Oct. 11, 1927. 1,644,996

A. GROSSINGER

BUILDING CONSTRUCTION

Filed Jan. 16, 1925

Fig. 1.

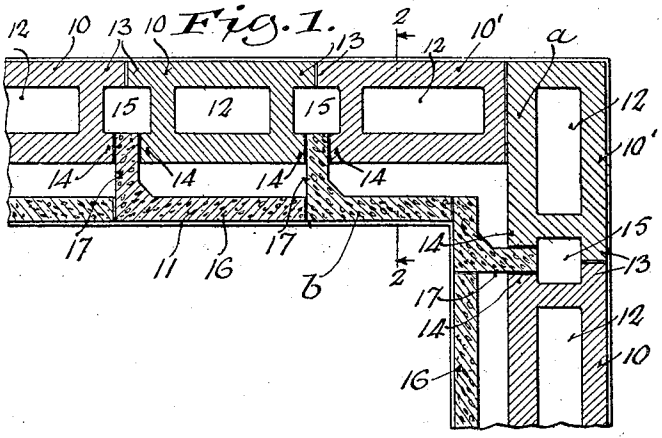


Fig. 2.

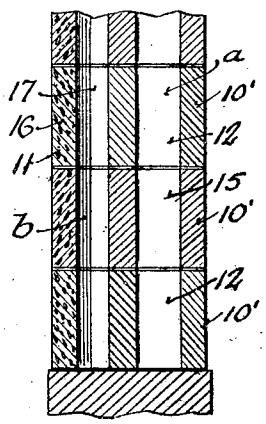


Fig. 3.

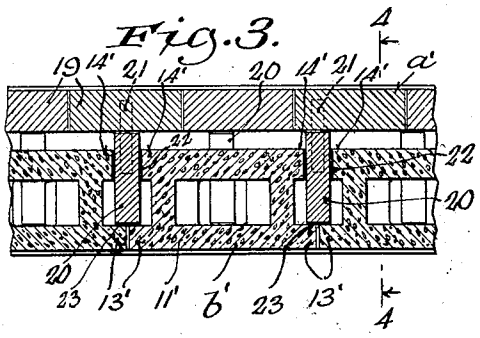


Fig. 4.

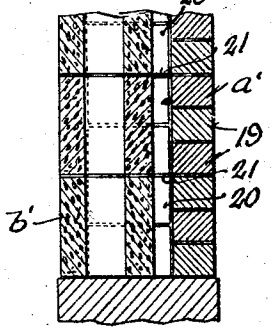


Fig. 5.

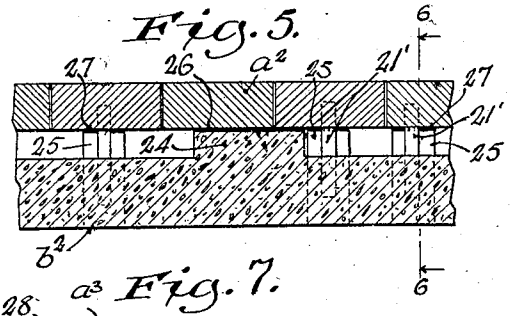


Fig. 6.

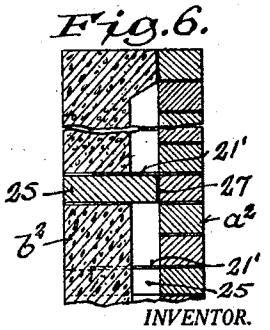
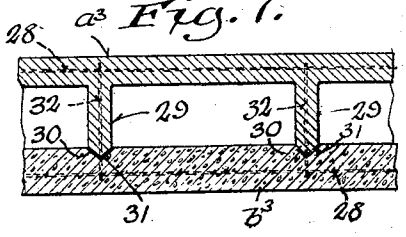


Fig. 7.



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UNITED STATES PATENT OFFICE.

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BUILDING CONSTRUCTION.

Application filed January 16, 1925. Serial No. 2,851.

This invention relates to building construction.

