

A. DE MAN.
BUILDING BLOCK.
(Application filed Sept. 3, 1901.)

(No Model.)

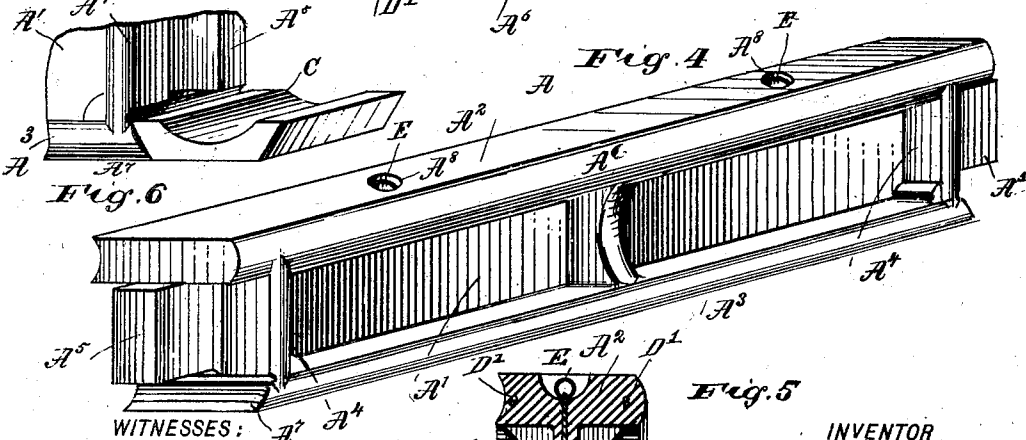
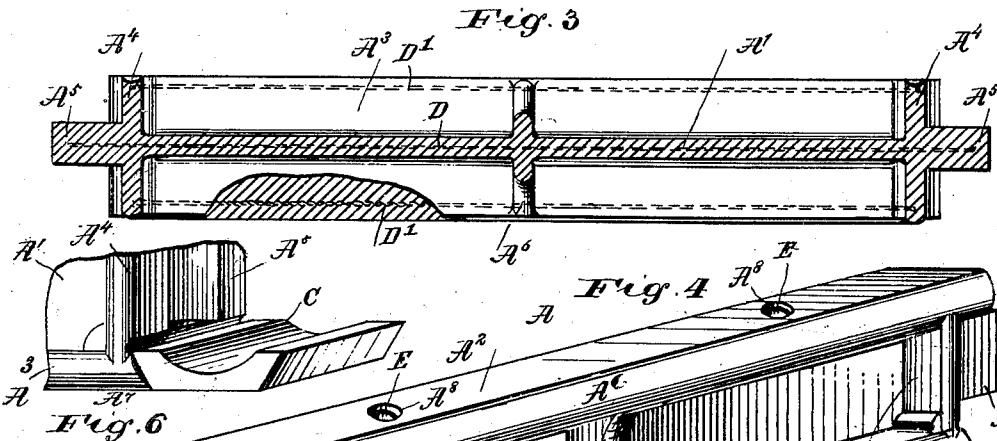
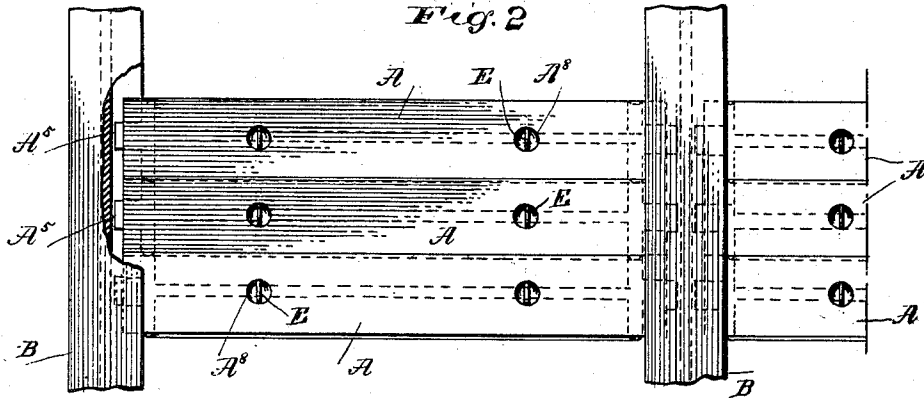
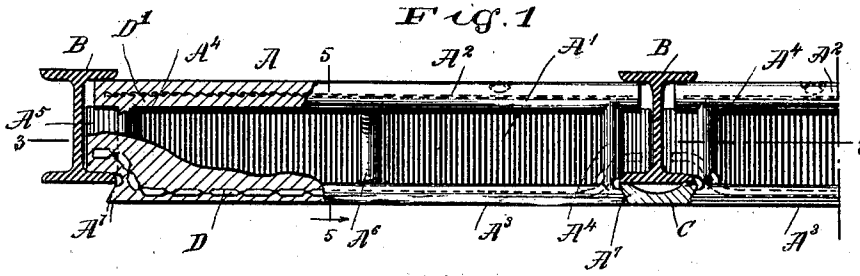
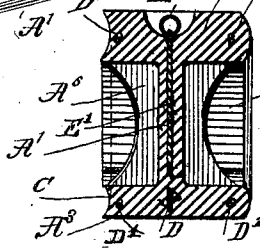


Fig. 6

WITNESSES:

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UNITED STATES PATENT OFFICE.

