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STEEL PARTITION CONSTRUCTION

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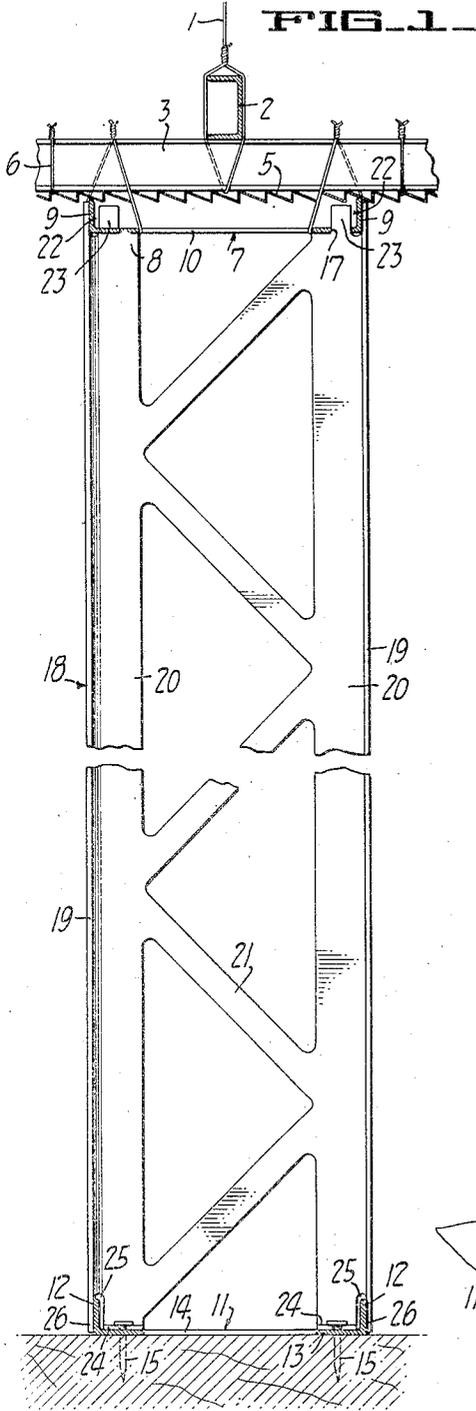


FIG. 2.

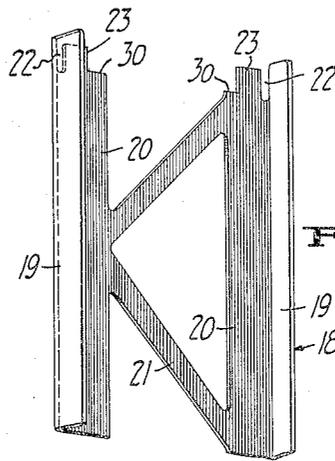
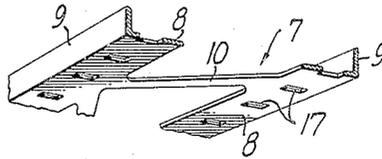


FIG. 3.

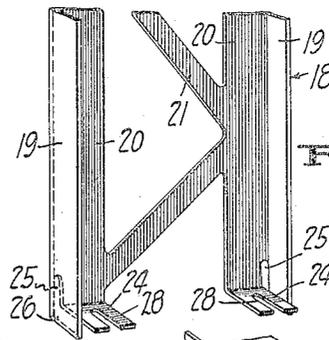


FIG. 4.

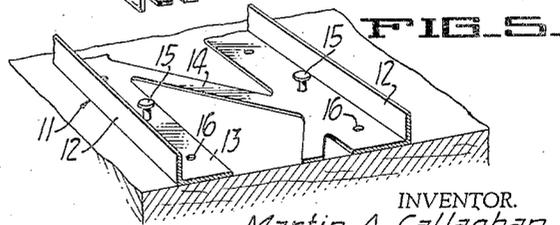


FIG. 5.

