Dec. 18, 1928. 1,695,553

F. E. JONES ET AL

TOY BUILDING BLOCK AND WALL CONSTRUCTION

Filed Aug. 11, 1926

FIG. 1.

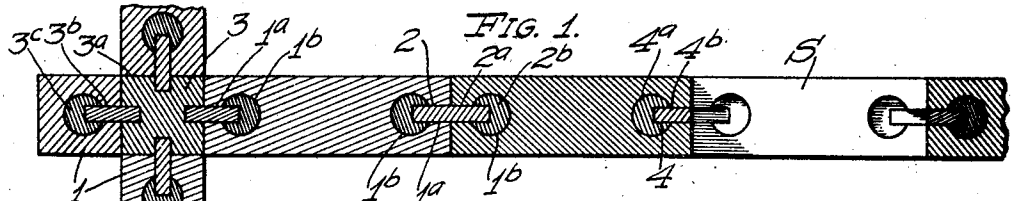


FIG. 2.

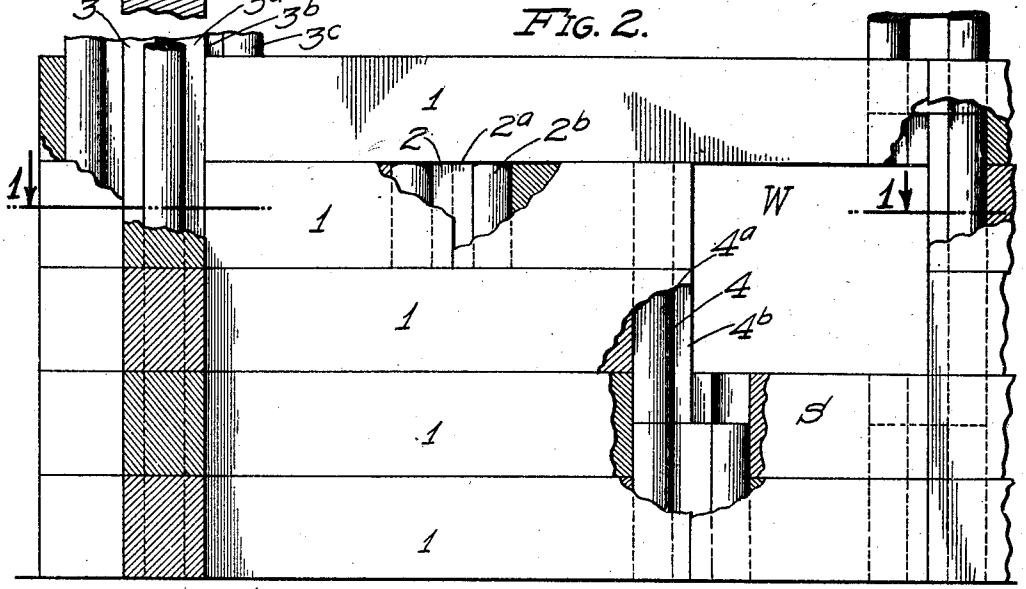


FIG. 4.

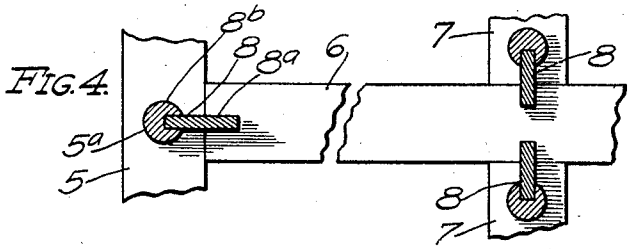


FIG. 3.

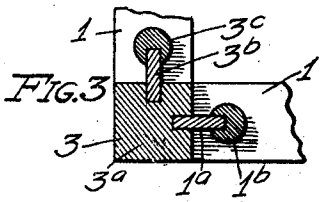
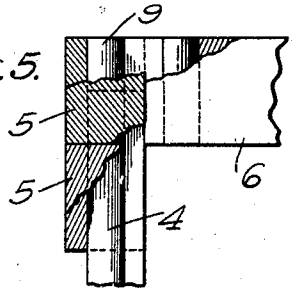


FIG. 5.



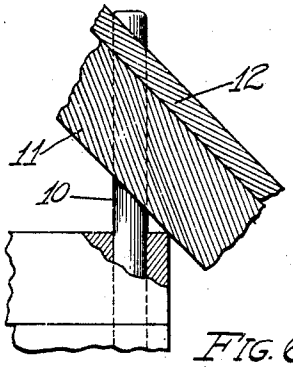


FIG. 6.

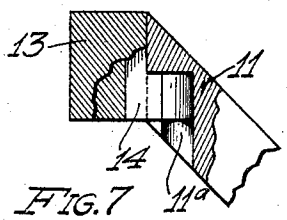


FIG. 7.

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TOY BUILDING BLOCK AND WALL CONSTRUCTION.

Application filed August 11, 1926. Serial No. 128,564.

