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DRAFTSMAN.

No. 855,657. PATENTED JUNE 4, 1907.

A. B. NICHOLS.

INTERLOCKING BUILDING BLOCK.

APPLICATION FILED FEB. 8, 1907.

2 SHEETS—SHEET 1.

Fig. 1.

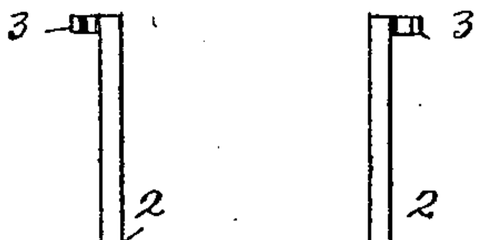


Fig. 3.

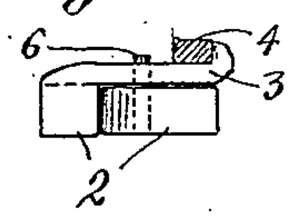
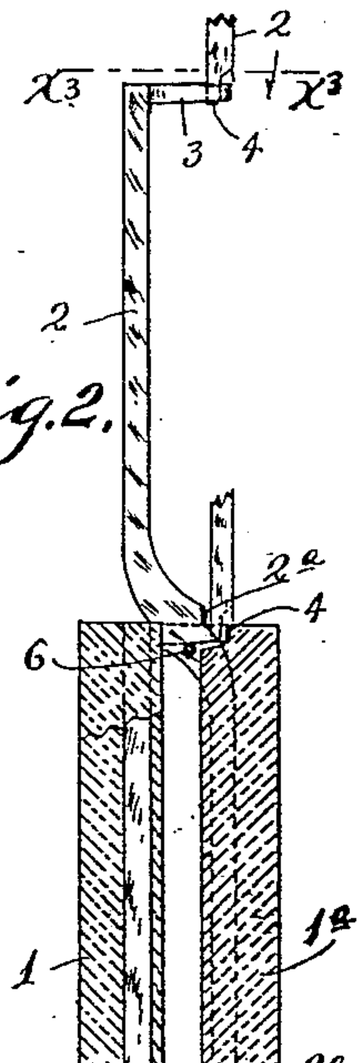


Fig. 2.