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## STEEL PARTITION CONSTRUCTION

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8 Claims. (Cl. 72—115)

This invention relates to steel stud partition construction in studs and in their end seats that are at the ceiling and floor for facilitating the rapid positioning and securing studs in place preparatory to lathing and plastering partition walls that are supported by the studs and which construction eliminates the use of clips, clamps and guide members that are separate from the studs and stud seats, as has heretofore been used in the art. Another object is the provision of means for accurately aligning the studs and a still further object is the provision of structure to enable the spacing of the studs at various distances apart as may be desired, all without necessitating the use of studs and seats that materially depart from the standard channel form of studs and seats now used in partition construction. Other objects and advantages will appear in the specification and drawing annexed hereto.

In the drawing, Fig. 1 is a view showing a stud in elevation, in position with the seats in cross section and showing portions of the floor and ceiling structure, in this instance, the ceiling being of the suspended or floating type as commonly used in fireproof buildings.

Fig. 2 is a fragmentary perspective view, partly in section, of an upper stud seat.

Fig. 3 is a fragmentary perspective view of the upper end of a stud.

Fig. 4 is a fragmentary perspective view of the lower end of a stud.

Fig. 5 is a fragmentary perspective view of a lower stud seat on a floor, the seat being in section at the nearest end.

Briefly described, heretofore it has been the common practice to position the studs by either forming openings in the ceiling itself for receiving the upper ends of the studs, and securing the lower ends of the studs to the floor between pairs of plates, or else special clips have been attached to the upper and lower stud seats to which the studs are attached. Naturally, considerable time and expense is involved in either of the above cases, and also, there is nothing in the structures themselves to insure the studs being in plumb and accurately spaced. With my invention, once the seats are properly positioned to receive the studs therebetween, the studs are quickly and accurately secured in place, since the stud ends and seats are themselves formed to contact for accurately positioning the studs, and the nails for securing the lower stud seats to the floor form stops for the lower ends of the studs to insure proper vertical positioning of the studs.

In detail, in floating or suspended ceiling con-

struction, it is customary to drop hanger wires 1 from the concrete between floors for supporting the ceilings, such wires being imbedded at their upper ends within the concrete and their lower ends are secured to horizontally extending runner channels 2. Below the runner channels, and secured thereto are horizontally extending furring channels 3, sometimes called furring channels, said furring channels extending at right angles across the runner channels and attached to the latter by clips or wires 4. The metal lath 5 is secured against the lower sides of the furring channels as by wires 6. Below the lath 5 I position my upper stud seats generally designated 7, which seats are upwardly opening channels running crosswise relative to the furring channels, the webs of the channels forming the seats being centrally cut away, as indicated in Fig. 2, leaving margins 8 along each of the sides 9 of the channels, which margins connect with each other by web portions 10 left between the openings cut out of the web.

The seats 7 are secured to the metal lath, and to the furring channels 3 by the wires 4, as seen in Fig. 1, with the free edges of the sides of the channel seats engaging the lath.

The lower stud seats, are indicated generally at 11, and are channels similar to the upper stud seats, having sides 12, marginal web portions 13 along the sides, and connecting web strips 14 extending across between portions 13. The lower seats lie flat on the floor directly under and parallel with the upper stud seats, and are secured in place by nails 15 which nails, preferably, are not fully driven down, but project upwardly at their upper ends a short distance above the web margins 13, as best indicated in Fig. 5. Of course the lower stud seats may be nailed directly to the concrete floor, or conventional wood nailing strips may first be secured on the floor, and the lower seats nailed thereto.

The web margins 13 on the lower stud seats are formed with rows of openings 16, which rows are in longitudinal alignment with the margins and pairs of openings in the opposite margins in each channel are disposed on lines at right angles to the length of the channel. The openings in each web may be spaced apart any desirable distance, which may be from two inches to several feet or more.

The web margins 8 of the upper stud seat are each formed with a row of slots 17, said slots each extending transversely of each web margin, and the slots in each row preferably have the

same spacing as occurs between the openings 16 in the lower stud seat.

