April 10, 1928. 1,665,442

L. J. CAMPBELL

BUILDING BLOCK

Filed June 20, 1925 2 Sheets-Sheet 1

Fig. 1.

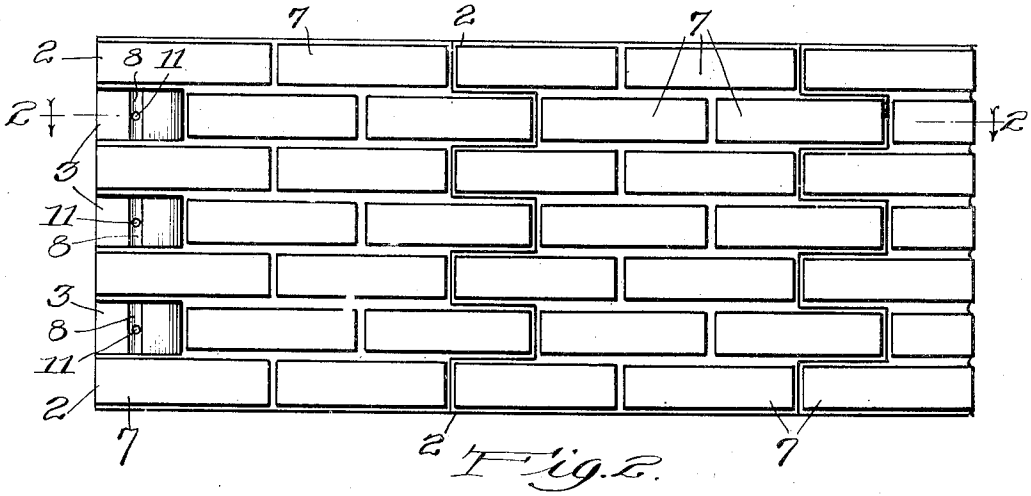


Fig. 2.

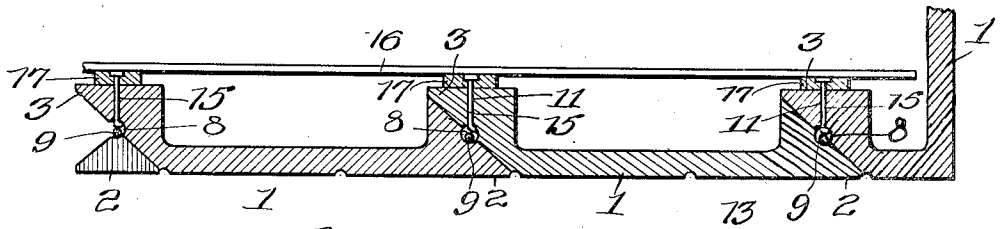


Fig. 3.

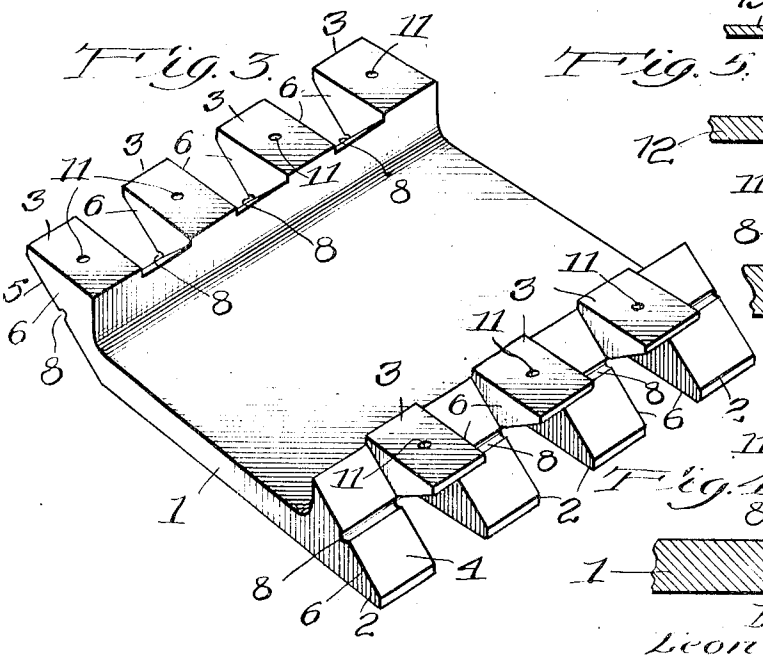


Fig. 5.