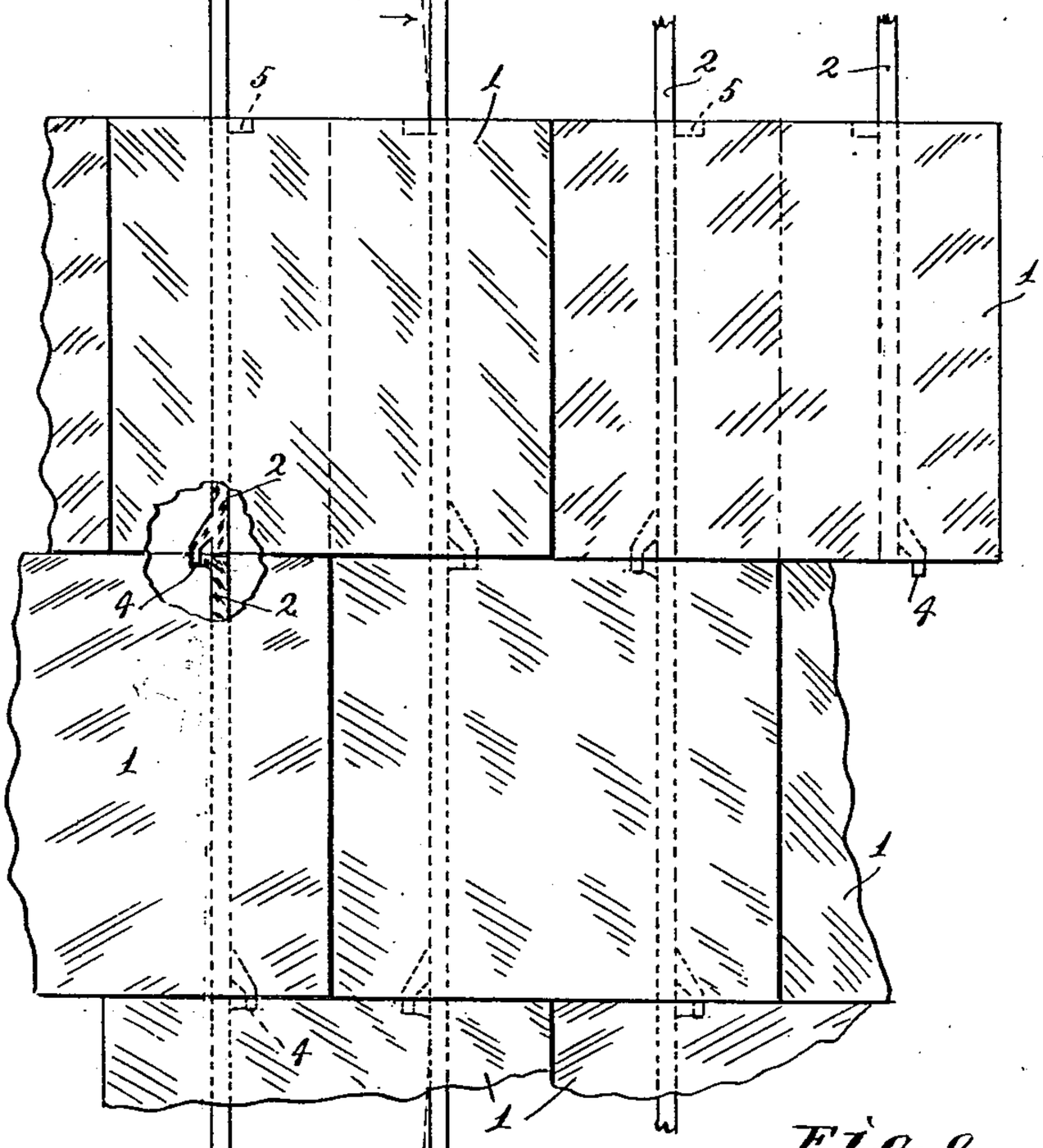


Fig. 9.

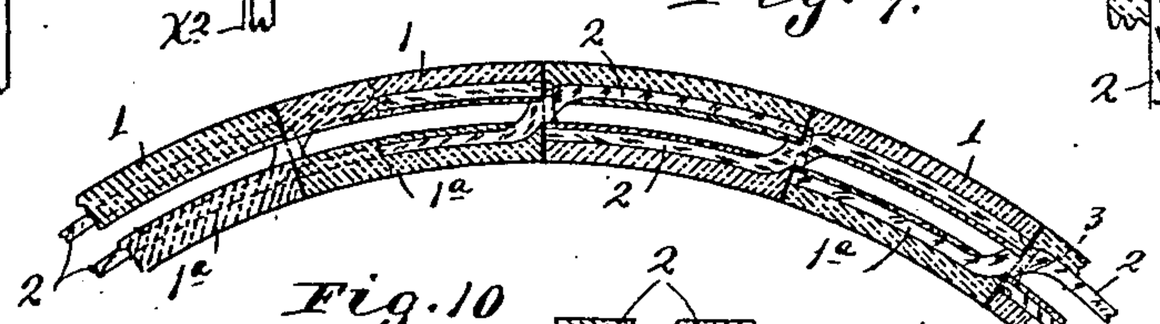
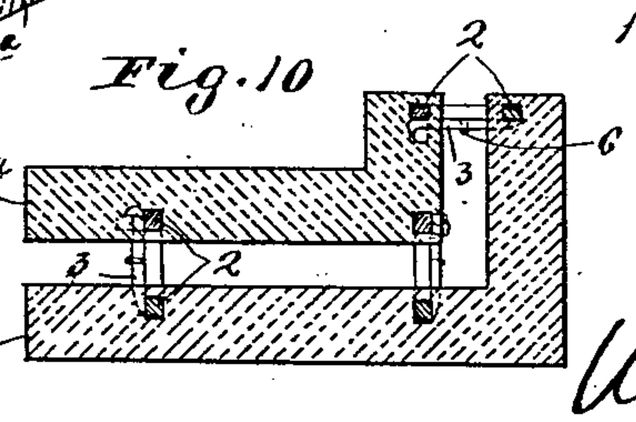


Fig. 10



Witnesses.
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[redacted] Meta. reinforced.

