June 7, 1932. G. H. ELLIS 1,861,740

BUILDING CONSTRUCTION

Filed May 4, 1931

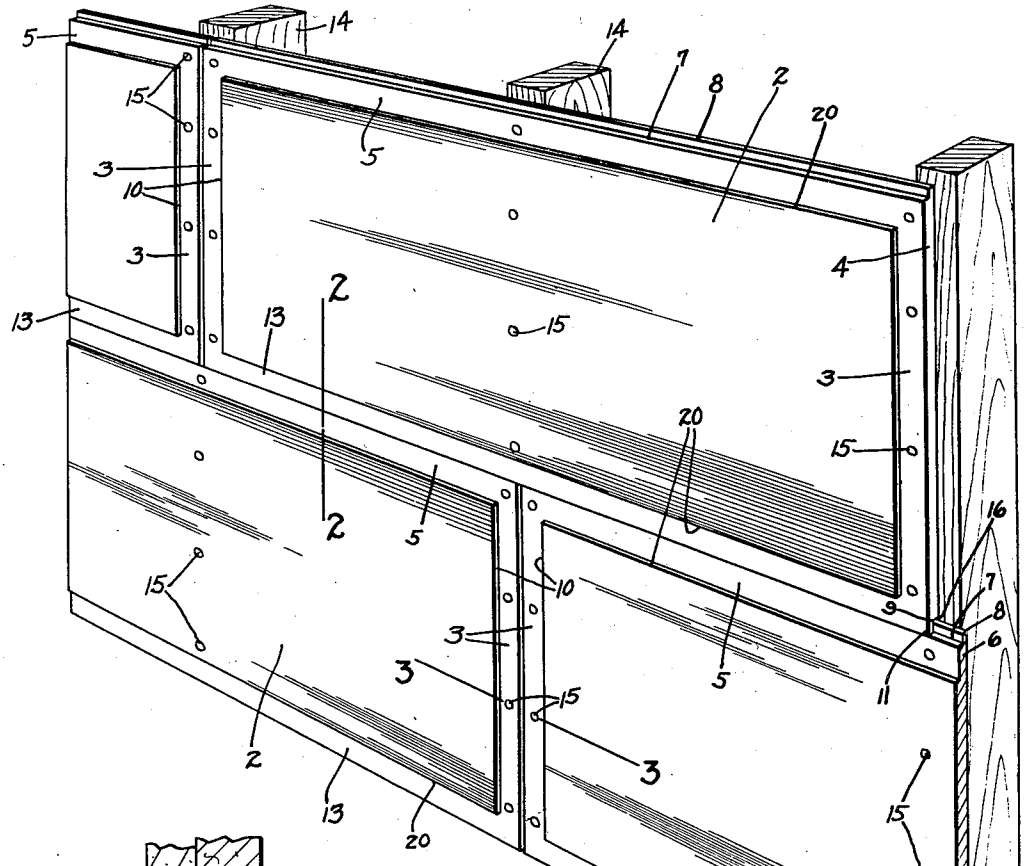


FIG. 1

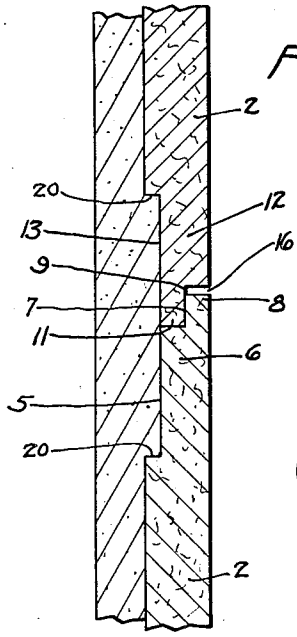


FIG. 2

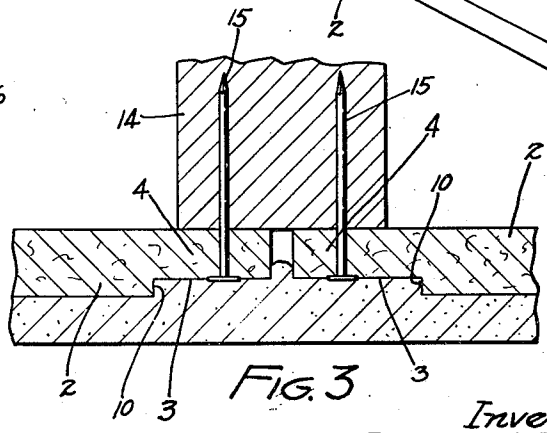


FIG. 3

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UNITED STATES PATENT OFFICE

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BUILDING CONSTRUCTION

Application filed May 4, 1931. Serial No. 534,828.

