No. 826,777. PATENTED JULY 24, 1906.

J. A. FERGUSON.

BUILDING BLOCK AND WALL.

APPLICATION FILED NOV. 14, 1905.

3 SHEETS—SHEET 1.

Fig. 1.

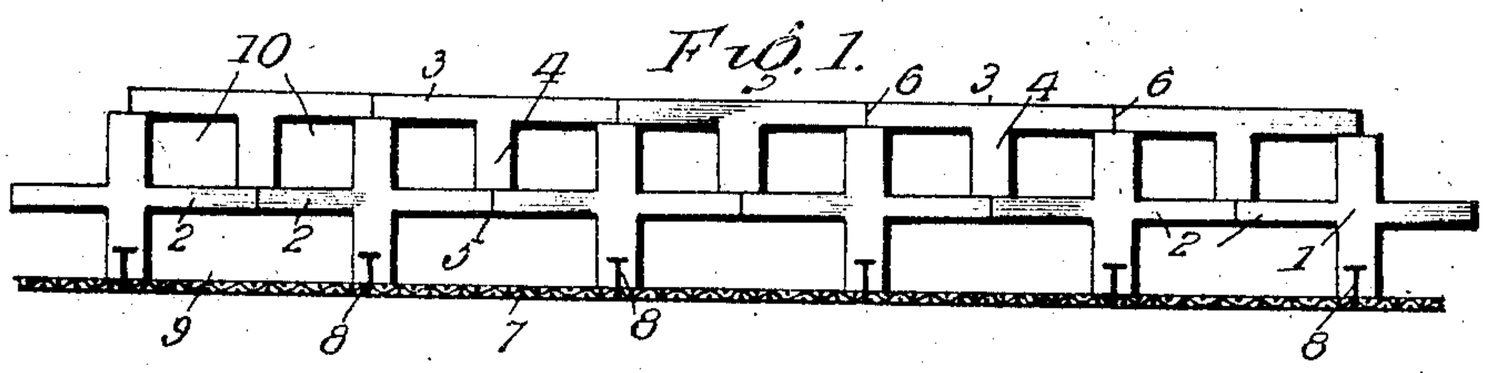


Fig. 2.

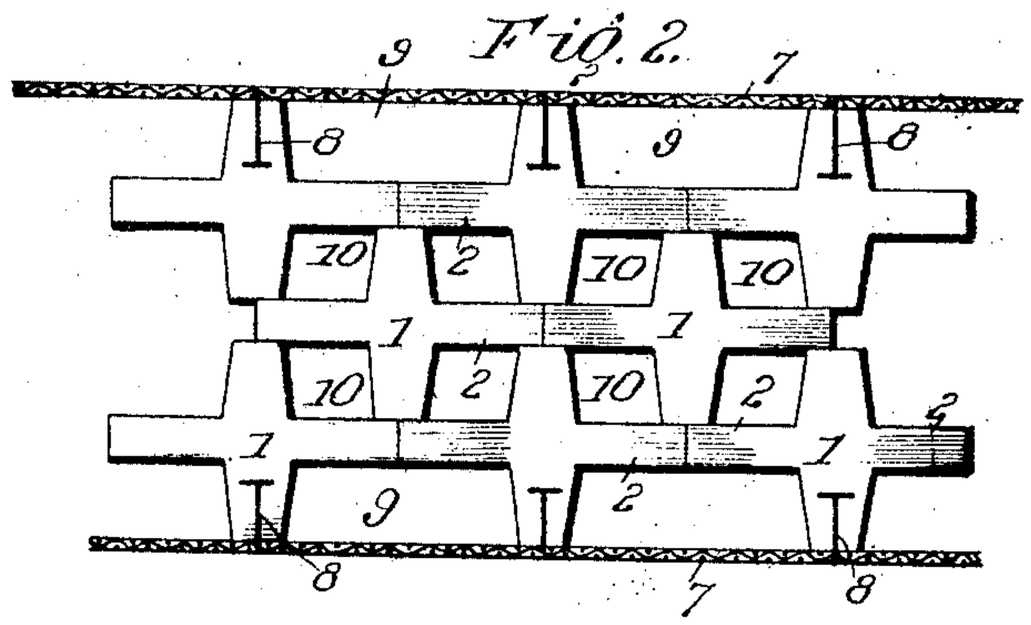


Fig. 3.

