

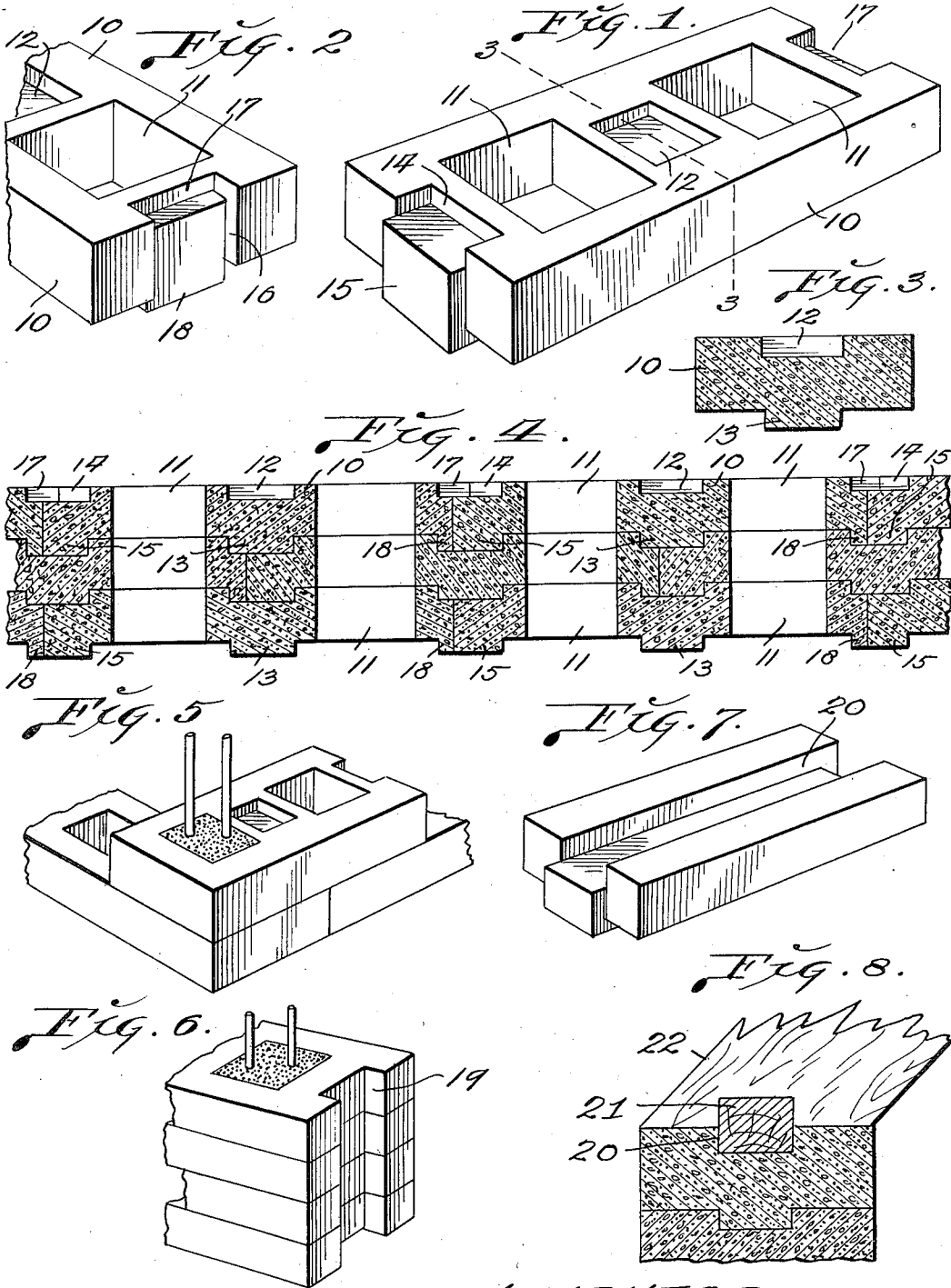
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C. W. ROBERTS

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BUILDING BLOCK AND WALL CONSTRUCTION

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INVENTOR,  
C. W. ROBERTS.

BY *Martin P. Smith* ATTY.

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## BUILDING BLOCK AND WALL CONSTRUCTION

Charles Wesley Roberts, Los Angeles, Calif.

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4 Claims. (Cl. 72-38)

My invention relates to a building block and wall construction and has for its principal object, the provision of a relatively simple, practical and inexpensive block formed of cement or suitable self-hardening material that is especially designed for the erection of building walls and partitions and which block is constructed so that it will interlock with the adjacent blocks in the wall or structure so as to effectually resist both longitudinal and lateral strains that would otherwise tend to separate the assembled blocks.

