

Jan. 28, 1969

M. HYATT

3,423,893

WOODEN STUD WALL OR PARTITION AND SUPPORT THEREFOR

Filed Dec. 16, 1966

FIG_1

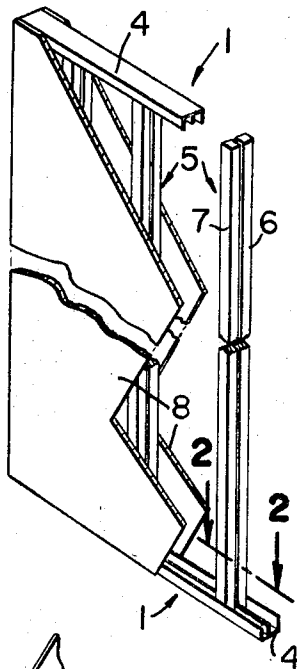


FIG_2

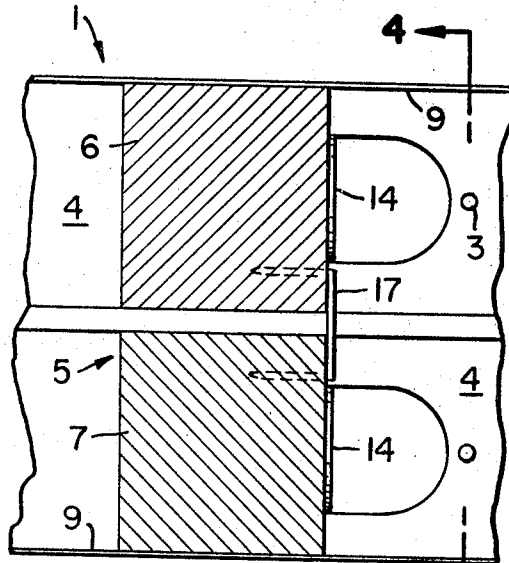


FIG_3

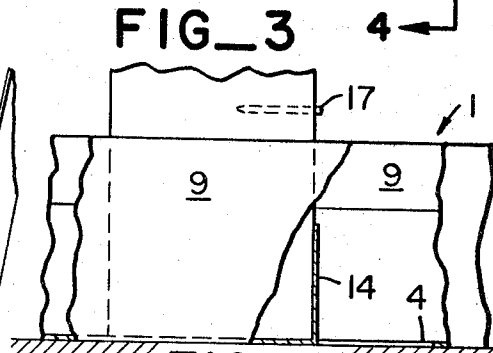


FIG_5

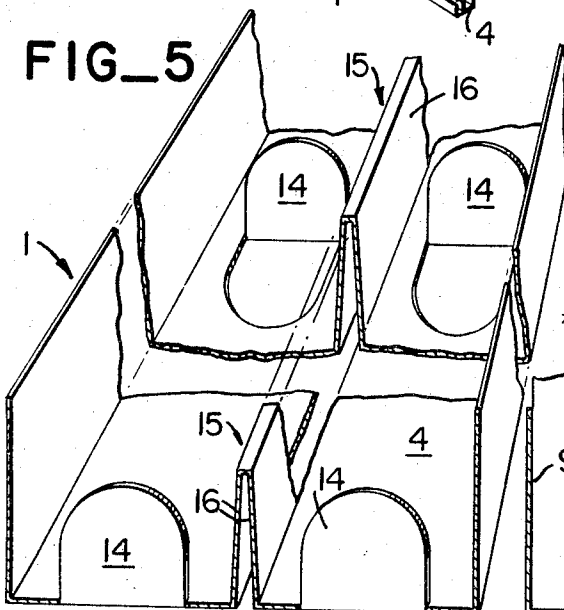
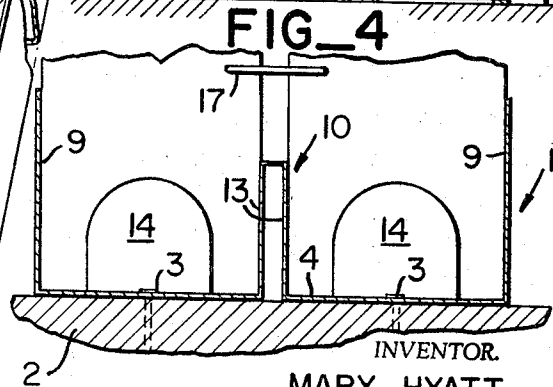


