July 24, 1934. C. W. UTZMAN 1,967,846

WALL CONSTRUCTION

Filed May 5, 1932

Fig. 1.

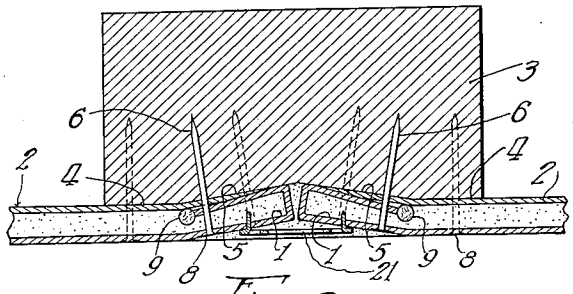


Fig. 3.

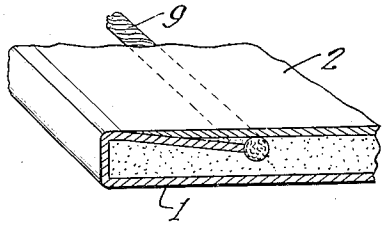


Fig. 2.

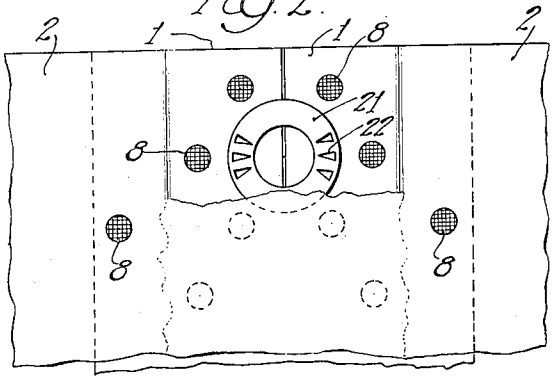


Fig. 9.

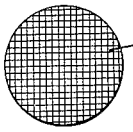


Fig. 8.

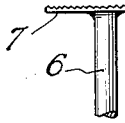


Fig. 7.

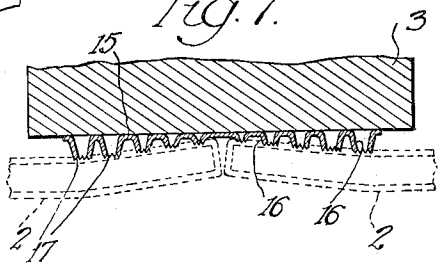


Fig. 4.

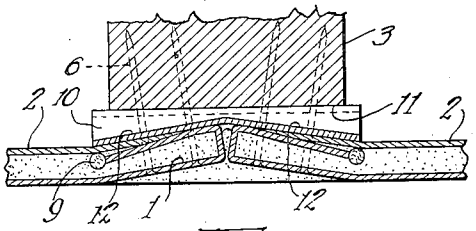


Fig. 5.

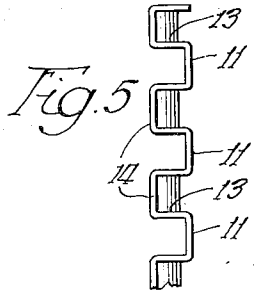
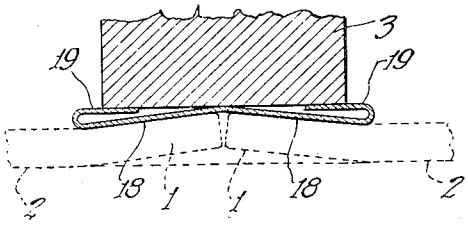


Fig. 6.



Inventor
Clarence W. Utzman
By: Lawson Mann Atty.

Patented July 24, 1934 1,967,846

UNITED STATES PATENT OFFICE

1,967,846

WALL CONSTRUCTION

Clarence W. Utzman, Wilmette, Ill.

