L. D. HARTER.

CONCRETE TILE FOR BUILDING CONSTRUCTION.

APPLICATION FILED DEC. 21, 1916.

1,251,019.

Patented Dec. 25, 1917.

2 SHEETS—SHEET 1.

FIG. 3

FIG. 1

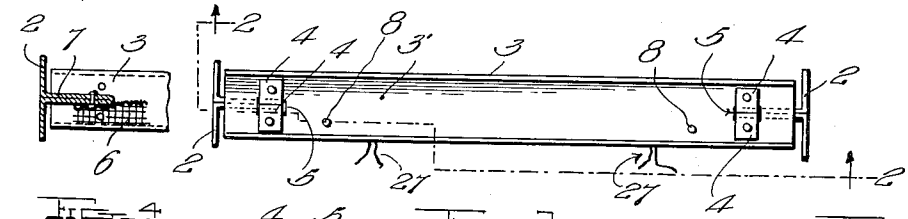


FIG. 4

FIG. 2

FIG. 5

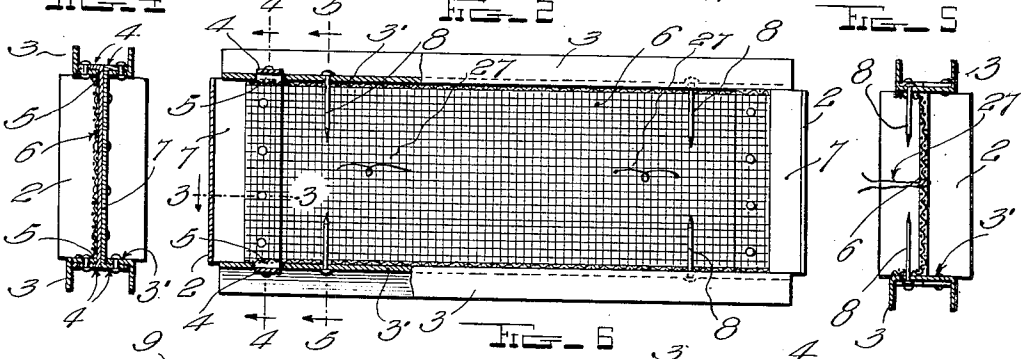


FIG. 6

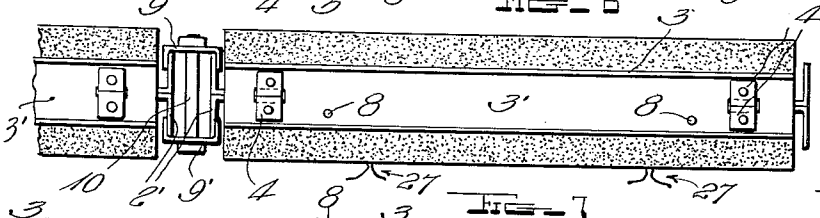


FIG. 7

FIG. 8

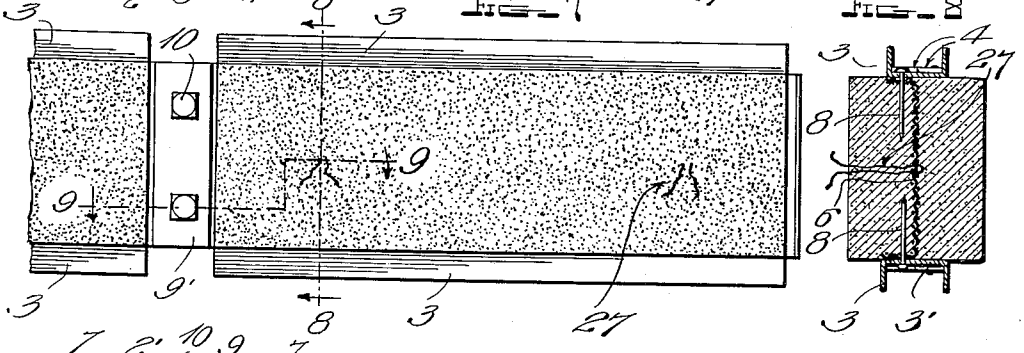
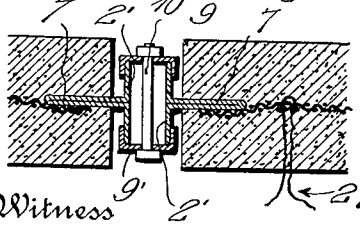


FIG. 9



Witness

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2 SHEETS—SHEET 2.

