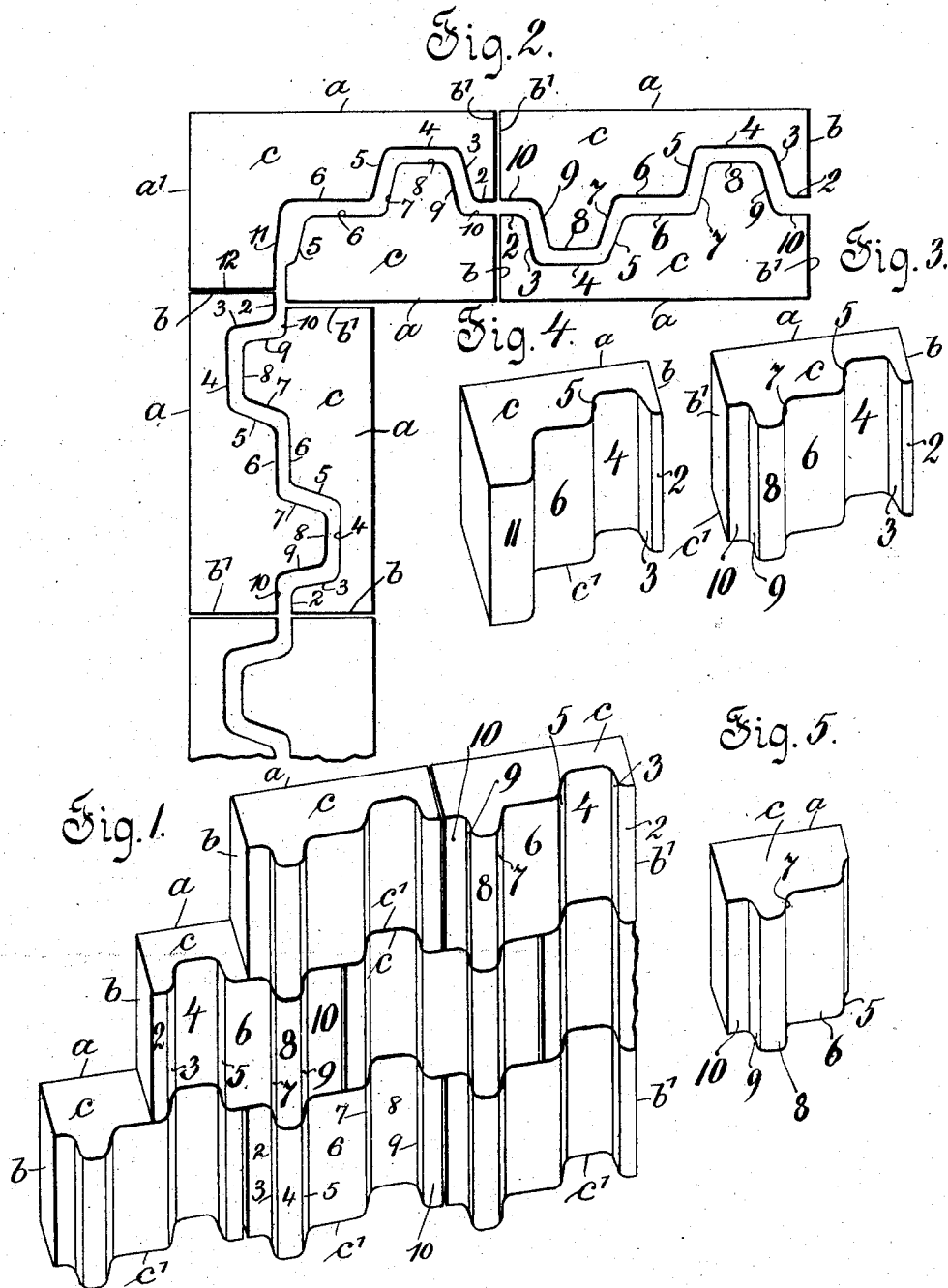


I. B. HILL.
CONCRETE BLOCK.

APPLICATION FILED APR. 25, 1907.

3 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

Fig. 6.

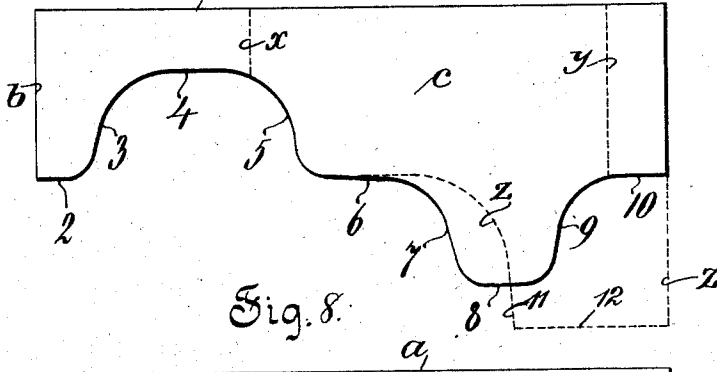


Fig. 8.

