

(No Model.)

T. A. LEE.
FIRE PROOF FLOOR.

No. 461,030.

Patented Oct. 13, 1891.

Fig. 1.

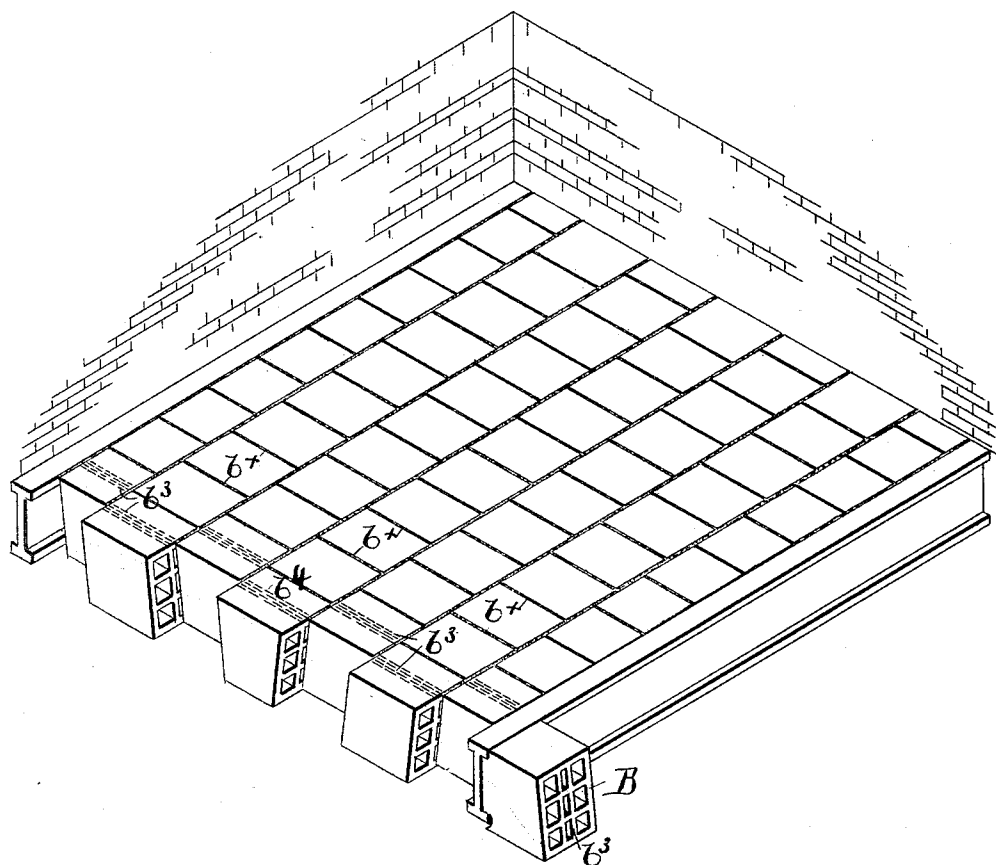


Fig. 2.

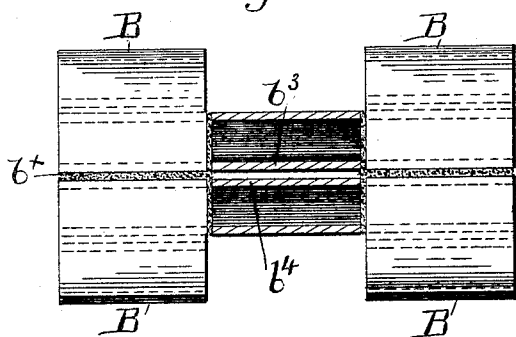
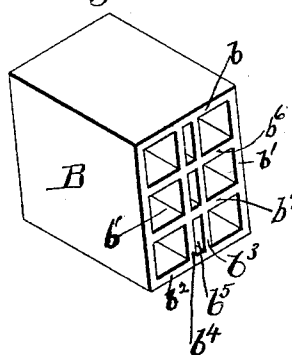


Fig. 3.



Witnesses:
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FIRE-PROOF FLOOR.

SPECIFICATION forming part of Letters Patent No. 461,030, dated October 13, 1891.

Application filed April 28, 1891. Serial No. 390,840½. (No model.)

To all whom it may concern:

Be it known that I, THOMAS A. LEE, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Fire-Proof Floors; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification.

The object of my invention is a fire-proof floor in which the hollow blocks abutting endwise in direction of the thrust and strain are separated by zigzag mortar-joints in the line of the thrust and the thrust of the outer vertical walls of the block sustained by vertical interior walls or partitions within each block, so that the vertical walls of the blocks remain in continuous line endwise between the supports and the blocks break joints with each other upon the ends in the direction of the thrust.