Fig. 10

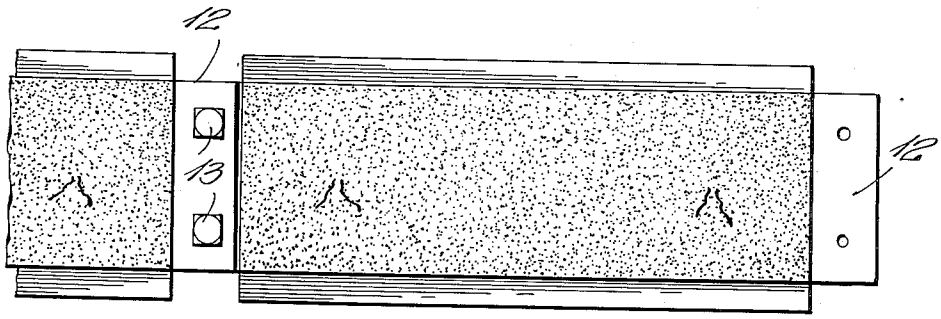


Fig. 11

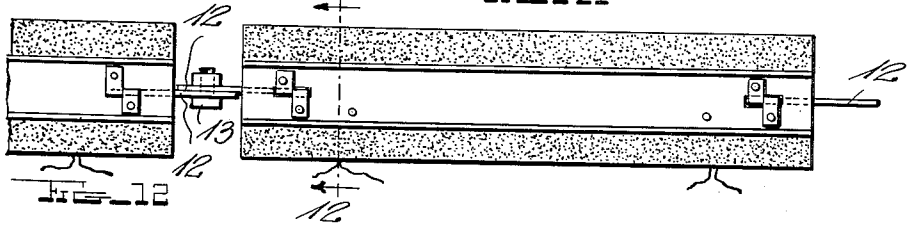
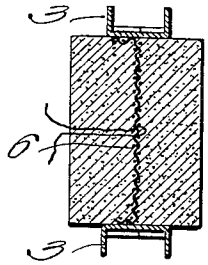


Fig. 12



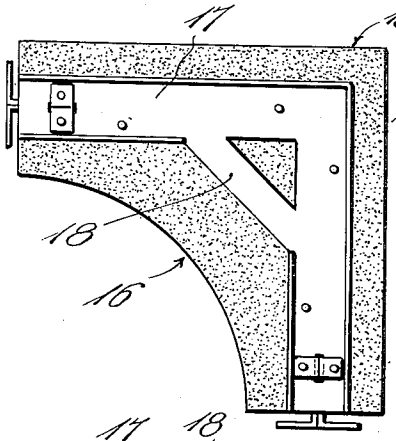


Fig. 13

Fig. 16

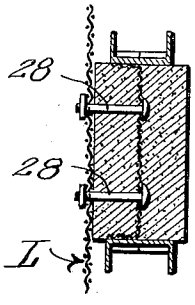
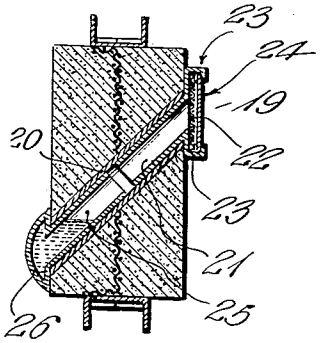
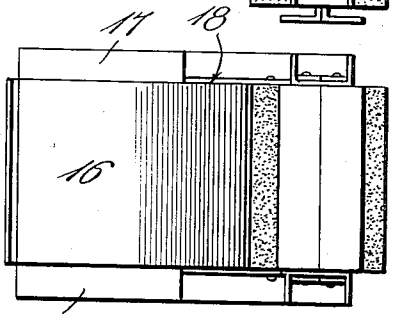


Fig. 14

Fig. 15





Witness

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UNITED STATES PATENT OFFICE.

