April 30, 1929. C. MIRABELLA ET AL 1,710,833

CONCRETE BRICK AND METHOD OF BUILDING THEREWITH

Filed May 3, 1927

Fig. 1.

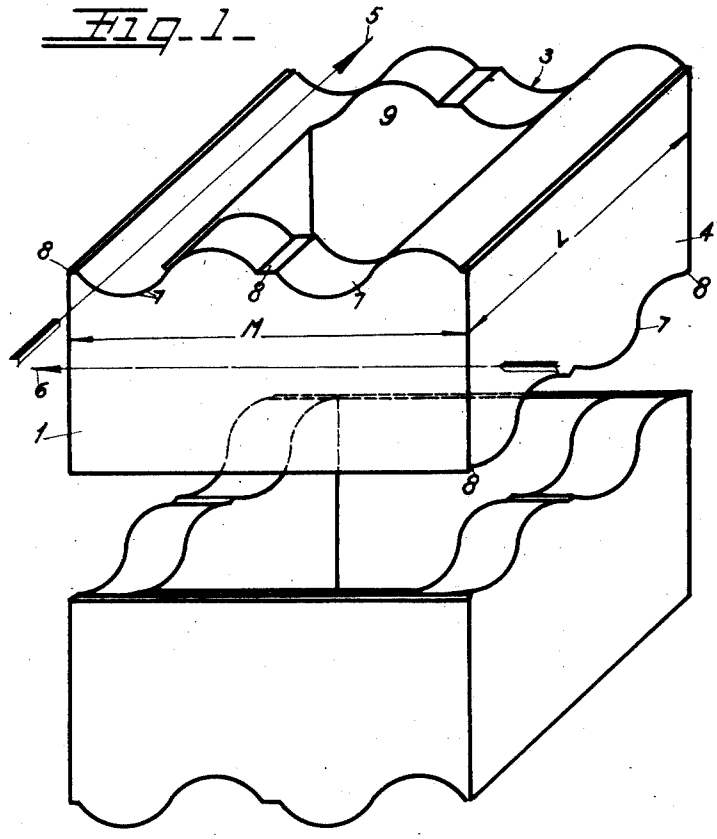
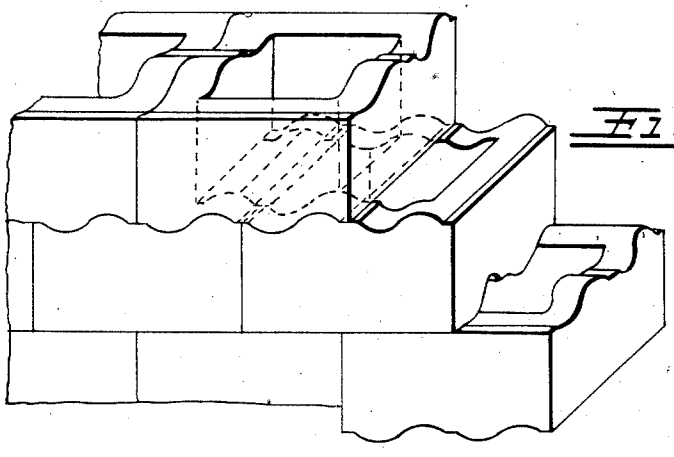


Fig. 2.



Inventors;
C. Mirabella
S. Tornadore &
L. Pantani
Marks & Clark
Attorneys.

Patented Apr. 30, 1929. 1,710,833

UNITED STATES PATENT OFFICE.

COLOMBO MIRABELLA, OF BROOKLYN, NEW YORK, AND SEBASTIANO TORNADORE AND LEONE PANTANI, OF GENOA, ITALY.

CONCRETE BRICK AND METHOD OF BUILDING THEREWITH.

Application filed May 3, 1927. Serial No. 188,578.

This invention relates to improvements in cement or the like building blocks of the type provided on their upper and lower surfaces or edges with interengaging means such as ribs and channels corrugations or the like, the blocks being provided with apertures which when a wall is built up form vertical channels which can be filled with liquid cement or the like which after solidification strengthens and binds the entire structure.

