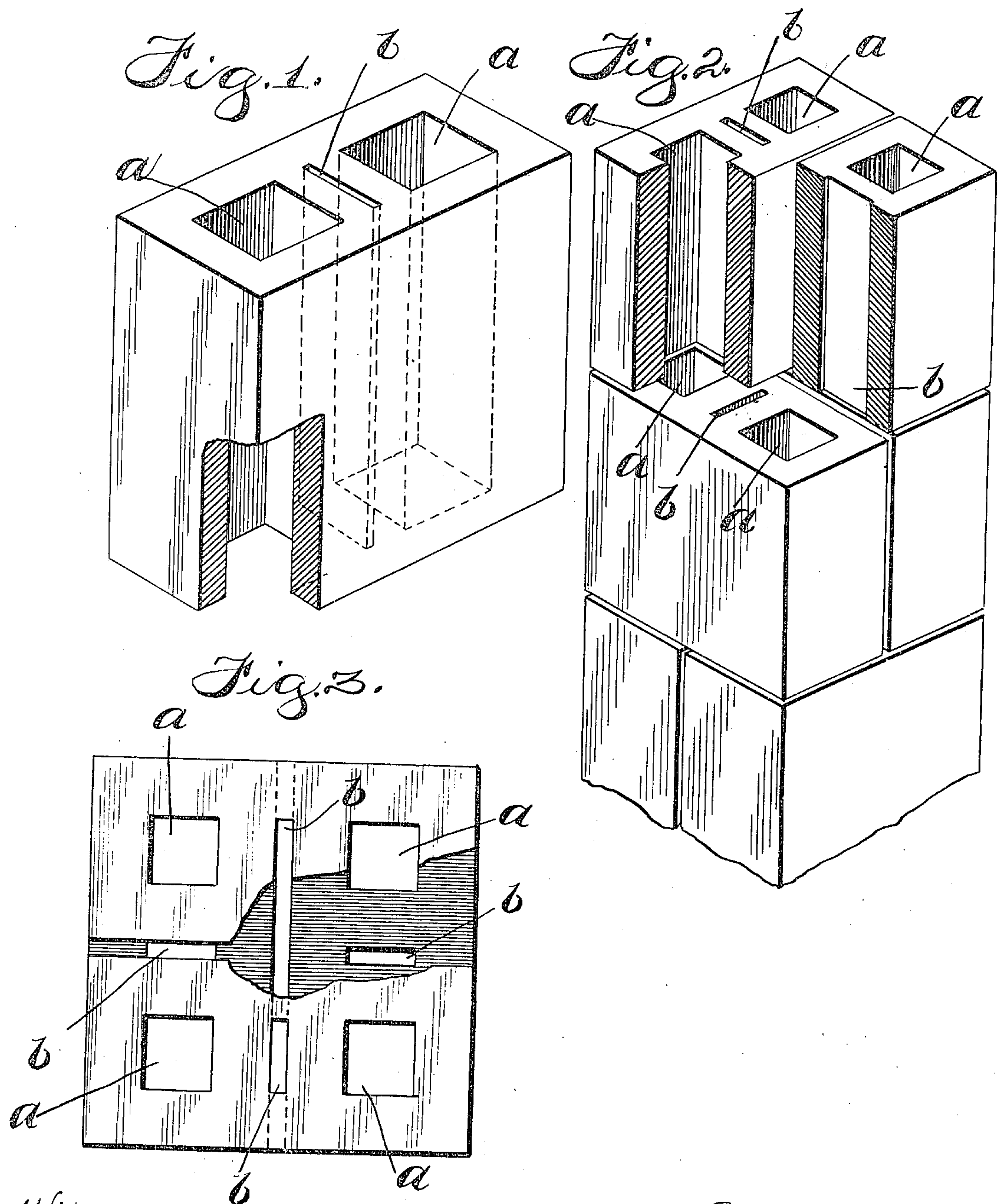


No. 837,572.

PATENTED DEC. 4, 1906.

E. V. JOHNSON.
BUILDING BLOCK.

APPLICATION FILED AUG. 14, 1905.



