July 7, 1925. 1,545,173

J. TROST

BUILDING BLOCK

Filed April 4, 1925

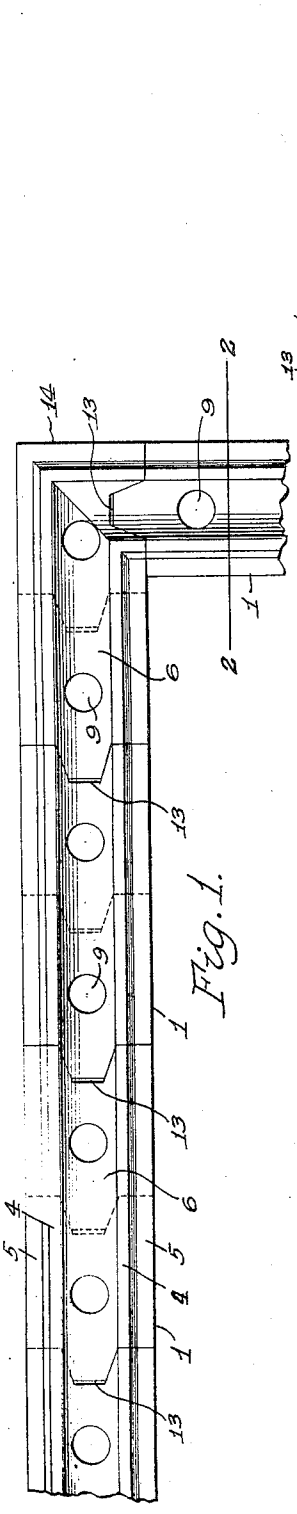

Fig. 1.

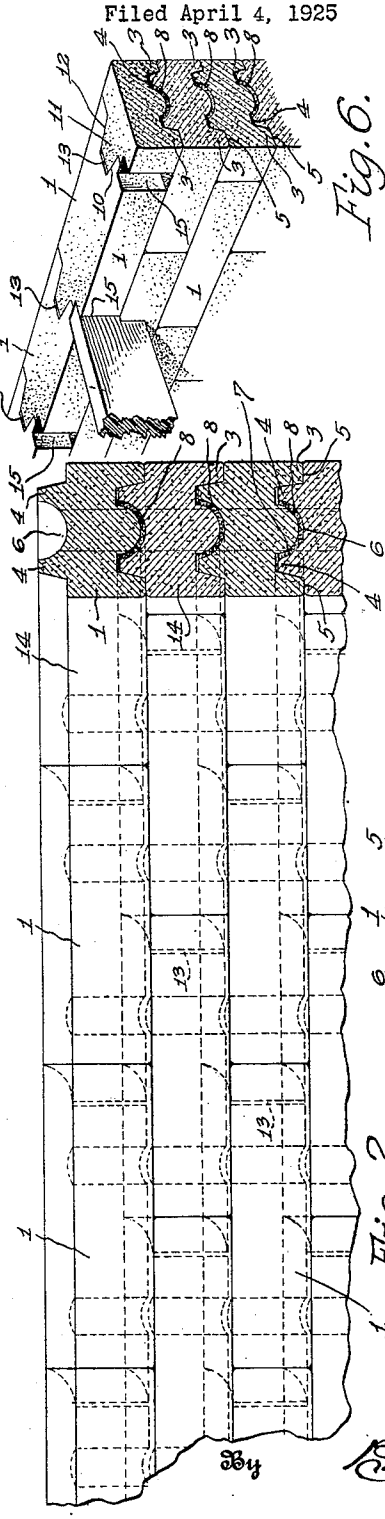

Fig. 6.

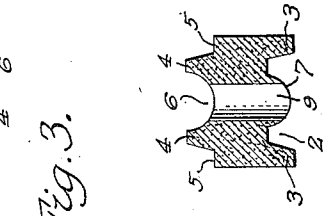

Fig. 5.

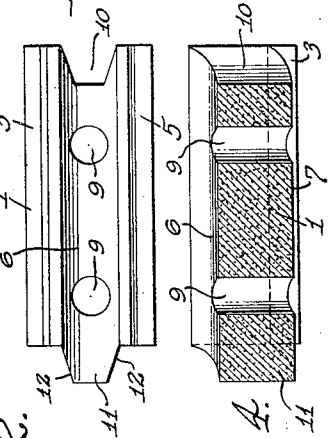

Fig. 3.

Fig. 2.

Fig. 4.

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UNITED STATES PATENT OFFICE.

