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M. C. MOMSEN.

WALL CONSTRUCTION AND CONCRETE BLOCK FOR THE SAME.

APPLICATION FILED JULY 24, 1905.

Fig. 1.

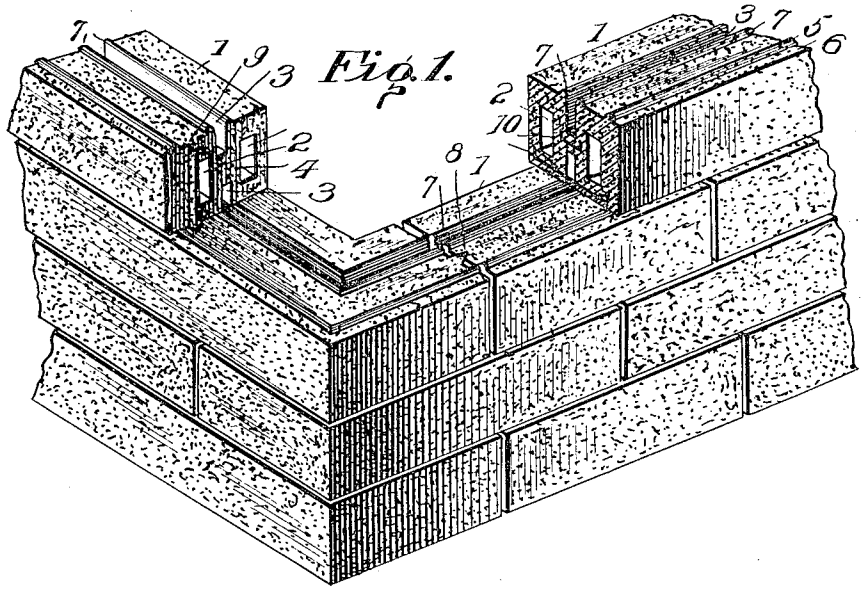


Fig. 2.

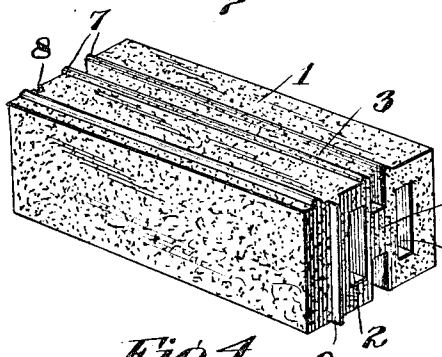


Fig. 3.

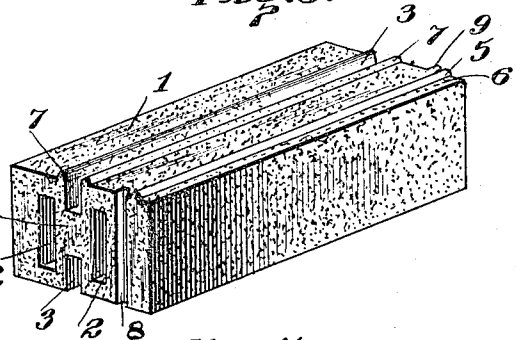


Fig. 4.

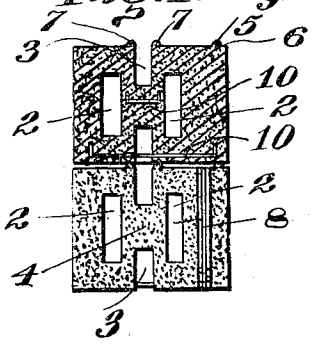
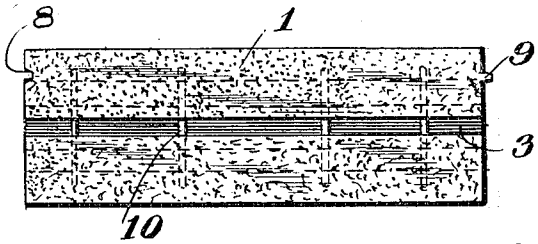


Fig. 5.



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WALL CONSTRUCTION AND CONCRETE BLOCK FOR THE SAME.

No. 830,094. Specification of Letters Patent. Patented Sept. 4, 1906.

Application filed July 24, 1905. Serial No. 270,985.