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2 SHEETS—SHEET 2.

Fig. 7.

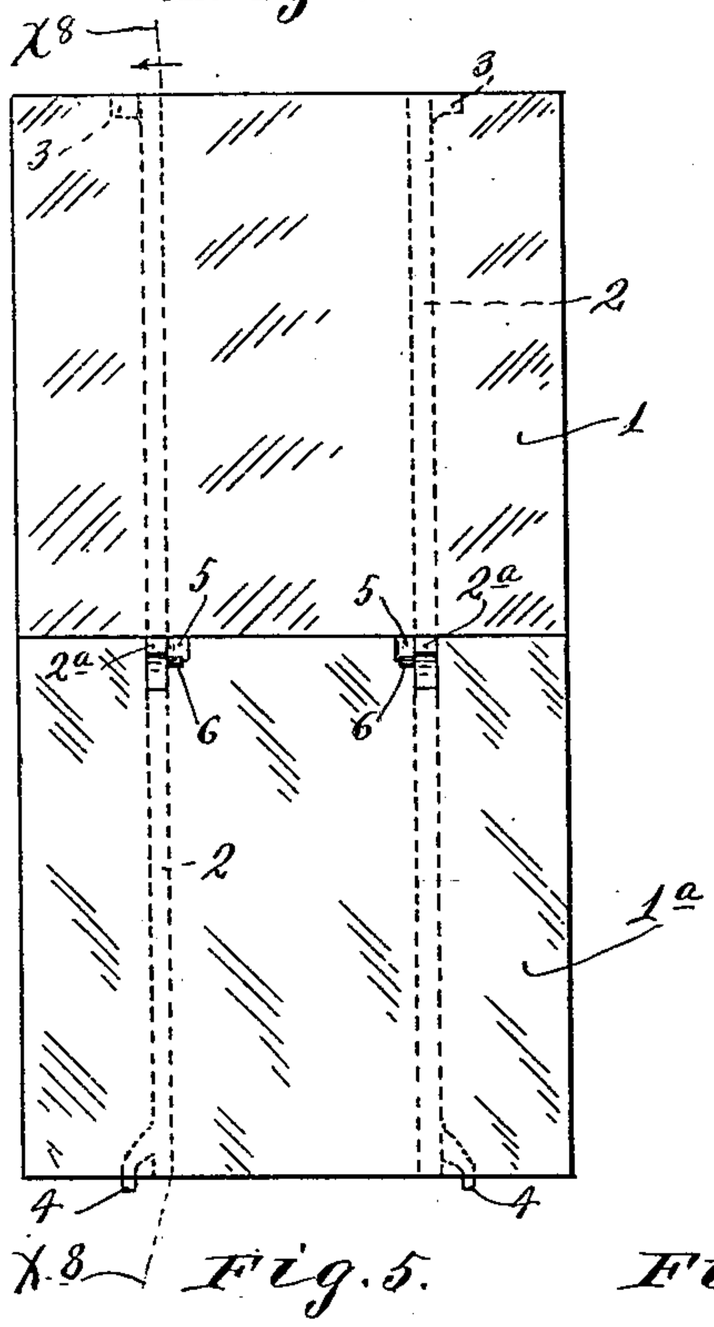


Fig. 8.