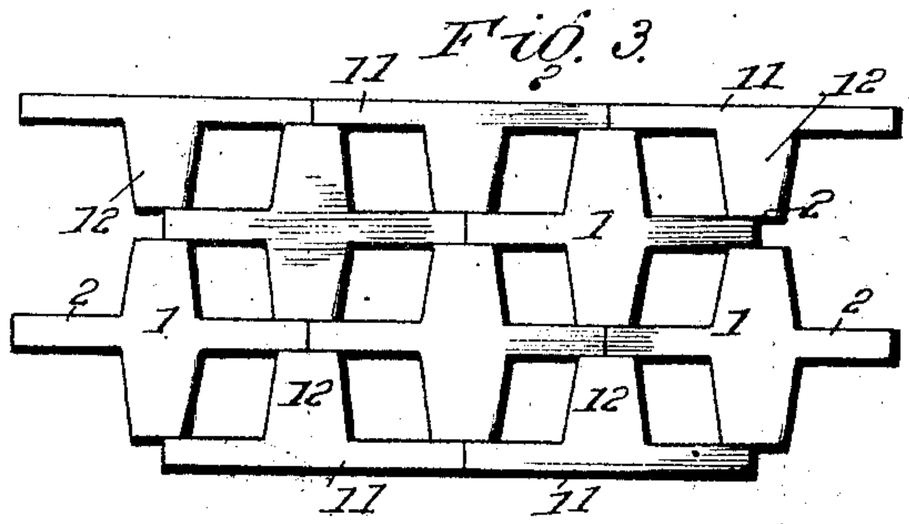
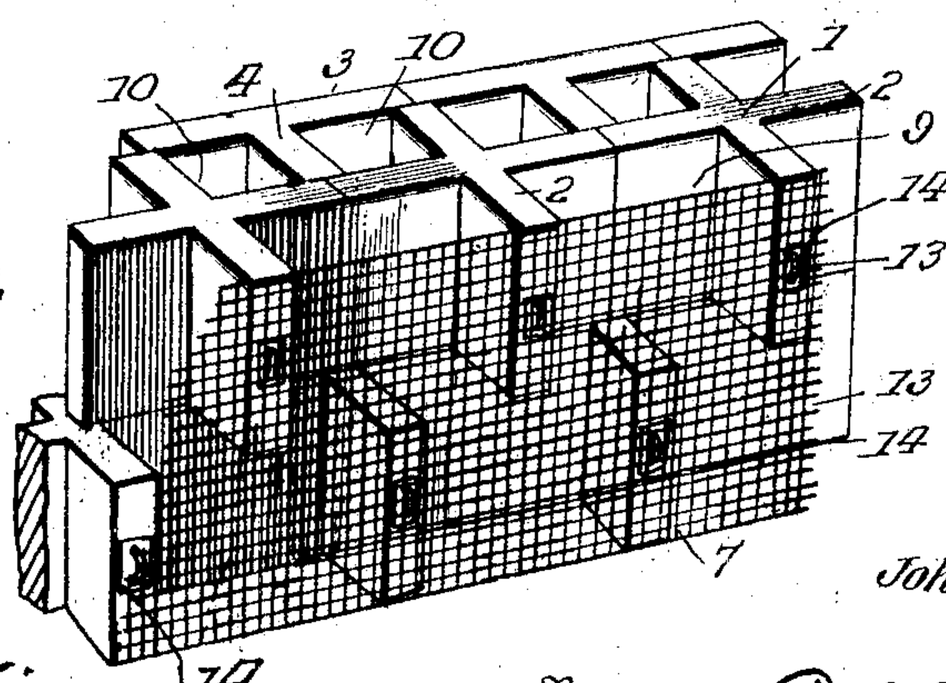


Fig. 4.



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3 SHEETS—SHEET 2.

Fig. 5.

