

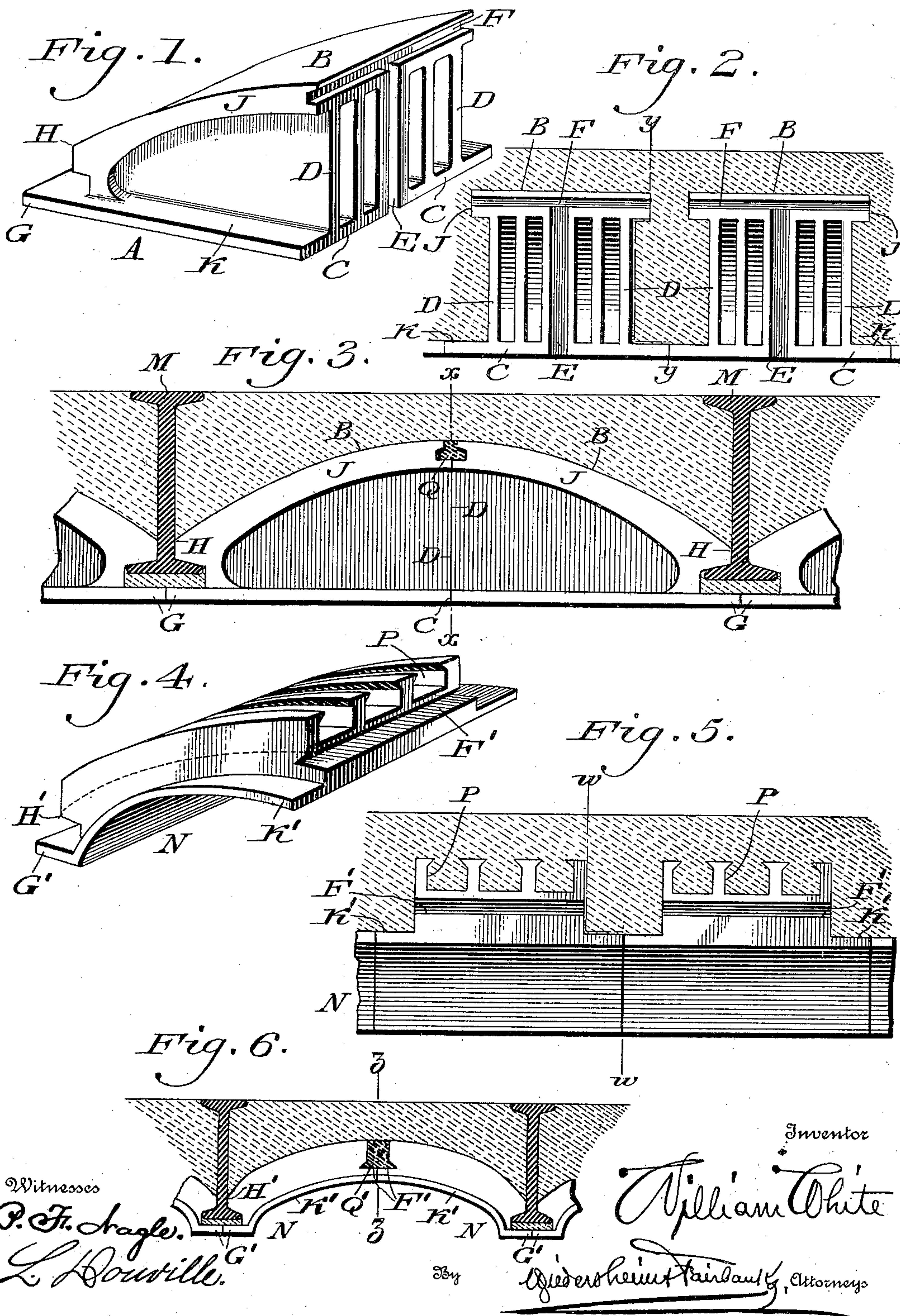
No. 662,635

Patented Nov. 27, 1900.