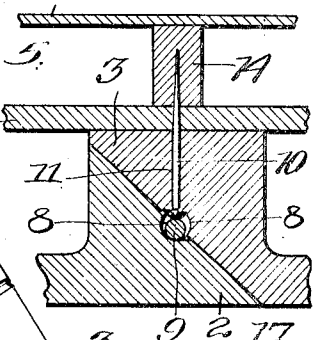
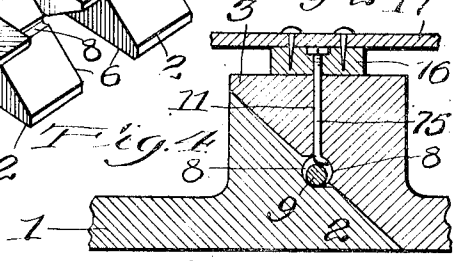


Fig. 4.



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Fig. 6.

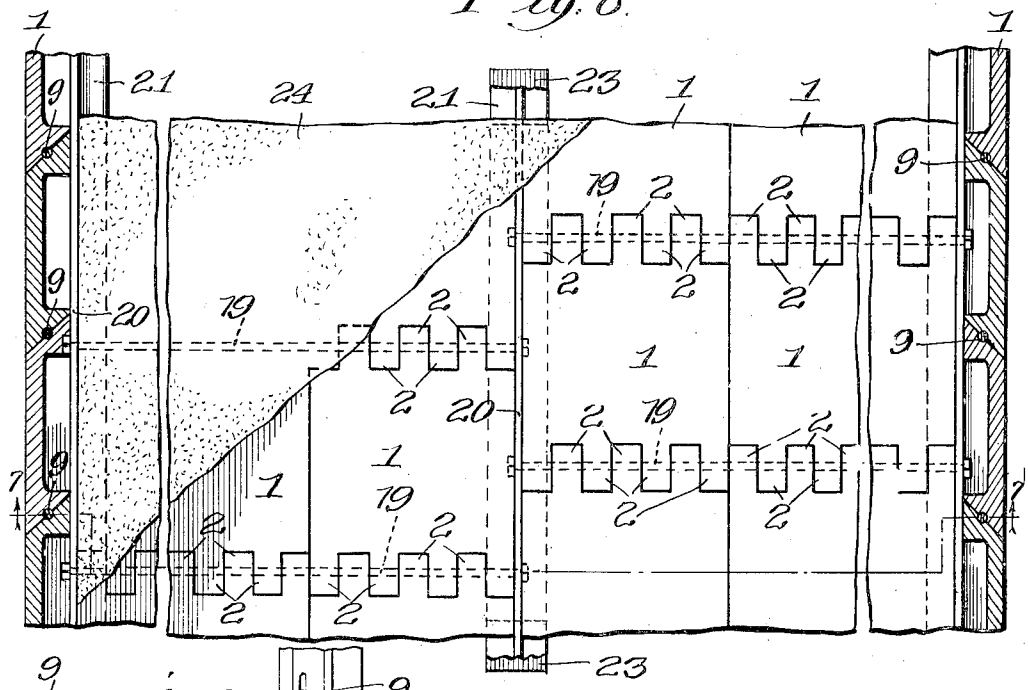


Fig. 8.

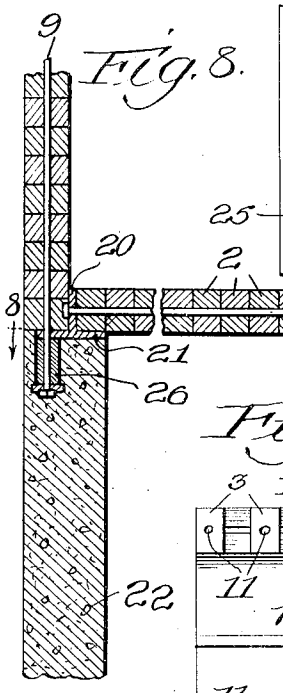


Fig. 7.

