July 3, 1934. J. A. GRAYDON 1,964,816

BUILDING BLOCK

Filed Feb. 24, 1931

Fig. 1.

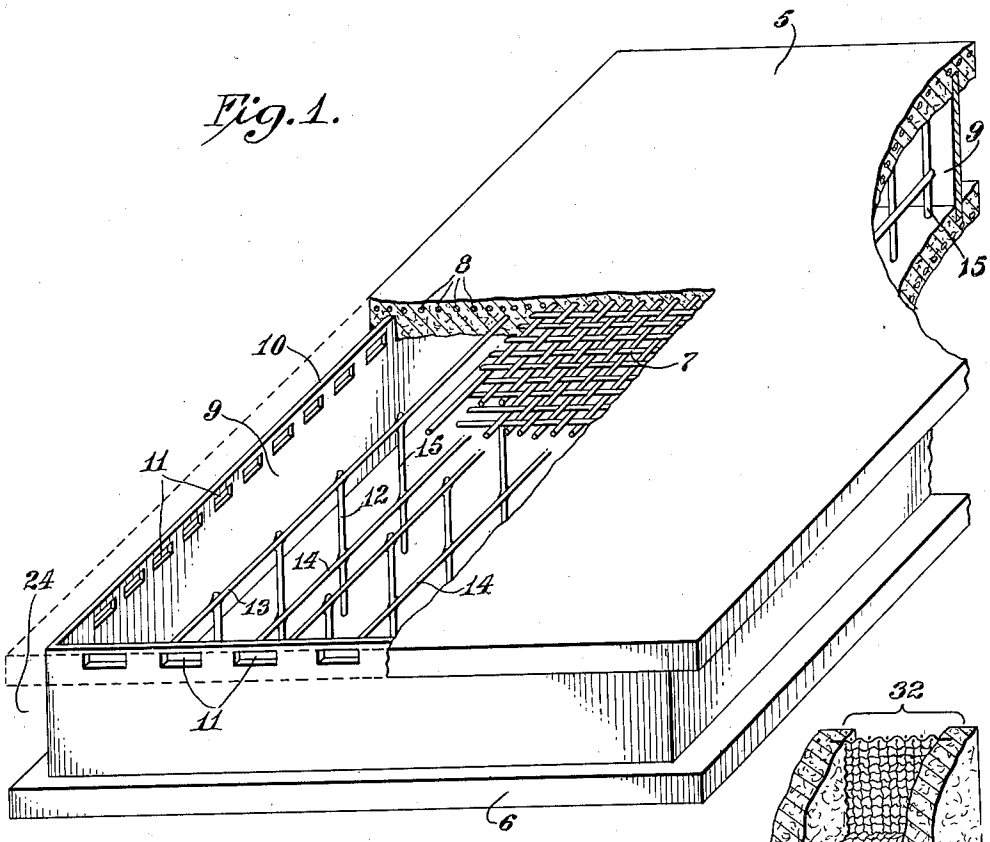
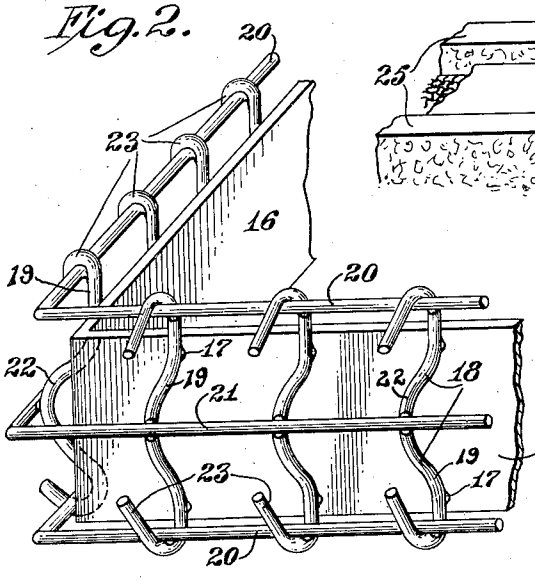


Fig. 2.



