

April 9, 1968

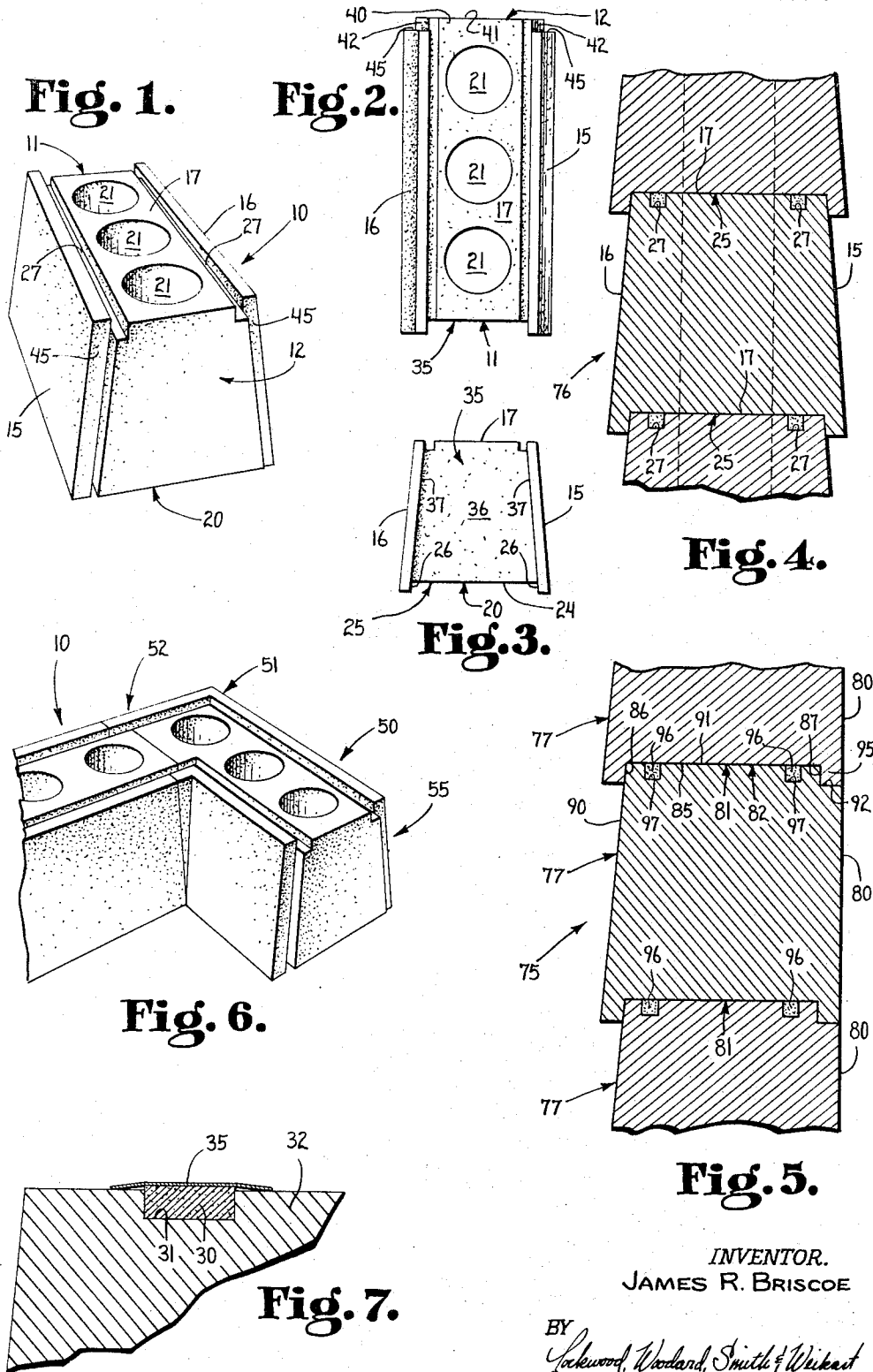
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BUILDING BLOCKS WITH SIDES CONVERGING UPWARDLY

