

Nov. 7, 1939.

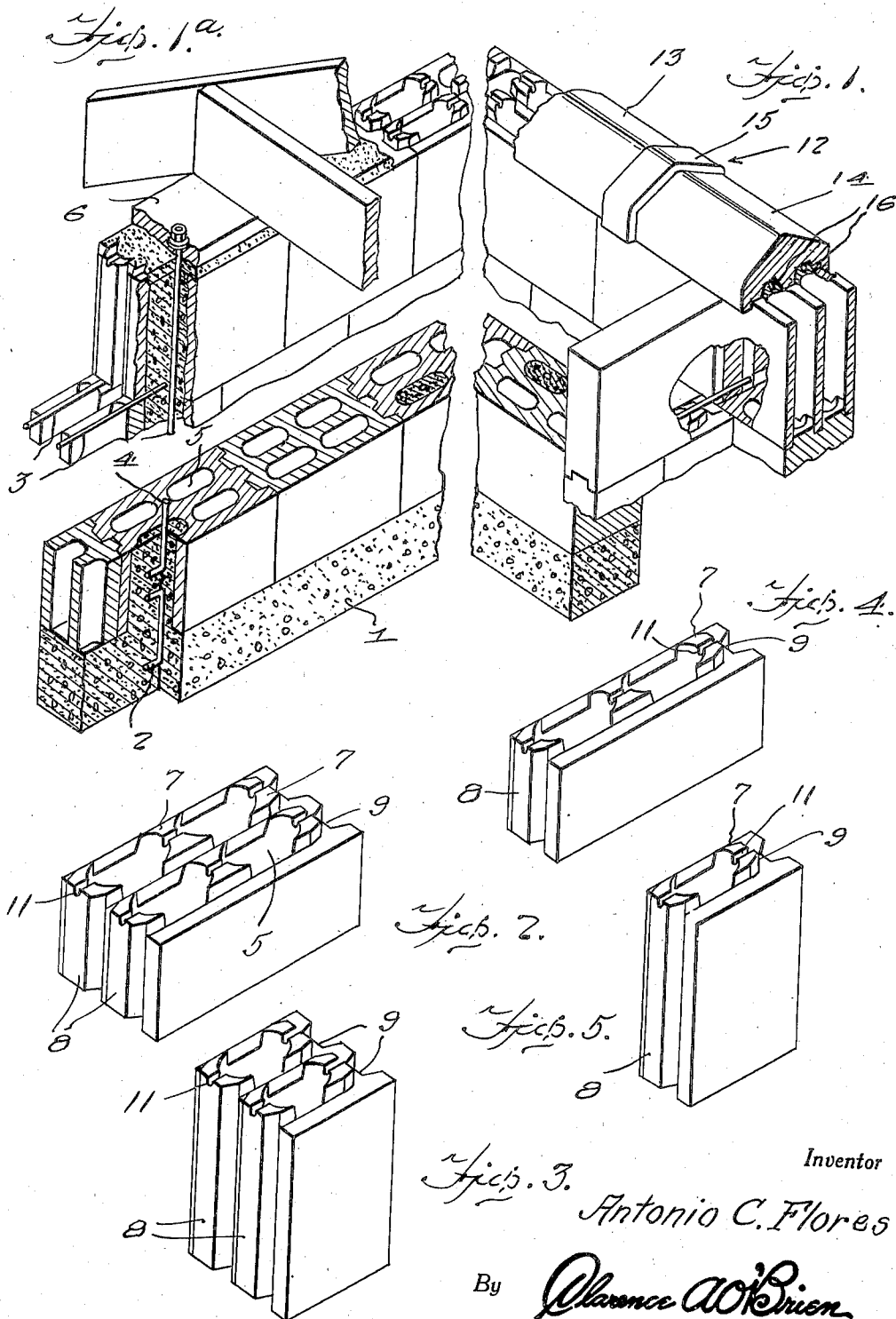
A. C. FLORES

2,179,407

BUILDING BLOCK

Filed Oct. 12, 1938

2 Sheets-Sheet 1



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*Fig. 6.*

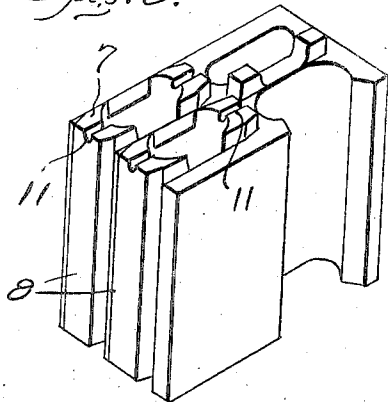
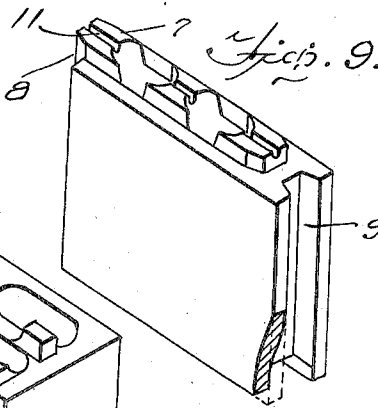
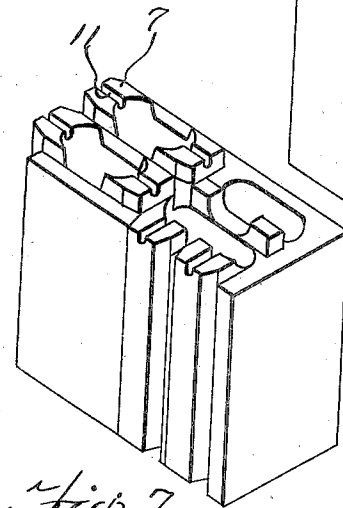
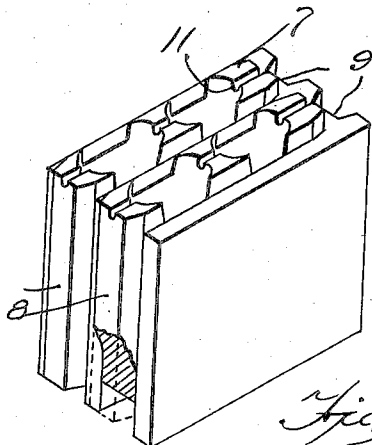


*Fig. 8.*

*Fig. 10.*

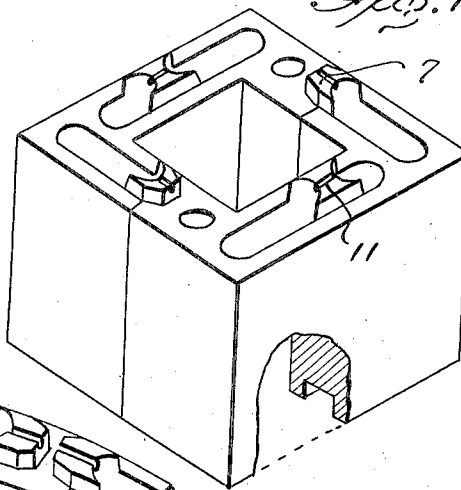
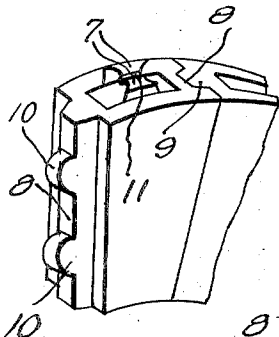


*Fig. 11.*

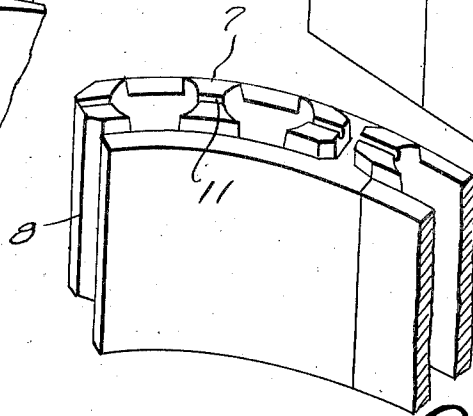


*Fig. 12.*

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## UNITED STATES PATENT OFFICE

2,179,407

## BUILDING BLOCK

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Application October 12, 1938, Serial No. 234,711

2 Claims. (Cl. 72-41)

This invention relates to blocks for building purposes.

