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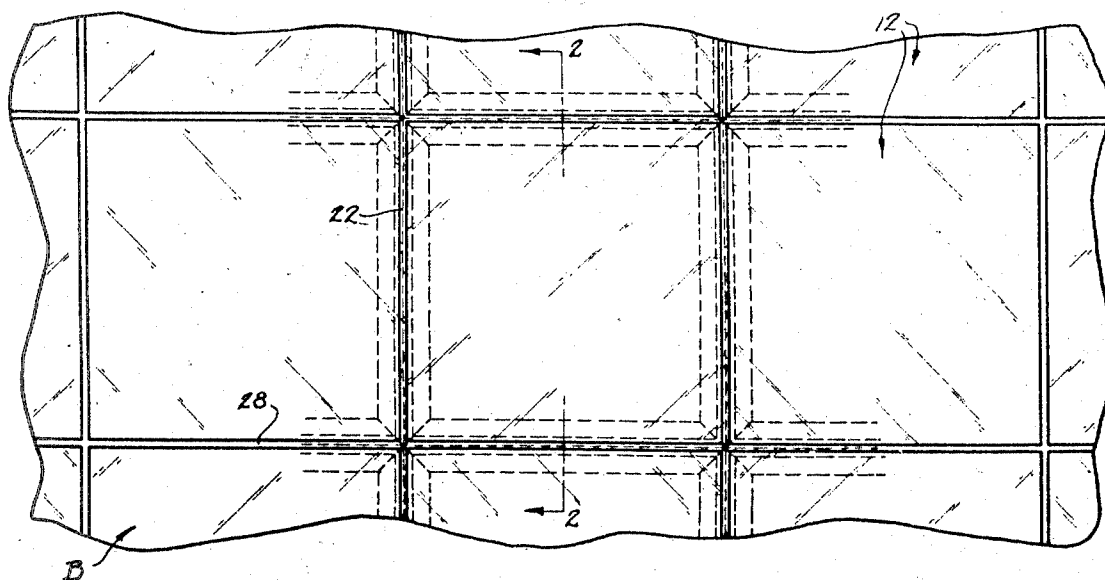
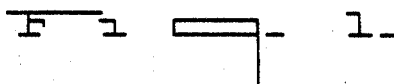
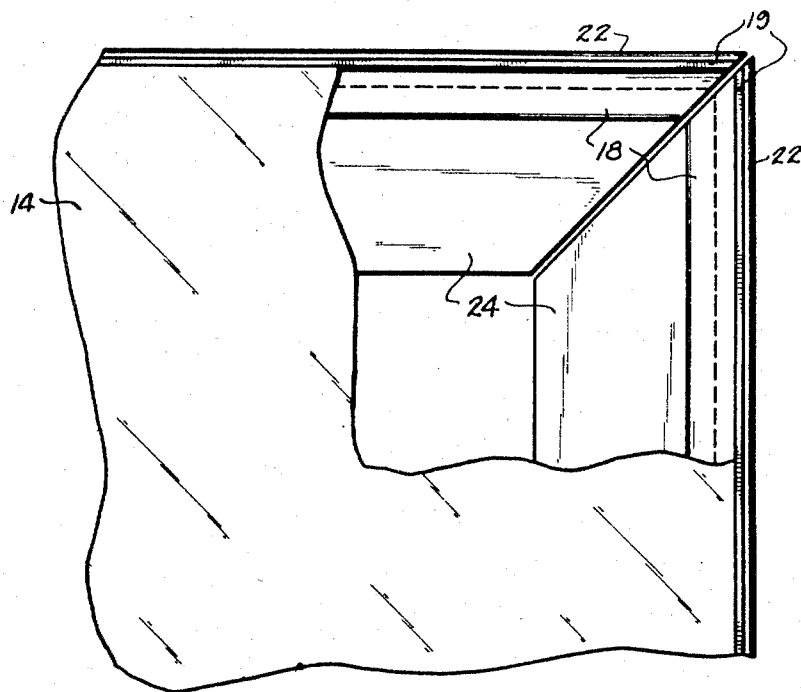
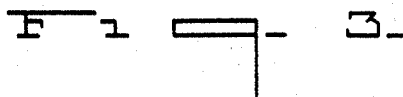
E. T. PUTNAM

2,235,114

BUILDING BLOCK

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2 Sheets-Sheet 1



Inventor

ERLE T. PUTNAM.

