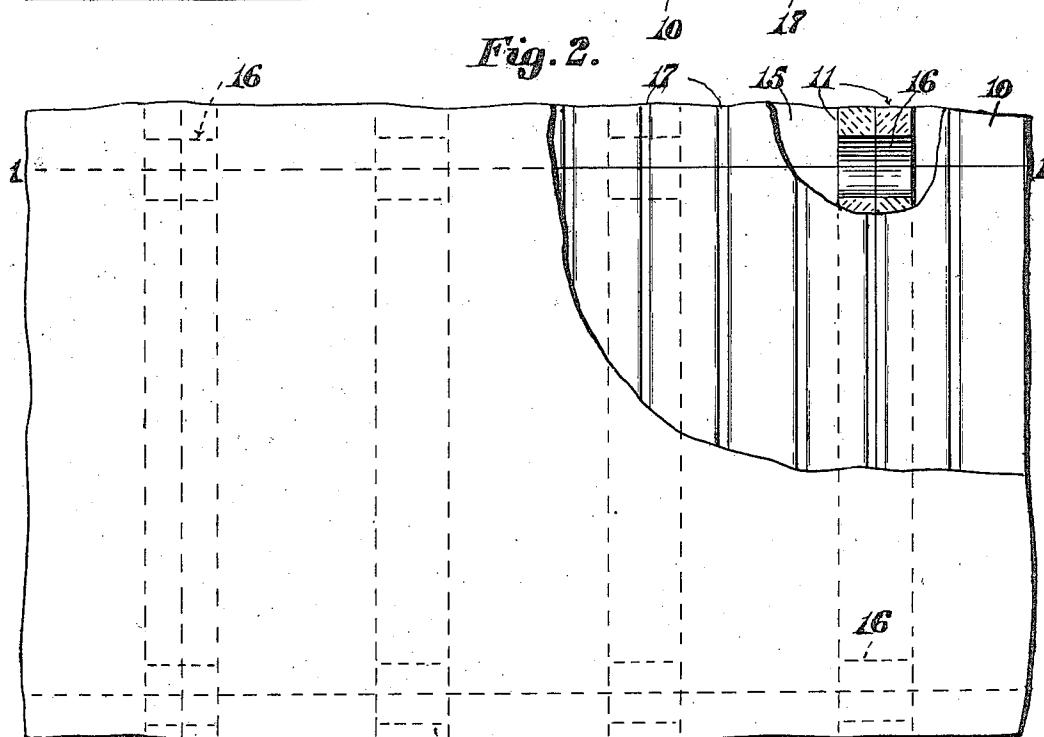
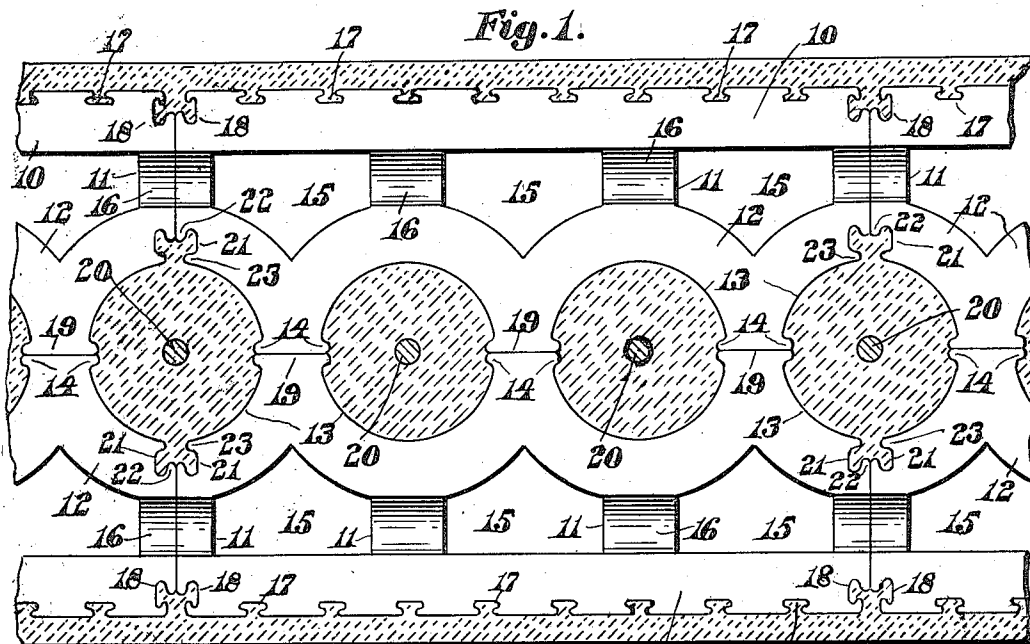