FIG_4



BY

MARX HYATT

Boyer, Moller, Foster & Schlemmer
ATTORNEYS

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3,423,893

WOODEN STUD WALL OR PARTITION AND SUPPORT THEREFOR

Marx Hyatt, Woodside, Calif., assignor to J. H. Baxter &
Co., San Francisco, Calif., a corporation of California
Filed Dec. 16, 1966, Ser. No. 602,373
U.S. Cl. 52—241
Int. Cl. E04b 2/32

2 Claims

ABSTRACT OF THE DISCLOSURE

A row of studs uniformly spaced apart longitudinally of the row in which each stud is a pair of vertically, parallel stud members in side-by-side relation uniformly spaced apart transversely of the row with said stud members held at their ends independently of each other against relative movement transversely of and out of said row and against twisting about their vertical axes to provide coplanar surfaces at opposite sides of said row for securement of wall panels thereto, with the spaces between the stud members reducing transmission of sound across the partition.

Background of invention

Wooden vertical studs for walls have heretofore been nailed at their ends to upper and lower ceiling and floor plates. Normally the plates are initially marked by the workmen forming the wall after the plates are secured in place and the stud ends nailed to the plates. Uniformity in the spacing of the studs, their alignment in a row, and their degree of securement in place is dependent upon the accuracy in the marking and in the nailing operation, which operations are time consuming and costly.

Studs slotted approximately from end-to-end, or the equivalent, were introduced to provide an air space between the wall panels secured to the studs to reduce sound transmission across the partition formed by the panels and studs, but the foregoing problems were not solved nor the problem of warpage, twisting and distortion of the studs, which problems are overcome by this invention.

Summary

This invention is particularly concerned with partitions in which wooden studding is employed and in which panels of wallboard or plaster on lath are adapted to be nailed thereto, and in which structure unitary floor and ceiling guides and supports are provided for quickly and accurately aligning the studs in a row and for positioning them uniformly relative to each other longitudinally of the row, and also for spacing the stud members of the studs of each row to reduce direct transmission of sound from one side panel to the opposite side panel.

Brief description of the drawings

In the drawings, FIG. 1 is an isometric view, partly in cross section, showing studding and wall panels including top and bottom guide and supporting members for the studs.

In the drawings, FIG. 1 is a fragmentary isometric view, partly in cross section and broken in height, showing a partition that is broken away to show the structure.

FIG. 2 is an enlarged fragmentary cross sectional view taken along line 2—2 of FIG. 1.

FIG. 3 is a fragmentary part sectional, part elevational view of the lower end of the portion of a stud supported shown in FIG. 2, including the lower end of a stud.

FIG. 4 is a cross sectional view taken along line 4—4 of FIG. 2.

FIG. 5 is a fragmentary isometric view showing a

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modification of the form shown in FIGS. 1—4, the view being broken in length and partly in section.

Description of preferred embodiment

In detail, referring to FIG. 1, upper and lower channel strips, each generally designated 1, are respectively secured to the ceiling and to the floor 2 (FIG. 4), by any suitable means such as nails 3, that extend through the bottom 4 of each strip. The ceiling is not shown. The open sides of said strips face toward each other (FIG. 1), and vertical studding generally designated 5, comprising a row of pairs of spaced, adjacent vertical stud members 6, 7 extend at their ends into the open sides of the channel strips 1, with one of the surfaces of the members of each pair facing laterally outwardly of the row. Wall panels, plaster on lath, or boards 8 are nailed against the sides of the stud members that face outwardly of the row, to form the partition.

