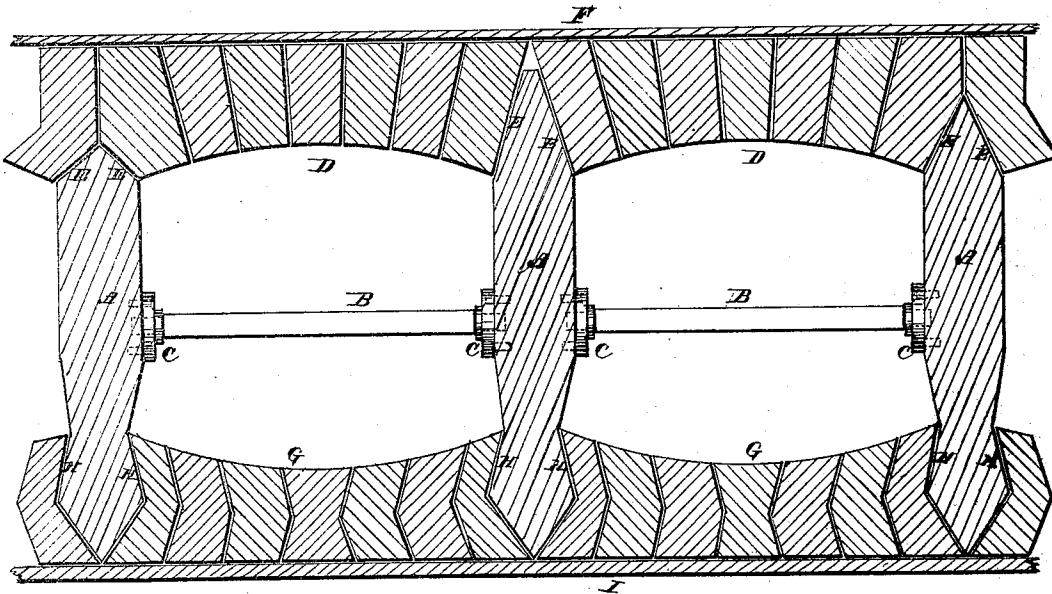


W. T. BUTLER.

Fire-Proof Floors and Ceilings.

No. 141,260.

Patented July 29, 1873.



Witnesses:

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UNITED STATES PATENT OFFICE.

WILLIAM T. BUTLER, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN FIRE-PROOF FLOORS AND CEILINGS.

Specification forming part of Letters Patent No. **141,260**, dated July 29, 1873; application filed June 28, 1873.

To all whom it may concern:

Be it known that I, WILLIAM T. BUTLER, of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Building, of which the following is a specification:

This invention relates to new and important improvements in constructing buildings; and consists in the manner of forming the floors and ceilings, hereinafter described.

The accompanying drawing represents a vertical section of a floor and a ceiling constructed according to my invention.

Similar letters of reference indicate corresponding parts.

A represents the joists, which are made of wood, and so constructed that they form abutments for brick arches at the top or for the floor, and so as to support inverted arches for the ceiling at the bottom. B is a brace or rod of iron, one (or more) of which may be used for tying the joists together. These ties may screw into the joists or be fastened by means of plates C, which latter are screwed or fastened to the joists, the design being to keep the joists rigid and at a uniform distance from each other, and the braces may be arranged in any manner. D is the arch between two of the joists for the support of the floor. A succession of these arches forms the entire support of the floor. These arches are sprung from one joist to another, as seen in the drawing, with bricks made for the purpose, supported by the beveled surfaces or abutments E of the joists. These bevels may vary in form, as seen in the drawing, and the bricks of which the arches are formed will be varied accordingly. F is the floor, which may be of any description—either cement, tile, stone, or "wood carpet." G represents the inverted arch which supports the ceiling. The lower part of the joist has beveled surfaces H, which support the arches. From the supporting-sur-

faces H the joists are beveled to an edge, so that the bricks which form the arches come in contact with each other and form a continuous incombustible surface beneath the joists. These arches are hanging arches, supported by the inclined surfaces H, and the bricks are formed so as to inclose the lower edges of the joist, and conform in shape to each other, as seen in the drawing. I is the plaster or ceiling surface, which is laid directly upon the arches, thus dispensing with laths.

The joists, it will be seen, are completely covered and shielded above and below with a fire-proof material, which heat neither contracts nor expands.

I do not confine myself strictly to wooden joists, as iron joists may be used; but my object is to reduce the expense of forming fire-proof floors and ceilings, the most essential features of fire-proof buildings.

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

1. The construction of the joists A, substantially as and for the purpose described.

2. The braces or rods B, more or less in number, in combination with the joists A, for the purposes described.

3. The arch D, in combination with the joists A, substantially as and for the purposes described.

4. The hanging arch G, in combination with the joists A, substantially as and for the purposes described.

5. A fire and water proof floor and ceiling, F and I, supported by joists A and arches D and G, arranged substantially as shown and described.

WILLIAM T. BUTLER.

Witnesses:

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