1,016,957.

2 SHEETS—SHEET 1.



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1,016,957.

2 SHEETS—SHEET 2.

Fig. 4.

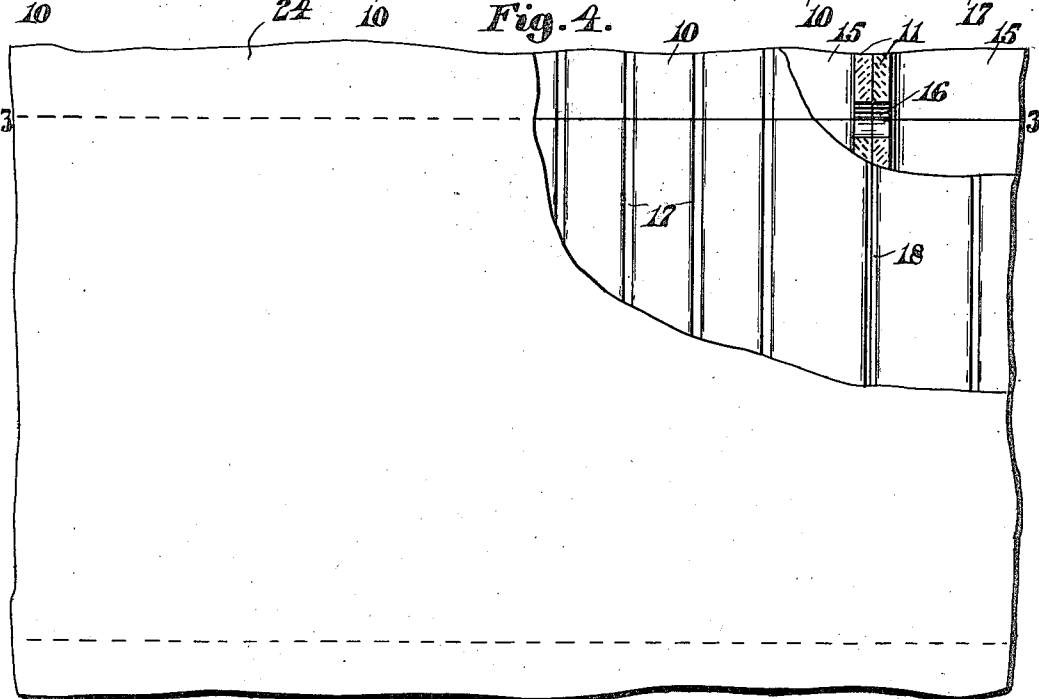
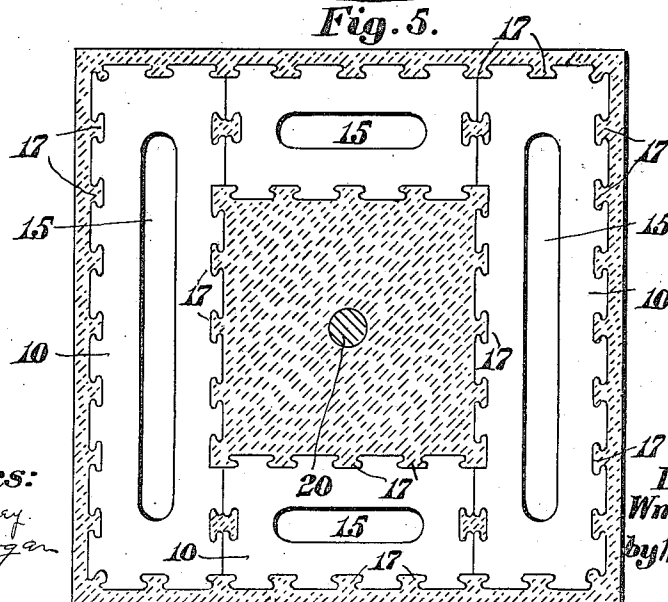