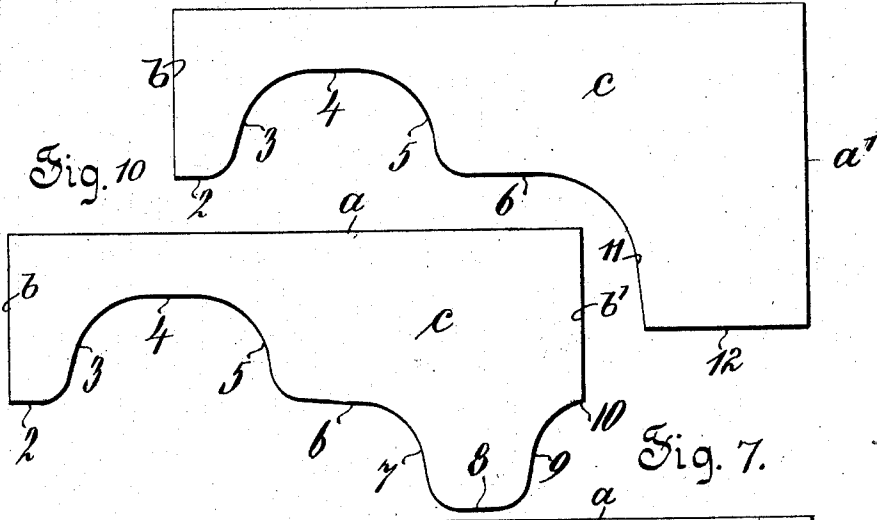


Fig. 10.

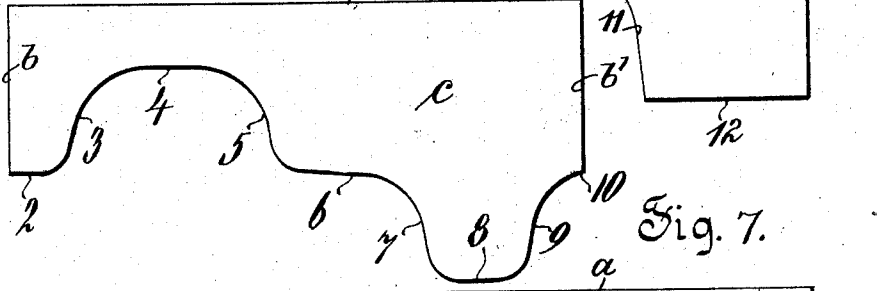


Fig. 7.

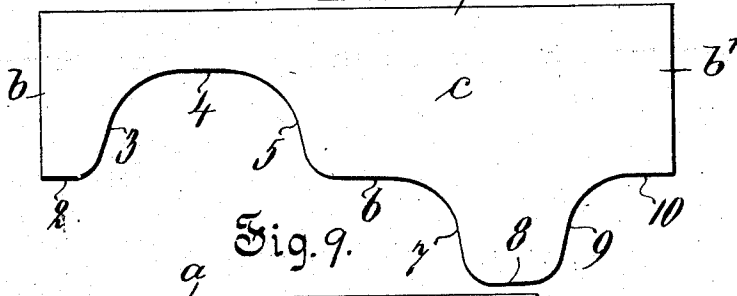
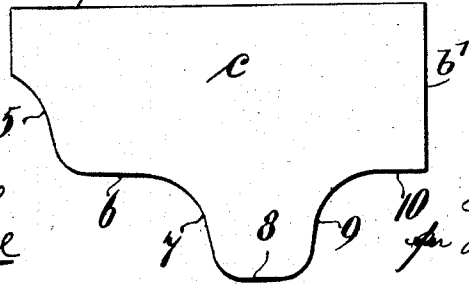


Fig. 9.



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UNITED STATES PATENT OFFICE.

ISAAC B. HILL, OF PLAINFIELD, NEW JERSEY.

CONCRETE BLOCK.

No. 866,360.

Specification of Letters Patent.

Patented Sept. 17, 1907.

Application filed April 25, 1907. Serial No. 370,124.

To all whom it may concern:

Be it known that I, ISAAC B. HILL, a citizen of the United States, residing at Plainfield, in the county of Union and State of New Jersey, have invented an Improvement in Concrete Blocks, of which the following is a specification.