Frank Fraser

By

Attorney

2,235,114

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Attorney

UNITED STATES PATENT OFFICE

2,235,114

BUILDING BLOCK

Erle T. Putnam, Detroit, Mich., assignor to
Libbey-Owens-Ford Glass Company, Toledo,
Ohio

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8 Claims. (Cl. 72—35)

The present invention relates broadly to the construction of walls, especially the exterior walls of buildings, and more particularly to an improved type of building block for use in the construction of such walls.

According to the invention, the building block herein provided is of a composite construction comprising a body portion formed from a suitable plastic material such as concrete or the like and an ornamental facing therefor consisting preferably of a sheet or plate of opaque glass, although ceramic tile may be used in some instances if desired. The ornamental face plate is firmly secured to the body portion by an interposed layer of suitable adhesive material such as asphaltic mastic cement and also by mechanical fastening means engaging both the ornamental face plate and body portion. In constructing a wall with building blocks of the invention, the blocks are laid up in courses in substantially the same manner as cut stone, granite, or terra cotta, being preferably anchored to a rear or foundation wall.

An important object of the invention is the provision of improved mechanical fastening means for securing the glass or other ornamental face plate to the body portion of the block in a manner to firmly lock the said facing and body portion together whereby all danger of the facing becoming accidentally displaced will be eliminated.

Another important object of the invention is the provision of improved mechanical fastening means engaging both the glass or other ornamental face plate and the body portion and being of such construction and arrangement that when the blocks are laid up in courses in a wall, the face plates will not support any of the structural load of the wall, thereby reducing to a minimum liability of breakage or chipping of the said facing.

Still another important object of the invention is the provision of mechanical fastening means of the above character including metal frame members having portions engaging the edges of the glass or other ornamental face plate and other portions embedded in the body portion of the block and wherein the metal frame members have load bearing surfaces projecting beyond the edges of the face plate opposite the body portion so that when the blocks are laid up in a wall, the structural load of the wall will be borne entirely by the body portions of the said blocks, while the face plates of vertically adjacent blocks will be spaced slightly from one another to receive caulking material therebetween.

A still further important object of the invention is the provision of a composite building block of the above character wherein the edges of the glass or other ornamental face plate are preferably beveled and the metal frame members have flanges engaging the said beveled edges, in combination with a layer of suitable adhesive material between the facing and body portion which serves not only to bond the said facing to the body portion but also to cushion the facing against shock and blows while at the same time permitting relative expansion and contraction of the facing and body portion to minimize breakage or loosening of the former.

Other objects and advantages of the invention will become more apparent during the course of the following description when taken in connection with the accompanying drawings.

In the drawings wherein like numerals are employed to designate like parts throughout the same,

Fig. 1 is a front elevation of a portion of a wall constructed in accordance with the invention;

Fig. 2 is a vertical sectional view through the wall taken substantially on line 2—2 of Fig. 1;

Fig. 3 is a front view of one of the glass or other ornamental face plates and the metal frame members associated therewith, the face plate being partially broken away to more clearly show the frame members; and

Fig. 4 is a perspective sectional view of one of the metal frame members.

In the embodiment of the invention illustrated in the drawings, A designates the rear or foundation wall and B the front or exterior wall constructed of the improved building blocks herein provided. While the rear wall A is shown as consisting of conventional bricks or blocks 10 laid in the usual manner with mortar 11, the said wall may be of any other construction.

The building blocks used in constructing the exterior wall B may be of any desired contour but as shown in Fig. 1 the said blocks, designated in their entirety by the numeral 12, are rectangular, and this is of course the most conventional shape although they may obviously be of any particular shape or shapes desired. Each building block 12 is of a composite construction comprising a body portion 13 formed of a plastic material such as concrete or the like, and an ornamental facing 14 preferably consisting of a sheet or plate of opaque glass, although ceramic tile or face plates of other materials may be used in some cases. Therefore, while the face plate will be hereinafter referred to as being of glass, it will be

understood that a face plate of any desired satisfactory material may be employed without departing from the invention.