Fig. 5.



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UNITED STATES PATENT OFFICE.

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BUILDING CONSTRUCTION AND BLOCK THEREFOR.

1,016,957.

Specification of Letters Patent.

Patented Feb. 13, 1912.

Application filed December 9, 1909. Serial No. 532,266.

To all whom it may concern:

Be it known that I, WILLIAM H. RICKER, a citizen of the United States of America, and a resident of Cambridge, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Building Construction and Blocks Therefor, of which the following is a specification.

10 This invention relates to building construction and particularly to a novel design of building block to be used in such construction,—the particular object of the invention being to provide a building block
15 having an air passage extending there-through adapted to communicate with similar air passages in other blocks superimposed thereon, these various air passages being separated from each other by partitions
20 formed integrally with said blocks, but of less height than the heights of the exterior walls of the blocks thereby permitting a circulation of the air from one air passage to another.

25 Another object of the invention is to provide a block with a plurality of T-shaped grooves in the outer faces thereof, the corners of said T-shaped grooves preferably being rounded. These T-shaped grooves are
30 adapted to serve as a retaining means for plaster, concrete or any other similar material spread over the outer face of said building blocks when superimposed upon one another to form the exterior or interior
35 wall of a building, or the wall of any other structure.

Another object of the invention is to provide similar T-shaped grooves at the ends of said building blocks which grooves will
40 communicate with the sides thereof and are adapted to receive cement or any other similar material which is adapted to be inserted therein while in a plastic state, and which when hardened or set will serve as a means
45 for locking the ends of two adjacent blocks together.

A further object of the invention is to provide one face of the building block with a plurality of semi-cylindrical depressions
50 having inwardly extending beads or ribs near the outer edges thereof, said depressions being adapted to receive cement or other similar plastic material inserted therein while the depressions of two of such

blocks are positioned opposite one another,—said cement when hardened or set being adapted to lock the two blocks together by means of the shoulders formed by said inwardly extending beads or ribs.

In carrying out these objects the invention consists of certain novel features in building construction and in and to a building block containing certain novel features of construction and arrangement of parts which will be readily understood by reference to the description of the drawings and to the claim hereinafter given.

Of the drawings Figure 1 represents a horizontal section of a portion of an exterior wall showing two building blocks face to face and locked together by means of cement, and portions of four other building blocks similarly locked to the ends of the first mentioned pair of blocks, the cutting plane of said section being on line 1—1 on Fig. 2. Fig. 2 represents an elevation of said wall showing a portion of the plastering or cement covering thereof broken away to show the plaster or cement retaining grooves in said building blocks,—and another portion broken away to show the connecting passage between the main vertical air passages of said blocks. Fig. 3 represents a modified form of block which is adapted for use in the construction of interior walls, the cutting plane being on line 3—3 on Fig. 4. Fig. 4 represents an elevation of said inner wall showing a portion of the plastering or other covering broken away to show the plaster retaining grooves on the outer face of said blocks, while another portion of said covering is broken away to show the connecting passage between the vertical air passages of said blocks, and Fig. 5 represents a horizontal section of a plurality of modified forms of said building blocks joined together to form a column.