My invention further consists in the novel construction and combination of parts as are hereinafter fully described, and specifically pointed out in the claim.

In the drawings, Figure 1 is a view in perspective of the fire-proof floor between the supporting I-beams, with portions of the floor removed to show the walls of the floor-blocks which sustain the thrust, the mortar-joints, and in dotted lines on the floor-blocks the position of the thrust-sustaining walls. Fig. 2 is a horizontal sectional view showing two abutting end blocks on each side of a single block, breaking joints therewith and showing the position of the thrust-sustaining walls of the block. Fig. 3 is a perspective view of one of the hollow floor-blocks.

Similar letters of reference indicate corresponding parts in all the figures.

Referring to the drawings, A A represent the ordinary I-beams placed parallel in position and at a suitable distance apart to sustain the thrust of the arch and the weight of the floor. Each floor-block B of which the floor is composed is hollow porous terra-cotta tiling or similar fire-proof material, and is of the similar size and form of arch-blocks used in the construction of ordinary end method fire-proof floor arches. The outer walls b b' b'' of each block are made the usual thickness

with the hollows extending through both ends of said block.

The interior construction of the arch-block I make as follows: From the inner surface of the top or upper wall b , on both sides of a line equidistant from the side walls b' b' and integral with said walls are made the partitions b^3 b^4 , which partitions extend in a downward direction to the inner surface of the base or lower wall b^2 and the entire length of the floor-block, and between said partitions a space or hollow b^5 is formed equal in width to the mortar-joint, uniting separate arch-blocks, as hereinafter described. In a transverse direction to the partitions b^3 b^4 and extending from the inner surface of the side walls b' b' are the partitions b^6 b^7 , which extend from one of said partitions to the side walls. Said partitions b^6 b^7 are placed an equal distance from the respective upper and lower walls of the block and from each other.

In the construction of the floor the floor-blocks are supported until the mortar has hardened by a temporary floor laid upon horses, neither of which horses or floor are shown in the drawings, the service of such appliances being well known and not requiring illustration. One of the floor-blocks is then covered upon one side and end with mortar and fitted endwise in place between the upper and lower flanges, and at one end of one of the I-beams with the hollows toward said beam, and the side of said block pressed against the wall of the building supporting the I-beam. Another block is then covered with mortar in suitable thickness upon its side, and also fitted within the upper and lower flanges of the I-beam and its side pressed against the opposing side of the floor-block first laid and between which blocks is formed the mortar-joint b^x . A series of floor-blocks are then laid against the I-beam and the entire length of said beam in the same manner. In the next course of arch-blocks the end block which is laid against the wall of the building is about one-half the width of the other blocks, and usually one of the arch-blocks is separated into two parts with the saw for that purpose. The block next laid in the second course is then made to overlap or break joints with two arch-blocks, viz., the block first laid against the I-beam

and the block next in position upon said beam, mortar being placed between the blocks in the usual manner. The partitions $b^3 b^4$ in this latter block are then directly in line with the contiguous side walls b^7 of two arch-blocks, the space or hollow between the said partitions $b^3 b^4$ being made equal to the mortar-joint b^x between the end blocks which sustain the thrust and bear directly upon the **I**-beam. The floor-blocks are then laid against the other **I**-beam in precisely the same manner, and the second course so laid as to bring the hollow b^5 between the opposite partitions $b^3 b^4$, and the mortar-joints in the several courses in line, so that in the complete floor the mortar-joints in line of the thrust are zigzag in position, or alternate with each other in contiguous courses, which are laid toward the center of the space between said **I**-beams or supports of the floor. At said center the key-blocks are laid in position in the customary manner.

The thrust which occurs in ordinary endwise-placed blocks in fire-proof construction is mainly dependent upon the strength of the side walls of the blocks, and therefore transferred to the beams or supports in a straight line. In my improved floor the thrust is in a zigzag line. I am thus enabled to distribute it through each and every arch block from one of said **I**-beams supporting one end of

the floor arch to the other, and the compression strength of the floor is greatly increased, for it will be observed that in the consequent pressure of the blocks one upon another the strain is distributed equally through the arch-blocks as well as the floor and at regular intervals. The vertical portions of each block remain in line endwise with vertical portions of abutting blocks and the line of vertical portions is continuous endwise between the supports.

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

In a fire-proof floor composed of separate hollow blocks abutting endwise in the direction of the thrust and strain, and the said blocks breaking joints with one another upon the ends in the direction of the thrust and strain, the combination of the hollow floor-blocks, each block having thrust-sustaining partitions between its outer walls in line with the vertical outer walls of abutting blocks, and hollows between said partitions in line with the joint between the sides of said abutting blocks, substantially as and for the purpose described.

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Witnesses:

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