

(No Model.)

W. H. BROWN.
FIRE PROOF FLOOR.

No. 384,421.

Patented June 12, 1888.

Fig. 1.

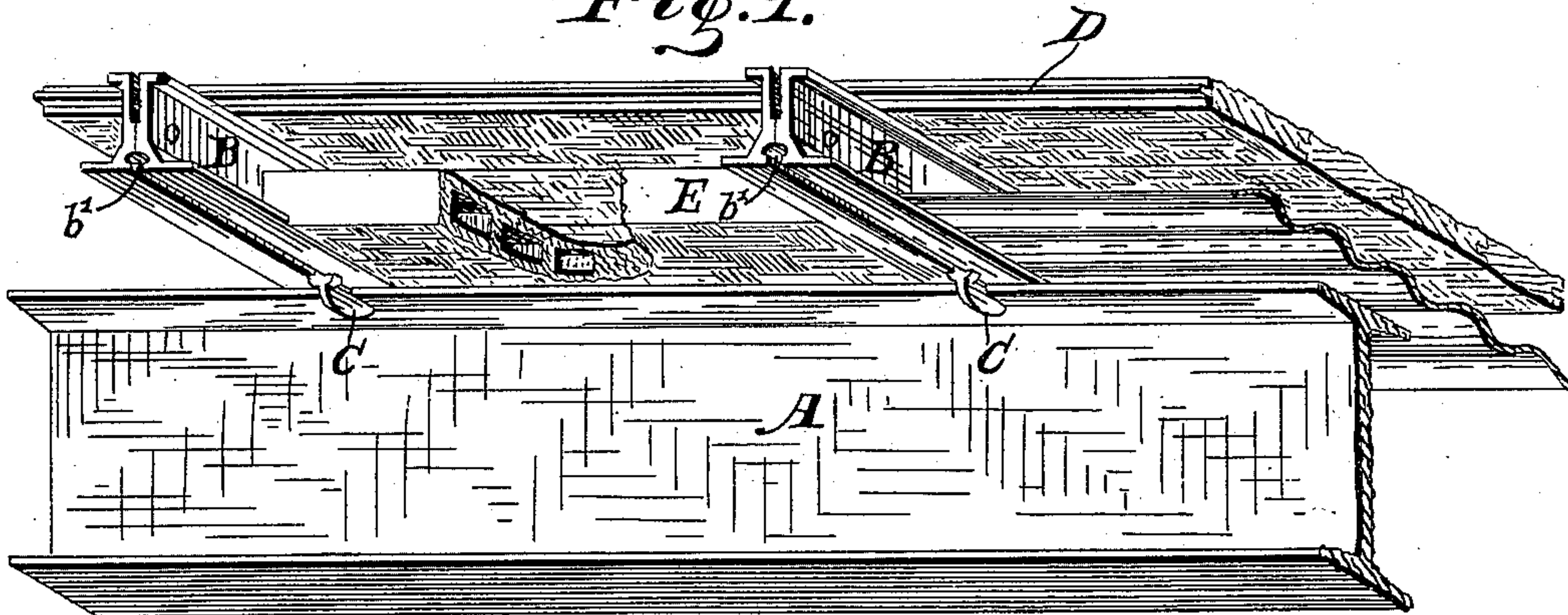


Fig. 2.