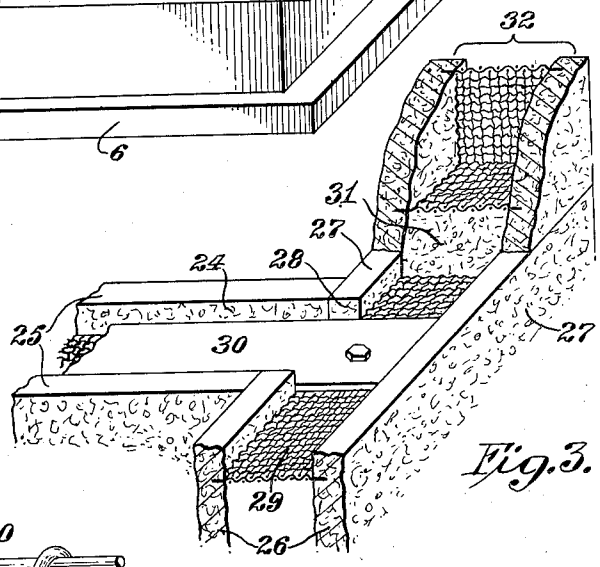


Fig. 3.

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BUILDING BLOCK

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4 Claims. (Cl. 72—42)

My invention relates to building blocks, units which are wholly or partly formed of cementitious material, and which are given a shape by means of which they are conveniently adapted to be assembled into walls, floors, ceilings, etc.

It is desirable to make slabs or plates of cementitious material, which are to be used for building purposes as units to be assembled to each other, as thin as possible in order to reduce the weight and cost of such slabs. But such slabs, when executed in larger sizes, offer difficulties in transportation, handling, and after erection, because they are more or less brittle, and are easily broken or damaged even when they are suitably reenforced. Parts of such slabs are of course frequently assembled into blocks, with a hollow space in between, such hollow space being highly desirable for purposes of heat- and sound-insulation. However, large blocks of this kind are not easy to make in a uniform strength and they usually cause still greater trouble in handling than the plain slabs or plates referred to above.

It has been one of the objects of my invention to assemble cementitious slabs and plates in such manner, that they form strong and durable blocks for building construction, yet their weight is reduced to a minimum, so that they are convenient means for economical construction work.

Another object of my invention is to assemble a plurality of substantially parallel slabs into building blocks by yieldable, ductile means, which reduce the rigidity of the block as a whole, providing elastic cushioning means between the plates or slabs, but still preserving the form of the block as a whole.

Another object of my invention is to join building slabs by metallic means which longitudinally and cross-wise form a rigid bracing, which, however, are kept at a minimum weight.

Another object of my invention is to connect two substantially parallel building blocks by a receded rigid wall extending substantially around the whole area between said slabs, thus forming a true hollow block.

Another object of my invention is to provide walls connecting two cementitious slabs, which are anchored in said slabs without substantially impairing the strength of each slab.

Another object of my invention is to provide in a building block of my invention, means facilitating the assembling of said blocks into walls, floors, ceilings, etc.

These and other objects of my invention will be more clearly understood from the accompanying drawing, in which,

Fig. 1 shows a partly sectioned perspective view of a building block of my invention.

Fig. 2 shows, in a similar, but sectional view, a modification of the outer frame which connects the cementitious blocks.

Fig. 3 shows, in a perspective view, the manner in which I assemble the blocks of my invention.

Similar numerals refer to similar parts throughout the various views:—

The upper and lower cementitious slabs 5 and 6 of my building block are conveniently reenforced by a mesh 7 of wires 8 which are embedded in said slabs near the outer surfaces thereof. Between the two slabs extends a rectangular sheet metal frame 9. The upper and lower edges 10 of said frame extend to a certain distance into the two slabs 5 and 6 and the parts of said frame thus extending into the slabs are perforated by elongated holes 11, through which extends the material of the slabs, so that the frame 9 is anchored in the two slabs all around the circumference of each slab; it being understood that the two slabs are substantially symmetrical, in respect to the reenforcing means thereof, as well as in respect to the manner in which the bracing between the slabs is anchored in said slabs. Upon the inside of the block are arranged a plurality of vertical bracing wires 12 which extend from one slab into the other, and which are connected by longitudinal wires 13 and 14 to form a mesh 15. These longitudinal wires 13 and 14 are rigidly tied upon the vertical wires 12 at the crossing points by welding, brazing or soldering, and they respectively extend within the slabs, connecting the ends of the vertical wires, and in the space between the slabs, connecting the intermediary points of the vertical wires.

