F. R. HALE.

TILE OR BLOCK.

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1,290,740.

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Fig. 1.

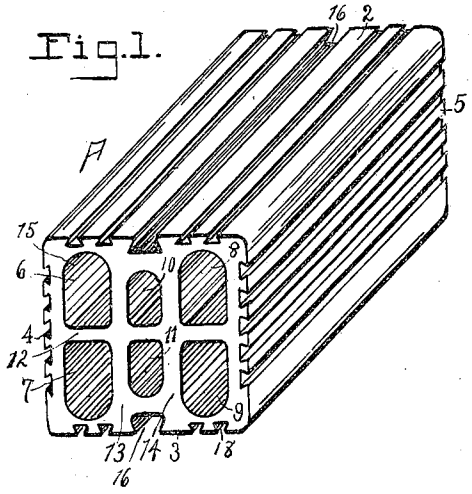


Fig. 2.

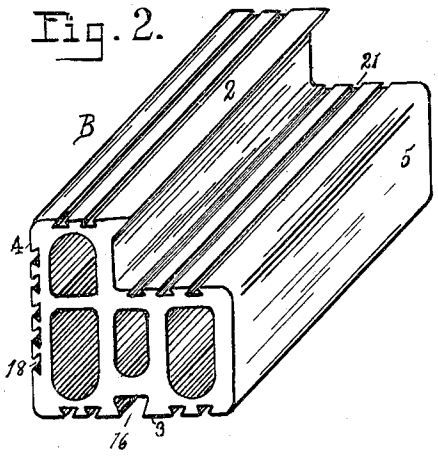
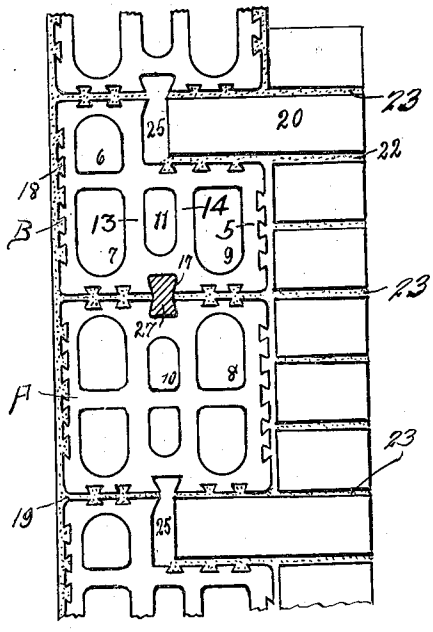


Fig. 3.



WITNESSES:

Sydney B. Davis.

W. H. Lloyd.

Frank R. Hale.

Inventor.

UNITED STATES PATENT OFFICE.

FRANK R. HALE, OF TERRE HAUTE, INDIANA.

TILE OR BLOCK.

1,290,740. Specification of Letters Patent. Patented Jan. 7, 1919.

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To all whom it may concern:

Be it known that I, FRANK R. HALE, a citizen of the United States, residing at Terre Haute, in the county of Vigo and State of Indiana, have invented a new and useful Improvement in Tiles or Blocks, of which the following is a specification.

My invention relates to the construction of walls, consisting of tile or block, in combination with brick or other similar veneering material; and the objects of the invention are:

First, to provide an improved construction of walls, whereby the component elements of the wall may be erected and bonded together as one composite masonry structure.

Second, to provide such a wall construction and tile or block therefor, wherein the veneer and tile or block, will be interlocked one with the other, in such manner that a plurality of independent air-channels will break the mortar joints at all points or courses, where the facing or veneer material interlocks with the tile or block, for the purpose of interrupting or preventing the penetration of moisture.

Third, to provide a tile or block, composed of a top and bottom, a plurality of perpendicular walls and intermediate webs, and one or more horizontal webs extending transversely across the interior of the tile or block, as shown.

A further object of the invention is to provide a tile or block, of the type described above, which will be divided by the walls and webs thereof, into a plurality of open air spaces, which, when a series of blocks are alined, will form continuous air passages within the wall so constructed; and to provide specially, a tile or block, wherein the interior walls of the top and bottom thereof, will be arched in all unions with the perpendicular walls and webs, as shown, for the purpose of reinforcing or strengthening the blocks at all such points of union.

These objects I attain by means of the structure and tile or block, illustrated in the accompanying drawings, in which:

Figure 1, is a perspective view of the tile or block.

Fig. 2, is a perspective view of the tile or block of the form used in the bonding course.