W. WHITE.
FIREPROOF CONSTRUCTION.

(Application filed May 9, 1900.)

(No Model.)



UNITED STATES PATENT OFFICE.

WILLIAM WHITE, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO HENRY WIEDERHOLD, OF SAME PLACE.

FIREPROOF CONSTRUCTION.

SPECIFICATION forming part of Letters Patent No. 662,635, dated November 27, 1900.

Application filed May 9, 1900. Serial No. 16,002. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM WHITE, a citizen of the United States, residing in the city and county of Philadelphia, in the State of Pennsylvania, have invented a new and useful Improvement in Fireproof Construction, which improvement is fully set forth in the following specification and accompanying drawings.

My invention consists of an improvement in arch-blocks for fireproof construction, whereby a protection is afforded for the iron and steel beams or structure to which they are applied and means furnished for supporting the concrete or cement to provide a strong and durable structure.

Figure 1 represents a perspective view of an arch-block constructed in accordance with my invention. Fig. 2 represents an end view of two of the arch-blocks embedded in the cement or concrete, the same being taken on the line *x x*, Fig. 3. Fig. 3 represents a vertical section taken on the line *y y*, Fig. 2. Fig. 4 represents a perspective view of a modified construction embodying my invention. Fig. 5 represents an end view of two of said arch-blocks, the same being taken on the line *z z*, Fig. 6. Fig. 6 represents a vertical section taken on the line *w w*, Fig. 5.

Similar letters of reference indicate corresponding parts in the figures.

Referring now to Figs. 1 to 3, A designates the arch-block, the same consisting of the upper curved side B and base C. Said upper side and base are joined by a plurality of upright walls or partitions D, whereby the requisite strength is imparted without unduly increasing the weight of the arch-block. At one end of the arch-block the base C is flush with the end of the wall D and an upright groove or keyway E extends longitudinally through the central wall or partition, which is conveniently wider than the other partitions or walls D, said keyway receiving the key E' to bind the arch-blocks against lateral displacement. Extending transversely across the end of the arch-block at the upper end of the curved side B is a transverse groove F, which in conjunction with the corresponding groove of a companion arch-block forms a keyway to receive a key Q, that extends through a plurality of

arch-blocks and produces an effectual bond. At the other end of the arch-block the base C is provided with a projecting flange G, above which is the end shoulder or overhanging flange H, between which and said flange G is a chamber or space adapted to contain filling or concrete material, which covers the under side of the base of the I-beam M. The length of the flange H is less than that of the flange G for a purpose hereinafter referred to. At the sides of the arch-block the curved side B is provided with the overhanging flanges J, while the base C is provided with the laterally-extending flanges K of greater length than said overhanging flanges J. In the application of my invention the said arch-blocks are applied to the I-beams M, as shown in Fig. 3, the overhanging flange H resting upon the flanges of the I-beam and the ends of the flanges G meeting the corresponding flange of an adjacent arch-block midway below the I-beam M. The distance between the flanges G and H is greater than the width of the flange of the I-beam, so that a space is formed below the I-beam and the upper bases of the flanges G, as seen in Fig. 3.

As seen in Fig. 2, when the arch-blocks are placed side by side the flanges K come in contact with each other, while a space is left between the overhanging flanges J on the side of the arch-block. After the arch-blocks are thus placed the key Q is first inserted through a plurality of arch-blocks, and the concrete or cement is applied and fills the space above and between the arch-blocks, as well as the space between the lower face of the I-beam and the flanges G. The filling of concrete, cement, or other suitable fire-proofing material between the lower side of the beam and the upper faces of the flanges G not only affords protection to the beam in addition to the protection offered by said flanges, but it is evident that in the absence of such filling said flanges G could be easily broken or fractured. The filling completely fills this space between the beams and said flanges G, and thereby forms a solid and firm backing and support for said flanges, which prevents the same from being easily fractured. In my application for patent filed March 17, 1900, Serial No. 9,028, I show a projection or flange of an arch-block

so backed or supported, although a space, as shown in this application, does not exist between the same and the beam. The function of said filling is, however, present, and the result—namely, the backing and supporting of a flange or projection of an arch-block that extends below a beam and is not firmly backed and supported by said beam—is the same. In this way it is seen that the beams M are effectually protected on all sides and that by reason of the keyway F and the flanges J and K a bond is provided that holds the arch-blocks in place and supports them under all conditions.

