

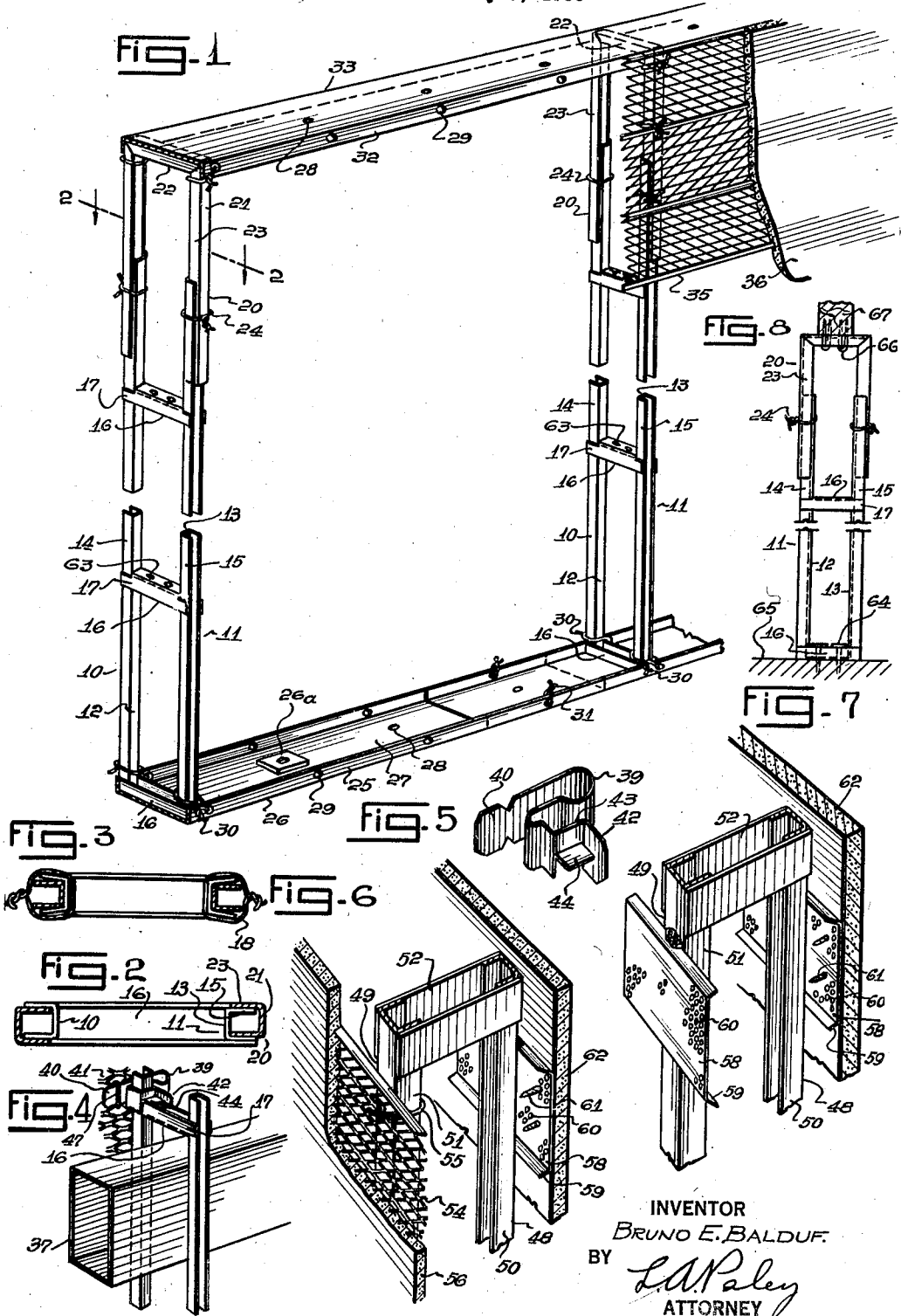
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PARTITION CONSTRUCTION

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PARTITION CONSTRUCTION

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This invention relates to building constructions, and has reference more particularly to a partition construction in which metallic studs of improved design are employed.

