INTERLOCKING SHEET STEEL FRAME FOR ANCHORAGE OF PLASTER BOARDS

INVENTOR.

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3 Sheets-Sheet 2

Fig. 6

Fig. 7

Fig. 8

Fig. 9

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Fig. 10

Fig. 11

Fig. 12
To all whom it may concern:

Be it known that I, ISADORE POMERANTZ, a citizen of the United States, residing at St. Louis, State of Missouri, have invented a certain new and useful Improvement in an Interlocking Sheet-Steel Frame for Anchorage of Plaster Boards; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to erecting of partitions formed of an interlocking sheet-steel frame to which plaster boards are fastened and ready to be covered, both sides, with gypsum plaster. I obtain in this manner a system of fire and sound resistive non-bearing partitions fulfilling the requirement of high-class fireproof construction at low ultimate cost.

My system of partition construction possesses great rigidity even unplastered. When plastered, its strength and rigidity exceeds any type of open lath and channel stud partition. Its strength is not entirely dependent on plaster as in the cases of many other types.

The principal object of the invention is to provide a system by which the plaster boards are instantly and rigidly fastened or anchored to the studs, plates and saddles, and no special tools are required to accomplish same.

Another object is to provide means by which the studs are readily adjusted in distances as desired and easily fastened and kept in place.

Another object is to provide partitions of plaster boards usually made in sheets and of standard sizes, and when these are anchored up to the studs, plates and saddles according to my system, will not warp, buckle or bulge.

A feature of my system is the reinforced design of the studs and the method of anchoring by easily and rigidly inserting the locks, or anchors into the holes provided in the projecting shouldered tongues of said studs themselves. Another feature is that said tongues are provided also with separate openings or perforations which cooperate with the plaster for holding the plaster boards.

Another and very important feature is that the shouldered continuous tongues provided in said studs will keep the plaster board rigidly in place before the locks are inserted for anchoring purposes.

Another feature which is also important is the fact that the sheet-steel channel forming the studs become reinforced in having the outwardly projected shouldered tongues, as per my system.

Another feature is that a frame made in accordance with my invention is speedily erected and the plaster boards are held rigidly in place to the studs and saddles by means of the interlocking of same with the locks as shown, also the plaster boards adjoining the floor or ceiling are rigidly held in place by means of my interlocking plates.

Still another main feature is that not only the vertical ends of the plaster boards but also the horizontal ends are rigidly anchored, thus preventing warping, buckling or bulging of same.

My system consists of:

1—Anchoring reinforced channel studs provided with outwardly projected and shouldered tongues with means to rigidly and instantly fasten the plaster boards to the said studs.

2—Special floor and ceiling channel plates with means to adjust and hold in place the reinforced studs.

3—Anchoring saddles with the featured purposes to rigidly keep in place the horizontal ends of the plaster boards anchored on both sides of the studs.

4—The locks or anchors which fasten the plaster boards to the studs and to the saddles, said locks engaging into holes provided for this purpose.

In accomplishing this object, I have provided improved details of structure, the preferred forms of which are illustrated in the accompanying drawings, wherein

Fig. 1 is a horizontal section through a stud made in accordance with my invention, the plaster boards fastened by means of locks to the said stud.

Fig. 2 is a horizontal section showing an anchoring saddle engaging and holding in place the plaster boards fastened on both sides of the stud.
Fig. 3 is a sectional perspective of a hollow partition made according to my invention, comprising the reinforced channel studs, same being held in place at the bottom to the special plate fastened to a floor. Note the anchoring saddles.

Fig. 4 is a vertical section through a stud, showing how same is held in place by a stop inserted into the groove of a bottom plate. Fig. 5 is a perspective showing the stop as formerly mentioned.

Fig. 6 is a sectional perspective showing the lock which rigidly holds in place the plaster board to the studding or to the saddles.

Fig. 7 is a vertical section through part of a partition and through the saddle.

Fig. 8 is a sectional perspective of a hollow partition, according to my invention, comprising the reinforced sheet-metal studding, showing how the plaster boards are anchored to the studs.

Fig. 9 is a perspective of a saddle. Such a device is the first ever used for rigidly holding in place the horizontal ends of plaster boards.

Fig. 10 is a vertical section through a stud, showing how same is connected to a channel plate fastened to a ceiling. I am using a similar plate to that shown in Figure 4 but reversed.

Fig. 11 is a perspective of the special adjustable plate to be used at top and bottom of the studs and shown in Figures 4 and 10. Fig. 12 is a horizontal section through a stud slightly different from the stud shown in Figure 1. Such a stud is to be used in case it is desirable to fasten two layers to the stud. First a deadening pad is used and second a plaster board on top of the deadening pad.

Excepting the sectional perspective shown in Figure 3, all other designs are shown in full size. But I do not limit the sizes of the studs.

Referring now to the drawings by numerals of reference and particularly to Figures 1 to 11, inclusively:

1 designates the studs in channeled form consisting of a flange 9 and end flanges 7.

