

UNITED STATES PATENT OFFICE

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BUILDING WALL CONSTRUCTION

Application filed May 1, 1929. Serial No. 359,550.

Our invention relates to building walls and consists in a novel building block structure and assembly.

One of the most desirable, artistic and attractive forms of building walls is that having a front face formed of rough stone blocks of irregular size and shape laid with broken joints both longitudinally and vertically of the wall. Due to the scarcity of suitable building stone in many localities and the increasing cost of quarrying and transportation, the expense of a wall as described above is greater than the cost of a wall formed of artificial stone blocks, but no artificial stone blocks have yet been produced which will simulate a natural stone wall of the type referred to above i. e., presenting a broken ashler appearance.

One of the objects of our invention is to provide an artificial stone wall formed of blocks having varying height and width and producing a broken ashler finish similar to that produced by rough stone.

Even when rough natural stone has been used to form a wall face it has been customary to fill in behind the face stone with rough irregular stone or rubble and, in many instances, to dump sand and old mortar into the spaces, which practice results in a weak and unsatisfactory wall subject to deterioration from settling and the action of the weather. Only at prohibitive cost could one provide natural stone blocks extending through the wall and the cost of such stone would be increased by the expense of dressing one end of each stone to provide a finished face for the inside of the wall.

Another object of our invention is to provide artificial stone blocks of sufficient depth to extend through the wall in which they are used from front to back of the wall, each block having a rough stone face at one end and a smooth face at the opposite end and the side and top and bottom faces of the wall also being smooth.

In laying a stone wall it is necessary for the mason to trim many of the stones in order to fit them in between the adjacent stones. This is a time consuming and expensive process, and it is a further object of our inven-

tion to provide a series of artificial blocks of varying height and width which may be assembled after a predetermined design to produce a broken ashler finish without the necessity of any trimming with the possible exception of cutting the blocks to fit around window or door openings.

Another object of our invention is to provide in a wall of the type described a corner construction which will lend itself to forming a well bonded joint between two intersecting walls formed of the series of blocks referred to and without requiring any trimming of the blocks in order to complete the corner construction. These and other detailed objects of our invention are attained in the structure illustrated in the accompanying drawings forming a part of the specification in which:

Figure 1 is an isometric view of an artificial stone wall showing one corner thereof.

Figures 2 and 7 are horizontal sections taken on the corresponding section lines of Figure 1.

The corner blocks 1, 2 and 3 have square bases, the width of blocks 1 and 3 being greater than the width of block 2 so that the surface presented by the three corner blocks in the direction of wall A is irregular. Since blocks 1, 2 and 3 have square bases, the surface presented in the direction of wall B will be identical with that presented in the direction of wall A.

At the side of block 1 are two smaller blocks 4 and 5, the combined height of which plus the layer of mortar 6 equals the height of block 1, but the widths of blocks 4 and 5 differ.

Above block 5 and overlapping the joint between the same and block 1 is block 7 and above block 7 is a block 8 of different height and width, the combined heights of block 7 and block 8 plus the layer of mortar 9 equals the height of block 2.

Above 8 is a small block 10 and above block 10 is a larger block 11 projecting beyond the side of block 10 and the height of blocks 10 and 11 plus the layer of mortar 12 equals the height of block 3.

Blocks 13 and 14 extend from block 4 to

block 11 and project to the right of these blocks to the same distance that they project to the left of the right hand face of these blocks. This provides for a series of blocks 4', 5', 7', 8', 10' and 11' identical with the blocks numbered 4, 5, 7, 8, 10 and 11, previously referred to and presenting an irregular surface facing towards the right end of wall A corresponding to the surface facing to the left and presented to the corner blocks 1, 2 and 3. These blocks comprise a cruciform unit having a contour which is symmetrical about the vertical and horizontal axes of the unit but in which horizontal joints are disposed at different distances from the horizontal axis.

Adjacent this surface facing toward the right are blocks 15, 16 and 17 corresponding in height to blocks 1, 2 and 3 respectively, block 16 being narrow enough to provide a projection from the right thereof by block 15 and 17 corresponding to the left hand projection of blocks 15 and 17 beyond blocks 16.

Since the height of blocks 1, 3, 15 and 17 is the same, it will appear that additional blocks corresponding to the unit comprising blocks 4, 4', 5, 5', 7, 7', 8, 8', 10, 10', 11, 11', 13 and 14 may be arranged in inverse position as indicated at 4'', 5'', 7'', 8'', 10'', 11'', 13'' and 14''.

Since the sum of the heights of blocks 4', 5' and 7', plus the thickness of the layers of mortar between them, is different (less) than the heights of blocks 8', 10' and 11', plus the thickness of the layers of mortar between them, the inverse arrangement of the right hand unit of blocks around the central blocks 13'' and 14'' will offset the longer horizontal joint between the two central blocks from the corresponding joint in the left hand unit of the blocks.

The arrangement described produces a broken ashler finish in which the design is repeated at such long intervals that its repetition is not obvious and the appearance is accordingly enhanced. It will be understood that the arrangement indicated by the brace C is repeated to the right thereof as often as is required for the length of the wall.