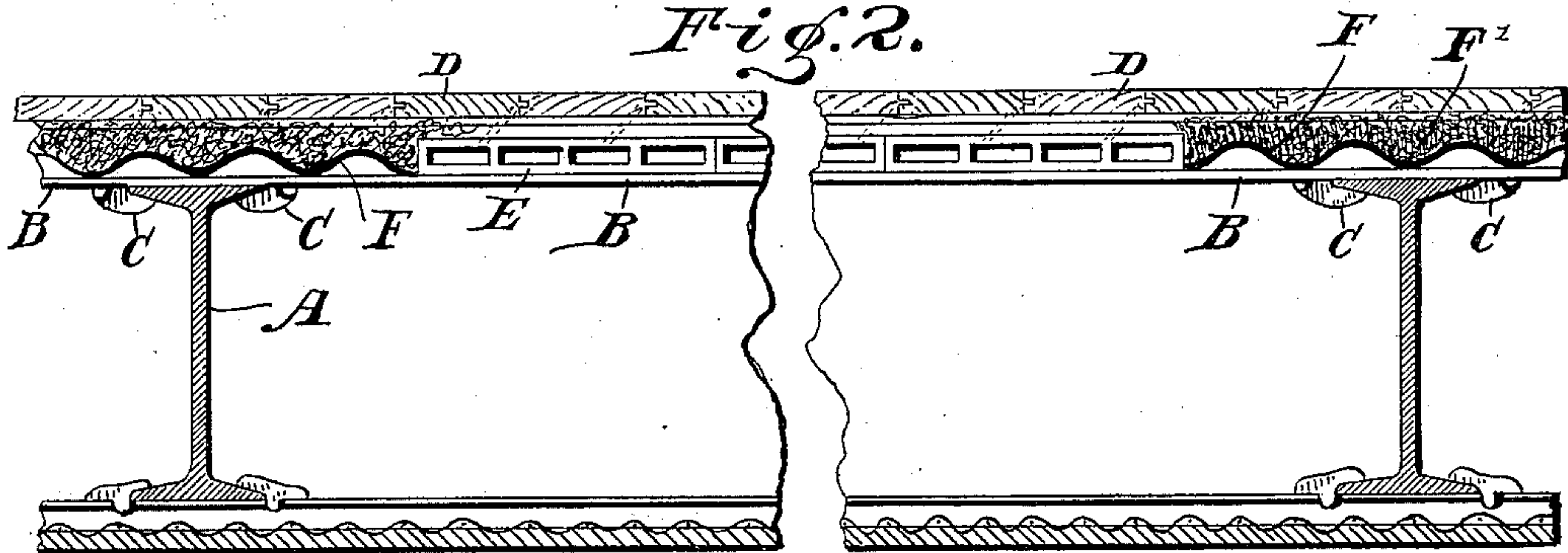


Fig. 3.

