

J. E. EXNER.
BUILDING BLOCK.
APPLICATION FILED SEPT. 21, 1915.

1,210,287.

Patented Dec. 26, 1916.

FIG. 1.

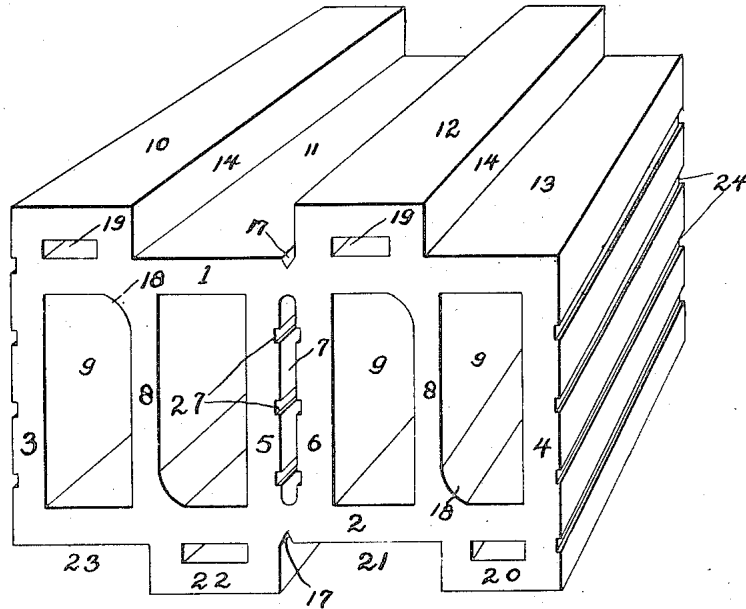


FIG. 2.

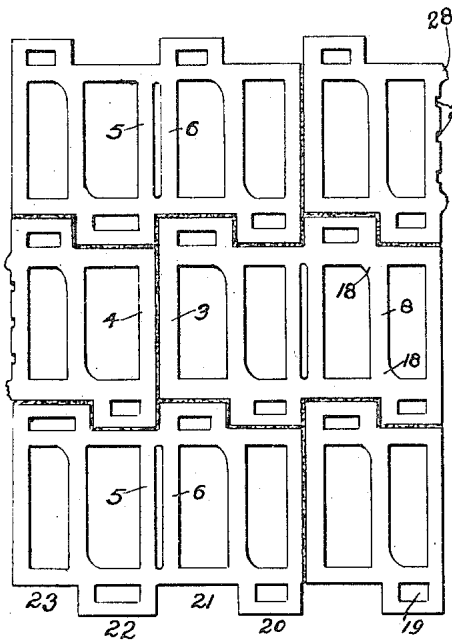
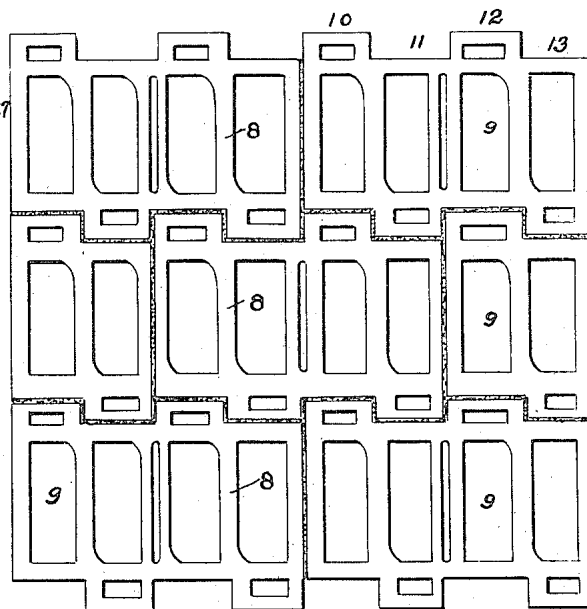


FIG. 3.



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BUILDING-BLOCK.

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To all whom it may concern:

Be it known that I, JOSEPH E. EXNER, a citizen of the United States, residing at Coffeyville, in the county of Montgomery and State of Kansas, have invented certain new and useful Improvements in Building-Blocks; 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 masonry and concrete structures, and more especially to hollow walls; and the object of the same is to produce a building block or unit by means of which a hollow or ventilated wall can be formed of units which are interlocked.