Filed Aug. 4, 1965

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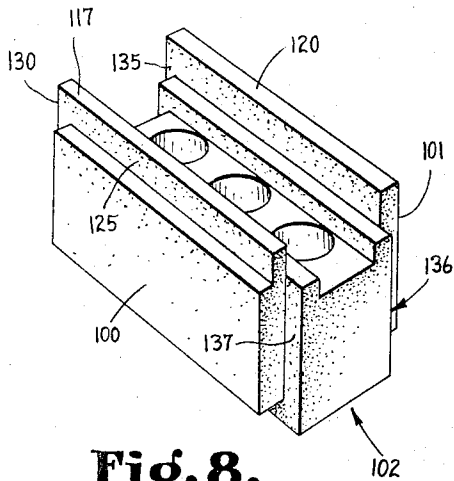


Fig. 8.

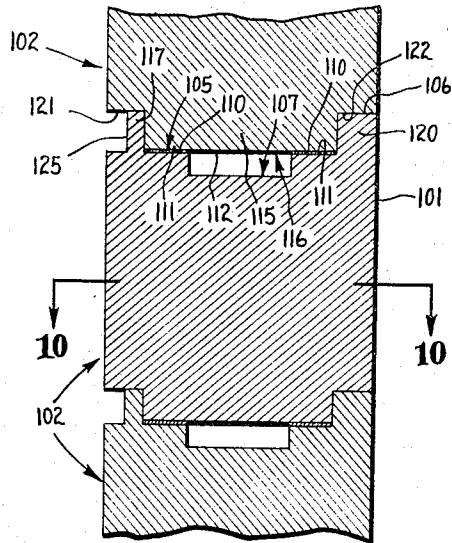


Fig. 9.

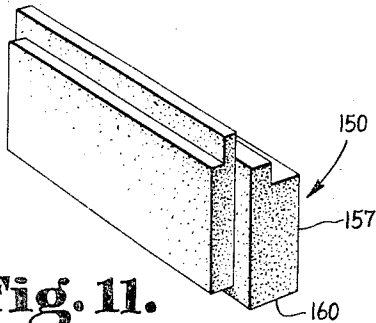


Fig. 11.

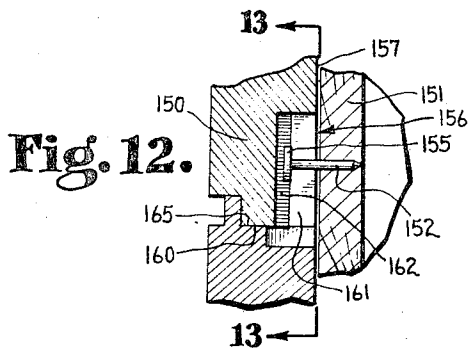


Fig. 12.

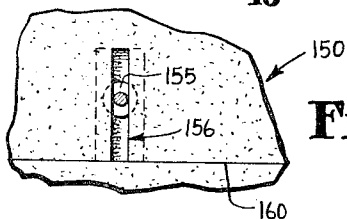


Fig. 13.

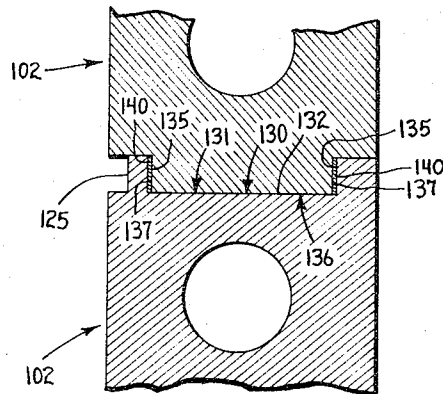


Fig. 10.

