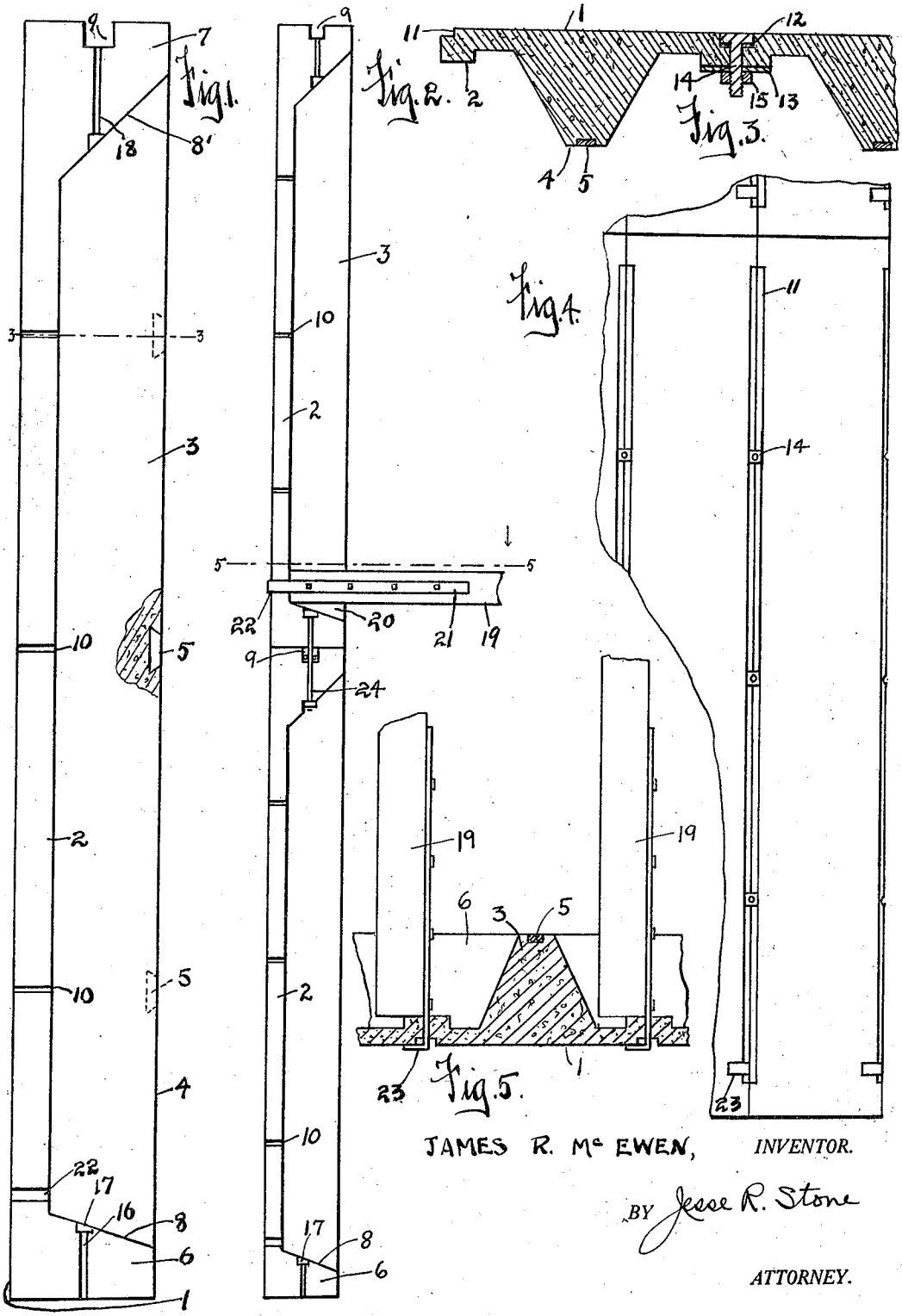
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CONCRETE BUILDING BLOCK.

APPLICATION FILED MAR. 30, 1920.

1,401,624.

Patented Dec. 27, 1921.



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CONCRETE BUILDING-BLOCK.

