No. 662,634. Patented Nov. 27, 1900.

W. WHITE.

FIREPROOF CONSTRUCTION.

(Application filed Mar. 17, 1900.)

(No Model.)

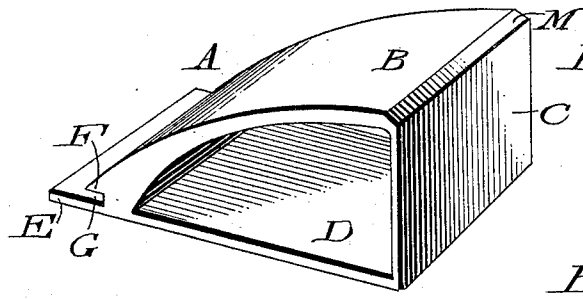


Fig. 2.

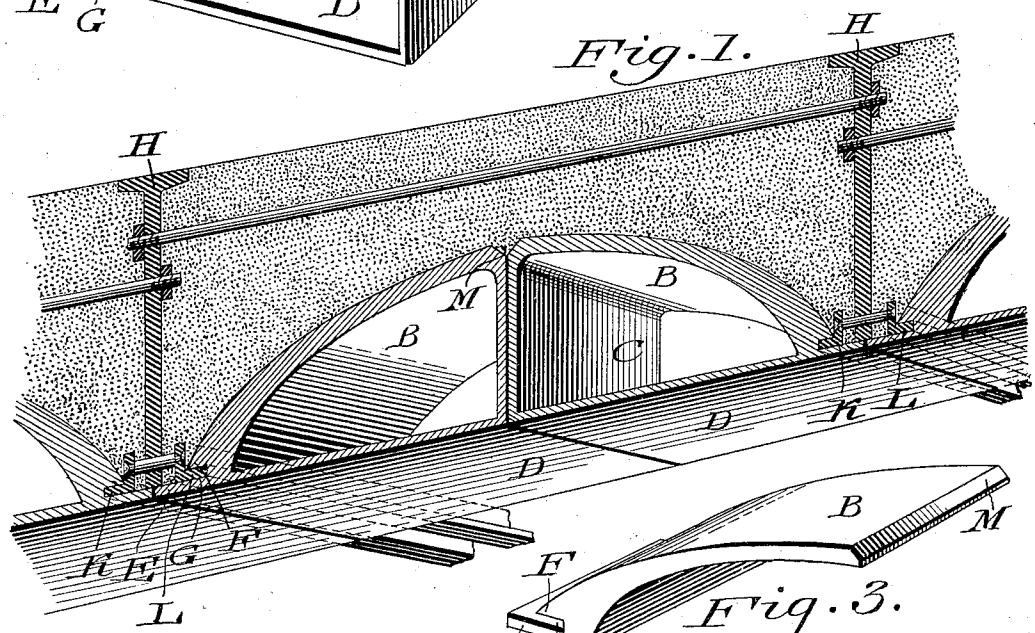


Fig. 1.

Fig. 3.

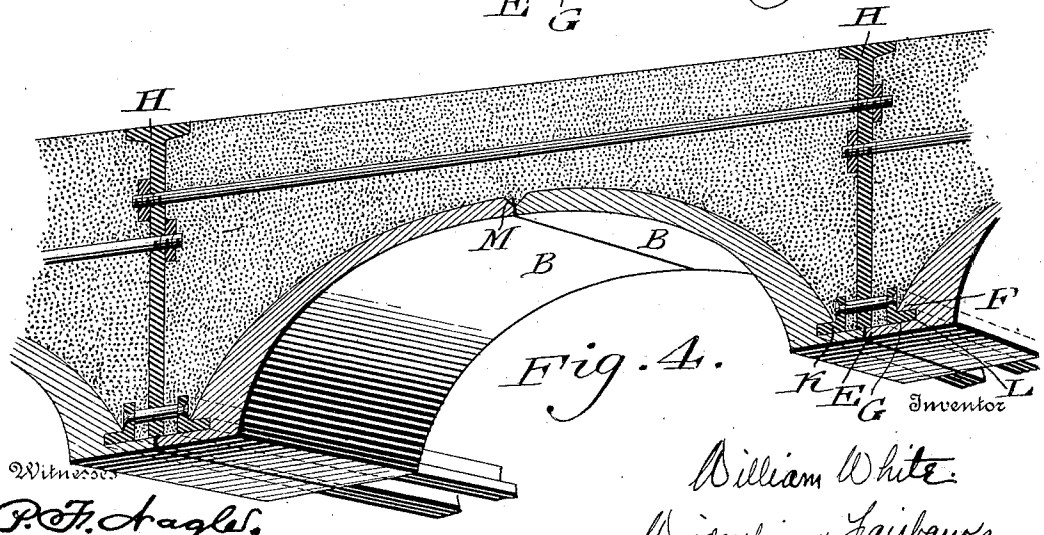


Fig. 4.

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UNITED STATES PATENT OFFICE.

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FIREPROOF CONSTRUCTION.