Our invention relates to building blocks, slabs or other members and in general to wall construction or other structures, and the objects of our invention are: first, to provide blocks, slabs or other members having key portions which may be positioned with their edges adjacent each other and securely locked relative to each other by a key means for forming a rigid wall or other structure; second, to provide building block and wall construction which is applicable to wood, stone, plastic, steel or other construction for quickly and rigidly building up blocks, slabs, columns, plates or other members in building or other structures; third, to provide key means for supporting blocks, slabs or other members having key portions at their one edges, in various relations with each other, for forming different portions of a building or building structure; fourth, to provide a novel corner key for construction of this class for rigidly supporting blocks together at a corner; fifth, to provide a key for construction of this class for supporting and locking building blocks or other members together at an intersection of a wall, the key in certain instances forming columns at the intersecting portions of the walls; sixth, to provide a novel key for supporting and locking building blocks relative to each other, which keys are made in lengths convenient for handling so that the blocks may be readily slipped over the ends of the key portions of the key for readily and quickly building up the wall from the blocks; seventh, to provide novel key means for locking blocks, slabs, plates or the like together at exposed edges; eighth, to provide blocks and keys of this class which are equally applicable for toy building blocks for children as well as for regular building construction; ninth, to provide novel arrangements of blocks and keys for supporting and securing the blocks in various relations with each other for forming various building features, and tenth, to provide blocks and keys of this class which are particularly simple and economical of construction, durable, and which will not readily deteriorate or get out of order.

With these and other objects in view, as will appear hereinafter, our invention consists of certain novel features of construction, combination and arrangement of parts and portions, as will be hereinafter described in detail and particularly set forth in the appended claims, reference being had to the accompanying drawings and to the characters of reference thereon, which form a part of this application, in which:

Figure 1 is a fragmentary sectional view in plan, showing the arrangement of blocks and keys applied to a general wall construction, the section being taken through 1—1 of Fig. 2; Fig. 2 is a fragmentary elevational view thereof, showing certain parts and portions thereof broken away and in section to facilitate the illustration; Fig. 3 is a fragmentary sectional view in plan of a corner construction of the blocks and a corner key; Fig. 4 is a fragmentary view in plan, showing the relation of partition walls with each other and with a main wall; Fig. 5 is a fragmentary elevational view, partially in section, showing the relation of floor or ceiling joists or other members with a wall; Fig. 6 is a fragmentary elevational view, partly in section, showing the method of securing rafters and roof boards to the wall, and Fig. 7 is a fragmentary, partial sectional and partial elevational view, showing the method of securing rafters to a ridge pole of a building.

Like characters of reference refer to similar parts and portions throughout the several views of the drawings.

The blocks 1 may be of any desired shape and any desired length, width and height; said blocks may be in the form of slabs, plates, boards, timbers, columns or other members if desired. At the opposite ends or other edges of the blocks or other members 1 are provided relatively narrow slots 1^a, which extend transversely of the length of the block. At the inner or bottom portions of the slots 1^a are provided enlarged recesses 1^b, which are preferably circular in form and provide key receiving and locking portions for the blocks.

It will be here noted that although we refer to walls and wall construction, we desire to include under such terms, any wall construction, such as floor slabs, roofs, arches and the like to which our building construction may be applicable.

The keys may be made in various forms, as shown and variously designated in the drawings. The key, designated by 2, is adapted for locking the edges or ends of separate blocks, slabs or other members together to provide a continuation of a

straight wall. The key 2 consists of a flat portion 2^a and circular bead portions 2^b at its opposite edges. The flat portion 2^a of this key is positioned in the narrow slotted portions at the ends of the blocks or other members, while the enlarged or circular bead portions 2^b at its opposite edges are positioned in the enlarged portion 1^b at the inner or bottom portions of the slots of the blocks, as shown in Fig. 1.

The key 3, shown in the drawings, is a modification of the key 2 and is adapted for supporting and locking the one ends of blocks to form an intersecting wall, the key forming the column for the intersecting wall or the supporting column for four radiating walls. This key 3 consists preferably of a rectangular key member 3^a having outwardly radiating, flat or web portions 3^b at its flat sides. At the outer edges of the portions 3^b are also provided circular bead portions 3^c, which are adapted to extend into the correspondingly shaped recesses 1^b of the blocks for locking sets of four blocks together at their one ends, as shown in Fig. 1.

The key shown in Fig. 3 shows the main rectangular key member 3, but shows only one-half the number of the bead or locking portions, as in Figs. 1 and 2, for forming a corner of the wall construction.

The several modifications of keys are made in various lengths so as to take care of all conditions and variations desired in the construction of the wall. In Figs. 1 and 2 of the drawing is shown a window or other opening W, which may be made by leaving out certain blocks. The key 2 in this case, for connecting the lower or sill block of the wall at the opening with the adjacent blocks at the side of the window opening, is short, its upper end being spaced below the upper edge of the sill block, indicated by S. The edges of the blocks forming the side edges of the window opening are locked relative to each other by a key 4, consisting of a round portion 4^a and a flat or web portion 4^b, the round portion extending through the circular recesses of said blocks and the flat portions extending outwardly through the narrow slots thereof, said portions extending downwardly below the upper edge of the sill block and abutting with the upper end of the key 2, and also with the corresponding key 2 positioned above. The key 4, it will be noted, consists of one-half of the key 2.