Among the objects of the invention are to provide building blocks which will interlock when assembled, thereby resulting in a more substantial structure than can be attained from blocks having plain faces; to provide a building block so constructed that it is possible to anchor the assembly firmly to the base on which the building rests and to so form the blocks that reinforcing may be used in the construction of the building; to provide a hollow building block which will offer greater thermal insulation than can be had with solid blocks; and, to provide building blocks which may be made into practically any desired shape or size and still retain the insulating and interlocking features thereof.

The invention together with its objects and advantages will be best understood from a study of the following description taken in connection with the accompanying drawings wherein:

Figure 1 is a fragmentary detail elevational view illustrating a wall structure embodying blocks made in accordance with the present invention.

Figure 1a is a fragmentary detail elevational view similar to Figure 1 and illustrating a slightly modified form of the invention.

Figure 2 is a perspective view of a half-height cross block for outside walls.

Figure 3 is a view of half-length block for outside walls.

Figure 4 is a view of a half-height block commonly used for partitions.

Figure 5 is a view of a half length block used for partitions, or inside walls.

Figure 6 is a perspective view of a female corner block.

Figure 7 is a view of a male corner block.

Figure 8 is a view of the regular size outside course block.

Figure 9 is a view of the regular size inside wall or partitioning block.

Figure 10 is a perspective view, partly in section, of a pair of chimney building blocks.

Figure 11 is a fragmentary perspective of the type of block used in arch work, and

Figure 12 is a fragmentary view of the type of block which is used in building circular tanks, curved walls, or analogous structures.

Referring more in detail to the drawings it will be seen that in accordance with the present invention the wall or other structure to be built from blocks embodying the features of the present invention rests upon a base 1 of concrete or

other suitable material. In constructing the wall or the like the blocks of the lowermost course are anchored to the foundation 1 by means of anchoring rods 2 as clearly shown in Figure 1.

Further in accordance with the present invention reinforcing bars 3 are used between the different courses, being positioned as the wall is built up, these bars extending the entire length of the wall. Preferably two of such reinforcing rods 3 are used between each course.

The blocks, as shown, are provided with projections 7 on one side thereof that fit in grooves of the blocks of the next adjacent course, and which grooves are provided at the side of each block opposite to that equipped with the projection 7.

Also the projections 7 of the blocks are provided with grooves 11 to accommodate the reinforcing bars 3.

Also each block on one side thereof is provided, according to the function of that block, with one or more tongues or ribs 8, and at the side thereof opposite to the tongues or ribs 8 with grooves 9 to accommodate the tongue or rib 8 of an adjacent block in the same course.

It will be noted that the tongues or ribs 8 as well as the projections 7 are bevelled or tapered and the grooves in the blocks for accommodating such tongues and projections are of course shaped to conformably accommodate such projections and ribs.

By having the projections and tongues or grooves bevelled instead of squared a better interlocking of the blocks at the joints thereof is obtained, and this bevelling of the tongues and ribs render the same more resistant to weight and pressure than would be the case if the projections and/or ribs were of the square type.

After the wall has been up to the required height a suitable cap for the top edge of the wall is provided. The type of cap employed will depend upon the nature of the roof structure. For example, in Figure 1 there is illustrated a wall cap which will be found desirable for what are known as "open roofs", and in connection with which roof structure the wall projects above the roof. Thus under such circumstances, as shown in Figure 1, and indicated by the reference numeral 12, may be composed of a plurality of complementary sections 13, 14, arranged in end-to-end relation with one end of a section fitting within an end 15 of the next adjacent section, the end 15 of each section being enlarged as it were, to provide a socket for accommodating the end of the next section.

Also, and as shown in Figure 1, the cap sections 13, 14, are provided with grooves 16 to receive the projections 7 of the uppermost course of building blocks.

Where, as shown in Figure 1, other forms of roof structure are to be employed, the cap for the wall structure may consist of a timber, or timbers 6 which rest on the projections 7 of the building blocks in the uppermost course. In actual practice the spaces caused by the projections 7 between the timber, or timbers 6 and the upper faces of the blocks in the uppermost course may be filled in with mortar.