Application May 5, 1932, Serial No. 609,369

8 Claims. (Cl. 72—16)

This invention relates to building structures and more particularly to the method and means for producing flat surfaces in such structures such as walls and ceilings.

The so-called wall board of commerce, formed of paper, wood pulp or fibrous material, as well as the gypsum board of commerce, comprising a plaster or gypsum core with a paper covering about the sides and edges, have long been employed in lieu of laths and plaster by nailing the same with the adjacent edges abutting to the usual supports to form walls and securing in the same manner to form ceilings in dwellings and other buildings and when so applied, painted, decorated or papered serve in the same manner as the lath and plaster wall and ceiling covering. Structures of this kind, which are used in lieu of laths, and then plastered over to complete the surface, are known to the trade as plaster boards.

It is an object of this invention to provide a structure which may employ wall board, gypsum board or plaster board, in which the outer surfaces may be uniform and permit the abutting edges to be positively drawn to an even or flush surface upon flat surfaced supports to serve the lower and cheaper class of construction or permit the abutting edges to be drawn downward into a depression provided on the support for the purpose of positioning the face side of the wall gypsum or plaster board at the edges thereof below the plane of the flat outer surfaces of the intermediate portions of the respective boards and then this depression filled with any of the plastic compositions commercially known as fillers, plaster or other means resulting in presenting a uniform surface in the same plane throughout the wall or ceiling ready for decorating, painting, papering or covering over, as the case may be, in the high and more efficient class of construction.

It is another object of this invention, by the means disclosed, to make the wall, gypsum or plaster boards, respectively, provide a higher class service than heretofore and to save much time in the construction thereof compared with those higher class constructions.

It is an object of this invention to provide a speedily erected high class construction which eliminates the need of large quantities of water being used therein, as in plaster surfaced methods, thus saving time and possible shrinkage difficulties in the drying out of the excess water at later times.

An advantage of this invention is that by this means the need to make panel effects in wall or gypsum boarding to produce high class or superior construction is entirely eliminated. By this invention the board may be used to advantage on either paneled or flat monolithic surfaced effects, thus opening a new field of use which heretofore has been closed by objections to the visible joinings which are unsightly.

Another advantage of this invention is that by the novel method of anchoring abutting edges of boards to the supports, a high degree of alignment of surfaces is secured, safety of anchorage assured with the further feature of providing between the wall faces, when so desired, an entire separation of the space therein which may serve for the insertion of a continuous sound stop, another advantage of importance. In carrying out this invention the body of the adjacent meeting edges of each board are firmly held against the support for a distance considerably greater than heretofore practiced in the art resulting in a reduction of sound transmission of the main body of the board.

It is a further object of this invention in coordination with other objects before mentioned to provide companion partition surfaces erected on timber or other supports with the surfaces of the partition forming walls much thinner to consume less space than the present employing similar materials.

It is still another object of this invention, when it is desired to employ insulation in wall construction to utilize the flexible or springy character of the insulating material to produce a concealed joint of the type hereinbefore described.

Such insulation is usually composed of fibered wood, vegetable or animal products properly treated and produced in sheets which are usually both porous and resilient and act as sound, heat and cold retardants. When the insulation is to be applied in contact with the inner side of this wall covering, in accordance with this invention, it is preferable to obtain sheets of such insulation of the same width as the wall, gypsum or plaster boards employed and place these sheets between the supports and the boards with the meeting edges of the sheets in staggered relation to the meeting edges of the boards and then secure the boards to the supports in the manner hereinbefore described and the thin flat-headed nails will, by compressing the insulation immediately thereunder, draw the meeting edges below the intermediate flat surface. In such cases it may be preferable to interpose a thin strip of metal between the insulation and meeting edges of the boards through which the nails pass before entering the support whereby the metal strip grasps

the nail and assists in maintaining the insulation compressed.

This invention contemplates the production of this board as well as the means and method for erecting it to accomplish this result.

