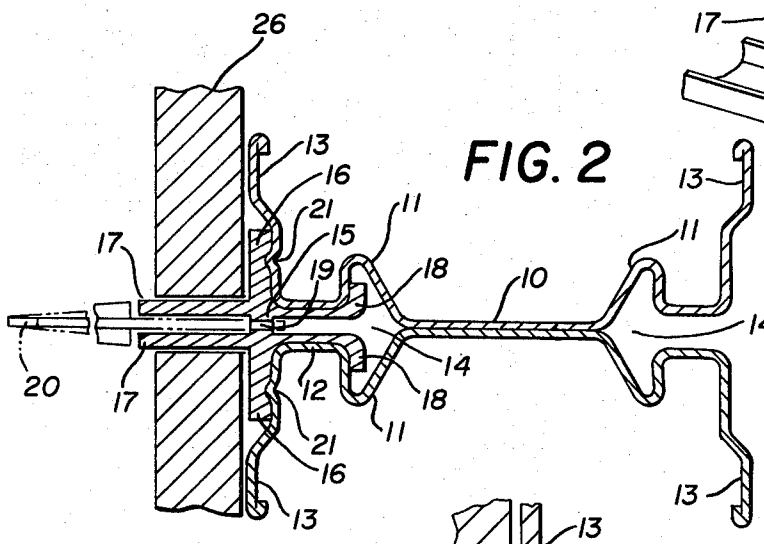


FIG. 2

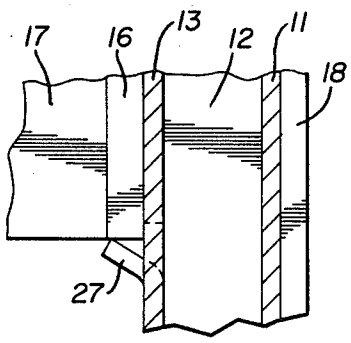


FIG. 5

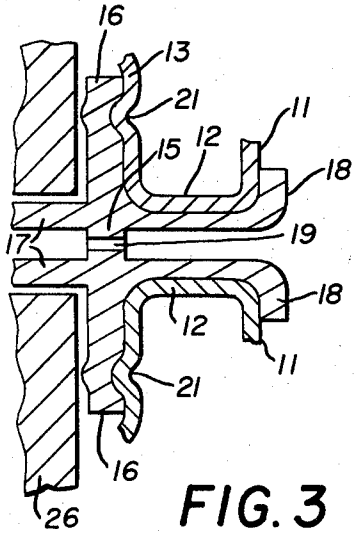


FIG. 3

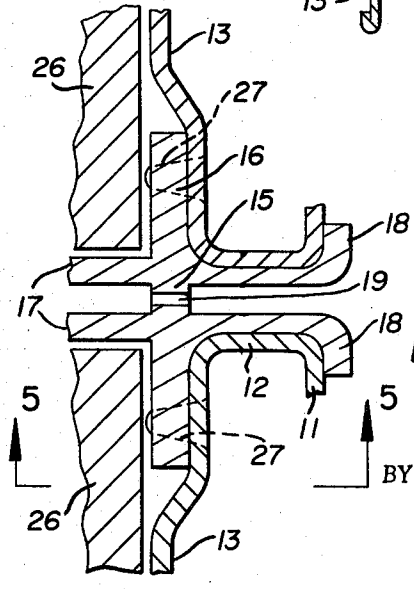


FIG. 4

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METAL STUDDING AND ADJUSTABLE SHELF CARRIER

This application for patent is a continuation-in-part of application Ser. No. 826,427 filed May 21, 1969 for METAL STUDDING AND ADJUSTABLE SHELF CARRIER; now U.S. Pat. No. 3,562,970, issued Feb. 16, 1971.

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to wall structures and more particularly metal studding forming the framework of wall structures and providing vertically adjustable means supporting extending shelf carrying arms.

2. Description of the Prior Art

Prior structures of this type have employed metal studding of various configurations adapted to receive and hold shelf carrying arms.

Such prior art constructions may be seen in U.S. Pat. Nos. 3,394,507; 3,407,547; 3,492,766; 3,509,669. The present invention permits the installation of the studding in a framing construction of a partition or wall without regard to the unevenness of the floor or supporting surface on which the studding is positioned and provides for the simple vertical adjustment of the metal member slidably engaged therein to which member the shelf carrying arms are detachably mounted so that the shelf carrying arms may be aligned on a common horizontal plane after the installation of the studding and the framing comprising the partition or wall. This invention eliminates the time and difficulty experienced in attempting to adjust the parts vertically as has heretofore been common in the art and provides a simple inexpensive and highly efficient means of securing the parts in adjusted relation.

