A. J. KOPREN.

BUILDING WALL.

APPLICATION FILED MAY 19, 1909.

953,534.

Patented Mar. 29, 1910.

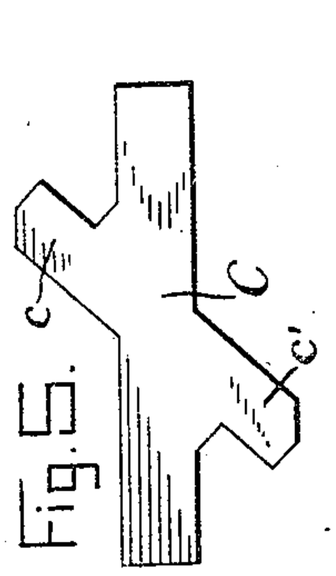

Fig. 5.

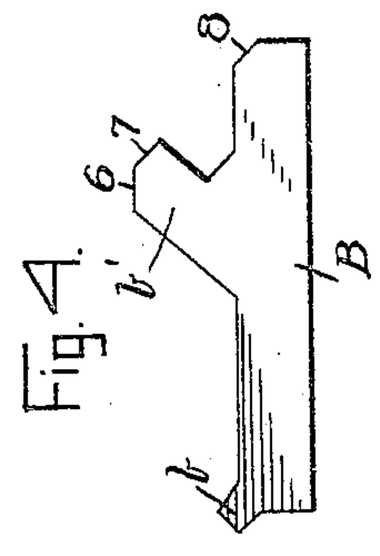

Fig. 4.

Fig. 2.

Fig. 3.

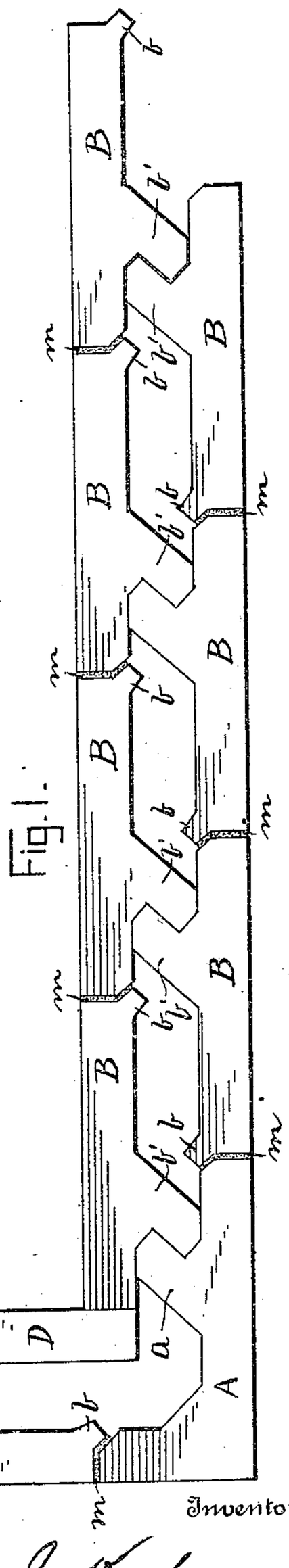

Fig. 1.

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UNITED STATES PATENT OFFICE.

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BUILDING-WALL.

953,534. Specification of Letters Patent. **Patented Mar. 29, 1910.**

Application filed May 19, 1909. Serial No. 497,101.

To all whom it may concern:

Be it known that I, AMUND J. KOPREN, a citizen of the United States, residing at Kearney, in the county of Buffalo and State of Nebraska, have invented certain new and useful Improvements in Building-Walls, of which the following is a specification.

My said invention consists in detailed improvements in the form and construction of concrete blocks for building purposes, whereby a building wall may be constructed the various parts of which are securely bonded together and a rigid wall of great strength secured, all as will be hereinafter more fully described and claimed.

Referring to the accompanying drawings which are made a part hereof and on which similar reference characters indicate similar parts, Figure 1 is a plan view of a corner section of an eight inch wall built of blocks of my improved construction, Fig. 2 a detail plan view of a portion of a twelve inch wall built of blocks of my improved construction, and Figs. 3, 4 and 5 views of several blocks employed in the construction of the wall separately.

In said drawings the portions marked A represent the outside corner blocks, B the side blocks, C the interior bonding blocks, and D the inside corner blocks. The outside corner blocks A are formed with two branches extending at right angles to each other one side being about double the length of the other side. The ends are formed at right angles with the faces for a distance and with tapered inner corners 2 and 3 respectively. A bonding lug *a* is formed on the inner face of the long side of each corner block extending rearwardly at an acute angle with the outer face of the block. The end of said bonding lug is also formed angular, being preferably formed with a face 4 parallel with the outer face of the block and with a face 5 approximately at right angles with the sides of the lug and of the same angle and parallel with the faces 2 and 3 on the inner corners of the ends of the block. Each block B is formed with a bonding lug *b* at one end extending outwardly at an angle from the end of the block and formed with a face adapted to fit against the corner face 3 of the block A or a corresponding corner of an adjacent block B. It is also formed with a bonding lug *b'* extending rearwardly from its rear side at an acute angle corresponding with the angle of the bonding lug *a* of the block A and having an angular end with faces 6 and 7 corresponding to the angles of the faces 4 and 5 of said lug *a*. The opposite end of the block is formed with a right angular face extending back for a distance and with a tapered inner corner, or face, 8 corresponding to the tapered face 3 of the block A. The inner corner block D is provided with a projecting angular bonding lug *d* at one end to engage over the angular adjacent corner of the adjacent side block B of the inner portion of the wall.

