May 15, 1934.

P. J. MAUL

1,959,083

BUILDING BLOCK

Filed May 4, 1933

2 Sheets-Sheet 1

Fig. 1.

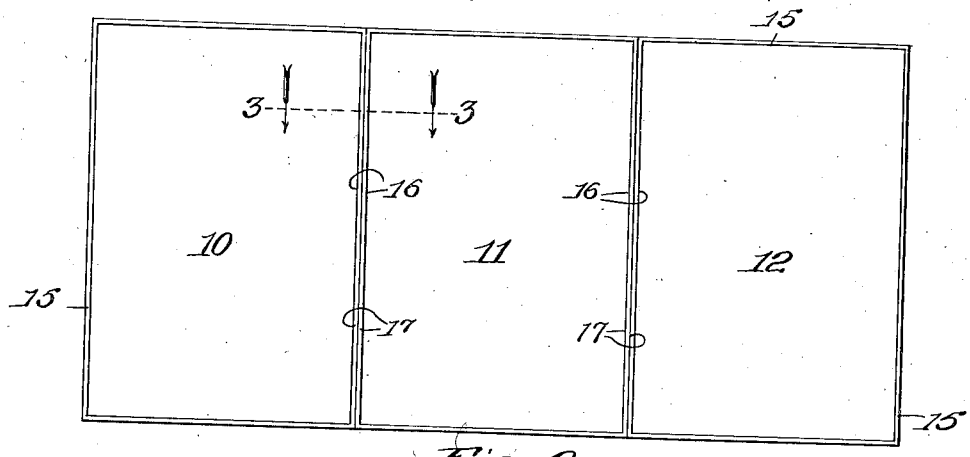


Fig. 2.

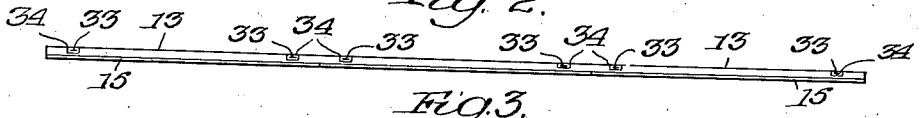


Fig. 3.

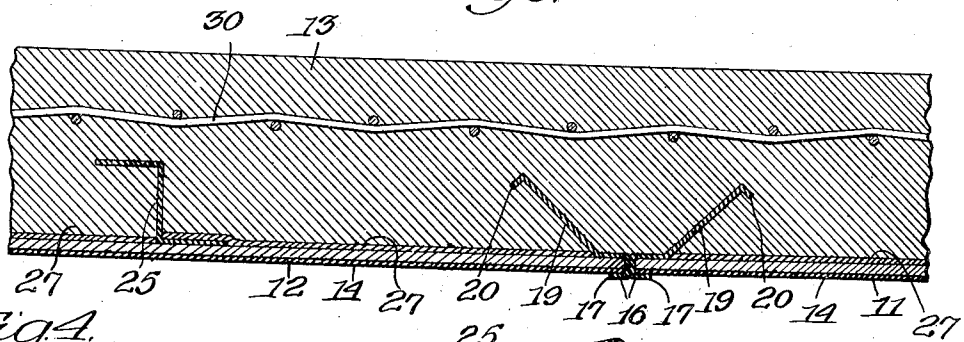
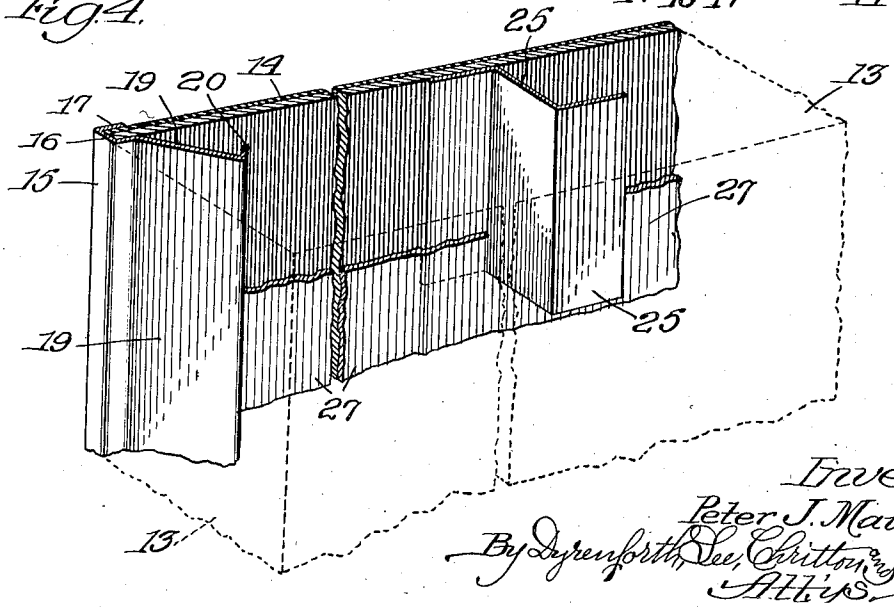


Fig. 4.



