Dec. 13, 1927. 1,652,305

E. J. FREWEN

METHOD OF CONSTRUCTING WALLS

Filed April 9, 1927 3 Sheets-Sheet 1

Fig. 1.

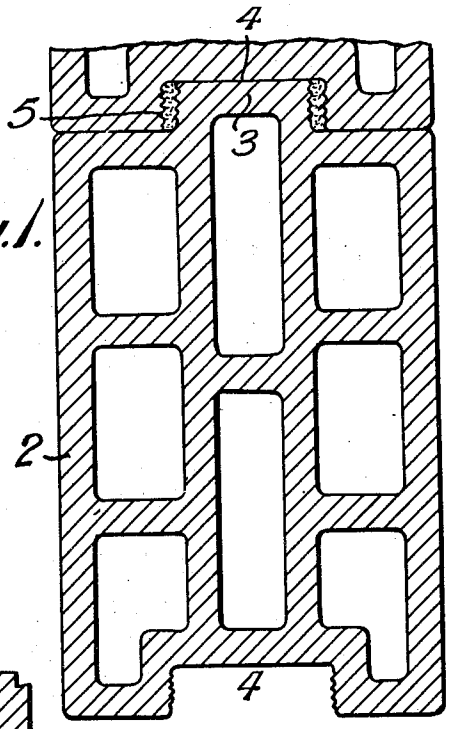
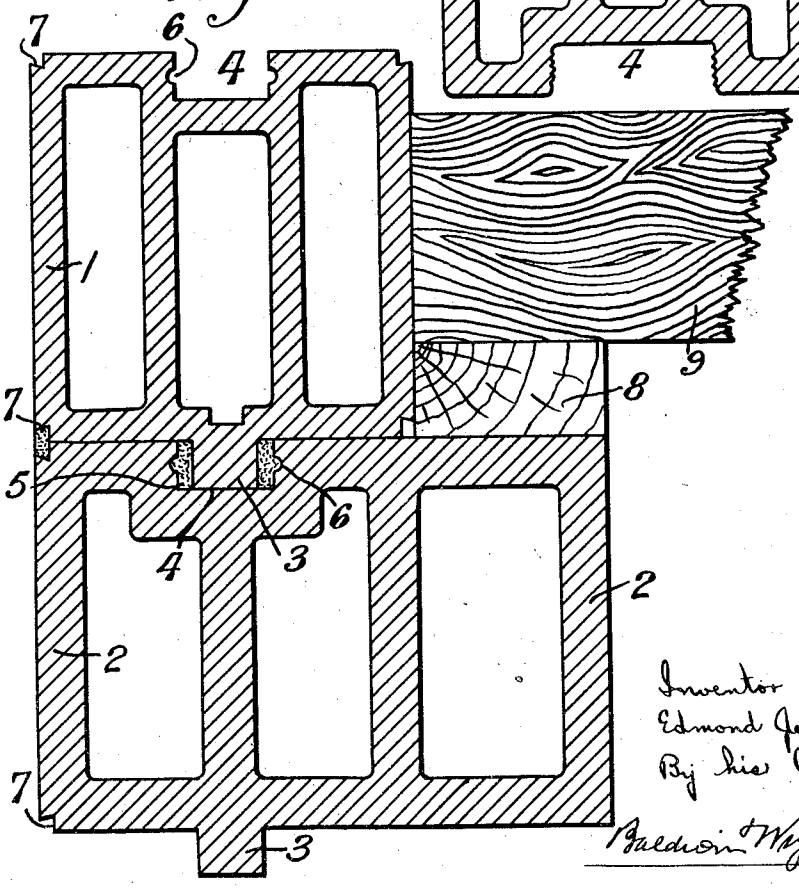


Fig. 2.



