

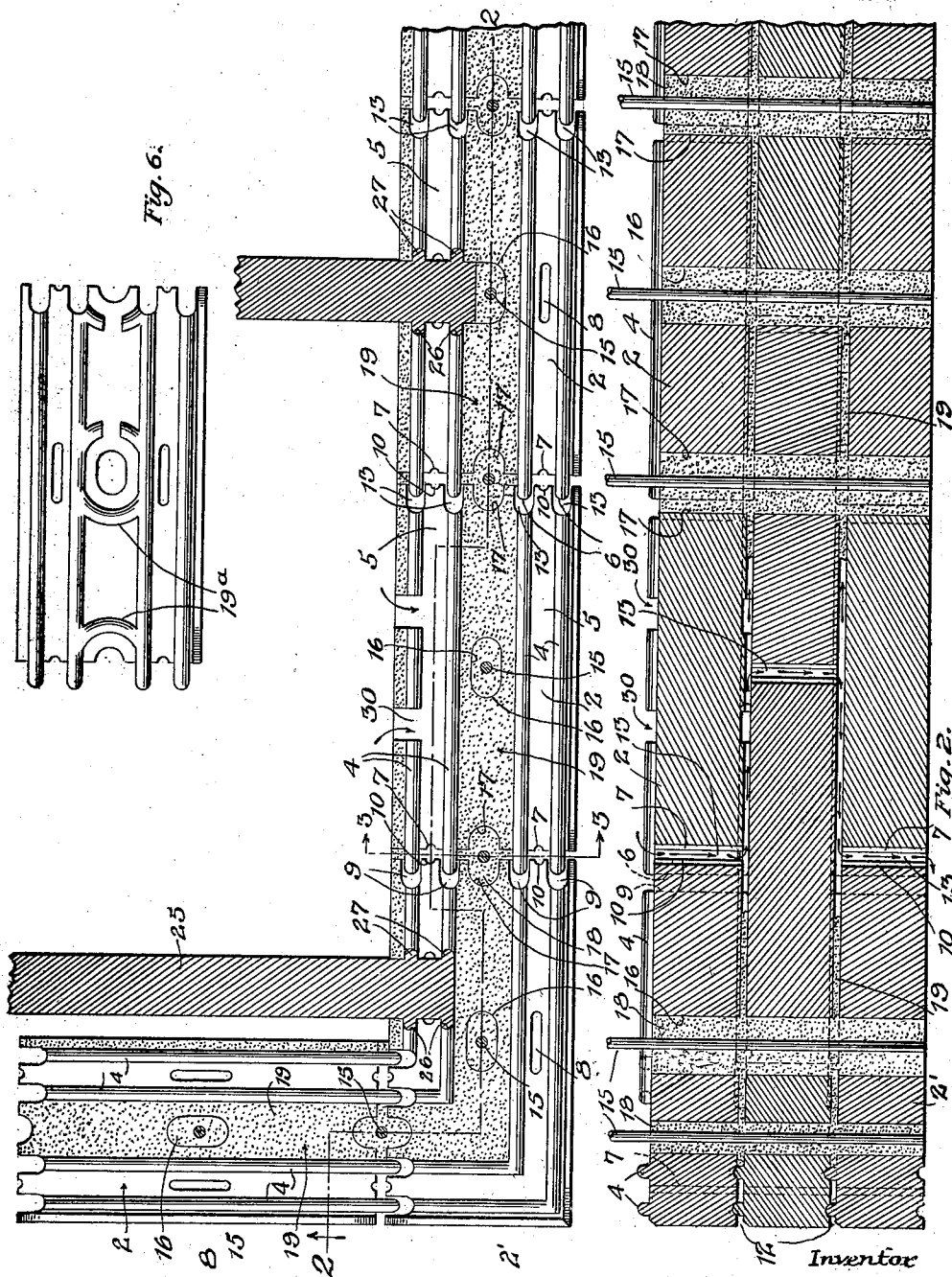
1,351,471.

W. H. DRABERS.
WALL SYSTEM.

APPLICATION FILED FEB. 21, 1919.

Patented Aug. 31, 1920.