It is understood that the elongated holes 11 are completely disposed within the slabs 5 and 6. Instead of anchoring the rectangular frame in the two slabs by means of said elongated holes 11, I may resort to the modification shown in Fig. 2. The frame part 16, which is made of sheet material, is in this case only of such a height that it just extends into the two slabs 5 and 6. In other words, its width is substantially the width which the frame 9 has between the elongated holes 11 in Fig. 1 extending therethrough near the top and bottom edges thereof. Onto the outside of this frame 16 is mechanically fastened or welded, brazed or soldered, (welds 17) a screen 18 which is similar to the mesh 15 as far as the vertical wires 19, and the horizontal wires 20 and 21 are concerned, which respectively correspond to the wires 12, 13 and 14 of the mesh 15, but which

mesh 18 differs from the screen of Fig. 1 in respect to an outward bulging 22 of the vertical wires 19, said vertical wires being also provided with extensions 23 which are angularly bent down and up, over the upper and lower horizontal wires 20 of the mesh 18, respectively, so that the free ends of these extensions extend into the groove 24 confronted by the outside of the frame and the inner faces of the slabs. The free ends 23 and the bulging parts 22 of the wire, together with the horizontal wires 21 connecting said bulging parts, serve as means for anchoring concrete which may be filled into the adjoining grooves 24 of blocks adjoining each other when assembled in a building construction, in order to provide a rigid connection between such adjoining blocks.

A detail of constructing buildings with my blocks is shown in Fig. 3, where two building blocks 25 and 26 are set against each other rectangularly in T-shape. The slab 27 of block 26, against which rests the block 25, is receded along its edge so as to form a slot or notch 28 which has the width and depth of the groove 24 extending around the slab 25, the bottom of the slot being in alignment with the box part 29 connecting the slabs making up the block 26. When such notches or slots 28 are provided upon the slabs, a bar 30 of structural steel may be laid into the groove 24 of block 25 and extend into the corresponding groove of block 26, where it is anchored, thus providing simple means which preserve the aligning between the blocks 25 and 26.

The frame part connecting adjoining slabs, for instance 27, is shown in this case to be a screen 29, the mesh of which is wide enough to allow the concrete 31 filled into the grooves between adjoining blocks 26 and 32 to engage thereupon, said mesh being however, not wide enough to permit said concrete to enter freely into the hollow space upon the inside of the block which hollow space is confronted by the slabs and the angular frame.

While I have shown and described my invention with some degree of particularity, it will be realized that other modifications and changes may be resorted to under special conditions. I therefore do not wish to be limited and restricted to the exact details shown and described, but reserve the right to make such changes and modifications as may fairly fall within the scope of the subject matter now being claimed.

I claim:—

1. A building block comprising flat cementitious slabs, longitudinal and transverse metal walls anchored in said slabs, spacing said slabs in substantial parallelism, and substantially enclosing the space between said slabs, and metal rods extending between said slabs in the enclosure formed by said walls between said slabs.

2. A building block comprising flat cementitious slabs, longitudinal and transverse metal walls anchored in said slabs, spacing said slabs in substantial parallelism, and substantially enclosing the space between said slabs, and metal rods extending substantially at right angles between said slabs in the enclosure formed by said walls between said slabs.

3. A building block comprising substantially registering concrete slabs, substantially flat metal walls, uniformly set back from the sides of said slabs and extending therebetween, and anchoring means extending from said walls into the space confronted by said walls and the parts of the slabs marginally extending outwardly beyond said walls.

4. A building block comprising substantially registering concrete slabs, substantially flat metal walls, uniformly set back from the sides of said slabs and extending therebetween, and anchoring means extending from said walls through said slabs into the space confronted by said walls and the parts of the slabs marginally extending outwardly beyond said walls.

JOHN ALPIN GRAYDON.