Jan. 16, 1968 M. H. BECKMAN 3,363,377

METAL INTERSECTION STUD

Filed Oct. 18, 1965

FIG. 1.

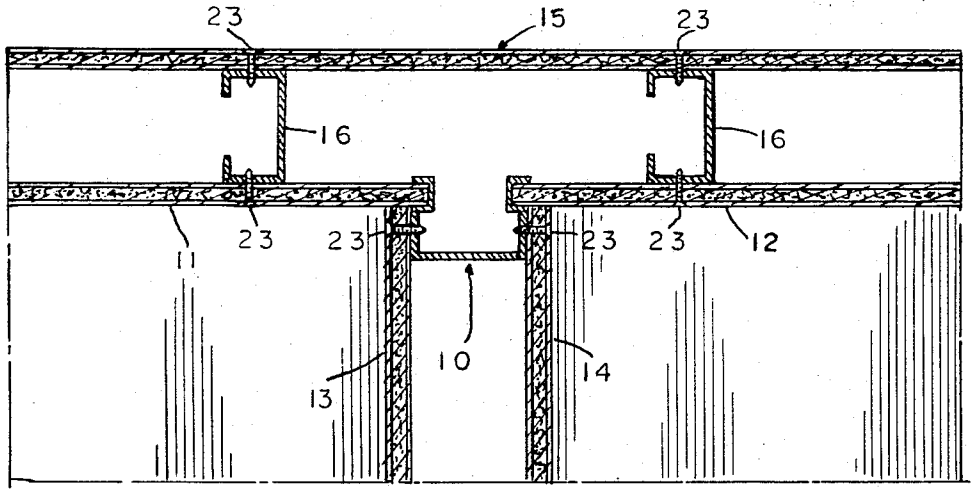


FIG. 3.

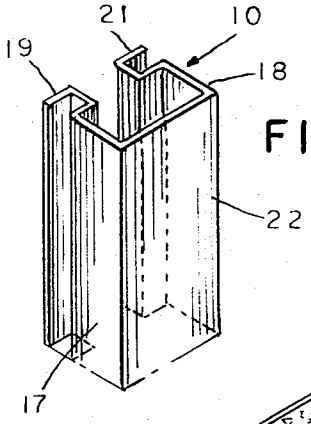


FIG. 2.

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United States Patent Office 3,363,377
Patented Jan. 16, 1968

3,363,377

METAL INTERSECTION STUD

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Filed Oct. 18, 1965, Ser. No. 496,899
1 Claim. (Cl. 52—275)

ABSTRACT OF THE DISCLOSURE

A metal stud for use in the construction of interior walls and partitions providing an intersection stud for the intersection of partition walls and interior walls which enclose the metal stud; the metal stud taking the place of three conventional intersection studs. The metal stud is a hollow longitudinally extending and rearwardly and inwardly opening integral member having a continuous transverse closing wall with rearwardly extending parallel side walls that are normal to the closing wall and the interior walls, the parallel side walls terminating in inwardly extending and outwardly and laterally opening channels conformably receiving and retaining therein the edges of the interior or side wall panels. The parallel side walls of the stud are provided with longitudinally spaced openings to receive fastening means to mount and secure the partition walls or panels to the side walls of the stud, with the partition panels having their edges abutting the interior walls retained by the stud.

The present invention relates to a novel metal stud construction for use in the construction and assembly of interior walls and partitions of buildings in which said metal stud provides an intersection stud for supporting panels forming the side walls as well as the angularly arranged partitioning panels formed of suitable wall surfacing material such as wallboard, of lath and plaster, or of other paneling material.

Prior combination wall and partition supporting means employ a corner fitting or structural member of sheet steel having channels for receiving aligned panels, and an inwardly opening channel conformably receiving and mounting between its spaced, flexible open sides a wooden stud to which wooden studs are affixed the partition panels projecting perpendicularly or normal to the aligned wall panels.

To eliminate fire hazards incident to the use of wooden studs or structural members and to conform to building codes which outlaw the use of such wooden structural members, the present invention avoids the use of wood studs or combustible material by providing a one-piece metal intersection stud to which the partition panels are affixed by means of sheet metal or dry wall screws.

As such prior fittings require wooden studs and contemplate other wooden frame members at the top and bottom of such wall and partitioning panels, it is an important feature of the present invention to eliminate the necessity of such wooden studs or members and to provide a novel metal intersecting stud for mounting and anchoring the side walls and partitioning panels in such manner as to avoid use of any wooden studs or combustible members.

It is, therefore, an important object of the present invention to provide a novel and simplified metal intersection stud construction for mounting interior side walls and partition panels and to which metal intersection studs the overlapping or abutting ends of the side walls and partition panels are affixed, eliminating any use of wooden studs and structural members and thereby any fire hazard due to the use of wood required in prior installations.

Not only does the novel sheet metal intersection stud

eliminate the use of combustible material as well as material subject to deterioration and damage caused by termites or other insects, but by its novel construction it provides a reinforced mounting having substantially greater inherent strength than with prior structural members combined with a wooden stud, and greatly simplifies the manner of and reduces the cost of installation of the wall and partitioning panels.

In the prior method of using conventional metal studs it is necessary to use three metal studs at partition intersections in order to provide proper anchoring means for fastening the wall finish to the studs.

