N. CHENEY.

Fire-Proof Floors.

No. 137,345. Patented April 1, 1873.

Fig. 1.

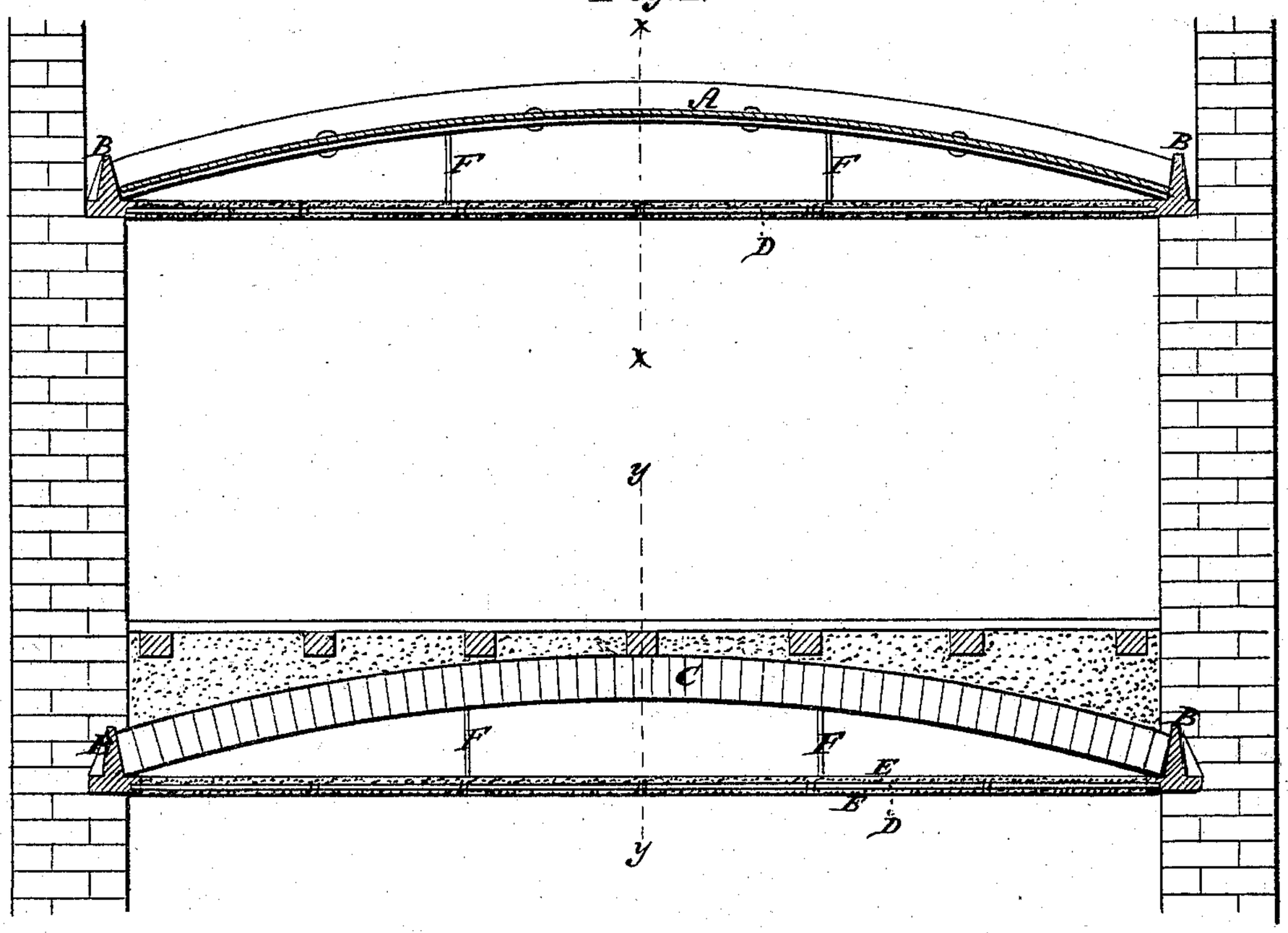


Fig. 2.

