

(No Model.)

J. W. RAPP.
FIREPROOF BUILDING CONSTRUCTION.

No. 576,692.

Patented Feb. 9, 1897.

Fig. 1,

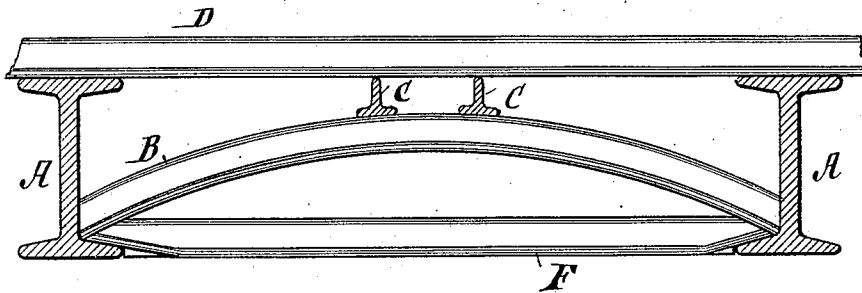


Fig. 2,

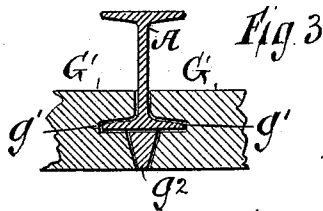
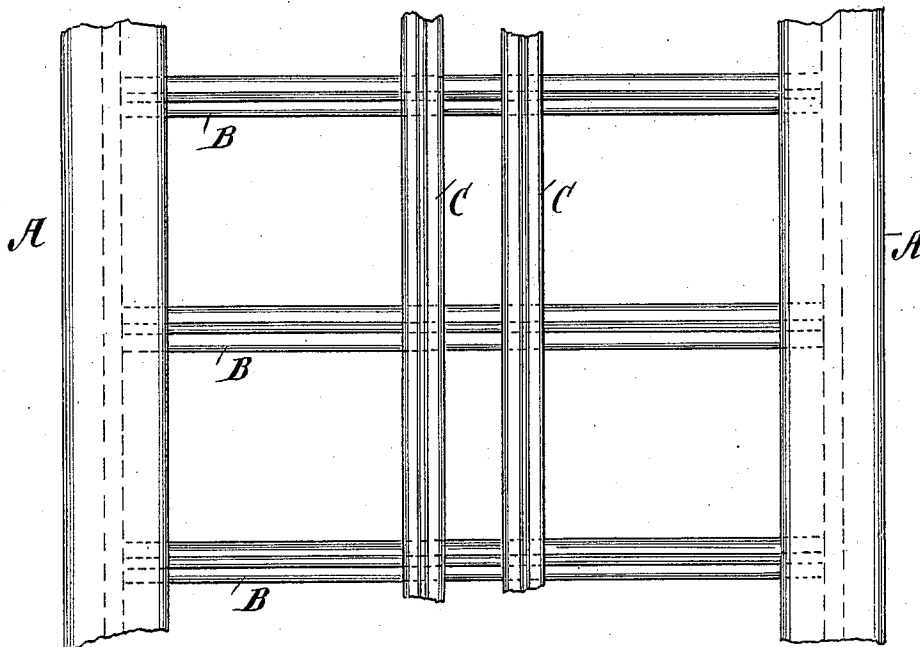
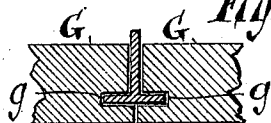


Fig. 4,



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FIREPROOF-BUILDING CONSTRUCTION.

SPECIFICATION forming part of Letters Patent No. 576,692, dated February 9, 1897.

Application filed March 11, 1896. Serial No. 582,830. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. RAPP, of the city, county, and State of New York, have invented a certain new and useful Improvement in Fireproof-Building Construction, of which the following is a specification.

My improvement relates to the construction of fireproof floors and partitions and is adapted to that system of building construction in which the main floor-support is constituted by iron or steel beams of suitable form resting upon the walls or upon columns.

An object of the improvement is to provide a support for the flooring between the floor beams or girders which is of simple and economical construction.

A further object of the invention is to provide a covering of brickwork or other fireproof material for the exposed metallic surfaces of the beams and other metal parts employed in the construction.

I will describe a fireproof-building construction embodying the features of my improvement and then point out the novelty in a claim.