Various attempts have heretofore been made to overcome the dampness characteristic of cement building structures. To this end, various forms of cement blocks have been devised and various methods of construction have been attempted with a view to providing air spaces and channels within the wall capable of preventing the seepage of dampness therethrough. So far as I am aware, none of these prior efforts have proven entirely satisfactory.

One object of the present invention is the provision of a novel building construction which will be entirely free from the above mentioned defect and at the same time possesses the advantages of strength, rigidity and economy of construction characteristic of ordinary cement structures. This I have accomplished by providing a wall having an inner lining or thickness of cinder concrete spaced or otherwise insulated from the outer thickness of the wall. The ability of a wall, so constructed, to exclude dampness is attributed largely to the porosity of the cinder concrete and consequent permeability thereof by air in sufficient quantities to dry up any dampness within the wall.

Other objects and advantages will appear from the following description of several illustrative embodiments of the present invention.

In the drawings:

Figure 1 is a horizontal sectional view of a wall constructed in accordance with the present invention.

Figure 2 is a vertical sectional view taken substantially along the line 2—2 of Figure 1.

Figures 3 and 4 are horizontal and vertical sectional views, respectively, of a brick veneer wall embodying the present invention.

Figures 5 and 6 are horizontal and vertical sectional views, respectively, of a modified form of brick veneer wall embodying the present invention.

Figure 7 is a horizontal sectional view of another form of wall constructed in accordance with the present invention.

The building construction illustrated in Figures 1 and 2 comprises an outer wall or thickness *a* made up of hollow blocks 10 and 10′ of concrete laid in the usual manner and an inner wall or thickness *b* made up of cinder concrete blocks 11. The blocks 10 and 10′ are formed of the usual concrete mixture and each has the usual central air space 12. The opposite ends of each of the blocks 10 are formed with tongues or projections 13 and 14 constituting continuations of the front and rear faces thereof, respectively, and each of the corner blocks 10′ is formed with similar projections 13 and 14 at one end only thereof. The blocks are laid with the projections 13 in abutting relation so as to provide an air space 15 between the ends of adjacent blocks. The projections 14 are shorter than projections 13 so as to leave recesses for receiving portions of the cinder concrete blocks 11 which will now be described.

The cinder concrete blocks are formed of a mixture similar to the concrete blocks 10 and 10′ except that cinders are substituted for the gravel ordinarily used. For best results, only sharp-edged, dust proof cinders should be used, of a size ranging between that of a pea and a walnut. The cinder concrete blocks shown in Figures 1 and 2 are substantially L-shaped, each having a longitudinal leg 16 and transverse leg 17. These blocks are laid end to end in the usual staggered courses with the legs 16 parallel to and spaced from the blocks 10 and 10′ and the legs 17 projecting into the recesses formed between the short projections 14 of adjacent blocks 10 or 10′. A water proof insulating material, such as tar, is preferably interposed at 18 to separate the blocks 11 from actual contact with the blocks 10 or 10′.

The building construction illustrated in Figures 3 and 4 comprises an outer wall or thickness *a′* of brick veneer and an inner wall or thickness *b′* made up of hollow blocks 11′ of cinder concrete. The blocks 11′ are similar in form to the blocks 10 and 10′ hereinabove described but are made of a mixture similar to that used in the production of the blocks 11 hereinabove described. The brick veneer comprises brick 19 of usual form, laid in the usual manner, but preferably spaced from the cinder concrete blocks 11′ so as to provide an insulating air space therebetween. Bricks 20, laid on edge be-

tween projections 14′ of adjacent blocks 11′ and extending from the projections 13′ of the blocks to the inner face of the brick veneer, maintain this spaced relation. Appropriate ties 21 in the form of thin strips of metal provide a secure connection between the inner and outer thicknesses of the wall. These strips are preferably positioned beneath the spacer bricks 20 with their opposite ends embedded in the mortar between courses of brick 19 and blocks 11′. A water proof insulating material, such as tar, is preferably interposed at 22 and 23 so as to separate each brick 10 from actual contact with the cinder concrete blocks 11′.