The glass face plate 14 covers substantially the entire front surface of the concrete body portion 13 and interposed between the said facing and body portion is a relatively thick, substantially uniform layer of suitable adhesive material 15, preferably an asphaltic mastic cement, which serves not only to bind the facing to the body portion but also permits relative expansion and contraction between the two without danger of the face plate becoming broken or accidentally displaced. The layer of adhesive material 15 also serves to cushion the face plate against shock and blows, thereby increasing its resistance to breakage.

Arranged at each edge of the face plate 14 is a metal holder of the construction shown in Fig. 4 and these holders cooperate to form a frame extending entirely around the perimeter of the block for mechanically securing the said face plate to the body portion. Each of these holders or frame members comprises a longitudinally extending channel shaped portion 17 which, as best shown in Fig. 2, is received between the face plate 14 and the body portion 13 of the block. The outer wall 18 of the channeled portion 17 constitutes a shoulder which abuts the rear surface of the face plate and extending forwardly therefrom is a flange 19 adapted to engage the respective edge 20 of the face plate. The edges 20 of the face plate are preferably outwardly beveled and the flanges 19 of the frame members are arranged at an acute angle with respect to the shoulder 18 so as to snugly fit over the beveled edges 20, thereby firmly tying the face plate to the body portion as will be later apparent.

The inner wall 21 of the channeled portion 17 constitutes a shoulder which engages the outer surface of the body portion 13, said shoulder projecting slightly beyond the outer shoulder 18, and extending at right angles with respect thereto is a relatively wide, flat, load bearing surface 22 which is disposed opposite the body portion of the block. Formed integral with and constituting a continuation of the load bearing surface 22 is an inwardly offset, parallel portion 23 terminating in an inwardly directed flange 24 which is embedded in the concrete body portion 13.

In fabricating the block 12, the glass face plate 14 is first laid horizontally on a suitable support and one of the metal frame members positioned at each side of the plate so that the outer shoulder 18 of the channeled portion 17 rests on the rear surface of the face plate. Suitable clamping means are provided for holding the metal frame members in proper position and the flanges 19 thereof in firm snug engagement with the beveled edges 20 of the facing. The mastic or other adhesive material 15 in a semi-liquid state is then poured upon the back of the face plate to cover substantially the entire surface thereof and to form a layer of a thickness approximately equal to the depth of the channeled portion 17. The cement or other plastic material forming the body portion 13 is then deposited on top of the layer of mastic to cover the same and to completely fill the space defined by the metal frame members. A suitable mold can also be built up around the frame members if desired to permit the molded body portion 13 to be made considerably thicker than the width of the said frame members from the shoulder 21 to the flange 24, as shown in Fig. 2, and when this is done it

will be seen that the flanges 24 will be embedded in the body portion. After the body portion has set, the mold and clamping means can be removed and the block is ready for use. While it is preferred to use cement for the body portion, the said body portion may be made of any suitable material or mixture of materials.

In constructing the wall B, the blocks 12 are laid up in courses in substantially the same manner as cut stone, granite, or terra cotta, being preferably mechanically anchored to the rear wall A in some suitable manner such as by means of tie members 25. These members are shown as consisting of corrugated flexible metal strips embedded in the body portion 13 of the block and also in the mortar 11 between the blocks 10 of the rear wall A. The advantage in making the tie members 25 flexible is so that if the joints in the rear wall A do not coincide with the spacing of the tie members, the said tie members can be bent to conform to the joints in the rear wall as shown in Fig. 2. In laying the blocks 12 of wall B, they are preferably spaced from the wall A and interposed between the two is a layer of mortar 26.