The studs themselves, each one generally designated 8, are of channel form formed from channels of the same construction, generally, as that of the seats, that is, each stud comprises sides 9, marginal web portions 20 extending toward each other from an edge of the sides, and at right angles to the sides, and which web portions are connected by strips 21 formed integral with the marginal portions 20. At their upper ends, the portion 29 at each side of the stud is slotted inwardly from the end edges of said portions, as by slots 22, leaving a projection 23 at the upper end of each of the portions 20. The projections 23 are each of a width to freely slide into pairs of slots 17 in the portions 8 of the upper stud seat, as best indicated in Fig. 1. The distance between the opposed inner surfaces of sides 19 at the upper ends of the studs is sufficiently greater than the distance between the outer surfaces of the sides 9 of the upper seat to enable the sides 19, at the upper ends of the studs to fairly closely receive the sides of the seat therebetween and the width of slots 22 is sufficient to receive the sides 9 of the upper seat thereon when the projections 23 are slipped into slots 17 in the seat.

Referring to the lower ends of the studs, the marginal web portions 20 of each stud at the lower end of the latter, are bent at right angles to the main portion 20, thus forming lips 24, which lips are built toward the open side of each of the studs so as to lie alongside, the sides 20 and in a plane at right angles to the planes of sides 20. The side edge of each lip adjacent the side 20 nearest thereto, is cut away to leave a space between the side 20 and the edge of the lip the thickness of side 12 of the lower stud seat, and the main portions 20 above the lip and adjacent thereto are slotted at 25 to permit the sides 12 of the lower stud seat to be received into said slots the lower stud seats being of the same width as the upper stud seats. The sides 19 of the studs at their lower ends 26 are formed in downward continuation of the sides 19, hence, when the sides 12 of the lower stud seat are received in slots 25, with lip 24 resting on the portions 13 of said seat, the ends 26 will be closely adjacent the outer surfaces of sides 12.

The lips 24 are each formed with a slot 28 extending inwardly from the free end edge of the lip, which slots are spaced to be respectively aligned over a line extending through the rows of openings 16 in each of the portions 13 when the sides 12 are received in slots 25.

The upper and lower stud seats 7, 11 are positioned parallel with each other with the slots 17 in the upper stud seat slightly to one side of the openings 15 in the lower stud seat, with respect to vertical, the degree of offset being the distance from the inner ends of lips 24 to about the inner ends of slots 28. The nails 15, extending through openings 16 that most nearly fall below corresponding openings 17 in the upper stud seat, and at points where it is desired to position the studs, may serve as means for holding the lower stud seat in the desired position below the upper stud seat.

I will now describe the operations of positioning one of the studs, between the stud seats, the operation being substantially the same for all studs. The projections 23 at the upper end of the stud are inserted in a pair of openings 17 in the upper stud seat, one of the openings of the

pair being in each marginal portion 8 of said seat. The lower end of the stud is then swung to one side relative to vertical, but in the vertical plane in which both seats are disposed, the projections 23 pivoting in slots 17, and the side to which the lower end of the stud is swung is that which will position the open ends of slots 28 (in lips 24) facing toward the upper ends of nails 15. The slots 17 in which the projections 23 are pivoted, are those lying most nearly directly over the nails 15. Upon swinging the lower ends of the studs toward the nails, the lips 24 will pass into the open side of the lower seat 11 and ends 26 will slide over the outer surfaces of the sides 12. Also the nails 15 will pass into slots 28 until the nails engage the closed ends of the slots, at which time the stud will be absolutely vertical and lips 24 will be in substantial engagement against the upper side of web margins 13 of the lower seat. The projections 23 may be cut away along their adjacent edges to form shoulders 30 (Fig. 3) adapted to engage the lower sides of the web margins 8 of the upper stud seat, thus when the stud is vertical the upper and lower ends of the stud will be firmly seated against the upper and lower seats.

After the studs are positioned as above described, the nails 15 may be driven downwardly to firmly hold the lower ends of the studs against displacement in the plane of the seats, the upper ends of sides 29 and the lower ends 26 of said sides functioning to prevent dislodgment of the studs out of said plane in any other direction.