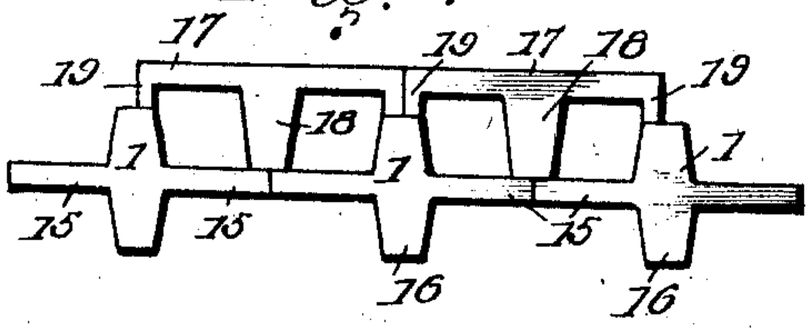


Fig. 6.

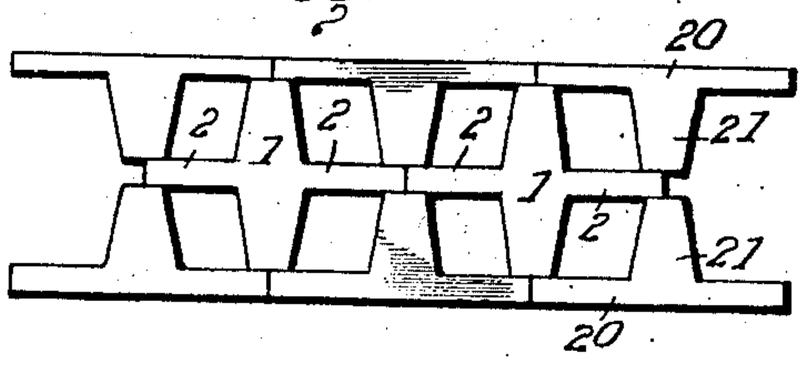


Fig. 7.

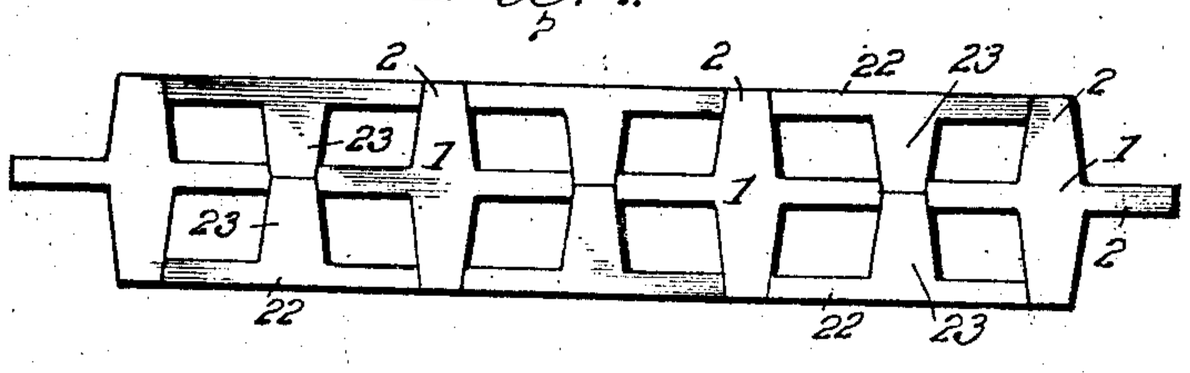


Fig. 8.

