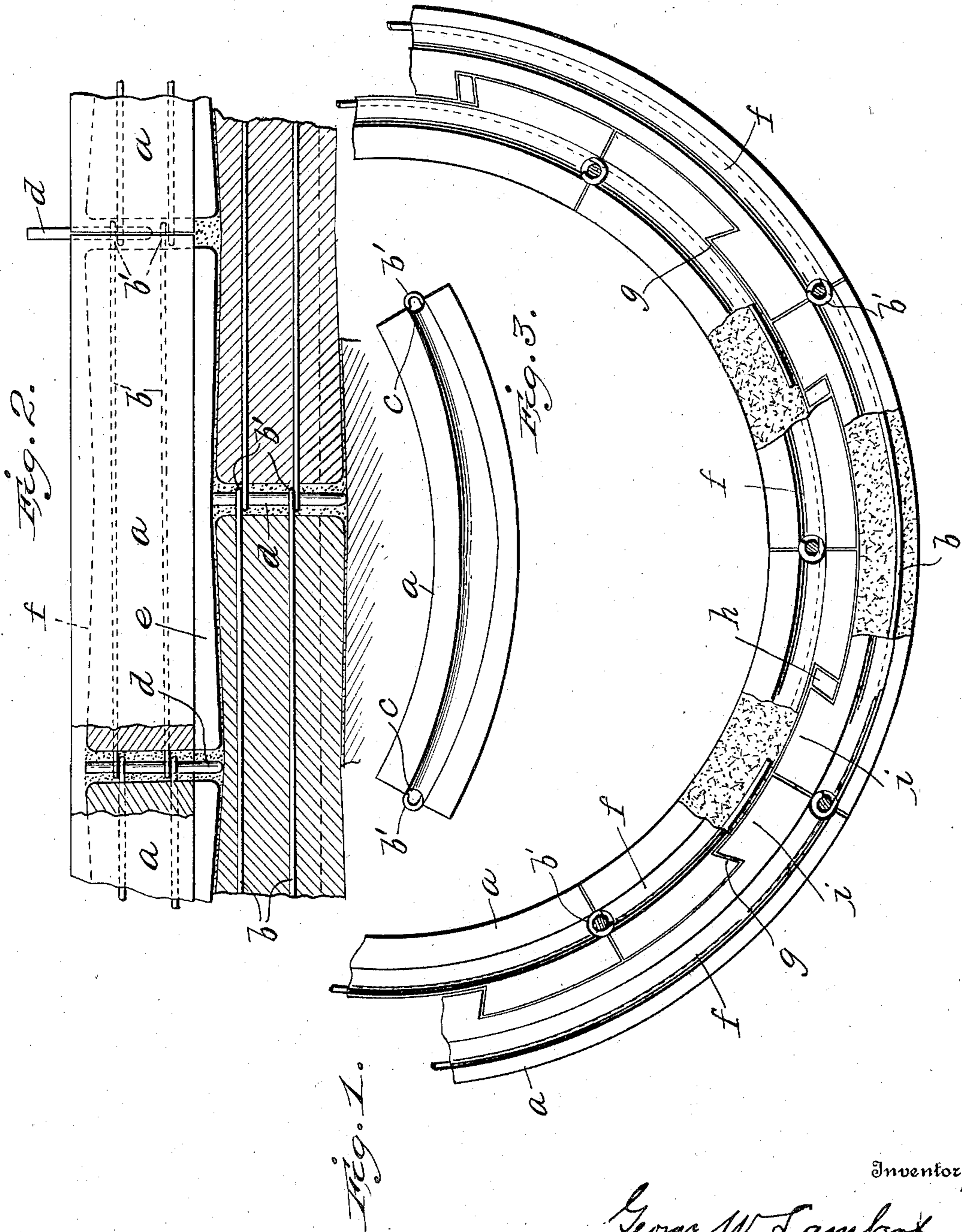


G. W. LAMBERT.  
WALL CONSTRUCTION.  
APPLICATION FILED JULY 9, 1909.

951,011.

Patented Mar. 1, 1910.



Witnesses  
Edwin L. Yewell  
A. N. Bridges

By

Inventor,  
George W. Lambert,  
Davis & Davis,  
Attorneys.

# UNITED STATES PATENT OFFICE.

GEORGE W. LAMBERT, OF RICHMOND, VIRGINIA.

## WALL CONSTRUCTION.

951,011.

Specification of Letters Patent.

Patented Mar. 1, 1910.

Application filed July 9, 1909. Serial No. 506,682.

*To all whom it may concern:*

Be it known that I, GEORGE W. LAMBERT, a citizen of the United States of America, and a resident of Richmond, county of Henrico, State of Virginia, have invented certain new and useful Improvements in Wall Construction, of which the following is a full and clear specification, reference being had to the accompanying drawings, in which—

Figure 1 is a plan view partly in section showing my invention embodied in a double wall structure, the two walls being interlocked; Fig. 2 is a side elevation partly in section of a portion of a wall constructed in accordance with my invention; Fig. 3 is a plan view of one of the blocks detached, this form of block being used where only one thickness of wall is required.

This invention has relation to wall constructions especially adapted for water-tanks, wells, towers, silos and other constructions in which extra strength is required as more fully hereinafter set forth.