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ERNEST V. JOHNSON, OF CHICAGO, ILLINOIS.

BUILDING-BLOCK.

No. 837,572.

Specification of Letters Patent.

Patented Dec. 4, 1906.

Application filed August 14, 1905. Serial No. 274,224.

To all whom it may concern:

Be it known that I, ERNEST V. JOHNSON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Building-Block, of which the following is a specification.

This invention relates to a building-block; and its object is to provide a construction capable of being erected in the class of walls intended to carry extreme loads—such as the wall of warehouse-buildings, piers, columns, &c.—and at the same time be comparatively light in weight, homogeneous in structure, and making a provision for insulation.

The invention consists, substantially, in the constructions hereinafter described, and more particularly pointed out in the claims.

Like letters refer to the same parts in the several figures of the drawings, in which—

Figure 1 is a perspective view of the building-block with a section cut away. Fig. 2 is a perspective view of a wall or column made of the blocks with a section of the top layer of blocks cut away vertically. Fig. 3 is a top or plan view of the same with a small section broken away or removed.

It is of course a well-known fact that in building walls, columns, piers, &c., which are intended to carry extreme loads it is desirable to lighten the structure as much as possible without subtracting from its requisite carrying strength, and to attain these ends it has been attempted to use hollow tile-blocks made of fire-clay or other suitable material, which would at once be light and at the same time provide insulating-spaces; but in practice it has been found that as the successive tiers of such tiled blocks are laid so that one tier of the blocks broke joints with the blocks of the other tier the hollow spaces and surrounding webs of the blocks of a superposed tier did not respectively coincide with the hollow spaces and webs of the subjacent tier, with the consequence that the webs of the successive tiers did not aline with each other, but projected into or crossed the hollow spaces, and the structure therefore as a whole failed in providing the requisite strength which should have been secured from the weight of material employed, owing to the fact that the entire face of the block was not

utilized, as a portion thereof was held out of contact with the face of the adjacent block. In order to overcome these difficulties, I have devised a building-block in which the desired lightness is secured by suitable hollow spaces and at the same time the maximum strength is attained by such an arrangement as that the entire face of the webs of the blocks of any one tier in the column or wall will always coincide with and rest upon the entire face of the webs of the blocks of the subjacent tier, thus utilizing the entire area of the faces of the blocks and making a wall or column whose carrying capacity is equal to the strength of the vertical height of material composing the webs of the blocks of the tiers constituting such wall.

In the accompanying drawings there is shown in Fig. 1 a block having a construction which exemplifies my invention. This block may be made of fire-clay or other suitable material and is provided with two hollow spaces *a a* extending therethrough which are of similar shape and dimensions. Each of these spaces may be of any desired size and is of such a shape that every horizontal diameter thereof will be equal to the corresponding diameter of every other space of every block, thereby forming uniform spaces which are arranged, respectively, on opposite sides of a central web *a'*. This central web *a'* is of a diameter slightly larger than the diameter of the side and end webs of the block formed by the openings *a*, the excess diameter of the central web *a'* being equal to the thickness of the mortar or masonry bond, which is usually about three-eighths of an inch. In constructing a hollow block of this character in which the central or intermediate web is of a greater thickness than the remaining webs considerable difficulty has been experienced in the baking in that, owing to the increased thickness, the central web is not uniformly baked with the remaining webs, thereby rendering the same weaker. If the tile or block is allowed to remain in the oven or kiln a length of time to sufficiently bake the central web, the remaining webs will be baked too long. In order to overcome these difficulties and dangers, the central web *a'* is preferably provided with a centrally-disposed slot or space *b*, extending

therethrough between and parallel with the spaces $a a$. The length of this slot or space b is equal to the longitudinal diameter of the spaces $a a$, and its width is preferably substantially equal to the thickness of the mortar or masonry bond.

Each of the blocks is so constructed that the length thereof is a multiple of its width plus the thickness of the mortar or masonry bond, and the spaces $a a$ are so arranged that the peripheral webs formed thereby are of a uniform width, while the intermediate web a' is twice the width of these webs plus the width of the mortar or masonry bond.

