R. M. HAVENS.

BUILDING BLOCK.

APPLICATION FILED AUG. 26, 1916.

1,265,447. Patented May 7, 1918.

Fig. I.

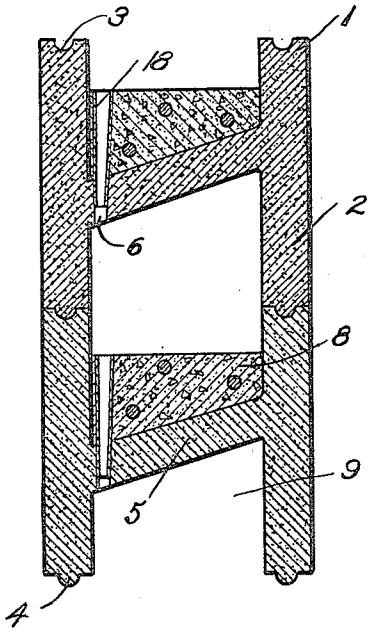


Fig. II.

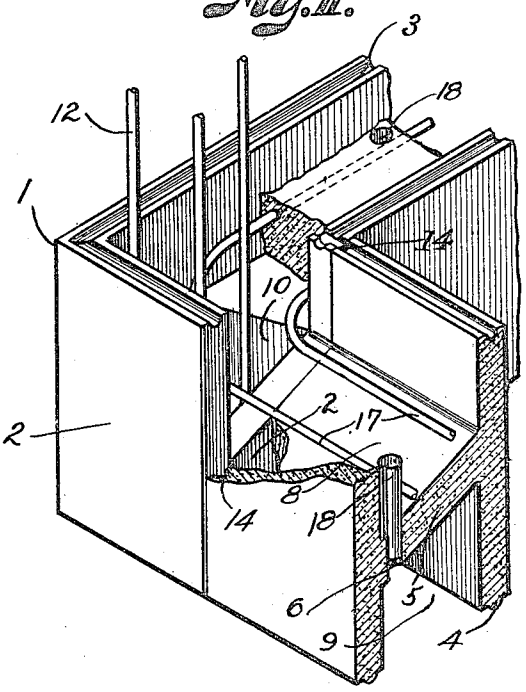


Fig. III.

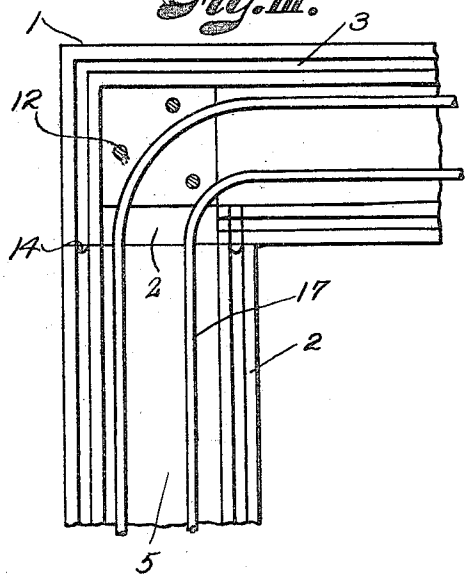
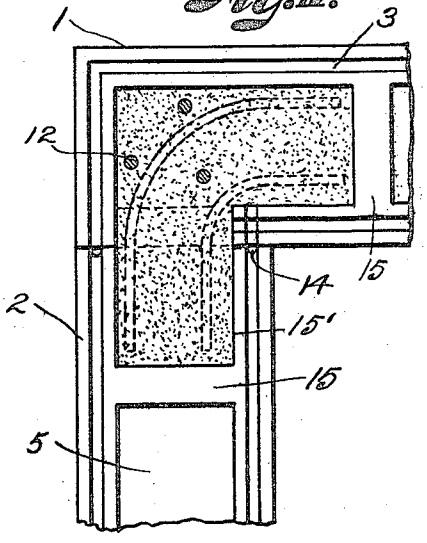


Fig. IV.



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BUILDING-BLOCK.

1,265,447. Specification of Letters Patent. Patented May 7, 1918.

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To all whom it may concern:

Be it known that I, RAYMOND M. HAVENS, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Building-Blocks; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to building blocks and has for its principal object to provide a block which may be assembled with like blocks to form a wall and is constructed to receive reinforcing materials to form a rigid and substantial structure

A further object is to provide a block which may be drained interiorly to obviate the passage of moisture to the interior of a building formed with the blocks.

It is also an object of the invention to provide blocks of this character, which, when arranged in a wall may be keyed interiorly with cement and take reinforcing to form a connection between blocks in the same or meeting walls and thereby form a substantial and rigid building structure.

In accomplishing these objects I have provided improved details of structure, the preferred forms of which are illustrated in the accompanying drawings, wherein:—

Figure I is a vertical section of superimposed blocks, showing reinforcing rods embedded in concrete in the upper block chambers, and particularly illustrating the drain tubes.

Fig. II is a detail perspective view of the corner of a building formed with my improved blocks showing reinforcing rods extended from one wall to the next.

Fig. III is a plan view of the same, particularly illustrating the end seal of abutting blocks.

Fig. IV is a plan view of similar blocks provided with cross webs for limiting the flow of concrete in the block chambers.