Also, and as shown in Figure 1, after the wall has been built to the required height any convenient number of tie rods 4 may be inserted in the openings 5 provided in the blocks. The upper ends of the tie rods 4 project beyond the upper edges of the blocks in the uppermost course and serve as anchoring means for the timber, or timbers 6.

It is also evident that slippage of the blocks relative to each other is prevented through the medium of the projections 7 and tongues 8 meshing with the grooves provided therefor in the adjacent blocks. Also the reinforcing bars 3 will prevent parting of the blocks horizontally while the tie rods 4 serve to hold the blocks firmly in position on the foundation.

By providing the blocks with projections 7 and tongues 8 together with grooves for accommodating said projections 7 and tongues 8 the wall may be constructed, and the blocks laid with speed and accuracy.

In Figures 2 to 12 inclusive are illustrated the different types of blocks commonly used in construction work. The blocks shown in Figures 2 and 4 are half-height blocks which may be used to secure the proper wall height.

In Figures 3 and 5 are shown blocks which are of half length and enable staggering of the different courses of blocks without staggering the ends of the walls.

In Figures 6 and 7 are shown male and female corner blocks respectively, and in connection with the corner blocks the interlocking feature tends to strengthen the corner of the building by the interchanging of the male and female blocks with each layer of blocks, taking advantage of overlapping of the joint itself as well as further securing corner blocks together by the use of the projecting tongues 7.

The block shown in Figure 9 is of the regular size partition or inner wall block.

In Figure 10 is shown a pair of chimney blocks as seen when placed together. Each course of these chimney blocks would, of course, be turned at an angle of ninety degrees to the course directly beneath it so as to form a rigid structure.

In Figure 11 is illustrated the type of block used in the construction of an arch and in this connection it will be noted that these blocks are provided with the raised portions or projections 10 which prevent endwise movement of the blocks and thus retain the same from falling or pulling up.

The blocks shown in Figure 12 are designed for use in the construction of circular walls such as the walls of silos or tanks and are made simi-

lar to the blocks shown in Figure 9 with the exception that the block of Figure 12 is curved to the desired radius.

It will also be understood that in actual practice mortar will be used between all joints of the blocks.

Adverting again to the chimney blocks shown in Figure 10, it will be appreciated that the blocks are adapted to the construction of pillars as well as chimneys, the builder, by the use of these blocks, advancing substantially a foot at a time, the blocks at the same time insuring strong rigidity of the structure on account of the interlocking features. Such blocks will also, in the building of a chimney, do away with the flue if desired as the inner surface of the chimney will, as formed by these blocks, be as smooth as that of a flue.

From the above it will be seen that I have provided a form of block which constitutes an efficient, practical and economical means of building walls, chimneys, and the like, and while I have herein illustrated the preferred embodiment of the invention, it is to be understood that I do not wish to limit myself to the precise details of construction herein shown and illustrated other than may be required in view of the prior art and scope of the claims hereunto appended.

Having thus described the invention what is claimed as new is:

1. A building block of the class described having spaced openings therein extending from the bottom edge of the block through the top edge thereof, said block having a rib on one side edge and a groove in the opposite side edge for receiving a rib of a second block and said block having a groove in its lower end, portions of which are formed by the vertically arranged openings and projections on the upper edge of the block for fitting in the bottom groove, said projections being formed on those portions of the block which are separated by the openings, said projections having straight side walls and the groove at the bottom of the block having straight side walls, those projections at the ends of the block carrying portions of the ribs and grooves at the side edges of the block.

2. A building block of the class described having spaced openings therein extending from the bottom edge of the block through the top edge thereof, said block having a rib on one side edge and a groove in the opposite side edge for receiving a rib of a second block and said block having a groove in its lower end, portions of which are formed by the vertically arranged openings and projections on the upper edge of the block for fitting in the bottom groove, said projections being formed on those portions of the block which are separated by the openings, said projections having straight side walls and the groove at the bottom of the block having straight side walls, those projections at the ends of the block carrying portions of the ribs and grooves at the side edges of the block, said projections having small grooves in their upper ends, said grooves extending longitudinally of the block and adapted to receive reinforcing rods.

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