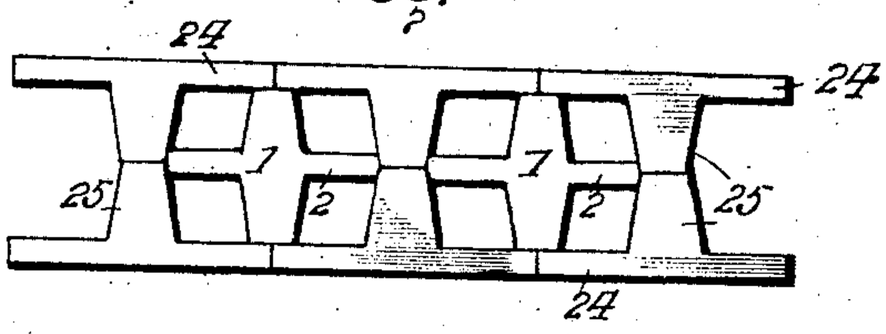
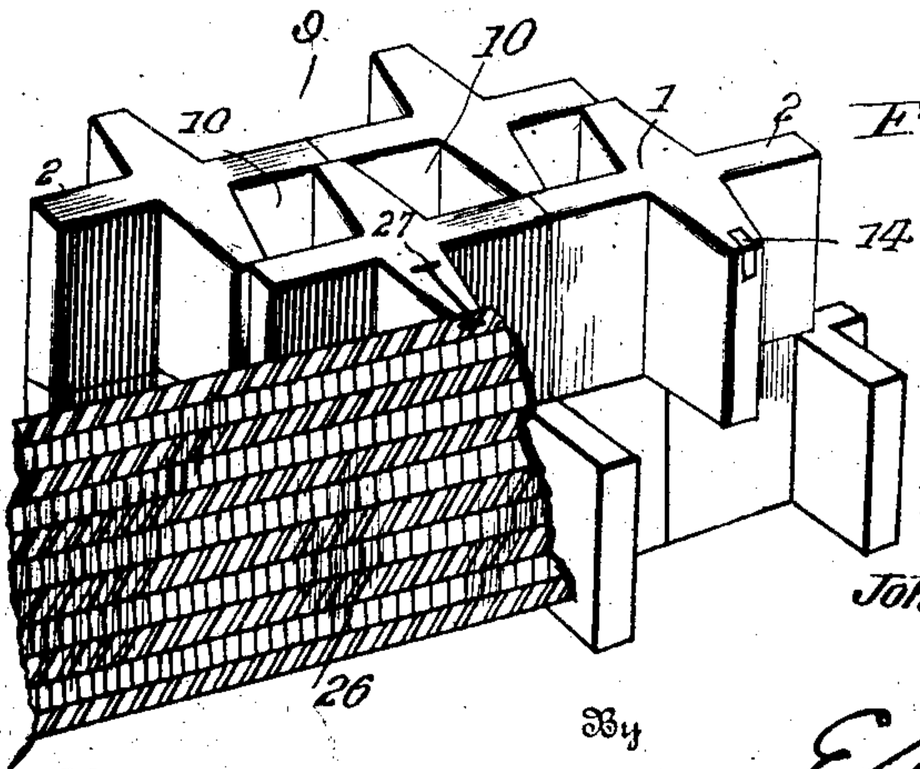


Fig. 9.



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No. 826,777. PATENTED JULY 24, 1906.

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BUILDING BLOCK AND WALL.

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3 SHEETS—SHEET 3.

Fig. 10.

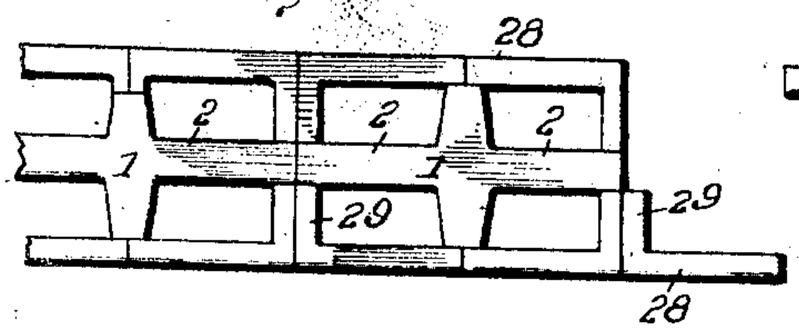


Fig. 11.