The channel strips 1 are of the same structure, hence a detailed description of the lower strip, as seen in FIGS. 2—4 will suffice for the upper one.

Strips 1 may be stamped to the desired shape, or they may be formed in a roller type rotary machine, as desired.

Each strip has a bottom wall 4 and opposed parallel side walls 9 perpendicular to the bottom wall. Said bottom wall includes a central spacer rib 10 that may be formed integral therewith, and which rib extends longitudinally of the strip 1 and projects to the same side of the bottom 4 as side walls 9. In FIG. 4 the rib is formed by upward extensions 13 of the bottom wall 4, the latter being of sheet metal, and said extensions being connected along their upper edges and extending a substantial distance from the bottom wall. The disclosure is not to be considered restrictive of the invention, except as may be defined in the claims, but as one example, in an actual installation, the side walls 9 may be from one to two inches high and spaced apart approximately three and one-half inches with the rib 10 being approximately one-half the height of the side walls, more or less. The base of the rib 10 may be approximately one-eighth of an inch in thickness.

At points spaced along the strip, longitudinally thereof, ears 14 are stamped from the bottom 4 at each of the opposite sides of the rib 10, to provide pairs of ears at said spaced points, which ears are spaced between the rib 10 and the side walls 9 opposed thereto and are bent upwardly to positions at right angles to bottom 4 with each pair or set of members 6, 7 being in a plane perpendicular to the side walls 9.

If desired, the central rib may comprise sections 15 (FIG. 5) that are spaced longitudinally of each strip 1, and each of which sections extend longitudinally of the strip 1 between a pair of coplanar ears or tabs 14 that are struck upwardly from the bottom 4 of the strip at each of the sides of each section 15. The section 15 preferably extends past each coplanar pair of ears or tabs 14 a substantial distance that may be approximately two inches. Also, the sides 16 of each section 15, that generally correspond to sides 13 of rib 10, may extend convergently from bottom wall 4, but the thickness of each section 15 adjacent to bottom 4 is preferably approximately one-eighth of an inch.

The spacing of the ears 14 longitudinally of the channel strip may be, say, sixteen inches or twenty-four inches, or whatever is the desired spacing between the studs.

Heretofore, ordinary one-piece studs called "two-by-fours," implying 2" x 4", are actually approximately three and five-eighths inches by one and five-eighths inches. In the example, the spacing between the opposed surfaces of side walls 9 of each strip is approximately three and five-eighths inches.

In centrally splitting each conventional stud longi-

tudinally thereof, the kerf will be approximately one-eighth of an inch, hence each stud member 6, 7 of each pair will fit at its ends in the channels formed at opposite sides of the central rib 10 or section 15 with the overall width of that of a standard stud.

After the upper and lower strips 1 are secured to the ceiling and floor in parallel oppositely opening positions with the ears 14 of each set thereof in the upper strip in vertical alignment with a set on the lower strip, the stud members of each pair may be inserted at their lower ends in the lower channel adjacent to one side of a set of ears 14, and the upper ends are then swung to vertical positions against the same side of the corresponding ears in the upper channel strip. The ribs 10 or sections 15 will thus space apart the stud members 6, 7 of each set the desired distance, as well as holding the stud members against movement toward each other when the panels are nailed thereto. If desired, staples 17 (FIGS. 2, 4) may connect the ends of the studs of each pair at points that are out of the channel strips, when the studs are in position, for ease in handling each stud while positioning the ends of members 6, 7 in the channels, and which staples may thereafter be removed.