LEANDER DOUGLAS HARTER, OF OKLAHOMA, OKLAHOMA.

CONCRETE TILE FOR BUILDING CONSTRUCTION.

1,251,019. Specification of Letters Patent. Patented Dec. 25, 1917.

Application filed December 21, 1916. Serial No. 138,247.

To all whom it may concern:

Be it known that I, LEANDER DOUGLAS HARTER, a citizen of the United States, residing at Oklahoma, in the county of Oklahoma and State of Oklahoma, have invented certain new and useful Improvements in Concrete Tiles for Building Construction; 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.

This invention relates to improvements in concrete tiles for building construction and more particularly to the locking means for securing the tiles together.

The object of the invention is to provide a simply constructed device for locking the adjacent ends of two tiles together and forming a tight joint between them.

Another object is to provide an improved corner tile so constructed as to render it very strong and yet which may be cheaply made and be entirely sanitary, affording no edges for lodgment of dirt.

Another object is to provide improved means for connecting the end and side bars of the reinforcing frame.

Another object is to provide a cement tile with ventilating means.

With the foregoing and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed may be made within the scope of what is claimed without departing from the spirit of the invention.

In the accompanying drawings:

Figure 1 represents a plan view showing the framework of a tile constructed in accordance with this invention;

Fig. 2 is a longitudinal section partly in side elevation taken on the line 2—2 of Fig. 1;

Fig. 3 is a detail longitudinal section taken on the line 3—3 of Fig. 2;

Fig. 4 is a transverse vertical section taken on the line 4—4 of Fig. 2;

Fig. 5 is a similar view taken on the line 5—5 of Fig. 2;

Fig. 6 is a plan view showing a pair of completed tiles having the ends thereof connected by the joint constituting one feature of this invention, one of said tiles being broken away;

Fig. 7 is a side elevation thereof;

Fig. 8 is a transverse section taken on the line 8—8 of Fig. 7;

Fig. 9 is a longitudinal section taken on the line 9—9 of Fig. 7;

Fig. 10 is a side elevation of a pair of completed tiles, one being broken away, showing another form of end connection;

Fig. 11 is a plan view thereof;

Fig. 12 is a transverse section taken on the line 12—12 of Fig. 11;

Fig. 13 is a side elevation of one of the corner blocks;

Fig. 14 is a front view thereof;

Fig. 15 is a transverse section through a tile showing a ventilator mounted therein; and

Fig. 16 is a transverse vertical section showing another form of lath attaching means, the lath being shown diagrammatically.

The concrete tile illustrated as an embodiment of this invention which is made of suitable and customary material molded in a machine for the purpose, includes a rectangular metallic frame made of channel iron and T-bars. The end members 2 of the frame are constructed of T-bars with the heads thereof projecting outwardly while its side members 3 are of channel iron with their concave faces disposed outwardly. These end and side members 2 and 3 are united by forming tenons 4 on the ends of the end members 2 which are inserted in apertures 5 formed in the cross bars or intermediate portions 3′ of the channel iron side members. The tenons and their coöperating apertures are preferably made angular to prevent rotation of the members when united, and the rigidity thereof is insured by riveting the tenons to the channel irons.

A reinforcing member in the form of a wire mesh 6 is secured to the side and end members of the frame, being riveted to the stems or shanks 7 of the T's and secured to the channel side members by means of nails 8 which are inserted in apertures in the channel irons and which are set in the tile when molding, it being of course understood that the tile bodies are molded around the reinforcing means.