ALPHONSE DE MAN, OF NEW YORK, N. Y.

BUILDING-BLOCK.

SPECIFICATION forming part of Letters Patent No. 701,165, dated May 27, 1902.

Application filed September 3, 1901. Serial No. 74,120. (No model.)

To all whom it may concern:

Be it known that I, ALPHONSE DE MAN, a citizen of the United States, and a resident of New York city, borough of Manhattan, in the county and State of New York, have invented a new and Improved Building-Block, of which the following is a full, clear, and exact description.

The invention relates to fireproof flooring constructions, especially such as have I-beams as floor-supports; and the object of the invention is to provide a new and improved building-block reaching from one floor-supporting beam to the next adjacent one and arranged to permit convenient handling and placing the blocks in position one alongside the other to form a sectional slab of great strength and durability and covering a space between the floor-beams and at the same time producing a flat ceiling and a straight top surface.

The invention consists of novel features and parts and combinations of the same, as will be fully described hereinafter and then pointed out in the claims.

A practical embodiment of the invention is represented in the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a sectional side elevation of the improvement as applied, parts being in elevation. Fig. 2 is a plan view of the same with parts broken out. Fig. 3 is an enlarged sectional plan view of a block or tile. Fig. 4 is a large perspective view of the same. Fig. 5 is a transverse section of the same, and Fig. 6 is a perspective view of one end of a block and the filling-piece for the ceiling.

The blocks A are arranged one alongside the other and extend between and are supported by adjacent floor-supporting or I beams B, as indicated in Figs. 1 and 2. The blocks are made of a suitable fireproof material which permits of molding the block to the desired shape when the material is in a plastic state, the said material being preferably cinder concrete reinforced by metallic tension members. The general cross-section of a block A is that of an I-beam, which gives the most strength with the minimum of material.

As shown in the drawings, each block A consists, essentially, of a central web A', a top flange A², a bottom flange A³, transverse partitions A⁴ at the ends of the web A', and lugs A⁵, extending outwardly from the partition in line with the web A'. The top flange A² extends somewhat beyond the partitions A⁴ to pass under the top flanges of adjacent I-beams B, as plainly indicated in Fig. 1, and the lugs A⁵ project somewhat beyond the ends of the top flange A² to reach close to the webs of the I-beams B. The partitions A⁴ are of the same width as to the top and bottom flanges A² and A³, and their outer faces extend in a vertical plane, touching the outer edges of the top and bottom flanges of the I-beams B. (See dotted lines, Fig. 2.) The edges of the top and bottom flanges A² A and those of the partitions A⁴ are formed in such a manner that when the blocks are in position, as shown in Figs. 1 and 2, then the said edges of adjacent blocks interlock to prevent vertical displacement of the blocks and form the latter into a sectional slab of great strength and durability, the slab covering the space between the floor-beams. The lugs A⁵ rest with their lower edges on the upper surfaces of the bottom flanges of the I-beams B to support the block A on the I-beams. In order to strengthen the top and bottom flanges of a long block, I provide the same on its web with transverse ribs A⁶, extending to the top and bottom flanges A² A³, as plainly shown in the drawings. The ends of the bottom flange A³ of each block terminate a short distance beyond the edge of the bottom flange of an I-beam B, and the said ends are preferably formed with bevels A⁷ for receiving filling-pieces C, extending under the bottom flanges of the I-beams B. It is understood that the bottom flanges A³ are located somewhat below the bottom flanges of the I-beams B, while the upper surfaces of the top flanges A² are below the top flanges of the I-beams B; but the webs of the blocks may be made higher or lower to bring the top flange A² to any desired position below or above the top flanges of the I-beams B. A suitable tension member D, of metal and preferably of the construction shown and described in the Letters Patent of the United States No. 606,988, granted to me July 5, 1898, for a fireproof construction, is embedded

lengthwise in the block at the bottom and about at the middle of the bottom flange A³, as plainly shown in Fig. 5, the ends of the tension member D extending into the lugs A⁵, so as to protect and reinforce the latter, and thereby prevent the lug from being broken off by shearing strains. The ends of the tension member D terminate a distance from the outer ends of the lugs A⁵ to allow trimming of the lugs in case a block is too long for the span. In large blocks the edges of the flanges are strengthened or reinforced by twisted wires D', extending lengthwise of the block and preventing the edges of the flanges from being broken, the bottom wires D' also forming auxiliary tension members. In the upper surface of each top flange A² are arranged openings or recesses A⁸, containing wire screw-eyes E for the application of suitable hooks or other tools to allow the operator to conveniently move the blocks A in position one alongside the other, as illustrated in Fig. 2. The shanks of the screw-eyes extend vertically in the web A' of the block, and thereby form strengthening-rods for the web.