JOHN TROST, OF DETROIT, MICHIGAN.

BUILDING BLOCK.

Application filed April 4, 1925. Serial No. 20,588.

To all whom it may concern:

Be it known that I, JOHN TROST, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Building Blocks, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to building blocks, and more particularly to blocks for building purposes formed of cement or the like, molded into the desired form. It is an object of the invention to provide blocks for the purpose which are so constructed that an unskilled laborer may with facility and accuracy lay up a wall composed of such blocks and whereby a complete wall having interior mortar joints to afford stability may be built by one unskilled in the use of trowel or level. A further object is to provide blocks so constructed that each of the blocks when placed in the wall will be guided accurately to place by adjacent blocks with the blocks in contact at the inner and outer faces of the wall to obviate the necessity for mortar joints at said faces and to maintain accuracy of alignment. It is also an object to so construct the blocks that interior mortar joints will be accurately formed by the placing of the blocks and without attention on the part of the workman, and to provide certain other new and useful features in the construction, all as hereinafter more fully described.

With the above and other ends in view, the invention consists in the matters hereinafter set forth and more particularly pointed out in the appended claims, reference being had to the accompanying drawing in which—

Figure 1 is a plan view of a length of wall formed of blocks illustrative of and embodying the invention;

Figure 2 is a side elevation of Figure 1 with the right-angle portion of the wall shown in transverse section upon the line 2—2 of Figure 1;

Figure 3 is a plan view of a block detached;

Figure 4, a longitudinal section through the block;

Figure 5 a transverse section thereof; and

Figure 6 is a perspective view of a completed portion of wall.

Each block 1 is molded or otherwise formed of cement or similar material with a longitudinal groove 2 in its lower side extending throughout the length of the block, said groove forming ribs or flanges 3 at the inner and outer sides of the block, the outer faces of which flanges form continuations of the side faces of the block and the inner faces of which flanges are inclined inwardly slightly. The upper side of each block is formed with upwardly extending longitudinal flanges 4 spaced inwardly from the side faces of the block a distance equal to the cross-sectional width of the flanges 3 with the outer side faces of these flanges 4 inclined to correspond with the inclination of the inner faces of the flanges 3. When these blocks are placed, one upon another, the flanges 4 on one block will fit closely within the groove 2 between the flanges 3 of the block above and as the depth of the groove is equal to or greater than the height of the flanges 4, the edge faces of the flanges 3 will seat directly upon the shoulders 5 or upper surfaces of the block outside of the flanges 4 with the side surfaces of the block in the plane of the side surfaces of the blocks above and below. When the blocks are in place, a wall is therefore formed having smooth exterior surfaces and as the blocks are in close contact and interlocked, joints are formed requiring no cement or mortar to fill the joints and the necessity for pointing up the joints is obviated.

In order that an interior cement or mortar joint may be formed to rigidly connect the blocks and securely hold them in place, the space between the upstanding ribs 4 is made in the form of a groove or channel 6 which is preferably semi-circular in cross-section, this groove extending from end to end of the block throughout the entire length of its upper side, and, in laying up the wall, the workman will simply place in this groove a small quantity of cement or mortar no particular care being necessary in placing or distributing this mortar or in the amount used as each block is formed within the groove or channel 2 in its lower side with a central longitudinal rib 7 which, when the blocks are placed, one upon another, fits into the channel 6 of the block below within which channel the mortar has been previously placed. The entrance of the rib 7 which is also semi-circular in cross-section with a radius slightly less than the radius of the channel 6, will spread and distribute

the mortar which will, when the upper block is seated upon the shoulders 5 of the lower block, fill the space between the rib 7 and groove 6, making a good mortar joint 8 between the several courses. To provide for excess of mortar in the groove or channel 6, holes 9 are formed in each block intermediate its ends, these holes opening into the bottom of the channel 6 and extending downwardly through the rib 7, so that when one block is placed upon another, the rib 7 entering the channel 6 containing mortar will distribute the mortar along the channel and over its surface and any excess will flow into the openings 9. A good mortar joint may, therefore be formed by simply placing mortar in the channel 6 and then placing the next block of the next upper course in place thereon, no particular skill or care on the part of the workman being required. These openings 9 may be so positioned in the blocks that when the blocks are in place in the wall, these openings in the several blocks will be in vertical alignment and thus form continuous vertical flues or passages in the wall forming air passages or flues within which may be placed wiring conduits, pipes and the like, if found desirable.

