April 28, 1925. 1,535,358

E. R. THORNTON

BUILDING TILE

Filed Nov. 20, 1922

Fig. 1.

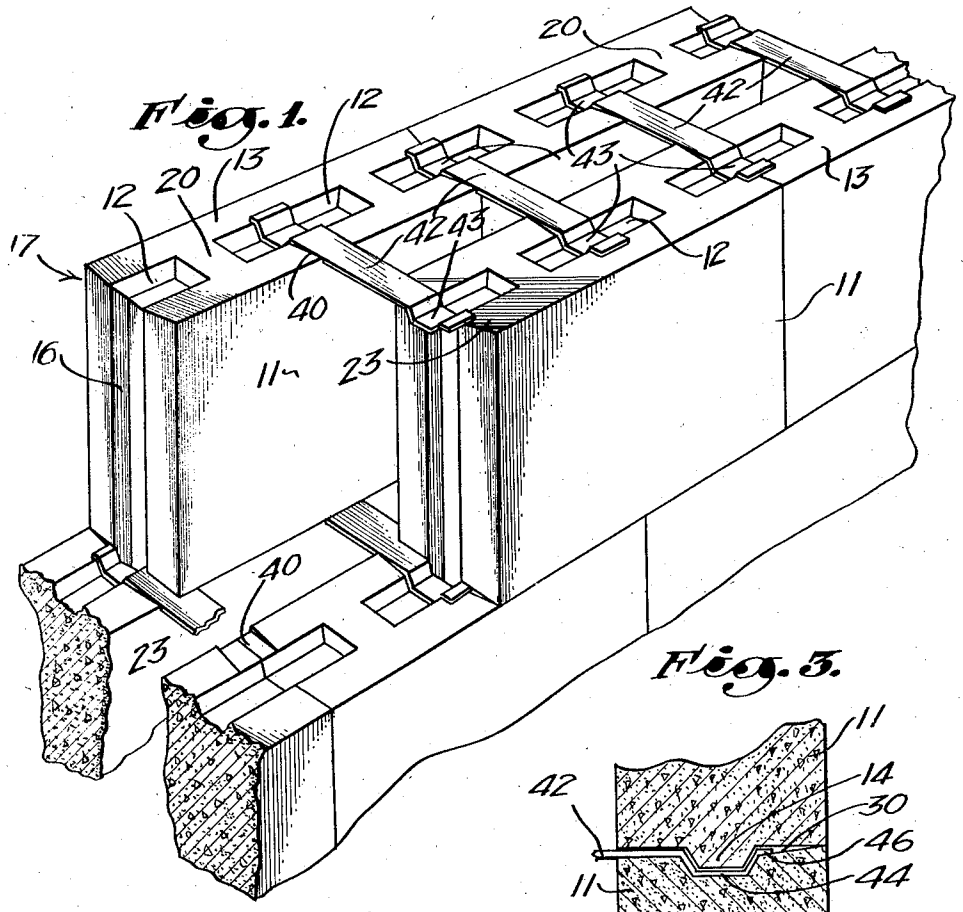


Fig. 3.

Fig. 2.

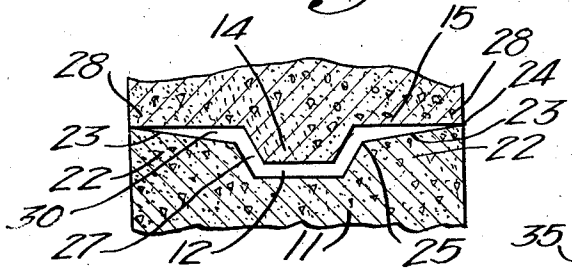


Fig. 5.

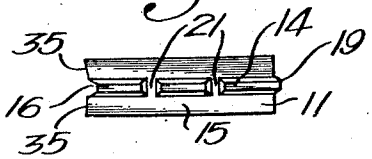
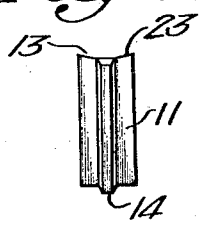


Fig. 4.



INVENTOR:
EDGAR R. THORNTON,
BY
Graham & Harris
ATTORNEYS.

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UNITED STATES PATENT OFFICE.

