No. 652,219. Patented June 19, 1900.

J. C. PELTON.

BUILDING CONSTRUCTION.

(Application filed Aug. 19, 1899.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

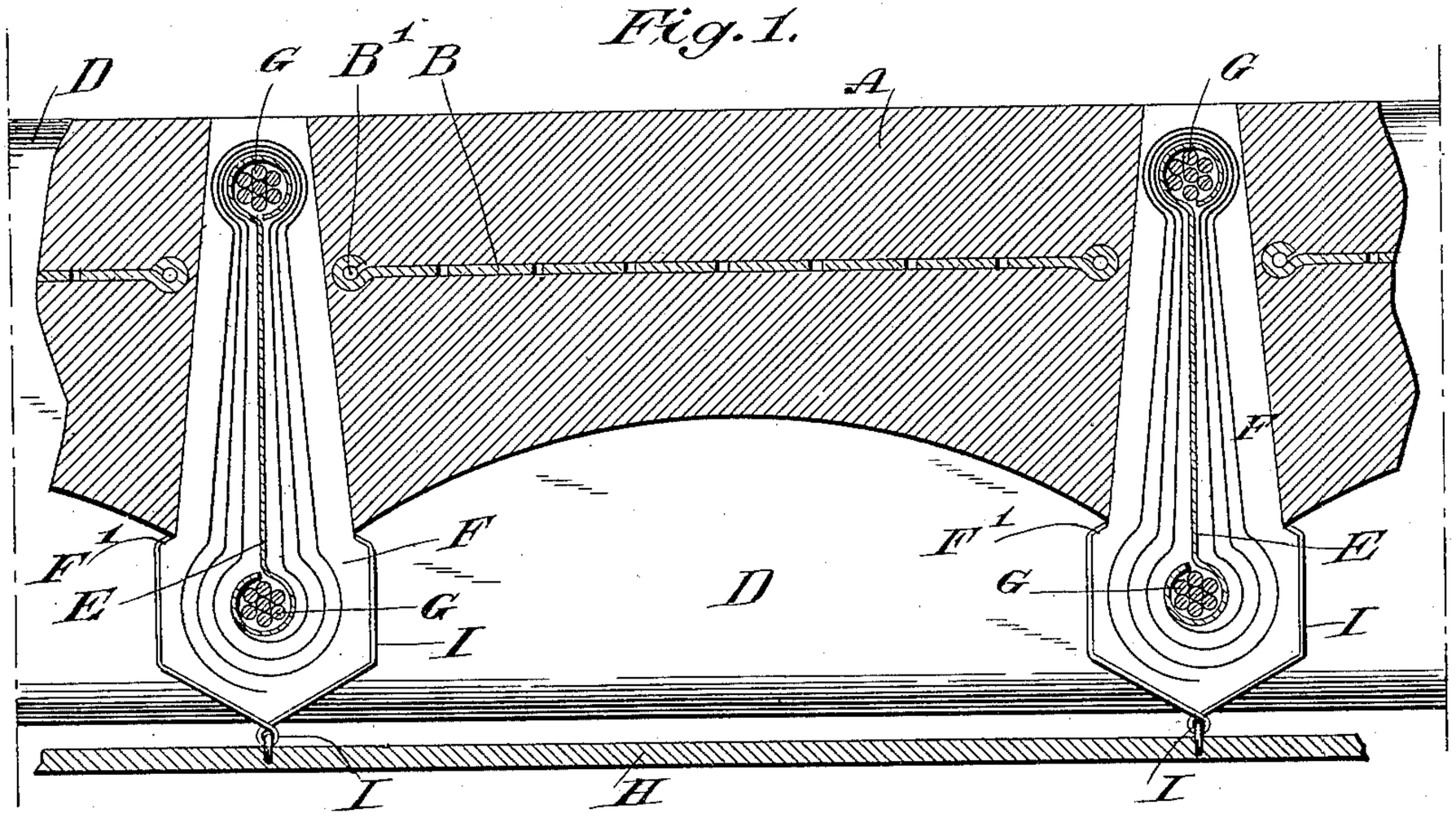

Fig. 2.