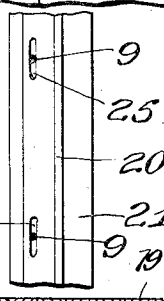


Fig. 9.

Fig. 10.

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Patented Apr. 10, 1928. 1,665,442

UNITED STATES PATENT OFFICE.

LEON JAY CAMPBELL, OF BUCHANAN, MICHIGAN.

BUILDING BLOCK.

Application filed June 20, 1925. Serial No. 38,419.

This invention relates to building blocks, and has for one of its objects to provide blocks of a size larger than the usual run of standard building bricks, and having solid front faces scored into units to represent a plurality of building bricks, thus allowing for more rapid and economical building for the reason that one block may be laid in the same time heretofore required for laying a plurality of bricks.

Another object of my invention is to provide the blocks with oppositely inclined interfitting projections at their joints so that the blocks will support each other at their joints by solid masses of block material extending throughout the extent of the joints.

A further object of my invention is to provide certain of the projections of the blocks with grooves or channels to accommodate rods for tying the blocks together along their joints.

A still further object of my invention is to provide these grooved projections with holes or openings extending through the projections to receive nails or bolts for securing the blocks to building elements to the rear thereof, so that the blocks may be either nailed or bolted to a wooden wall, as in brick veneer work, or metal or other lath may be secured to the blocks through these holes or openings.

A further object of my invention is to provide blocks which may be commercially and cheaply made and which also may be readily handled even though of sizes much larger than the usual building bricks, and moreover be capable of being made by the present brick making machines or apparatuses with only such slight changes required therein by reason of the particular contour or shape of the projections at the ends of the blocks.

The invention consists further in the matters hereinafter described and claimed.

In the accompanying drawings—

Fig. 1 is a front elevational view of a wall composed of my improved blocks;

Fig. 2 is a horizontal sectional view taken on line 2—2 of Fig. 1;

Fig. 3 is a perspective view of one of the blocks;

Figs. 4 and 5 are enlarged detail sectional views, to be hereinafter more fully described;

Fig. 6 is a top plan view, with parts in section, showing how the blocks of my invention are laid to make a floor;

Fig. 7 is a vertical sectional view taken on the indirect line 7—7 of Fig. 6;

Fig. 8 is a horizontal sectional view taken on line 8—8 of Fig. 7 to show a detail of construction; and

Figs. 9 and 10 are bottom plan and side views, respectively, on a small scale, of the block to show the application of a strengthening rib thereto.

My improved building block is shown in perspective in Fig. 3, and is made of clay or other suitable moldable building material. The block is generally rectangular when in the shape shown in the drawings and has its end portions considerably thicker than its mid or body portion 1. The end portions are shaped to provide oppositely inclined projections 2, 3 at the opposite ends of the block. There are two sets of these projections 2, 3 at each end of the block with the projections of one set alternating with those of the other, as shown in Fig. 3.

The projections of each set have their inclined surfaces 4, 5 in intersecting inclined planes with the line of intersection extending along the projections about mid-way between them. The inclined surfaces 4 of the projections 2 face the rear of the block, and the inclined surfaces 5 of the projections 3 face the front of the block. The front and rear faces of the projections are flat and are parallel to each other and to the flat solid front face of the block. With reference to these faces, the projections 2 are the front ones, while the projections 3 are the rear ones, the latter having their flat front faces in the plane of the front face of the block. The side surfaces 6, 6 of the projections are straight and at right-angles to the flat front face of the block. As shown in Fig. 3, the projections 3 at one end of the block alter-

nate with the similar projections at the opposite end of the block, so that the front projections 2 of the several blocks will overlap the rear projections 3 of the adjacent blocks when interfitting.