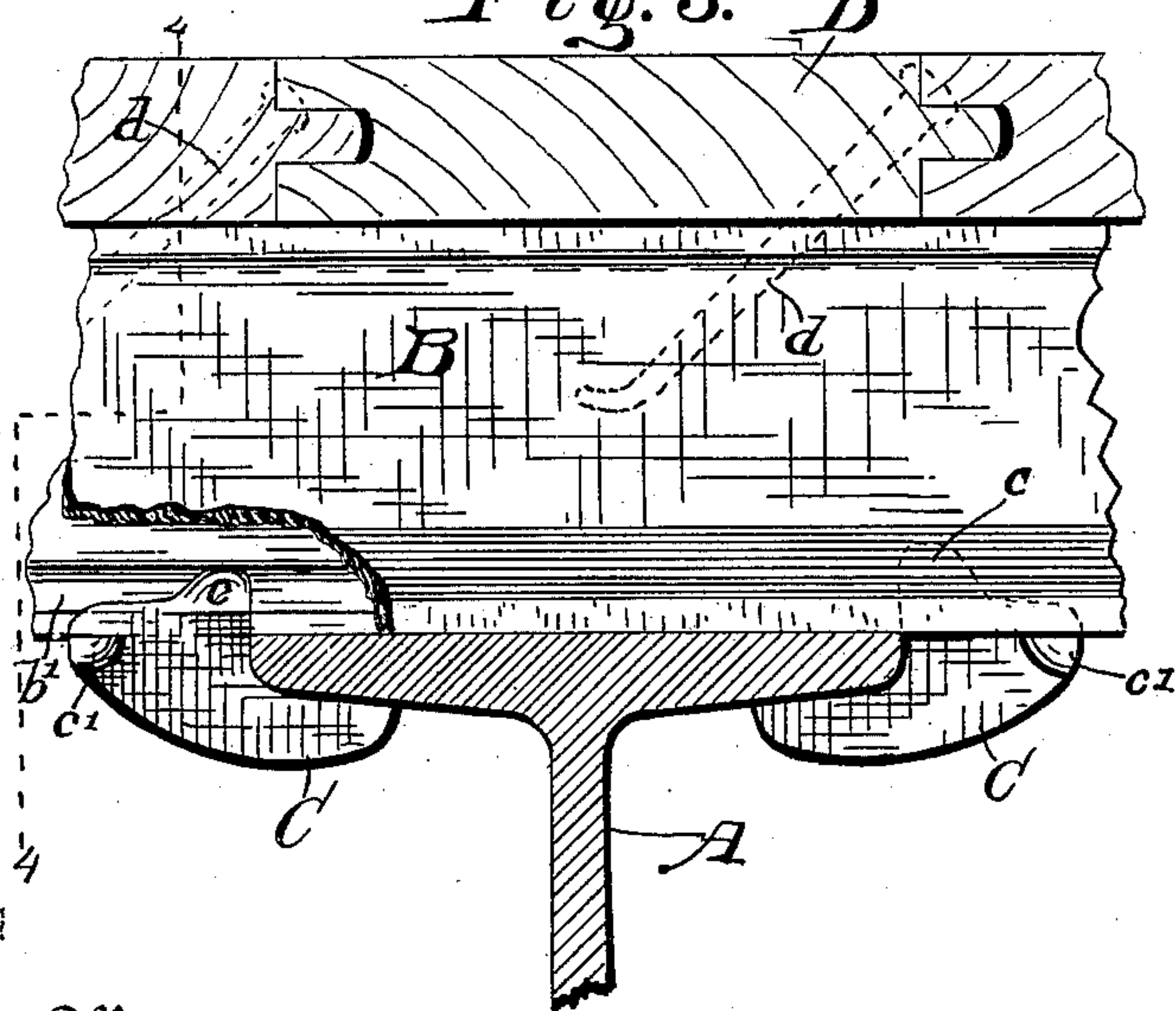
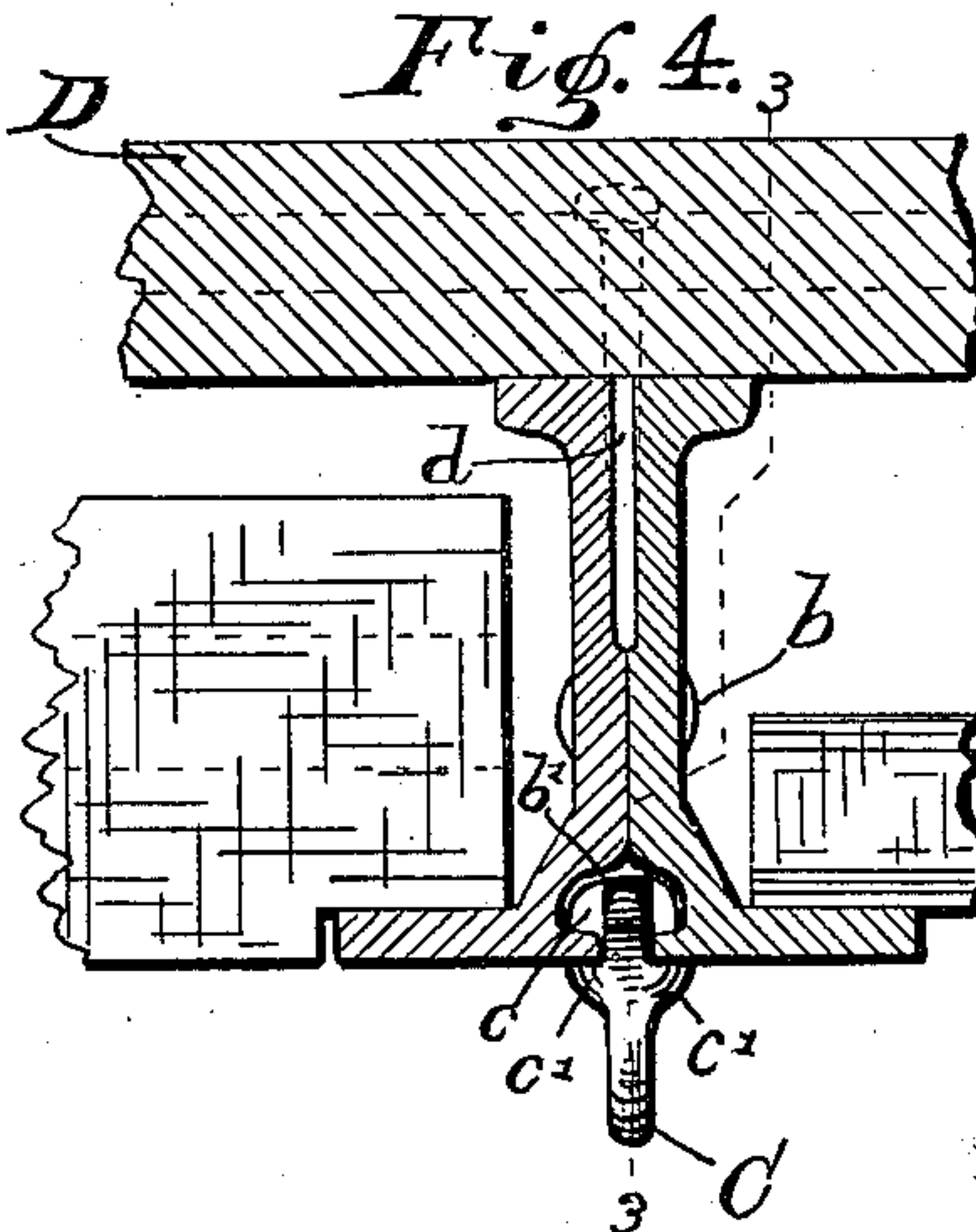


