

April 6, 1937.

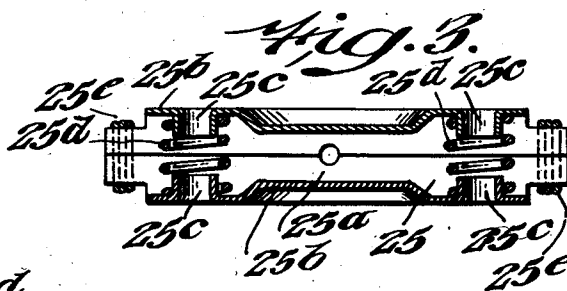
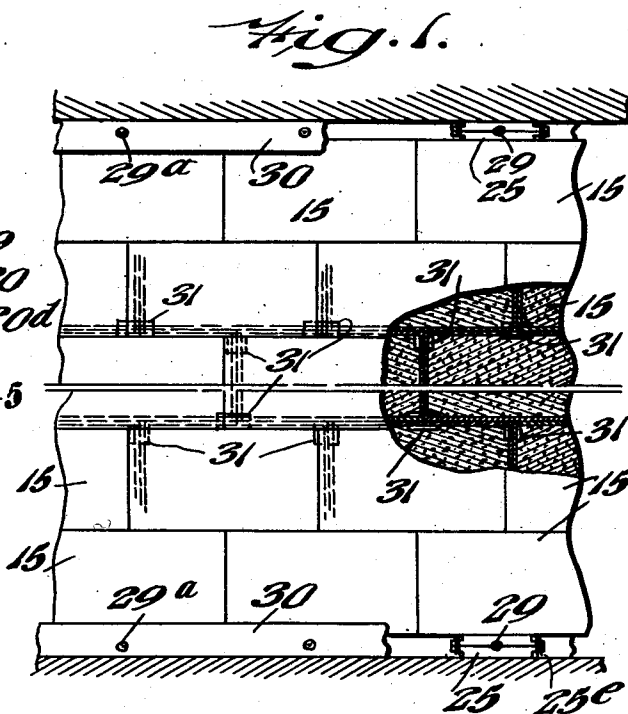
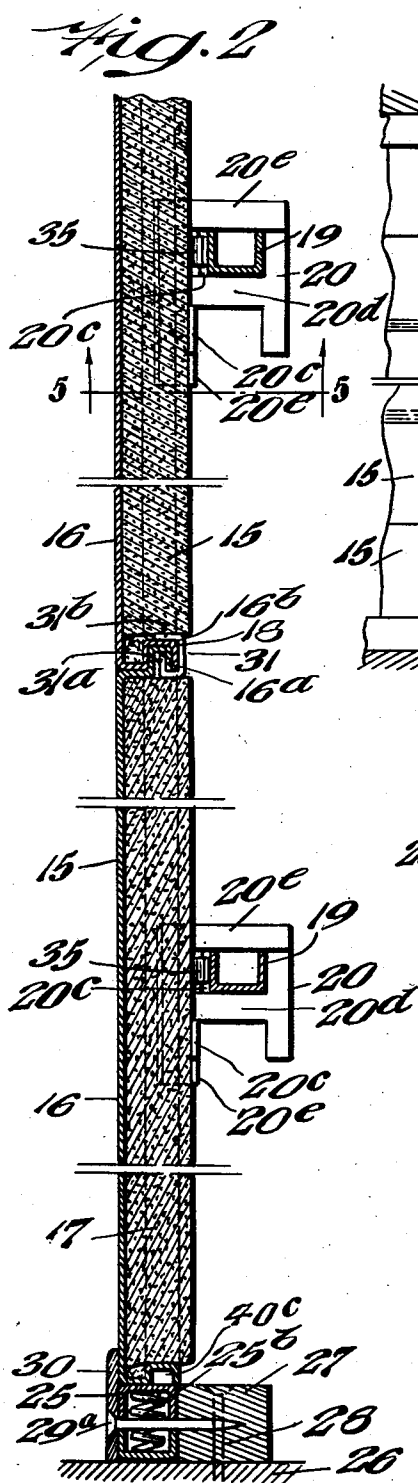
F. M. VENZIE