3 SHEETS—SHEET 1.



WILLIAM H. DRABERS

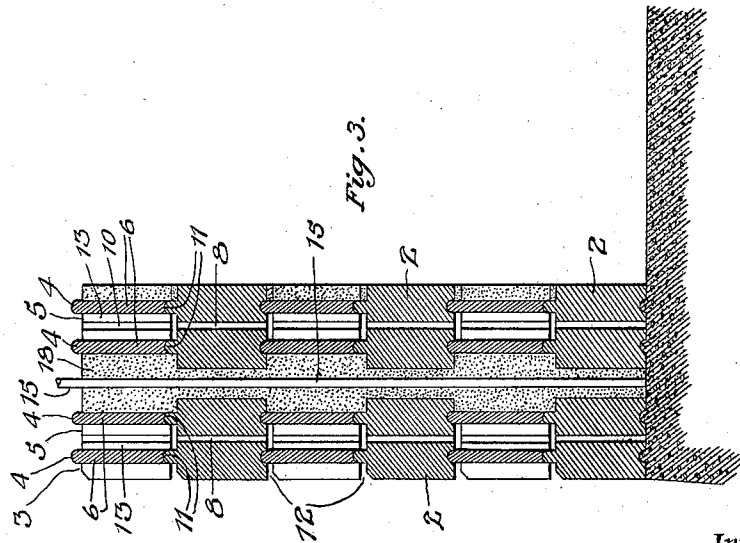
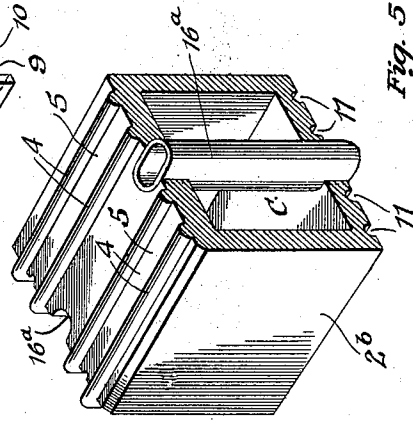
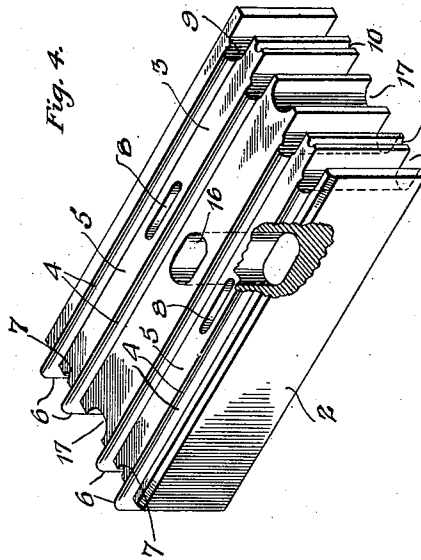
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3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

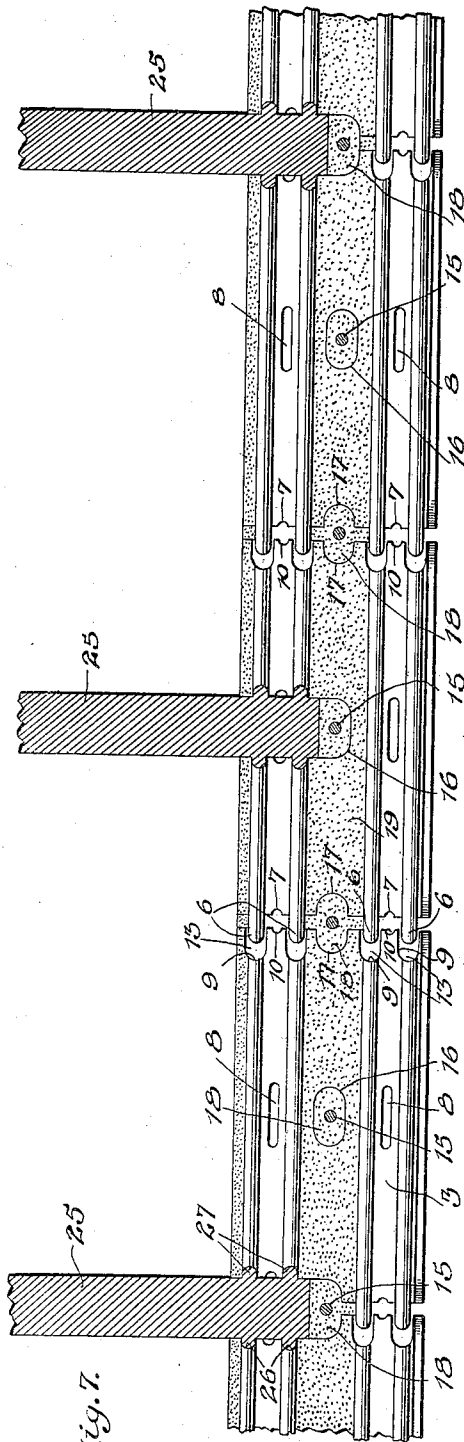


Fig. 7.

