E. May.

Fire Proof Building.

No. 89,782. Patented May 4, 1869.

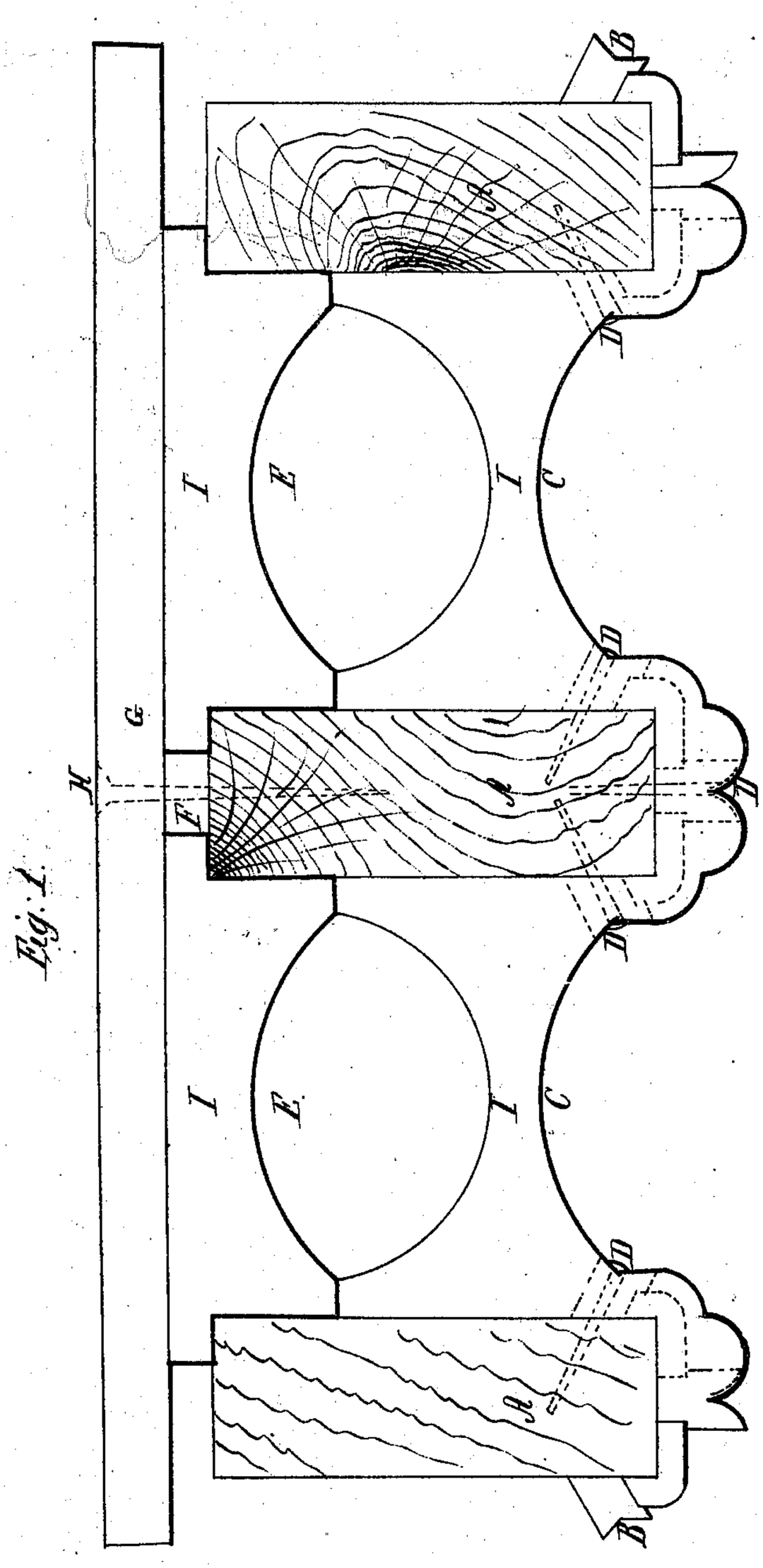

Fig. 1.

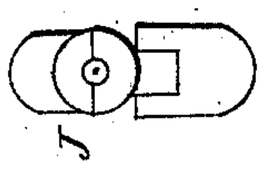

Fig. 3.