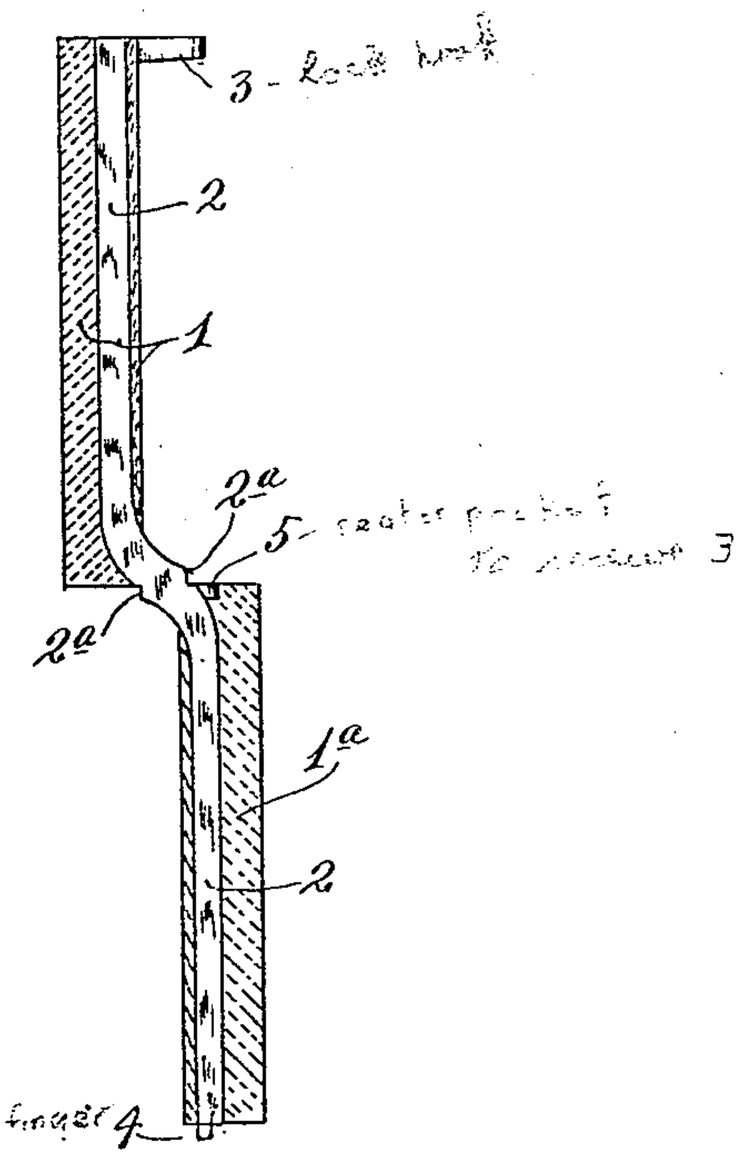


Fig. 5.

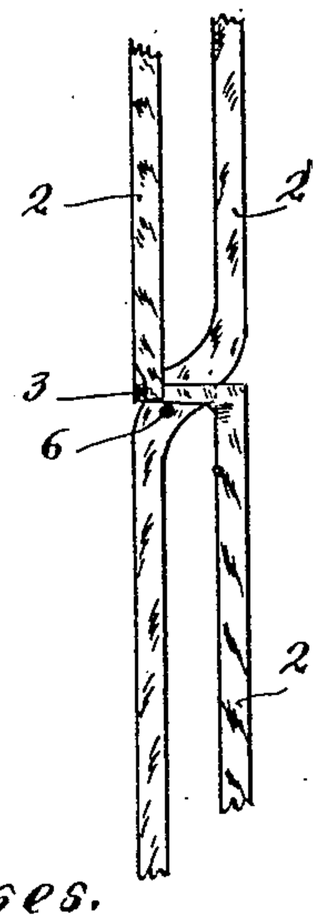


Fig. 4.

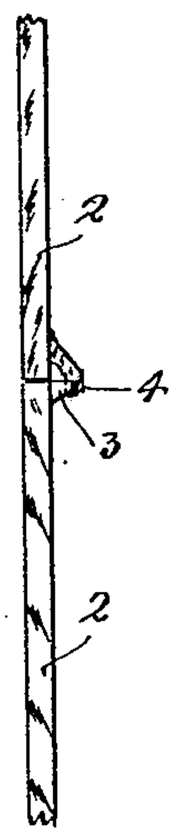
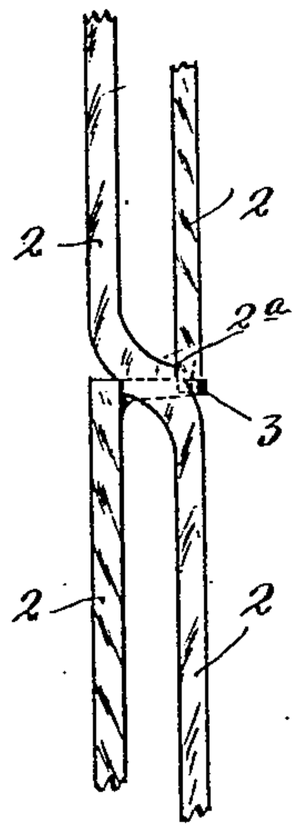


Fig. 6.