Fig. 1 shows three blocks laid in a horizontal row to form part of a vertical wall with each block very much larger than the usual run of standard building bricks. As shown, the front face of each block is scored into units 7, 7 to represent a plurality of laid bricks, the blocks in Fig. 1 being of a size to include fourteen bricks. This allows for more rapid and economical building for the reason that one block may be laid in the same time heretofore required for laying fourteen bricks. With the larger blocks less mortar is required, and the wall will be neater in appearance because the outlines of the bricks are uniform and straight with no mortar projecting out between them, and the bricks are not out of line in the wall. The projections are made substantially standard brick in width and approximately half of standard brick length, so that when they interfit in a wall, as in Fig. 1, full brick lengths appear at the joints of the blocks. This gives the appearance of a standard brick wall and gets away from the appearance of large blocks. The projections follow the mortar line of the bricks so as to maintain the finished and neat appearance of the wall.

Fig. 2 shows the manner in which the projections 2, 3 at the ends of the blocks overlap. The projections of one block are received in the spaces between the projections of the adjacent block by moving the blocks into endwise engagement, and, as shown in Figs. 1 and 6, the projections overlap as to their straight side and inclined surfaces 4, 5, and 6, respectively. When in a vertical wall, the blocks support each other at their joints by their overlapping surfaces 6, 6. The overlapping inclined surfaces 4, 5 resist internal as well as external lateral pressures on the blocks. These inclined surfaces provide supports for the blocks when laid as a floor, as shown in Figs. 6 and 7. The interfitting projections 2, 3 provide a solid mass throughout the extent of the joints to resist vertical as well as lateral pressures. For corners or other turns in the wall, corner blocks are provided, as shown in Fig. 2. These blocks are made the same as the others, differing only in being bent at their ends to the angles required.

The projections 2, 3 have aligned channels or grooves 8, 8 extending across them in their inclined faces 4, 5, the channels being at the line of intersection of the planes of said inclined surfaces.

Rods 9 extend through the grooves or channels 8 and, as the channels open lengthwise through the inclined faces of the projections, the blocks may be readily engaged with the rods 9 as the wall progresses by merely hooking the projections over the rods in the application of the blocks to their places in the wall. This avoids threading the blocks on the rods as when closed openings or holes are employed. The mortar or other binder spread on the projections 2, 3 at the time the blocks are laid will be forced into these channels and about the rods 9 when the blocks are forced together during their application in a wall. Mortar may be introduced into these channels after the blocks are laid by pressure or otherwise. Tightening up the rods after the binder has set will draw the projections tightly together into a solid mass along the length of the rods without any internal strain being exerted on the projections, due to the fact that their side surfaces 6, 6 are straight and not on a taper or incline to resist the pull on the rods.

When the blocks are used to make a so-called brick-veneer wall, the blocks are secured to the wooden structure of the wall by nails 10, as shown in Fig. 5. To provide for this, each block has a hole 11 in each of its inner set of projections 3, 3. The nails are driven through these holes before the next block is applied to cover the heads of the nails and before the rods 9 are inserted in place, if rods are used in such a wall. The heads of the nails being in the channels 8 will hold the blocks in place in the wall. This construction is shown in detail in Fig. 5 and the wooden structure of the wall includes the sheeting 12, lath 13, and interposed scantling 14.

In case the blocks are to form the main part of the wall, the blocks are secured to the inner structure by bolts 15 inserted through the openings 11, as shown in Fig. 4. These bolts have their heads or bent ends in the channel 8, while their threaded ends are in the inner part of the wall structure. This structure includes wooden or other strips 16 with a plaster-board or latch facing 17 nailed or otherwise secured thereto. Metal lath could be secured to the projections 3, 3 by wire inserted through the holes 11.

The blocks 1 may be provided with strengthening ribs 18 on their rear faces, as shown in Figs. 9 and 10. These ribs are centrally arranged between the enlarged end portions of the blocks and are parallel thereto with the ribs at least as high as the end portions, as shown in Fig. 10. With the body portions of the blocks thinner than the end portions, the blocks take less material in their manufacture and thus may be made at smaller cost. Moreover, the thinness of this body portion reduces the weight of the blocks and makes them easily handled even though of a size to include a dozen or more standard bricks. This feature is also of importance in manufacturing the

blocks because it enables the blocks to dry faster on being made.

The thicker end portions of the blocks make, with the thinner body portions thereof, air spaces in the wall formed by the blocks. The projections 2, 3 guide the blocks into engagement on being laid and align them to make a neat appearing wall.