EDGAR R. THORNTON, OF LONG BEACH, CALIFORNIA, ASSIGNOR OF ONE-HALF TO ALICE A. THORNTON, OF LONG BEACH, CALIFORNIA.

BUILDING TILE.

Application filed November 20, 1922. Serial No. 602,003.

To all whom it may concern:

Be it known that I, EDGAR R. THORNTON, a citizen of the United States, residing at Long Beach, in the county of Los Angeles and State of California, have invented a new and useful Building Tile, of which the following is a specification.

This invention relates to building tile which is employed in building construction for exterior and interior walls and other similar purposes, and relates particularly to interlocking tile blocks which may be formed of concrete or other material.

In the laying up of walls from brick or building block, it is necessary to employ a comparatively stiff mortar mixture because of the tendency for the more liquid mixtures to flow from the edges of the joints, thus leaving the superimposed bricks dependent entirely upon the centrally disposed strip of mortar for their support. It will be readily recognized that a wall built up of bricks having full mortar bearing will be far more stable than a wall built up in the manner hereinbefore described, owing to the fact that a narrow plaster support of the bricks provides a rocking tendency thereof, with the result that the full strength of wall structure is not attained.

It is an object of my invention to provide a building block or tile with which a mortar mixture of a fairly liquid consistency may be employed without the spilling of the mortar from the joints in the manner hereinabove described. This object is attained by the use of building blocks having channels formed in the upper edges thereof which are confined between upwardly projecting edge walls, the tops of which walls slope inwardly from the face of the bricks to meet the channels, thus forming a concave longitudinal receptacle in which the liquid mortar or grout may be placed and retained. The lower edges of the bricks are provided with longitudinal centrally projecting ridges which extend downwardly from a substantially flat lower face into the mortar placed in the channels of the lower course of tile. When the blocks are placed together in this manner, the edges of the bricks are in contact and the cementing mixture is contained between the edges thereof.

The adhesive or bond forming qualities of a liquid cement mixture or grout are far superior to that of a stiff mortar mixture. A particular advantage of my invention is that therewith a grout, rather than a heavy mortar, may be employed, thus greatly increasing the stability and durability of a wall constructed therewith owing to the better bond obtained.

It is a further object of the invention to provide a building block of this character having interlocking features and which may be employed in double or vacuum wall construction.

It is a still further object of the invention to provide a novel form of tie bar which may be employed for joining together a number of single walls to form a composite wall.

The especial advantages of the invention and further objects thereof will be made evident hereinafter.

Referring to the drawing which is for illustrative purposes only,

Fig. 1 is a fragmentary perspective view showing a double wall in the process of construction from building tile embodying the features of my invention.

Fig. 2 is an enlarged fragmentary view showing the joint provided between superimposed tile.

Fig. 3 is a fragmentary view similar to Fig. 2 showing the manner in which the tie bars are enclosed in the joints between the consecutive courses of tile.

Fig. 4 is an end view of one of the building tile.

Fig. 5 is a bottom plan view of one of the building tile.

My invention lends itself readily to use in construction in which rectangular tile or building blocks 11 are employed. As shown in the drawing each of the blocks 11 is provided with angularly shaped channels 12 formed in the top face 13 thereof and has projecting interlocking angularly shaped ridges 14 formed upon the lower face thereof. At one end of each tile member 11 a channel 16 is formed which extends entirely across the end of the tile and connects with a channel 12, as shown at 17 in Fig. 1. The opposite end of the tile has a projecting ridge 19 formed thereupon which is adapted to be received in a channel 16 of an adjacently placed member. The channels 12 formed in the upper edges of the tile 11 are

divided by cross connecting walls 20, and spaces 21 are provided between the downwardly projecting ridges 14 to accommodate the dividing walls 20 when the tile are placed in superimposed position, as is done in construction of the wall shown in Fig. 1.

With particular reference to Fig. 2, the channels 12 are confined between upwardly projecting wall portions 22 formed along the edges of the tile, and the top faces 23 of these confining walls 20 slope downwardly from the edges 24 and meet with the channels 12 at 25 forming depressions. The ridge 14 of the superimposed tile extend downwardly from a substantially flat lower wall 15; thus when one block is placed upon the other a longitudinal space is provided between the tile, which space is substantially of the form shown at 27 in Fig. 2.