Witnesses.
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UNITED STATES PATENT OFFICE.

ATHERTON B. NICHOLS, OF HASTINGS, MINNESOTA.

INTERLOCKING BUILDING-BLOCK.

No. 855,657. Specification of Letters Patent. Patented June 4, 1907.

Application filed February 8, 1907 Serial No. 356,309.

To all whom it may concern:

Be it known that I, ATHERTON B. NICHOLS, a citizen of the United States, residing at Hastings, in the county of Dakota and State of Minnesota, have invented certain new and useful Improvements in Interlocking Building-Blocks; 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.

My invention relates to concrete or other artificial building blocks or sections, and is particularly directed to the improvement of metallic reinforcements therefor, arranged to interlock and thereby tie the blocks or sections securely together in coöperative relation to each other.

The invention is well adapted for incorporation either in vertical walls, arches, roofs or floors.

In its preferred form it is illustrated in the accompanying drawings, wherein like characters indicate like parts throughout the several views.

Referring to the drawings, Figure 1 is a view in elevation, with some parts broken away, showing a portion of a wall made up of my improved reinforced and interlocking blocks. Fig. 2 is a vertical section taken approximately on the line x^2 x^2 of Fig. 1. Fig. 3 is a detail in horizontal section on the line x^3 x^3 of Fig. 2. Fig. 4 is a detail in edge elevation, illustrating the form of the interlocking connection between three abutting metal reinforcements. Fig. 5 is a view of the part shown in Fig. 4 turned toward the left. Fig. 6 is a view of the part shown in Fig. 4, turned toward the right. Fig. 7 is a view in elevation, showing in detail one of the complete blocks. Fig. 8 is a section taken on the line x^8 x^8 of Fig. 7. Fig. 9 is a view in vertical section, illustrating my invention as applied to an arch, such as an arched roof; and Fig. 10 is a detail view in horizontal section, indicating the construction and manner of connecting corner blocks.

Referring first to the construction of a block as shown in Figs. 7 and 8, it will be seen that the body of the block, as made up of two laterally offset portions 1 and 1^a, the latter of which is located with its upper edge approximately in horizontal line with the lower edge of said section 1. These two sections 1 and 1^a are preferably constructed of concrete and they are rigidly tied together by a pair of metallic reinforcing bars 2 that are embedded therein except at the intermediate portions where they extend from the one block section to the other. At their junction with the block sections 1 and 1^a, the bars 2 are preferably formed with alining shoulders 2^a. At their upper ends, said bars 2 are formed with laterally projecting lock hooks 3, and at their lower ends, they are provided with laterally offset depending lock fingers or projections 4, the ends of which, it will be noted, project below the lower edge of the block section 1^a. It will also be noted that the lock hooks 3 and lock fingers 4 project on the outer sides of the reinforcing bars 2. Each lower block section 1^a at its upper edge, just inward of the intermediate portions of the bars 2, is provided with seats or pockets 5 that are adapted to receive the hooks 3 of lower blocks. The numeral 6 indicates pins, lugs or other projections that extend inward from the intermediate portions of the bars 2, for a purpose which will presently appear.

Figs. 1, 2 and 3 illustrate the manner in which my improved blocks are adapted to be put together to form a vertical wall or a floor or roof, for that matter, and it will be noted that the horizontally alined sections of the different blocks lap joints with respect to each other. It will also be noted that a continuous air space is formed between the inner and outer portions of the wall, roof or floor.

The manner in which the abutting ends of two of the metallic reinforcing bars or rods interlock with each other and with the intermediate portion of a third reinforcing bar or rod, is best shown in Figs. 4, 5 and 6, by reference to which it will be seen that the lock hook 3 of a lower bar 2 interlocks with the lock finger 4 on the lower end of an upper bar 2, and itself is held between the lock finger and the intermediate portion of the adjacent bar 2 of the third or intermediate block. Also, as best shown in Fig. 6, the lower end of the upwardly extended bar 2 and the upper end of the downwardly extended bar 2, engage the shoulders 2^a at the intermediate portion of the said latter noted intermediate bar 2. In this way, three bars or reinforcing rods are tied together at each joint and there are, of course, twice as many joints as there are blocks. It also of course follows that the overlapped blocks are rigidly coupled together without the use of cement.