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2 Sheets-Sheet 2

Fig. 5.

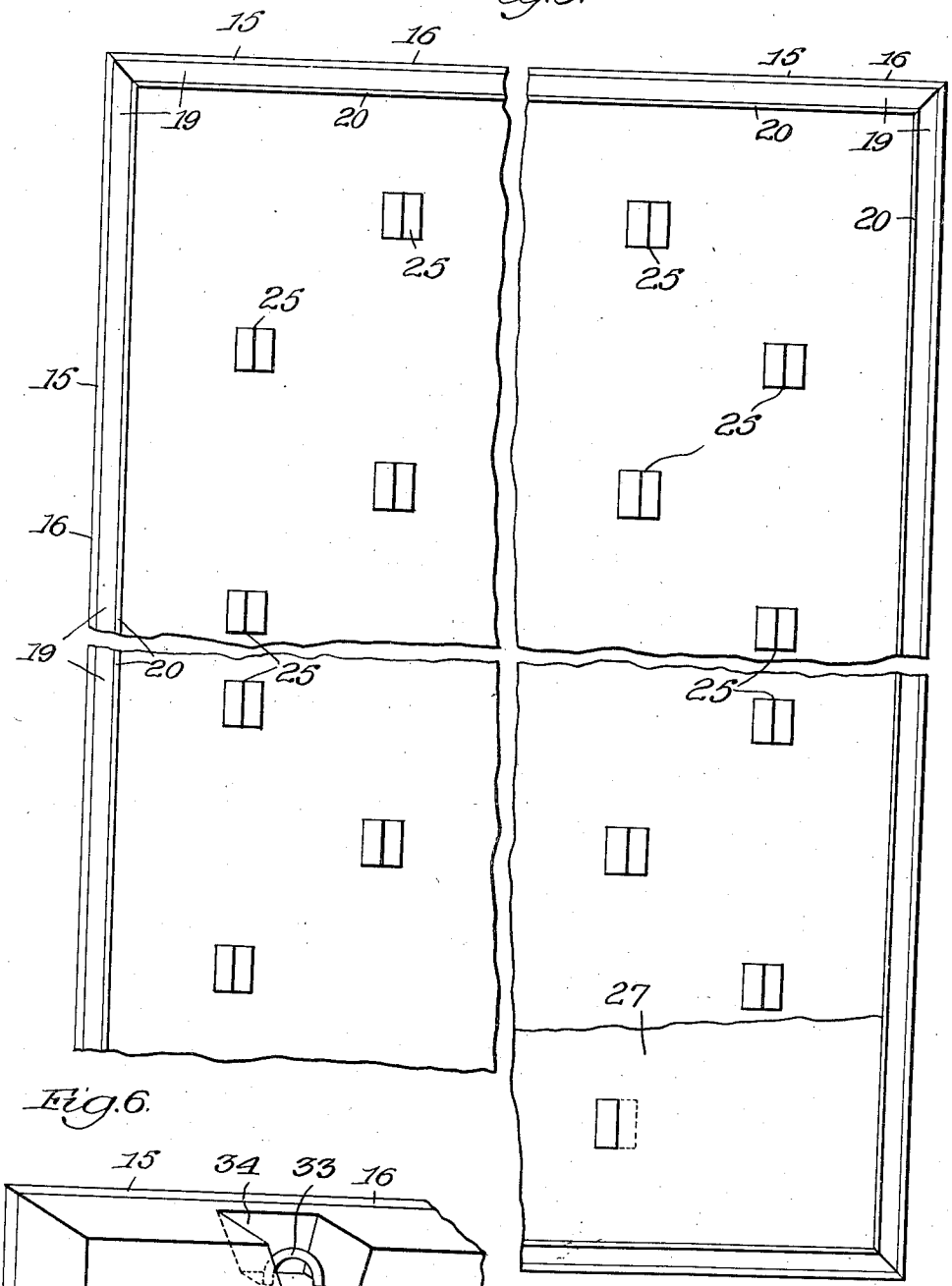
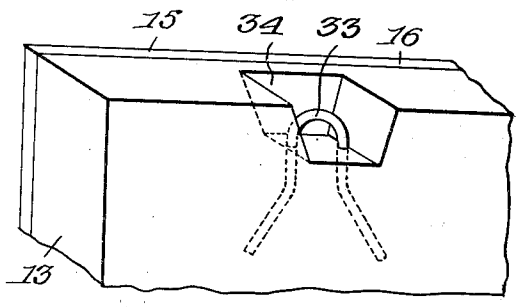


Fig. 6.