SUMMARY OF THE INVENTION

A metal studding having a longitudinally adjustable metal member which is adapted to receive and hold extending shelf carrying arms is disclosed. The studding may be used in multiples to form a partition or wall as, for example, by alternate positioning of the improved studding along with conventional metal studding or the like, and over which studding and frame formed thereof surface panels of dry wall, plywood or other ornamental surfacing materials may be readily attached so as to leave narrow vertical slots aligned with the metal studding and the longitudinally adjustable metal members so that the shelf carrying arms may be inserted in the slots and engaged in appropriate configurations in the longitudinally adjustable metal members and thus be carried by the studding.

The adjustable metal members are moved vertically in the metal studding to desired positions so that the shelf carrying arms to be carried thereby will be disposed on a common horizontal plane and portions of the metal studding are then distorted into the area of the adjustable metal sections so as to lock the same in desired adjusted position.

DESCRIPTION OF THE DRAWINGS

FIG. **1** is a perspective view with parts broken away and parts in cross section and broken lines illustrating a portion of a partition or wall incorporating a metal studding formed in accordance with this invention.

FIG. **2** is an enlarged horizontal section through the metal studding of FIG. **1**.

FIG. **3** is an enlarged detailed cross section of the metal studding and adjustable member seen in FIGS. **1** and **2** of the drawings and showing locking means therefor.

FIG. **4** is an enlarged detailed cross section of a portion of the metal studding and adjustable member seen in FIG. **1** of the drawings and showing an alternate locking means therefor.

FIG. **5** is a vertical section on line **5—5** of FIG. **4**.

DESCRIPTION OF THE PREFERRED EMBODIMENT

In the form chosen for illustration, the invention comprises a metal studding as best seen in FIGS. **1** and **2** of the drawings wherein an interconnecting web portion **10** has oppositely disposed channel forming configurations **11** in spaced apart web portions **12** which web portions **12** terminate in oppositely disposed outwardly turned offset flanges **13**. The studding is preferably formed of two sections of identical rolled steel shapes spot welded or riveted to one another in the web portions **10** thereof as will occur to those skilled in the art.

The overall size of the metal studding as defined by the longitudinal outermost edges of the outturned flanges **13** is the same as a conventional wooden or metal studding as heretofore known in the art and used in the formation of partitions, walls and the like.

The narrow mouth channels formed by the oppositely disposed configurations **11** are indicated in the drawings by the numerals **14** and these narrow mouthed channels **14** are adapted to receive and slidably hold elongated flanged portions of a metal member **15** which is cross-shaped in overall configuration as been seen in FIG. **3** of the drawings.

By referring thereto it will be seen that the metal member **15** is preferably formed as an extruded metal shape having a principal flat body **16** with a pair of closely spaced projecting flanges **17** formed on one side thereof and a pair of closely spaced oppositely disposed L shaped flanges **18** formed on the opposite side thereof with the connecting portion of the principal flat body **16** being cut away at intervals to form apertures **19**. The apertures **19** provide openings in which the hook ends of shelf carrying arms **20** may be engaged as seen in FIGS. **1** and **2** of the drawings. It will be observed in FIGS. **1**, **2**, and **3** of the drawings that portions of the cross-shaped metal member **15** have been slidably engaged in the metal studding disclosed therein and held in adjusted relation thereto by distorted or crimped portions **21** formed in one of the outturned offset flanges **13** of the metal studding so as to engage a portion of the principal flat body **16** thereof and lock it to the studding.

By referring now to FIG. **2** of the drawings it will be seen that an enlarged cross-section of the metal studding has been illustrated with a cross-sectional representation of the metal member **15** positioned therein and the distorted portion **21** holding the same in adjusted position. It will also be seen that the shelf carrying arm **20** is shown with its hook end engaged in one of the apertures **19** of the metal member **15** and it will further be seen that the outturned portions of the oppositely disposed L shaped flanges **18** are engaged in the channel **14** so that metal studding is reinforced by the positioning of the metal member **15** which is vertically adjustable so as to provide for the positioning of the shelf carrying arms **20** at a desired level and so that several of the shelf carrying arms **20** along a surface of the partition or wall formed with the device of the invention may be horizontally aligned whereby the shelves positioned thereon will be in true horizontal position.

