Dec. 15, 1925. 1,566,211

T. HENDERSON

BLOCK AND WALL STRUCTURE

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Fig. 7

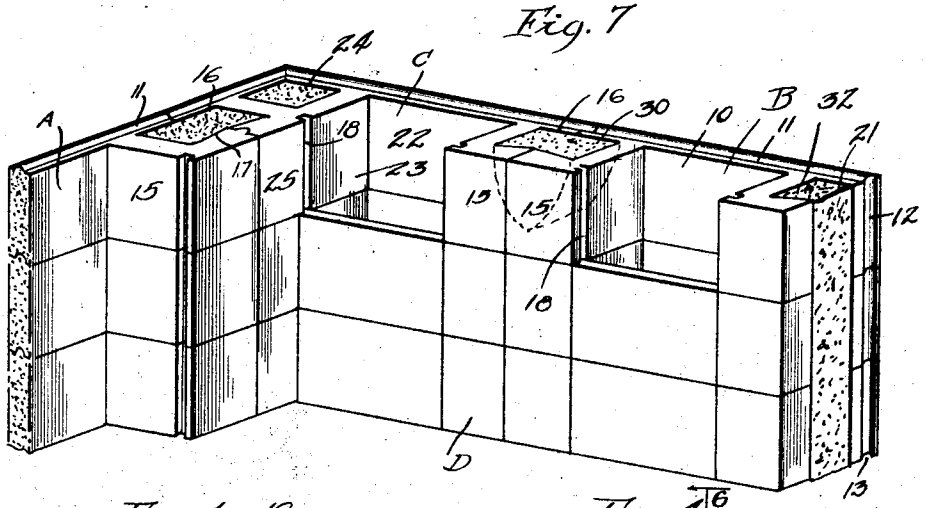


Fig. 1

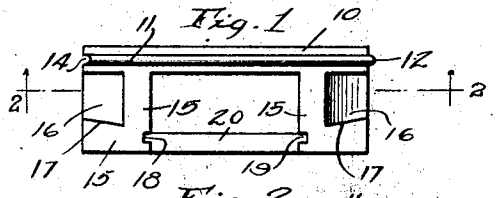


Fig. 4

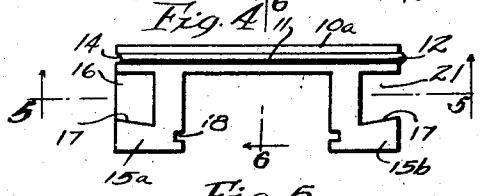


Fig. 2

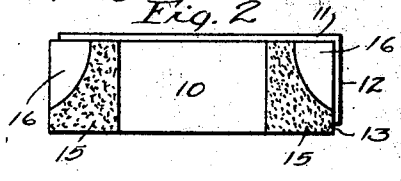


Fig. 5

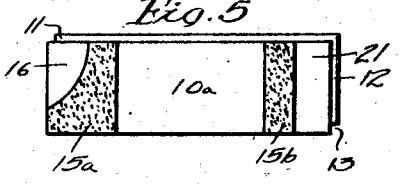


Fig. 3

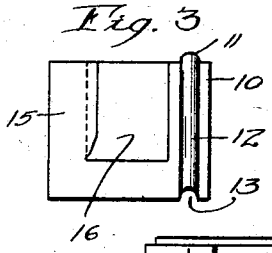


Fig. 6

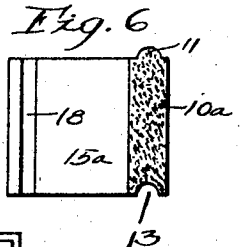
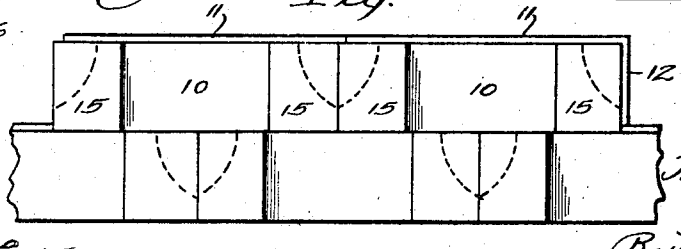


Fig. 8



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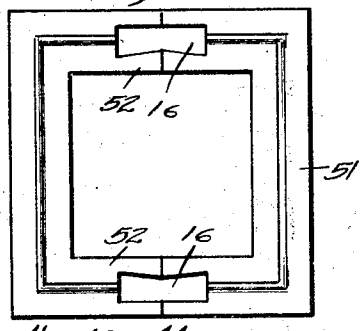
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Fig. 12