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Patented May 15, 1934 1,959,083

UNITED STATES PATENT OFFICE

1,959,083

BUILDING BLOCK

Peter J. Maul, Detroit, Mich., assignor to The Macotta Unit Corporation, a corporation of Maryland

Application May 4, 1933, Serial No. 669,394

12 Claims. (Cl. 72—35)

The invention relates to building blocks and is particularly adapted to be embodied in relatively large blocks suitable for use where exterior walls of light and thin construction are desired. However, the invention is limited to this use only to the extent indicated in the appended claims.

One form of the invention is embodied in a building block which has its front surface covered by a plurality of sheets of porcelain enameled metal, each sheet of porcelain enameled metal being provided with a binding or edging of stainless steel or other metal around its periphery. Formed integral with the binding or edging of stainless steel or other metal, are flanges which project rearwardly and inwardly of the porcelain enameled sheet. These flanges are embedded in a concrete block formed by pouring the concrete on the porcelain enameled sheets. The porcelain enameled sheets are provided intermediate their marginal portions by anchors formed of sheet metal which are preferably welded thereto. These anchors of sheet metal are also embedded in the concrete block and secure the porcelain enameled sheets to the concrete. Intermediate the back surfaces of the porcelain enameled sheets and the concrete block, a layer of mastic material is preferably provided. The mastic material is preferably adhesive in character so that it tends to bind the porcelain enameled sheets to the concrete. The mastic material also protects the porcelain enameled sheets from moisture which would corrode them.

Other objects and advantages of the invention will become apparent as the following detailed description progresses, reference being had to the accompanying drawings, wherein—

Fig. 1 is a front elevation of a building block which embodies the invention.

Fig. 2 is a plan view of the improved block.

Fig. 3 is an enlarged fragmentary section taken on line 3—3 of Fig. 1.

Fig. 4 is a fragmentary perspective view of a porcelain enameled sheet which forms part of the improved block.

Fig. 5 is a rear elevation of the porcelain enameled sheet, and

Fig. 6 is a fragmentary perspective view of a corner of the improved building block.

Referring to the drawings wherein a preferred embodiment of the invention is illustrated, the reference characters 10, 11 and 12 designate three porcelain enameled sheets of metal which cover the front surface of a concrete block 13. The concrete block 13 is preferably formed from porous burned shale and a cementitious material but it may be formed from any suitable material. The porcelain enamel on the sheets 10, 11 and 12 is indicated at 14.

Each of the sheets 10, 11 and 12 is provided with a metallic edging 15 around its periphery. The metallic edging may be formed of stainless steel, aluminum or any other suitable metal. As best shown in Figs. 3 and 4, the edging 15 is preferably in the form of U-shaped members 16 which embrace and are preferably clamped on the edges of the sheets 10, 11 and 12 in such manner that the marginal portions of the porcelain enamel 14 is protected by flanges 17 forming parts of the U-shaped sections 16.

Preferably formed integral with the U-shaped sections 16 are flanges 19 which project inwardly and rearwardly from the sheets 10, 11 and 12, the flanges 17 being preferably disposed at an angle of approximately 45° with respect to the plane in which the sheets 10, 11 and 12 are disposed. The inner or free edges of the flanges 19 terminate in relatively short flanges 20 which extend at an angle to the flanges 19. As illustrated in Figs. 3, 4 and 5, the flanges 19 are preferably provided with apertures 22. The ends of each flange 19 are preferably mitered as illustrated in Fig. 5.

Disposed intermediate the flanges 19 and preferably spot welded to the rear surfaces of the sheets 10, 11 and 12 are anchoring devices 25 which are preferably formed from sheet metal.

The flanges 19 and the anchors 25 are embedded in the concrete block 13 and serve to secure the sheets 10, 11 and 12 to the concrete block. It will be readily understood that when the concrete block 13 is to be formed, the sheets 10, 11 and 12 are placed face downwards in a mold, after which the concrete or plastic material is poured over the back surfaces of the sheets 10, 11 and 12 to the desired thickness. After the concrete or plastic material has set, the flanges 19 and the anchor 25 are firmly embedded therein.

In the preferred embodiment of the invention, the back surfaces of the porcelain enameled sheets 10, 11 and 12 are preferably covered with layers 27 of mastic before the concrete block 13 is formed. The mastic may be of any suitable composition but its main ingredients are preferably asbestos fibre, asphalt and Chinawood oil. This mastic is adhesive in its nature and tends to bind the sheets 10, 11 and 12 to the concrete block 13. The mastic also protects the back surfaces of the sheets 10, 11 and 12 from the corroding effect of moisture.