My invention relates to an improved form of concrete block and concrete wall construction for building purposes, with the object of producing between adjacent walls formed by the laying up of these blocks, a continuous, tortuous or zig-zag vertically disposed air chamber to prevent dampness of the outside wall striking through to the inside.

My improved form of block is equally well adapted for foundation walls or walls above ground and the blocks may be made of any desired size.

In carrying out my invention, I employ one essential form of block and three auxiliary forms for the corners of a wall. Each block of the essential form has a plain outer face, two end faces of predetermined width and upper and lower plain faces.

The back face is of such predetermined irregular winding outline that when two blocks are set together in opposition, with their irregular faces in juxtaposition, there is a tortuous or zig-zag passage between them which is vertically disposed and continuous.

As the wall is built up layer upon layer, the blocks are reversed to break joints similar to laying up a brick wall. The blocks are reversed in each super-imposed layer and reversed in an inner layer with reference to an outer layer and this does not disturb the regular continuity of the passage between the blocks which forms an air-chamber unbroken between the parts of the wall. These blocks are of such form that their bearing strength is not impaired.

The auxiliary blocks are forms of the regular blocks and correspond to a portion of their outline and section and are essentially employed at the corner of the wall for turning the angle, all of which is hereinafter more fully set forth.

In the drawing, Figure 1 is a perspective view of the inner irregular surface of the similar blocks super-imposed. Fig. 2 is a plan of a layer of oppositely disposed adjacent blocks turning a corner. Fig. 3 is a perspective view of the essential form of the block. Fig. 4 is a perspective view of one of the outer corner blocks. Fig. 5 is a perspective view of one of the inner corner blocks. Fig. 6 is a plan of the essential form of block showing in dotted lines the other forms of block and thereby the relations of one to the other. Fig. 7 is a plan of the essential form of block. Fig. 8 is a plan of a corner block. Fig. 9 a plan of an inner corner block and Fig. 10 a plan of the next adjoining corner block to the inner corner block; Fig. 2 showing clearly the continuous zig zag air-chamber between the inner and

outer blocks of each layer, not only showing the continuous feature but that the same turns the corner.

Each block of the essential form has one plain face *a*, two plain ends *b b'* and upper and lower plain surfaces *c c'*. The surface with the irregular faces is opposite to the plain face *a* and this surface has a series of faces 2 3 4 5 6 7 8 9 and 10. The faces 2 6 and 10 are in the same plane and in a plane parallel to the outer face *a*.

The surfaces 3 4 and 5 form a recess from the plane of the aforesaid surfaces toward the outer face *a*, and the surfaces 7 8 and 9 form a projection for the block extending away from the outer face *a*.

The projection formed by the surfaces 7 8 and 9 is adapted to fit in the recess formed by the surfaces 3 4 and 5 and is so much smaller than the recess as to leave an equi-distant walled recess.

When these blocks are arranged as in Fig. 1, to form a wall, the adjacent end faces are cemented together, the adjacent top and bottom faces are also cemented together and from the outside appearance the joints are broken the same as in laying up a wall of brick. The perspective view shows three super-imposed layers of this essential form of the block, from which it will be noticed that the lower and upper layers agree in the position of the block while the intermediate layer shows the block turned over or reversed in position to the blocks of the lower and upper layers.

The blocks employed for the inner part of the wall having the same horizontal plane as in Fig. 1, are placed reversed so as to leave an equi-distant walled recess or vertically disposed air chamber between the blocks. This disposition would bring the projection formed by the surfaces 7 8 and 9 in each case into the recess formed by the surfaces 3 4 and 5. This position is illustrated generally in Fig. 2; Fig. 6 illustrating a plan view of the block of essential form made with a dotted line *x* so as to illustrate the part of the block that is removed or cut away so as to produce the inner corner block shown in Figs. 5 and 9. Therefore this inner corner block is a section of the essential form of the block.

In Fig. 6 the dotted line *y* illustrates the portion of the block of essential form that is removed or cut away to produce the inner block; Fig. 10 coming next to the corner block Figs. 5 and 9, and in Fig. 6 the dotted line *z* represents the portion added to the block of essential form to produce the outer corner angle block employed alternately in opposite directions in Fig. 2, and shown in perspective Fig. 4 and plan Fig. 8. Therefore these auxiliary blocks are sections built out of the general outline or form of the essential block Figs. 3 and 7. In other words, the corner block is the same as the essential form of block without the faces 8 9 and 10, but with the face 7 prolonged at the same inclination and with a face 11 extending therefrom to the surface 12 of the

block; thus making one end a' half the length of the outer face a , and these corner blocks when the walls are laid up are reversed so as to break the joints.

