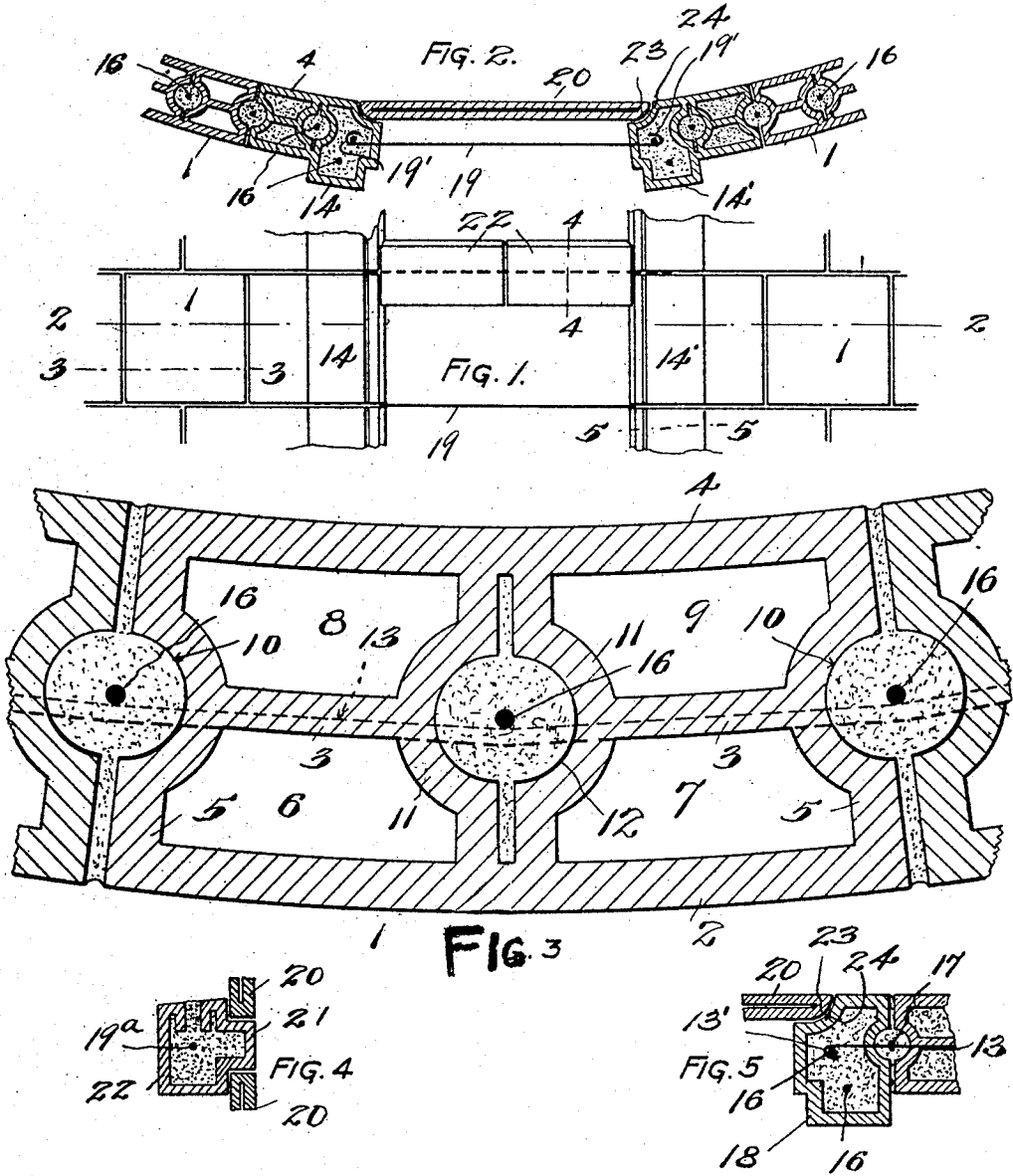


R. L. GAMEWELL.
HOLLOW TILE SILO.
APPLICATION FILED MAY 5, 1915.

1,171,036.

Patented Feb. 8, 1916.
2 SHEETS—SHEET 1.