Fig. 4.



Witnesses.

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UNITED STATES PATENT OFFICE.

WILLIAM H. BROWN, OF INDIANAPOLIS, INDIANA.

FIRE-PROOF FLOOR.

SPECIFICATION forming part of Letters Patent No. 384,421, dated June 12, 1888.

Application filed January 3, 1888. Serial No. 259,693. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. BROWN, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Fire-Proof Floors, of which the following is a specification.

My said invention consists in various improvements in the construction and arrangement of sleepers for use in the construction of fire-proof floors, by which I am enabled to secure them more rigidly to the floor-beams, and also am enabled to secure the wooden floor directly thereto by means of ordinary nails, as will be presently more fully described.

Referring to the accompanying drawings, which are made a part hereof, and on which similar letters of reference indicate similar parts, Figure 1 is a perspective view of a section of flooring embodying my said invention; Fig. 2, a section across the floor, but longitudinally of the sleepers; Fig. 3, a view similar to a portion of Fig. 2, on an enlarged scale, showing the floor and floor-beam in cross section and the sleeper in side elevation, and Fig. 4, a cross-section looking to the right from the dotted line 4 4 in Fig. 3.

In said drawings, the portions marked A represent the floor-beam; B, the sleeper; C, a device for securing said sleeper to said floor-beam, and D the floor.

The floor-beam A is the ordinary iron floor-beam commonly used in the construction of fire-proof buildings, and needs no special description.