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BUILDING BLOCKS WITH SIDES CONVERGING UPWARDLY

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ABSTRACT OF THE DISCLOSURE

A building block incorporating recesses and projections at its top, bottom and sides for mating and interlocking blocks in a wall. In one embodiment, the top of the block has a two sided recess which extends along the length of the top at the junction of the top and one side for mating with a projection on the bottom of a contiguous block. In another of the embodiments, the block tapers from a larger, lower portion to a smaller, upper portion.

The present invention relates to building blocks and to a wall formed with building blocks and more particularly to blocks or bricks such as those commonly used in the construction of homes, buildings, fireplaces and the like.

The blocks or bricks commonly used in construction are customarily sealed and joined to one another with a cement base mortar which is applied to each brick or block so as to separate the various bricks or blocks from one another and also providing a bond between them. It is also customary when using conventional blocks to employ the use of highly skilled craftsmen in order to accurately maintain the level and plumb of the construction. Consequently, it is one object of the present invention to provide an improved building block which does not require the great amount of skill involved in the laying of conventional brick or block.

A further object of the present invention is to provide a building block which minimizes the amount of bonding or adhering material required to secure together the blocks of a given structure.

Still another object of the present invention is to provide building blocks which have greater structural strength by reason of their contacting one another directly rather than through bonding material.

Still another object of the present invention is to provide building blocks which can be more easily and quickly assembled into a wall or the like than can conventional building blocks.

A further object of the present invention is to provide an improved wall formed of an improved building block.

Still another object of the present invention is to provide a building block which eliminates the need for "tooling" mortar joints or scraping off excessive bonding material between the blocks or bricks.

Related objects and advantages will become apparent as the description proceeds.

One embodiment of the present invention might include a building block comprising a body having two opposite ends, a pair of longitudinal sides, a top surface and a bottom surface; one of said opposite ends having a first projection thereon and the other a first recess complementary to said projection; one of said surfaces having a second projection thereon and the other a second recess complementary to said projection whereby a series of such blocks may form a wall with first projections seated in first recesses and second projections seated in second recesses to support adjacent blocks in vertical and horizontal alignment.

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The full nature of the invention will be understood from the accompanying drawings and the following description and claims.

FIG. 1 is a perspective view of a building block embodying the present invention.

FIG. 2 is a top plan view of the building block of FIG. 1 showing it at the rearward end of FIG. 1 extending downwardly.

FIG. 3 is a front elevation of the structure of FIG. 2.

FIG. 4 is a vertical section through a wall incorporating a plurality of the building block as illustrated in FIGS. 1-3.

FIG. 5 is a view similar to FIG. 4 but showing an alternative form of a building block.

FIG. 6 is a perspective view of a pair of building blocks—one identical to the building block of FIGS. 1-4 and the other a corner building block used in the turning of a corner of a wall or the like.

FIG. 7 is a section taken through the building block showing a means for providing bonding material in connection with the building block.

FIG. 8 is a perspective view of an alternative form of the present invention.

FIG. 9 is a vertical section through a wall formed of building blocks identical to the building block in FIG. 8.

FIG. 10 is a horizontal section taken along the line 10-10 of FIG. 9 in the direction of the arrows.

FIG. 11 is a perspective view of still another alternative embodiment of the building block of the present invention.

FIG. 12 is a vertical section through the building block of FIG. 11.

FIG. 13 is a section taken along the line 13-13 in FIG. 12 in the direction of the arrows.

For the purposes of promoting an understanding of the principles of the invention, reference will now be made to the embodiments illustrated in the drawings and specific language will be used to describe the same. It will nevertheless be understood that no limitation of the scope of the invention is thereby intended, such alterations and further modifications in the illustrated device, and such further applications of the principles of the invention as illustrated therein being contemplated as would normally occur to one skilled in the art to which the invention relates.