In the erection of partitions, it is desirable to use open metal studs which will permit the passage of pipes, conduits and ventilating and air conditioning ducts not only in a vertical but also in a horizontal direction. These studs are preferably constructed of metal to provide a fireproof partition. The studs should be low in cost, light in weight, easily erected, and be easily cut with an ordinary lathers snippers without the use of bolt cutters and hacksaws. For use around bathrooms and in certain other partitions, the studs should be reasonably sound insulating. The studs should be capable of supporting either a plaster wall, or a wall composed of composition boards, such as gypsum or fiber boards.

An object of this invention therefore, is to provide a partition construction including lightweight, fireproof and inexpensive studs which have open webs to permit the passage of ducts, pipes, etc.

Another object of the invention is to provide lightweight metallic studs which may be easily cut to the desired length by means of ordinary lathers snippers.

Another object of the invention is to provide a metal stud which may be attached directly to the floor and ceiling without the use of plates or runners.

A further object of the invention is to provide sound insulating partitions through the use of resilient clips on special metal studs.

A still further object of the invention is to provide a metal stud adapted to support either a plaster wall or a wall made of composition boards; also to improve building constructions in other respects hereinafter specified and claimed.

Reference is to be had to the accompanying drawing forming a part of this specification, in which

Fig. 1 is a perspective fragmentary elevation of the preferred form of my improved partition structure,

Fig. 2 is a sectional plan view through one of the partition studs taken on line 2-2 of Fig. 1,

Fig. 3 is a transverse sectional view through a stud showing the manner of telescoping cut sections,

Fig. 4 is a perspective fragmentary elevation of the partition utilizing a resilient clip for metal lath support and showing a duct extending through a stud,

Fig. 5 is a perspective view of one of the resilient clips,

Fig. 6 is a perspective fragmentary view of a modified form of partition structure,

Fig. 7 is a perspective view of a further modified form of partition, and

Fig. 8 is an elevation of the stud attached directly to the floor and ceiling.

Referring to the drawing by numerals, a pair of channels 10 and 11 are secured in spaced, parallel relation with the webs 12 and 13, respectively, lying in parallel planes. In this form of stud, flanges 14 and 15, respectively, are turned outwardly and connector channels 16 are notched out at the ends to form outstanding lugs 17 which are secured, as by spot welding, to the flanges 14 and 15 so as to rigidly secure channels 10 and 11 in spaced, parallel relation. Connectors 16 may be spaced at intervals desired, such as 1-2 feet in order to impart proper rigidity to the stud. The channels 10 and 11 are preferably constructed of lightweight steel so that they may be easily cut to desired length with regular lathers snippers. If desired, short pieces may be joined to longer pieces to make complete studs, in the manner shown in Fig. 3. For this purpose, the flanges 14 and 15 of the stud are slightly spread apart so as to receive the channels of the short stud length in telescopic relation, the two sections being rigidly secured together in adjacent position by means of tie wires 18.

Extension members 20 may be provided at the tops of the studs, said members comprising channels 21 in U-shaped form having a transverse cross channel 22 at the top. The channels 21 preferably have inturned flanges 23 which are telescopically received by stud flanges 14 and 15 in staggered relation as shown in Fig. 2 in order to impart maximum rigidity to the extension member, the channels 21 being secured to channels 10 and 11 in adjusted position by means of tie wires 24. The bottoms of the studs are received between upturned flanges 25 on base channels 26, webs 27 of said channels 26 being provided with perforations 28 for nailing attachment to the floor of a building, or other building framework. In nailing the channels 26 to concrete floors, stub nails are used and fiber board washers 26a are preferably interposed between the head of the nails and the channel web 27 to prevent breaking off of the nail heads. The channel flanges 25 are provided with spaced perforations 29 at about four inch spacing, so as to receive tie wires 30 to secure the bottoms of the studs to said flanges 25. The channels 26 are

