June 11, 1935. G. E. WHRITENOUR 2,004,739

BUILDING CONSTRUCTION

Filed Nov. 24, 1934

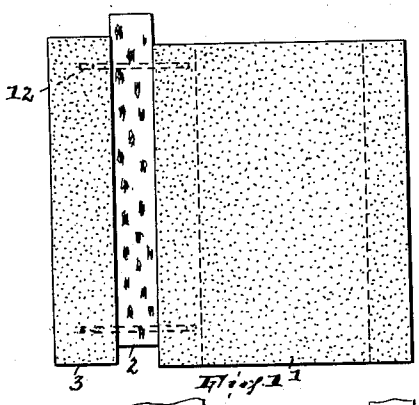


Fig. 1.

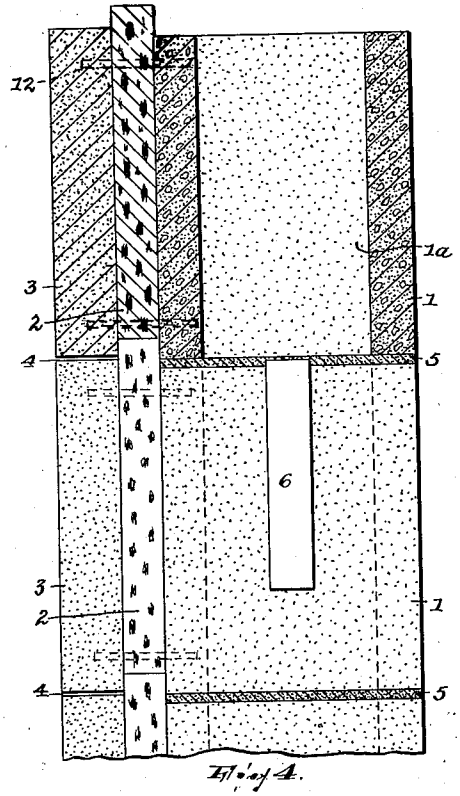


Fig. 4.

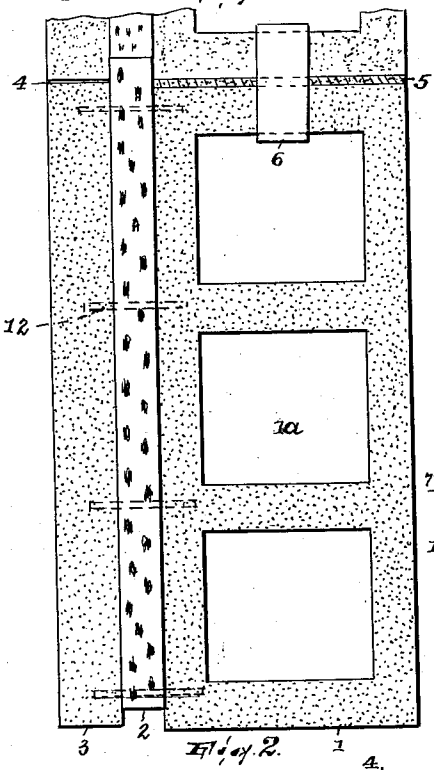


Fig. 2.

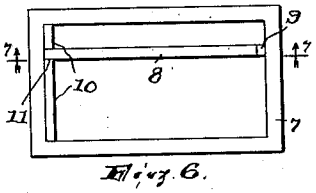


Fig. 6.

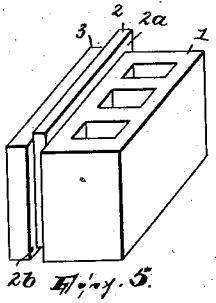


Fig. 5.

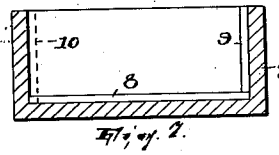


Fig. 7.

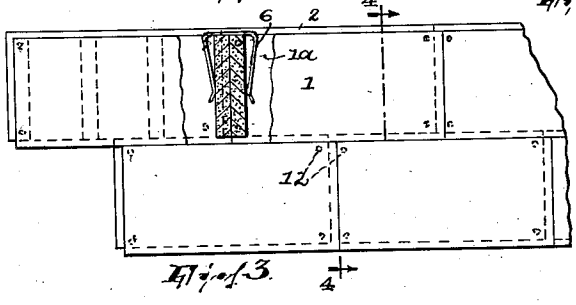


Fig. 3.