Other objects will appear in the following specification, and reference is made to the drawings wherein:

Figure 1 is a perspective view of this building block. Figs. 2 and 3 are end elevations of twelve inch and sixteen inch walls made therefrom.

It is my intention to make these blocks from shale, concrete, brick clay, and other suitable plastic materials; and I do not wish to be limited to the material, the process of manufacture, or the proportion and exact construction of parts.

I may say generally that the aim of the invention is to produce a building block whereof each unit is separable into like halves and each half can be used on the inside or outside of a wall; and the units are interlocked with each other or the halves are interengaged with the units when laid. Preferably these units are laid in cement, mortar, or other binding agent; and here again the widest latitude must be permitted.

The block comprises a rectangular body which may measure about eight inches wide by five inches high and will be as long as desired; and ribs at the top and bottom of this body, running lengthwise thereof. The body is hollow having a top wall 1, a bottom wall 2, and side walls 3 and 4; and midway between the side walls is the main web or double web composed of two upright walls 5 and 6 spaced slightly from each other so as to produce a narrow channel or slot 7. About midway between this web and each side wall I prefer also to form another upright or single web 8, with the

result that four chambers 9 extend longitudinally through the body of the block.

Along what might be called the left hand quarter of the upper face of the top 1 extends a rib 10, and along the third quarter a rib 12. Between these ribs a space 11 occupies the second quarter, and to the right of the rib 12 another space 13 occupies the fourth quarter. Each rib is itself preferably hollow, being cast with a small longitudinal chamber 19 as shown. The left wall of the left rib is flush with the face of the left wall 3 of the body, but the face 14 of its right wall stands about over the center of the single web 8 beneath, and the upper end of this web is widened as at 18 so as to underlie and support the full width of the right or inner wall 14 of the rib 10. The left face of the other rib 12 stands over the right side of the slot 7, and its right face 14 over the center of the subjacent web 8 as already described. The result is that the space 11 is a little wider than either of the two ribs which define it, and the space 13 is also a little wider than either rib and is open at its right side. The construction of the bottom of the unit is exactly the reverse, by which I mean to say that the quarters of the lower face of the bottom wall 2 reading from right to left are formed respectively into a rib 20, a space 21, a rib 22, and a space 23.

Along the outer face of the top and bottom walls of the body directly in line with the transverse center of the slot 7 are cut grooves 17 of such depth that the material between the bottom of such groove and the extremity of the slot is considerably reduced in thickness. The result is that when it is desired to divide this unit into halves a sharp blow suitably given will break it along the two grooves in a manner which will be clear. Thereafter each half unit has one rib and one space at its top and one space and one rib at its bottom. The use of the units and half units is well shown in Figs. 2 and 3. If the units are eight inches wide, one and a half units will be employed in erecting a wall twelve inches thick, and at the right of the upper row and left of the second row in Fig. 2 I have shown how the complementary halves of a broken unit will appear when built into a wall of this thickness. If the wall is sixteen inches thick

it can be built of two full-width units, side by side, but for the sake of strength occasional rows or every other row may have the units staggered so that their ribs will interlock with the spaces in the rows above and below. It may not be necessary to stagger every other row, but by reason of the grooves and slots it is very easy to break this building block and it would be almost no work at all to stagger alternate rows as the wall was erected and interlock all the blocks. The same will be true of thicker walls, but the illustration need not be amplified.

By the word "interlock" as herein used I mean that each of the spaces in a whole block or unit in one row receives a rib of a unit in the row adjacent so that these two blocks are a little more than interengaged—they are "interlocked" in such manner that neither can move either to the right or left with respect to the other. As an illustration take the whole unit at the left of the upper row in either Fig. 2 or 3. Its lower space (corresponding to 21 in Fig. 1) receives the left hand upper rib of the unit in the row below (corresponding to 10 in Fig. 1) and therefore these two units cannot move laterally in either direction with respect to each other and are interlocked. The term "interengaged" might be used as expressing the connection between the half unit at the right of the uppermost row in Fig. 2 and the whole unit beneath it. Here the space 23 and the rib 22 of the half unit interengage respectively with the rib 12 and the space 13 of the whole unit beneath, and while it is possible that the half unit cannot be moved to the left with respect to the whole unit below, it could be moved to the right. It is to be understood that these remarks do not take into consideration the mortar or cement employed and whose adhesive properties might very well interlock all units or half units. If laid without such mortar or cement the whole blocks or units would interlock as described and the half blocks or half units would interengage.

