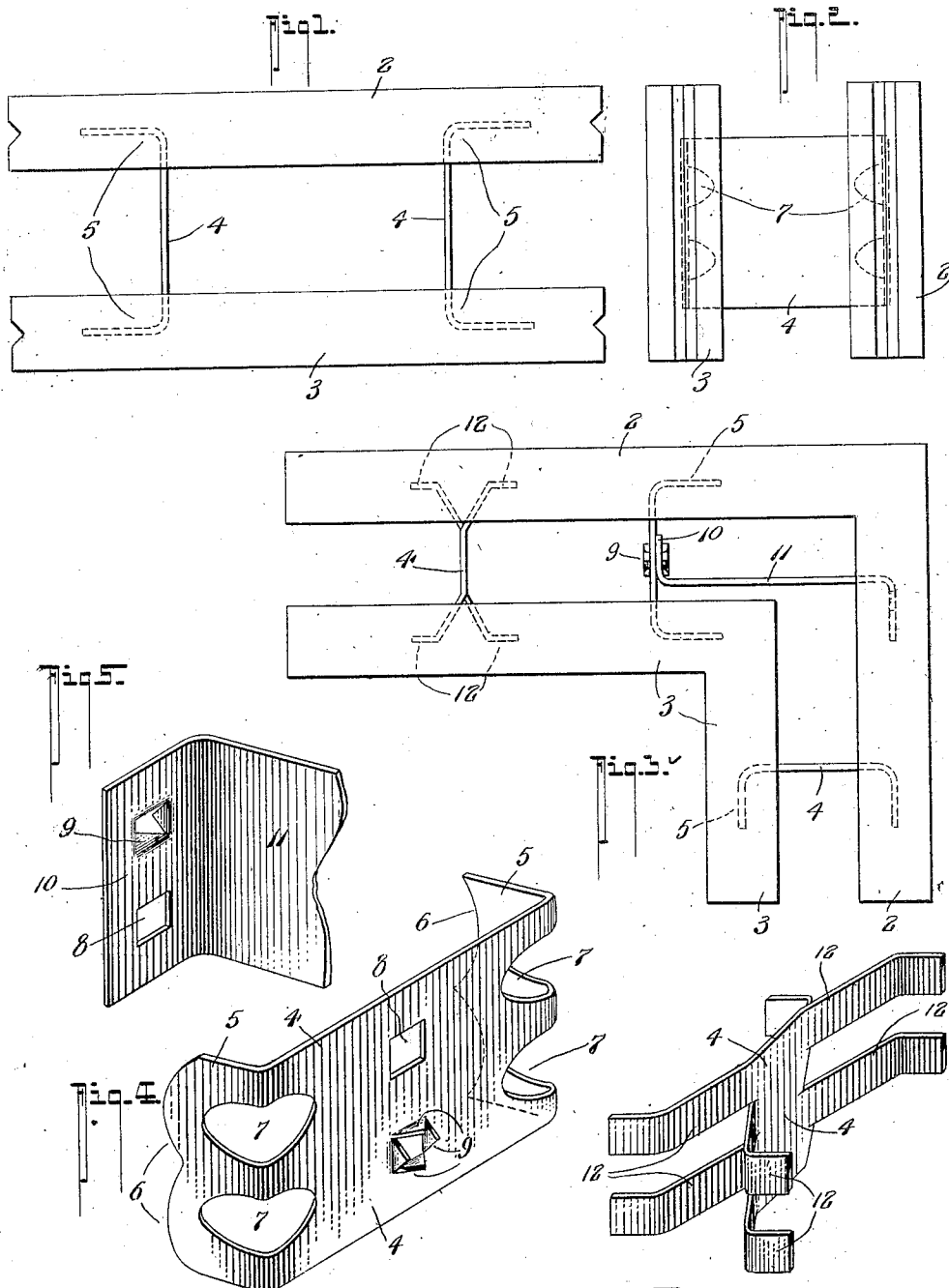


No. 836,589.

PATENTED NOV. 20, 1906.

LAYFIELD & A. V. CRISP.
CEMENT BUILDING BLOCK.
APPLICATION FILED OCT. 10, 1905.



WITNESSES:
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Fig. 5. INVENTORS.
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JAMES LAYFIELD AND ALBERT V. CRISP, OF VANCOUVER, BRITISH COLUMBIA, CANADA.

CEMENT BUILDING-BLOCK.

No. 836,589.

Specification of Letters Patent.

Patented Nov. 20, 1906.

Application filed October 10, 1905. Serial No. 282,120.

To all whom it may concern:

Be it known that we, JAMES LAYFIELD and ALBERT V. CRISP, citizens of the Dominion of Canada, residing at the city of Vancouver, in the Province of British Columbia, Canada, have invented new and useful Improvements in Cement Building-Blocks, of which the following is a specification.

Our invention relates to a cement building-block having an outer and an inner wall connected together by metal bonds and preserving an air-space between the walls.