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BUILDING CONSTRUCTION

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8 Claims. (Cl. 72—41)

The underlying object of this invention is to provide a wall composed of blocks which include in one vertical plane extending lengthwise of the wall relatively non-compressible sections and in another such plane compressible sections, the first-named sections serving as load-bearing media and the second-named sections existing in the wall compressed more or less and serving as moisture and sound resisting and heat-insulating media. Preferably, though not in all cases essentially, other sections exist in a vertical plane between which and the plane of the first-named sections the compressible sections exist; preferably, the blocks are constructed to interlock with each other; and preferably the compressible sections form a layer without appreciable openings through it.

In the drawing,

Fig. 1 is an end elevation of one of the blocks;

Fig. 2 is a plan of a block and a fragment of another block and showing means to couple them together;

Fig. 3 is an outside elevation of a fragment of the wall;

Fig. 4 is a section on line 4—4, Fig. 3, and on the same scale as Figs. 1 and 2;

Fig. 5 is an isometric view of one of the blocks; and

Figs. 6 and 7 are a plan and a section on line 7—7, Fig. 6, of the mold for use in forming the blocks.

In the illustrated example each block answers to the following description:

Each block is generally rectangular and along two adjoining sides it has a rib and at the other two adjoining sides a groove, which rib and groove will be definitely indicated hereafter. Three sections 1, 2, 3 form each block, sections 1 and 3 being of relatively non-compressible and section 2 of compressible material, preferably elastic. Section 1 is of appreciably greater thickness than sections 2 and 3 (measured horizontally through the wall formed), it having a block-like instead of the slab-like form of the sections 2 and 3 and being here shown hollow, at 1a, and thus similar to an ordinary hollow concrete block. It forms what I term a load-bearing section, for which purpose its indicated superior thickness is desirable.

The section 1 is formed of some material, as a compound of cement and cinders, giving it the necessary qualities as the load-bearing medium of the wall; section 2 is composed of some compressible material, as a compressed and thereby consolidated and integral mass of pieces of cork or other vegetable product used to form blocks, slabs, and the like employed in building construction, being as indicated and desirably more or less elastic; section 3 is a plaster and may be composed, for example, of asbestos fibers, cement and sand.

The three sections exist rigidly united or bonded together. That is, section 2 being already formed, the material for the other two sections while still in plastic state is applied thereto, formed and allowed to set or harden, with consequent adhesion between the sections and making of them a single unit.

Viewed from either side of the wall the section 2 has somewhat greater dimension vertically and horizontally lengthwise of the courses formed than the section 1, as a fraction of an inch each way. The object in this is to set up or permit compression of each section, in the layer composed of the sections 2, by its next-adjoining neighbors in such layer, such being the effect of the weight of the blocks and of effort to draw together each two in a course as will appear.

Section 3, when viewed in the same way, has such dimensions vertically and horizontally lengthwise of the courses as at least not to obstruct the compression of the section 2 in the way stated. Its dimensions may be such as in the finished wall to leave a crevice between it and adjoining sections 2, as at 4 in Figs. 2 and 4.

In laying courses of the blocks mortar or equivalent plastic bonding substance 5 is applied so as to intervene between adjoining faces of all the sections in a layer of the sections 1, so that said sections will be all bonded together the same as in building an ordinary wall of blocks; the initial thickness of this plastic bonding medium should be such as, while it is still plastic, to permit in the laying the displacement of each block vertically, as by its weight, and longitudinally of the course of which it forms a part necessary to obtain the said compression of the sections 2.

The said displacement longitudinally of a course may be effected by the mason and if desired then maintained by the inverted U-shaped clip 6 shown in Figs. 2 and 4 straddling the adjoining ends of two adjoining blocks.

The sections 2 are so formed and related that no openings through the layer they form exist, each bearing squarely from end to end against the sections 2 which flank it either vertically or horizontally.

In order to provide an interlock between the blocks and make them self-alining and also have

the layer formed by sections 2 break joints with respect to those formed by the layers 1 and 2 each block is preferably formed as above indicated so as to produce the mentioned rib and groove, 2a and 2b, Fig. 5. That is, the section 2 is diagonally offset with respect to the layers 1 and 3 and if the blocks are formed by a molding operation this may be accomplished by the mold shown in Figs. 6 and 7. Here 7 is the mold body provided at its interior with a bottom rib 8 and an upstanding rib 9 at one end in the same vertical plane and upstanding plates 10 at the other end flanking the rib 8. The already formed section 2 being placed in the mold so as to occupy the groove formed at 11 and extend to the rib 9, overlying the rib 8, the material to form the sections 1 and 3 is introduced.