In Figs. 4 to 6 an arch-block N is illustrated in which the base C and the upright walls D are dispensed with. Said arch-block N, however, is provided with a flange K' to meet and contact with a companion arch-block, also the base-flange G' and overhanging flange H', the space between which receives the flange of the I-beam. The upper side of the arch-block is provided with a plurality of channels P, the walls between which are preferably flaring or dovetailed at their upper end, and at the upper end of the arch-block is a groove F', which, in connection with a corresponding groove of a companion arch-block, forms a keyway, as shown in Fig. 6, to receive the key Q', that extends through a plurality of arch-blocks, as will be understood. In this construction the cement or concrete protects the I-beam as before, while in connection with the key Q' it forms a bond to afford the requisite support.

I do not claim herein the specific construction of arch-block shown in Figs. 4, 5, and 6, as the same forms the subject-matter of claims of a divisional application filed June 30, 1900, Serial No. 22,109.

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

1. An arch-block for a fireproof construction having a base, an upper side, upright walls or partitions joining the same, and an upright channel or keyway in the end of one of said walls or partitions.

2. An arch-block for a fireproof construction consisting of a base, and an upper side piece, said base having laterally-extending flanges, and said upper side piece having laterally-extending flanges of less width than the flanges of the base.

3. An arch-block for fireproof construction consisting of a base having laterally and rearwardly extending flanges, and an upper side piece having laterally and rearwardly extending flanges of less width than the flanges of the base.

4. An arch-block for fireproof construction

consisting of a base, an upper side, said base and upper side being joined at one end of the arch-block, and a plurality of longitudinal upright walls or partitions extending between said base and upper side.

5. In a fireproof construction, the combination of a beam having flanges, arch-blocks having overhanging end flanges resting upon the flanges of said beam and provided at their ends with base-flanges extending below the flanges of said beam and adapted to meet the base-flange of an adjacent arch-block, lateral base-flanges upon said arch-blocks adapted to meet the lateral base-flanges of adjacent arch-blocks, said end base-flanges being situated below the flanges of the beam to provide a space, and a filling between said beams, upon and between said arch-blocks, and within the space between said flanges of the beam and the base-flanges of the arch-blocks.

6. In a fireproof construction, the combination with a beam having flanges, of arch-blocks, resting upon said flanges and provided with base-flanges extending below said beam and adapted to meet with the base-flanges of an adjacent arch, the upper faces of said base-flanges being situated below the beam and having a space therebetween, said arch-blocks abutting each other below and separated from each other above, and a filling of concrete or cement within said space between the blocks and extending in said space below the beam.

7. In a fireproof construction, the combination with a beam having flanges, of arch-blocks having shoulders resting upon said beam-flanges and provided with base-flanges, extending below the said beam-flanges and adapted to meet the base-flange of an adjacent arch-block, the upper faces of said base-flanges being situated below the beam forming a chamber, a space being provided between the sides of adjacent arch-blocks above the beam-flanges, and a filling in said space below said beam and resting partly upon said arch-blocks and the upper face of said beam-flanges.

8. In a fireproof construction, the combination with arch-blocks suitably supported and meeting at their inner ends, grooves in the upper ends of said arch-blocks, a key extending through the grooves of a plurality of arch-blocks, lateral flanges at the bases of said arch-blocks meeting lateral flanges of adjacent arch-blocks, said flanges being situated below the said keys, and a filling resting upon said arch-blocks and extending beneath said keys.

WILLIAM WHITE.

Witnesses:

JOHN A. WIEDERSHEIM,
HARRY COBB KENNEDY.