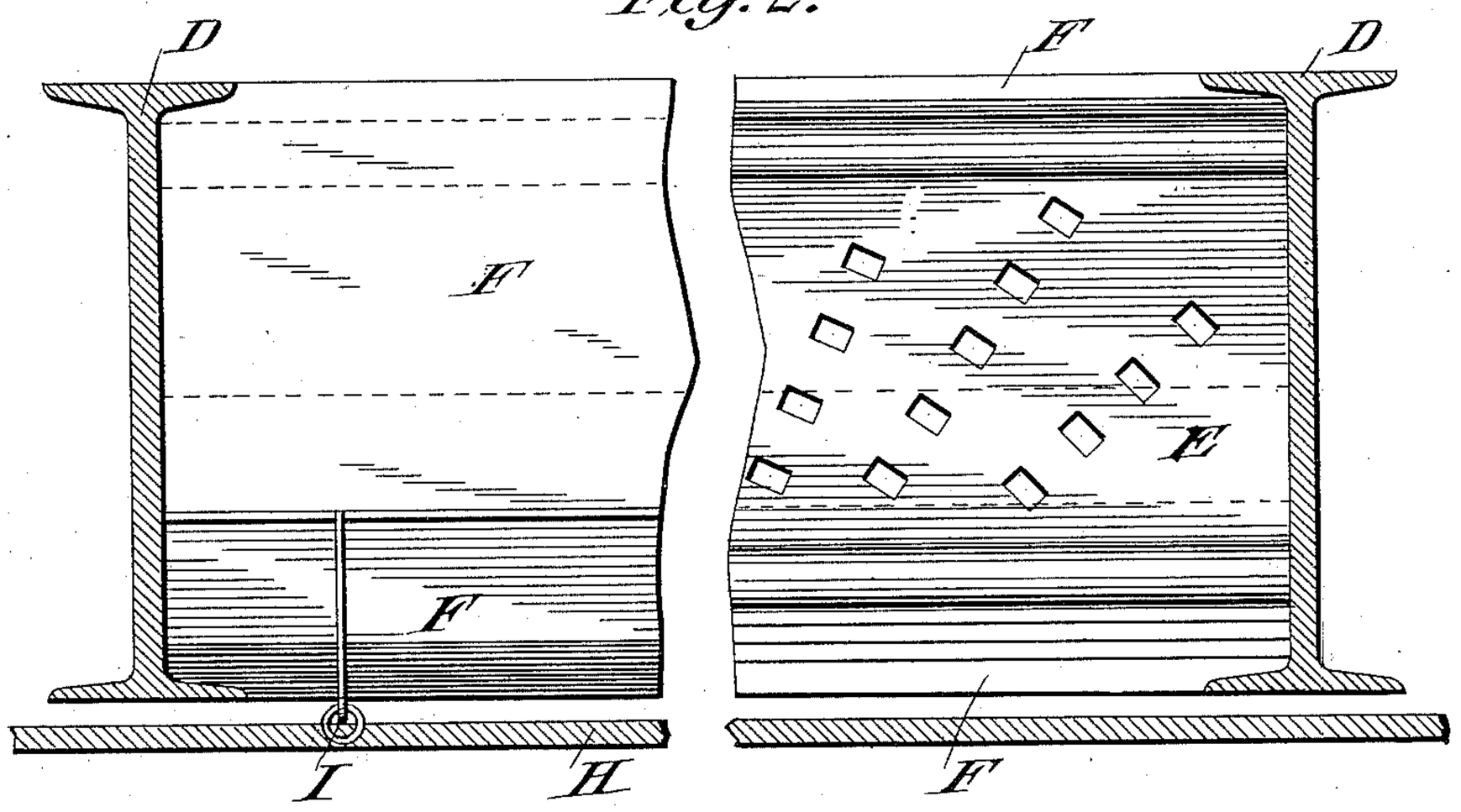

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Fig. 3.

