

(No Model.)

G. LIEBAU.
FIREPROOF FLOOR AND CEILING.

No. 603,598.

Patented May 3, 1898.

Fig. 1.

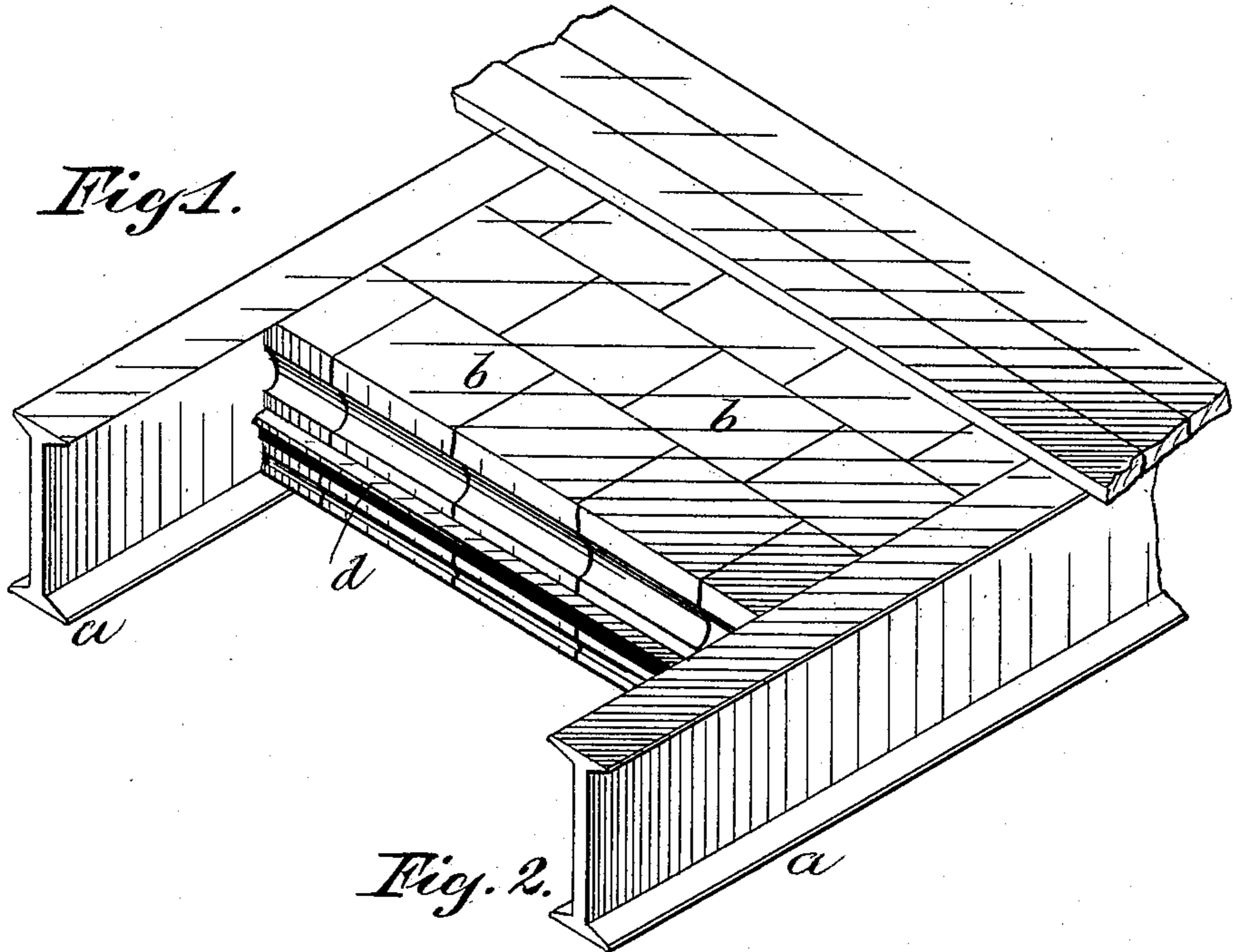


Fig. 2.