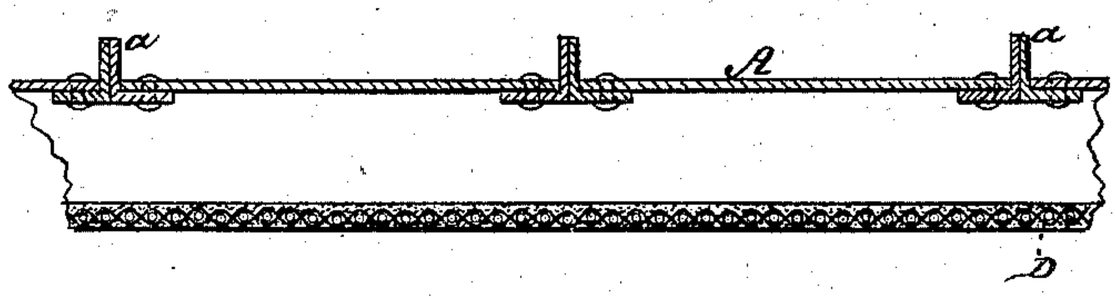
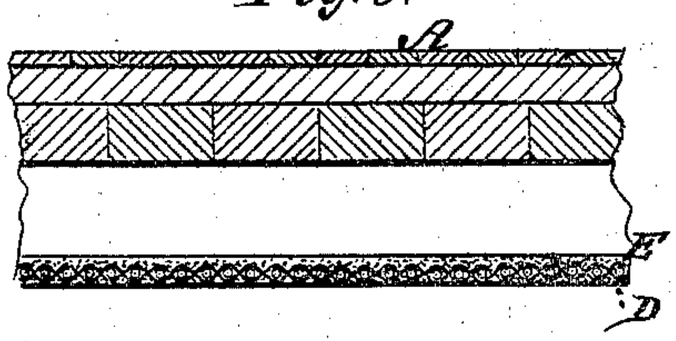


Fig. 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

NATHANIEL CHENEY, OF NEW YORK, N. Y.

IMPROVEMENT IN FIRE-PROOF FLOORS.

Specification forming part of Letters Patent No. **137,345**, dated April 1, 1873; application filed February 8, 1873.

To all whom it may concern:

Be it known that I, NATHANIEL CHENEY, of the city, county, and State of New York, have invented a new and Improved Fire-Proof Floor and Roof Construction, of which the following is a specification:

The invention consists in interweaving cross-wires with the tie-rods or wires of floor or roof arches, and suspending the same, so as to serve not only as ties but also as a lathing to hold the plaster.

Figure 1 is a sectional elevation of a building with two floors of different construction, the arches of which are tied with wires on which the ceiling-plaster is applied. Fig. 2 is a transverse section of Fig. 1 on the line *x x*, and Fig. 3 is a transverse section taken on the line *y y* of Fig. 1.

Similar letters of reference indicate corresponding parts.

In the upper floor the arch A is represented as formed of metal plates bolted together at the edges by the angle-bars *a*, and resting at the ends on the metal "skew-back" beams or bars B, which I propose to tie together by the small wire rods D to prevent end pressure or strain on the walls and hold the arch up stiff and firm. In the lower floor the arch *c* is represented as made of brick, but resting at the ends on the skew-backs the same as in the other, and these are tied together the same by wires D. The arches may be otherwise constructed—for instance, bent planks of wood laid flatwise on the skew-backs with the tension-bars of wood nailed onto the edges from the foot to the crown will serve well for light cheap floors for dwelling-houses, and, being covered with concrete above, and inclosed by the plaster ceiling below, will be fire-proof in the exposed parts. Roofs of the metal plates of the kind represented in the upper floor will have the angle-bars inverted so that the flanges *a* will project downward to allow of covering the joints with caps that will shed water. But however the arches may be constructed, I propose to tie the ends together by these wires to prevent them from sagging at the crown; also to protect the walls from end thrust; and I arrange the wires close together and utilize them to hold the ceiling-plaster E instead of the lath commonly used, and thus dispense with the wood-joints necessary to hold the lath, making the ceiling fire-proof. The wires will be bound or tied together transversely by small wires woven in at suitable distances to keep them from spreading, and they may be suspended, at one or more points between the ends, from the arches by short wires F, which may be connected to them by strips of band or hoop iron interwoven transversely with them for attaching the suspending wires to.

Besides being firm and fire-proof, these floors will be incapable of transmitting sound to any considerable extent.

The wires may be secured to the skew-backs in any approved way, but I prefer to do it by casting the metal to form them on the ends of the wires.

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

The tie-wires D provided with interwoven transverse wires, and suspended, substantially as and for the purpose described.

NATHL. CHENEY.

Witnesses:
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