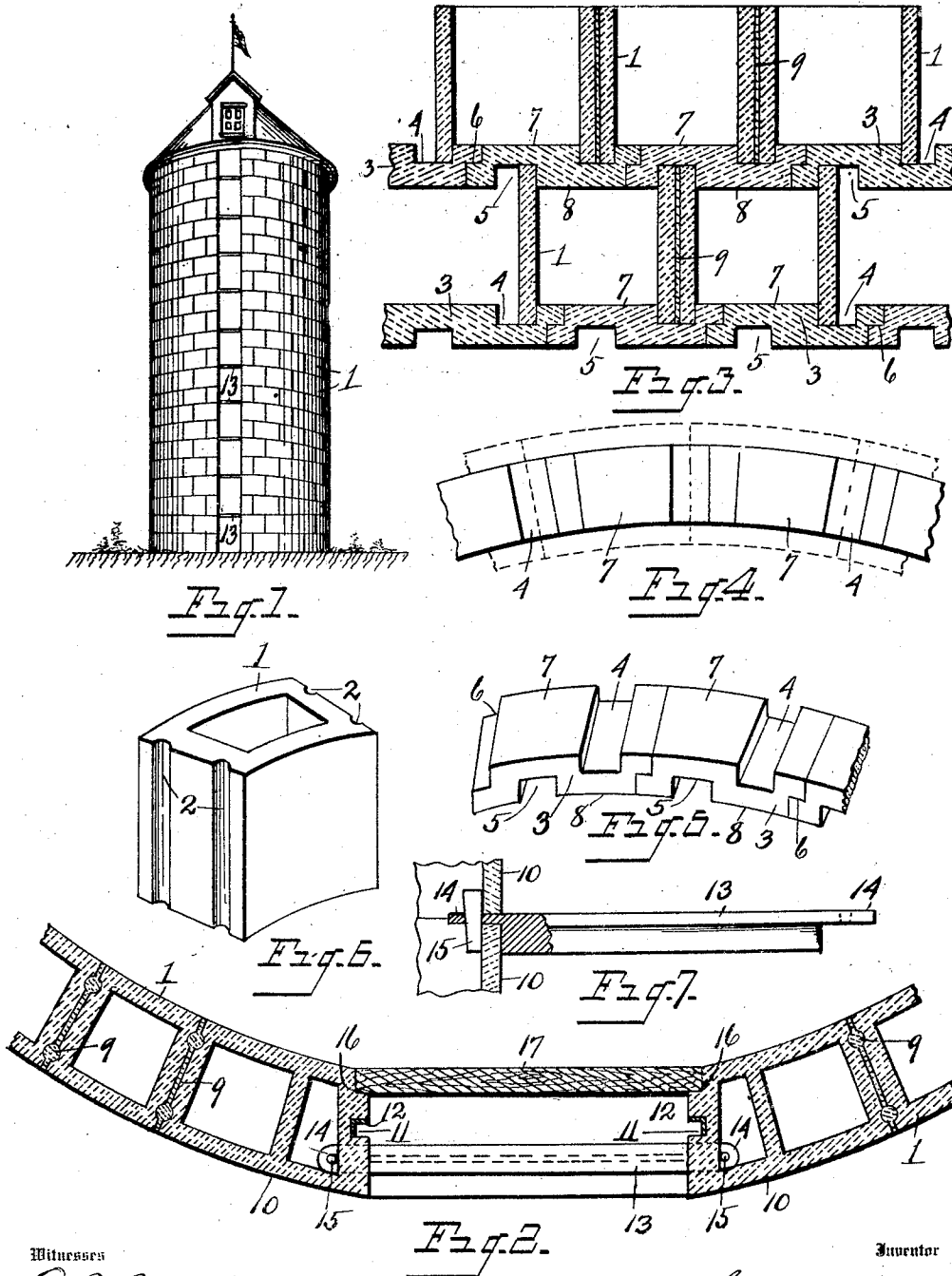


H. N. KING.
BUILDING BLOCK.
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1,009,319.

Patented Nov. 21, 1911.



Witnesses
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UNITED STATES PATENT OFFICE.

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BUILDING-BLOCK.

1,009,319.

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To all whom it may concern:

Be it known that I, HENRY N. KING, a citizen of the United States, residing at Adrian, in the county of Lenawee, State of Michigan, have invented certain new and useful Improvements in Building-Blocks; and I do 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, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this specification.

This invention relates to building blocks and tie-plates therefor, especially designed for use in the construction of silos, but adaptable for other purposes.

The invention consists in the construction and arrangement of parts hereinafter more fully set forth and pointed out particularly in the claims.

The primary object of the invention is to construct a hollow building block and to associate therewith a tie-plate through the medium of which the blocks may be securely bound together in the wall.

A further object is to provide for forming an opening in the wall, as for a door, and to reinforce the wall at that point in a manner to resist lateral and circumferential strain.

A further object is to prevent the entrance of moisture between the joints of the blocks.

The above objects are attained by the formation and association of parts illustrated in the accompanying drawings, in which:—

Figure 1 is a general view of a silo, the wall of which is constructed in accordance with my invention. Fig. 2 is an enlarged fragmentary view in horizontal section, of the line of the section being across the door opening. Fig. 3 is an enlarged fragmentary view in vertical section through a portion of a wall built in accordance with my invention. Fig. 4 is a plan view of a number of tie-plates placed together, the position of the blocks with respect thereto, being illustrated by dotted lines. Fig. 5 is a fragmentary view in perspective of said tie-plates. Fig. 6 is a perspective view of one of the blocks. Fig. 7 is a fragmentary view partly in section, illustrating the method of tying the jamb-blocks together across the door opening.

