LINTEL FOR OPENINGS IN BUILDING WALLS

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3 Claims.

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In the drawing Figure 1 illustrates a building wall composed of blocks of glass or other material and having an opening therein which is provided with a lintel constructed in accordance with the present invention.

Figure 2 is an isometric view of a grid structure to be used in the fabrication of lintels embodying the invention.

Figure 3 is a fragmentary sectional view taken substantially upon the line III—III of Fig. 1, but showing certain portions of the grid broken away.

As shown in Figure 1 of the drawing, a wall 10 is composed of units 11, which preferably are hollow blocks of glass having rectangular vertical sections of conventional design. These blocks may be laid in horizontally aligning courses 12 and vertically aligning columns 13, and may be bonded together in any convenient manner, for example by means of a mortar or cement, such as Portland cement, or other suitable bonding agent. The fabrication of the wall in these respects is conventional.

An opening 14 in the wall may be provided with a frame 16 for a door, which frame is formed of metal, wood or other suitable material. A lintel structure 17 for the opening includes a grid 18, shown in Fig. 2 and comprises a plurality (e. g., two) of vertically spaced horizontal bars or rods 19 and 21, which are joined together at appropriate points by vertical members 22 constituting ties between the bars. It will be appreciated that the ties may be joined to the horizontal bars by welding or by rivets, or in any other convenient manner.

Preferably the spacing between the various parts of the grid is such that the interstices 23 thereof will each just snugly receive a glass block or a plurality of glass blocks. These are of conventional design and are provided with peripheral shoulders 24 defining mortar-receiving grooves about the blocks. In order rigidly to bond the blocks and the grid together and also to provide for the transmission of stresses from the grid structure to the blocks, the edges of the blocks may be coated with layers 25 of mortar or cement (best shown in Fig. 3), which preferably adheres strongly to the glass surfaces. The bars 19 and ties 22 of the grid structure are embedded in the mortar in the grooves between shoulders 24 and if desired openings 26 may be formed in them in such manner as to provide keys uniting the mortar upon opposite faces at appropriate points. These openings may be round, square, oblong or of any other convenient...
shapes and may almost completely divide the bars and ties longitudinally, thus interrupting the transmission of heat from one side of a building wall to the other by reason of conduction through the metal comprising the grid.

It will be understood that three or more horizontal, vertically spaced bars may be united by ties so that the structure will receive a plurality of courses of blocks.

In the fabrication of the wall in accordance with the provision of the invention, blocks 11 are laid up to an appropriate height on each side of the opening 14. The grid 18 may then be disposed in position across the opening with its ends resting upon the vertical columns 27, defining the sides of the openings. The glass blocks closing the interstices of the grid structure may be inserted and cemented in place after the grid has been mounted across the opening 14 or if preferred they may be mounted in the grid before the latter is placed in the wall. After the grid has been appropriately mounted, additional blocks may be laid thereupon to any desired height, in order to complete the wall. When the cement about the edges of the blocks in the interstices of the grid has properly hardened it will be apparent that the blocks are firmly bonded in position. The cement also acts as a stress-transmitting medium, which may transmit a considerable proportion of the stress upon the grid structure to the blocks, thus assuring that all portions of the wall are made to resist in bearing the strains imposed thereupon. The grid structure is excellently adapted to carry the tensile loads of the system.

The construction disclosed is light in weight, inexpensive to manufacture and is practically completely concealed in the joints between the blocks in such manner that the general motif of a wall of glass blocks is not marred. At the same time the lintel structure is of great strength and rigidity and is capable of bearing heavy loads without substantial flexure or without subjecting any of the blocks embedded therein to excessive strains.

The use of the grid structure is not limited to lintels for openings; it may also be employed to reinforce the vertical sides of the opening.

The structure is especially suitable for use with blocks of glass, but the latter may be replaced by tiles, bricks and other structural blocks.

The form of the invention herein shown and described is to be considered merely as exemplary. It will be apparent that numerous modifications may be made therein without departure from the spirit of the invention or the scope of the appended claims.

What I claim is:

1. A building construction embodying a series of structural blocks of rectangular vertical section laid up in vertical columns and horizontal courses to provide a wall, said wall having an opening formed therein and being provided with a lintel for the opening including a grid comprising a pair of spaced parallel bars in horizontal position and of high tensile strength, spaced vertical ties interconnecting the spaced bars and structural blocks inserted in the interstices of the grid, the blocks coacting with and constituting reinforcements to prevent the flexure of the grid, whereby to obtain a lintel harmonizing in appearance with the rest of the wall and having high resistance to flexure, the ends of the grid resting upon and being supported by the columns of blocks constituting the jambs of the opening.

2. A construction as defined in claim 1 in which the structural blocks are hollow and are formed of glass.

3. A construction as defined in claim 1 in which the blocks inserted in the interstices of the grid structure are coated about their edges with the cement rigidly keying the blocks in position and constituting a stress-transmitting medium between the blocks and the grid structure.

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