Similar characters designate like parts throughout the several figures of the drawings.

In the drawings, 10 represents a vertical side wall of the building block united by means of a plurality of partitions 11 to another wall 12 in the outer face of which are a plurality of semi-cylindrical depressions 13 extending from top to bottom of said block. Near each outer edge of said semi-

cylindrical depressions is an inwardly extending bead or rib 14, the corners of which are rounded.

The partitions 11 joining the walls 10 and 12 form vertical passages 15 extending from top to bottom of said block. The partitions 11 are of less height than the height of the walls 10 and 12, thus leaving at the top and bottom of said block a semi-cylindrical connecting passage 16 which provides a communication between the various vertical air passages when the blocks are superimposed on one another.

By means of the vertical air passages 15 and the connecting passages 16 a free circulation of air is permitted between the walls 10 and 12. The outer face of the outer wall 10 is provided with a plurality of vertical T-shaped grooves 17, the corners of which are preferably rounded,—these grooves being adapted to serve as a retaining means for concrete, cement, plaster or other suitable plastic material which may be applied to the exterior face of said wall 10. Similar T-shaped grooves 18 are formed in the ends of each block, these grooves 18 also communicating with the outer face of the wall 10. By this construction the cement applied in the plastic state to the exterior faces of the walls 10 will enter the grooves 18 and not only form a means for retaining the cement or other material applied to the outer face in position, but will also serve as a means for uniting the ends of the blocks together when the cement is hardened or set.

Usually in the construction of an exterior wall of a building or other structure in which this improved block is used, the faces 19 are butted against one another as shown in Fig. 1 of the drawings, thus forming a cylindrical space through which a tie rod 20 of any suitable construction is positioned, this tie rod extending through a plurality of building blocks in a well known manner.

The end faces of the blocks are also provided with vertical grooves 21 having suitable beads or ribs 22 extending in front of said grooves parallel with the ends of said block, and other similar beads or grooves 23 extending at right angles thereto, but not extending to the end face of said block.

When the blocks have been positioned as indicated in Fig. 1 of the drawings in the construction of a wall, and the tie rods 20 have been positioned in the center of the cylindrical spaces formed by the semi-cylindrical depressions 13, cement or other suitable plastic binding material is inserted in said depressions 13 and by means of the inwardly extending beads 14 the two blocks facing one another are firmly united together when the cement is hardened and become set. The cement in said depressions 13 will also pass into the grooves 21 and by means of the beads 23 will more firmly unite

the two blocks together to prevent a lateral separation thereof, while the beads 22 will unite the ends of two adjacent blocks together to prevent longitudinal separation thereof.

When it is desired to make a thicker wall than would be made with the faces 19 butting one another, the blocks may be separated so that the faces 19 are at a greater or less distance apart and then when the cement has been inserted into the semi-cylindrical depressions 13 it will pass from one depression to another and fill the space between the faces 19 and when hardened or set it will form a tie between the cement in all of the depressions 13, while it will also provide a means for retaining the blocks separated to form a wall of any desired thickness.

Building blocks have heretofore been formed with dove-tailed grooves in the outer faces thereof serving as a retaining means for plaster, cement, or other plastic material applied to the exterior face thereof, but in practice such dove-tailed grooves have been found more or less objectionable owing to the shoulders thereof being insufficient to secure a firm grip upon the material when hardened or set,—but the principal objection found thereto is on account of the sharp corners extending into the plastic material which cause such material to be more easily broken away. This objection has been found in practice to be wholly obviated by making the grooves T-shaped, thus securing a better grip upon the material and by making the corners of the grooves rounded as indicated in the various figures of the drawings, in which case the material is less liable to become cracked and separated from the wall to which it is applied.