In Figs. 6 and 7, I have shown my improved blocks 1 laid and tied together at their projections to make a floor. In this structure the blocks are laid horizontal and have tie rods 19 in the channels 8 of the interfitting projections 2, 3. These rods, at their ends, engage the upright flanges 20 of inverted T-beams or other structural steel members 21, as shown. Certain of those members 21 are arranged on the foundation walls 22 and secured thereto by the rods 9 used with the blocks 1, 1 of the upright wall above. The other member 21 is supported by a number of upright columns 23 below the same, as shown in Figs. 6 and 7.

In order that the blocks 1 on opposite sides of the intermediate beam 21 will not interfere with the tie-rods 19 engaging said beam, the blocks on opposite sides of said beam are staggered or offset to bring the rods in the spaces at the rear of the blocks, as shown in Figs. 6 and 7. After the floor is laid, the upper surfaces of the blocks may be covered with any facing material, as concrete 24 in Figs. 6.

To secure the beams 21 to the upright foundation walls 22, 22, the rods 9, 9 extend down through slots 25 in said beams, as shown in Fig. 8. These slots are elongated so that the rods may be adjusted laterally to position them for the blocks to be engaged thereby. To provide sufficient bearing for the rods 9 against the beams 21, the lower ends of the rods project below the beams through tubular sections 26, said sections engaging upward against the under side of the beams and having washers at their lower ends for the headed ends of the rods, as shown in Fig. 7.

The details of structure shown and described may be variously changed and modified without departing from the spirit and scope of my invention.

I claim as my invention:

1. A building wall composed of an upright rear structure and a plurality of blocks laid in substantially parallel rows in front of said structure, said blocks having a plurality of oppositely inclined front and rear projections at the opposite ends thereof, the projections at each end of the block having their inclined surfaces in planes intersecting between the ends of the projections and with the rear projections alternating with the front ones, said rear projections of each block having holes extending therethrough from front to rear and covered at their outer ends by the overlapping front projections of the adjacent blocks and fastening members inserted through said holes for securing each block at its opposite ends to said rear structure.

2. A building wall composed of an upright rear structure and a plurality of blocks laid in substantially parallel rows in front of said structure, said blocks having a plurality of oppositely inclined front and rear projections at the opposite ends thereof, the projections at each end of each block having their inclined surfaces in planes intersecting between the ends of the projections with the rear projections alternating with the front ones, said projections having aligned grooves or channels extending across the inclined faces thereof at the intersection of the planes of the same, the rear projections having holes extending therethrough from front to rear and opening into the channels thereof and covered at their outer ends by the overlapping front projections of the adjacent blocks, fastening members inserted through said holes for securing the blocks to the rear structure, and rods in the channels for tying the blocks together.

3. A building block having its end portions thicker than its mid-portion, each end portion being shaped to provide a multiplicity of oppositely inclined front and rear projections having their inclined surfaces in planes intersecting between the ends of said projections, the rear projections at each end of the block alternating with the front projections at the corresponding end of the block.

4. A building block having its end portions thicker than its mid-portion, each end portion being shaped to provide a multiplicity of oppositely inclined front and rear projections having their inclined surfaces in planes intersecting between the ends of said projections, the rear projections having bolt or nail holes therethrough with the rear projections at each end of the block alternating with the front projections at the corresponding end of the block.

5. A building block having its end portions thicker than its mid-portion, each end portion being shaped to provide a multiplicity of oppositely inclined front and rear projections having their inclined surfaces facing the rear and front faces, respectively, of the block and in planes intersecting between the ends of the projections, said projections having grooves or channels extending across the inclined surfaces thereof at the intersection of the planes of the same, the rear projections at each end of the block alternating with the front projections at the corresponding end of the block.

6. A building block having its end portions thicker than its mid-portion, each end portion being shaped to provide a multiplic-

ity of oppositely inclined front and rear projections having their inclined surfaces facing the rear and front, respectively, of the block and in planes intersecting between the ends of said projections, said projections having aligned grooves or channels extending across the inclined surfaces thereof at the intersection of the planes of the same, the rear projections having holes extending therethrough from front to rear from the grooves or channels therein.

In testimony whereof I affix my signature this 18th day of June, 1925.

LEON JAY CAMPBELL.