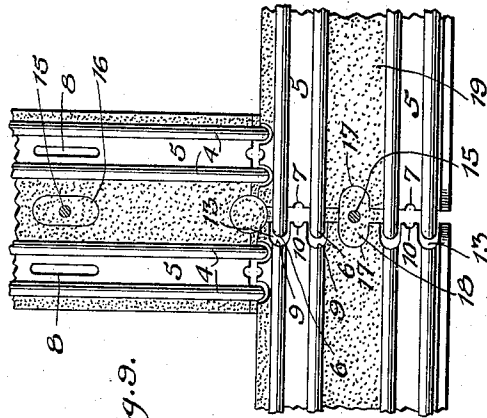


Fig. 8.

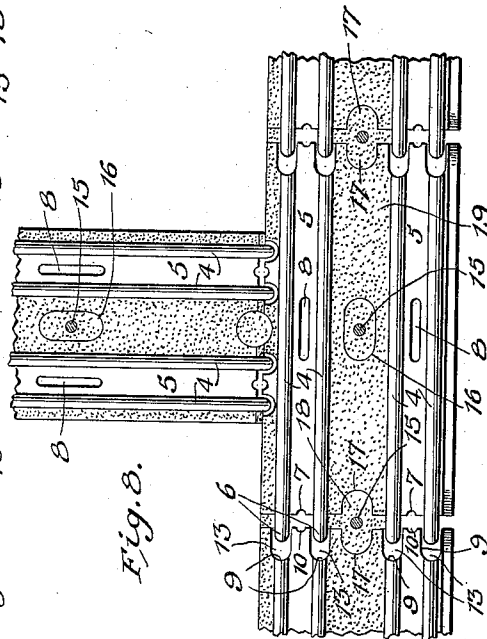


Fig. 9.

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WALL SYSTEM.

1,351,471.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WILLIAM H. DRABERS, a citizen of the United States, residing at Niles, in the county of Trumbull and State of Ohio, have invented certain new and useful Improvements in Wall Systems; and I do hereby 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 building material and more particularly to building blocks and walls constructed thereby.

The present invention especially relates to building tiles or blocks of such construction and design and proportion that by their use an interbonded and ventilated wall structure may be erected, it being an object of the present invention to provide a building block having such characteristics of design and other novel features as will enable the production of the blocks in quantity at comparatively small cost so as to compete with the cost of construction of buildings having hollow walls or solid walls if desired. It is another object of the invention to provide a building block having integral, interlocking means which also serve for the purpose of facilitating the alinement of the blocks and the rapidity of erection of a wall and a further object of the invention is to provide a block of coördinate group of interrelated blocks which not only provide for the ready erection of the wall but also provide for the proper ventilation of the wall. An important object of the invention is to provide a building block or tile of such characteristics as will enable the erection of a substantial wall with proper interbonding and will materially reduce the quantity of plastic bonding or cementitious material in the processes of construction of the wall.

With these and other objects in view as will be manifest to those versed in the art the invention consists in the construction, the combination and in details and arrangements of the parts as more particularly set forth in the following specification with relation to the accompanying drawing in which there is shown embodiments of the invention. In the drawings:

Figure 1 is a plan view of a portion of a wall in the course of construction the view being taken looking toward the top of the bricks or blocks.

Fig. 2 is a detail vertical section through the wall shown in Fig. 1 on the irregular line 2—2, the blocks being represented in normal position or with their bottoms lowermost as projected from Fig. 1.

Fig. 3 is a transverse, vertical section through a portion of a wall on the line 3—3 Fig. 1.

Fig. 4 is a perspective view of one form of block or brick partly broken away to show the center aperture.

Fig. 5 is a perspective view of a hollow block or tile broken away to show the stop tube extending through the center to form a central aperture to receive the bonding material.