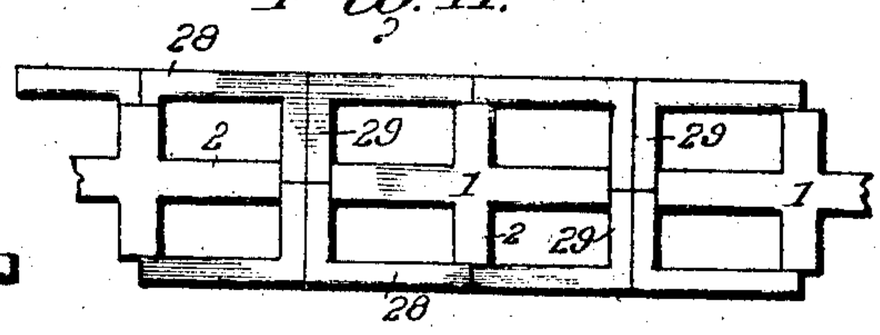


Fig. 12.

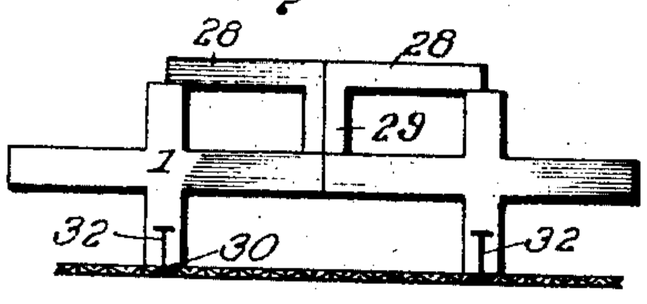


Fig. 13.

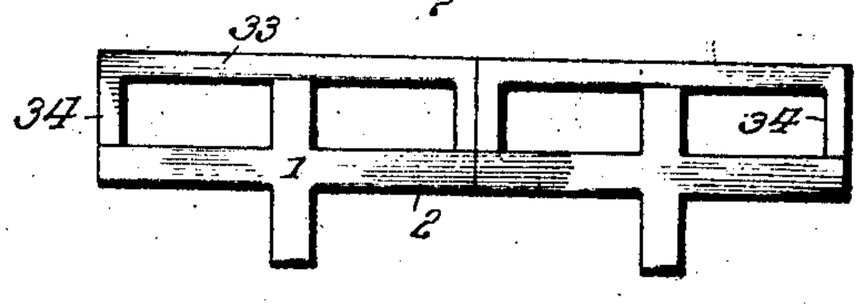


Fig. 14.

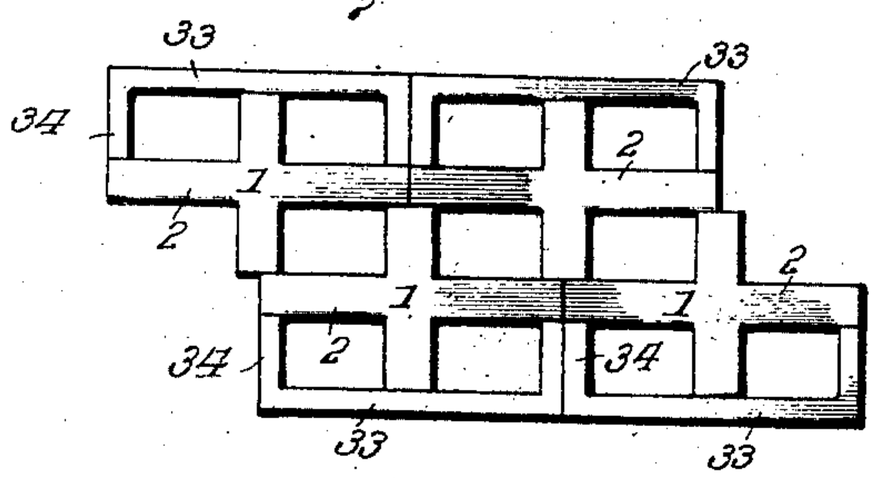
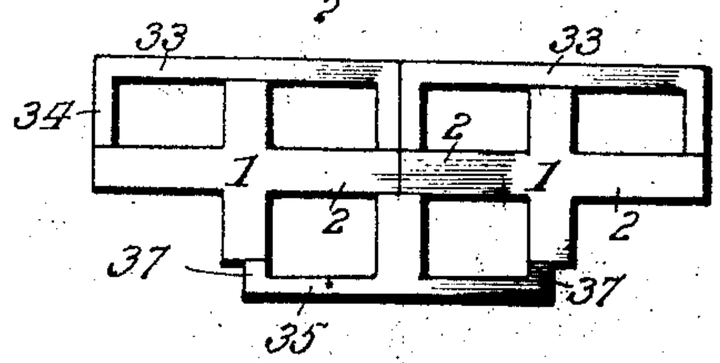


Fig. 15.