This invention relates to improvements in building construction, and particularly to composition fibre boards and walls constructed of such material, said boards being applied either outside or inside of the usual studding or floor joists, and receiving a coating of plaster, cement, or stucco.

An object of the invention is to provide a wall board adapted to be used in the construction of either outer or inner walls, which will not warp or buckle when wet plaster, cement or stucco is applied thereto, and in which cracking of the plaster at the joints will be minimized.

A further object is to provide a wall board constructed in such a manner that when embodied in the construction of a wall, it may expand and contract without buckling or warping.

A further object is to provide a composition board having opposite edge portions recessed from the same face side of the board to reduce said edge portions in thickness, and whereby depressions will be provided at the joints between the contiguous boards, so that when plaster is applied to the surface of the wall, it will be thicker at the joints between said wall boards, whereby the plaster is reinforced at these places so as to minimize cracking thereof, due to expansion and contraction of the composition wall boards.

A further object is to provide a wall board having its vertical edge portions recessed from one face side of the board, and its horizontal edge portions correspondingly recessed, and said horizontal edge portions being corner notched to provide longitudinal recesses respectively facing in opposite directions of opposite face sides of the board to provide ship lap joints between adjoining edges of contiguous boards, and whereby said joints will be substantially air tight, even though the boards may contract and expand.

A further object is to provide a synthetic wall board which may be used as a base for plaster and other cementitious materials, having its vertical edges recessed from the same face side of the board to reduce the thickness of the board at its ends, and said boards being adapted to be secured to the usual studs of the wall by suitable nails driven through the reduced end portions of the boards and into said studs, and the resistance of the fibrous material of the board at the reduced portions pierced by the nails being lessened, whereby the nail holes will elongate before the board will warp or buckle.

A further object is to provide a composition wall board having all of its edge portions recessed inwardly from the marginal edges thereof and from the same face side of the board, and the longitudinal edges being corner notched to provide two recesses respectively facing in opposite directions at opposite face sides of the board, and the depth of one of said recesses in direction transversely of the board, being greater than the other.

A further object is to provide an improved composition wall board of the general character disclosed in my Patent No. 1,725,787, issued August 27, 1929.

Other objects of the invention will appear from the following description and accompanying drawing and will be pointed out in the annexed claims.

In the accompanying drawing, there has been disclosed a structure designed to carry out the various objects of the invention, but it is to be understood that the invention is not confined to the exact features shown as various changes may be made within the scope of the claims which follow.

In the drawing:

Figure 1 is a perspective view illustrating a portion of a wall and the preferred manner of mounting the improved composition wall boards thereon;

Figure 2 is an enlarged detail sectional view on the line 2—2 of Figure 1; and

Figure 3 is an enlarged detail sectional view on the line 3—3 of Figure 1.

The novel composition fibre building board featured in this invention comprises a body portion 2 having its vertical edge portions provided with recesses 3—3 formed in the outer side face of the board and extending the full height thereof, as shown in Figure 1. These recesses are comparatively wide, as best

shown in Figure 3, and function to reduce the thickness of the marginal edge portions 4—4 of the board, and whereby shoulders 10—10 are provided.

The upper edge of the board is provided with a longitudinally extending recess 5 of substantially the same width as the vertically disposed recesses 3—3 at the ends of the board, whereby the upper marginal edge portion 6 of the board will be reduced in thickness in a manner similar to the end portions 4—4 thereof. One side of the recess 5 is defined by a shoulder or wall 20. The marginal edge portion 6 of the board is corner notched to provide a longitudinally extending recess 7 and a tongue 8. The tongue 8 is adapted to fit a correspondingly shaped recess 9 provided in the lower edge portion 12 of another board, as shown in Figure 2. The lower edge portion 12 also has a longitudinal tongue 11 adapted to be received in the recess 7 of a lower adjoining board. A recess 13 is provided in the lower edge portion 12 of each board, which is substantially aligned with the recesses 3—3 and 5, as shown in Figure 1, and is substantially of the same width. The recess 13, like the recess 5, is defined at one side by a similar shoulder 20.

When securing the wall boards to the studding, they are preferably arranged as shown in Figure 1, so as to break the vertical joints between the ends of the boards. The reduced vertical edge portions 4—4 of each board are arranged to be seated against the usual studs 14 of the wall, and are secured thereto by suitable nails 15, as shown in Figure 3. When securing the wall boards to the studs a space of approximately $\frac{3}{16}$ths of an inch is left between the contiguous ends of the boards to provide for expansion of each board may also be secured to the studding by driving nails through the board as clearly illustrated in Figure 1.