It should be understood that what is essential to my invention is the presence in each block of a relatively non-compressible load-bearing section and a compressible section rigidly united together and having such dimensions in parallel planes respectively through them that when they form with other such blocks a wall in which all the relatively non-compressible sections are in one upright plane and act to bear the load and all the compressible sections are in another such plane each compressible section exists more or less compressed by a neighboring compressible section or sections. Nevertheless it is preferred that the sections 3 be present so that at both sides the section 2 will be unexposed. In the construction shown the section 1 would go to compose the outside and the section 3 the inside of the wall and either of these may be treated with any materials to afford some desired finish.

My invention makes it possible to build a wall so that the laying of each block contributes in one handling operation to both the load-bearing and the moisture- and sound-resisting and heat-insulating qualities of the finished wall, the blocks being self-spacing as an incident of the contact of the sections 2 with each other and in the form shown also interlocking and self-aligning; and when the layer formed by the sections 3 exists the same may further be immediately treated with any materials to impart a finish, no frame, furring, lathing and incidental nailing being necessary.

Of course an advantage in having the compressible section actually possessing elasticity as against compressibility without elasaticity is that, in addition to insuring permanence of the seal existing in the wall between each two adjoining sections 2, in handling the blocks prior to installation said section will be better adapted to withstand abuse without undergoing deformation.

I may in some instances provide tying elements, as metal strips or the like 12, penetrating and embedded in the sections.

Having thus fully described my invention what I claim is:

1. A wall construction including an upright wall-layer itself including superposed courses of relatively non-compressible load-bearing sections and an upright wall-layer of superposed courses of compressible sections, each section of the second-named layer being rigidly connected to a section of the first-named layer and held in a state of compression by the load of the load-bearing sections.

2. A wall construction including three upright wall-layers, the intermediate layer including superposed courses of compressible sections and each of the other two layers including superposed courses of sections of which those in one section are relatively non-compressible and form load-bearing sections, each section of the intermediate layer being rigidly connected to a section of each of the other two layers and held in a state of compression by the load of the load-bearing sections.

3. A wall construction including an upright wall-layer itself including superposed courses of relatively non-compressible load-bearing sections and an upright wall-layer of superposed courses of compressible sections, each section of the second-named layer being rigidly connected to a section of the first-named layer and held in a state of compression by the load of the load-bearing sections and the sections of one layer breaking joints with those of the other layer.

4. A wall construction including three upright wall-layers, the intermediate layer including superposed courses of compressible sections and each of the other two layers including superposed courses of sections of which those in one section are relatively non-compressible and form load-bearing sections, each section of the intermediate layer being rigidly connected to a section of each of the other two layers and held in a state of compression by the load of the load-bearing sections and the section of said intermediate layer breaking joints with those of the other two layers.

5. A wall construction including an upright wall-layer itself including superposed courses of relatively non-compressible load-bearing sections and an upright wall-layer of superposed courses of compressible sections, each section of the second-named layer being adhesively united to a section of the first-named layer and held in a state of compression by the load of the load-bearing sections.

6. A wall construction including three upright wall-layers, the intermediate layer including superposed courses of compressible sections and each of the other two layers including superposed courses of sections of which those in one section are relatively non-compressible and form load-bearing sections, each section of the intermediate layer being adhesively united to a section of each of the other two layers and held in a state of compression by the load of the load-bearing sections.

7. A wall construction including, with an upright wall-layer itself including superposed courses of relatively non-compressible load-bearing sections and layers of bonding substance alternating with and held compressed by such courses, an upright wall-layer of superposed courses of compressible sections, each section of the second-named layer being rigidly connected to a section of the first-named layer and held in a state of compression by the load of the load-bearing sections.

8. A wall construction including, with an upright wall-layer itself including superposed courses of relatively non-compressible load-bearing sections and layers of bonding substance alternating with and held compressed by such courses, an upright wall-layer of superposed courses of compressible sections, each section of the second-named layer being rigidly connected to a section of the first-named layer and held in a state of compression by the load of the load-bearing sections and the sections of one layer breaking joints with those of the other layer.

GEORGE E. WHRITENOUR.