Where an inner wall is to be constructed, as for instance, in making partitions between the various rooms of a building a similar but modified form of said block such as is shown in Fig. 3 may be utilized, the ends of the block being provided with the grooves 18 for locking the ends together when the plaster or other plastic material has been applied to the exterior faces of said blocks and secured thereto by means of the grooves 17. The air spaces 15 therein are similar to those shown in Fig. 1 of the drawings and communicate with one another by means of the communicating passages 16 formed in the top and bottom of the partitions 11. Where a thicker inner partition or wall is desired, the plaster 24 may be omitted and two parallel rows of said blocks positioned separated from each other and the space between them filled with cement in lieu of plaster 24 which when set will unite the two rows securely together, tie rods 20 being embedded in said cement if desired. In a similar manner modifications of said

blocks may be utilized in the manner shown in Fig. 5 to form a column, these blocks being formed in a square in the center of which the tie rod 20 is placed and the space
5 between the inner walls of the blocks thus positioned about said tie rod being filled with cement which will enter the T-shaped grooves 17 in the inner faces of said blocks and when set will unite them all together.

10 It is obvious that columns of any desired cross section may be similarly constructed by making the blocks forming the columns of a suitable shape. The outer faces of the blocks will then have applied thereto cement or other plastic material which will
15 still further unite the blocks together and make a rigid column suitable for all ordinary building purposes. It is obvious that the building block may also be utilized for
20 many similar purposes such as the construction of posts, fences, floors, paving, et cetera.

The blocks themselves may be formed of cement, concrete or any similar material, but preferably are made of vitrified terra cotta
25 and salt glazed,—it having been found in practice that blocks of salt glazed vitrified terra cotta are the best non-conductors of the elements.

In the blocks ordinarily used some difficulty has been found in preventing the dampness from the exterior of the wall from passing through the block to the interior thereof making damp interiors and causing objectionable stains upon the interior faces.
35 By means of the vertical air passages and the horizontal passages communicating therewith, a free circulation of air through the wall is permitted which very materially decreases the tendency of the dampness to
40 pass through the walls even if it is not entirely prevented. This forms an important feature of the present invention as obviously the dampness passing through the walls will cause the building material to deteriorate
45 if some means is not provided to prevent the same. This is more true where steel tie rods or other stiffening members are utilized in the walls, the moisture from the elements oxidizing the metal used unless it
50 is effectually incased which is done in the present construction shown in the drawings and forming a part of this invention.

It is obvious that in the exterior walls as

constructed in accordance with the present invention a double supply of dry air spaces 55 is provided for each wall which naturally is the greatest protection which could be provided to prevent the dampness from being transmitted from the exterior to the interior of the wall. These air sections not
60 only are adapted to cut off the dampness but they also insulate from the cold or heat, the dry air passing through the passages assisting materially in preventing either the cold or the heat from the exterior face
65 of the wall being transmitted to the inside of the building.

It is obvious that the blocks as constructed may be readily set up without the use of skilled labor and will not only be cheaper than the
70 bricks ordinarily used in the construction of a wall, but the wall constructed therefrom will be far superior to those constructed of brick for obvious reasons.

The operation of the invention and the
75 many advantages thereof it is believed will be fully evident without any further description.

Having thus described by invention, I
claim:

A building block having a hollow body
portion provided on one face with a plurality of semi-cylindrical depressions having inwardly extending beads and adapted to receive columns of cement to which said
85 block is adapted to be locked by said beads extending into said cement columns, the ends of said block being provided with part-cylindrical depressions and smaller shouldered depressions near said part-cylindrical
90 depressions, the walls of said smaller shouldered depressions near said part-cylindrical depressions being of less depth, whereby when two blocks are brought together, a channel is formed providing a means for
95 the introduction of the cement into the smaller shouldered depressions, thereby locking the blocks together and to said cement columns.

Signed by me at 4 Post Office Square, Boston, Mass., this 4th day of December 1909. 100

WILLIAM H. RICKER.

Witnesses:

WALTER H. LOMBARD,
NATHAN C. LOMBARD.