2,076,388

WALL CONSTRUCTION

Filed July 22, 1933

2 Sheets-Sheet 1



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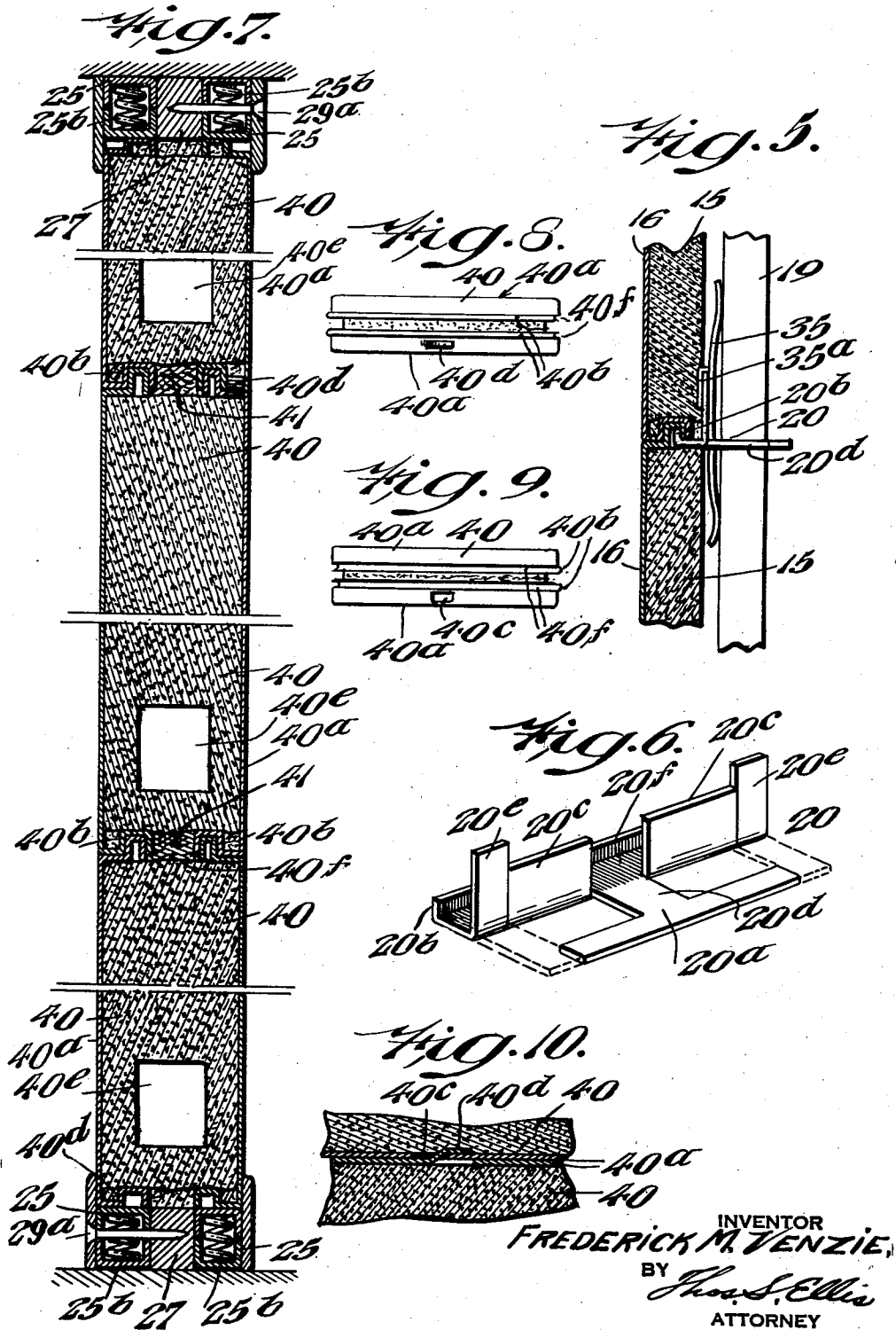
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UNITED STATES PATENT OFFICE

2,076,388

WALL CONSTRUCTION

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Application July 22, 1933, Serial No. 681,679

3 Claims. (Cl. 189—34)

My invention relates to building construction and more particularly to a novel wall and means for supporting the same.

Heretofore in the more modern types of interior walls formed of a plurality of panels the panels have been spaced from and secured to the studding by resilient clips. It has been found that such walls cracked due to expansion and contraction and hence would not keep the smooth surface with which they had been finished. Furthermore, it was found that the sound absorption of such walls was not as great as it should be.