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UNITED STATES PATENT OFFICE.

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BUILDING BLOCK AND WALL.

No. 826,777. Specification of Letters Patent. Patented July 24, 1906.

Application filed November 14, 1905. Serial No. 287,294.

To all whom it may concern:

Be it known that I, JOHN A. FERGUSON, a citizen of the United States of America, and a resident of Denver, in the county of Denver and State of Colorado, have invented certain new and useful Improvements in Building Blocks and Walls, of which the following is a specification.

This invention relates to certain new and useful improvements in building blocks and walls, the latter whether made of blocks after they are made and cured or whether the wall is made by the use of molds or forms laid on the course below which is already hardened, and tamping the material into these forms and withdrawing the latter to allow said material to cure and harden in position on the wall.

The present invention has for its objects, among others, to provide a multiple air-space construction of wall which may be built up of any required thickness with a stone facing or with any suitable outside as well as inside finish, the latter being metal lath, wood lath, expanded metal, or other suitable material attached to the arms of the blocks by fastening devices embedded in the arms or the mortar joints. The facing-blocks may be provided each with a single arm or a multiplicity of arms, and these may be bonded in the wall in any suitable manner.

By the present construction I provide a wall having multiple air-spaces throughout the thickness of the wall and insure a strong and well-bonded construction suitable for all purposes and capable of being built up of previously-constructed blocks or by molding the same on the wall.

Other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be particularly pointed out in the appended claims. The invention is capable of embodiment in a variety of forms, some of which are herein illustrated.

The invention in its preferred form is clearly illustrated in the accompanying drawings, which, with the numerals of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a plan view of a portion of a wall constructed in accordance with my present invention. Fig. 2 is a similar view showing another embodiment of the invention. Fig. 3 is a similar view of still another form. Fig. 4 is a perspective view of a portion of a wall such as is shown in Fig. 1. Fig. 5 shows in plan still another form of embodiment of the invention. Fig. 6 is a like view of still another form. Fig. 7 shows yet another form. Fig. 8 shows a similar view of the embodiment of the form shown in Fig. 7. Fig. 9 is a perspective view of a portion of a wall embodying the invention and showing a portion of the metallic sheathing secured to the arms of the block. Fig. 10 shows a different form of wall employing one-armed facing-blocks. Fig. 11 shows another form of wall employing similar blocks. Fig. 12 is a perspective view of a similar wall with a block facing on one side and lathing upon the other. Fig. 13 illustrates another form of wall embodying the essence of the present invention. Fig. 14 is still another form of wall, while Fig. 15 illustrates another form of wall embodying the same form of blocks as seen in Figs. 13 and 14.

Like numerals of reference indicate like parts throughout the several views.

Referring now to the details of the drawings, it will be noted that in each and every embodiment of the invention therein illustrated I employ a four-armed block 1, the arms 2 of which project preferably at right angles to each other from the four sides of the block. These arms may be all of the same length or of different lengths, as may be deemed most expedient or as best suited to the character of wall to be constructed.

In Fig. 1 the blocks 1 are laid with the adjacent arms 2 of adjacent blocks abutting, and the facing for the wall is composed of facing-blocks 3, each having an arm 4 projecting at substantially right angles therefrom at its center. In laying the wall the arms 4 are disposed opposite the joints 5 between adjacent arms 2, while the joint 6, between the adjacent ends of adjoining blocks 3, come opposite the arm of the block 1, extending at right angles to the abutting arms 2. The opposite face of the wall is composed of any suitable plaster-retaining material 7, which may be wire-netting, as shown, or metal or wood lathing, or any of the materials commonly used for such purposes. The plaster-retaining material is secured to the arms 2 of the block 1 by suitable means, as metal stays or fastenings 8, embedded in the arms or mortar joints. It is to be noted that by this construction I provide multiple air-spaces in the depth of the wall and that the air-space 9 is substantially

twice as large as the air-spaces 10 upon the opposite side of the abutting arms 2.