In the finished partition, the air gap between the adjacent studs of each set of stud members 6, 7 is continuous from end to end of the said members, and the hollow ribs 10 or hollow rib sections 15 against which the adjacent sides of the pair of members 6, 7 are in contact are connected only by the connection between the upper edges of sides 13 of the ribs 10 or the upper edges of sides 16 of sections 15. Sound vibrations reaching the connections between the sides of the ribs 10 or sections 15 are effectively dissipated in the spaces or space between sides 13 or 16 of the ribs or sections.

It is obvious that the dimensions given relative to the stud members 6, 7 and the strips 1, including ribs 10, 15 and ears 14, may vary. However, the height of the spacing ribs 10 or 15 should be adequate to assure against the ends of the stud members 6, 7 engaging each other under the influence of any force applied against the wall panels 8, irrespective of minor variations in the lengths of the stud members.

It is not necessary in the present instance to split the so-called 2 x 4's to form the stud members, inasmuch as they may initially be cut to the desired dimensions.

It is also obvious that the strips 1 may be reversed, end for end, insofar as the ears 14 are concerned, provided the ears of each set in the upper strip are in vertical alignment with the ears of a corresponding set in the lower strip.

It is apparent that the positioning and securing of the studding in place by the structure hereinbefore disclosed will require only a fraction of the time required by the conventional method, and the studding in a row will be in accurate alignment, and the spacing between the sets of studs will be accurate, once the channels are properly secured to the floor and ceiling, and skilled labor is not required.

I claim:

1. In room partition structure,

(a) a horizontally extending overhead strip formed with a central rib depending from its lower side extending longitudinally thereof, and seats at opposite sides thereof for seating against the upper ends of studding,

(b) a horizontally extending lower strip parallel with and spaced below said upper strip, and formed with a central rib projecting upwardly from its upper side and extending longitudinally of said lower strip, and seats at opposite sides thereof for seating against the lower studs of studding,

(c) a row of spaced, vertical studs between said over-

head and said lower strip disposed in opposed pairs aligned transversely of said strips with the adjacent sides of the studs of each pair against said ribs whereby said studs are spaced apart, and the terminating opposite end surfaces of the studs of each pair being seated against said seats with the oppositely outwardly facing surfaces of each pair of studs being substantially flush with the oppositely outwardly facing longitudinally extending sides of said strips whereby wall panels against said oppositely outwardly facing surfaces of each pair of studs may extend across and substantially in engagement with the oppositely outwardly extending sides of said strips, and

(d) wall panels so secured against said oppositely outwardly facing surfaces of said strips and said pairs of studs.

2. In a partition, the combination of:

(a) a row of spaced studs, each of which studs comprises a pair of adjacent stud members in side-by-side, parallel relation aligned transversely of said row;

(b) supporting means at the upper and lower ends of said studs supporting said studs vertical and in alignment in said row;

(c) positioning means on said supporting means positioning said studs in uniform spaced relation in said row;

(d) spacing means on said supporting means uniformly spacing the stud members of each pair apart to provide a uniform air gap between said adjacent stud members substantially from end-to-end thereof;

(e) said supporting means comprising separate horizontal parallel strips adapted to be secured to the ceiling and floor of a room in a vertical plane providing an upper and a lower strip spaced apart substantially the length of said studs for extending over and below the latter;

(f) said positioning means comprising pairs of vertically aligned elements on said upper and lower strips spaced uniformly longitudinally of said strips between adjacent pairs of studs and respectively against one of the sides of the stud members of each pair at their ends;

(g) said upper strip and said lower strip being channel strips of sheet metal providing a bottom wall and spaced opposed, parallel side walls extending toward each other and over and in engagement with the oppositely outwardly facing sides of each pair of stud members at the ends of the latter for supporting said ends substantially against the spacing means therebetween;

(h) said elements being integral with said bottom wall of each strip and stamped therefrom;

(i) said spacing means being a hollow rib integral with and extending horizontally of each strip midway between the side walls thereof, whereby said spacing means provides an air gap between the ends of each pair of stud members.

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HENRY C. SUTHERLAND, *Primary Examiner*.

U.S. Cl. X.R.

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