The concrete functions to some extent as thermal insulation, particularly if porous burned

shale is employed as the aggregate. Where a higher degree of insulation is desired, a layer of thermally insulating material may be employed in place of the layers 27 or in addition thereto.

The concrete block 13 may be reenforced with any suitable means. Thus, in the present instance, the block 13 is reenforced by a metallic mesh 30. When reenforced in this manner, the building blocks can support the ordinary loads to which they are subjected.

Suitable means may be embedded in the concrete block 13 for use in attaching the block to the framework or walls of a building. In the present instance, eyes 33 are embedded in the concrete block 13 and project into notches 34 formed thereon. (See Fig. 6.)

The block 13 may be formed of plaster instead of concrete, if it is so desired, as the flanges 19 and the anchor 25 form suitable means for securing the plaster to the metallic sheets 10, 11 and 12. In the smaller size blocks, only one or two of the sheet metal panels need be employed, it being readily understood that these sheet metal panels may be of any suitable dimensions. As an example of the sizes in which the improved blocks may be made, it may be assumed that the front surface of the block shown in the drawings is four feet high and nine feet long and that the sheet metal panels 10, 11 and 12 are all of the same height and width. The flanges 17 of the U-shaped section 16 are approximately ⅛ of an inch in width.

An advantage of the improved construction is that the flat sheets 10, 11 and 12 will not buckle during the firing operation. It has been the common practice heretofore to provide rearwardly extending integral flanges on similar porcelain enameled sheets and when such sheets were fired, they buckled and the porcelain enamel had a tendency to craze at the edges of the sheets.

While I have shown and described certain embodiments of my invention, it is to be understood that it is capable of many modifications. Changes, therefore in the construction and arrangement may be made without departing from the spirit and scope of the invention as disclosed in the appended claims, in which it is my intention to claim all novelty inherent in my invention as broadly as possible, in view of the prior art.

I claim:

1. A block of the character described comprising a sheet metal facing, a metallic edging clamped around the periphery of said sheet metal facing, a body of plastic material, and means intermediate the edging and projecting from said sheet metal facing into said plastic material to anchor said sheet metal facing thereto.

2. A block of the character described comprising a coated sheet, U-shaped members clamped to the edges of said enameled sheet, a body of plastic material, and members formed integral with said U-shaped members to secure said enameled sheet to said plastic material.

3. A block of the character described comprising a body of plastic material, a coated sheet applied to one face of said body, U-shaped members clamped to the edges of said sheet to protect said edges, and flanges formed integral with said U-shaped members and embedded in said plastic material to secure said coated sheet thereto.

4. A block of the character described comprising a body of plastic material, a coated sheet applied to one face of said body, U-shaped members clamped to the edges of said sheet to protect said edges, and metallic members secured to said sheet and embedded in said body to secure said sheet thereto, said metallic members being spaced from said U-shaped members.

5. A block of the character described comprising a body of plastic material, a porcelain enameled sheet applied to one face of said body, U-shaped members clamped to the edges of said sheet and having extensions projecting into said body to secure said sheet thereto, and members projecting from said body whereby it may be attached to a wall, or the like.

6. A block of the character described comprising a body of plastic material, a sheet metal panel for one surface of said body, a layer of mastic disposed between said panel and said body, U-shaped members clamped to the edges of said panel, and means secured to said panel and projecting into said body to secure said panel thereto.

7. A block of the character described comprising a body of plastic material, a sheet metal panel for one surface of said body, U-shaped members straddling the edges of said sheet metal panel, and flanges formed integral with said U-shaped members and projecting into said body to secure said panel thereto.

8. A block of the character described comprising a body of plastic material, a sheet metal panel for one surface of said block, U-shaped members straddling the edges of said sheet metal panel, and flanges projecting from said U-shaped members into said body to secure said panel thereto.

9. A block of the character described comprising a body of plastic material, a sheet metal panel for one surface of said block, a U-shaped member straddling one edge of said panel, and means projecting from said U-shaped member into said body to secure said panel thereto.

10. A block of the character described comprising a body of plastic material, a sheet metal panel for one surface of said body, and sheet metal members embedded in said body and engaging the marginal portions of the front surface of said sheet metal panel, said sheet metal members securing said panel to said body.

11. A block of the character described comprising a metallic sheet, U-shaped members clamped to the edges of said metallic sheet to protect said edges, a body of plastic material, and flanges projecting from said U-shaped members and into said body to secure said metallic sheet to said body.

12. A block of the character described comprising an integral body of plastic material, a plurality of metallic sheets covering one face of said body of plastic material, and U-shaped members clamped to the peripheries of said sheets to protect the edges thereof, said U-shaped members having portions embodied in said body of plastic material to secure said metallic sheets thereto.

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