By overlapping the tongues 8 and 11 of contiguous boards, the horizontal edges between the boards will be sealed, and said overlapped edges will form, in effect, ship lap joints as will be clearly understood by reference to Figure 2. The recess 9 provided in the lower edge of each board 2 is preferably wider than the length of the tongue 8 provided at the upper edge of the board, so as to provide narrow grooves 16 at the horizontal joints of the boards which extend substantially the full lengths thereof, when the boards are secured to the studs. These grooves permit the tongues 11 upon the lower edges of the boards to compress when the boards expand vertically, resulting from the relatively smaller cross-sectional area of the tongues 11, as compared to the cross-sectional areas of the marginal edge portions 6 and 12 of the boards.

The vertical recesses 3—3 of each board, and also the horizontal recesses 5 and 13 of each board, are made comparatively wide, as will be noted by reference to Figures 2 and 3, so that a considerable portion of the plaster at the joints between the boards will be reinforced to substantially eliminate the danger of the plaster cracking at the joints between the boards, due to expansion and contraction. It will also be noted that the tongues 11 at the bottoms of the boards, abuttingly engage the bottoms of the recesses 7 in a direction transversely of each board so that when the boards expand in a cross-wise direction, the tongues 11 will compress and prevent the body of the board from buckling or warping. This results because of the reduced cross sectional area of the tongues 11. It is also to be noted that the tongues 11 are situated substantially in the medial planes of the boards, so that the forces of compression, due to expansion, will be transmitted to the boards at their medial planes, which tends to prevent the boards from buckling.

Also, by recessing the marginal edge portions of the outer surfaces of the boards as herein described, depressions will be formed in the surface of the wall extending the full lengths of the joints between the boards. These depressions will fill with plaster, as shown in Figures 2 and 3, when plaster is applied to the surfaces of the boards, thereby reinforcing the plaster at the joints between the boards so as to minimize cracking thereof. The shoulders 10 and 20 defining the walls of the recesses 3—3, 5, and 13, provide additional anchors or bonds for the plaster to further increase the strength of the structure at the board joints, as will readily be understood by reference to Figures 2 and 3. It will also be noted by reference to Figure 3 that by driving the nails through the reduced marginal edge end portions 4—4 of the boards, and by spacing apart the ends of the boards, as here shown, that the boards may expand and contract, the reduced cross sectional area of the end portions 4—4 permitting the nail holes in the composition boards to elongate to compensate for any creeping or elongating of the board ends upon the studs. The intermediate portion of each board is secured to the studding by nailing in a manner similar to that shown with respect to the ends thereof, but the nails at the intermediate portions of the boards pass through the full thickness of the boards, and because of the greater resistance offered by the increased thickness of the material at these points, the nail holes at the intermediate portions of the boards will not elongate, such elongation taking place only at the nails securing the ends of the boards to the studding.

I claim as my invention:

1. A composition board having opposite marginal edge portions recessed from the same face side of the board to reduce said edge portions in thickness and to provide marginal recesses, the width of each recess being relatively greater than its depth, and the marginal recesses of the adjoining edges of contiguous boards cooperating to provide elongated depressions in the surface of the wall so that when plaster is applied, it will be thicker in the regions of the joints between boards, to thereby strengthen the plaster at said joints.

2. A composition board having all of its marginal edge portions recessed from the same face side of the board to reduce said edge portions in thickness, and whereby one face side of the board is provided with a raised portion or panel bounded by a marginal recess, and the width of said recess being relatively greater than its depth, and the marginal recesses of the adjoining edges of contiguous boards in a wall cooperating to provide a plurality of interconnected depressions in the surface of said wall adapted to receive plaster, and whereby when plaster is applied to the wall surface, it will be thicker in the regions of the joints between boards, to thereby strengthen the plaster at said joints.

3. A composition board having all of its marginal edge portions recessed from the same face side of the board to reduce said edge portions in thickness, and whereby one face side of the board is provided with a raised portion or panel bounded by a marginal recess, and the width of said recess being relatively greater than its depth, and the marginal recesses of the adjoining edges of contiguous boards in a wall cooperating to provide a plurality of interconnected depressions in the surface of said wall, whereby when plaster is applied to the wall surface, it will be thicker in the regions of the joints between boards, to thereby strengthen the plaster at said joints, and means permitting said boards to expand and contract without buckling.

In witness whereof, I have hereunto set my hand this 2nd day of May, 1931.

GEORGE H. ELLIS.