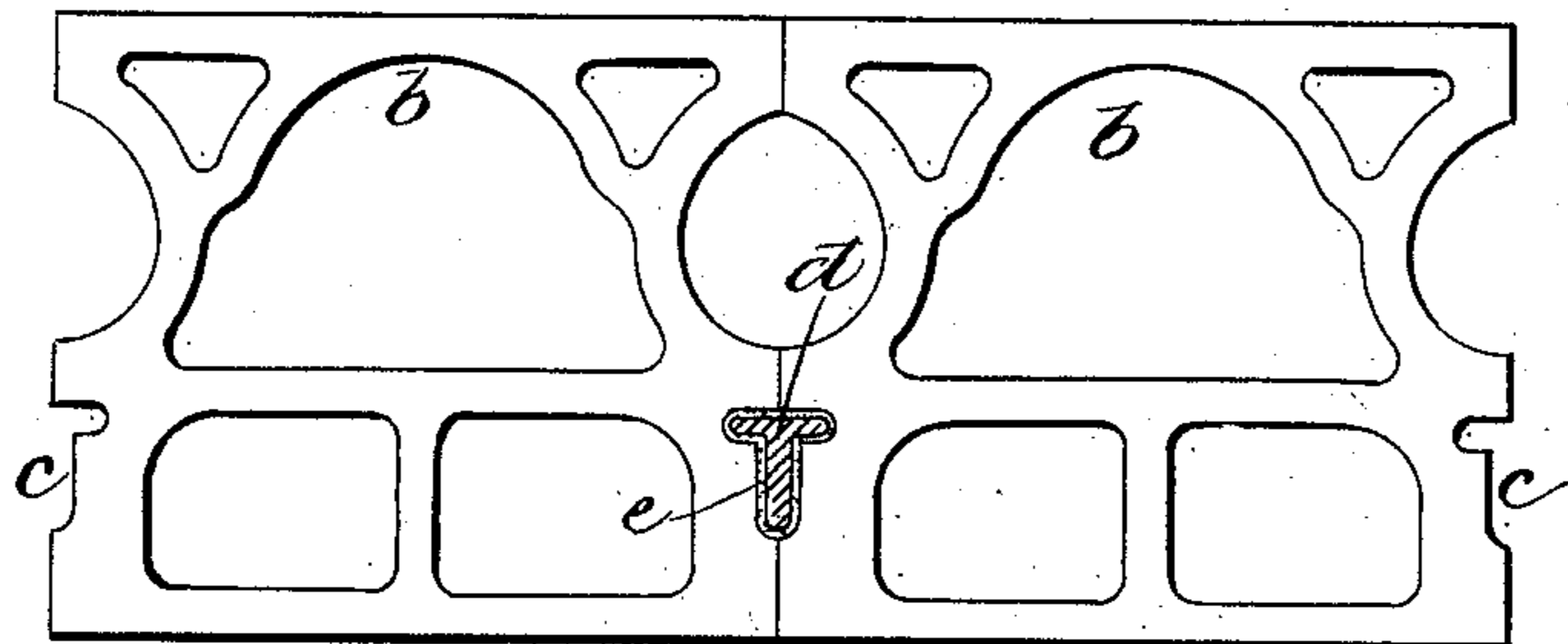


Fig. 3.

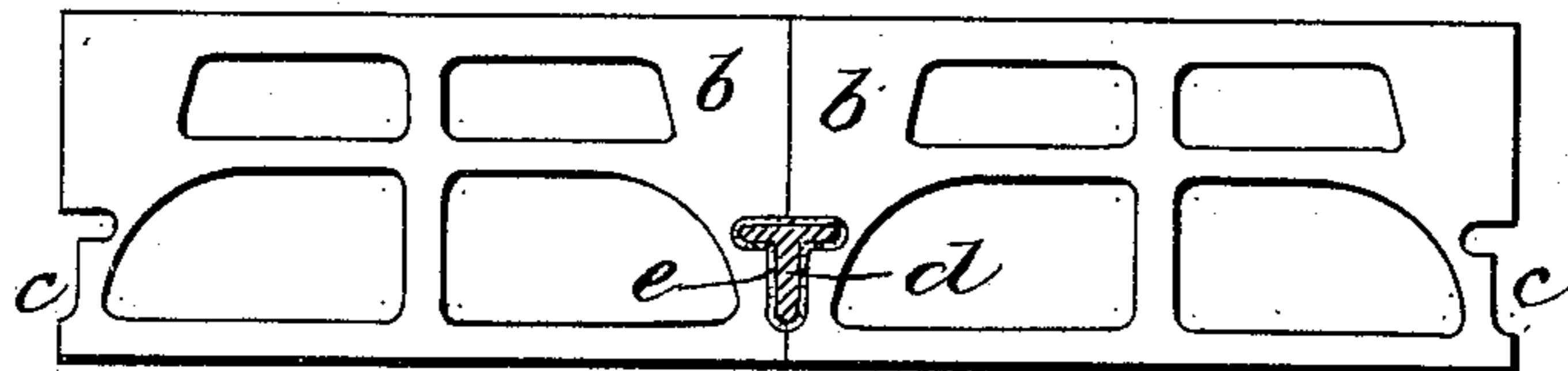
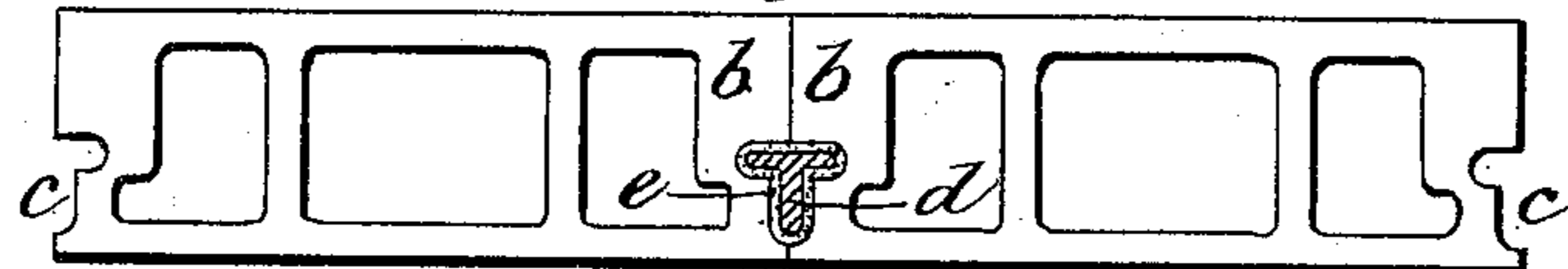