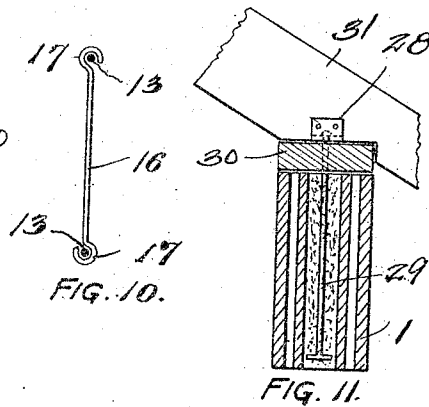
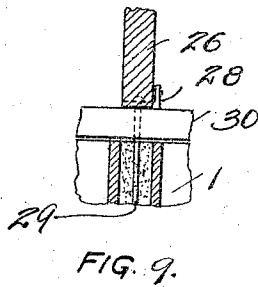
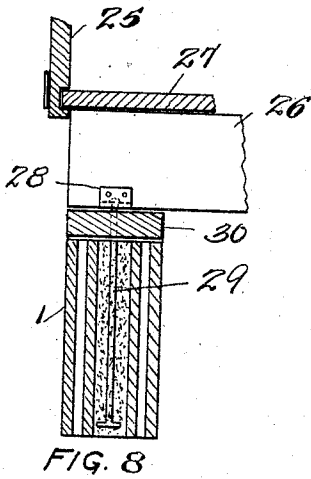
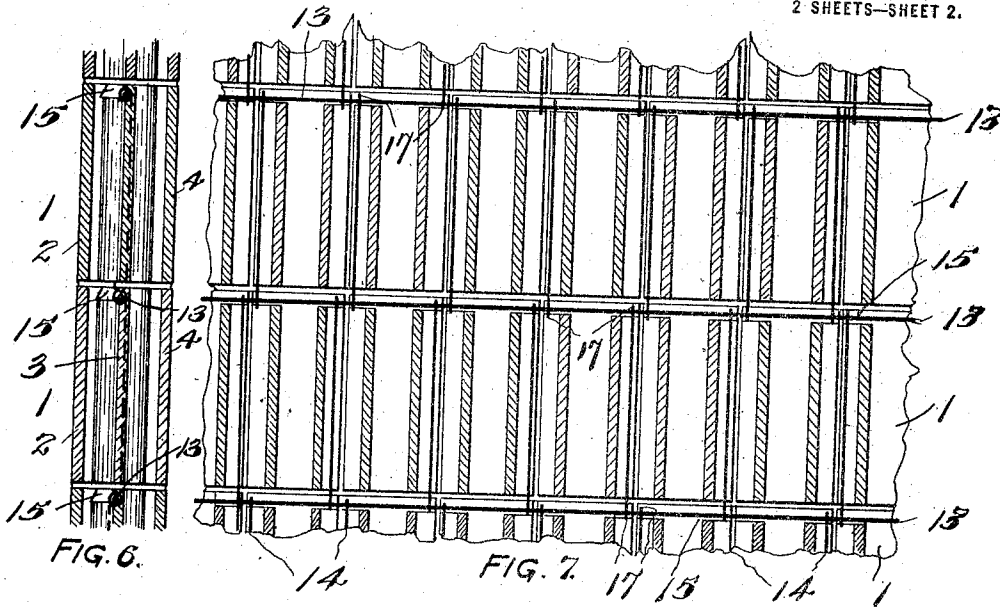


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UNITED STATES PATENT OFFICE.

ROBERT L. GAMEWELL, OF BIRMINGHAM, ALABAMA.

HOLLOW-TILE SILO.

1,171,036.

Specification of Letters Patent.

Patented Feb. 8, 1916.

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To all whom it may concern:

Be it known that I, ROBERT L. GAMEWELL, a citizen of the United States of America, residing at Birmingham, in the county of Jefferson and State of Alabama, have invented certain new and useful Improvements in Hollow-Tile Silos, of which the following is a specification.

The present invention relates to improvements in hollow tile silos, and is designed to provide a reinforced structure adapted to support a tank if desired.

While I shall hereinafter refer, in my specification, to a silo construction, it will be understood that the invention is equally applicable for use in constructing straight masonry walls for other purposes.

The primary object of the invention is to reinforce the tile and concrete construction of the wall so that it will be sufficiently strong not only to hold itself together, but in addition, is strong enough to carry a tank on the top of the structure, and the invention consists essentially in the combination with the tile or hollow blocks and their concrete cores of specially constructed and arranged reinforcing rods or bars as will be hereinafter described and claimed.

In the accompanying drawings I have illustrated one complete example of the physical embodiment of my invention constructed according to the best mode I have so far devised for the practical application of the principles of my invention, the drawings showing a silo structure, but it will be understood that other structures are contemplated within the scope of my invention.

Figure 1 is a front elevation of a portion of a silo constructed according to my invention, showing the door way and door jambs. Fig. 2 is a horizontal sectional view on line 2—2 of Fig. 1. Fig. 3 is an enlarged sectional view on line 3—3 of Fig. 1. Fig. 4 is a sectional detail view on line 4—4 of Fig. 1. Fig. 5 is a sectional detail view on line 5—5 of Fig. 1 showing a half jamb block or tile. Fig. 6 is a transverse sectional view through a portion of the tile wall of the silo. Fig. 7 is a vertical longitudinal sectional view of a portion of the silo showing the horizontal and vertical reinforcing rods. Fig. 8 is a sectional detail showing manner of anchoring joist at the top of the silo. Fig. 9 is an edge view of the construction of Fig. 8. Fig. 10 is a detail showing the hooked

vertical reinforcing rod with its ends engaging horizontal reinforcing rods or bars. Fig. 11 is a detail showing manner of anchoring roof rafters when tank is omitted.