Referring more in detail to the drawings:—

1 designates a block which may be formed from concrete or other plastic material and is substantially H-shaped, the side walls 2 being of any desired thickness, having grooves 3 at their upper edges and tongues 4 at their lower edges, so that when the blocks are assembled in a wall they will be keyed in proper vertical alinement, particularly when the joint edges of superimposed blocks are cemented together.

The cross or web member 5 of each block is preferably inclined to drain from the inner toward the outer wall and extending through the webs adjacent the outer walls are apertures 6 through which water drained from the web may pass from the upper block chambers 8 to the lower block chambers 9 and thence into a lower block and eventually to the foundation course, where it may be drained from the wall.

In order to lock adjacent walls at a corner, I provide blocks having vertical partitions 10 near their ends, which divide the interiors into body and end chambers; the webs 5 being omitted in the end chambers to provide a continuous opening therethrough for receiving reinforcing rods 12 and into which concrete may be poured when the blocks are assembled to form a bond for the adjacent wall sections and to add strength to the structure.

In order to securely key the ends of the blocks against the side faces of other blocks at the corner of a building, I provide the ends of the blocks with grooves 14 into which cement may be poured when the blocks are in position, to affect a seal between the abutting blocks when the cement has dried.

In Figs. II and III I have shown reinforcing rods located in the channels of the blocks at the corner of a building and extending around the corner from the block in one wall to that of the adjacent wall. In order that this may be accomplished, the bottom chamber 9 of an abutting block is closed by a part of the side wall 2 of the abutted block, the part of the said wall above the web 5 of the abutted block being cut away to form an opening between the upper channels of said blocks. With this arrangement, when the blocks are assembled, concrete may be poured into the upper block chambers to embed horizontal reinforcing rods 17 that may lie in said upper chambers and extend around the corners of the wall, so that the walls may be tied together entirely about a building, the corner filling

fusing with the horizontal filling to establish an homogeneous vertical and horizontal keyed relation of the wall blocks.

To limit the flow of concrete in the upper block chamber, I may provide the end blocks with partitions 15 (Fig. IV) each of which is located at sufficient distance from the end of the block to provide a key space 15′ into which the concrete may flow and be confined to form the end key and lock the abutting blocks and vertical courses together.

When the walls are reinforced in this manner it is apparent that, unless some preventive means is employed, the drainage aperture 6 will be stopped by the filled in concrete, and in order to secure drainage through the block webs when the upper chambers contain such concrete reinforcing, I provide drain tubes 18, which I place in the block apertures 6 and which are of sufficient length to open through the top of the filling and conduct condensation or other water down through the wall as before described.

When constructing a wall of blocks built according to my invention, the blocks are arranged in horizontal courses in proper alinement, on a suitable foundation, cement being preferably flowed into the grooves in the upper edges of the blocks of each course before a superimposed course is placed, in order to properly cement the blocks together.

In each of the tiers, the corners are formed by means of the special corner blocks. These specially constructed blocks have their ends run to the outer line of the wall with the corner blocks of the adjacent wall overlapping, so that the corner chambers register with each other throughout the height of the wall to receive the vertical reinforcing rods, and so that concrete may be poured thereinto to embed the rods. When reinforcing rods are extended horizontally the tubes 18 are inserted in the drain apertures 6 and concrete flowed thereabout, the tubes preventing the stopping of the apertures and permitting condensation or other water to drain from the upper to the lower courses to prevent its seeping through the walls to the interior of the building.

It is apparent that with this construction the overlying blocks are keyed together by the reinforcing rods so that a bond is formed between the adjacent wall members and that by reason of the cement joints between the tiers of the blocks a firm and substantial wall is provided. It is also apparent that by reason of the arrangement of the webs in the individual blocks and the presence of the drain apertures, moisture that might reach the interior of the blocks will pass downwardly therethrough and may be drained from the lower course.

It is apparent also that with such moisture proof wall, an interior finish coat may be applied directly to the inner face of the wall blocks and thereby effect an economy in construction.

It is also apparent that each of the blocks may be provided with suitable reinforcing and that additions or changes may be made within the scope of the invention.

Having thus described my invention what I claim as new therein and desire to secure by Letters-Patent, is:—

1. The combination in a building wall, of blocks, each having a transverse web dividing its interior into upper and lower chambers and one having end abutment against the side of the other; the said side being cut away above the web of the abutting block to provide communication between the upper chambers of said blocks, the web of the abutted block being cut away at its end to provide a vertical opening in the end of the block, and concrete in the said end opening and in the upper chambers of the abutting blocks forming a homogeneous vertical and horizontal key, substantially as set forth.

2. The combination in a building wall, of blocks, each having a transverse web dividing its interior into upper and lower chambers throughout the length of the blocks, one of said blocks being closed and the other open at its end, the open end block abutting against the side of the closed end block and the side of the latter being cut away above the plane of the web of the former to provide communication between the upper chambers of said blocks, and a concrete key located in said upper chambers and forming a homogeneous bond between the blocks.

3. The combination in a building wall, of blocks, each having a transverse web, one of the blocks having a closed end and the other an open end abutting against the side of the first, the web of the abutted block being cut away adjacent its closed end, a partition closing the lower chamber of the abutted block below the end of the web, the abutted side of the closed end block being cut away above the web of the abutting block to provide communication between the upper chambers of said blocks, and concrete located in the vertical and upper horizontal chambers of said blocks to form a homogeneous key between the abutting blocks and the blocks of adjacent courses.

In testimony whereof I affix my signature.

RAYMOND M. HAVENS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."