In building a single wall, such as shown in Fig. 1, only the three forms of blocks just described are necessary as it will be noted that the blocks B in the outer and inner faces of the wall are laid in reverse direction to each other and fit together with the bonding lugs *b'* engaging on their short sides or overhanging faces, the angular ends of said lugs fitting closely in the corners, or angles, between the lugs and the body of the blocks. By reason of the peculiar formation and angles of the bonding lugs, engaging with each other on their short sides or overhanging faces, the two parts of the wall, the outside and the inside, are tied together in such a manner as to hold against any lateral strain, while at the same time the blocks may be readily fitted together or separated by endwise adjustment. Each lug *b* on one end of each block B projects over the angular corner 8 of the opposite end of the adjacent block. The front and rear portions of the wall are thus securely tied together. The corner blocks A are each formed to engage with a block B on one side of the wall and at its other end with a similar block on the other side of the wall, its two tapered inner corners engaging with the tapered projecting lugs *b* of said side blocks respectively. It will be understood, of course, that in building walls one course will be laid in a reverse direction to the adjacent courses so that the angles of the bonding face in the adjacent courses will extend reversely to each other and the two portions of the wall be thus securely tied together. The voids between the angular bonding members provide efficient ventilation and permit a light but durable structure. Mortar *m* is shown in the joints between the ends of the various blocks and it will be understood may also be used in the joints between the bonding lugs if desired, as indicated at the ex-

treme right in Fig. 1, or may be left out altogether where it is not necessary.

In Fig. 2 the blocks B of both the inner and outer sides of the wall and the corner blocks A and D will be the same as shown in Fig. 1, but in order to secure greater thickness an inside wall is built up of the blocks C, each block having bonding lugs *c* and *c'* respectively extending from the opposite sides thereof and adapted to fit against and engage with the bonding lugs *b'* of the blocks B, as shown clearly in said figure. The wall is built up in the same manner as described for the wall shown in Fig. 1 except that the middle part composed of blocks C is built into the wall and its thickness thus increased for the purpose of greater strength, or rigidity, required for larger and heavier buildings. It will be understood, of course, that still greater thickness may be secured by adding another interior wall built up from another row of the blocks C. By the use of these blocks it will be seen that the several bonding lugs engage with their angular faces behind the angular faces of lugs on the adjacent blocks so that the two parts of the wall are securely locked together and prevented from spreading and each portion is compelled to bear its proportion of the weight and strain.

Having thus fully described my said invention what I claim as new and desire to secure by Letters Patent, is:

1. A block formed with an inter-locking bonding lug on its inner face projecting at an angle from a point between its ends, the inner corner at one end of a block being formed tapered and the inner corner of its other end with an angular projection, whereby it is adapted to inter-lock with a similarly formed adjacent block in wall construction, substantially as set forth.

2. A wall comprising blocks each formed with a bonding lug intermediate its length extending from the inside face of the block at an acute angle therewith, the lug of one block in the outside part of the wall engaging with a similar lug correspondingly located on the adjacent block in the inside part of the wall, said lugs engaging on their short sides or overhanging faces, whereby the outside and inside parts of the wall are tied together against lateral strain and the blocks readily fitted or removed by longitudinal adjustment substantially as set forth.

3. A wall composed of outside corner blocks each formed with a bonding lug at an intermediate point on the long side of its inner face projecting from said face at an acute angle therewith and with tapered corners on the inner face at both ends, inside corner blocks square at one end and with an angular projection at the other, and side wall blocks each formed with a tapered inner corner at one end and an angular projection at the other and an intermediate bonding lug projecting from its inside face at an acute angle said bonding lugs being adapted to engage the lug of the outside block with the lug of the inside block on the side of their acute angles, substantially as set forth.

4. A wall composed of corner blocks formed with tapered inner corners at each end and an angular bonding lug on one side thereof, side blocks each formed with an angular bonding lug on one side thereof adapted to engage with a bonding lug of the blocks composing the other side of the wall and also with a projecting bonding lug at one end adapted to engage with the tapered corner of the end of the adjacent block, substantially as set forth.

In witness whereof, I have hereunto set my hand and seal at Kearney, Nebraska this 15th day of May, A. D. nineteen hundred and nine.

AMUND J. KOPREN. [L. S.]

Witnesses:
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