In the preferred embodiment of my invention as shown in the drawings the silo wall is made up of courses of tiles or hollow blocks as 1, laid course upon course, and the blocks are molded with inner and outer curved faces to provide a circular wall when the rows are completed. Each block is formed with an outer vertical web 2, a partition or intermediate web 3 and its inner web 4, while the end webs 5, 5, complete the outline of the block. These webs provide the four spaces 6, 7, 8, 9, the end walls are curved to form a semi-cylindrical space 10 and the curved intermediate partitions 11 which extend transversely between the two side walls 2, 4 form cylindrical spaces 12. In use all these spaces are filled with concrete as indicated in the drawings, the cores of concrete extending from the bottom to the top of the structure and filling the crevices between the blocks of each course and row. These blocks forming the wall are reinforced by a continuous net work of metal bars or rods which extends around the silo and are utilized to hold the blocks in vertical alinement from the bottom to the top of the silo.

The reinforcing net work comprises a series of horizontally extending bars as 13 each of which extends from one door jamb 14 to the other jamb 14' and the blocks 1 are provided with grooves or notches in their webs as 15 through which the bars pass. These notches are located at the top of the blocks just to one side of their center lines and extend through the end walls, the longitudinal intermediate walls and the curved intermediate partitions 11, so that the curved bars 13 may be laid on the top of each course of hollow blocks, resting in the grooves or notches. Connecting these horizontal bars, in pairs, are a multiplicity of vertically extending rods 16 formed with end hooks 17 opening in opposite directions as seen in Fig. 10. These hooks are adapted to engage over the horizontal bars, and the rods pass through the "voids" or spaces extending vertically through the blocks, which it will of course be understood are open at top and bottom. In Figs. 7 and 10 it will be seen that the upper hook 17 engages over the upper horizontal bar and

that the lower hook engages under the lower bar. The arrangement of the hooks and rods on the bars is well shown in Fig. 7 where it will be seen that an effective net work of reinforced metal is provided which permeates the silo wall from top to bottom and throughout its circular wall.

In Fig. 5 a hook 13' is shown at the end of the horizontal ring or bar 13 which hook engages about the rod 16 in the half jamb block 18, and the other end of the bar (not shown) is hooked to a similar rod 16 across the doorway. The bars 13 stop short of the doorway, but connecting bars 19, (Figs. 1 and 2) extend across the doorway from jamb to jamb in line with the bars 13 and these connecting bars have hooks 19' engaged about the vertical rods 16. These connecting bars, in addition to strengthening and bracing the door way, perform the function of ladder rungs or rounds so that ascent of the silo may be accomplished at the doorway extending from bottom to top of the silo.

The doorway is closed by door sections 20 which are supported on the projections 21 of the sills 22 and the sills are blocks spaced apart vertically, extending across the doorway from jamb to jamb with a horizontally extending bar 19^a therethrough for reinforcement. The doors are preferably lined with asbestos paper to make the joints air tight, and at the ends have rounded edges 23 which fit neatly into the rounded or grooved corners 24 of the jambs at the inner side of the doorway.

When the tank is supported at the top of the silo as indicated at 25 in Fig. 8 the

wooden joist 26 beneath the tank bottom 27 is secured to the silo wall by means of the angle bracket 28 which is nailed to the joist and has an anchoring rod 29 fixed therein and passed through the wood plate 30 into and is embedded in the concrete core of the block 1. When a sloping or peaked roof is used instead of the tank at the top of the silo, the rafter 31 is supported by the bracket and anchoring rod as shown in Fig. 8.

It will be understood that all the circular "voids" or spaces in the blocks are filled with concrete, and these concrete cores together with the interior net work of reinforcing steel bars and rods, render the structure exceptionally strong and capable of bearing great weight. It should be noted that the webs of the blocks in courses, have a perfect bearing upon the webs below, as the horizontal bars are embedded below the top surface of the blocks.

I claim:—

A wall composed of hollow blocks laid in courses and formed with longitudinal grooves having a horizontally extending bar in the grooves of each course below the top thereof, said blocks each fashioned with curved end walls forming vertical spaces between adjoining blocks and an intermediate space in each block, vertically arranged rods passing through said spaces and hooked ends on said rods engaging said horizontal bars in pairs, and concrete cores incasing said rods and embedded in the spaces of the blocks.

In testimony whereof I affix my signature.

ROBERT L. GAMEWELL.