By using the metal intersection stud of the present invention, no conventional metal studs are required for proper fastening at these intersections because the metal intersection stud replaces the three conventional studs.

Further benefits or advantages in this regard are that engineering problems are reduced because special stud spacings do not have to be indicated on the various documents involved in presenting the work to the workmen in the field and also layout time at the job site is reduced considerably because the workmen do not have to erect or install the aforementioned studs to special spacing.

At the job site the first partition may be erected using uniform spacing of the metal studs and no allowances have to be made for intersecting partitions. The intersecting partitions are then erected using a metal intersection stud at each intersecting point.

Further objects are to provide a construction of maximum simplicity, efficiency, economy and ease of assembly and operation, and such further objects, advantages and capabilities as will later more fully appear and are inherently possessed thereby.

In the drawing:

FIGURE 1 is a horizontal cross sectional view through the novel metal intersection stud construction and showing the manner of mounting both the wall and partition panels.

FIG. 2 is a perspective view of the assembly of FIG. 1.

FIG. 3 is a fragmentary perspective view of the metal intersection stud member.

Referring more particularly to the novel embodiment of the present invention illustrated in th accompanying drawing, the metal intersection stud **10** for mounting and supporting aligned side wall panels **11** and **12** and angularly arranged parallel portioning panels **13** and **14**, comprises a one-piece sheet metal stud shown as mounted at the intersection of and joining and supporting the wall and partition panels in a novel manner without the use of prior types of conventional wooden studs or the three conventional metal studs now required at partition intersections to provide anchoring means for fastening the wall finish to the studs.

In the cross sectional views of FIGS. 1 and 2, the building is shown as having the spaced side walls **11** and **12** of a room or enclosure with these walls and a wall **15** of another room or exterior wall spaced apart by structural channels **16** to which these spaced walls are anchored by conventional fastening means. The novel sheet metal intersection stud **10** has spaced sides **17** and **18** extending perpendicular to the side wall panels **11** and **12** and each side is provided at its inner end with an outwardly opening channel section **19, 21** conformably receiving and retaining an end of the side wall panels **11** and **12**. The side walls **17** and **18** project outwardly or forwardly and merge into a closed end wall **22** forming a one-piece metal intersection stud eliminating the conventional wooden and metal stud.

At the exterior of the side walls **11** and **12** and securely anchored to the spaced sides **17** and **18** of the intersection stud by conventional sheet metal or dry wall

screws **23** are the spaced partition panels **13** and **14** with the vertical edges of these partition panels abutting the adjoining surfaces of the side wall panels **11** and **12**.

In the final assembly, the metal intersection stud **10** is completely concealed from view and enclosed by the partition panels **13** and **14** with the side wall panels **11** and **12** each having an edge conformably received and retained in one of the channels **19** or **21**, and the partition panels affixed to the sides **17** and **18** of the stud **10** by fastening means such as the sheet metal or dry wall screws **23**.

This novel metal intersection stud, wall and partition assembly provides an improved inexpensive and simplified construction in a corner section dividing an enclosure by partitioning panels, and is suitable for use in new constructions as well as in old structures with the novel metal intersection stud mounted at its lower end in or upon the floor or sill and at its upper end in the ceiling so as to span the height of the panels and provide a continuous metal shape devoid of any wooden studs or other wooden members subject to combustion to which wood is subjected in building structures.

Not only is this metal intersection stud easy and inexpensive to fabricate in a continuous length and then cut to the desired length to span the height required, but due to its simplicity in shape and embodying but a single member it is easy and inexpensive to install and, when installed, provides a rigid structural member for mounting the side wall and partition panels at the corners. In assembly, the edges of the side wall panels **11** and **12** are slipped into and conformably received and retained in the channels **19** and **21** of the metal intersection stud and anchored to the bridging channel members **16** by the screws or fasteners **23**. Next the partition panel **13** and **14** are positioned against the sides **17** and **18** of the metal intersection stud with the adjacent edges of these panels abutting or close proximity to the assembled side wall panels **13** and **14**, and then affixed to the relatively wide metal sides **17** and **18** by means of the screws or fasteners **23**. This is all that is required to complete the corner assembly. Furthermore, in this novel construction only approximately 50% of the number of fasteners are required at the intersection over prior constructions.

Having thus disclosed the invention, I claim:

1. In combination, a metal intersection stud consisting of a one-piece sheet metal member replacing three conventional metal studs required for mounting and affixing the side wall panels and partition panels at a partition intersection and eliminating the requirement for locating and mounting such plural conventional metal studs in predetermined spaced relation, side wall panels and partition panels with said panels all affixed to and supported by said intersection stud, said metal intersection stud including a rearwardly and inwardly opening integral member having a transverse closing wall with parallel side walls extending normal to said closing wall and to said side wall panels, and at their inner ends each side wall is provided with an inwardly extending and outwardly and laterally opening channel with these opposed channels each conformably receiving and retaining therein an edge of one of the spaced adjoining side wall panels, each side wall of said metal intersection stud extending forwardly from its channel in parallel relation to locate and accurately space the partition panels and having longitudinally spaced openings therein, fastening means for said partition panels and received in said openings to affix the panels to the side walls of said metal intersection stud, said partition panels being supported by said spaced side walls with the inner edge of each partition panel extending over and affixed to one of said spaced side walls with its edge positioned adjacent a side wall panel whereby said partition panels enclose said metal stud.

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