Fig. 3, is an elevation of a portion of a wall constructed of my tile or block, mortar or cement, and a brick veneer.

Similar letters and numerals of reference, refer to similar parts throughout the several views.

My tile or block is so formed as to provide the maximum strength, minimum weight and cheapness in manufacture, consistent with practicable efficiency, and comprises the essential features hereinafter specified in detail.

In Fig. 1, the letter A indicates a block of full dimensions, and adapted to use in all walls, and consists of a top wall 2, a bottom wall 3, the side walls 4 and 5, and is divided internally into six air chambers, 6, 7, 8, 9, 10, and 11, respectively, by a horizontal web 12, extending transversely across the center of the block, two perpendicular walls 13 and 14, extending throughout the length of the block, and disposed equidistant upon each side of the center of the block. The perpendicular webs 13 and 14, are so disposed or spaced, relative to the width of the block, that the central air-chambers 10 and 11, will be proportionately narrower than the side chambers 6, 7, 8, and 9, thereby producing the effect of a double central wall of great strength.

My blocks are so designed that when erected one upon another in wall construction, the respective and corresponding side walls and perpendicular webs of the blocks will stand in perpendicular alinement; and practice and experience has proven that the weight-strain of walls constructed of ordinary building block, concentrates at the points of union between the horizontal walls and the perpendicular webs of the blocks, and tends to shear the horizontal walls from the upper edges of the webs, thereby breaking down the block.

My block is designed particularly, with the view of obviating such shearing and breaking of the block, as shown in Fig. 1, wherein the numeral 15 indicates an arch, formed by the peculiar union of the corresponding side walls and webs, and the tops and bottoms of the block, respectively.

It is apparent that said arched union produces an arched wall in the air-spaces 6, 7, 8, and 9, and strengthens and reinforces the unions of the top, bottom, side walls, and perpendicular webs of the blocks.

Also, the horizontal web 12 forms a continuous transverse tie which unites the vertical webs and thus prevents lateral deflection, either outwardly or inwardly, of these vertical webs which sustain the load imposed upon them by the arches.

Comparatively deep, dovetailed channels 16, are provided centrally, and extending throughout the length of the block top 2, and block bottom 3. The dovetailed channels 16, flare inwardly from the outer surfaces of the top and bottom, and when two blocks are assembled, one upon the other, the corresponding edges of the channels 16, of said blocks, will coincide, and thereby form an hour-glass shaped air-channel 17, as shown in Fig. 3.

Dovetailed channels or scorings 18, extend horizontally throughout the length of the block top, bottom, and side walls, respectively, for the purpose of providing a lath-like bond for plaster, mortar, and other similar plastic material 19.

The letter B indicates my block altered in form, but not in principle, to facilitate the interbonding of stone, brick, or other veneer blocks 20, as shown in Fig. 3.

The block B is of the same general type and structure as the block A, except that one upper fraction thereof, comprising the corresponding portions of the top 2 and side wall 4, respectively, and the web 14, is omitted, as shown.

The exposed outer surface of the web of the block B, is scored with dovetailed channels 21, to facilitate proper bonding of the mortar 22.

It is apparent that my tile or block may be of varying dimensions and proportions, without departing in any way from the general principle thereof, and the proportions shown are for illustration in combination with brick, of the standard dimensions.

In Fig. 3, an end view of a portion of a wall is shown in section, wherein an inner wall of my blocks is interbond with a veneer of facing brick, said wall being laid in mortar and bond in courses.

As shown in Fig. 3, the blocks used in the wall illustrated, are so proportioned that each block A is equal in height to the height of three standard bricks 20, laid up flat, thereby bringing the mortar joints 23, between the blocks A and the flat bricks upon the same level; and the blocks B which are used for the purpose of admitting the bonding course of bricks 20, are so proportioned that the outer or exposed bearing surface of the web 12, will be equal in height to that of two flat bricks, thereby leaving proper spacing between the exposed web 12, and the top 2, of the block, to admit the inwardly projecting end of the bond brick 20, when laid as bond-course. As shown, the length of the bonding brick will cause said brick to extend over, and slightly beyond, the perpendicular web 14, thereby providing the double support of the web 14, and the side-wall 5, beneath the inner end of the bonding brick.

The web 13, of the block B, is properly positioned to leave an air space 25, corresponding to the air-chambers 10, between the inner end of the bonding brick 20, and the web 13, thereby preventing the penetration of any moisture which may penetrate the bonding brick or mortar adjacent thereto.