Fig. 6 is a plan view of a slightly modified form of the rib arrangement of a block.

Fig. 7 is a plan showing how joists are connected to the wall structure.

Figs. 8 and 9 show angular wall joints.

The system of formation of my improved tile or block is quite plainly illustrated in Fig. 4, which is a perspective view of one of the course blocks or tiles which is generally indicated by the numeral 2, the block obviously being of any suitable dimensions and of the desired shape according to the relative position it might have in a wall construction and obviously while it is shown as oblong in form it might be otherwise configured according to the requirements of its position. The brick 2 in Fig. 4 is shown in perspective position so that its top 3 is viewed and has extending parallel to each other and lengthwise of the block two pairs of longitudinal ridges or beads 4—4 the outer one of which is spaced adjacent to the outer longitudinal corners of the block while the inner ridges or beads 4 are spaced a suitable distance inwardly from the outer ridges or beads and thereby form between each pair of the beads, horizontal and longitudinal grooves or channel ways 5. At one end of the brick or block the beads 4 extend vertically from the bottom to the top of the block as shown at 6—6 and the end of the block between each pair of beads 6—6 is shown as gouged or grooved at 7 so that when the ends of a pair of bricks are brought into juxtaposition there will be formed a vertical air space at the ends of the bricks between the beads 6—6 of each pair, this air space communicating with the horizontal, longitudinal space 5 which in turn is further provided for communication

with vertical air passages 8 extending from the top to the bottom of the brick and here shown as at the central portion thereof. The end of the block 2 opposite to the end having the beads 6—6 is shown as provided with vertical recesses or slots 9 which are of a depth somewhat greater than the height of the beads 6 from the end of the brick and are also of a width somewhat greater than the width of the beads so that in the construction of a wall shown for instance in Figs. 1, 2 and 3, the bricks may be assembled with rapidity and accuracy without the fracturing of the ends owing to jamming or locking of the interengaging complementary projections at the walls of the slots 9. Also the end of the block or brick having the slots 9 is provided with vertical air passages 10 disposed in a vertical plane which lies between the planes of the slots 9 of each pair thus providing for the passage of air down the ends of the bricks. In the erection of said wall the horizontal and longitudinal beads or ridges 4 on the top 3 of a brick or block are designed to match readily with horizontal, shallow and longitudinal grooves 11 Fig. 3 formed in the bottoms of the blocks, these grooves with the coördinate shoulders or beads 4 of the underlying blocks thus facilitating the proper alignment of the bricks in the erection of the wall as well also as providing for the proper spacing of the blocks vertically one above the other and providing for the uniform horizontal filling spaces 12 provided at the front of the wall Fig. 3, and which spaces may be closed with a suitable plastic material to give the desired brick exterior finish to the completed wall. There is therefore formed between the horizontal and adjacent faces of the blocks or bricks as they are laid in the wall, horizontally extending and substantially continuous air spaces 5 which at suitable intervals communicate with vertical air spaces 8 extending vertically through the center of the blocks and also with the air spaces 13 formed between the end faces of blocks when these ends are juxtaposed in staggered relation over the central vents or the openings 8.

For the purpose of providing for the reception of suitable vertical reinforcing rods 15 Figs. 1, 2 and 3, each of the blocks of the type illustrated in Fig. 4 is provided at its longitudinal and transverse center with a hole 16 while the ends of the block are provided with vertical grooves 17 which are designed to register when the ends of one pair of bricks are arranged in assembled position vertically over the central aperture 16 of a brick as shown in Fig. 3. These apertures 16 and the grooves 17 therefore not only form a vertical, continuous passage way for the reception of the rods 15 reinforcing the wall but they also

form a continuous vertical space for the reception of the cementitious plaster or binding material represented at 18 Fig. 3 which may also flow horizontally as at 19 in Figs. 1 and 2 into the space formed between the innermost and adjacent of the ridges or beads 4 along the bottoms of the bricks in a course. It will be seen therefore that I have provided for the thorough interbonding of the wall by the flow of cement or plaster vertically and longitudinally at the central plane longitudinally of the wall and yet have the plaster prevented from flowing laterally into the longitudinal air spaces 5 by reason of the provision of the beads 4 which readily seat in their respective grooves 11 in the bottom face of the superadjacent blocks.

If desired the upper, outer corners of the blocks may be beveled outwardly and downwardly as at 19 to simulate certain brick forms and also to facilitate the shedding of water from the wall joints.