Due to the fact that the load bearing surfaces 22 of the metal frame members project beyond the edges of the face plate 14, there will be formed around the edges of the body portion 13 a continuous ledge 27 which also projects slightly beyond the edges of the said face plate. As a result, when the blocks are laid up in courses in a wall, the load bearing surfaces 22 of vertically adjacent blocks will engage one another while the edges of the adjacent face plates will be spaced slightly from each other and in this space is adapted to be inserted a suitable caulking material 28. This caulking material may be applied by means of a spray gun and will ordinarily fill the mating channels of the adjacent frame members. With such a construction, the structural load of the wall will be supported entirely by the body portions of the blocks with none of the load being placed upon the face plates. In other words, the load of one block is transferred to the next lower block directly through the contacting load bearing surfaces 22 of the metal frame members and each block takes the full strain of the blocks above it. Since it is impossible for the vertically adjacent face plates to engage one another when the blocks are put in place, the strain upon the said face plates will be reduced to a minimum, thereby eliminating breakage and chipping thereof.

The construction of the block is such that the face plate does not support any of the load when the block is set into the wall and the layer of adhesive material between the face plate and body portion takes care of any differences in expansion and contraction between the two materials, thus minimizing danger of breakage of the face plate under expansion or contraction. Also, the uniform layer of adhesive material 15 provides a cushion for the face plate to minimize the liability of breakage thereof. The channeled portion 17 of each frame member can yield to a certain extent in expansion and contraction and also provides a semi-spring support for the flange 19 which engages the beveled edge 20 of the face plate. By this combination of mechanical fastening means and adhesive material, the face plate is firmly secured to the body portion with practically no danger whatever of its becoming accidentally displaced.

When the blocks are mounted in place, the

body portions 13 of vertically adjacent blocks will also be spaced from one another inwardly of the load bearing surfaces 22 and this space can be filled with a layer of mortar 29. As the flanges 19 of the metal frame members terminate slightly inwardly of the outer surface of the glass face plate, the caulking material 28 will conceal the said flanges and give the appearance of a wall built up of only the glass face plates as these plates will be the only parts of the blocks exposed to view. This will result in a wall of exceptionally pleasing and attractive appearance. The caulking material is also adapted to be inserted in the vertical joints between horizontally spaced blocks.

One of the most important advantages of the improved type of block herein disclosed is that it removes the restriction which has been placed upon the use of structural glass on building fronts in practically every large city through the use of the mechanical fastening means which effectively ties the glass facing to the masonry backing and the uniform layer of mastic which prevents small pieces of the glass from falling if the glass should be broken. Also, the blocks may be made in thicknesses of four or eight inches to bond into the wall and thus answer all code requirements for load bearing walls.

It is to be understood that the form of the invention herewith shown and described is to be taken as the preferred embodiment of the same, and that various changes in the shape, size and arrangement of parts may be resorted to without departing from the spirit of the invention or the scope of the subjoined claims.

This application constitutes a continuation in part of my application filed May 21, 1936, Serial No. 81,064, and entitled "Face block for buildings and method of making same."

I claim:

1. A building block of the character described comprising a body portion formed from a plastic material, a face plate covering a surface of the body portion, said body portion having a ledge projecting beyond the edges of the face plate in a plane parallel with the plane of said face plate, and means for securing the face plate to the body portion including a metal frame member arranged at each edge of the block and having a portion engaging the respective edge of said face plate; another portion engaging said body portion; and an intermediate portion covering the outer edge of the ledge on said body portion and providing a load bearing surface for carrying the load of the wall when the blocks are laid up in a wall and for spacing the face plates of vertically adjacent blocks from one another when said blocks are placed one upon the other whereby said face plates do not support any load of the wall.

2. A building block of the character described comprising a body portion formed from a plastic material, a face plate covering a surface of the body portion and having its edges beveled, said body portion having a ledge projecting beyond the edges of the face plate in a plane parallel with the plane of said face plate, and means for securing the face plate to the body portion including a metal frame member arranged at each edge of the block and having a flange engaging the respective beveled edge of said face plate; a second flange embedded in said body portion; and an intermediate portion covering the outer edge of the ledge on said body portion and providing a load bearing surface for carrying the

load of the wall when the blocks are laid up in a wall and for spacing the face plates of vertically adjacent blocks from one another when said blocks are placed one upon the other whereby said face plates do not support any load of the wall.