In the accompanying drawings, Figure 1 is a cross-section through a portion of a floor embodying my improvement. Fig. 2 is a plan view of Fig. 1. Fig. 3 is a cross-section, on a slightly smaller scale, of a floor-beam, showing the method of securing the fireproofing material to its lower portions to completely inclose and protect the lower flange of the beam. Fig. 4 is a cross-section at right angles to Fig. 3, representing the fireproofing material secured to T-bars comprised in the construction.

Similar letters of reference designate corresponding parts in all figures.

A A designate so-called "I-beams," customarily employed at the present day in fireproof-building construction to constitute the floor-beams. I have represented but two of these beams, but of course the number of beams and the size of each are proportioned to the magnitude of the load the floor is designed to carry.

B designates a number of T-bars extending transversely to the beams A and resting at their ends upon the lower flanges of the beams. Preferably they will be given an arched or upwardly-bowed form before being

put in place, and in this case their ends will be beveled or inclined, so that the bars will not only rest upon the lower flanges of the beams, but will bear against the webs of the latter as well. Their ends may or may not be secured to the beams. For keeping these T-bars in place I preferably employ retaining-strips, notched or formed as shown in Patent No. 537,483, granted to me April 16, 1895, but other means of holding the bars in place may be employed.

The T-bars B may consist of the commercial rolled shapes, with the webs, when the bars are in place, extending upward, or they may consist of T-bars of the shape shown and described in Patent No. 557,147, granted to me March 31, 1896.

Extending across the upper portions of the T-bars, transversely thereto, and held in place by means as aforesaid or by any suitable means, are longitudinal strips C. These strips may be in the form of T-bars and are advantageously of such a height as will bring their upper surfaces substantially upon a level with the upper surfaces of the I-beams A A. I have shown two of these strips C, but it is evident either a greater or a less number may be employed.

The beams A A and the intermediate strips C serve as the immediate supports of the flooring D, which may be laid directly upon them and suitably secured, or the flooring may be secured to auxiliary pieces resting upon the beams and intermediate pieces.

When the appearance or form of the ceiling is a matter of small consequence, the body or material to which the ceiling-plaster is applied may be secured directly to the under surfaces of the T-bars B. If a smooth and level ceiling, on the other hand, is desired, straight T-bars F may be used and rest at their ends upon the lower flanges of the beams A A.

Figs. 3 and 4 represent the manner in which the lower flanges of the beams and T-bars are encased and protected from the action of fire.

G represents brick or tiling, or blocks of fireproof material, slotted at their sides, as shown at g, Fig. 4, in which slots the laterally-extending flange of the T-bar extends. The slots g are made deep enough to bring the

lower portions of the bricks on opposite sides of the T-bar sufficiently close to amply protect the lower surfaces of the T-bar.

5 The fireproofing material G may advantageously be made from ordinary brick and the slots g formed therein by means of a saw.

10 Where the floor area is not large, it may not be necessary to use beams A A to support the ends of the T-bars, but the latter may simply rest upon the walls of the building and be spaced a distance apart corresponding with the length of the blocks of fireproofing material used.

15 The T-bars may also be arranged vertically with the fireproofing material applied, as explained, and form partitions.

20 Where I-beams are used in the floor construction and the T-bars rest thereupon, I prefer to combine the fireproofing material with the lower flange thereof, as shown in Fig. 3, which represents a view at right angles to Fig. 4. As shown in that figure, the faces of the blocks G' adjacent to the beam A are each provided with a slot g' , into which the
25 lower half of the beam-flange enters. Owing, however, to the width of the flange, it will generally require an excessive depth for the slot to bring the lower portions of the block

on opposite sides of the beam sufficiently close together to protect the bottom surface of the beam. A separate piece g^2 is in this case provided, and preferably, to be self-sustaining, will be wedge-shaped, fitting the beveled faces of the blocks G' G'.

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

35 The combination of longitudinal beams, arched transverse T-bars resting at their ends upon the lower flanges of said beams, longitudinal strips supported by said arched bars with their upper surfaces in substantially the same plane as the upper surfaces of the longitudinal beams, straight T-bars also resting upon the lower flanges of the beams, and
40 blocks of fireproof material having slots in their edges into which the flanges of the beams and straight bars extend, substantially as shown and for the purpose described.

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

JOHN W. RAPP.

Witnesses:

ANTHONY GREF,

PIERSON L. WELLS.