As clearly shown in Fig. 1 the corner block 2' is illustrated as having one of its longitudinal faces made the counterparts as at 2 of an end of the adjacent brick having the projecting beads 6 so that a proper end joint and interlocking may be made between the bricks at the corner of the wall and also provide for the continuation of the horizontal and vertical air passages at the courses of the bricks at the location of a wall corner. And further to provide for the reception of a vertical reinforcement as at 15 at the corner; obviously the corner bricks will be made right- and left-hand to provide for the proper construction of a wall when bricks of the system designed are utilized. In Fig. 6 there is shown a slightly modified form of the brick in which plaster is prevented from flowing the entire length of the top central space or channel 19 by the provision of suitable transverse stops 19^a thus in this manner materially conserving in the amount of plaster or cement utilized in the bonding of the wall and yet securing a very efficient interlocking of the bricks in their courses during the construction of the wall by permitting a part of the plaster to flow horizontally into the space until limited by the transverse stops 19^a.

In Fig. 5 the same general system is involved in the construction of the block but the block is illustrated as being of larger proportions and is made hollow. But it is desirable that plastic material be economized in the use of hollow blocks of this character and for that purpose the central aperture or hole 16 through the top and bottom walls of the block is shown as provided with a tube or sleeve 16^a extending from top to bottom and preventing the flow of plastic material into the chamber C of

the hollow block 2^b. The ends have half round tubes if the block is tubular.

It is desirable in some cases to provide for the reception and support of transverse joists or beams 25 Fig. 1 and this I accomplish by providing some of the bricks or blocks of the system of construction with notches 26 designed to receive the interposed end of the joist or beam 25 which may if desired be provided with vertical interlocking beads 27 designed to enter complementary recesses 28 formed in the side walls of notch 26.

In case it should be desired to provide for the ventilation of a room or chamber at some portion of the wall this may be accomplished by having certain of the bricks or blocks provided with transverse air vents as shown for instance in Fig. 1 at 30. These vents provide for the inlet or outlet of the air flowing through the air chamber or passages 5 at the inside or outside of the wall.

It is manifest, of course, that the shape, size and arrangement of the blocks may be altered, changed, and modified as the exigencies may require and that the bricks or blocks may as above suggested be made of the desired shape or contour to provide for their proper placement in the wall according to the characteristic feature or structural essential in the wall as for instance where the wall may be made in the form of a curve either when the wall is set vertically or is in the form of an arch set horizontally and again the block might be designed in the form of a wedge to assume its proper position in an arch all of which modifications are so obvious as to be unnecessary of illustration.

What I claim is:

1. A building block having on each of two faces, a plurality of beads and on the opposed faces mating but shallow grooves, said beads constituting the side walls of continuous intercommunicating vertical and horizontal cement channels and continuous intercommunicating vertical and horizontal air channels.
2. A building block having a plurality of

beads on the top and one end and a plurality of mating but shallower grooves on the bottom and other end, said beads constituting the side walls of a central cement channel and of air channels exterior, and on each side of said cement channel.

3. A wall constructed of blocks, each block provided with parallel beads and mating but shallower grooves, said beads of one block engaging said grooves of an adjacent block and constituting the side walls of a plurality of independent, continuous, intercommunicating air channels and a central continuous, intercommunicating cement channel.

4. A wall constructed in courses and comprising building blocks, each of which has on one face more than two ribs extending horizontally parallel with the wall and a like number of correspondingly located grooves on the opposite face, the ribs being of a height greater than the depth of the grooves, said ribs constituting the side walls of independent and continuous air channels on each side of a continuous central cement channel.

5. A wall constructed in courses and comprising building blocks, each of which has on one face and end more than two ribs, each face and end rib lying in a vertical plane and a like number of grooves in the opposite face and end, correspondingly located, said ribs constituting the side walls of independent continuous and intercommunicating vertical and horizontal air channels and a continuous intercommunicating vertical and horizontal central cement channel and a cementitious material filling said central cement channel.

6. A wall comprising a plurality of blocks having beads and mating but shallower grooves on their adjacent faces and ends, said beads forming the side walls of a central and flanking channels, said channels being continuous and intercommunicating, having cementitious binder filling said central channel.

In testimony whereof I affix my signature.

WILLIAM H. DRABERS.