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To all whom it may concern:

Be it known that I, JAMES R. McEWEN, a citizen of the United States, residing at Goose Creek, Harris county, Texas, have invented a certain new and useful Improvement in Concrete Building-Blocks, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention reates to an improvement in concrete building blocks and means for constructing the same. It has particular reference to the forming of concrete or cement slabs which may be used in the building of the smaller class of structure, such as residences, garages, barns, etc.

An object of my invention is to provide a form of concrete building block which may be easily assembled in the building operation and which may be securely bound to the adjacent blocks to form a durable structure.

Another object is to so form the block that it will be strong and, at the same time, as light in weight as practicable.

A further object is to provide a means of constructing and shaping the block which will be simple, accurate and rapid in operation.

Referring to the drawing forming a part of this specification, and wherein like numeral of reference are applied to like parts throughout the several views, Figure 1 is a side elevation of my improved building block; Fig. 2 is a side elevation showing a detail in the construction of the building with my improved block; Fig. 3 is a transverse section on the line 3—3 of Fig. 1; Fig. 4 is a broken front elevation of a building in which my improved block is employed; Fig. 5 is a transverse section on the line 5—5 of Fig. 2.

In the building of small structures, and especially the smaller class of houses, it has been found economical to use blocks of concrete or cement formed in such manner as to be easily assembled in the construction thereof, and in the drawing I have illustrated a preferred form of building block which is especially adapted for that purpose. The said block is oblong on its outer face, having a flat surface similar to the usual board construction used in buildings. It is reinforced, however, on its inner face by a longitudinal ridge to secure the proper strength of the material. This form of block is shown in Figs. 1 to 5.

In Fig. 1 the block is shown from the side, having a smooth outer face 1 and an inwardly projecting flange 2 at each lateral edge thereof. This flange is for the purpose of thickening the edge of the block to form a substantial contacting surface for union by means of cement and otherwise with the adjacent block. Centrally of the block is a longitudinal ridge 3, which forms a strengthening means for the slab and also provides at its flat crest 4 a means for securing the inner wall of the building where such wall or surface is required. To accommodate the nailing of the laths, or other means, to the inner face 4, wooden blocks 5 are embedded therein. These blocks, as shown in Fig. 1, are wider at their inner sides so as to form a mortised connection with the cement after the same has been poured around them. These nailing blocks 5 may be spaced at such intervals, vertically of the cement block, as to provide the nailing surface required.

At the lower end of the block, a head 6 is formed, this head being solid for the full width of the block and extending in thickness flush with the face 4 of the reinforcing ridge. The inner face of this head slopes inwardly, as shown at 8, at each side of the central ridge to the thinner portion of the block. The upper end is also formed into a head 7 similar in construction to the head 6 at the lower end, except that the same is somewhat heavier. It is longer than the lower end and slopes more gradually toward the outer side, as shown by the beveled face 8′. At the upper end of the head 7, the surface thereof is recessed to form a channel 9 extending across the block parallel with the outer face 1. The purpose of this channel will later appear.

In the forming of the b'ock small semi-cylindrical channels or grooves 10 are formed in the outer edge of the block, as shown in Fig. 1, these channels forming, when registered with another adjacent block, a cylindrical bore through which a bolt or other attaching means may be placed. In Fig. 3 two adjacent blocks are shown as attached together at their adjacent edges by such a means. To accommodate the heads of such attaching bolts the outer face is recessed slightly at the upper margin at 11 so

as to provide a longitudinally extending recess or groove, as shown most clearly in Fig. 4. In attaching the two blocks together by this means, a washer 12 is placed around the opening 10 between two adjacent blocks, and a similar washer of larger extent 13 is placed on the inner face. A bolt 14 is then inserted and the blocks are clamped securely together by means of a nut 15 on the inner end of the said bolt. The use of this attaching means enables the blocks to be drawn securely together in surface alinement and to prevent any tendency of the blocks to move out of adjustment. At the lower end of the block, and on the sides thereof, are also formed semi-cylindrical grooves 16 ending at their inner ends in a recess 17 to receive the head of a bolt. A similar groove 18 is formed at the upper end, this groove extending along the face of the thickened head 7 of the block and ending at its upper end in the margin of the channel 9. Thus when the blocks are placed on end, as shown in Fig. 2, a bolt 24 may be inserted between two adjacent blocks extending upwardly through the channels 16 and 18 and secured in place by means of a nut on said bolt, thus holding the two blocks in vertical alinement. When the flooring of the second story, in a building erected by means of these blocks, is laid, it is contemplated that the beams 19 to support said flooring shall rest upon the upper face 8 of the head 6 at the lower end of the block, as shown in Fig. 2, a wedge-shaped block 20 is placed upon the inclined face of the head 6, thus leaving a horizontal upper face upon which the block 19 rests. The beams 19 are secured in position by means of a heavy strap of iron 21 which is bolted along the side face of the beam and extended through a flattened groove 22 formed in the edges of the blocks and bent laterally at the outer end, as shown at 23 in Fig. 5, thus anchoring the beams firmly to the concrete blocks.