Our improved block which is provided with interengaging corrugations or undulations is characterized by the provision of flat surfaces disposed and arranged particularly with respect to the undulations. Further when the blocks are erected to form a wall the hollows or recesses of the blocks instead of forming vertical channels for the liquid cement to be poured into, form a network of channels arranged so that the liquid cement poured in, interlocks the structure not only in the vertical direction but also in the horizontal direction.

An embodiment of the present invention is shown in the accompanying drawing in which Fig. 1 is a view of two bricks of the kind proposed in perspective, somewhat apart from one another, but orientated as they would be in the construction. Fig. 2 is a perspective view showing a fragment of a wall with the blocks arranged in staggered relation.

Referring to the drawing, the upper block or brick presents four vertical plane walls. 1 to 4 (of which, only the walls 1 and 4 are visible) and two horizontal surfaces bearing both like undulations, but perpendicular to one another, the undulations of the upper face running in the sense of the arrow 5 and those of the other face in the sense of the arrow 6, i. e. normal to the former.

The undulations 7, in the preferred embodiment, are sinusoidal, and are interrupted at the ends and the central portion by plane tracts. In the embodiment, as shown in the drawing, the central plane tract 8 is twice as broad as the tracts at the corresponding parallel corners of the block, for the purpose as stated hereinafter.

Each block is formed with a central rectangular prismatic hole 9, disposed with the faces parallel to the outer vertical faces of the block. All the bricks are alike, as they can be different from one another only by the length of the longer side, which however should be an entire multiple of the length of the shorter side, the length of the sides to be considered being measured, in the drawing, in the direction of the arrows L and M.

The above described type of bricks or blocks will be used for building in the following manner.

On a suitable layer of plastic mortar or concrete, a first layer of bricks will be arranged with the undulated faces horizontal. Generally the layer will be for walls one brick thick and each brick will be arranged with the undulations either in line or parallel to those of the adjacent bricks, i. e. the grooves or channels of one brick should be disposed in continuation of the channels or grooves of the adjacent bricks, or parallel to them, for each plane wall.

On this first layer of bricks other layers of bricks will be arranged with "break joints" and without mortar.

Owing to the special construction of the bricks, the outer plane surfaces of two contiguous bricks will meet on or under the central double plane surfaces of the upper or lower brick, the bossing or projections on the bricks of one layer fitting perfectly into the channels of grooves of the bricks of the other layer, and vice-versa.

By this arrangement of the bricks, the inner spaces of each brick of the upper layer will communicate with the corresponding spaces of the lower brick layers, but, as the bricks are disposed so as to break joint, the spaces of the upper layer bricks will be in line only with the underlying odd number layers and with the side parts of the spaces formed in two adjacent bricks in the even number layers, counting from above.

Having thus arranged a certain number of brick layers, from the upper layer an almost liquid cement mortar is filled into the intercommunicating spaces, to the undermost. This mortar, by hardening, binds the bricks together in such a manner, as to lend the wall an almost monolithic resistance.

From the foregoing it will be seen that in the construction according to the present invention, no iron mountings are needed.

Walls constructed according to this system are healthy from all points of view, good

insulators against heat and dampness and sufficiently soundproof for ordinary requirements.

Further they are easily plastered, as the rough walls present an even face and do not stain the plaster spread thereon.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:

1. A hollow concrete building block, having plane vertical surfaces and undulated horizontal surfaces, the undulations being interrupted by flat surfaces adapted to register with like flat surfaces of the adjacent brick, the said flat surfaces being provided both at the ends of the bricks and in central positions parallel to said ends the central flat surfaces being twice as broad as those at the ends, substantially as described.

2. A hollow building block as in claim 1, in which the hollow of each block is disposed so that when the blocks are in situ the hollow is in correspondence with two portions of the hollow of two different blocks both of the upper and of the lower course, the centre of the hollow corresponding to the line of separation of the two underlying blocks or also of the two blocks of the upper course whereby cement or mortar poured into the hollows, forms a kind of net which not only fills the voids vertically, thus forming as a prism of cement, but also fills the spaces just above the solid adjacent portions of each two adjoining blocks, thus interlocking the construction not only in transversal direction but also in vertical direction.

In testimony whereof we affix our signatures.

COLOMBO MIRABELLA.
SEBASTIANO TORNADORE.
LEONE PANTANI.