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MULTIPLE SECTION HOLLOW WALL CONSTRUCTION.

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1,298,026. Patented Mar. 25, 1919.

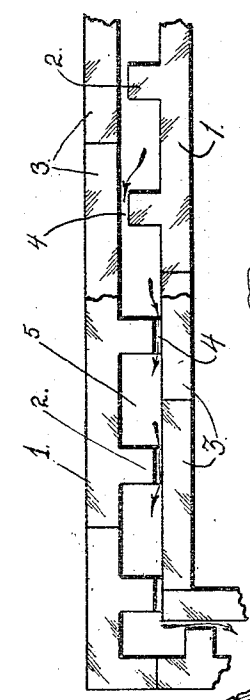

Fig. 2.

Fig. 1.

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To all whom it may concern:

Be it known that I, JOHN A. FERGUSON, a citizen of the United States, residing at the city and county of Denver and State of Colorado, have invented certain new and useful Improvements in Multiple Sectional Hollow-Wall Constructions; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in hollow walls of the type embodying parallel spaced wall body sections, the broad aim of which generally is to provide for maximum strength and desired thickness, with vertical air ducts throughout the structure, and at the same time to materially reduce the cost of construction without sacrificing stability.

As a rule these walls are built up in horizontal courses employing concrete building blocks of varying forms and providing lateral spacing webs between the wall body sections, all as well understood in the art.

In constructing my improved wall, I also employ such a type of building block but in connection with flat slab elements, although it may be stated at the outset that, in the instant case, I make no claim to the specific formation of the blocks or the slab elements *per se*, the advantageous object and primary essence of my invention residing in the combined relation and arrangement of such blocks and slab elements as associated in the production of a novel wall structure itself, resulting from the manner of so setting the block and slab elements that, in one course, the blocks form the component elements of the outer wall body section, while the slabs form the component elements of the inside wall body section, the blocks and slabs of the outer and inner wall body sections being reversely disposed in transposed relation, as a bodily whole, in alternate courses of the wall.

Other advantages, in more minor details of structure, will appear from the following disclosure, and the particular features of novelty of the improved wall structure will be succinctly set forth in the appended claim, but in order to more clearly understand the same reference is had to the accompanying drawings, forming a part of this application, in which drawings like parts are designated by the same reference numerals in the two views, of which—

Figure 1, is a perspective view of a corner section of a wall employing the principles of my invention as embodied in a thick wall of multiple sections, and

Fig. 2, is a fragmentary plan view of a two-section wall, the upper course being so terminated as to clearly show the disposition of the webbed blocks and slabs of one course relatively to the next succeeding courses.

In carrying out the present invention, the blocks and slab elements, respectively, are of appropriate design and dimensions, and while it will be obvious that I need not limit myself to a block of the double-lug type, still this is an expedient and desirable form for illustration.

As shown in the drawings, therefore, the blocks employed, excepting at the corners, comprise a flat surfaced base 1 having laterally disposed spacing webs 2 projecting from one side, the webs being of uniform length or depth.

The remaining elements of the wall consist of the flat or slab elements 3, of the same dimensions as the base of the blocks 1.

With these two basic elements the improved wall is built up as follows:—

Referring first to the two-section wall of Fig. 2, the lower horizontal course of blocks and slabs (at the right of the figure) illustrate the slab elements 3 as laid in the plane of the outer wall body section, while the flat surfaced bases of the blocks 1 lie in the plane of the inner wall body in the same course, and as shown the end faces of the webs 2 may preferably be slightly spaced from the inner faces of the slab elements 3 to form air passages 4 opening communication, in the same course, between the vertical rows of air ducts 5 of the whole wall.

In the upper course, shown at the left of the figure, the positions of both the blocks 1 and the slabs 3 have been shifted or completely transposed as bodily sets, so that in this course, the slabs 3 reversely form the component elements of the inner wall body section, while the bases of the blocks 1 now provide the component elements of the outer wall body section, the spaced ends of the webs 2, in this course, forming the air passages 4 on the opposite inside face of the wall.