When the blocks A are placed in position one alongside the other, the ends of the partitions A⁴, as well as the top and bottom flanges of adjacent blocks, interlock with each other, the joints being united by a suitable cement or mortar. It is evident that when the said blocks are in position and are fastened together, as described, the lugs A⁵, with the partitions A⁴, form dead-air spaces with the I-beams B to protect the web A' in case of fire. It will also be seen that dead-air spaces are formed between adjacent blocks A, so as to render the filling-blocks or floor between the I-beams B sound-proof. By securely fastening the blocks together in the manner set forth each sustains the adjacent one, all the blocks combining to form a sectional slab to properly sustain the load. A floor constructed in the manner described is ready for use as soon as the blocks A are in position, it being expressly understood that the blocks and filling-pieces C are completely dry when put in place to be immediately ready for receiving any finishing work which may be required.

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

1. A floor construction, comprising floor-supporting beams, and floor-blocks arranged one alongside the other and extending between and supported from the adjacent floor-supporting beams, the said blocks being arranged to form dead-air spaces between the floor-supporting beams and the ends of adjacent blocks, the blocks having interlocking top and bottom flanges, as set forth.

2. A floor construction, comprising floor-supporting beams, and floor-blocks arranged one alongside the other and extending between and supported from the adjacent floor-supporting beams, the said blocks being ar-

ranged to form dead-air spaces between the floor-supporting beams and the ends of adjacent blocks, the said blocks being interlocked and fastened together at the interlocked joints by a suitable binding substance, and the blocks forming dead-air spaces between adjacent blocks, as set forth.

3. A floor-block of substantially an I-beam cross-section, and having transverse partitions near its ends to reach close to the edges of the flanges of the floor-supporting beams, and longitudinal lugs extending outwardly from the partitions to reach to the webs of adjacent floor-supporting beams, as set forth.

4. A floor-block, of substantially an I-beam cross-section and having its top flange extending beyond the ends of the web, and lugs projecting from the ends of the web, as set forth.

5. A floor-block, of substantially an I-beam cross-section and having its top flange extending beyond the ends of the web, and lugs projecting from the ends of the web under the said top flange, as set forth.

6. A floor-block, of substantially an I-beam cross-section and having its top flange extending beyond the ends of the web, and lugs projecting from the ends of the web and a distance beyond the same, as set forth.

7. A floor-block, of substantially an I-beam cross-section and having its top flange extending beyond the ends of the web and the bottom flange terminating at the ends of the web, and lugs projecting from the ends of the web in line therewith and beyond the ends of the said top flange, as set forth.

8. A floor-block, of substantially an I-beam cross-section, and having transverse partitions at the ends of the web, the top flange extending beyond the partition, as set forth.

9. A floor-block, of substantially an I-beam cross-section, and having transverse partitions at the ends of the web, the top flange extending beyond the partition, the bottom flange terminating at the partition and having its ends beveled, as set forth.

10. A floor-block, of substantially an I-beam cross-section and having transverse partitions at the ends of the web, the top flange extending beyond the partition, and lugs projecting outward from the partition in line with the web, as set forth.

11. A floor-block, of substantially an I-beam cross-section and having transverse partitions at the ends of the web, the top flange extending beyond the partition, lugs projecting outward from the partition in line with the web, and strengthening members at the top and bottom flanges of the block and extending longitudinally thereof, as set forth.

12. A floor-block of substantially an I-beam cross-section, and having recesses in its top and supporting-eyes having twisted shanks embedded in the web of the block, the eyes extending in the said recesses, as set forth.

13. A floor-block, of substantially an I-beam cross-section and having transverse partitions at the ends of the web, the edges of the

partitions and those of the top and bottom flanges being arranged to interlock with the corresponding edges of adjacent blocks, as set forth.

5 14. A floor-block of substantially an I-beam cross-section and having lugs at the ends thereof above the bottom flange of the block, and a tension member extending in the bottom flange and the said lugs, as set forth.

10 15. A floor-block of substantially an I-beam cross-section, and having lugs at the ends thereof above the bottom flange of the block, and a tension member extending in the bottom flange and the said lugs at the middle of the flange and lugs, as set forth.

15 16. A floor-block of substantially an I-beam cross-section and having lugs at the ends thereof, and a tension member longitudinally embedded in the block at the bottom

thereof and extending into the lugs thereof, 20 the ends of the tension member terminating a distance from the ends of the lugs, as set forth.

17. A floor-block of substantially an I-beam cross-section and having lugs at the ends 25 thereof, and a tension member longitudinally embedded in the block at the bottom thereof and extending into the lugs thereof, and reinforcing-wires longitudinally embedded in the block near the edges of the flanges 30 of the block, as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ALPHONSE DE MAN.

Witnesses:

EVERARD B. MARSHALL,
ALFRED H. DAVIS.