The preservation of an air-space in a cement or concrete wall is generally admitted to be an advantage, as it not only lightens the structure and economizes material, but the air-space tends to keep the house cooler in summer and warmer in winter and also checks the passage of moisture from the outer to the inner wall. The advantages of an air-space have been sought for in the use of cellular blocks of various kinds; but where the connecting-bond between the outer and inner wall of the block has been of the material of the brick itself the advantage has only been partial, as moisture will permeate at the bond or tie, and, further, the cellular structure does not insure the full ventilation of the intervening air-space necessary to a dry inner wall. To overcome these objections, we have designed the block which is the subject of this application and have introduced into the structure a tie or bond of sheet metal and have adopted a form of tie that is simple and cheap and enable the cement to be effectually bonded together through the tie where it is embedded in the cement or concrete of the two walls, so that their introduction so far from weakening the walls reinforces them.

The particular construction and advantages of the invention are fully set forth in the following specification and illustrated in the drawings which accompany it, in which—

Figure 1 is a plan, and Fig. 2 an end elevation, of a plain wall-block; Fig. 3, a plan of a corner-block, showing the modified application of the same bond; Fig. 4, a perspective view of the metal bond, showing also the means for attachment of a corner-bond; Fig. 5, the end of a corner-bond, and Fig. 6 a modified cheaper form of the bond.

In the drawings the outer wall of the block is represented by 2, and the inner by 3,

and 4 indicates the metal bond member between them. This bond 4 is made of thin sheet metal, preferably of steel or iron, and the ends are bent round, as at 5, to afford a hold in the walls. To obviate a straight line of weakness at the ends of the embedded portion of the bonds, they may be sheared, as at 6, with a curved or irregular outline, and to insure that the integrity of the walls 2 and 3 does not depend on the adherence of the cement to the faces of the metal bond the bond member is before bending pierced with two or more preferably elliptical apertures 7, through which the cement will bond itself with that on the other side of the metal and form an integral and reinforced structure, or the same may be attained in what is a somewhat simpler manner by the alternative construction illustrated in Fig. 6. In this the ends of the ties 4 where embedded in the cement of the walls 2 and 3 of the block are sheared well up toward the center, and the strips 12 so formed are oppositely spread alternately and bent approximately to the face planes of the block. The spread of the strips is preferably carried into the air-space between the walls, as illustrated in the application, to one end of Fig. 3, so as to form a diagonal brace endwise of the block.

If considered desirable, the metal may be of very light gage and rigidity imparted to it by corrugations without departing from the spirit of the invention. To avoid the possible objection of corrosion of the metal, the bonds may be galvanized or dipped when hot in tar or other preservative material.

In corner-bricks, as illustrated in Fig. 3, an aperture 8 may be pierced toward one edge of the interspace portion of the bond and sheared and outwardly-turned projections 9 be provided toward the other edge. Oppositely corresponding apertures and projections being provided in the bent portion 10 of the corner bond-plate 11, when brought together the outwardly-turned projections of one piece will enter the corresponding aperture in the other and being clenched on the other side will secure the corner-bond 11 to the ordinary bond 4.

We are aware that prior to our invention a metal bond has been used in a cement or concrete block; but such has either been used merely as reinforcement of the block without

dispensing with a cement bond between the walls, or, where this has not been the case, the metal structure of the bond has either been so elaborate and expensive in design as to be generally prohibitive, or the bonds have been of headed round iron, which is not an economic use of the metal, nor does the bond contribute to the strength of the block.

Having now particularly described our invention, we hereby declare that what we claim as new, and desire to be protected in by Letters Patent, is—

1. A building-block, consisting of a pair of cement block members 2 and 3 in combination with metallic ties 4 having their ends 5 bent over at right angles to the body portion of the tie and embedded in the cement blocks 2 and 3, said metallic tie having its bent-over edges provided with elongated apertures extending in the same direction as the longitudinal axis of the tie member, substantially as shown and described.

2. A bond for cement building-blocks, comprising a sheet-metal member having its ends bent over at an angle to the body portion thereof, said bond having tangs stamped up from the body portion thereof, and a stay member having an apertured portion through which said tangs are adapted to pass to secure the stay to the bond, substantially as shown and described.

3. In a tie for building-blocks of the character stated, a bond having an aperture, and a stay having a plurality of prongs stamped from the same adapted to pass through the bond-aperture and to be bent over to secure the stay and bond together.

4. In a device of the class described, a bond consisting of a sheet-metal member having its ends bent over at an angle to the body portion thereof and provided with a pair of apertures in said body portion, and tangs stamped up from the body portion at one of said apertures, and a stay consisting of a body portion and having its ends bent over at right angles thereto, one of said stay ends having a pair of apertures and prongs or tangs stamped from said ends at one of said apertures, the prongs in the stay adapted to pass through one of the apertures of the bond and those of the bond to pass through the other aperture of the stay, said prongs adapted to be bent over to secure the bond and stay together, substantially as shown and described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

JAMES LAYFIELD,
ALBERT V. CRISP

Witnesses:

ROWLAND BRITAIN,
FREDA QUINN.