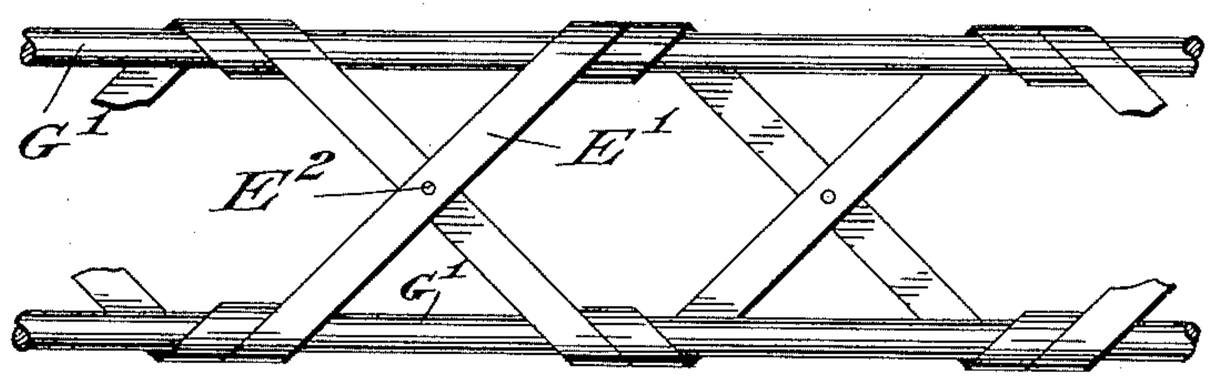


Fig. 4.