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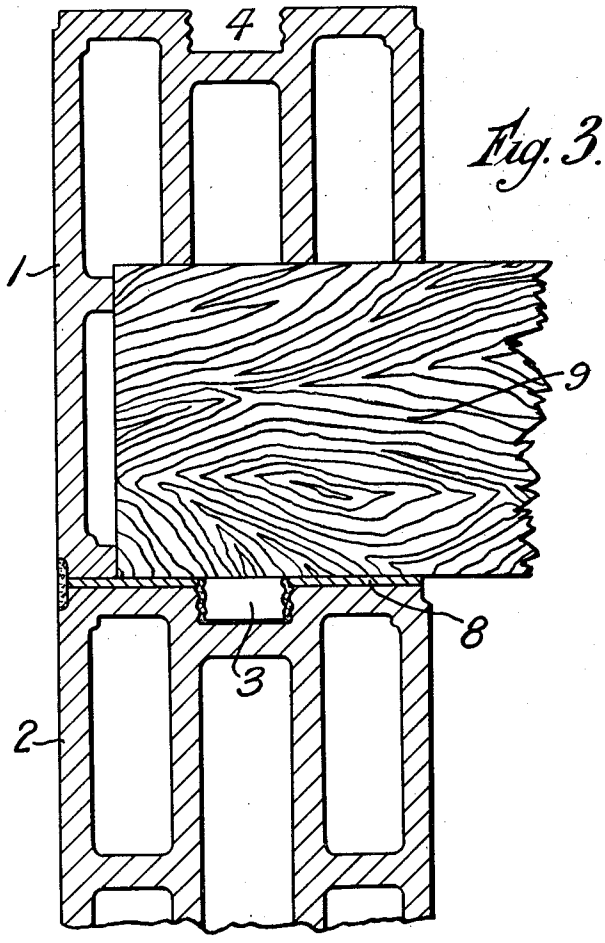


Fig. 3.

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Fig. 4.

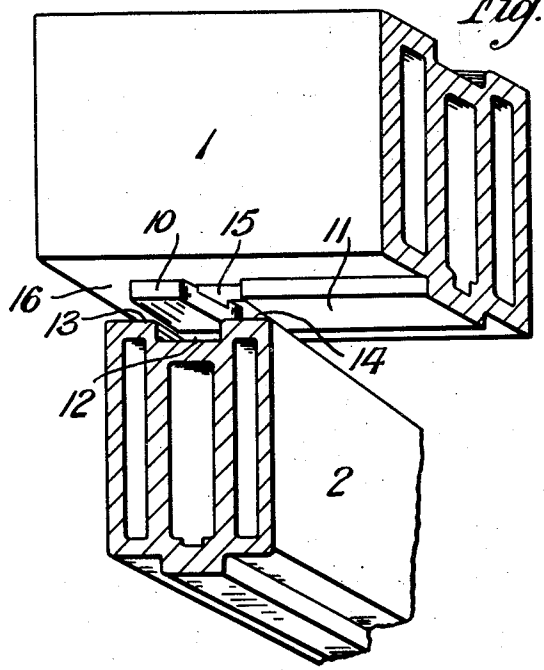
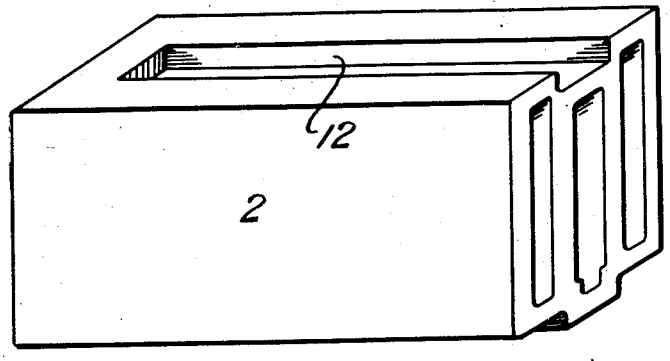


Fig. 5.



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UNITED STATES PATENT OFFICE.

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METHOD OF CONSTRUCTING WALLS.

Application filed April 9, 1927, Serial No. 182,437, and in Great Britain April 12, 1926.

This invention relates to improvements in walls and similar structures and building bricks or blocks therefor.

In the ordinary construction of walls, for example, brick walls, horizontal mortar courses are interposed between successive courses of bricks, and therefore the overall strength to resist the crushing load depends on the crushing strength of the mortar since the material of the average brick is considerably stronger than the mortar. Consequently, the use of mortar courses necessitates a greater amount of building material or a greater width of wall for a particular crushing load than would be required if the load were borne entirely by the bricks.

The object of this invention is to avoid such waste in building material or loss of strength by a method and means for building walls which dispenses with the usual horizontal mortar courses.

According to this invention, the method of construction of walls whereby the crushing load is not transmitted through a course or courses of mortar, consists in laying one course of bricks or blocks directly upon another and interlocking superimposed bricks or blocks by means leaving a clearance which is filled with cement or other bonding or sealing material.

A building brick or block, according to this invention, which is adapted to be superimposed directly upon a brick or block in a lower course, is formed with a projection, channel or the like, adapted to engage a corresponding formation in the lower brick or block, leaving a clearance for a key or seal of cement or other bonding or sealing material.