SPECIFICATION forming part of Letters Patent No. 662,634, dated November 27, 1900.

Application filed March 17, 1900. Serial No. 9,028. (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, State of Pennsylvania, have invented a new and useful Improvement in Fireproof Constructions, which improvement is fully set forth in the following specification and accompanying drawings.

My invention consists of an improvement in fireproof constructions whereby a protection is provided for the iron beams and means are provided for supporting the concrete, a strong and durable construction resulting.

Figure 1 represents a sectional view of a portion of a fireproof construction embodying my invention. Fig. 2 represents a perspective view of a concrete arch employed. Fig. 3 represents a perspective view of another form of arch which may be employed. Fig. 4 represents a sectional view of a portion of a construction, showing the last form in operative position.

Similar letters of reference indicate corresponding parts in the figures.

Referring to the drawings, A designates an arch employed in my construction, the same being formed of the upper curved side B, the upright C, and the base D, which has a projection E beyond the lower side of the curved side B, the latter being provided with a flange F, forming a recess G between it and the projection E, said arch A being formed of concrete or other suitable material. If desired, the upright C and the base D may be dispensed with, the arch then assuming the form as shown in Fig. 3. The upper edge of the curved side B is beveled, as at M, so that when the ends of the arches abut a V-shaped recess will be formed which will be filled with the cement, &c., and assist in holding the same. It will be seen that by the use of the arch a continuous surface is presented. In the form shown in Fig. 1 it is a flat surface and in Fig. 4 an arched surface. The flanges F of the arches rest upon the angle-irons and support the arches, while the projections E of the arches extend below both the angle-irons and the I-beams, the edges of companion projections meeting each other. In constructing arches of this description the projections E ordinarily will not fit against the lower side of the angle-irons and the I-beams firmly enough to be supported and backed thereby. In other words, in making said arches the space between the flanges F and projections E will necessarily be a little greater than the width of the flange of the I-beams, and the flange F being supported upon the flange of said I-beam there will be a little space between the latter and the projection E. Owing to the comparatively fragile nature of the material of which the arches are constructed the said projections E could, if not firmly supported and backed, be easily broken; but this is obviated by the filling of concrete or other suitable material that is placed upon said arches, said filling extending between the beams and also entering between the lower edge portion of the beam and the angle-irons. The filling thus entering between the I-beam and the angle-irons abuts against the upper face of the projection E and obviously firmly backs and supports the same. The filling by thus supporting and backing the projections E prevents them from being easily fractured, as they would be if, as before mentioned, a little space existed between the upper face of the same and the lower edges of the I-beams and the lower sides of the angle-iron. It is understood that although in the present construction the filling reaches the upper side of the projection E through the space between the lower edge portion of the I-beam and the angle-irons, yet my invention contemplates, broadly, supporting and backing such a projection of an arch of this character by such filling in the manner described whenever such projection is not firmly supported by the beam.

The operation is as follows: The I-beams H are placed in position and locked by the bars F and have secured to their lower ends by any suitable means the angle-irons K and L. The arches are now slipped into position, the horizontally-extending member of the angle-irons K and L entering the recess G and the projections E being beneath said I-beams and the angle-irons. The ends of adjacent arches now abut, as shown in Figs. 1 and 4, thus locking the same in position, and a strong and durable support is made. The space above the arches is now filled in with concrete

or other suitable material, and the beams are thus fully protected from fire, and will thus be prevented from warping or cracking.

It will of course be evident that should the ordinary I-beam be employed suitable provision may be made for accomplishing the same result as above described, and hence various changes may be made without departing from the spirit of my invention, and I do not therefore desire to be limited in every instance to the exact construction as herein shown and described.

It is evident that after the cement hardens it is supported independently of the arches, since it rests upon the angle-irons. It is seen, therefore, that the arches are not necessary to support the structure after the cement hardens, so that if the arches are broken or injured the structure remains intact. In fact, the arches could then be removed without weakening the structure. It will be noticed, further, that by reason of the space between the lower portion of the I-beam and the angle-iron, which is filled by the cement, the projection or flange E of the arch is backed by the cement and being thus supported or backed cannot be as easily broken as if it were backed only by the I-beam and angle-irons, it being evident that in the latter case there would of necessity be a little space above the projection E, so that it would be apt to be fractured by a light blow.

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

1. In a fireproof construction, beams, arches supported thereon and having projections extending beyond the outer ends of the body portion of said arches and below said beams, and a filling upon said arches abutting against the sides of said beams, said filling also abutting against the upper faces of and backing said projections.

2. In a fireproof construction, beams, angle-irons secured to the lower edges thereof and at a little distance therefrom, arches supported upon said angle-irons and having projections extending below said beams, and a filling upon said arches and between said beams, said filling extending between the beams and angle-irons and abutting against said projections for the purpose of backing the same.

3. In a fireproof construction, beams, having arch-supports providing spaces between said beams and said supports, arches supported thereon and having projections extending below said beams, and a filling upon said arches and between said beams, said filling abutting against and supporting and backing said projections.

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