The building construction shown in Figures 5 and 6 comprises an outer wall or thickness a^2 of brick veneer and an inner wall or thickness b^2 of cinder concrete. In this instance, the inner thickness comprises a monolithic layer of cinder concrete of a mixture similar to that employed in the bricks 11 hereinabove described. This layer may be strengthened by vertically extending ribs or projections, one of which is shown at 24 in Figure 5. The thickness of brick veneer is retained in spaced relation from the cinder concrete structure by means of the projection 24 and by the use of spacer bricks 25 embedded in the cinder concrete structure at intervals and projecting toward the thickness of brick veneer. Suitable tie plates 21′ embedded at one end in the cinder concrete structure and at the other end between courses of the brick structure may be used to bind these structures together. A good water proof insulating material, such as tar, is preferably inserted at 26 and 27 to prevent actual contact between the projections 24 or bricks 25 and the brick veneer structure.

The building construction shown in Figure 7 comprises an outer wall or thickness a^3 of ordinary concrete and an inner wall or thickness of cinder concrete spaced therefrom. In this instance, both the inner and outer thicknesses comprise monolithic structures, preferably reinforced as indicated at 28. The outer thickness is formed with vertically extending lateral projections 29 which bear at their inner edges 30 against the inner thickness to maintain a uniform spacing between the thicknesses and to stiffen the wall. The inner edges 30 are preferably beveled off, as indicated, so as to interlock with the inner thickness, tar 31, or other water proof insulating material being interposed between these edges and the inner thickness. Reinforcing rods 32 may be embedded in the projections 30 and so arranged as to project into the inner thickness so as to tie the inner and outer thicknesses together.

It will be noted that each of the wall structures hereinabove described comprises an outer thickness or layer of a good weather resisting material, such as concrete or brick, and an inner thickness or layer of cinder concrete spaced or insulated therefrom. It has been found that such a wall provides a sturdy economical construction which is absolutely free from the dampness characteristic of other concrete, cement or brick structures. It will also be noted that each of the building constructions disclosed herein comprises an outer wall of weather-resisting material and an inner wall of relatively porous material spaced from the outer wall to provide an extensive intervening air chamber. The walls are spaced apart definite distances by means of the spacing members, but direct transgression of water from one wall to the other through the material constituting the structure, is positively prevented by means of the water-proof material which is interposed between each of the spacing members and the adjacent wall. If any water passes through the outer wall, it produces dampness in the intervening air space, and by virtue of the porous construction of the inner wall, this dampness is gradually dispersed into the atmosphere within the building, without creating undesirably damp spots upon the inner surfaces of the inner wall. This improved result is due to the provision of the relatively extensive air space between the walls, within which the leakage water entering at local spots of the outer wall is quickly evaporated and distributed, and from which the porous inner wall enables gradual evaporation over an extended area.

It will be noted that in the wall shown in Figures 1 and 2 the outer thickness is made up of cement blocks while in the walls shown in Figures 3 to 6 to the outer thickness is of brick. The term "block formation" is hereinafter used in a generic sense to designate a wall thickness built up of units whether such units specifically comprise bricks, blocks or otherwise.

Various changes may be made in any of the embodiments of the invention hereinabove described, without departing from or sacrificing the advantages of the invention as defined in the appended claims.

I claim:

1. A building construction comprising, an outer wall of weather-resisting material, an inner wall of relatively porous material spaced from said outer wall to form an intervening air chamber, spacing members having relatively small cross-sectional area and spanning said chamber to maintain said walls in proper spaced relation, and water-proof material interposed between said members and said walls to prevent transgression of water from one of said walls to the other through said members.

2. A building construction comprising, an

outer wall of weather-resisting material, an inner wall of relatively porous cinder concrete spaced from said outer wall to form an intervening air chamber, spacing members having relatively small cross-sectional area and spanning said chamber to maintain said walls in proper spaced relation, and waterproof material interposed between each of said members and an adjacent wall to prevent transgression of water from one of said walls to the other through said members.

In witness whereof, I hereunto subscribe my name this 6th day of January, 1925.

ANTON GROSSINGER.