If cement is used, it would be for the purpose of closing up the joints and not for the purpose of strength. The pockets 5 in the lower block sections 1^a afford clearance for the lock hooks 3. The lock pins or projections 6 prevent the hooks 3 from being uncoupled from the coöperating parts by endwise movements of one or more of the bars.

In putting the blocks together and interlocking the same as above described, the block that is being applied is given sufficient downward movement to engage its lock fingers 5 with the underlying already positioned hooks 3, and then the said block is moved with a lateral rocking motion or oscillation so as to throw the upper portion inward and carry its hooks 3 which are at the upper ends of its bars 2 into proper position and to carry their lugs or projections 6, which are at the intermediate portions of the bars 2, under the hooks 3 of the last positioned lower block. When the parts are put together as shown in Figs. 1 and 2, the interlocked reinforcing bars or rods form a multiplicity of trusses that extend from top to bottom or from one extremity to the other of the wall, roof or arch.

The construction illustrated in Fig. 9 is substantially like that already described, except that the parts are formed on curved lines and the blocks are properly formed to produce an arch or curved wall. The corner block shown in Fig. 10 may also be connected on the same general plan as that described. It will of course also be understood that the blocks may be made of any suitable sizes and that the so-called "reinforcing" bars or rods may take various forms as long as they are arranged to interlock on the general plan above described.

By reference particularly to Fig. 1, it will be noted that the lock fingers 4 of the one block engage outside of the lock hooks 3 of two underlying block sections, and thereby prevent edgewise separation of the latter.

What I claim is:

1. A building block made up of two or more laterally and longitudinally offset sections separated from each other, but reinforced and connected by one or more metal tie bars or rods, substantially as described.

2. A concrete building block made up of laterally and longitudinally offset sections separated from each other, and one or more metal bars or rods embedded therein and rigidly connecting the same, substantially as described.

3. A concrete block made up of laterally and longitudinally offset sections, and metal bars or rods embedded therein and rigidly connecting the same, the ends of said bars or rods being formed with interlocking devices engageable with coöperating ends of similar blocks, substantially as described.

4. A wall or similar body made up of a plurality of blocks, each block comprising laterally and longitudinally offset body portions, and embedded metal rods rigidly connecting the sections of said respective blocks, the said reinforcing bars having interlocking end portions whereby continuous metal reinforcements are extended longitudinally of the said wall or body, substantially as described.

5. A wall or other body having a continuous air space and made up of laterally and longitudinally offset sections, and metal reinforcing bars embedded therein and provided at their ends with interlocking devices, the several layers of blocks having lapped joints, and the alined and interlocked bars of the blocks of said wall constituting continued metal reinforcements, substantially as described.

6. A concrete block made up of the laterally and longitudinally offset sections 1 and 1^a, said sections 1^a having the pockets 5, and the metal reinforcing bars 2 embedded in and rigidly connecting the block sections 1 and 1^a, the said bars at one end being provided with lock hooks 3, at their other ends with projecting lock fingers 4, and at their exposed intermediate portions, with the stop shoulders 2^a, substantially as described.

7. A wall or other body made up of concrete blocks having laterally and longitudinally offset body portions, said blocks being laid with staggered joints, and metal bars embedded in and connecting the sections of the said blocks and provided at their ends and intermediate portions with interlocking devices whereby the alined and interlocked bars constitute an extended truss rigidly connecting the blocks, substantially as described.

8. A wall or other body made up of a plurality of concrete blocks, each block comprising sections 1 and 1^a offset laterally and longitudinally with respect to each other, and the metal bars 2 embedded in said block sections, said bars having lock hooks 3 at one end and lock fingers 4 at their other ends, the sections of said blocks being set in zig zag arrangement in respect to each other, and the hooks 3 being interlocked to abutting lock fingers 4 and to the intermediate portions of a third bar 2, substantially as described.

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

ATHERTON B. NICHOLS.

Witnesses:
MALIE HOEL,
F. D. MERCHANT.