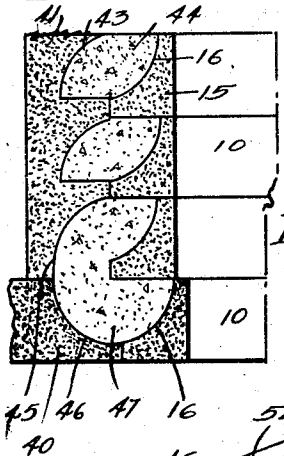


Fig. 10

Fig. 9

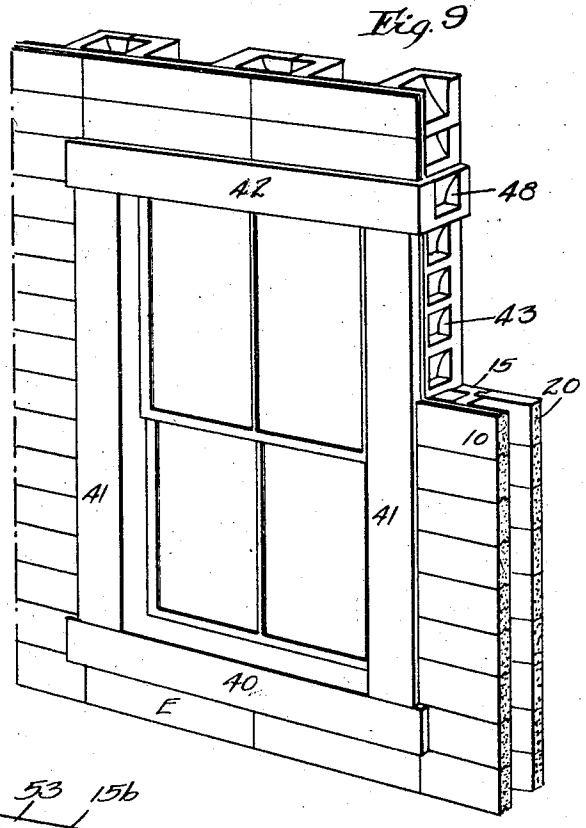


Fig. 13

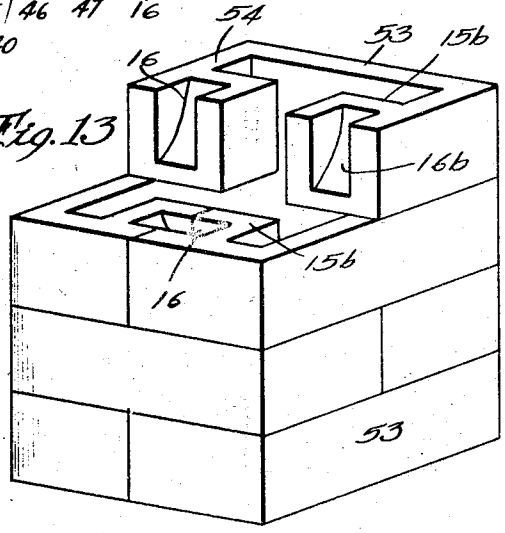
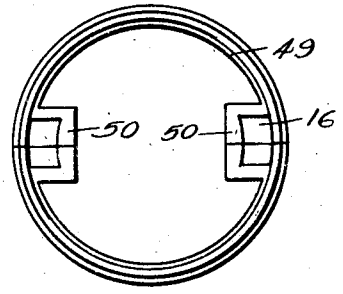


Fig. 11



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Patented Dec. 15, 1925. 1,566,211

UNITED STATES PATENT OFFICE.

TASKER HENDERSON, OF DES MOINES, IOWA.

BLOCK AND WALL STRUCTURE.

Application filed April 7, 1924. Serial No. 704,756.

To all whom it may concern:

Be it known that I, TASKER HENDERSON, a citizen of the United States, and a resident of Des Moines, in the county of Polk and State of Iowa, have invented a certain new and useful Block and Wall Structure, of which the following is a specification.

My invention has to do with a novel type of block and wall structure.

The purpose of my invention is to provide a block of novel construction, whereby a thin wall may be made and the blocks in the wall may be locked together horizontally in courses.

Another object is to provide such a block, so constructed that it may be laid in a wall for forming a thin wall with spaced strengthening pillars, and to provide a wall made with such blocks.

Still another object of my invention is to provide a block in which a solid monolithic upright pillar may be had if desired.