In the construction of "hollow tile" dwellings which are to be plastered on the inside and treated externally as with stucco, provision is often made for roughening the exposed faces of the tiles or blocks, so that the plaster, cement, etc., will find a ready cling and adhere permanently thereto. Such roughening may be accomplished when my tile is formed, and by preference I produce it by making grooves 24 along the outer faces of the side walls 3 and 4. As seen in Fig. 1 it may also be desirable to form grooves 27 along the side walls of the slot 7, and then when the block is broken into halves these grooves may be caused to appear on the exposed faces of the wall as seen in Fig. 2, and the broken off piece 28 may also be left as a cling for the plaster, etc.

Where the grooved faces come next each other in the interior of a wall made up of these units, the cement enters them and makes a very strong union as well understood. But the most important structural feature of this building block is the fact that its ribs and spaces interlock when it is used entire or interengage when it is used in halves.

I have described and illustrated the block as used in the manner I prefer to employ it, laying it in rows along the wall being erected; but it is possible to place the blocks vertically so that the chambers 9 and 19 become upright flues, and it is also possible to lay the blocks with these chambers across the wall, although probably that would rarely be done. Attention is directed to the fact that when the blocks are laid as shown in the drawings, the contiguous side walls of the units in one row stand directly over the parts 5 and 6 of the double web in a unit of the row beneath. Also the single webs 8 all stand in line with each other, and where they are widened at 18 they underlie and support the inner walls of the ribs above. This arrangement of parts gives great strength to the building block and prevents crushing.

I have described and illustrated the use of this block only in a twelve inch wall and a sixteen inch wall, but the wall could be increased in thickness indefinitely, or an eight inch wall could be built by laying whole blocks directly on each other. A four inch wall might even be built by using half blocks, but walls as thin as this are often faced or backed with brick as well understood by builders.

What I claim is:

1. A building block comprising a rectangular body having ribs rising from the first and third quarters of its upper face and depending from the second and fourth quarters of its lower face, all ribs being slightly narrower than the space between them, for the purpose set forth.

2. A hollow building block having a pair of slightly spaced webs connecting its top and bottom walls midway between its side walls and defining a slot between said webs, the outer face of the top and bottom walls being grooved on lines parallel with such slot; and ribs rising from the first and third quarters of the top wall and depending from the second and fourth quarters of the lower wall, all ribs being slightly narrower than the spaces between the ribs and the innermost ribs standing alongside said grooves.

3. A hollow building block comprising top, bottom, and side walls, a pair of slightly spaced upright main webs midway between the side walls and defining a slot between them, and single webs midway between the main webs and the side walls, all webs unit-

ing the top and bottom walls and the outer faces of the latter having grooves parallel with said slot; two spaced ribs rising from the top wall, and two spaced ribs depending from the bottom wall, each rib on one wall being opposite to and slightly narrower than a space on the other and the inner ribs standing alongside said grooves.

4. A hollow building block comprising top, bottom, and side walls, a pair of slightly spaced upright main webs midway between the side walls and defining a slot between them, and other and single webs midway between the main webs and the side walls and having their upper and lower extremities widened, the outer faces of the top and bottom having grooves parallel with said slot; ribs rising from the first and third quarters of the top wall with their own right walls above the widened portions at the upper ends of said single webs, and ribs depending from the second and fourth quarters of the lower wall with their own left walls underlying the widened portions at the lower ends of said single webs.

5. A building block made up of two like

halves, each having a rib rising from one half of its upper face and another rib depending from the other half of its lower face, said halves having their top and bottom walls integrally united and grooved alongside one rib on each half and the block containing a break-slot between and in line with said grooves.

6. A hollow building block having an upright central web midway between its side walls and other upright webs respectively midway between said walls and central web, all webs integrally uniting the top and bottom walls and each of said other webs being widened on one side at its upper end and on the other side at its lower end at its respective points of juncture with said top and bottom walls; and hollow ribs rising from alternate quarters of the top wall and depending from intervening alternate quarters of the bottom wall, each rib being narrower than the space between two contiguous ribs and having one of its walls alined with said widened portion.

In testimony whereof I affix my signature.

JOSEPH E. EXNER.