To all whom it may concern:

Be it known that I, Bruce E. Loomis, a citizen of the United States, residing in the city, county, and State of New York, have invented a new and useful Fire-Resistive Construction, of which the following is a specification.

The object of my invention is to provide a tile, concrete, block, or other building material particularly adapted to inclose a stiffening-frame and protecting framework.

A further object of my invention is in tile, concrete, or like constructions to provide grooves and spaces for a stiffening-frame and the means for uniting the frame parts.

A further object of my invention is to provide a tile, concrete, or similar construction permitting of the ready building up of the frame parts along with the tile.

A further object of my invention is to provide spaces in tile, concrete, or similar construction for the passage of retaining-bonds both along and through the tile and to permit the fastening of bond parts as the wall or flooring is being constructed.

A further object of my invention is to provide pierced tiles or concrete blocks having enlargements to permit the fastening of the internal bonds at these points.

A further object of my invention is to provide such a construction which is suitable for use with cement filling and in which the bonding action will be assisted by the cement acting between adjoining tile.

Figure 1 represents a perspective view of a floor and wall partially erected thereon making use of my tile. Fig. 2 represents a top plan view of the wall embodying my tile but omitting the bonds. Fig. 3 represents a side elevation of a similar wall broken away to show some of the bonds in space. Fig. 4 represents a sectional view of a wall using my tile and finishing the bonds at the top with facing-tile. Fig. 5 represents a partial sectional and partial perspective view of a portion of a tile. Fig. 6 represents in elevation the independently-supported rod and its supports and connections.

Similar numerals of reference indicate corresponding parts in the figures.

Referring to the drawings, in tile and concrete constructions, whether intended for floor, street, or wall purposes, it is quite desirable that there be metallic bonds giving stiffness and rigidity to the structure and preventing excessive injury by reason of breaking or disintegration of individual tile. My invention has to do primarily with the block-tile or other constructions which are used for such purposes. Where I use the word "tile" hereinafter, I desire to be understood that I wish to include both in the specification and in the claims all materials which are made up in such shape as to come within my claims herein and which are used for building, paving, or protecting purposes.

My invention has to do primarily with block-tile; but in the form shown in Fig. 4 I illustrate a combination of the block and facing tile by means of which a wall constructed according to my invention is finished at one extremity, bonds and retaining-hooks being protected from fire and other destructive influences. The block which I preferably use is formed with preferably recessed ends having recesses 1, grooves 2, uniting the recesses, and with longitudinal grooves 3 upon those sides 4 which are placed together in ordinary building operations, as best seen in Fig. 1. The longitudinal grooves are preferably centrally enlarged in a lateral direction at 5 to provide space for the bond uniting means, to be after described. It will thus be seen that each block-tile is apertured, preferably in its central position, to permit the passage of a frame member and that where the aperture emerges into the surface an opening is provided to permit unifying the vertical and horizontal or otherwise angularly-disposed frame members.

It will be evident that the enlargement of the aperture laterally might be provided for by an enlargement of the entire aperture that is, by grooving throughout to provide space for the connecting means; but there is no necessity for special advantage in this form of construction, as the junction-point of the frame members will be preferably in the junction plane of the tile and most advantageously at this point, because the uniting means can there be most readily applied.

It will be evident that the enlargements 2, formed in the ends, as shown, will ordinarily be in a line with a more constituted part of the longitudinal openings which are ordinarily found in tile of this character, and I have so illustrated these parts in Fig. 4. It will be equally evident, however, that the tile may be formed as shown in Fig. 1 with...
out making them hollow or longitudinally apertured at all, except as required by the grooves and lateral recesses therefrom.

I place my tile in the form shown in Fig. 1 upon a flooring 6, to which are secured vertical frame members 7 by means of any suitable tie. In the form shown in Fig. 1 this is a horizontal strip 8 at the bottom. These vertical frame members are retained by a hook 9, rod or tube 9', supported thereby, and any suitable clamping means by which the vertical strips are stretched and retained in tight position as set. Between adjoining tiles and in horizontal position, as shown in Fig. 5, I place horizontal strips 10, which lie in the grooves 3 within the meeting sides of my tile. Where the horizontal and vertical members pass each other, I preferably join them, using in the form illustrated a pin 11. Some joining means is necessary, and a pin, such as 11, is preferably used where the strips which make up my vertical and horizontal frame members are themselves united, it being understood that the stiffening frame members are each made up of separate strips for convenience in building up the frame member coincidently with the building up of the tile. These junction-points may meet within the lateral recess 12, by which the ends, grooves, or channels 2 are laterally extended where they meet the faces 4, or may occur where vertical and horizontal strips meet within recesses 5.