In Fig. 2 I have illustrated a wall composed entirely of the blocks 1 with their arms 2, the blocks being arranged three in depth and the blocks upon the two faces of the wall having their arms 2 abutting, while the blocks in the intermediate row have their arms 2 abutting and bonded between adjacent arms of the blocks in the inner and outer rows. The plaster-retaining material 7 in this form is secured to the opposite faces of the wall by metallic bonds or stays 8, embedded in the arms or mortar joints. It will be noted that in this form also the air-spaces 9 are substantially twice the size of the air-spaces 10.

In Fig. 3 I have shown a wall composed of two rows of the blocks 1 with their arms 2, said wall being faced upon opposite sides with blocks 11, having each a single arm 12, the arms 12 and the arms of the blocks 1, which extend in the same direction as said arms 12, having their opposite sides inclined, as are also the sides of the arms 12. Said arms 12 overlap the joints between adjacent arms 2, and the adjacent ends of adjoining blocks 11 come opposite the right-angled arms of the blocks 1.

In Fig. 4 I have shown substantially the form of wall shown in Fig. 1, except that the plaster-retaining material 7 is secured to the arms 2 of the blocks 1 by means of staples or the like 13, secured in blocks 14, molded into said arms.

In Fig. 5 I have shown a wall composed of blocks 1, having four arms, the arms 15 of which, however, are longer than the arms 16. The outer face of this wall is composed of facing-blocks 17, each having a central long arm 18 and two short arms 19, one near each end. The long arm 18 abuts against the adjacent ends of adjoining arms 15, while the short arms 19 engage the adjacent ends of the arms 16. The opposite face of the wall may be of any desired nature. The short arms 19 are substantially one-half the thickness of the arms 16, as shown. In this form the air-spaces upon one side of the arms 15 are substantially twice the size of those upon the other side.

In Fig. 6 is shown a wall composed of the blocks 1 with their arms 2, and facing-blocks 20 upon opposite sides, each of the facing-blocks 20 having a single central arm 21, the adjacent ends of adjoining blocks 20 abutting and engaging the arms 2 of the blocks 1.

In Fig. 7 is shown a wall of the same nature as that seen in Fig. 6, except that the facing-blocks 22, each with a single central arm 23, are disposed with their ends between the adjacent arms 2 of the blocks 1, and the adjacent arms 23 abut and are disposed between the other arms 2 of said blocks 1, so that the outer faces of the facing-blocks are flush with the outer ends of the arms 2. In this instance the ends of the facing-blocks 22 are inclined and engage the oppositely-inclined faces of the arms 2, making a wedge-joint.

In Fig. 8 is shown another variety of wall composed of the same form of blocks as in Fig. 7; but the blocks 1, with their arms 2, are confined entirely between the faces and arms of the facing-blocks 24, the arms 25 abutting, as do the adjacent ends of the facing-blocks, and the ends of the arms 2 of the blocks 1 being disposed within the spaces thus formed and abutting against the abutting ends of the arms 25 and the ends of the facing-blocks.

In Fig. 9 is shown a wall composed entirely of the blocks 1 with their arms 2, the blocks being two in depth, and the air-spaces 9 on one side of abutting arms being substantially twice the size of the air-spaces 10 upon the opposite side thereof. The plaster-retaining material 26 is secured to the arms 2 by metallic stays 27, as seen at the left of said figure, which stays are embedded in the arms or mortar joints, or it may be secured in place by stays engaged in the blocks 14, molded in the arms, as seen at the right of said view and as described above in connection with Fig. 4.

It is to be understood that in all the forms of wall above described the blocks are laid in courses, one upon the other, so as to break joint, and the arms of the blocks 1 and of the facing-blocks are bonded to each other and in the wall.

The facing-blocks may be formed with one, two, three or more arms, as may be found most expedient, all of such forms of facing-blocks being applicable for use in connection with my blocks 1.