A further object of my invention is, to provide a building block that is capable of being produced at or near the point where the blocks are to be used and to be laid by unskilled labor, thereby enabling building walls and the like to be very economically erected.

A further object of my invention is, to produce a building block having a general shape of tapestry brick that are now generally used in building constructions.

Further objects of my invention are, to provide building blocks that are constructed so that the corners of walls formed of the blocks may be reinforced with concrete and metal rods, also to provide blocks of special construction that are arranged at the sides of a door or window opening in a wall or partition and which blocks are capable of being reinforced by concrete and metal rods and also, to provide specially formed blocks that constitute the upper courses of walls or partitions and which blocks are grooved for the reception of longitudinally disposed reinforcing members or timbers or the wall plates that serve as anchorage and points of attachment for the roof rafters.

With the foregoing and other objects in view my invention consists in certain novel features of construction and arrangements of parts that will be hereinafter more fully described and claimed and illustrated in the accompanying drawing in which:

Fig. 1 is a perspective view of a building block constructed in accordance with my invention.

Fig. 2 is a fragmentary perspective view of one end of the building block.

Fig. 3 is a cross section taken on the line 3-3 of Fig. 1.

Fig. 4 is a longitudinally vertical section taken through a portion of a wall constructed of my improved building blocks.

Fig. 5 is a perspective view showing the corner of a building structure and showing the reinforcement used at said corner.

Fig. 6 is a perspective view of a portion of a

wall or partition at the side of a door or window opening and showing the reenforcement in the wall at the side of said opening.

Fig. 7 is a perspective view of the form of block used in the top courses of walls and which blocks are grooved longitudinally for the reception of the wall plate or longitudinally disposed reinforcing rods.

Fig. 8 is a sectional view of the upper portion of a building wall constructed of the blocks with a wall plate positioned on top of said wall to form anchorage for the lower ends of roof rafters.

Referring by numerals to the accompanying drawing which illustrates a preferred embodiment of my invention, 10 designates a block preferably formed of cement or other similar self-hardening material. In some instances it may be found advantageous to construct the blocks from asphaltum, clay or a self-hardening plastic composition having sawdust as one of its principal ingredients.

The blocks are substantially rectangular in form and may be made in any size and the length of each block is twice the width thereof.

A block which may be conveniently used in the erection of building walls and partitions will measure 16 inches in length, 8 inches in width and approximately 2½ inches in thickness. Each block is provided with a pair of vertically disposed openings 11, which, when the blocks are properly laid to form a wall, align with each other vertically to form air chambers that extend throughout the height of the wall.

Formed in the upper face of each block between the openings 11, is a recess or depression 12, preferably rectangular in form and formed on the underface of the block directly below this recess or depression, is a lug 13, having the same size and shape as said depression.

Formed in the upper face of the block at one end thereof, is a recess or depression 14, the width and depth of which are practically the same as the width and depth of recess 12. Formed integral with the end of the body of block 10, directly below recess 12, is an outwardly projecting rectangular lug 15, the width of which is equal to the width of recess 14 and the height of said lug equals the height or thickness of block 10. The upper face of lug 15 and the bottom face of recess 14 occupy the same horizontal plane.

Inasmuch as the height of lug 15 is equal to the height or thickness of block 10, a portion of said lug 15 extends a short distance below the under-surface of the block, this distance equaling the depth of the recesses 12 and 14 and this depend-

ing thickness of the lug extends lengthwise of block 10 for a distance equaling the length of recess 14 or the distance from the outer face of block 10 to the inner vertical face of said recess.

At the opposite end of the block is formed a vertically disposed notch 16, the width of which is equal to the width of lug 15 at the opposite end of the block and the upper portion of notch 16 is extended inwardly into the adjacent end portion of the body of block 10 so as to form in the upper face of said block a recess 17, the width of which is equal to the width of notch 16 and likewise equal to the width of lug 15 and the depth of said recess 17 is equal to the depth of the recesses 12 and 14.

Formed on the underside of the block 10 immediately adjacent the lower end of notch 16, is a transversely disposed rib or lug 18, the width of which is equal to the width of lug 15 and the height of said lug being equal to the depth of the recesses 12, 14 and 17.

For convenience and economy, the blocks are preferably cast or formed at or near the point where the building is to be erected and when dried the blocks are ready to be laid in courses to form walls, partitions and the like.

The lower course of blocks may be laid in a trench dug in the ground or on top of a foundation wall of concrete or the like and as the blocks are laid end to end, the lug 15 or one end of each block fits into the notch 16 in the end of the adjacent block.