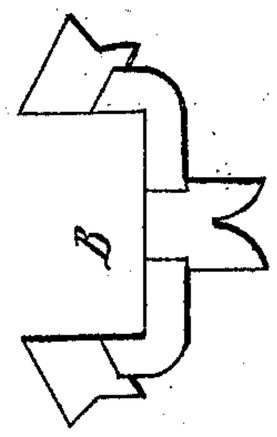

Fig. 2

Witnesses;
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EDWIN MAY, OF INDIANAPOLIS, INDIANA.

Letters Patent No. 89,782, *dated May* 4, 1869.

IMPROVED FIRE-PROOF BUILDING.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, EDWIN MAY, of Indianapolis, in the county of Marion, and State of Indiana, have invented a new and useful Improvement in Fire-Proofing Grain-Elevators, Manufactories, and Workshops; and I do hereby declare that the following is a full, clear, and exact description thereof, that will enable skilled artisans to make and use it, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making part of this specification.

This invention consists, first, in the mode of applying segmental arches of thin sheet-metal to be suspended to the upper edge of the floor-joists, arching over the space between them, and arranged to carry the least practicable sufficient quantity of non-conducting or fire-proofing material to be laid thereon, to cover and encase the upper edges of the joists in such a manner as to prevent their ignition at the top by the burning of the flooring-boards and upper part of the building, and at the same time to admit of the flooring-boards being laid thereon and nailed to the joists without disarranging the intervening fire-proofing material; and it further consists in the novel form of the sheet-metal arch and rib-moulding suspended to the under edge of the floor-joist forming the ceiling, more easily and cheaper than lath, as the space over the arch is filled with coarse mortar, or other cheap fire-proofing material, completely encasing the joist, and presenting to the view from the floor a surface of sheet-metal instead of the exposed plastered surface of a ceiling, when constructed in the usual manner with lath and plaster, and such ceilings are so liable to become injured and broken off, that the use of them in elevators, manufactories, and workshops, is in most cases dispensed with, and the lower edge and sides of the joist are left exposed to view, and the danger of fire.

The invention still further consists in the peculiar construction of a cast-iron clamp or furring-off stud, which is made to hold the arch of sheet-metal off the wooden floor-joist, and may be easily and conveniently attached to the under edge of the joist.

Figure 1 is a section of flooring and ceiling with my improvements applied thereto.

Figures 2 and 3, are detail views of my improvement in constructing the furring-off stud or clamp.

Similar letters of referenee indicate corresponding parts in the several figures.

A are the wooden joists.
B, furring-stud or clamp.
C, sheet-metal segmental arch and rib-moulding.
D, nails fastening the arch C to wooden joist.
E, segmental arch of sheet-metal.
F, space filled with fire-proofing material.
G, flooring.
H, nails through the filling F into the joist.
I, filling of plaster or fire-proofing material.
J, end view of furring-stud or clamp B.

The furring-studs or clamps B are placed in position and spaced off on the lower edge of the joist, and can easily be fastened by wedging where the joists may be too thin, or trimming off the joists where they are too thick.

The sheet-metal arches C are formed with the round or mould on the edges, that they may present a uniform appearance, and at the same time turn the edges of the sheet-metal arch which join to and against each other into the shade, making a perfect finish of the two edges.

They are also formed in a manner to leave a space in the haunches and around the lower edge of the joists, so as to receive and contain the greatest quantity of the fire-proofing material against the sides and about the lower edge of the joists, the better to protect them against excessive heat.

After securing the arch-plates C in position by the nails D, or screws, through the furring-stud or clamp B, into the wooden joist, the fire-proofing material I is to be filled in.

In this manner the lower edges and sides of the joist will be fully protected against fire, and the filling in of plaster or other fire-proofing material will, after it becomes dry, help to brace and strengthen the floor-joists.

The arch-plates E are prepared in the form shown, and when placed in position, the fire-proofing material is filled in and levelled by the edges of the arch-plates, and after it becomes sufficiently dry, the floor is laid down and nailed to the joists through the filling F.

In this manner the upper edges and sides of the joists will be completely covered and encased by the fire-proofing material. This manner of fire-proofing also subserves the same purpose as the ordinary deafening in general use, and at the same time serves to stiffen the floor-joists.

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

1. The furring or clamp B, to seize over the lower edge of the joists, and hold the metal arch C, when constructed and arranged substantially as herein described.

2. In combination with the above, the sheet-metal arch C and fastenings D, when arranged and constructed substantially as herein described.

EDWIN MAY.

Witnesses:
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C. P. HUTCHINSON.