In this exemplification of the invention the block is illustrated as being eight inches in vertical height, eight and three-eighths inches in length at top and bottom, and four inches across. The intermediate or narrow slot b , located at about the center of the block, is three-eighths of an inch across, and the two larger hollow spaces $a a$ are located equidistant from the intermediate hollow spaces and equidistant from the ends and sides of the blocks and are about one and one-half inches in diameter in either direction, thus leaving a solid web about one and one-fourth inches in transverse section between the outer edges of the block and the edges of the hollow spaces $a a$. This in practice has been found to be the most convenient sized block for general purposes; but of course it is evident that the size could be increased to any multiple of that of the block described or proportionately diminished. Now it is evident that when these blocks are placed together in pairs, as is illustrated in Fig. 3, and secured together by mortar or other masonry bond there would be a certain space between them occupied by this masonry bond, which has been found in practice to be about three-eighths of an inch, thereby corresponding to the excess width of the central web a' and preferably to the width of the narrow slot b , and then when upon this pair of blocks another pair is superposed and upon that pair still another pair, and so on until the column is finished, and each pair breaking joint with the other pair, as is customary, the slots $a a$ of the superposed pair all being of a uniform shape and having uniform diameters will coincide with the corresponding spaces $a a'$ of the subjacent pair, and the narrow slots or hollow spaces b of the superposed pair of blocks will coincide and be in alinement with the masonry bond between the blocks of the subjacent pair, with the result also that the entire face of all of the webs or solid portions of the blocks of one pair will lie immediately over and contact with the entire face of the webs or solid portions of the subjacent pair, thereby utilizing the entire faces and giving a supporting strength to the wall equal to the strength of the vertical

thickness of the material constituting the height of the webs of all the superposed blocks and the foundation-blocks. In short, by such construction no portion of the webs of any of the blocks will stand across or project over the spaces $a a$ of the subjacent block, but will be in a direct line with each other vertically, thereby imparting to the wall a strength equal to the sum of the vertical heights of all these webs which are in line with each other, and at the same time the benefit of the insulating effect of the hollow spaces in each block is maintained in the entire wall or column, as is also the saving of weight secured by the hollow spaces. Moreover, as the hollow spaces are regularly placed in each block the entire block is made very homogeneous, because in the process of making the block the flame extends regularly through it and subjects the interior as well as the exterior sections to approximately even heat.

It will be understood that the column shown in Fig. 2 is only an example of one form of column which can be made with these blocks, and instead of this eight-inch column a sixteen-inch or a multiple thereof might be made with the same construction of blocks, and in each instance the same results will be secured, and, as before stated, while it has been found in practice that the block of the dimensions described is most serviceable, yet larger or smaller blocks might be employed provided the same principle of construction and proper proportion is maintained. It is therefore obvious that persons skilled in the art might vary the details without departing from the principle of the invention.

What I claim, and desire to secure by Letters Patent, is—

1. A column or wall composed of building-blocks, each block of which is equal in length to the width of two blocks plus the masonry bond between the two blocks, and each of which blocks is provided with a central slot extending vertically therethrough and likewise of a width corresponding to the masonry bond and with other slots equidistant from the central slot, the entire faces of the webs of all blocks of one tier resting in vertical alinement and upon the entire faces of and in vertical alinement with webs of the blocks of the subjacent tier.

2. An assemblage of superposed building-blocks arranged to break joint with each other, each block having a length which is a multiple of its width plus the thickness of a masonry bond, and having vertical spaces passing therethrough to form peripheral webs of uniform thickness, and a central web between the spaces, the central web being of a thickness greater than the peripheral webs equal to the excess length of the block, the

vertical faces of the webs of the superposed blocks being arranged entirely within the same vertical planes as the corresponding vertical faces of the subjacent block with the entire face of each block contacting with the entire face of the subjacent blocks, and with the spaces alined to form unobstructed passages.

In witness whereof I have hereunto set my hand, this 10th day of August, 1905, in the presence of the subscribing witnesses.

ERNEST V. JOHNSON.

Witnesses:

E. C. SEMPLE,
ERNST A. BAUGHMAN.