In Fig. 4 the member 6 represents a block, blocks or slabs of a partition wall and is provided at its end and sides with keys 8 secured thereto. Said keys consist of web or flat portions 8^a preferably embedded at their one edges within the member 6 and provided at their outer edges with bead portions 8^b, as previously described. The block, slab or other member 5, to which the member 6 is secured, is provided in its side with a slotted portion 5^a for receiving the key 8 at the end of the member 6. Other blocks or members 7, for constructing a partition wall against the member 6, are slotted at their ends and adapted to receive the keys 8 at the sides of the member 6.

In Fig. 5 of the drawings, the member 6 is also provided with a key at its end, said key being designated by 9. The blocks or slabs 5 in Fig. 5 are shown keyed together at their sides by a key 4, previously described. Said key 4, as shown, extends to approximately one-half the width of the block 5 directly opposite the block 6. The key portion 9, extending beyond the block 6, extends also only about one-half the width of the block 6, providing an offset portion for rigidly supporting the blocks relative to each other when directly opposed. This construction may be embodied in ceiling and floor joists and in supporting walls or arches on walls.

In Fig. 6 of the drawings the key, indicated by 10, is in the form of a rod extending above the blocks, slabs, or other building units, and is shown supporting the lower ends of inclined rafters and roof boards of a building, the key 10 extending diagonally through holes in said rafter and roof boards, indicated respectively by 11 and 12.

In Fig. 7 of the drawings is shown a method of securing the rafters 11 to the ridge pole, indicated by 13, of a roof.

To the sides of the ridge pole 13 are secured keys 14 similar in construction to the keys 8 and secured to the ridge pole in the same manner, but preferably offset or extending only a short distance of the width of the ridge pole, forming shoulders. The upper ends of the rafters are provided with diagonal slotted portions 11^a for receiving the key portions 14 extending beyond the sides of the ridge pole, the inner ends of the slotted portions resting at the upper ends or shoulders of the key portions, as shown.

Though we have shown and described a particular construction, combination and arrangement of parts and portions and certain modifications and arrangements of blocks and other building members, as well as certain modifications of the key member, we do not wish to be limited to the particular construction, combination and arrangement nor to the modifications, but desire to include in the scope of our invention, the construction, combination and arrangement substantially as set forth in the appended claims.

Having thus described our invention, what we claim as new and desire to secure by Letters Patent is:

1. In toy building blocks, blocks having key slots in their ends, said slots being trans-

verse to the length of said blocks, and key members, of a length greater than the width of said blocks, each having a plurality of separate key portions adapted to be inserted into the end slots of said blocks, for tying pairs of the latter together into walls with the long edges of the pairs adjacent each other, said key members forming an intermediate portion of the walls formed by said blocks.

2. In toy building blocks, blocks having key slots in their one edges, and a corner key member provided with key portions extending longitudinally therewith, outwardly therefrom and at an angle with each other, said key portions being adapted to be inserted into the slots of the blocks for tying pairs of blocks into walls at an angle to each other and with their long edges adjacent each other, said key member forming the corner portion of said walls.

3. In toy building blocks, blocks having key slots in their one edges, and a corner key member of a length greater than the width of said blocks and provided with key portions extending longitudinally therewith, outwardly therefrom and at an angle with each other, said key portions being adapted to be inserted into the slots of the blocks for tying pairs of blocks into walls at an angle to each other and with their long edges adjacent each other, said corner key member forming the corner portions of said walls.

4. In toy building blocks, blocks having key slots in their ends, and key members having pairs of opposed key portions extending longitudinally with said key members, said pairs of key portions being positioned at a right angle with each other, said key portions being adapted to be positioned in the key slots of said blocks whereby said key members form an intersecting-wall supporting column for a multiplicity of said blocks.

5. In toy building blocks, blocks having slots in their ends, said slots being transverse to the length of said blocks and provided with circular enlargements at their bottom portions, a rectangular corner key member having at adjacent sides thereof longitudinally extending flat portions positioned at a right angle with each other, said flat portions being provided at their outer edges with circular key portions adapted to be inserted into the circular enlargements of said blocks, the flat portions of said corner key member extending through the slots of said blocks.

6. In toy building blocks, blocks having key slots in their ends and positioned end to end, said slots being transverse to the length of said blocks, and key members of a length sufficient to pass through several of said blocks, each key member having a plurality of separate key portions adapted to be inserted into the end slots of said blocks and pass through several of said blocks for tying several pairs of said blocks together into walls.

7. In toy building blocks, blocks having key slots in their one edges and a corner key member of a length greater than the width of several of said blocks and provided with key portions extending longitudinally therewith, outwardly therefrom and at an angle with each other, said key portions being adapted to be inserted into the slots of said blocks and pass through several of said blocks for tying several pairs of said blocks into the walls at an angle to each other, said corner key member forming the corner portion of said walls.

In testimony whereof, we have hereunto set our hands at Helena, Mont., this 17th day of July, 1926.

FRANCES E. JONES.
FRANCIS D. JONES.