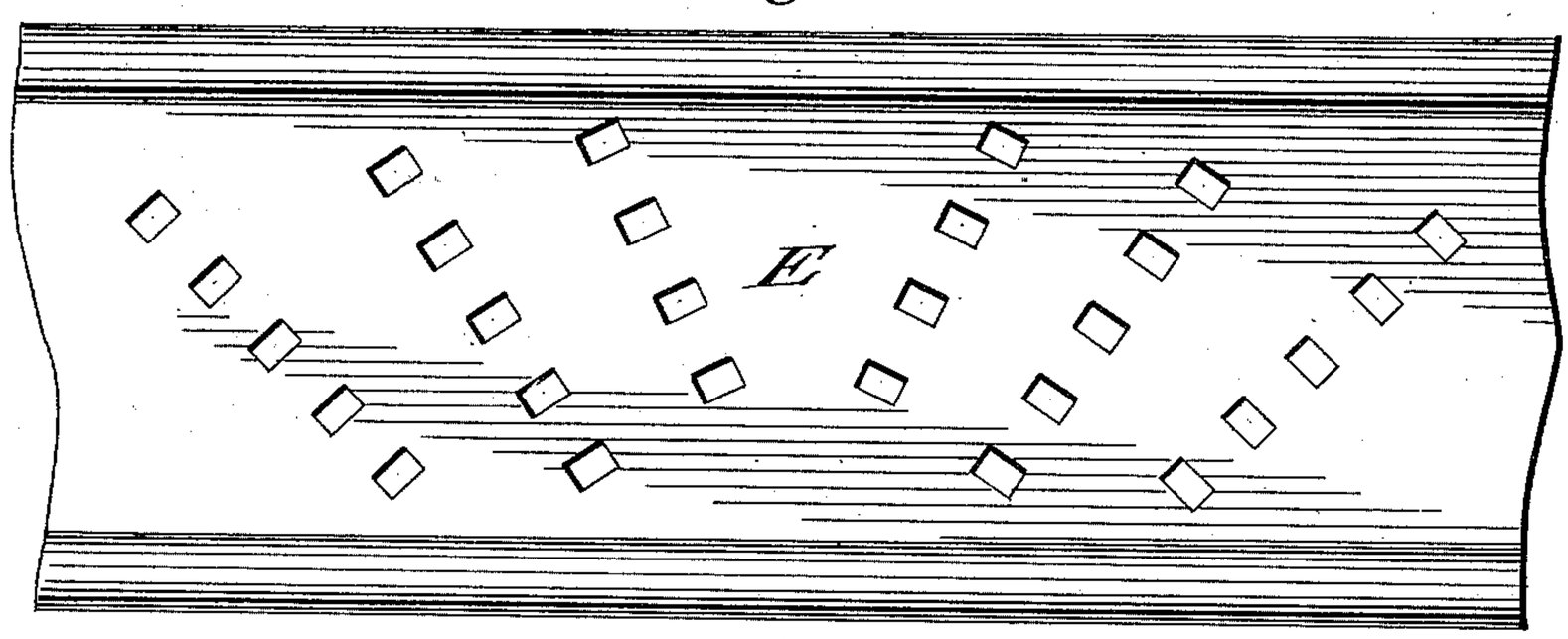


Fig. 5.

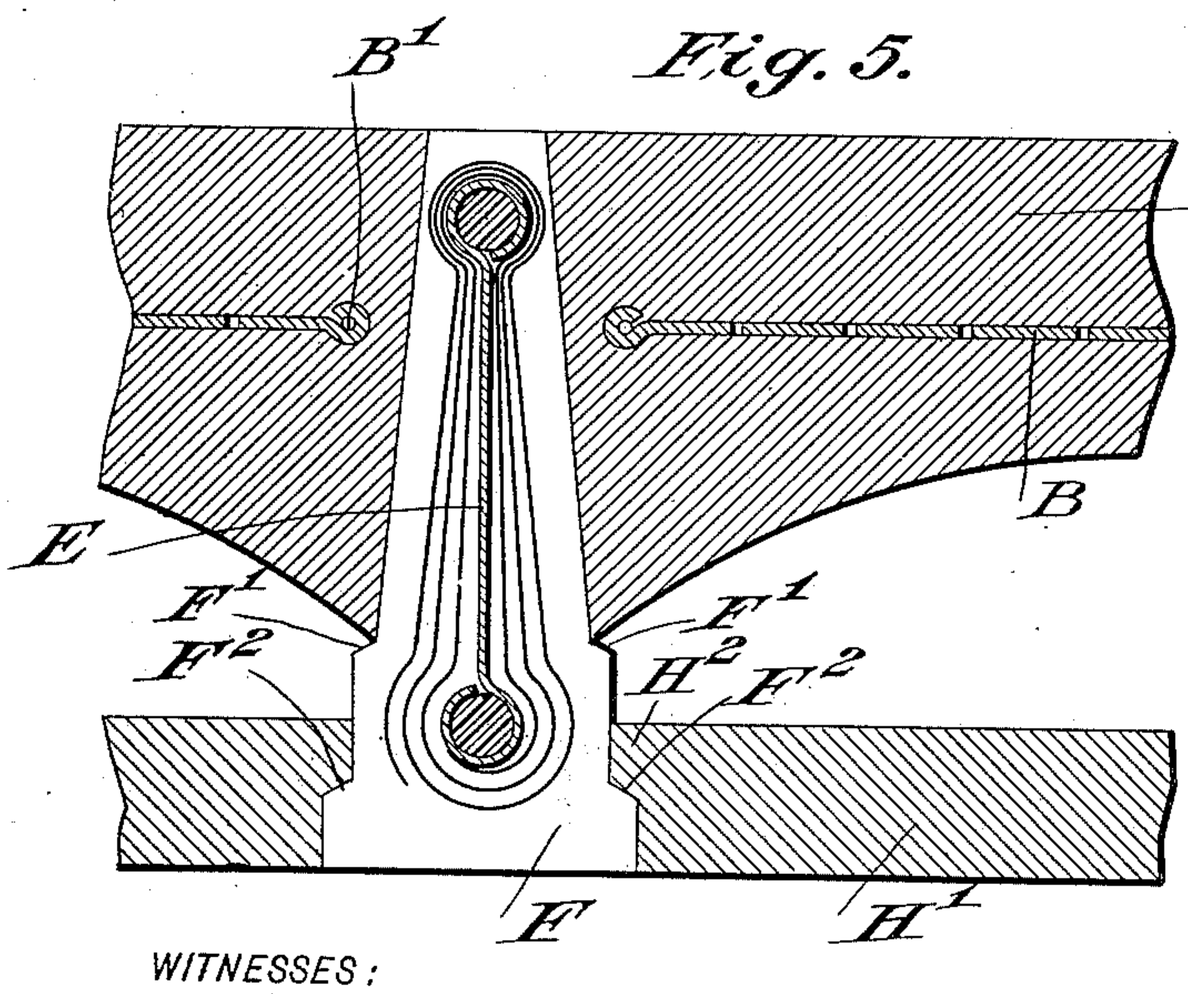
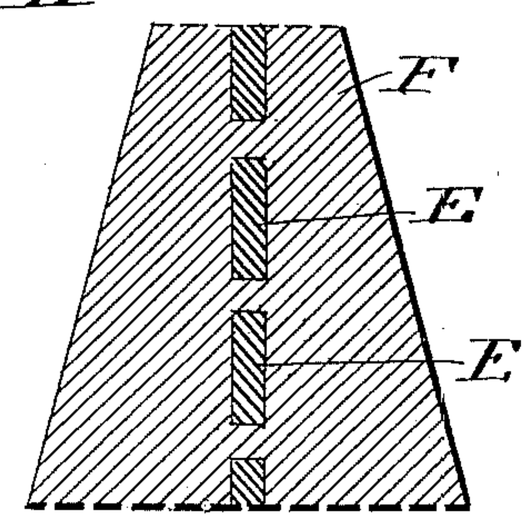