It is, of course, obvious that the slots 17 may open inwardly from the free edges of portions 8, and then the projections 23 need not be cut away to form shoulders 30, in which case the lower ends of slots 23 will engage the edges of sides 9 adjacent the slots, but greater strength is provided by the structure as disclosed generally in the drawing.

It will readily be seen that my studs can very quickly be positioned between the stud seats without requiring any parts, such as clamps, clips, etc., and with less work than would be required to nail ordinary wooden studding in place, and furthermore, once the stud seats are in position, the studs will automatically be in plumb and correctly spaced, upon pivoting the studs in openings 17 to a position with slots 28 receiving nails 15 for driving the latter in place.

Having described my invention, I claim:

1. A partition comprising a row of vertical studs and an upper and a lower elongated strip forming upper and lower stud seats extending across the upper and lower ends of the studs in alignment with the row, means formed integrally with the studs and the upper and lower strips respectively arranged and adapted to interlock for securing the studs in position between the strips with the ends of the studs in engagement with said strips, said studs and said upper and lower strips respectively being of generally channel form in cross-section and the studs being formed with recesses at the ends thereof adapted to receive the sides of the strips as distinguished from the web portion of the channels forming the strips.

2. In partition construction, a seat for one of the ends of a row of partition studs comprising an elongated metal strip adapted to extend over one of the ends of the studs, a row of studs, means projecting from a side of said strip adapted to engage said ends of the studs, and said ends of the studs being provided with a

recess adapted to engage said first mentioned means upon lateral movement of said ends toward said first mentioned means, and means arranged and adapted to pivotally support the opposite ends of said studs for swinging the first mentioned ends thereof generally laterally relative to vertical.

3. In partition construction, studs comprising vertically extending channels each formed with the web portions thereof at its opposite ends recessed inwardly from the opposite end edges of the web portion at points adjacent the sides of each channel, and stud seats comprising horizontally extending channels extending across the opposite ends of the studs and between the sides of the stud at their ends for securing the seats in position between the sides of the studs, the channels forming said seats each being provided with a plurality of openings in the web portions thereof and means extending through said openings for securing the studs against movement in a direction longitudinally of the seats.

4. In partition construction, a plurality of studs each comprising a vertically extending channel having opposite sides and a web portion, an upper and a lower stud seat extending horizontally across the upper and lower ends of the studs respectively, means for securing the lower stud seat to the floor of a room and for securing the lower end of the stud to said lower seat, means for securing the upper end of the stud to said upper stud seat, and means formed integrally with said stud at its opposite ends respectively for securing the stud to the upper and lower seats against movement of the stud in a direction laterally in the plane of its web, said last mentioned means comprising extensions of the sides of the channel at its ends arranged and adapted to extend across opposite sides of the seats respectively and the first mentioned means comprising a horizontal lip on the web portion of the stud overlying the lower seat

and a nail driven into the floor engaging said lip and lower seat.

5. In partition construction, a stud comprising a single, elongated channel of sheet metal providing opposed sides and a web connecting between said sides, a stud seat comprising an elongated strip of metal removably extending at right angles across one end of the stud and disposed between the opposed sides of the channel at said end, said web of the channel being cut away at said end for receiving the seat between said sides, and means engaging between the web of the stud and said strip securing said end of the stud against movement in one direction longitudinally of the strip when said stud is disposed perpendicular to the stud.

6. In a construction as defined in claim 5, said strip being of channel form with its sides substantially in engagement with the sides of the stud at said end of the stud.

7. In a construction as defined in claim 5, said strip being formed with an opening and the means engaging between the web of the stud and said strip comprising an extension of the web projecting into said opening.

8. In partition construction, a stud comprising a single, elongated channel of sheet metal providing opposed sides and a web connecting between said sides, opposite ends of said web at opposite ends of the stud being formed with slots adjacent the opposite sides of the stud, said slots extending longitudinally of the stud and opening outwardly of the opposite end edges of the web, stud seats comprising channel strips extending perpendicularly of the stud and across opposite ends thereof with the sides of the channel strips disposed within said slots, the web portion of one of said channel strips being formed with an opening and a portion of the web of the stud adjacent said channel strip being removably fitted within said opening.

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