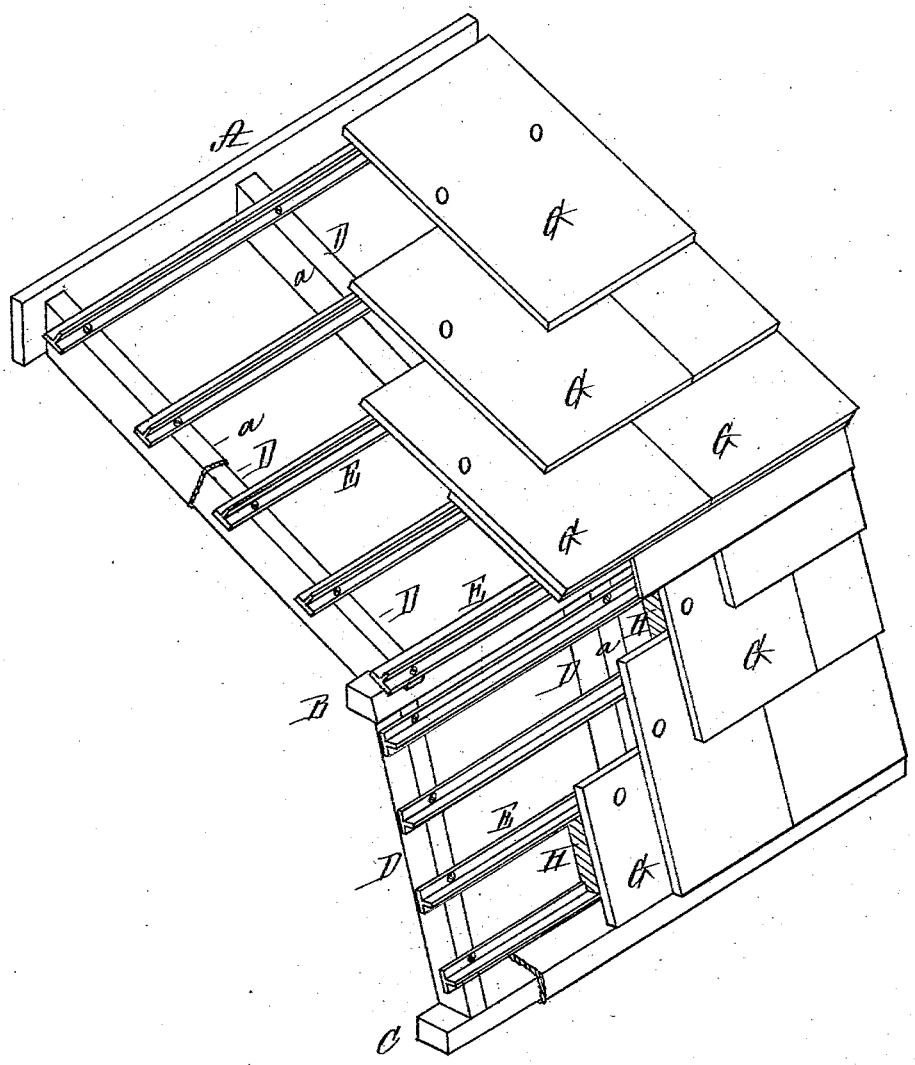
2 Sheets—Sheet 1.

S. FARQUHAR.

FIRE-PROOF ROOFS.

No. 195,594. Patented Sept. 25, 1877.

Fig. 1.



Witnesses,
W. J. Cambridge
J. E. Cambridge

Inventor,
Samuel Farquhar,
Per Teschemacher & Bearns
Attorneys.

2 Sheets—Sheet 2

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FIRE-PROOF ROOFS.

No. 195,594. Patented Sept. 25, 1877.

Fig. 2.