To interlock the several blocks endwise, each block is formed with a notch or recess 10 in one end and a rib or tongue 11 at its opposite end to fit into the notch 10 of the next adjacent block, the side faces 12 of the tongue 11 being formed convergent toward the outer end of the tongue and the sides of the groove 10 being correspondingly inclined so that the tongue will enter freely into the groove and fit closely therein when the blocks are in place. The length of the tongue 11 is preferably less than the depth of the groove 10 so that an open space 13 will be provided at the end of each tongue, into which space mortar will enter from the channel 6 when the wall is erected as described and mortar joints will be formed between the ends of adjacent blocks.

In laying up the wall, the blocks of one course will preferably be laid in staggered relation to the blocks of the course below, thus breaking joints as shown in Fig. 2, and in order that the blocks may interlock at the corners of the wall, corner blocks 14 are provided. Each of these corner blocks are the same as the blocks 1 except that instead of the ribs 4 and channel 6, as well as the grooves 2, rib 7 and flanges 3, being extended from end to end of the block, are formed with a right angle turn adjacent one end of the block and extend to and through the side of the block with the tongue 11 or groove 10 at this end of the block formed in this side so that a wall extending at right angles to the corner blocks will interlock with these blocks.

By the use of blocks of this construction, any unskilled person may erect a wall, the only care required being in placing the first course so that its upper surface will be level as the other blocks above rest in contact with each other, and being accurately formed, will maintain the level condition of the wall. It is not necessary to use a trowel as no mortar joints are to be formed by the workman and no pointing up is necessary, all mortar joints being internal. Even the vertical alignment of the blocks is insured by the construction due to the wedging action of the ribs 4 in entering the groove 2 of the course above, and the proper relative positioning of the blocks endwise is insured by the end tongue and groove connection and the vertical alignment of the openings 9 in the several blocks. The inter-locking of the blocks is such that, if found desirable, all mortar joints may be dispensed with, thus providing a wall which may be dis-assembled and moved as desired.

Where a basement wall for a dwelling is constructed of these blocks as illustrated in Figure 6, the blocks forming the upper course of the wall may be notched as at 15 in one side at one end to receive the ends of the floor joists and provide a firm seat therefor.

Having thus fully described my invention, what I claim is:—

1. A building block comprising a body formed with longitudinal upstanding ribs at its upper side forming between them a longitudinal channel, said body being formed at its lower side with a longitudinal groove of a width to receive said upstanding flanges of an adjacent block, and also formed with a longitudinal rib within said groove to engage within said channel of an adjacent block with a narrow space between the surface of the channel and the surface of the rib, whereby when said blocks are placed, one upon another, mortar placed in said channel will be spread and distributed therein by the placing of the block above.

2. A building block comprising a body formed with parallel upstanding ribs spaced inward from the side faces of the block to provide shoulders along the outer sides of said ribs and extending throughout the length of the block, the space between said ribs forming a central longitudinal channel, said body being formed at its lower side with a groove forming downwardly extending flanges throughout the length of the lower side of the body with outer surfaces of said flanges in the planes of the side surfaces of the body, the edge surfaces of said flanges being adapted to seat upon said shoulders outside said upstanding ribs on a block below, and the inner surfaces of said flanges and the outer surfaces of said ribs being correspondingly up-

wardly inclined toward the central longitudinal plane of the block, said body being also formed at its lower side with a central longitudinal rib projecting into said groove and adapted to engage within said channel of a block below.

3. A building block comprising a body formed with a projecting outwardly tapered tongue at one end and a groove at the other end having correspondingly inwardly inclined sides, said body being provided at its upper side with longitudinally extending upstanding ribs spaced apart and inwardly from the sides of the body, said ribs forming between them a longitudinal channel of semi-circular shape in cross-section, said body being formed at its lower side with a longitudinal groove forming downwardly extending flanges the outer surfaces of which form continuations of the side surfaces of the body and said groove being of a width to receive therein said upstanding ribs on an adjacent block with said ribs fitting closely between said flanges and with the lower edges of said flanges seated upon the upper surface of the block below outside of said ribs, said body being also formed at its lower side with a longitudinal rib projecting into said groove centrally thereof, said rib being of semi-circular form in cross-section and of less radius than the radius of the said channels at the upper side of the body and into which channel of an adjacent block said rib is adapted to project with a space between the surfaces, said body being also formed with opening in the body opening into the bottom of said channel, all as and for the purpose described.

In testimony whereof I affix my signature in the presence of two witnesses.

JOHN TROST.

Witnesses:
LEWIS E. FLANDERS,
ANNA M. DORR.