Referring to the drawings by reference characters, *a* designates the blocks which in the present instance are curved transversely to adapt it for use in a cylindrical or circular structure. These blocks are molded of concrete or other cementitious material and running longitudinally through each block is a pair of reinforcing rods or wires *b* whose ends project beyond the ends of the block and are formed into eyes *b'*, which eyes lie in a vertical groove *c* in each end of the block. These eyes are so positioned that when the ends of the block are abutted, the eyes in one block register with the eyes, and the blocks are locked together by a metal pin *d* which passes vertically downwardly through the overlapped eyes and being in length approximately equal to the width of the blocks.

Formed on the bottom of each block is a longitudinal rib *e* which increases gradually in depth from its middle toward its ends and whose ends terminate even with the bottoms of the grooves *c*. In the top of each block is a longitudinal groove *f* whose ends communicate with said end grooves *c* and which greatly deepens toward the middle of the block to a degree corresponding with the taper of the rib *e*. When the blocks are laid with the blocks of one course breaking joints with the blocks of the adjacent courses, as shown in Fig. 2 each groove *f* will receive

the wedge shaped end portions of the ribs of the two blocks in the course above, so that any strain tending to separate the blocks end-wisely will be counteracted by a wedge action, and thus bind all the courses together with great strength. The employment of the reinforcing of the members *b* and tying them together in the manner set forth gives great tensile strength to the blocks and the structure and thus insures a high degree of resistance to lateral strains. Any tendency of the blocks to be dislodged or broken will also be taken up by the interlocking ribs and grooves *e* and *f*.

In laying the courses of blocks, after a course is laid a suitable liquid cement is poured into the vertical grooves *c* until it fills the same, and then the lock pins *d* are forced down into the cement and through the eyes *b'* while the cement is still in liquid form, and in this way the liquid cement is forced into the joints in all directions, thus filling the joints, which are necessarily made slightly loose or open. When this cement hardens it binds the blocks together and forms vertically a monolithic structure.

Where more than one thickness of wall is desired I prefer interlocking the thicknesses in the manner shown in Fig. 1. In accordance with this method of interlocking I form in the outer face of each block a transverse under-cut groove *g*, this groove being located a distance to one side of the middle of the block approximately equal to the width of a wedge key or filling block *h* which is preferably made of the same material as the blocks and extends the full width thereof and lies in one end of said groove *g*, its side faces being inclined to correspond with the adjacent under-cut wall of the groove. In the inner face of the outer blocks is formed a transverse under-cut groove greater in width than the aforesaid groove *g*, thus forming at each end of the block a projecting portion *i*. When the outer course of blocks is laid with the ends of the blocks abutting, these projections *i* form together an under-cut projection which lies in the groove *g* in the adjacent inner block, and this projection is locked in said groove by the wedge key *h*. By reason of the fact that the groove *g* is greater in length than the projection formed by the two projections *i*, the blocks may be put in position from the side and thus avoid the inconvenience of laying the blocks in position from the top.

After each course in the second thickness of wall is thus laid in place, the wedge keys  $h$  are inserted from the top, thus locking the two thicknesses solidly together.

5 In Fig. 1 the grooves  $f$  are shown as being of the same width throughout their length, but as shown in Fig. 3 I may employ a groove which not only deepens toward the mid length of the block but which also  
10 widens toward that point, and thus increases the wedging action brought into play by any tendency to separate the blocks end-wisely. It will also be obvious that where more than one thickness of wall is employed I may  
15 lay the blocks of these thicknesses in such manner that the horizontal joints of one thickness will break the horizontal joints of the adjacent thickness or thicknesses and thus increase the strength of the wall.

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

1. A course wall structure, each course consisting of a series of blocks of hardened  
25 cementitious material laid end to end and having embedded in each block a longitudinal reinforcing wire or wires whose ends project beyond the vertical ends of the block and are formed into eyes, the vertical adjacent  
30 ends of the blocks being vertically grooved and said eyes lying in said grooves, a vertical lock pin of a length approximately equal to the depth of the course and extending through the adjacent overlapping  
35 eyes of said reinforcing wires and resting on the brick below, and hardened cementitious material filling said grooves and surrounding the pins and eyes, the vertical joints in each course breaking joints with  
40 the vertical joints in the adjacent courses.

2. A wall structure constructed of blocks whose ends abut, the blocks of one course

breaking joints with the blocks of the adjacent courses and each block having formed on one face a longitudinal groove deepening  
45 toward the middle of the block and on its opposite face with a longitudinal rib increasing in depth toward the ends of the block, for the purpose set forth.

3. A wall construction consisting of a  
50 series of courses of blocks laid to break joints, the abutting faces of the blocks being provided on their adjacent horizontal faces with interlocking wedge shaped and longitudinal grooves and ribs, for the purpose  
55 set forth.

4. The method herein described of constructing a wall of blocks whose abutting ends are provided with vertical grooves, and are locked together by vertical pins, consisting in first laying a course of blocks then  
60 pouring a liquid cementitious material into the grooves at the ends of the blocks, then forcing down into the liquid material the lock pins, whereby the act of interlocking  
65 the blocks with the pins causes the liquid cement to be forced down into the adjacent joints, for the purpose set forth.

5. A wall structure of double thickness each thickness consisting of courses of  
70 blocks, the inner faces of the blocks of one thickness being provided with under-cut transverse grooves and the adjoining faces of the blocks in the other thicknesses of wall being provided with under-cut projections,  
75 and wedge keys inserted in said grooves, for the purpose set forth.

In testimony whereof I hereunto affix my signature in the presence of two witnesses  
this 3d day of July 1909.

GEORGE W. LAMBERT.

Witnesses:

GEO. J. HOOPER,  
CLIFF. GODSEY.