With these and other objects in view, my invention consists in the construction, arrangement and combination of the various parts of my device, whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claims, and illustrated in the accompanying drawings, in which:

Figure 1 shows a top or plan view of a wall block embodying my invention.

Figure 2 shows a vertical, longitudinal, sectional view through the same taken on the line 2—2 of Figure 1.

Figure 3 shows an end view of said block.

Figure 4 shows a top or plan view of a slightly modified form of the block.

Figure 5 shows a longitudinal, sectional view taken on the line 5—5 of Figure 4.

Figure 6 shows a detail, sectional view taken on the line 6—6 of Figure 4.

Figure 7 shows a perspective view of a wall structure embodying my invention.

Figure 8 shows a side elevation of a modified form of the wall.

Figure 9 is a perspective view of a wall illustrating the arrangement of openings and frames therefor.

Figure 10 is a vertical sectional view illustrating a lower corner of a window frame structure or the like.

Figure 11 is a plan view of a pillar made with a modified form of my blocks.

Figure 12 is a plan view of another form of pillar; and

Figure 13 is a perspective view of the pillar shown in Figure 10, illustrating the staggered arrangement of the blocks.

It is highly desirable in building a concrete wall to be able to build a comparatively thin wall. In such cases, it is sometimes necessary to have strengthening pillars.

I have provided a block wherewith such a thin wall may be made.

I have also provided such a block, which may be used with panels, so as to make a thicker wall with a smooth inner face; there being also thus produced a wall with air spaces.

It is also desirable in the making of a thin concrete wall to provide blocks, which may be rigidly locked together at their ends in the courses, whether the joints be broken in superposed courses or not, and this desirable result may be had with my block.

In Figure 1, I have shown one of my blocks, which comprises the substantially flat slab, indicated by the reference numeral 10 in the accompanying drawings, preferably provided with a tongue 11 on top and a tongue 12 at one end, and with a groove 13 at the bottom and a groove 14 at the other end.

In each end of the block, there projects inwardly therefrom a portion 15. Each portion 15 is provided in its upper outer part with a recess 16 tapered from the end of the block near the lower part thereof upwardly and toward the middle of the block, as shown for instance in Figure 2.

One of the walls of the recess 16, as at 17, may be slightly tapered so as to make the end of the recess at the end of the block somewhat contracted.

The inwardly projecting portions 15 are provided with registering grooves 18 to receive the ribs 19 of a panel 20. The grooves 18 are so arranged that the panel may be inserted in position for forming a smooth inner face for the entire block.

In Figure 4, I have shown a slightly modified form of my block, comprising the main slab 10^a, constructed in the same way as the slab 10 and having at one end an inwardly projecting portion 15^a, similar in construction to the portion 15, and having a

similar pocket 16 therein, and having at its other end, an inwardly projecting portion 15^b formed with a vertical recess 21, in its end face, as shown in Figure 1 of the drawings.

I provide a corner block, illustrated for instance in Figure 7, comprising the main slab 22, having at one end the member 15 similar to that already described with the recess or pocket 16 therein and having at the other end an inwardly projecting member 23, having a vertical passage 24 extending through it and a projecting portion 25, similar to the portion 15^b, and having in its face farthest from the slab 22, the recesses or pockets 16, similar to those already described.

In Figure 7, I have shown a wall structure in which the blocks A are of the type shown in Figures 1 and 2; the blocks B are of the type shown in Figures 4, 5 and 6, and the blocks C are corner blocks.

In Figure 8, I have shown an inside elevation of another wall made from blocks like the blocks shown in Figures 1 and 2, in which the blocks in their respective courses are staggered with relation to each other.

In laying the wall, the lower course is arranged with the corner block C at the corner and with the block, such as that shown in Figure 1, arranged with one end adjacent to the portion 25, as illustrated.

The wall can be made with corner blocks and blocks like those shown in Figure 1, or if desired, there may be laid at certain points in the wall, blocks B like those shown in Figure 4.

Where a straight wall is laid, as shown for instance in Figure 8, the joints of the respective courses may be staggered.

The pockets formed by the registering recesses 16 of the adjacent blocks in a course may be filled with concrete 30 for forming a bond and locking means in the respective blocks in the course. Thus each block in a course will be locked to the next block, and yet the staggered joint effect can be had.

The blocks in one course may be superposed directly over the blocks in another course, as shown for example in Figure 7.

In such cases, if blocks, such as those shown in Figures 1 and 2, are employed, the blocks in the same course may be locked together in the manner just mentioned.