Fig. 4.



Witnesses:

O. W. Gardner,
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Inventor:

Gustav Liebau.
by Frederic Larnagan
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UNITED STATES PATENT OFFICE.

GUSTAV LIEBAU, OF MAURER, NEW JERSEY.

FIREPROOF FLOOR AND CEILING.

SPECIFICATION forming part of Letters Patent No. 603,598, dated May 3, 1898.

Application filed September 8, 1896. Serial No. 605,103. (No model.)

To all whom it may concern:

Be it known that I, GUSTAV LIEBAU, a subject of the Emperor of Germany, and a resident of Maurer, in the county of Middlesex and State of New Jersey, have invented certain new and useful Improvements in Fireproof Floors and Ceilings, of which the following is a specification.

This invention relates to certain new and useful improvements in fireproof floors and ceilings, and has for its object the production of a light and very strong fireproof floor or ceiling which may be subjected to fierce heat and sudden cooling without material depreciation and which will withstand a heavy and sudden impact.

To these ends, therefore, my said invention consists in a fireproof floor or ceiling composed of bricks or tiles having longitudinal recesses laid between the usual I or other floor beams and metal strips or ties located in the coincident recesses of adjoining courses of said tiles, said ties being above and out of contact with the lower flanges of the beams, all as hereinafter more particularly described, and pointed out in the claims.

Referring to the accompanying drawings, illustrating the said invention, in the several figures of which like parts are similarly designated, Figure 1 is a fragmentary perspective view of a floor and ceiling taken between two of the usual floor-beams. Figs. 2, 3, and 4 are end views of different forms of hollow tiles embodying my improvement.

a a, Fig. 1, are I-beams, such as are ordinarily used in this class of work, between which the hollow tiles or bricks *b* are laid, preferably in bond. Each of said tiles is formed with the horizontal recess *c* on each side adapted to coincide with the corresponding recesses of tiles of the next course when laid, thus forming a continuous transverse channel. Within the channel so formed and crossing the dividing-line of each course or any desired number of courses is a strip of T-iron which, however, does not rest upon and is out of contact with the lower flanges of the floor-beams, being entirely located within the recesses between the courses and protected from warping in case of fire by being thus surrounded by the fire-brick. For additional strength I prefer to embed the strips *d* in mortar *e* within the said recesses.

It will be obvious that each of the recesses *c* constitutes but one-half of the continuous

channel formed by two adjacent courses and that each recess is appropriately shaped to receive its portion of the tie *d*. While I have shown and prefer to use for such ties T-iron strips, I do not wish to confine myself to their use, as said ties may be flat, round, I-shaped, or of other contour, always, however, crossing the dividing-line of the courses and engaging the tiles on both sides thereof. Where metal of a shape different from that shown is used, the recesses *c* will of course be modified to conform thereto.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a floor or ceiling, bricks or tiles laid between I-beams having side recesses adapted to coincide with the recesses in the tiles of the next course, in combination with metallic ties located in the dividing-line of said course above and out of contact with the lower flange of the I-beams and entering the recesses in the tiles on adjacent courses, substantially as described.

2. In a floor or ceiling, bricks or tiles laid between I-beams and having appropriately-shaped side recesses adapted to coincide with the recesses in the tiles of the next course, in combination with T-iron ties located within the coincident recesses and above and out of contact with the lower flanges of the I-beams, substantially as described.

3. In a floor or ceiling, bricks or tiles laid between flanged floor-beams and having side recesses adapted to coincide with the recesses in the tiles of the next course, in combination with metallic ties embedded in mortar and located in the dividing-line of said courses above the lower flanges of the floor-beams, and entering the recesses of two adjacent courses, substantially as described.

4. A floor or ceiling composed of bricks or tiles having appropriately-shaped side recesses between the upper and lower surfaces of said bricks or tiles, and a metal tie located wholly within said recesses above and out of contact with the support for said ceiling or floor, substantially as set forth.

Signed at New York, in the county of New York and State of New York, this 1st day of September, A. D. 1896.

GUSTAV LIEBAU.

Witnesses:

FREDERIC CARRAGAN,
J. BRADLEY TANNER.