Fig. 10 shows one form of wall with a one-armed facing-block. In this form the blocks 1, with their arms 2, form the intermediate layer, and the facing-blocks 28, each having an arm 29 at one end at right angles thereto, constitute the inner and outer facings of the wall. In this form the arms 2.2 of the adjacent blocks 1 abut, and the arms 29 of two adjacent facing-blocks lie parallel with each other and abut against the abutting arms 2. The adjacent ends of two adjoining facing-blocks come opposite the other arms 2 of the blocks 1.

In Fig. 11 I have shown a wall composed of the same forms of facing and intermediate blocks, but slightly differently arranged. In this form the adjacent arms 2 are separated, and the adjacent arms 29 of the facing-blocks on opposite sides of the wall abut and are received between the arms 2, the effect being substantially the same.

In Fig. 12 I have shown another form of wall in which the blocks 1 have four arms, one, 30, of which is shorter than the others

and have secured thereto the lath or other plaster-retaining material 31, secured thereto by metal stays or the like 32. The facing-blocks 28, with their arms 29, are arranged upon the opposite side of the wall in the same manner as are the similar arms in Fig. 10.

In the form shown in Fig. 13 the facing-blocks 33 have each two arms 34, one near each end, these arms engaging at opposite ends of two of the arms 2 of the blocks 1, the intermediate arm 2 engaging the inner face of the facing-block at substantially its center. This form of construction may be employed either with a plaster-retaining material upon the face opposite the facing-blocks or, as seen in Fig. 15, with another row of facing-blocks 35, each with a central arm 36 and two shorter end arms 37. In this instance the long arm 36 is disposed upon one side of the joint between two arms 2 of the blocks 1 and opposite the two adjacnt arms 34 of two facing-blocks 33 upon the opposite side of the wall, or, as seen in Fig. 14, if a thicker wall is desired, I employ two rows of blocks 1 and facing-blocks 33, with arms 34, upon opposite sides of the wall, or the one side may be provided with a plaster-retaining material in lieu of the facing-blocks and secured to the arms 2 of the blocks 1.

From the above it will be seen that I have devised a most desirable form of wall and that in all the different embodiments hereinbefore described there is the generic feature or basic principle of the four-armed blocks with a multiplicity of air-spaces in the depth of the wall, with means for bonding all the courses and a finish for both sides of the wall, and while the forms of embodiment herein shown constitute what I at present consider the preferable ways of carrying out the invention I do not wish to be restricted to the details and relative proportions of parts hereinbefore disclosed, but reserve the right to make such changes, variations, and modifications as come properly within the scope of the protection prayed.

What I claim as new is—

1. A wall comprising blocks each consisting of two intersecting portions having four arms at substantially right angles to each other, each block being of a height greater than the length of any of its arms, and a facing to said wall composed of blocks having right-angled arm projecting from one side only thereof, with the arms bonded with the arms of the said blocks and their abutting ends disposed opposite the joints of the four-armed blocks.

2. A wall comprising blocks arranged in a multiplicity of rows horizontally, each having four arms at substantially right angles to each other, said blocks being of a height greater than the length of any of its arms, and facing-blocks each having a plurality of arms projecting from one side only thereof and bonded into the wall with a plurality of arms of several of the first-mentioned blocks.

3. A wall comprising four-armed blocks each comprising two intersecting strips formed of arms, and facing-blocks each having an arm bonded into the wall with a plurality of the arms of several of the first-mentioned blocks, said four-armed blocks being of greater height than the length of either of its arms, said wall having a plurality of air-spaces in depth.

4. A wall composed of four-armed blocks each comprising two intersecting strips formed of arms, armed facing-blocks with which a bond for all courses is made and providing a hollow wall with a plurality of air-spaces in depth, said four-armed blocks being of greater height than the length of either of its arms.

5. A wall composed of four-armed blocks, each comprising two intersecting strips formed of arms, armed facing-blocks for one side of the wall with which a bond for all courses is made and providing a hollow wall with a plurality of air-spaces in depth, said four-armed blocks being of greater height than the length of either of its arms, and means bonded into the opposite face of the wall, and having portions received between arms of the four-armed blocks.

Signed by me at Denver, Colorado, this 9th day of November, 1905.

JOHN A. FERGUSON.

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