The corner blocks C are used wherever necessary in the corners of the structures, and it will be noted that the openings 24 in the blocks in different courses will register with each other and may be filled with concrete to form a solid pillar.

Similarly, where blocks like those shown in Figure 4 are employed, as for instance at the right-hand end of Figure 7, the space left between the recesses 21 may be filled similarly with concrete 32 for making a vertical, solid monolithic pillar, and also for locking together the blocks in the same course.

Where a vertical monolithic pillar is provided for reinforcing a thin concrete wall, it is found that much dissatisfaction is caused by the fact that expansion and contraction causes the pillars to contract and break. This difficulty is not faced where blocks of the type shown in Figures 1, 2 and 3 are used, since the bonding concrete 30 does not form a vertical monolithic pillar, while at the same time, when my blocks of the kind mentioned are used, the successive blocks in each course are locked together, and where the members 15 are superposed over each other, a strong supporting pillar for the wall is provided.

It will thus be seen that the members 15 of the blocks of the kind shown in Figures 1, 2 and 3 may be arranged to form pillars as shown at D in Figure 7, and may be arranged so that they are staggered in the respective courses.

Where blocks of the kind herein shown are employed, a thicker wall may be had by using the panels 20 and a smooth inner face for the wall may thus be provided. There is also thus provided a wall having air spaces.

My block is therefore capable of a great variety of uses and may be used in building various kinds of walls.

For instance, I have shown in Figures 9 to 13, certain forms of structure, in which blocks embodying the principles of my invention may be employed.

In Figure 9, I have shown a wall E having a window opening below which is the lower horizontal frame member 40. At the sides of the window opening are the upright frame members 41 and at the top is the horizontal frame member 42. The side frame members 41 are provided with pockets 43 arranged to register with the pockets 16 of blocks of the type shown for instance in Figure 2, so that the pockets 43 and 16 form a single recess to receive plastic material 44, as shown for instance in Figure 1.

At the lower end of each member 41 is a pocket or recess 45 opening at the side of the frame and also at the bottom of the frame. The member 40 has in its end a pocket 46 arranged to register with the pocket 45 and with the pocket 16 of an adjacent wall block.

It will thus be seen that at the lower corner of the window frame, the pockets or recesses in the upright frame member 41, the cross frame member 40 and the adjacent blocks of two courses of the wall form a recess or compartment to receive binding plastic material 47.

The member 42 has pockets 48 in its ends adapted to coact with pockets 16 of the adjacent wall blocks. It may be noted that the member 42 may be simply an elongated block of the type shown in Figure 1.

In Figures 11, 12 and 13, I have shown forms of large pillars, which may be made with blocks embodying my invention. In Figure 11, I have shown blocks having the curved slab portions 49 provided at their ends with inwardly projecting portions 50, having formed therein the pockets or recesses 16 similar to those already described.

The number of blocks used in making a circular structure such as a pillar or tank or even a silo would, of course, depend upon the curvature of the slab 49.

In Figures 12 and 13, I have shown a pillar in which a block 51 is provided with lateral extensions 52 at its ends formed with pockets 16 similar to those already described.

The length of the lateral extensions may be such as to make a square pillar where desired.

In Figure 12, the block is relatively thick, while in Figure 13, there is shown the block comprising the slab 53, having the extensions 54 in its ends, the slab and extensions being relatively thin.

In the ends of the extensions are formed the portions 15^b similar to the portions 15 heretofore described, provided with the recesses 16 similar to those already mentioned herein.

The pillar may be built up with staggered joints as shown in Figure 13, if desired.

These various modified forms illustrate the flexibility of my invention and the great variety of uses to which it may be put.

Some variation may be made in the construction and arrangement of the parts of my improved block and of my wall structure without departing from the real spirit and purpose of my invention, and it is my intention to cover by my claims, any modified forms of structure or use of mechanical equivalents, which may be reasonably included within their scope.

I claim as my invention:

1. A structure forming a thin wall with spaced pillars comprising courses of blocks each having at its ends lateral extensions provided in their upper parts with pockets tapered toward the ends of the block, the pockets of the successive blocks in each course being adjacent to each other and having a plastic binder and filler.

2. A structure forming a thin wall with spaced pillars comprising courses of blocks each having at its ends lateral extensions provided with recesses tapered toward the ends of the block and terminating at the ends of the block at a point above the bottom thereof, thereby forming pockets between the successive blocks in a course and a plastic binder and filler in the pockets thus formed.

TASKER HENDERSON.