By referring now to FIG. **1** of the drawings, it will be seen that the studding of the invention is shown positioned in a portion of a framing structure forming a wall or partition and which framing structure includes a bottom channel **23**, an inverted upper channel **24**, which channels **23** and **24** define the floor and ceiling levels with respect to the wall or partition being formed.

The several metal sections seen in FIG. **1** of the drawings are preferably attached to one another as by spot welding or the like or they may alternately be joined by metal fasteners or mechanical clips as will occur to those skilled in the art. A reinforcing aligning member **25** may be employed as illustrated if desired.

By referring now to FIG. **2** of the drawings, it will be seen that portions of adjoining sections of a surfacing wall board or panel **26** are illustrated as being positioned with their vertical edges in abutment with the closely spaced flanges **17** which extend outwardly therebetween to define the narrow slot which receives the shelf carrying arm or arms **20**. The panels **26** may be fastened to the outturned offset flanges **13** of the studding by conventional means and it will be observed that the offset in the flanges **13** provides appropriate space for the necessary location of the principal flat body **16** of the metal

member **15** as hereinbefore described as well as the distortion resulting from the crimping **21**.

In forming a wall or partition with the device of the invention, the wall or partition framing is completed as illustrated in FIG. **1** of the drawings, the adjustable metal members **15** having been first slid into engagement in the narrow mounted channels **14** as hereinbefore described. Shelf carrying arms **20** are positioned in the metal members **15** and the members **15** are adjusted vertically to obtain a horizontal level of the several arms **20** along the surface of the wall. When this has been achieved, a crimping tool is engaged on one of the flanges **13** and operated to crimp or distort a section **21** thereof into an adjacent portion of the flat body member **16**. The crimp or distorted area **21** thus holds the metal member **15** in desired position in the studding. The finished wall panels **26** can then be installed and the wall or partition thus completed.

Modification of the crimping or distorting means used for locking the metal members **15** in adjusted relation to the studding will occur to those skilled in the art and one such modification comprises stamping tongues from the material of the outturned flanges **13** of the studding and bending them into a position beneath and/or above the ends of the metal member **15**.

By referring to FIGS. **4** and **5** of the drawings enlarged cross sectional details of such a modification may be seen. In FIG. **4** the outturned flanges **13** have tongues **27** partially stamped therefrom and bent outwardly with respect to the general plane thereof so that they underlie the lower end of the metal member **15** and more particularly, the flat body member **16** which slidably engages the flanges **13**.

In FIG. **5** of the drawings which is a vertical section on line **5—5** of FIG. **4** the stamp tongue **27** may be seen in solid lines and it will be observed that it provides a degree of adjustability in that can be bent to several different positions where it can be located in supporting relation to the flange **16** of the metal member **16** which it holds in adjusted position in the studding.

Although but two embodiments of the present invention have been illustrated and described it will be apparent to those skilled in the art that various changes and modifications may be made therein without departing from the spirit of the invention.

I claim:

1. A metal studding having a web portion, spaced apart sections in said web portion, oppositely disposed right angular flanges on said spaced apart sections, oppositely disposed longitudinally extending channels formed in said spaced apart sections inwardly of said flanges, an elongated metal member positioned between said spaced apart sections and against said flanges and partially within said channels, said member consisting of an apertured longitudinally extending flat body seated against said oppositely disposed flanges and spanning said spaced apart sections, a pair of oppositely disposed spaced right angular secondary flanges on each of the opposite sides of said flat body, outturned longitudinally extending end sections on one pair of said secondary flanges slidably engaging said oppositely disposed channels in said spaced apart web sections and the other pair of secondary flanges extending outwardly axially of said studding so as to form spacing means for wall panels positioned on and supported by said first flanges, selected areas of the material constituting said oppositely disposed right angular flanges being displaced from the plane of said flanges outwardly thereof, said areas cooperating with areas on the flat body of said elongated metal member positioned thereagainst.

2. The metal studding set forth in claim **1** and wherein said distorted areas of said right angular flanges of said studding are positioned therein adjacent one end of said elongated metal member positioned thereagainst so as to support the same in adjusted position.

3. The metal studding set forth in claim **2** and wherein the distorted areas in said right angular flanges of said studding comprise tongues stamped from said flanges and bent outwardly on an angle with respect thereto so as to provide fixed support means for said elongated metal member.

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