telescoped together in end-to-end position with end holes 29 in registry and secured together by tie wires 31, the flanges 26 of one channel being spread slightly to permit said telescopic action. It will thus be seen that the studs are spaced apart in increments of four inches as desired. The extension members 20 engage between flanges 32 of channels 33 which are identical to channels 26 except that they are secured to the ceiling of a room, or to other suitable building framework. Ordinarily riblath 35 or any other type of expanded metal or plaster base is secured to channels 10 and 11 to receive a plaster coating 36 or other wall facing element, and form a hollow partition. The plaster passing through the meshes of the expanded metal keys with the outstanding stud flanges 14 and 15 so as to impart high rigidity to the finished partition. Heating or air conditioning ducts 37, conduits, pipes, or the like may freely extend through the hollow partition, either in a horizontal or vertical direction. Thus, wash basins or other plumbing fixtures may be arranged on opposite sides of the partition and the connecting pipes will be entirely concealed by the hollow partition. If desired, resilient clips 39 may be attached to one or both of the stud channels 10 and 11 adjacent the connector channels 16, each of said clips having an outstanding, notched, resiliently held arm 40 to which metal lath 41 is attached by means of tie wires 47. An arm 42 on said clip 39 is provided with U-shaped flanges 43 which embrace the channel 10, a bearing lug 44 being provided to engage a connector 16 to firmly and removably secure the clip to the stud. By the use of these resilient clips, a partition having high sound insulating value is produced for use around bathrooms and for certain other partitions.

In the form of partition illustrated in Fig. 6, spaced, parallel channels 48 and 49 are provided with inturned flanges 50 and 51, respectively, said flanges being rigidly secured together by means of connector strips 52 which are spot welded thereto. Metal lath or stucco mesh 54 is secured to the channels 49 by tie wires 55, and exterior stucco 56 is applied to said expanded metal 54 to form the exterior wall facing element, perforated plates 58 are provided with inturned flanges 59 which are welded to the webs of channels 48 so that said plates are spaced apart from said webs. The plates 58 are provided with a multiplicity of closely spaced perforations 60 to receive board attaching screws 61. Gypsum, fiber or other natural or composition boards 62 are secured in face abutting relation against the plates 58 and are secured thereto by means of the screws 61. In erecting the partition, the boards are placed against the plates 58 and the board is pierced by a slender punch which "finds" one of the perforations 60. The punch is then withdrawn, and a screw inserted in the punched hole by means of a screwdriver until the board 61 is drawn up tight against the plates 58. Plastic paint is then applied over the exposed inside face of boards 62. As this partition is intended for the exterior walls of buildings, the channels 48 and 49 are made of considerably heavier metal than the channels 10 and 11 so as to be load bearing. The partition shown in Fig. 7 is similar to that shown in Fig. 6 except that plates 58 and boards 62 are applied to both channels of the studs to form a plasterless partition.

In many installations, it will be desirable to

eliminate the channel runners 26 (Fig. 8) and secure the studs directly to the floor and ceiling. For this purpose, nail holes 63 are provided in the webs of connector channels 16 for receiving large headed nails 64 driven into the floor 65. At the top of the stud, staples 66 are driven through the web of channel connector 22 into a joist 67 and straddling one of the flanges of said connector. A saving in the cost of channels 26 is thus effected.

I would state in conclusion that while the illustrated examples constitute practical embodiments of my invention, I do not wish to limit myself precisely to these details, since manifestly, the same may be considerably varied without departing from the spirit of the invention as defined in the appended claims.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. In a partition construction, upright studs each comprising a pair of metallic channels having webs in spaced, parallel relation and outstanding flanges, means for supporting the tops and bottoms of said studs, a foraminous plaster base sheet secured to the channels of each stud to form a hollow partition, and a plaster coating applied to each base sheet, part of said plaster extending through said sheets and keying with said outstanding channel flanges.