3. A building block of the character described, comprising a load bearing body portion, a non-load bearing face plate associated with one surface of said body portion, metallic members carried by the body portion and having portions engaging the face plate to hold the same in position and other portions disposed between the back of the face plate and the body portion and spacing said face plate from said body portion, said body portion extending beyond the edges of the face plate in a plane parallel with the plane of said face plate and also beyond those portions of the metallic members engaging said face plate for carrying the load of the wall when the blocks are laid up in a wall and for spacing the face plates of vertically adjacent blocks from one another when said blocks are placed one upon the other whereby said face plates do not support any load of the wall.

4. A building block of the character described, comprising a load bearing body portion, a non-load bearing face plate associated with one surface of said body portion, metallic members embedded in the body portion and having flanges engaging the edges of the face plate to hold the same in position, and channel portions arranged between the back of the face plate and the body portion and spacing said face plate from said body portion, said body portion extending beyond the edges of the face plate in a plane parallel with the plane of said face plate and also beyond the flanges of said metallic members upon the load supporting sides of the block to such an extent that when the blocks are laid up in a wall the face plates and corresponding metal flanges of vertically adjacent blocks will be spaced from one another so that said face plates will not support any of the load of the wall.

5. A building block of the character described, comprising a load bearing body portion, a non-load bearing face plate associated with one surface of said body portion, and metallic members for securing said face plate to said body portion, each metallic member comprising an outwardly facing channel portion arranged between the back of the face plate and the body portion and spacing said face plate from said body portion, one wall of said channel portion terminating in a forwardly directed flange engaging the respective edge of the face plate and the opposite wall of said channel portion terminating in a rearwardly directed portion embedded in said body portion, said body portion extending beyond the edges of the face plate in a plane parallel with the plane of said face plate and also beyond the flanges of said metallic members upon the load supporting sides of the block to such an extent that when the blocks are laid up in a wall upon one another the face plates and corresponding metal flanges of vertically adjacent blocks will be spaced from one another so that the said face plates will not support any of the load of the wall.

6. A building block of the character described, comprising a load bearing body portion, a non-load bearing face plate associated with one surface of said body portion, said body portion having a ledge projecting beyond the edges of the face plate in the plane thereof, metallic members

for securing said face plate to said body portion, each metallic member comprising an outwardly facing channel portion arranged between the back of the face plate and the body portion and spacing said face plate from said body portion, one wall of said channel portion terminating in a forwardly directed flange engaging the respective edge of the face plate and the opposite wall of said channel portion projecting beyond said first wall and terminating in a rearwardly directed portion covering the outer edge of the ledge on said body portion to provide a load bearing surface, said ledge extending beyond the edges of the face plate upon the load supporting sides of the block to such an extent that when the blocks are laid up in courses in a wall, with the load bearing surfaces of the metallic members in engagement with one another, the face plates and corresponding metal flanges of vertically adjacent blocks will be spaced from one another so that the said face plates will not support any of the load of the wall.

7. A building block of the character described, comprising a body portion formed from a cementitious material, a face plate covering a surface of the body portion, said body portion having a ledge projecting beyond the edges of the face plate in a plane parallel with the plane of said face plate, and means for securing the face plate to the body portion including a metal frame member arranged at each edge of the block and having a portion engaging the respective edge

of said face plate; another portion engaging said body portion; and a further portion covering the outer edge of the ledge on said body portion and providing a load bearing surface for carrying the load of the wall when the blocks are laid up in a wall and for spacing the face plates of vertically adjacent blocks from one another when said blocks are placed one upon the other, whereby said face plates do not support any load of the wall.

8. A building block of the character described, comprising a body member formed from a cementitious material, a face plate covering a surface of the body member, said body member having a portion projecting beyond the edges of the face plate in a plane parallel with the plane of said face plate, and means for securing the face plate to the body member including a metal frame member arranged at each edge of the block and having a portion engaging the respective edge of said face plate; another portion engaging said body member; and a further portion disposed opposite the outer edge of the projecting portion of said body member in contact therewith and providing a load bearing surface for carrying the load of the wall when the blocks are laid up in a wall and for spacing the face plates of vertically adjacent blocks from one another when said blocks are placed one upon the other whereby said face plates do not support any load of the wall.

ERLE T. PUTNAM.