My invention comprises a novel wall formed of a plurality of surfacing units in which the units are rigidly connected and resiliently supported out of contact with all supports.

A primary object of my invention is to provide a wall, formed of a plurality of abutting surfacing units, in which no cracks will form from either vibration, expansion, or contraction.

Another object of my invention is to increase the sound absorbing qualities of a resiliently supported wall.

A more specific object of my invention is to provide a wall comprised of a multiplicity of abutting surfacing units which is not only resiliently connected to the supports adjacent its inner surface but is resiliently supported on all of its marginal edges.

Yet another object of my invention is to provide a wall comprised of a multiplicity of surfacing units which is provided with means for maintaining the edges of the surfacing units in abutting relationship.

A further object of my invention is to provide a wall which is maintained out of fixed contact with all stationary supports.

Other and more specific objects of my invention will be apparent from the following specification, claims, and from the drawings in which:

Fig. 1 is a front elevation with portions broken away of a part of a wall embodying one form of my invention;

Fig. 2 is a horizontal section taken through a portion of the wall shown in Fig. 1;

Fig. 3 is a vertical section through an expansion member used in connection with my invention;

Fig. 4 is a perspective view of a clip adapted to hold together two surfacing units;

Fig. 5 is a vertical section on an enlarged scale taken at right angles to the view shown in Fig. 2 on the line 5—5 thereof and showing the application of a clip to the wall and support;

Fig. 6 is a detailed perspective view of a clip for holding the surfacing unit to the support;

Fig. 7 is a vertical section of a wall showing a modification of my invention;

Figs. 8 and 9 are vertical elevations of edges of the surfacing unit shown in Fig. 7; and

Fig. 10 is a vertical section through edges of two of the abutting surfacing units shown in Fig. 7.

Referring now particularly to the embodiment of my invention shown in Figs. 1 to 6 inclusive, wherein is illustrated a wall, supported by studding, a multiplicity of surfacing units 15 comprising a metal shell or pan 16 having a filler of suitable material such as felt, fire resisting compositions or the like 17 and formed with tongued and grooved marginal edges 18 are connected to studs 19 by clips 20. The surfacing units may be identical with or similar to those described in my copending application filed February 1, 1933, Serial No. 654,688. The studs may be supported in any preferred and suitable manner as is well known to those skilled in the art. Each surfacing unit 15 of a bottom row or tier is spaced from the floor or other supporting surface by an expansion or resilient member 25 and the end units of each horizontal row are similarly spaced from the side or end walls 26 by similar members 25.

It being understood that the expansion members 25 along the entire margin of the wall are similarly mounted, a description of the spring at one of the ends of my novel wall will suffice for a description of all. As illustrated in Fig. 2, adjacent the margin of the wall to be erected a strip 27 of wood is nailed to a fixed support 26, such as an exterior wall, as by nail 28, and to the strip 27 is nailed as by the nail 29 the spring unit 25, the unit 25 being formed with an opening 25a for a nail formed between two complementarily shaped members 25b. Each of the members 25b has a pair of inwardly projecting flanges 25c facing one another between which is adapted to be seated a pair of expansion springs 25d. Prior to their erection the units 25 are compressed, as by a vise, and fastened in compressed position by a wrapping of wire or other suitable material about their ends as at 25e. The members 25 are then positioned as previously indicated adjacent the strip 27.

After the surfacing units 15 have been positioned in the wall, the wires 25e are cut, the springs 25d expand and maintain the wall spaced from its marginal supports under a resilient pressure and maintain these units at all times in a close abutting relationship regardless of their

expansion and contraction or movement due to vibration.

The opening around the edges of the wall formed as above described, as well as the expansion members 25, is covered by a finishing strip 30 nailed as at 29a to the strip 27 to which the expansion members 25 are connected, which strip extends over the edge of the floating wall a sufficient distance that when the wall is in its most contracted condition the strip will still overlap the same.