With these and other objects in view reference is made to the accompanying sheet of drawings which illustrate preferred embodiments of this invention with the understanding that minor detail changes may be made without departing from the scope thereof.

In the drawing:—

Figure 1 is a view in horizontal section taken through one form of support illustrating the manner in which the meeting edges of the boards are drawn below the plane of the board surfaces.

Figure 2 is a fragmentary view in front elevation, with parts removed of Figure 1.

Figure 3 is an enlarged detail view in perspective of a corner of a gypsum board showing one edge thereof.

Figure 4 is a view similar to Figure 1 illustrating a modified construction.

Figure 5 is a fragmentary detail view in end elevation of the metallic member support shown in Figure 4.

Figures 6 and 7 are views similar to Figure 4, of other modification.

Figure 8 is a fragmentary view in front elevation of a drawing nail.

Figure 9 is a top plan view of Figure 8.

One preferred means for accomplishing the drawing in of the edge portions 1 of the abutting boards 2 is to provide a support 3 having an angular depression along the center line thereof which presents flat surfaces 4 in the same plane on each side of the angular surfaces 5, applying the boards 2 with their abutting edges over the center line of the support 3 and then securing the same in place by driving a series of nails 6 with large flat, but very thin heads 7 through the respective boards, preferably at uniform distances along each edge in rows. Said heads having a finely roughened surface 8 upon the upper side thereof. The driving of the nails adjacent the edges will draw the respective edges into contact with the support.

There is usually sufficient flexibility and compressibility in the wall, gypsum and plaster boards of commerce to allow this to be accomplished. The thin flat heads 7 of the nails will firmly hold the boards in the drawn position without fracturing the outer surface of the board. While the method above described will readily produce the desired result, it is preferable to provide some means for insuring that the edges may be uniformly drawn by the nails below the surface plane by providing some means to positively allow of compression on the side engaged by the support, as by scoring that side of a wall board or imbedding in the core adjacent the paper covering a longitudinal strand or series of strands of paper, fiber or other flexible material 9 or by forming therein a void in the gypsum or plaster board. This means is invisible in the finished product and will permit the edge of the board to be flexed uniformly and defined closely with the position of the means employed to produce the spring line point as it is being secured to the support.

The supports 3 may be the customary wood construction, or in a fireproof construction, metal channels or the like, which are adapted to be punctured, clipped or retained by nails or other means to serve the same purpose. If it is not desired to score the face of the wooden supports, the same result may be obtained by placing against the support a metallic member 10 having a flat surface 11 to engage the flat surface of the support and present two angular surfaces 12 to the abutting edges of the adjacent boards. Such members may be transversely corrugated or fluted in which alternate folds 13 rest against the support and the intermediate folds 14 form the angular surfaces engaged by the abutting edges, or a metallic plate 15 may be placed upon the flat surface of the support which metallic plate is provided with a series of punched out portions 16 decreasing in height from the edges toward the center having the ends of the outer portions punctured and formed with serrated edges 17 adapted to bite into and hold the board from movement thereover, or this member may be formed of a flat metallic strip centrally bent to form corresponding angular surfaces 18 with each side edge 19 bent back upon itself, so that the apex of the angular portions and the outer flat surfaces of this bent back portion will lie in the same plane and will engage the flat surface of the support. In these forms the metal is of such character as to be readily punctured by the customary board nail and the driving of the nails through the board will cause the nails to pass through the member and into the supports and in so doing insure the drawing of the abutting edges below the plane of the wall surface. The forms shown illustrate simple mechanical devices and may be varied to suit cost and service without departing from the scope of this invention.

While not necessary, it is preferable to provide some means overlaying each of the abutting gypsum boards which will not only form an additional securing means, but which will also form a reinforcement for the filler. When so desired, it is preferable to employ a plurality of annular metal shapes 21 which may have prongs 22 struck out from the body thereof which may be driven into the board adjacent each edge and which will lie below the plane of the surface of the main portions, to reinforce the filler. Other means of reinforcement may be provided to overlay the abutting depressed edges of the board which may be of a continuous type, woven or punched to suit the needs of the construction.