To all whom it may concern:

Be it known that I, MELVILLE C. MOMSEN, a citizen of the United States, residing at Armour, in the county of Douglas and State of South Dakota, have invented certain new and useful Improvements in Wall Construction and Concrete Blocks for Same, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to wall building construction, and more particularly to a concrete block to be used in wall construction, one of the objects being to provide an improved building-block which may be made of concrete, cement, tile, or other plastic material and which shall be practical and effective in use and economical of construction and by the use of which a practical and effective building-wall may be constructed, so as to contain horizontal air-spaces in which the air remains dormant and does not shift from the top to the bottom of the wall, or vice versa, when influenced by the temperature on the exterior of the wall, as is the case with the vertical-air-space building-blocks.

By the use of my improved block in wall construction cold is effectively intercepted by reason of the particular arrangement of the air-spaces, while at the time the block is fully up to the standard in compressiveness as well as tensile resistance.

Other objects and advantages of my invention, as well as the structural features by means of which these objects are attained, will be made clear by an examination of the specification, taken in connection with the accompanying drawings, in which the same reference-numerals indicate corresponding portions throughout, and in which—

Figure 1 is a perspective view of a corner of a wall constructed in accordance with my invention. Fig. 2 is a perspective view of one of the blocks constructed in accordance with my invention and showing the vertical tongue. Fig. 3 is a perspective view of one of said blocks, showing the vertical groove or kerf in which the tongue on the opposite block rests. Fig. 4 is an end view of two of the blocks set one above the other as they appear in the wall construction, the upper block being in cross-section to show the anchors embedded therein; and Fig. 5 is a bottom plan of one of the blocks.

I will first describe the blocks which are used in the construction of a wall in accordance with my invention with respect to the detail of their construction as individual or independent blocks. Each block 1 is provided with two oblong air-passages 2, extending entirely through the same longitudinally thereof, and also with longitudinal grooves 3, extending the entire length thereof, and which are set sufficiently deep so that the bottom of each groove is opposite the air-passages 2, leaving a connecting-rib 4, which joins the two parts of the block separated by said grooves 3, the outer part or side of said block being somewhat thicker than the inner side. This arrangement is desirable in order to keep the cold from too easily penetrating the wall from the outside and also materially strengthens the wall. Each block is also provided near its outer edge with an upwardly-projecting flange or guard 5 to prevent the mortar from oozing out and dropping upon the face of the block during the course of the wall construction, and 6 designates a shoulder or recess between the outer edge of the block and the mortar-guard 5, which forms a smooth and solid bed on which to point or raise the joints.

7 designates upwardly-projecting mortar-guards formed integral with the top of each block, said guards being arranged at the edges of the upper grooves 3 in order to prevent the mortar from falling into said groove during the course of construction. Each block is further provided at one end with a vertical groove or kerf 8 and at the other end with a vertical rib or tongue 9, said rib or tongue being adapted to engage with the groove in the opposite block, thereby forming a continuous wall construction and preventing the blocks from becoming dislodged or misplaced in the wall. The grooves 8 are somewhat shallower than the ribs or tongues 9, so that when the tongue is fitted in the groove there remains a small space between the ends of the blocks to regulate the size of joint and also affording space to be pointed up or filled in with mortar or cement to form a continuous wall construction.

It will be observed that the longitudinal air-spaces 2 are set sufficiently in from the edges of the blocks to admit of plenty of space for mortar or cement between the ends of the blocks without in any wise obstructing said air-passages 2. In each block two rows or sets of anchors or ties 10 are embedded, one set being shorter than the other. The longer anchors are preferably embedded near

the bottom of each block, as shown in Figs. 4 and 5, and their ends extend to within a comparatively short distance from the edges of said block. The shorter set of anchors is embedded in the rib 4, as shown in Fig. 4. These anchors are preferably constructed of pieces of wire or other suitable material having the ends turned at right angles to form the lateral points 11.

In the wall construction the blocks are laid as shown in Fig. 1. It will be observed (see Fig. 4) that when the blocks are laid in the wall the grooves 3 form additional air-passages 12, extending lengthwise of the wall. These air-passages, owing to the position of the grooves 3 in the blocks, are arranged somewhat inside of the center of the wall and between the parallel rows of air-passages 2, so that each wall is provided with three rows of air-passages, the central row alternating with the passages on each side thereof. These air-passages may be of any desired height or width, according to the size of block or the use of building to be constructed. In the construction of the corner-blocks the grooves 3 and the air-passages 2 turn at right angles to follow the contour of the block. Fig. 1 shows the corner of a wall constructed in accordance with my invention and extending at right angles and showing the manner in which the grooves and air-spaces follow the contour of the blocks, and in the construction of walls where the corners are at oblique or acute and not at right angles the air-passages and grooves follow the contour of the blocks, so that the air-passages are in no wise obstructed or their utility lessened by constructing walls at any desired angles.