The surfacing units 15 are connected to one another by a clip 31, Fig. 4, which may be quadrilateral in cross-section with two free edges one of which is convex as at 31a. The convex edge 31a is adapted to fit under the inner side of the tongue 16a on the pan 16 and the upper face 31b of the clip, at right angles to convex edge 31a, is adapted to fit over the inner edge of the groove 16b of an adjacent pan 16. These clips are so shaped that the convex edge 31a may be readily slipped into the back of the tongue 16a and an adjacent surfacing unit thereafter driven in under the upper face 31b thereof, the clip serving to wedge together the tongue and groove of adjacent pans. Preferably these clips are positioned with relation to the surfacing units as indicated in Fig. 1.

Clips 20 for connecting the units to the stud 19 preferably are formed from a single blank and comprise a substantially H-shaped plate 20a having a flange 20b extending at right angles thereto along one of the longer sides, parallel to which and connected to the opposite side of the same side of the H-shaped plate are two fingers 20c spaced by the bar 20d of the H. Alongside of each of the fingers 20c are two fingers 20e lying in the same plane therewith, each of these fingers being adapted to be bent downwardly to connect one end of the longer sides of the H to form a closure as indicated in Fig. 6 about a stud. These clips, preferably along the flange 20b and the portion of the plate adjacent thereto, are coated with a non-metallic substance 20f such as asphalt, whereby when the clip is connected to the surfacing unit there will be no metal contact and hence the transmission of sound will be minimized.

As indicated in Figs. 2 and 5, the upright finger 20c of the clip 20 carries a spring 35 formed with a hook-shaped member 35a adapted to engage the finger 20c. The spring 35 is interposed between the inner face of the finger 20c and the studding to provide a non-rigid connection between the surfacing unit and its support. As will be apparent from Fig. 5, the flange 20b of the clip 20 engages the inner portion of the tongue 16a of the surfacing units 15 in the same manner as does the clip 31 but at a position spaced therefrom.

In the embodiment of my invention, shown in Figs. 7 to 10, which eliminates the studding and is primarily useful as a partition wall, the surfacing units 40 are substantially similar to those above described but the filler may be three times as thick but provided with pans on both surfaces. The filler may have an opening such as at 40e extending lengthwise therethrough allowing the

passage of waterpipes, electric conduits and the like.

The pans 40a forming one surface of each of the units are provided adjacent their tongued edges 40b with a catch 40d and along the grooved edges 40f with a slot 40c adapted to receive the catch 40d and be engaged by the same, as clearly indicated in Fig. 10, to prevent movement of adjacent units out of engagement with each other. The units embodied in this invention are supported in an identical manner on the tension members 25 as those shown in the first described embodiment of my invention except that a plurality of the tension members are provided at each end and all other supporting means are eliminated, as clearly indicated in Fig. 7. Since in this construction a space occurs between the adjacent edges of the panels inwardly of the pans, this is filled with grouting 41 to increase the fire-proof qualities of the wall.

Various modifications may be made of the above described embodiments of my invention without departing from the spirit and scope thereof, as set forth in the following claims.

What is claimed is:

1. A wall comprising a plurality of surfacing units each having a metal face and a non-metallic filler, said faces being shaped to form tongued and grooved edges on said units; a metallic clip engaging a tongue and groove of adjacent units for maintaining the same in fixed relationship one with another; a fixed support; a metallic clip engaging said fixed support and surfacing unit, said last named clip having a non-metallic coating on the portion thereof engaging said unit, and means for maintaining it in resilient contact with said fixed support; and resilient members positioned between said surfacing units and surrounding surfaces whereby said surfacing units are maintained out of fixed contact therewith.

2. A wall comprising a plurality of surfacing units, said units having tongued and grooved edges; a clip engaging a tongue and groove of adjacent units for maintaining the same in fixed relationship; a fixed support; a clip engaging said fixed support and one of said surfacing units, said last named clip having a non-metallic coating on the portion thereof engaging said unit, and means for maintaining said last named clip in resilient contact with said fixed support; and resilient members positioned between said surfacing units and surrounding surfaces whereby said surfacing units are maintained out of fixed contact therewith.

3. A wall bounded by fixed supports comprising a multiplicity of similarly shaped surfacing units having parallel major surfaces, tongues and grooves on each of said units, means engaging the tongue of one unit and the groove of an adjacent unit for connecting said units, studs positioned outside of the planes in which said major surfaces lie, means lying between said planes for resiliently spacing said connected units from said fixed supports, and means engaging said units for resiliently connecting said units to said studs.

FREDERICK M. VENZIE.