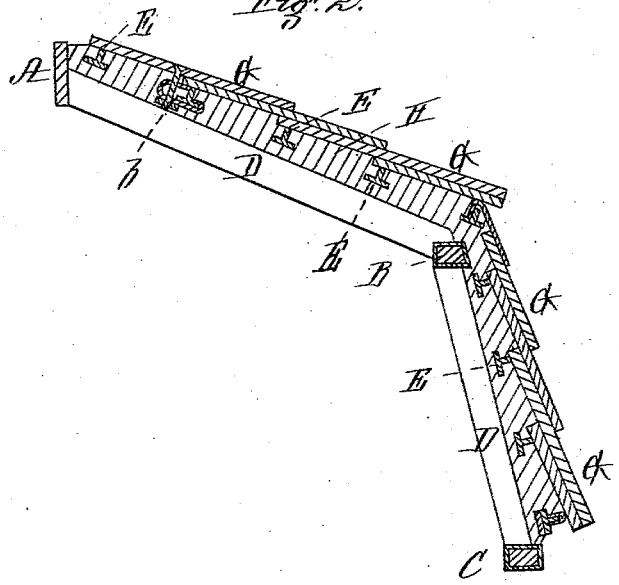
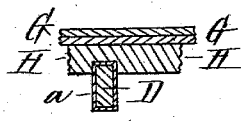


Fig. 3.



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Inventor,
Samuel Farquhar,
Per Teschemacher & Stearns,
Attorneys.

UNITED STATES PATENT OFFICE.

SAMUEL FARQUHAR, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO HIMSELF AND DAVID W. FARQUHAR, OF SAME PLACE.

IMPROVEMENT IN FIRE-PROOF ROOFS.

Specification forming part of Letters Patent No. **195,594**, dated September 25, 1877; application filed July 28, 1877.

To all whom it may concern:

Be it known that I, SAMUEL FARQUHAR, of Boston, in the county of Suffolk and State of Massachusetts, have invented an Improvement in Fire-Proof Roofs, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a perspective view of a roof constructed in accordance with my invention. Fig. 2 is a vertical section through the same; Fig. 3, sectional detail.

My present invention consists in a roof composed of wooden rafters, covered with sheet metal or other fire-proof material, and iron purlins or beams, with the slates or other covering secured thereto by clasps, or in any other suitable manner, in connection with a fire-proof cement or composition "rendered" or laid within the space inclosed by the rafters and purlins immediately under and in contact with the slates or covering of the roof, by which construction I dispense with the use of the boards ordinarily employed for nailing the slates thereto, and produce a roof thoroughly fire-proof at every point, and in which the condensation of moisture and staining of ceilings, incident to many of the roofs of the present construction, are entirely avoided.

To enable others skilled in the art to understand and use my invention, I will proceed to describe the manner in which I have carried it out.

In the said drawings, A represents the ridge, B C the iron wall-plates, and D the wooden rafters, of a roof. These rafters are sheathed or covered with tin, galvanized iron, or other sheet metal *a*, and upon them are secured a series of T or other shaped iron beams or purlins, E, in an inverted position.

G are the slates, secured in place to the purlins by bent plates, bolts, and screw-nuts, forming a fastening described in the United States Letters Patent No. 138,999, granted to myself (Samuel Farquhar) May 20, 1873; or, the slates may be fastened to the purlins in any other suitable manner.

After the roof is covered with slates, the space immediately thereunder, inclosed by the purlins and rafters, is rendered or filled with a fire-proof cement, mortar, or other composition, H, of a thickness sufficient to secure the necessary protection against fire, this fire-proof material being securely clinched in place upon and around the flanges or ⊥ of the iron purlins, and when dry forms an impenetrable barrier to fire and a non-conductor for heat or cold, while, at the same time, all condensation and dropping of moisture and the discoloring of ceilings incident to the ordinary construction of roofs is thereby avoided.

A roof constructed in accordance with my invention is also preferable to a roof constructed wholly of iron, as in this latter case, in the event of a fire, an intense heat would warp and twist the iron portions sufficiently to cause the breaking and opening of the roof. Moreover, a roof of my improved construction does not require so heavy walls to sustain it, while the number of the rafters is diminished, and all roofing-boards for attaching slates thereto, heretofore required, are dispensed with, and the damage incident to the contraction and expansion of roofs formed wholly of iron is also avoided.

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

A fire-proof roof, having in its construction wooden rafters D covered with sheet metal or other fire-proof material, and iron purlins E, in combination with a fire-proof covering secured thereto, and a backing, H, of fire-proof cement or other composition placed thereunder in the space between the rafters and the purlins, substantially as described, for the purpose set forth.

Witness my hand this 26th day of July, A. D. 1877.

SAMUEL FARQUHAR.

In presence of—
N. W. STEARNS,
W. J. CAMBRIDGE.