A wall constructed in accordance with my improved cement-block system will have three separate rows of continuous horizontal air-passages, the passages in two rows extending parallel with each other and the passages in the central row alternating with the passages in the rows on each side thereof, as shown in Fig. 4. When the blocks are assembled in the wall, the air-spaces in the central row which are formed by the grooves 3 are so arranged that the tops and bottoms thereof extend between the outer rows of air-spaces, so the wall contains three parallel rows of horizontal air-spaces extending from the top to the bottom, the spaces in the middle row alternating with the spaces in the other rows, and by reason of the particular construction of my building-block a strong and durable wall may be formed and provided with air-spaces in which the air will not circulate from the top to the bottom of the wall, and vice versa, when sudden changes in temperature occur, but will remain inactive in the passages or spaces. The outside section or face of each block being considerably thicker than the inside section, a wall constructed in accordance with my invention is more durable and affords better protection against cold than other blocks and is also able to withstand great tensile strain; also, by means of the mortar-guards the air-spaces cannot become obstructed with mortar, and, if found necessary or desirable, these mortar-guards may also be arranged between the ends of the blocks and around the air-passages that open into each other when the blocks are assembled in the wall, so that the mortar placed between the blocks at their ends cannot ooze into the air-passages.

The face or outside of the block may be provided with any ornamentation or design desired, the shoulder or recess 6 affording means whereby the joints between the rows of blocks may be pointed up so that the mortar or cement may not ooze out upon the face of the block or upon any designs or ornamentations thereon.

Having thus described my said invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. A building-block of plastic material comprising two faces or sections partially separated by longitudinal grooves in the upper and lower surface of each block, each face or section having a longitudinal air-passage, a neck or rib connecting the two faces or sections and forming the bottoms of said grooves, a plurality of anchors or ties embedded in the neck or rib, and a plurality of anchors or ties embedded in the block to connect the two faces or sections near the bottom thereof.

2. A building-block of plastic material comprising faces or sections partially separated by longitudinal grooves in opposite surfaces of the block, a neck or rib connecting the faces or sections and forming the bottoms of said grooves, an anchor or tie embedded in said neck or rib to strengthen its connection with the faces or sections, and a transverse anchor or tie embedded in the block adjacent to one of its grooved surfaces and extending through one of said grooves to connect the faces or sections of the block, substantially as described.

3. A building-block of plastic material comprising two faces or sections partially separated by longitudinal grooves in the upper and lower surfaces of the block, a neck or rib connecting the two faces or sections and forming the bottoms of said grooves, each of the faces or sections of the block having a longitudinal air-passage formed therein, upwardly-projecting mortar-guard ribs formed upon the upper surface of the block at each edge of said groove and adjacent to the front edge of the block, said guard-ribs extending continuously from end to end of the block, a vertical tongue or dowel formed on one end of the block, the other end of the block being formed with a vertical groove to receive the tongue or dowel on an abutting block, anchors or ties embedded in said neck or rib,

and transverse anchors or ties embedded in the block adjacent to its bottom and extending through the longitudinal groove therein to connect the two faces or sections, substantially as shown and described.

4. A building-wall composed of superposed blocks of plastic material, each block comprising faces or sections partially separated by longitudinal grooves in the upper and lower surfaces of the block, said grooves forming a connecting neck or rib between the faces or sections of each block and being similarly arranged in each block to be opposite similar grooves in the contiguous blocks and provide in the wall continuous longitudinal air-passages between the horizontal rows or layers of blocks, said air-passages being out of communication with each other and extending continuously from end to end of the wall, anchors or ties embedded in the necks or ribs of the blocks, and transversely-extending anchors or ties embedded in said blocks and extending through said grooves or air-passages to connect the faces or sections of the blocks, substantially as shown and described.

In testimony whereof I hereunto affix my signature in presence of two witnesses.

MELVILLE C. MOMSEN.

Witnesses:
C. J. KLAHN,
A. P. MARVIN.