The wall board and gypsum board of commerce are cut in various standard lengths and may usually be bought of a sufficient length for one monolithic board to extend from floor to ceiling of the usual building. However, in the construction of ceilings, it is very often necessary to place the boards end to end in prolongation of each other. This invention also contemplates that the furring may be constructed in the same manner as the studding heretofore described, and transverse furring provided under the transverse abutting board edges which are preferably scored on the underside by sawing a kerf therein of sufficient depth to allow the transverse edges to be drawn below the plane of the ceiling surface and then filled, as before indicated.

What I claim is:

1. A wall construction comprising two or more wall boards of substantially uniform thickness throughout disposed in a substantially single plane and having adjacent edge portions drawn out of the plane of the boards, and means filling the space between said drawn portions, said means being flush with the exterior faces of the boards and a support to which the boards are secured and over which the edges are drawn.

2. A wall construction comprising two or more wall boards of substantially uniform thickness throughout disposed in a substantially single plane and having adjacent edge portions fastened to supports and said edge portions drawn below the plane of the exterior surface of the boards, reinforcing means laid into the depression thus formed and attached to the edges of the board making the depression full, flush and even with the exterior surface of the boards of said construction and a support to which the boards are secured and over which the edges are drawn.

3. In a wall construction, the combination of two or more plaster boards of substantially uniform thickness throughout disposed in a substantially single plane and having adjacent edge portions drawn out of the plane of the boards; a plastic material filling the space between said edge portions, said material being flush with the inner faces of the boards, and a support to which the boards are secured and over which the edges are drawn.

4. In a wall construction, the combination of two or more plaster boards of substantially uniform thickness throughout disposed in a substantially single plane and having adjacent edge portions drawn out of the plane of the boards, a plastic material filling the space between said edge portions, said material being flush with the inner faces of the boards, and a support to which the boards are secured, said support having a channeled face receiving said edge portions.

5. In a wall construction, the combination of two or more plaster boards of substantially uniform thickness throughout disposed in a substantially single plane and having adjacent edge portions drawn out of the plane of the boards, a paper covering for each board, a strand of fibrous material thicker than the paper of said covering embedded in the plaster of each board adjacent the face thereof and running parallel to the adjacent edge approximately along the line where the drawn portion of the board joins the main portion thereof, a plastic material filling the space between said edge portions, said material being flush with the faces of the boards, a support having a channeled face for receiving said edge portions, and means securing the boards to the support, said means drawing the edges of the boards into the channel of the support.

6. In a wall construction, the combination of a plurality of plaster wall boards of substantially uniform thickness throughout disposed in a substantially single plane and having adjacent edges, with a support therefor embodying a member having a face to which said adjacent edges are secured, said face having therein a shallow relatively wide V-shape channel running longitudinally of the member, means for securing the said edges to said member, said means drawing the edges into said channel out of the plane of the boards, and means for filling the space between said edge portions, said material being flush with the exterior faces of the boards.

7. A wall construction comprising a plurality of wall boards of substantially uniform thickness throughout disposed in a substantially single plane and having adjacent edge portions drawn out of the plane of the boards, reinforcing means fastened to the drawn edges below said plane, and means filling the space between said drawn portions and embedding said reinforcement therein, said means being flush with the exterior faces of the boards and a support to which the boards are secured and over which the edges are drawn.

8. In a wall constructed of abutting wall boards the method of covering the abutting edges flush with the main surface comprising the longitudinally recessing of the supports therefor, forcing the longitudinal margins of the said boards into said recesses bringing their abutting edges below the surface of the wall, filling the depressions so formed with a plastic material, and smoothing the same while plastic flush with the wall surface.

CLARENCE W. UTZMAN.