The design comprises a repetition of groups of three blocks, one of which is of major height and the other two of which are of minor height, the sum of the heights of the two blocks of minor height plus the thickness of the layer of mortar between them equaling the height of the block of major height and the widths of the blocks of minor height different from each other and, preferably, from the width of the block of major height.

Each of the blocks described above, except the corner blocks 1, 2 and 3, extends from front to back of the wall and has an outer face roughened from edge to edge and

has side, top and bottom faces extending at right angles to the outer face and comprising plane surfaces. Preferably, the inner face of each block will be a plane surface also to provide an inside finish for the wall if desired, altho additional finish may be added if desired.

It will be noted from the sections that the corner construction provides for alternate overlapping of blocks 4, 5, 7, 8, 10 and 11 of wall A with the correspondingly numbered blocks at the end of wall B, thus forming a bond or key construction for the walls A and B in addition to and irrespective of the corner blocks 1, 2 and 3, thereby strengthening the wall and contributing to its permanence. We are aware that artificial blocks have been used heretofore to form the face of a wall, but such blocks when used in any residence or equivalent structure must be doubled to complete a wall of adequate thickness and this produces a wall consisting of two vertical layers of blocks having no bond with each other. To overcome this difficulty, various bonding devices have been proposed such as steel clips or wooden blocks, the use of which is more or less subject to attention of the workman and, in any event are not an integral part of the stone structure as is the preferred construction where an all stone wall is specified.

Our blocks may be 9, 13, 18 or 21 inches in depth according to the thickness of the wall in which they are used. The blocks may be formed of concrete, cinders or refractory material or other compositions which are coming into general use for moulded blocks.

In order to fully instruct those interested in the use of our invention, we have added a selected set of dimensions to the blocks illustrated and indicating a practical combination of sizes which will secure the desired result. It will be understood that these dimensions may be varied and that other block arrangements may be made without departing from the spirit of our invention and we contemplate the exclusive use of all such modifications as come within the scope of our claims.

We claim:

1. In a wall construction, two walls intersecting to form a corner, a series of corner blocks arranged one above the other and cooperating to present irregular surfaces in the directions of both of said walls, the contours of said surfaces being the same, and blocks each of greater depth than said corner blocks and overlapping each other at the rear of said corner blocks to key said walls together in addition to keying produced by said corner blocks.

2. In a wall construction, two walls intersecting to form a corner, a series of corner blocks of substantially the same height, arranged one above the other and cooperating

to present irregular surfaces in the directions of both of said walls, the contours of said surfaces being the same, said corner blocks varying in their horizontal dimensions, and blocks each of greater depth than said corner blocks overlapping each other at the rear of said corner blocks, certain of said blocks of greater depth overlapping the larger corner blocks, thereby binding the corner blocks with respect to each other and keying the two walls together.

3. In a wall construction, two walls intersecting to form a corner, a series of corner blocks arranged one above the other and cooperating to present irregular surfaces in the directions of both of said walls, the contours of said surfaces being the same, and blocks each of greater depth than said corner blocks but of various heights up to height of corner blocks, a block in one wall overlapping a block in the first layer in the other wall at the rear of said corner block, said block in the second mentioned wall overlapping a block in the second layer in the first mentioned wall at the rear of said corner block, said alternation in the overlapping of said blocks being carried to the top of the wall.

4. A building wall of preformed artificial stone blocks of a limited number of sizes assembled in a series of uniformly constructed units having a cruciform outline disposed symmetrically about vertical and horizontal axes of the unit, successive units being in inverted relation to each other, and intermediate units of dumb-bell-like contour cooperating with said cruciform units to form a continuous wall face the adjacent blocks of which are of different widths and heights to produce a patterned wall having the appearance and bonding effectiveness of broken ashler masonry.

5. In a building wall, a series of uniformly constructed units; each unit comprising a plurality of blocks each of which is adjacent to others of different width and height, said blocks collectively providing the unit with a generally cruciform contour disposed symmetrically about a vertical axis; and other units of dumb-bell-like contour between adjacent cruciform units, the blocks of said units cooperating to produce a broken ashler appearance and bonding effect although the assembled arrangement of blocks in each unit is repeated lengthwise of the wall.

6. A building wall of preformed artificial stone blocks of a limited number of sizes assembled in a series of uniformly constructed units of cruciform contour, each comprising a group of blocks each block being adjacent to other blocks differing therefrom in widths and heights, and units of blocks intermediate said cruciform units, each of said intermediate units being of dumb-bell-like contour; some horizontal joints between the blocks of a cruciform unit being continuous

with joints in the adjacent dumb-bell units and other horizontal joints in the cruciform unit being disaligned with adjacent joints in the dumb-bell units, at least some horizontal joints of each cruciform unit being disposed asymmetrically of the horizontal axis of the unit and alternate cruciform units being inverted whereby the uniform contour and structure of duplicate units is rendered unnoticeable and a wall is produced having the appearance and bonding effectiveness of broken ashler construction.

In testimony whereof we hereunto affix our signatures this 27th day of April, 1929.

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