In the laying up of these tile a grout is poured into the channels 12 and the next layer of tile is placed thereupon as shown, the edges 28 of the superimposed tile coming to rest against the edges 24 of the underneath tile, and the projections 14 entering into the channels 12, forcing the grout outwardly into the converging spaces 30. The downward slope of the faces 23 of the edge walls 22 forms a concave or cup shaped bed for the mortar, which formation prevents the overflow of any but surplus grout which may be forced out from between the tile when the upper layer is placed upon the lower layer.

By the use of this arrangement I am able to attain a full width of mortar bearing across the joint, thus assuring a stable and non-rocking joinder between consecutive rows of tile. It will be perceived that in such instances where insufficient mortar is employed to entirely fill the space between the tile the engagement of the edges of the tile will still preserve a non-rocking engagement therebetween. I employ a channel and projection of polygonal outline having sloping sides as shown as such form facilitates the forming of molds and also the extracting the finished tile product from these molds. Besides providing an increased area of engagement of the grout with the engaging faces of the tile, the interlocking feature of the projecting ridges with the channels prevents lateral movement between the tile when in use.

As shown in Fig. 5 it may be desirable to inwardly slope the end faces 35 to meet the channel 16, thus providing a mortar chamber between the ends of the laid up tile as well as between the upper and lower faces thereof. For vacuum or double wall construction I provide notches 40 in one of the faces 23, as shown in Fig. 1, into which are fitted tie bars 42 having the ends thereof downwardly bent as shown at 43 to correspond to the contour of the channels 12 into which the ends downwardly extend, as shown also at 44 in Fig. 3, the projection 14 extending down over the ends of the tie bars and locking them securely between the tile and preventing their being removed from the joints.

It will be perceived that the notches 40 are placed only along one edge of the brick and that the extreme ends 46 of the tie bars 42 extend only a short distance into the converging space 30. In this manner a substantially smooth appearance is presented by the tile at the outer face thereof so that a wall is formed having a very smooth and even appearance and without wide cracks at the joints.

The particular feature of the invention is that none but surplus grout may be forced from between the tile, thus retaining a maximum of material between the tile and obtaining a broad bearing therebetween which provides a very stable structure as hereinbefore described. A particular advantage in the use of the invention resides in its adaptability to use with grout instead of a stiff mortar mixture, thus assuring a maximum bond between the tile.

I claim as my invention:

1. In a wall, the combination of: superimposed tile, each having a channel in one edge thereof; a ridge formed on each of said tile and adapted to project into a channel on an adjacent tile; one of said edges being formed with a depression longitudinally thereof and an interlocking key of cement or the like formed in the space between said tiles, said key locking said ridge solidly in said channel, said key having a substantial thickness inside said wall but tapering to nothing at each surface of said wall.

2. In a wall, the combination of: superimposed tile, each having a plurality of angularly shaped channels in one edge thereof; a plurality of angularly shaped ridges formed on each of said tile and adapted to project into a channel on an adjacent tile; one of said edges being formed with a depression of gradually increasing depth from the sides of the tile to the center thereof and an interlocking key of cement or the like formed in the space between said tiles, said key locking said ridge solidly in said channel, said key having a substantial thickness inside said wall but tapering to nothing at each surface of said wall so that said tile are supported at their edges directly on the tile below without the interposition of a substantially thick layer of interlocking cement at these edges.

3. In a double wall, the combination of: tile laid up to form two parallel walls, each of said tile having a ridge extending horizontally in said wall and extending into a channel in an adjacent tile; and flat plates, each fitting at one end into said channel

under its associated ridge in one wall and at the other end into a channel in the other wall.

4. In a double wall, the combination of: tile laid up to form two parallel walls, each of said tile having a ridge extending horizontally in said wall and fitting into a channel formed in a depression in an adjacent tile thereby leaving a space between said ridge and channel; and flat plates, each fitting at one end into said space in the channel in one wall and at the other end into a channel in the other wall, the space in said channels about said ties being filled with cementitious material.

In testimony whereof, I have hereunto set my hand at Los Angeles, California, this 13th day of November 1922.

EDGAR R. THORNTON.