It is apparent from the system of construction illustrated by Fig. 3, that all mortar joints of the veneer or facing walls, are intercepted, either by the wall 5, or channel 17, of the block A, or the air-chamber 25, formed between the bonding brick and block B, thereby insuring a moisture proof inner wall.

In the event extra strength is desired in a wall to resist unusually heavy lateral pressure from within or without, I insert X-shaped metallic rods or bars 27, of full dimensions, or rods of other forms and sizes to correspond with the channels which extend horizontally throughout the length of the air-channels 17, thereby greatly reinforcing and binding the wall.

The advantages claimed for my wall construction and tile or block therefor, consist:

First, in the extreme strength, lightness, and minimum amount of material attained by the peculiar structure thereof.

Second, in the maximum bearing strength of both wall and individual block, attained by the arched formation of the inner walls of the top and bottom walls of the tile or block.

Third, the prevention of moisture penetration along mortar joints, internal sweating of the wall, attained by the peculiar design of my block, its channels and air-chambers, and the method of assembling the same with the bonding members of headers of the veneer or facing material.

I am aware that hollow tile or block, provided with air-chambers and webs, have been used prior hereto, and make no broad claim upon the same, but what I claim as an improvement, new and useful, and desire to secure by Letters Patent, is:

1. A building block or tile comprising top and bottom walls and laterally spaced vertical webs united thereto, said top and bottom walls having flat exterior mortar-receiving faces which extend between said vertical webs, said top and bottom walls being thickened progressively toward their points of union with the vertical webs, thus forming arches which span the space between the vertical webs, said arches being adapted to support the portions of the mortar-receiving faces lying between the verti-

cal webs against the weight imposed thereon by the wall.

2. A building block or tile comprising vertically spaced top and bottom walls and laterally spaced vertical webs united thereto, said top and bottom walls having flat exterior mortar-receiving faces which extend between said vertical webs, said top and bottom walls being thickened progressively toward their points of union with the vertical webs, thus forming arches which span the space between the vertical webs, said arches being adapted to support the portions of the mortar-receiving faces lying between the vertical webs against the weight imposed on said faces by the wall, and intermediate horizontal webs extending transversely between and uniting said vertical webs at points between said top and bottom walls.

3. A building block or tile comprising vertically spaced top and bottom walls, pairs of laterally spaced vertical webs united thereto, said top and bottom walls having exterior mortar-receiving faces which extend between said vertical webs and said top and bottom walls being thickened progressively toward their points of union with the vertical webs, thus forming arches which serve to support the portions of the mortar-receiving faces lying between the respective pairs of vertical webs against the weight imposed upon said faces by the wall, and a horizontal web extending continuously across the spaces between the vertical webs and united to all of said vertical webs at points intermediate the top and bottom walls.

4. A building block or tile consisting of a pair of units separated laterally and connected by horizontal webs forming air spaces between the units, each unit comprising a pair of vertical walls, horizontal members joining the tops and bottoms of said vertical walls and having flat exterior mortar-receiving faces and curved interior faces, said horizontal walls being thickened progressively toward their points of union with the vertical webs, thus forming top and bottom arches adapted to strengthen the mortar-bearing faces against pressure imposed thereon by the wall.

5. A building block or tile comprising vertically spaced top and bottom walls, pairs of laterally spaced vertical webs united thereto, said top and bottom walls having exterior mortar-receiving faces which extend between said vertical webs and said top and bottom walls being thickened progressively toward their points of union with the vertical webs to form arches which span the spaces between the respective pairs of vertical webs, said arches being adapted to support the portions of the mortar-receiving faces which lie between said vertical webs against the weight imposed thereon by the wall, one pair of vertical webs being spaced laterally from the adjacent pair of vertical webs and forming air chambers between said pairs of vertical webs, the top and bottom walls being formed on their exterior mortar-receiving faces with undercut channels in vertical alinement with said air chambers between the pairs of vertical webs to form mortar breaks in said faces, and a horizontal web extending continuously between and uniting said vertical webs at points intermediate the top and bottom walls, the respective pairs of vertical webs and their connecting top and bottom walls at opposite sides of said undercut channels constituting tile units.

In witness that I claim the foregoing as my own, I have hereunto affixed my signature, in the presence of two subscribing witnesses.

FRANK R. HALE.

Witnesses:
SYDNEY B. DAVIS,
W. H. FLOYD.