In the use of blocks formed in the manner described, the lower end 6 of the blocks are placed upon the foundation provided therefor, and will stand erect, the outer face 1 being set toward the outer side of the building. The blocks should preferably be long enough to extend the full height of the first story of the building. When a number of these blocks are set up adjacent each other to form a wall of the building, the grooves 10 in the adjacent faces of the blocks will be adapted to register so as to allow the insertion of the bolts 14 therethrough and enable the adjacent blocks to be clamped firmly together to form the outer wall of the building. At the upper end of the wall thus laid, the channels 9 will register to form a single channel extending along the entire length of the building. It is then contemplated that reinforcing rods or beams may be laid within this channel, the said rods being tightened and anchored in place at the ends by the usual means adapted in building construction, and when the bolts 24 have been inserted upwardly through the grooves 18 at the upper end, the cement may be laid within this channel so as to secure the rods in position and to hold the bolts 14 erect and projecting upwardly to receive the lower end of the blocks used in the second story of the building. When the second story has been erected in a similar manner the floor of the second story may be laid as previously indicated, iron straps 21 being inserted through grooves 22 and bolted to the beams 19, as shown in Figs. 2 and 5.

When this system of construction is used it is apparent that a building may be very rapidly erected and the blocks constituting the wall of the structure may be tied firmly together, both against lateral and vertical movement, and a durable structure thus obtained. When the wall has been erected it is contemplated that the outer face may be covered with a coating of stucco or similar facing and that metal laths or other means may be secured to the inner face to form the inner walls of the rooms within the building.

Having thus described my invention, what I claim as new and desire to protect by Letters Patent is:

1. A concrete building block comprising a longitudinal member having a thick central core on the inner side, a flat outer face, inwardly extending flanges at the sides thereof, said flanges having marginal recesses on the outer edges thereof, and marginal grooves along the said edges, said block having a transverse channel at one end and means at both ends to secure said block to an adjacent block above and below the same.

2. A cement building block comprising a longitudinal slab of material having a thick central core, inwardly extending flanges at both sides thereof, and having a transverse channel at the upper end thereof, and means at the sides and ends to secure adjacent blocks together.

3. A concrete building block comprising a longitudinal member having a flat outer face, a thick central core on the inner face, inwardly projecting flanges at each side, a head at each end having longitudinal grooves on each side thereof, and one head having a transverse channel in the end face for the purpose described.

4. A concrete building block comprising a slab adapted to be stood on end in use and having a flat outer face with marginal shallow grooves therein, the inner face having a thick central core, heads at the upper and lower ends, means at the sides to secure laterally adjacent blocks together and separate means extending through the ends of

vertically adjacent blocks to secure said blocks together.

5. A concrete building block adapted to be stood on end in use and having transverse marginal grooves at its side edges to accommodate attaching means, and longitudinal grooves at each end for a similar purpose, and having a transverse channel at the upper end to receive a reinforcing and connecting rod in the manner described.

6. A concrete building block comprising a slab of concrete adapted to be stood on end in use, a central longitudinal core thereon, inwardly projecting heads on each end thereof, means on said heads to secure laterally adjacent blocks together and separate means to secure vertically adjacent blocks together, the lower heads having a supporting face to receive joists extending at right angles to said blocks.

7. A concrete building block comprising a longitudinal slab of concrete adapted to be stood on end in use, a thick central core, a head at each end, said heads having longitudinal grooves in the side faces thereof to accommodate attaching bolts to secure the same to similar blocks above or below the same, and transverse grooves on the end faces to receive lateral connecting means, and means at the edges of said slabs to secure laterally adjacent slabs together in the manner described.

In testimony whereof I hereunto affix my signature this the 27th day of March, A. D. 1920.

JAMES R. McEWEN.