Referring now more particularly to the drawings, a building block 10 is illustrated in FIG. 1 and comprises a body having two opposite ends 11 and 12 and a pair of longitudinal sides 15 and 16. The block 10 further includes a top 17 and a bottom 20 and has lightening holes 21 extending vertically therethrough from the top 17 to the bottom 20. The sides 15 and 16 are both at an acute angle to the bottom 20 and converge upwardly toward one another from the bottom 20 to the top 17.

The bottom 20 has a recess 25 formed therein, said recess extending along the complete length of the bottom 20 and having a flat base 24 which has the same transverse dimension as the transverse dimension of the top 17. Recess 25 further includes sides 26 which diverge from one another and extend away from the base 24 in parallel relation to the sides 15 and 16. It can therefore be appreciated that the recess 25 of the block 10 is complementarily shaped to the top 17 so that when a plurality of the blocks 10 are stacked as in FIG. 4 the tops 17 seat firmly within the recess 25.

Formed in the top 17 are a pair of parallel upwardly opening recesses 27 which extend the complete length of the blocks. The recesses 27 have therein mortar or bonding material for securing the blocks in the vertical direction to one another. The mortar or bonding material

within the recesses 27 may be placed therein at the factory and may be pressure sensitive bonding material. Referring, for example, to FIG. 7, pressure sensitive material 30 might be supplied within a recess 31 in the block 32 and a piece of disposable paper 35 or the like placed over the bonding material. The block 32 would then be supplied to the job site from the factory with the paper 35 in place. In order to make use of the bonding material, the paper 35 is removed and thrown away.

The end 11 of the block 10 is formed with a recess 35 which has a vertically extending base 36 and has sides 37 which extend perpendicularly relative to the base 36 and which taper from a smaller transverse dimension at the top of the block to a larger transverse dimension at the bottom of the block. At the opposite end of the block 10 there is formed a projection 40 which has a distal end 41 congruent to the base 36 of the recess 35. The projection 40 has upwardly converging sides 42 which are perpendicular to the distal end 41 of the projection 40 and which join the distal end 41 and the projection 40 to shoulders 45 also forming a part of the end 12. It can therefore be appreciated that the end 12 with its projection 40 is complementary in configuration to the end 11 so that a plurality of such blocks can be assembled and connected horizontally to provide mutual support. One advantage of the present invention resides in the fact that as a further block is placed on an existing wall the recess 35 of the block forming the newest addition to the wall can be fitted down over the projection 40 on the block already forming a part of the wall whereby assembly of the blocks in an interlocking manner is relatively easily accomplished.

Referring to FIG. 6, there is illustrated a further one of the blocks 10 and a block 50 used to turn a corner. The block 50 is identical to the block 10 with the exception that the block 50 has a right angle 51 between its opposite ends 52 and 55. The configuration of the opposite ends 52 and 55 is identical to the configuration of the opposite ends 11 and 12. Additional blocks similar to the block 50 but with the right angle turned at a different location in the block also form a part of the invention but are not illustrated because of their similarity to the block 50.

Referring to FIG. 5 there is illustrated a wall 75 which is similar to the wall 76 of FIG. 4 with the exception that the blocks 77 are formed to have their rearward side 80 perpendicular to the bottom 81 of the blocks. The bottom 81 of each block 77 is formed with a recess 82 having a flat base 85 and sides 86 and 87. The side 87 is perpendicular to the base 85 while the side 86 is arranged at an obtuse angle relative to the base 85, said obtuse angle being the same angle that the forward side 90 forms with the top 91 of the block 77. The block 77 is further distinguished from the block 10 in that the block 77 has a two sided recess 92 at the junction of the top 91 and the rearward side 80. The projection 95 which partially defines the recess 81 fits into and is complementary to the two sided recess 92. Thus when a plurality of the blocks 77 are assembled into a wall as illustrated in FIG. 5, the rearward sides 80 are coextensive. Similarly to the wall of FIG. 4, the various blocks are secured together by mortar 96 received within parallel recesses 97 in the tops 91 of the blocks 77.