Previous to laying the blocks they may be dipped in a relatively thin mixture of self-hardening material in order to form a quick drying bond between the blocks and for this purpose a mixture of approximately equal parts of quick drying cement and water may be used.

In laying the blocks to form a course, the ends of the blocks are brought together so that the recesses 14 and 17 register with each other and provide a recess that equals the size of the recesses 12 and in laying the second course of blocks the joints between the blocks of the second course are broken or offset with respect to the joints of the first course so that the lower portion of the lug 15 at one end of a second course block and the lug 18 on the end of the adjacent block, combine to form a depending projection that is equal in size to the lug 13 and which depending projection occupies the recess 12 that is formed in the central portion of the upper face of the underlying block.

The lugs 13 that depend from the centers of the blocks occupy the recess that is formed in the joint between the blocks of the underlying course between the combined recesses 14 and 17.

Thus the blocks are laid in courses with broken joints as illustrated in Fig. 4 and both ends of each block are interlocked with the ends of the next adjacent blocks so as to effectively resist both vertical and lateral strains or movement that would otherwise tend to separate the blocks.

Further, the central portion of each block is interlocked with the ends of the adjacent blocks by means of the lower portions of lugs 15 and 18 that engage in the recesses 12 and thus the blocks in the entire wall structure are tied to each other so as to produce an especially strong structure that will effectively resist vibration and displacement as a result of wind, strains and pressure and earth tremors.

At the corners of a building structure composed of my improved blocks reinforcing may be provided by filling the vertically disposed air

pocket or chamber that is formed by the openings 11, with concrete or the like and with reinforcing rods imbedded in said concrete as illustrated in Fig. 5.

At the sides of the door or window openings in the walls built with my improved blocks, the air pockets or chambers formed by the openings 11 may be filled with concrete in which may be imbedded reinforcing rods as illustrated in Fig. 6 and if desired specially formed blocks may be used in the wall adjacent door and window openings, which blocks are provided with vertically disposed notches 19, which when aligned with each other, provide vertical grooves or channels for the reception of upright timbers to which the door or window frames are secured.

In order to accommodate the plates at the tops of walls, specially formed blocks of the type illustrated in Fig. 7 may be provided and these blocks are constructed with longitudinally disposed grooves 20 in their upper faces. When these blocks are laid so as to form the top course of a wall, the grooves 20 in said blocks align with each other to form a continuous longitudinal groove that is adapted to receive a wall plate such as 21 or longitudinally disposed reinforced rods.

Where the grooves 20 receive a wall plate as illustrated in Fig. 8, said wall plate provides anchorage and a point of attachment for the lower ends of the roof rafters 22.

Where a wall or partition structure of any considerable height is produced, a course or courses of blocks of the form illustrated in Fig. 7 may be laid at various elevations in the height of the wall and horizontally disposed reinforcing rods are laid in concrete in the grooves 20, thereby providing an effective reinforcement for the entire structure.

To further reinforce a wall or partition, every fourth, fifth or sixth vertically disposed chamber formed by the coinciding opening 11 may be filled with concrete or the like.

Thus it will be seen that I have provided a building block and wall structure that is relatively simple in construction, inexpensive in production and erection and very effective in performing the functions for which it is intended.

It will be understood that minor changes in the size, form and construction of the various parts of my improved building block and wall construction may be made and substituted for those herein shown and described without departing from the spirit of my invention, the scope of which is set forth in the appended claims.

I claim as my invention:

1. A building block, comprising a substantially rectangular body, there being a recess formed in the central portion of the upper face of said block, a lug depending from the central portion of the underface of said block, there being a recess formed in the upper portion of the body of the block adjacent one end thereof, a lug projecting from the end of the block below said recess, the lower portion of said lug extending below the underface of the head of the block, the opposite end of the block being provided with an inverted L-shaped recess and a lug depending from the underface of the block adjacent the lower portion of said inverted L-shaped recess.

2. A building block as set forth in claim 1, and there being vertically disposed openings formed through the body of said block between the ends thereof and the centrally arranged recess and depending lug.

3. A building block, comprising a substantially

5 rectangular body, provided at one end in its upper portion with a recess, a lug projecting from the end of the body below said recess, the lower portion of which lug projects below the bottom of the body of the block, the opposite end of the block provided with an inverted L-shaped recess and a lug depending from the side of the

block adjacent the lower end of said inverted L-shaped recess.

4. A building block as set forth in claim 3, and said block having vertically disposed openings formed between its longitudinal center and its ends. 6

CHARLES WESLEY ROBERTS.