In finishing a wall against a ceiling or other limiting-surface, such as 13 in Fig. 4, I preferably use facing-tile 14 in line with the upper surface of my block-tile, filling the space between with cement, and cement may be evidently used between or within my block-tile; also, as seen in the upper block-tile of Fig. 4 at 15.

It will be evident that a wall other than a vertical wall will have a framework corresponding to its general direction and that the frame-strips will not be vertically and horizontally arranged in such a case, but may be arranged according to any suitable scheme, and that either the vertical or horizontal frame members or the corresponding members may be omitted, the lateral extensions of the grooves and apertures being useful then to unite the parts of the remaining strips whatever their direction, whether vertical or horizontal or angular, with reference thereto.

It will be evident that end or side grooves may be omitted where it is not the intention to use bonding frame members at these points. It will be further evident that my tile are of the same construction end for end and side for side, and that they may be longitudinally reversed or turned upside down without altering the relations of the parts, and that they are therefore fully reversible. It will be further evident that the framework of my construction is readily carried along with the wall, being built up as the blocks are built up and well protected from fire by the surrounding tile, giving a stiffness of construction and protection against injury which are highly desirable.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A tile having horizontal and vertical intersecting grooves in facing edges thereof which are intended to meet other tile, and lateral enlargements of said grooves.

2. A tile having horizontal and vertical grooves in the faces thereof which are intended to lie against other tile, and a perforation terminating in enlargements of said grooves upon opposite faces thereof.

3. A tile having horizontal and vertical grooves in the faces thereof which are intended to meet faces of other tile, lateral enlargements of said grooves, and a perforation in the approximate center thereof terminating in the enlargement of one of the grooves.

4. A tile having longitudinal and transverse grooves in the narrow faces thereof and lateral enlargements of said grooves in combination with a framework composed of strips, and means for uniting strips, said means resting in one of said lateral enlargements.

5. A tile having longitudinal and transverse grooved faces adapted to meet the faces of other tile, lateral enlargements of said grooves in said faces and perforations in one of said enlargements in combination with a frame jointed within said enlargement.

6. In combination a plurality of tiles having longitudinal and transverse grooves and perforations, a framework made up of a plurality of strips, laterally-extending pins joining said strips within said perforations and cement within the grooves.

7. A tile having grooved top, bottom and end faces, an aperture through the top terminating in an enlargement in one of the faces and lateral openings in the ends leading from the grooves therein.

8. A fire-resistive wall, partition or the like, composed of block-tiles substantially the same thickness as the wall, a horizontal rod independently supported above the same, a series of upwardly-extending metallic bonds located in recesses formed in said tiles, means for securing the upper ends of said bonds to said rod, cement inclosing the upper ends of said bonds and the securing means, and separate tile on opposite sides of the plane of the bonds.

9. A fire-resistive wall, partition or the like, composed of block-tiles, a horizontal rod independently supported above the same, a series of upwardly-extending metallic bonds located in recesses formed between said tiles, the upper ends of said bonds being secured to said rod, a cement filling incasing said rod and adja-
cent portions of the bonds, and a tile-facing for said cement filling.

10. A fire-resistive wall, partition or the like, comprising an end of facing-tile, a rigid rod independently supported between the same, a plurality of bonds transverse to the rod and secured to the rod between the tile, cement surrounding the rod, and a plurality of tile constituting the main portion of the wall, each of which extends on both sides of the plane of the bonds.

11. A fire-resistive wall, partition or the like, comprising a wall proper of tile extending through the thickness of the wall, bonds within this wall, a rigid support for said bonds in proximity to the said wall and facing-tile upon opposite sides of said support.

12. In a fire-resistive wall, a plurality of tile having matching grooves in meeting faces and lateral extensions of said grooves, bonds lying within said grooves, and means for uniting the bonds entering said extensions.

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Witnesses:
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