Fig. 6.



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JOHN COTTER PELTON, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO LEROY E. MOSHER, OF LOS ANGELES, CALIFORNIA.

BUILDING CONSTRUCTION.

SPECIFICATION forming part of Letters Patent No. 652,219, dated June 19, 1900.

Application filed August 19, 1899. Serial No. 727,760. (No model.)

To all whom it may concern:

Be it known that I, JOHN COTTER PELTON, a citizen of the United States, residing at New York, in the county and State of New York, have invented certain new and useful Improvements in Building Construction, of which the following is a full, clear, and exact description.

My invention relates to improvements in building construction, and particularly to the construction of a floor that shall possess unusual firmness and strength, while at the same time being unusually light in consequence of the economical employment and distribution of the several parts thereof. In addition to the above features the floor possesses the advantage of being fireproof.

My object, therefore, is to provide a flooring for buildings that may be simply and rapidly constructed and that shall combine the above advantages.

In the drawings, Figure 1 is a sectional view of a portion of flooring, said section being taken on a line parallel with the iron beams commonly employed. Fig. 2 is a side elevation of one of the details of construction, partly in section. Fig. 3 is a side elevation of another detail. Fig. 4 is a side elevation of a detached strengthening-core of what I shall hereinafter term a "lintel-block." Fig. 5 is a sectional modification. Fig. 6 is a section of a portion of a lintel and strengthening-core.

