A. B. MULLETT.

Fire Proof Roof.

No. 168,277. Patented Sept. 28, 1875.

FIG. 1.

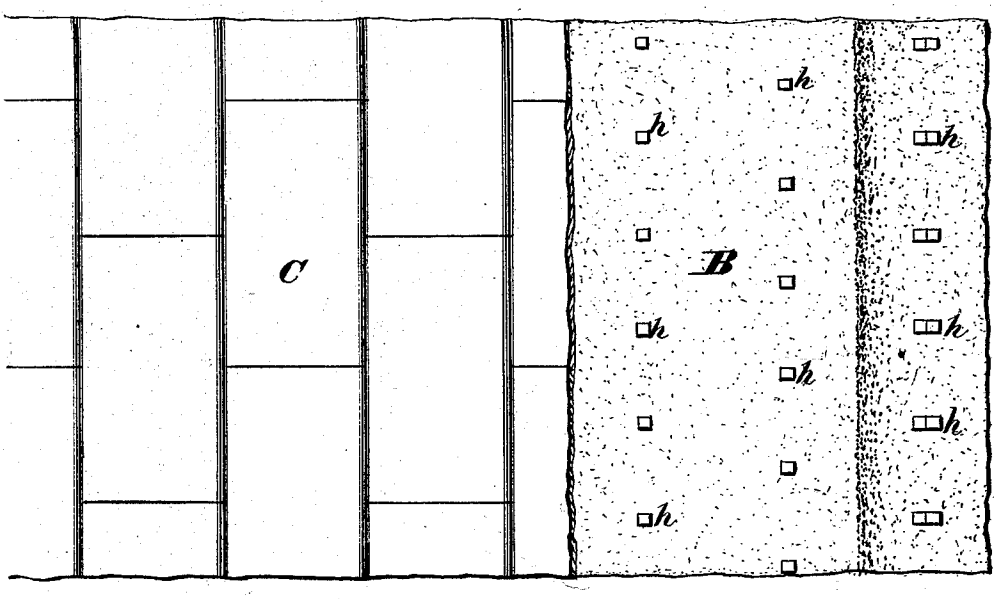


FIG. 2.

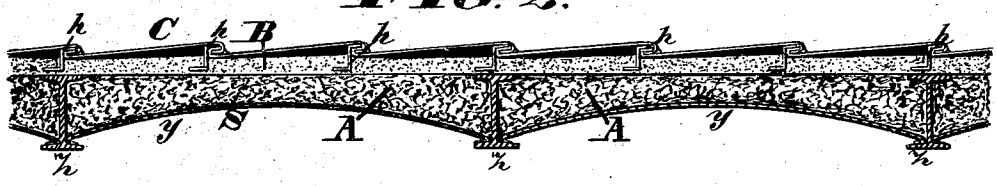
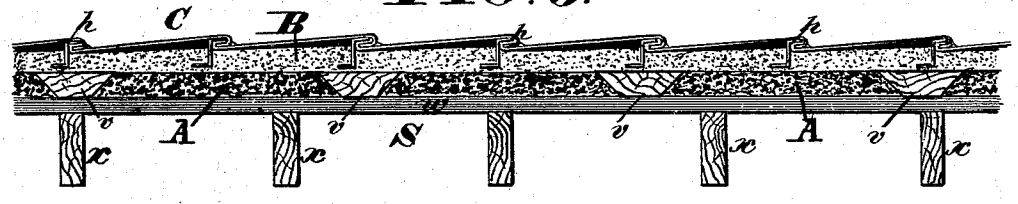


FIG. 3.



WITNESSES

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UNITED STATES PATENT OFFICE

ALFRED B. MULLETT, OF WASHINGTON, DISTRICT OF COLUMBIA.

IMPROVEMENT IN FIRE-PROOF ROOFS.

Specification forming part of Letters Patent No. **168,277**, dated September 28, 1875; application filed April 3, 1875.

To all whom it may concern:

Be it known that I, ALFRED B. MULLETT, of the city and county of Washington, in the District of Columbia, have invented a new and useful Improvement in Roofs, of which the following is a specification:

The present invention relates, primarily, to roofs for fire-proof buildings, but is applicable to roofing for houses generally.

My invention consists, first, in a coating or layer of fire and water proof cement, having hooks or cleats embedded therein, and secured by the setting or hardening of the cement as means for attaching or anchoring a sheathing of copper or other sheet metal. It thus not only precludes the stripping off of the sheet metal by the wind, but also protects the building temporarily in the most effective manner against the entrance of fire or water—after the metallic sheathing has been burned off, for example—and tends to arrest or absorb the heat which is imparted by the rays of the sun as a non-conductor, so as to keep the upper compartments of the building cool in summer.

My invention consists, secondly, in the combination of a foundation of coarse cement for filling between metallic roof-beams or girders, or between cleats applied to a plank ceiling, a coating or layer of fire and water proof cement, anchoring hooks or cleats embedded in the cement, and sheet-metal plates attached by the hooks or cleats, as hereinafter more fully set forth.

Figure 1 is a top view of a roof illustrating this invention, showing successive layers stripped off to expose layers beneath. Fig. 2 represents a vertical section of the improved roof applied to metallic beams or girders. Fig. 3 represents a vertical section of the improved roof applied to a plank ceiling.

Like letters of reference indicate corresponding parts in the several figures.

The substructure S of a roof constructed according to this invention is not peculiar, and may consist of metallic beams *z* and plate-arches *y*, as shown in Fig. 2, or wooden rafters *x* and planking *w*, with cleats *v* applied to the latter, as represented in Fig. 3. A level foundation is formed on this by a stratum, A, of coarse concrete—say, of gravel, sand, and lime, filling in the spaces between the beams or cleats, and attached and supported thereby. When this has set a layer or coating, B, of Portland or equivalent cement is applied, the same adhering to the concrete, and forming a fire and water proof surface. In this layer anchoring hooks or cleats *h* are embedded, as clearly illustrated in the drawing. These hooks may be of **Z** shape, as represented, or of any equivalent form, and are arranged in lines coincident with what are to be the seams of a copper or other sheet-metal sheathing, C, which completes the structure. The anchoring-hooks receive the adjoining edges of successive sheets, and securely attach the latter, so as to preclude stripping by the wind. Lock-seams may be formed beneath the heads of the hooks, as represented, or the sheets of sheathing may be united otherwise, if preferred.

Should the metallic sheathing become leaky or be burned off, an effectual temporary barrier against the entrance of water or fire is furnished by the coating of cement beneath the same, while the entire foundation operates always as a superior non-conductor of heat to arrest the direct rays of the sun in summer.

The improved roof is adapted to be built and repaired with facility, and may be inclined to any extent required or preferred.

The following is claimed as new in this improvement in roofs, namely:

1. A coating or layer of fire and water proof cement, having hooks or cleats embedded therein, and secured by the setting or hardening of the cement, for attaching or anchoring a sheathing of sheet metal, and forming a supplemental protection, in the manner herein set forth.

2. The combination of a foundation, A, of concrete, a coating or layer, B, of cement, anchoring hooks or cleats *h*, embedded in the cement, and supported thereby, and copper or other sheet-metal sheathing, C, attached to the hooks or cleats, substantially as herein specified, to constitute an improved wind-proof and fire and water proof roof.

A. B. MULLETT.

Witnesses:
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