Thus the elements 1 and 3 are shifted or transposed, in alternate courses, throughout the whole wall structure.

In the multiple construction, shown in Fig. 1, there are introduced intermediate block wall sections, between the outer and inner wall body sections, to increase the wall to any desired thickness.

The generic principle involved, however, is the same in both structures, in that the inner and outer wall body sections, comprising the interior and exterior surfaces of the complete wall, are respectively formed of block and slab elements 1 and 3, in alternate courses.

In Fig. 1, the bases of the blocks 1 are shown as forming the lower course of the outer wall body section, while the slabs form the inner wall body section of that course, the blocks of the intermediate wall sections being similarly disposed to the blocks 1 of the outer wall body section, with their webs extending inwardly in the direction of the slab elements of that course.

In the second course, as illustrated, the bases of the blocks 1 are set in the plane of the inner body wall section, while the slabs 3 are located in the outer wall body section, the said elements having been completely transposed, as heretofore described with reference to Fig. 2. The blocks of the intermediate wall sections, have not been completely transposed in the sense of the blocks and slabs of the inner and outer wall sections, but they have been turned over in a position reversely to that of the lower course, and with their webs now directed in an opposite direction or toward the slab elements in the outer wall section.

In the third, or upper course shown, the elements of the outer and inner wall sections have been again completely transposed and the intermediate webbed blocks reversed in position, so that the several parts again assume the positions of the lowermost course.

Thus in every alternate course there is a complete interchange of elements relative to the adjacent upper and lower courses.

It is apparent that the intermediate block sections, do not change the essential wall structure, excepting that they act as a substantial supporting filler between the outer and inner wall sections proper to satisfactorily increase the width of the wall as desired, and this in many instances is very desirable, as for example in packing house or analogous structures, wherein a thoroughly heat resisting wall is essential.

The multiple section wall construction has a further decided advantage in the building of tall structures, requiring a substantially thick lower or base foundation wall, which may readily be decreased in thickness, in accordance with building regulations, as the building progresses in height, the upper stories being provided for with a nine inch double wall as in Fig. 2, and this being accomplished, without the employment of reducing elements, other than the same size double-lug blocks and slabs employed throughout.

The multiple section wall construction also provides for the air spaces or passages 4 and vertical air ducts 5, as in Fig. 2, and it will of course be understood that, in both the double wall and multiple wall structures, as is obvious from the drawings, the block bases and the slabs of the inner and outer wall sections and the blocks of the intermediate wall sections are so laid as to break joints, the oppositely disposed webs 2 resting one above the other, in vertically alining rows, and being cemented together by a layer of mortar as the courses are laid, thus interbonding or tying the wall sections securely to each other.

It may be repeated that I lay no claim to the specific elements of the wall as such, nor to the broad idea of a hollow sectional wall, other than encompassed by the scope of my invention as set forth in the ensuing claim, but what I do claim as patentably novel, is:—

In hollow wall construction, an inner and an outer wall, substantially spaced apart, each built up of rows of plane-surfaced slabs alternating with rows of laterally webbed building blocks of uniform dimensions, with the slabs and blocks of one wall disposed complementally of the blocks and slabs of the other wall; and one or more intermediate walls composed wholly of laterally webbed building blocks of congruent dimensions with those aforesaid; all of the building blocks, in all of the walls containing them in any same horizontal course, being laid with their webs projecting in the same direction, with the adjacent end faces of the blocks abutting without spacing therebetween, and with the end faces of their webs terminating on the same side of the opposed surface of a contiguous wall; while in alternate courses the said blocks are reversely set to provide for the vertical alinement and interbonding of complemental webs, substantially as described.

In testimony whereof I affix my signature.

JOHN A. FERGUSON.