Referring to the characters of reference, 1 designates the hollow building blocks, which, for the purpose of constructing a circular wall are herein shown provided with curved outer and inner faces and straight sides, said sides having vertical channels 2 therein. The blocks are shown tapering, a necessary formation in constructing a circular wall. In constructing a straight wall the blocks will be made rectangular.

The bonds or tie-plates 3 are made to conform to the contour of the wall and are provided in their upper and under faces with transverse channels 4 and 5. The ends of the tie-plates are rabbeted, as shown at 6, in a manner to enable them to match together when placed end to end, as shown in Figs. 3, 4 and 5. The channels 4 and 5 in the tie-plates are adapted to receive the ends of the side portions of the block as said blocks are placed in the wall in successive tiers, the portions 7 and 8 of the tie-plates between said channels entering the apertures in the opposite ends of the blocks, as clearly shown in Fig. 3. The width of the channels 4 and 5 is sufficient to receive the combined thickness of the side walls of two blocks which are placed side by side, whereby said blocks become tied together when laid up in a wall. It will be noted that the portions of the tie-plates which enter the ends of the hollow blocks are made up of a major part of one plate and a minor part of another; the arrangement being such that when the wall is laid up, the tie-plates are bound together because of the fact that the terminal portions of two of said plates enter and lie within the opening in the end of one block, thereby preventing the separation of the tie-plates at the joints between their meeting ends, while the entrance of the portions of said plates within the blocks serves to hold said blocks against lateral displacement in the wall. The blocks are further held against lateral displacement when the wall is laid because of the presence between their channeled faces of the cementitious matter 9 which fills said channels and seals the space between the faces of the blocks in a manner to prevent the passage of moisture therethrough. The hardening of said cementitious matter in the registering channels of the faces of the blocks forms an additional tie to hold the blocks against relative lateral movement. The tie-plates are of such form and are so disposed

that upon the completion of the wall their presence between the tiers of blocks is not discernible, being wholly concealed between the tiers of blocks which they tie together, said plates serving, it will be noted, to tie the upper ends of the blocks immediately below, and the lower ends of the blocks immediately above.

In order that a door opening may be formed through the wall from top to bottom thereof as is required in the construction of a silo, jamb-blocks 10 are employed (see Fig. 2) which are so placed in the wall as to form the jamb of the door. The inner faces of the jamb-blocks 10 are formed at such an angle with respect to the curved faces thereof as to render the door opening through the wall of uniform width and are provided with registering vertical channels 11 in which are set reinforcing bars 12 of angle iron which extend through all of the jamb-blocks and add materially to the strength of the wall on each side of the door. To tie the jamb-blocks together across the door opening in a manner to resist the great lateral pressure which is exerted upon the wall when the silo is filled, tie bars 13 are employed, preferably T-shaped in transverse section, and having reduced end portions 14 which pass between the ends of the jamb-blocks at each course into the opening therein, said end portions being apertured to receive the pins 15 which engage the inner faces of the jamb-blocks, as shown in Fig. 7, to tie the wall together across the door opening. The tie bars 13 also serve as a ladder upon which the top of the door opening may be readily reached.

To afford a closure for the door opening the jamb-blocks are provided in their inner edges with rabbets 16 into which planking 17 is set from within and secured in any suitable manner, not shown. This planking is removed from time to time as the fodder is fed from the silo, as will be well understood in the art.

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

1. A wall comprising hollow blocks placed side by side, tie plates of the width of the opening in said blocks having joined ends, said tie plates also having transverse chan-

nels which receive the edges of the abutting blocks, and portions intermediate said channels above the base thereof, comprising the terminals of two of said blocks which enter within and fill the openings in the ends of the blocks.

2. A wall comprising hollow blocks placed side by side and tier upon tier, the successive tiers being disposed to break the vertical joints between the blocks, tie-plates of the width of the opening in the blocks located between the tiers thereof, said tie-plates having transverse channels in their upper and under faces which receive the edges of the abutting blocks in the tiers immediately above and below said plates, said plates also having portions intermediate said channels upon both faces thereof which lie within and fill the openings in the ends of the blocks above and below said plates.

3. A wall comprising hollow blocks placed side by side, tie-plates having transverse channels in the face thereof which receive the edges of the abutting blocks to tie said blocks together, the portions of the tie-plates intermediate said channels forming raised centers which enter the ends of said blocks and which comprise a terminal portion of two of said plates, whereby the terminals of said plates are bound together.

4. A wall for a silo having a vertical door opening therein, hollow jamb-blocks forming the margins of the door opening, said jamb-blocks having vertical registering channels in the faces thereof which form the walls of the door opening, reinforcing angle iron bars set in said channels in the faces of the jamb-blocks, tie bars crossing the door opening and having flattened end portions which lie between the horizontal faces of the jamb-blocks and extend into the opening therein, and pins passing through the ends of said tie bars and engaging the inner faces of the wall of the jamb-blocks within said opening across the joint between said blocks.

In testimony whereof, I sign this specification in the presence of two witnesses.

HENRY N. KING.

Witnesses:

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