A is a floor block or tile. B is an internal metallic strengthening-core in the form of a perforated sheet of metal, the opposite edges of which may, if desired, be upset or swelled or wrapped around a rod B′, by which said edges may be anchored. In constructing this floor-block any suitable material which can be molded—for example, concrete—may be employed to envelop the perforated strengthening-strip B, which material when once set is anchored through and through said strip, thus making the addition to the swelled edges merely an additional means of security. It is because the core B is captured by the material of the floor-block A at so many points that in many instances said core may comprise merely a comparatively-thin sheet of metal. While it is preferable to have the perforated sheet-metal core B flat, or substantially so, the same may, if desired, be concaved. These blocks A in my preferred construction have their ends downwardly and inwardly inclined and have a flat, even, and comparatively-smooth bearing-surface to take up uniformly against the supporting member, termed the "lintel-block," which will now be referred to. The lintel-block F is shown in detail in Fig. 2, in which its position is illustrated with reference to the iron supporting-beams such as I prefer to employ.

D D are iron beams, commonly termed "I-beams," which derive their support in the usual manner. Between these beams D D the lintel is placed, and as many of them may be employed as may be determined is necessary. The lintel-block comprises a central strengthening-core E of suitable material, preferably metal, in which core are arranged rows of "obliquely-faced" perforations, by which I mean rows of perforations which are inclined in opposite directions away from the center of the arch, the pitch of which gradually decrease toward opposite ends of the core E, which may be readily understood by referring to Fig. 4. Around this core is formed an envelop of concrete or other suitable material, which preferably entirely covers the core and passes through the perforations therein, so as to form a secure anchorage for said core at each perforation, as shown in Fig. 6, which view merely illustrates a portion of a lintel F, said section being taken upon a line to indicate a perforation in said core through which the enveloping material passes. The finished lintel-block is of a shape which in general may be best seen by reference to Fig. 1, in which it will be observed that the lower portion thereof is the thickest and preferably of an angular outline. The sides of the lintel-block converge toward its upper edge at an angle corresponding as nearly as possible to the ends of the floor-blocks A which are to be supported thereby. If desired, abrupt shoulders F′ may be formed on the outer surface of the lintel F at a point adjacent to the lower abutting surface of the floor-blocks, which arrangement will be found very desirable in fireproof construction. It is preferable that the web or core E, by which the

lintel is strengthened, should have its opposite edges wrapped around one or more cables G, thus giving to the core an added strength, the size, strength, or number of which may be varied as desired, and by which the strength of the metal may be graduated or varied to its exact needs without varying the thickness of the material of the perforated strip E, which may, in general, be practically the same. In practice I have employed for this purpose what is known as "No. 26" sheet-iron, and have varied the size of the cable G as necessity required, and have practically ascertained by experiment that the weight-supporting capacity may be determined thereby. While it is cheaper to construct the envelop of a homogeneous mass of material, if desired the construction may be varied, for example, by building up layer upon layer of thin fireproof material to be subsequently pressed into the shape before described. To that end, therefore, I have taken cloth or paper and after first treating it with a fireproof solution have smeared it with a plastic concrete possessing fireproof qualities and have wrapped it around and around the core E until it was of the desired size, after which I have compressed it into the desired shape. Such a construction is unusually fireproof in that it cannot upon being subjected to great heat crack throughout, but will, if it cracks at all, separate layer by layer, so that only after a very prolonged heat will its holding capacity be destroyed, and then only after it has been repeatedly subjected to the shock of water thrown against the same, which will too rapidly cool and contact the material and result in the rupture of the same. Obviously this construction is not confined to the manufacture of lintel-blocks; but it may be advantageously employed in building constructions wherever it is desired to resist successive shocks of heat and cold.

While I have shown and described preferred forms of construction of various details of construction, the same may be quite radically varied without departing from the spirit and scope of my invention. For example, while the best results are obtained by gradually lowering the pitch of perforations in the core E away from the center, satisfactory results may be obtained by forming said rows in substantially parallel lines; but the former is preferred, since it produces a lintel-block which supports the strain of a heavy weight more after the manner of an arch.

The detail of construction shown in Fig. 3 is a modification of the strengthening-cores previously referred to in which in place of a sheet of metal I employ strengthening-cables G′ G′, connected together by strips of sheet metal or wire E′, crossing diagonally and, if desired, riveted, as at E^2, where said intermediate connections cross.