2. In a partition construction, a plurality of studs each comprising a pair of metallic channels having the webs thereof in spaced, parallel relation, metallic supporting channels adjacent the tops and bottoms of said studs, the flanges of said supporting channels having spaced perforations, tie wires passing through said perforations and securing the tops and bottoms of said stud channels to said supporting channels, and wall facing elements secured to said stud channels to form a hollow partition.

3. In a partition structure, upright studs each comprising a pair of metallic channels having the webs thereof in spaced, parallel relation, connector strips for rigidly connecting the flanges of said channels, an extension frame of channel members telescoping with the tops of said stud channels and rigidly secured in adjusted position by wiring, means for securing the bottoms of said stud channels and the tops of said extension frames to a building structure, and wall facing elements secured to said stud channels to form a partition.

4. A building stud comprising a pair of channels in spaced, parallel relation with the flanges of said channels turned outwardly, and cross channels rigidly connecting said stud channels, said cross channels having notched out webs adjacent the ends thereof to provide protruding flanges, said protruding flanges engaging said stud flanges and being welded thereto.

5. A building stud comprising a pair of channels in spaced, parallel relation with the flanges of said channels turned outwardly, and cross members rigidly connecting said channels at spaced intervals, and an extension member slidably associated with one end of said stud and comprising a pair of channels in spaced, parallel relation with the flanges of said second channels turned inwardly and telescoping with the flanges of said stud channels, said extension and stud channels being adapted to be secured together by wiring in the desired adjusted position.

6. A building stud comprising a pair of channels in spaced, parallel relation with the flanges of said channels turned outwardly, and cross

members rigidly connecting said channels, said stud being adapted to support foraminous metallic sheets coated with plaster, the outer edges of said stud flanges being adapted to key with the plaster passing through said foraminous sheets.

7. In a partition construction, floor and ceiling channel runners comprising webs and inturned flanges, said flanges having spaced perforations, said runners being end telescoped and wired together through said perforations, metallic studs having the ends thereof seating in said runners, wiring connections from said studs to the perforations in said runner flanges, and wall facing members secured to said studs.

8. In a building stud, a pair of metallic channels in spaced, parallel relation, said channels having webs extending in parallel planes and flanges extending from the edges of said webs, and connector strips secured to said channels intermediate the ends thereof, said channels being of light metal and being adapted to being cut into short lengths, said short lengths being capable of telescoping between the flanges of other stud lengths by slightly spreading the flanges of said studs and then wiring together the telescoped stud lengths.

9. In a partition construction, upright studs each comprising a pair of metallic channels having webs in spaced, parallel relation and flanges extending from the edges of said webs, and con-

necter strips for rigidly connecting said stud channels at the tops and bottoms of said studs and also intermediate the ends of said channels, the end connector strips being secured directly to floor and ceiling by driven attaching elements.

10. A building stud comprising a pair of strips in spaced, parallel relation, cross members rigidly connecting said strips at spaced intervals, and an extension member slidably associated with one end of said stud and comprising a pair of strips in spaced, parallel relation, said extension strips and stud strips being adapted to be secured together by wiring in the desired adjusted position so as to vary the effective length of said stud.

11. In a partition structure, upright studs each comprising a pair of spaced, parallel strips, connector strips for rigidly connecting said stud strips, an extension frame having spaced, parallel strips engaging said stud strips, wiring connections securing said extension strips to said stud strips in any desired adjusted position, metallic channels attached to a floor and ceiling and having webs in spaced, parallel relation and outstanding perforated flanges, said stud end and extension frame being received between adjacent channel flanges, wired connections securing said extension frame and stud to said perforated flanges, and wall facing elements secured to said studs.

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