The channel irons 3 which form the side members of the frame are made of different widths, the larger being adapted to fit over

the smaller of the next tile below when the wall of a building is being erected, whereby the blocks or tiles of adjacent rows are interlocked and displacement of the tiles prevented.

The heads 2′ of the T's 2 which project from the ends of the tiles are connected by channel irons 9, two being employed to connect the meeting ends of a pair of tiles. One of these connecting channel irons 9 spans the flanges at one side of adjacent T-heads and the other similarly spans those on the other side of said heads as is shown clearly in Figs. 6 and 9. Bolts 10 extend through the intermediate or cross bars 9′ of the irons 9 between the heads of the T's 2 and securely clamp them together, forming a rigid connection which prevents any tendency of the wall to buckle or sway laterally.

In Figs. 10 to 13 another form of end connection for the tiles is shown, the structure of the tiles being otherwise the same. In this form, the T's of the other form are replaced by flat bars 12 which are connected to the side channel bars 3 in the same way as the T's 2. The free ends of the flat bars 12 of adjacent tiles are arranged in overlapping relation when the tiles are assembled, and are secured together by bolts 13 which hold the ends of the tiles rigidly connected.

The corner tiles 14 shown in Fig. 13 have square outer corners 15 and rounded inner corners 16 which while increasing the strength of the tile also renders it sanitary as the rounded inner corner will not catch and hold dirt. These tiles 14 have right angular channel bars 17 on the opposed side faces thereof which have cross braces 18, and avoids all possibility of the building cracking at the corners.

Ventilators 19 are arranged in some of the tiles and as shown in Fig. 15, each is constructed in the form of a metal tube 20 which is set in the tile when molding, being held in place by cement. This tube is set at an angle of about 45°, the higher end being disposed on the inside of the wall when the tiles are in use, so as to prevent the entrance of rain and snow through the ventilator. A removable tube 21 is made to fit in tube 20, being provided with a screen 22 and a flange 23 to prevent it from slipping through the stationary tube 20. The tube 21 is made removable to facilitate repairing of the screen, and the ventilator may be closed by a slide 24. This ventilator is especially useful for ventilating and fumigating grain bins to destroy weevil and other insects. When used as a fumigator, the insect exterminator or disinfectant is placed in tube 25 which is inserted from outside the bin and having a closure 26, the disinfectant being replenished when desired. When used as a ventilator only the disinfectant container is removed.

These improved tiles are preferably provided with lath attaching means shown in Figs. 1 to 12 in the form of tie wires 27 which are looped around the reinforcing wires 6 with the ends extending through the cement in the completed tile. These ends are designed to secure metal or other laths to the tiles.

In Fig. 16 bolts 28 are shown for this purpose instead of the wires 27, a metal lath being shown diagrammatically at L.

By the use of these improved tiles in constructing a one story building, the studding usually employed is dispensed with and the tiles need be made not more than three inches thick, thereby greatly cheapening the construction of a building. These improved tiles may be made of any desired width and length, being preferably made two feet wide and of any desired length. The use of these tiles also insures great economy in labor and material.

I claim:

1. A plastic building block having a pair of transversely extending reinforcing bars molded in its ends and extending beyond the same for attachment to similar bars of other blocks, and longitudinal bars extending along the opposite sides of said block and secured at their ends to the ends of said transverse bars.

2. A plastic building block having channel bars extending along its opposite sides with their flanges disposed outwardly, and transverse bars secured to said channel bars and embedded in the ends of said block to retain said channel bars in place, said transverse bars extending beyond said ends of the block to provide means for connecting adjacent blocks.

3. A plastic building block having channel bars extending along its opposite sides with their flanges projecting outwardly, the end portions of said bars having openings formed therethrough, and transverse bars molded in the ends of said block and having tenons extending through said openings and clenched upon said channel bars, said transverse bars extending beyond the ends of said block to form means for attaching adjacent blocks.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

LEANDER DOUGLAS HARTER.

Witnesses:

A. L. Moyer,

Robt. Bressem.