The sleeper B is formed in two parts, which, when put together, form in outline a doubly-flanged beam somewhat similar to the floor-beam. Each part is rolled with an offset or depression in the upper side of its inner face, and with a groove near its lower edge, so that when the two parts are put together and secured by rivets or bolts *b*, as shown in the drawings, a longitudinal recess is formed in the top of the sleeper, the sides of which are substantially parallel, extending the entire length of said sleeper, and a groove, *b'*, to admit the head of the part C, with a narrower opening, as shown, is formed in its under side.

The device C consists of a hook-shaped part

formed with a head, *c*, adapted to fit into and slide in the groove *b'* in the lower part of the sleeper B, and also with laterally-projecting ears *c'*, which bear against the under face of said sleeper. The hook part extends forward and is adapted to hook under the flange on the top of the floor-beam, its face being formed somewhat tapered to correspond with the taper of said flange.

The floor D is the ordinary tongue-and-groove flooring, and is secured to the sleepers by means of the ordinary tapered nails, *d*, (shown in dotted lines,) which are driven into said flooring, as usual, at the top of the tongue down into the recess formed in the top of said sleeper, which, being at its top of about the width of the nail at the point, binds against or grips said nail, and by reason of the wedge shape of the nail the two sections of the sleeper are forced apart sufficiently to allow the nail to be driven to the position desired, where it is securely held by the grip of the two parts of the sleeper upon it, thus firmly securing the floor to the iron beam with the ordinary nail used in putting down flooring on wooden sleepers. The intervening space between the flanges and the sleeper B may be filled with any fire-proof material—such as the tiling E or corrugated metal plate F, filled with fire-proof material, *F'*, as illustrated—but, as it forms no part of my present invention, need not be particularly described.

My invention is used as follows: The sleepers being rolled, as described, and the two parts being securely riveted or bolted together, as shown, they are secured to the floor-beams A by the devices C, said devices being slid into the recess *b'*, formed at the lower edge of said sleeper, the head of said device being slid into said recess from the end up to the flange of the floor-beam, with which its hooked point engages, and is then driven tightly against said floor-beam, thus drawing down and tightening up the parts and securing them firmly together, the head of said devices bearing against its seat in the groove, the laterally-projecting ears against the under side of the sleeper, and the hooked portion against the flange of the floor-beam, affording three distinct bearings binding against each other.

These devices are preferably arranged in pairs, one on each side of the floor-beam, as shown. By this means not only a very secure and rigid connection is provided, but the adjustment of these parts in relation to each other is made very easy, as will be readily understood. The sleepers being thus secured in position, the flooring D is laid and nailed to said sleepers exactly as it would be on wooden sleepers, the nails being directed into the longitudinal recess between the two parts of said sleeper, as before described.

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

1. In the construction of a fire-proof floor, the combination, with the floor-beam A, of the sleeper provided with a longitudinal recess, *b'*, the device C, formed with a head, *c*, adapted to fit into said recess, the ears *c'*, arranged to bear against the under side of said sleeper, and a hooked forwardly-extended portion arranged to engage with the flange of the floor-beam, substantially as set forth.

2. The combination, with the floor-beam, of the sleeper B, formed in two parts, with a lon-

gitudinal groove at its bottom and a longitudinal recess in its top, a device engaging with said longitudinal groove in its bottom, and the flange of the floor-beam for securing them together, the flooring arranged on said sleepers and secured thereto by nails driven into the longitudinal recess in the top of said sleepers and clamped between the sides thereof, substantially as set forth.

3. In a fire-proof floor, the combination of the sleeper formed with a recess in its top extending longitudinally thereof, and formed with substantially straight sides arranged to clamp the floor-nail when driven into said recess, and the flooring laid upon said sleeper and secured thereto by nails driven through said flooring and into said recess in its top, between the sides of which they are clamped, substantially as set forth.

In witness whereof I have hereunto set my hand and seal, at Indianapolis, Indiana, this 31st day of December, A. D. 1887.

WILLIAM H. BROWN. [L. S.]

Witnesses:

E. W. BRADFORD,

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