The flanges 7 contain outwardly projecting tongues provided with shoulders 12; inclined flanges 24 and anchoring ends 5. Numeral 6 designates the perforations cut into the inclined flanges 24 acting as plaster keys.

Numeral 11 designates the holes cut into the anchoring ends 5 into which engage the locks 4 to hold the plaster boards 2 to the studs 1. Numeral 14 designates the saddle consisting of a top flange 41, having at both ends T form anchoring devices 15, provided with perforation 16 in which engage locks 17 to hold in place the plaster boards 2.

Number 26 designates the special channel plate for top and bottom of studs 1. This channel plate consists of a flange 27 provided with a groove 28. At the ends of the main flange 27 there are angles formed of flanges 29 and 30 in angle form. Said angles are provided with hooks 31 for the purpose of rigidly holding in place the plaster boards on the top and bottom of the partition.

Numeral 33 designates the stops placed on both sides of the studs 1, where the studs come in contact with the flange 27 of the channel plate 26. These stops 33 engage into the groove 28 formed into the flange 27 of said plate 26. Numeral 3 designates the plastering coat. Numeral 59 designates the slightly different stud in channeled form consisting of a flange 51 and end flanges 52. The flanges 52 contain outwardly projecting tongues provided with shoulders 53, having grooves 54. Inclined flanges 55 are provided with perforations 56 for cooperation with the plaster and numeral 57 designates the anchoring end provided with holes 58, in which engage the locks 59 to hold in place the deadening pad 60; also the plaster board 61 on top of the pad 60, against the stud 50.

Numeral 63 designates the pin engaged in the groove 54 to hold in place the deadening pad 60. Numeral 64 designates the plastering. I do not limit myself to the shape of studs, plates, saddles and locks shown upon this drawing, but any other studs, saddles and locks, etc., could be used if same are provided with features claimed as part of my invention.

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

1. A reinforcing structure for wall structures comprising studs, adjustable plates at the top and the bottom of said studs, said plates having a channeled shape and containing a groove for engaging stops to hold said studs in place and having anchoring means for the horizontal ends of the plaster board.

2. Adjusting plates of channel shape, a back thereon provided with a groove for holding stops and right angularly bent ends for holding plaster board.

3. The construction of a sheet-steel frame consisting of uprights made of sheet-steel, these uprights having the shape of channels provided with outwardly projecting tongues, said tongues having grooved shoulders and perforated flanges and ends for holding in place deadening pads and plaster boards.

4. In a studding construction for plaster boards, studs, adjustable plates for the ends of said studs and stops carried by grooves in said plates for holding said studs in any desired position relative to said plates.

5. In a plaster board wall construction, plaster boards, sheet metal studs having means for engaging the vertical marginal portions of said plaster boards and adjust-
able plates having stops engaging the ends of said studs having means for engaging the extreme top and bottom horizontal marginal portions of said plaster board.

6. In a plaster board wall construction, plaster boards, sheet metal studs for engaging the vertical marginal portions of said plaster board, plates having stops engaging the ends of said studs, having means for engaging the top and bottom horizontal marginal portions of said plaster board and sheet metal anchoring saddles holding the intermediate horizontal marginal portions of said plaster board.

7. In a studding construction, a sheet metal stud having spaced parallel sides, outwardly projecting tongues formed upon said sides, said tongues having perforations therein for the entry of plaster and openings relatively close to the ends thereof for a locking element.

8. In a studding construction, a sheet metal stud having spaced parallel sides, outwardly projecting tongues formed upon said sides, said tongues having portions at right angles to said sides whereby the ends of the plaster board may have a close fitting seat.

9. In a studding construction, a sheet metal stud having a channel formation, an outwardly directed tongue formed upon one of the sides of said stud, said tongue having a portion at right angles to the sides of the said studs and a portion angularly disposed thereto.

10. In a studding construction a sheet metal stud having a channel formation, an outwardly directed tongue formed upon one of the sides of said stud, said tongue having the portions contacting with the plaster board at right angles to the side of the stud and the portions not contacting therewith provided with perforations for the entry of plaster and for locking members.

11. In a studding construction, a sheet metal stud having parallel sides, outwardly directed tongues formed upon said sides having parallel side portions and grooves in said side portions.

12. In a studding construction, a sheet metal stud, outwardly directed tongues formed upon said stud, said tongues in cross section consisting of a portion of rectangular form and a portion of a triangular form.

13. In a studding construction, a sheet metal stud, outwardly directed tongues formed upon said stud, said tongues in cross section consisting of a portion of a rectangular form and a portion of a triangular form, and grooves dividing said rectangular and triangular portions.

14. In a studding construction, a sheet metal stud, outwardly directed tongues formed upon said stud, said tongues in cross section consisting of a portion of a rectangular form and a portion of a triangular form, grooves dividing said rectangular portion from said triangular portion and said triangular portion having perforations for the reception of holding members.

15. In a building construction, a sheet metal stud, tongues formed upon said stud, said tongues in cross section consisting of a portion of a rectangular formation and a portion of a triangular formation and said triangular portion having perforations in the apex thereof for the reception of holding members.

In testimony whereof, I affix my signature.

ISADORE POMERANTZ.