Referring to FIGS. 8-10, there is illustrated a further embodiment of the invention which is similar to the above described embodiments with the exception that the forward and rearward faces 100 and 101 of a representative building block are parallel to one another instead of at an angle to one another as in the embodiments of FIGS. 1-6. As can best be seen in FIG. 9, the blocks 102 each have a large recess 105 formed in their top 106 and a smaller recess 107 formed in the top and opening into the recess 105. In the illustrated embodiment, bonding material 110 is used between the base 111 of the recess 105 and the distal end 112 of a projection 115 formed on

the bottom 116 of the next higher block 102. Alternatively, mortar can be placed within the recess 107 to secure blocks vertically together.

The recess 105 is defined by upwardly extending projections 117 and 120 which extend the length of the block 102. The projections 117 and 120 fit into the two sided recesses 121 and 122 in the bottom 116 of the next higher block. It should be noted that each of the blocks has an additional two sided recess 125 formed therein and extending along the junction of the forward face 100 and the top 106 as well as the junction of the forward face 100 and the one end 130. This recess 125 gives the appearance to the completed wall of blocks separated by mortar even though the various blocks are in direct contact with one another.

Referring to FIGS. 8 and 10, the horizontal interlocking relationship of the wall of FIG. 9 is illustrated. At the one end 130 of the block 102 there is formed a recess 131 which has a flat base 132 and parallel side walls 135 perpendicular to the base 132. At the opposite end of the block 102 there is formed a projection 136 the opposite sides 137 of which are spaced apart a distance slightly less than the spacing apart of the sides 135 of the recess 130 whereby bonding material 140 secures the sides 135 and 137 together and secures the blocks together. The wall or other structure formed from the blocks of FIGS. 1-7 would be similarly adhered together in the horizontal direction by adhesive which would be placed on, for example, the surface 138 of FIG. 6.

Referring to FIGS. 11, 12 and 13, a further embodiment of the invention is illustrated and is identical to the embodiment of FIGS. 8-10 with the exception that the blocks are cut in two in a longitudinal and vertical direction. Thus, the blocks of FIGS. 11, 12 and 13 are intended primarily for use as overlays or veneer.

Referring to FIGS. 12 and 13, a wall formed of the blocks 150 of FIG. 11 is illustrated as comprising a wood framework 151 having a nail 152 partially driven into the framework so that its head 155 is spaced from the framework. Of course, a plurality of the nails 152 are provided; however, the single illustrated nail is representative. The block 150 has a slot 156 formed therein, said slot opening on the rearward face 157 and the bottom 160 of the block. The slot 156 has a T-shape with the base 161 of the T-shape extending to the rearward face 157 and to the bottom 160. The crossed portion 162 of the T-shape extends only to the bottom 160. When the blocks 150 are being assembled to form the wall, the nails and particularly the heads 155 of the nails are inserted into the crossed portion 162 of the T-shape slot 156 and the blocks are moved upwardly until the bottom 160 of the particular block is received within the recess 165 in the top of the next lower block. Of course, suitable mortar or bonding adhesive is used to secure the blocks together. The advantage of the slot 156 and the particular configuration of the slot is the fact that the nail 152 does not have to be accurately driven but instead can find its own height in the slot 156.

It will be evident from the above description that the present invention provides an improved wall and an improved building block. It will also be evident that the building block of the present invention makes unnecessary the use of highly skilled labor and also makes possible the elimination of the need for "tooling" mortar joints or scraping off excess bonding material between structural units. It will be further evident that the present invention minimizes the amount of bonding material required to secure together blocks in a structure.

While the invention has been illustrated and described in detail in the drawings and foregoing description, the same is to be considered as illustrative and not restrictive in character, it being understood that only the preferred embodiment has been shown and described and that all changes and modifications that come within the spirit of

the invention and the scope of the claims are also desired to be protected.