The invention is illustrated by way of example in the accompanying drawings, of which:—

Figure 1 is a vertical section through two superimposed bricks in a wall; and

Figure 2 is a vertical section through two superimposed bricks showing further details;

Figure 3 is a modification of the arrangement shown in Figure 2;

Figure 4 is an isometric view showing superposed corner blocks about to be positioned; and

Figure 5 is an isometric view looking down on the lower block of Figure 4.

Referring to the drawings, 1 and 2 are superimposed cavity bricks; the lower brick 2 having a projection or rib 3, which extends the whole length of the brick, and the upper brick 1 having a correspondingly disposed channel 4 of greater width than the projection 3. The clearance 5 between the sides of the projection and of the channel is filled with a key or bond or grout of cement or other suitable material.

In Figure 2, the projection is on the base of the upper brick and the sides of the channel are recessed at 6 to form a key-way for the filling material or grout. If desired, the sides of the projection or rib may also be recessed. The meeting edges of the faces of the bricks are recessed at 7 and "pointed" with a suitable medium, constituting a seal against the penetration of moisture between the faces of the two bricks. The upper brick, in Figure 2, is of less width than the lower brick, illustrating, for example, a change over to a wall of less width as the building rises in height, and a seating is thereby provided on the extension of the lower brick for a wall plate 8 and rafter 9.

In Figure 3, the upper and lower bricks accommodating the rafter are of the same width, the upper brick being cut away as shown to receive the rafter 9 which is supported on the wall plates 8 positioned between the bricks. The end of the rafter should be out of contact with the front surface portion of the brick as shown.

A film of paint, preferably of a bituminous nature, may be brushed or otherwise applied to the contacting surfaces of the superimposed bricks.

The cavities of adjacent bricks in the same course preferably register in communication with each other and their sides are mortared together, leaving spaces, however, without mortar along the sides at right angles to the wall, so that there is no continuous line of mortar from the outer to the inner face of the wall.

Certain bricks of the walls, for example, at the corners, may have one or more cavities in vertical communication so that concrete may be poured therein to form a reinforcing

pillar and/or provide a vertical space or spaces for the housing therein of rain-water or domestic pipes.

The ribs and channels in the bricks, particularly corner bricks which of course are stop-ended, may in some cases be interrupted and/or may not extend the full length of the brick. Each brick may have a plurality of ribs or channels, or may be partly channeled and partly ribbed.

Figure 4 shows the construction and method of laying corner bricks. The bricks are laid at right angles to one another, each being stop-ended in the face exposed in the corner walls of the structure. The upper brick 1 is formed with ribs 10 and 11 and the lower brick 2 with a channel 12 terminating short of the stopped end (Figure 5). The rib 10 interlocks with clearance in the channel 12 adjacent the stopped end of the lower brick which is broken off in section in Figure 4 to show the parts more clearly. The parts 13 and 14 on either side of the channel in the lower brick engage respectively the channel 15 between the ribs 10 and 11 and the recess 16 on the outer side of the rib 10. The rib 11 engages a channel in a brick (not shown) at right angles to and in the same course as the brick 2, whilst the remaining part of the channel 12 of the brick 2 is engaged by a brick (not shown) at right angles to and in the same course as the brick 1.

It is to be understood that sloping, as well as vertical walls, may be built according to this invention and in some cases the sloping roof of a structure may be constructed of bricks or blocks such as hereinbefore described, thereby dispensing with tiles. Arched structures may likewise be constructed with blocks formed and disposed in the manner described.

What I claim is:—

1. The method of construction of walls whereby the crushing load is not transmitted through courses of mortar, which consists in laying one course of blocks directly upon another and interlocking superimposed blocks by means of a longitudinal rib on one block and a channel in the other block of substantially the same depth as but wider than the rib and filling in the vertical clearances with grouting.

2. The method of construction of walls as claimed in claim 1 in which a film of paint, for example, of bituminous material, is applied between contacting faces of superimposed blocks.

3. The method of construction of walls as claimed in claim 1, in which adjacent blocks are disposed in the same course with their cavities in communication and the adjacent ends mortared together so that there is no continuous line of mortar from the outer to the inner face of the wallage.

4. The method of construction of walls as claimed in claim 1, in which stop-ended corner blocks superimposed at right angles to one another are employed, one of which blocks is formed with an interrupted rib and the other with a channel terminating short of the stopped ends.

In testimony that I claim the foregoing as my invention I have signed my name this first day of April, 1927.

EDMOND JOSEPH FREWEN.