In laying up both the inner and outer portions of a wall formed of these blocks, the blocks are reversed in each horizontal layer with reference to the layer beneath, and this provides for the broken joints both on the inside and the outside, the same as are made in laying up brick, producing between the juxtaposed faces of the blocks of the respective layers, a zig-zag tortuous passage-way or air chamber, which is vertically disposed and which continues unbroken from the first course of the wall to the top thereof and around the corner as illustrated in Fig. 2.

I am aware that concrete blocks for foundations and their walls have heretofore been employed, in which it is not new to lay up the blocks as bricks are laid up with broken joints and in which there are air-chambers and passage-ways between the blocks of each layer, but in these walls some of the blocks have crossed over and broken up the air-chamber or divided the same into a number of parts so that the air-chamber has not been either continuous vertically between the blocks of the walls or horizontally, whereas in my case this intermediate or dead-air space is not only continuous for the height of the wall but is continuous lengthwise and around the corner, there being nothing to intercept the continuity of the air-chamber.

The wall built of my improved form of blocks is a double wall in which each part is substantially alike, or in other words, the members are the counterpart of one another between which is an unbroken air space throughout its entire length and height and each wall contains a maximum of strength, thickness and stability, and this is because the essential form of block has within itself the thickest and strongest element of the wall structure.

I claim as my invention:

1. A series of similar concrete blocks forming the outer surface of a wall and a series of similar blocks in a reversed position forming the inner surface of a wall, each block having an outer plain face, plain end faces and plain top and bottom faces and a face opposite to the outer plain face of irregular surface, in which there are three surfaces in the same plane and in a plane parallel to the outer plain surfaces, three surfaces at one end that form a recess toward the outer plain surface and three surfaces at the other end to extend away from or form a projection from the outer plain surface with the blocks of the superimposed layers reversed with reference to one another and with broken joints, and the blocks of each horizontally disposed layer reversed in position and spaced apart so that between said blocks a tortuous or zig-zag passage-way is formed which is vertically disposed and continuous as a dead-air space for the height and length of the wall.
2. A series of similar concrete blocks forming the outer

surface of a wall and a series of similar blocks in a reversed position forming the inner surface of a wall, each block having an outer plain face, plain end faces and plain top and bottom faces and a face opposite to the outer plain face of irregular surface, in which there are three surfaces in the same plane and in a plane parallel to the outer plain surfaces, three surfaces at one end that form a recess toward the outer plain surface, three surfaces at the other end to extend away from or form a projection from the outer plain surface with the blocks of the superimposed layers reversed with reference to one another and with broken joints, and the blocks of each horizontally disposed layer reversed in position and spaced apart so that between said blocks a tortuous or zig-zag passage-way is formed which is vertically disposed and continuous as a dead-air space for the height and length of the wall, and blocks forming the corner or angle of a wall which are formed out of the regular side blocks and that correspond to the major portion of their section which are also to be laid in opposition.

3. A concrete block having an outer plain face, plain end faces and plain top and bottom faces and a central surface parallel with the outer face, a recess at one side of the central surface and a projection at the other side and end surfaces forming extensions of the central surface beyond the recess and projection and in the same plane.

4. A concrete block having an outer plain face, plain end faces and plain top and bottom faces, a central surface parallel with the outer face, a recess at one side of the central surface and a projection at the other side, said recess being of sufficiently greater area than the said projection so that when a projection is received in the recess with the parts in opposition a tortuous passage-way is formed between the parts.

5. A concrete corner block having an outer plain face and plain end faces at right angles thereto, one of which is adapted to come at the corner of a wall and agree with half the area of the plain outer face of the block, an end surface parallel with the outer face forming at one end a maximum width for the block and an inner face having two parts in line and parallel with the outer plain face and between which is a recess extending toward the outer face.

6. A series of similar concrete blocks forming the outer surface of a wall and a series of similar blocks in a reversed position and spaced apart from the first series and forming the inner surface of a wall, each series being arranged in superimposed layers reversed with reference to one another and with broken joints and each block of the respective series having an outer plain face, plain end faces and plain top and bottom faces and an inner face opposite to the outer plain face of irregular surface, in which there are three surfaces in the same plane and in a plane parallel to the outer plain surfaces, three surfaces at one end that form a recess toward the outer plain surface and three surfaces at the other end that extend away from or form a projection beyond the outer plain surface, and blocks forming the corner or angle of a wall which are formed out of the regular side blocks and that correspond to the major portion of their section and which are also reversed or laid in opposition.

Signed by me this 16th day of April 1907.

ISAAC B. HILL.

Witnesses:

ARTHUR H. SERRELL,
E. ZACHARIASEN.