The invention claimed is:

1. A building block comprising a body having two opposite ends, a pair of longitudinal sides, a top and a bottom; said sides converging upwardly toward one another from said bottom to said top; said bottom having a first recess therein extending along the complete length of said bottom; said bottom recess being complementarily shaped to said top and the contiguous portions of said sides whereby a series of such blocks may form a wall with the tops of the blocks seated in the first recesses of adjacent blocks thereabove to support said adjacent blocks; one of said opposite ends having a second recess which tapers from a smaller transverse dimension at the top of said body to a larger transverse dimension at the bottom of said body; the other of said opposite ends having a projection thereon complementarily shaped to said second recess and said other opposite end being complementarily shaped to said one opposite end whereby horizontally adjacent blocks in said wall may interlock with one another with the projections thereof received within the second recesses thereof.

2. A building block comprising a body having two opposite ends, a pair of longitudinal sides, a top and a bottom; said sides converging upwardly toward one another from said bottom to said top; said bottom having a first recess therein extending along the complete length of said bottom; said bottom recess being complementarily shaped to said top and the contiguous portions of said sides whereby a series of such blocks may form a wall with the tops of the blocks seated in the first recesses of adjacent blocks thereabove to support said adjacent blocks; said block having parallel recesses extending along the length of said top and adapted to receive mortar for securing said block to the bottom of an adjacent block; one of said opposite ends having a second recess which tapers from a smaller transverse dimension at the top of said body to a larger transverse dimension at the bottom of said body; the other of said opposite ends having a projection thereon complementarily shaped to said second recess and said other opposite end being complementarily shaped to said one opposite end whereby horizontally adjacent blocks in said wall may interlock with one another with the projections thereof received within the second recesses thereof.

3. A building block comprising a body having two opposite ends, a pair of longitudinal sides, a top and a bottom; said sides converging upwardly toward one another from said bottom to said top; one of said sides being perpendicular to said top and said bottom; said top having a two sided recess therein extending along the length of said top at the junction of said top and one side, said bottom having a first recess therein extending along the complete length of said bottom and defined by a pair of downwardly extending projections; said bottom recess being complementarily shaped to said top, the contiguous portion of the other longitudinal side of said body, and the two sided recess, whereby a series of such blocks may form a wall with the tops of the blocks seated in the first recesses of adjacent blocks thereabove and the two sided recesses receiving one of said downwardly extending projections to support said adjacent blocks with

the one sides of the blocks coextensive; one of said opposite ends having a second recess which tapers from a smaller transverse dimension at the top of said body to a larger transverse dimension at the bottom of said body; the other of said opposite ends having a projection thereon complementarily shaped to said second recess and said other opposite end being complementarily shaped to said one opposite end whereby horizontally adjacent blocks in said wall may interlock with one another with the opposite end projections thereof received within the second recesses thereof.

4. A building block comprising a body having two opposite ends, a pair of longitudinal sides, a top and a bottom; said sides converging upwardly toward one another from said bottom to said top; one of said sides being perpendicular to said top and said bottom; said top having a two sided recess therein extending along the length of said top at the junction of said top and one side, said bottom having a first recess therein extending along the complete length of said bottom and defined by a pair of downwardly extending projections; said bottom recess being complementarily shaped to said top, the contiguous portion of the other longitudinal side of said body, and the two sided recess, whereby a series of such blocks may form a wall with the tops of the blocks seated in the first recesses of adjacent blocks thereabove and the two sided recesses receiving one of said downwardly extending projections to support said adjacent blocks with the one sides of the blocks coextensive; said block having parallel recesses extending along the length of said top and adapted to receive mortar for securing said block to the bottom of an adjacent block; one of said opposite ends having a second recess which tapers from a smaller transverse dimension at the top of said body to a larger transverse dimension at the bottom of said body; the other of said opposite ends having a projection thereon complementarily shaped to said second recess and said other opposite end being complementarily shaped to said one opposite end whereby horizontally adjacent blocks in said wall may interlock with one another with the opposite end projections thereof received within the second recesses thereof.

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