In Fig. 1 I have shown a ceiling H, which, if desired, may be employed and which may be supported in any desired manner to the under side of the floor—as, for example, by wires I.

In Fig. 5 I have shown a preferred method of supporting a ceiling-block in which I have provided a second set of angular projections F^2 upon the lintel and have provided the ceiling-block H′ with a flange H^2, to rest upon said shoulder F^2, and thereby derive its support. A ceiling of this construction may be readily let into place, if desired; before the floor-blocks A are set in or, if desired, afterward in various ways.

It is a well-known fact in building constructions that I-beams are seldom placed more than four or five feet apart, because of the difficulty of forming a suitable arch with the limited amount of material that it is advantageous to employ in the floor and still secure a sufficient amount of strength. By the improved construction hereinbefore described it is clear that the I-beams may be placed, if desired, at a much greater distance apart than has heretofore been the rule without sacrificing any strength and without increasing the thickness and bulk of the material. Heretofore the span of the arch was from beam to beam, whereas by the present construction the span runs in an opposite direction, the lintels providing the shoulder or skew-back to take the thrust of the arched floor-block.

What I claim is—

1. In a building construction, a lintel, having inclined sides, a floor-block having oppositely-inclined ends and bearing against said lintel, a strengthening-core enveloped in said lintel, said core being perforated and through which perforations the enveloping material extends.

2. In a building construction, a lintel, a floor-block, a strengthening-core enveloped in said lintel, said core being perforated on obliquely-arranged lines, through which perforations the enveloping material extends.

3. In a building construction, a lintel, a strengthening-core for said lintel enveloped therein, said core being perforated on obliquely-arranged lines extending in opposite directions away from the center of said lintel, and through which perforations the enveloping material extends, and a floor-block supported by said lintel.

4. In a building construction, a lintel, comprising a strengthening-core, perforations therein arranged in oblique lines extending away from the center, an envelop therefor the material of which passes through the perforations of said core to anchor the same.

5. In a building construction, a lintel, comprising, a strengthening-core of perforated sheet metal, cables carried thereby at opposite edges thereof, perforations in the sheet-metal portion of said core and an envelop of suitable material inclosing the aforesaid core and passing through the perforations therein from opposite sides thereof.

6. In a building construction, a lintel, a

strengthening-core for said lintel, said core being perforated on lines obliquely arranged and extending in opposite directions away from the center of said lintel and at gradually-reduced angles of inclination toward the ends thereof, perforations in said core, through which perforations the enveloping material upon opposite sides of said lintel is connected, and a floor-block bearing against said lintel.

7. In a building construction, a lintel comprising a strengthening-core, said core being perforated on an obliquely-arranged line, an enveloping material, said material extending through and being anchored in said perforations, said lintel being adapted to support floor-blocks, substantially as described.

8. In a building construction, a lintel, a perforated sheet-metal core therefor, said core being embedded in said lintel and vertically arranged with respect to its normal position, the opposite sides of said lintel being inclined upwardly and inwardly and adapted to receive and support floor-blocks which bear against opposite sides of said lintel to laterally support the same and preserve it in its upright position.

9. In a building construction, a plurality of cross-beams arranged in parallel, a plurality of lintel-blocks supported by said beams and arranged in parallel but in planes transversely to the supporting-beams, a perforated metal core in each of said lintels, and flooring-blocks supported by said lintels.

10. In a building construction, a lintel comprising a strengthening-core, an envelop therefor comprising a series of layers bearing against and secured to each other.

11. In a building construction, a lintel-block comprising a perforated core and a laminated envelop the inner layers being secured to each other through said perforations and the outer layers being secured one upon another.

Signed at New York, N. Y., this 16th day of August, 1899.

JOHN COTTER PELTON.

Witnesses:

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GEORGE T. HACKLEY.